

# Fergus County, Montana Long Range Plan



Completed in co-operation with the Fergus Conservation District and Local Work Group – 2020

## **Section 1: Introduction**

The purpose of the Fergus County Long Range Plan (FLRP) is to create a working document that identifies natural resource issues throughout the county. This plan will provide guidance to the Lewistown Natural Resources Conservation Service (NRCS) field office, partners and producers to develop strategies to address the identified issues.

The development of this document is based on information provided by producers and partners during Local Work Group (LWG) meetings and will be reviewed and modified annually (at a minimum). Attendees of the 2019 LWG include: local producers, Department of Natural Resources and Conservation (DNRC), Fergus Conservation District (FCD), Missouri River Conservation District Council (MRCDC), MSU Extension, Bureau of Land Management (BLM), Montana Fish, Wildlife & Parks (MFWP), and Natural Resources Conservation Service (NRCS) staff.

### Vision

Work cooperatively with partners and producers in Fergus County to address natural resource issues through Montana Focused Conservation and Targeted Implementation Plans, and to assist agriculture operators to continue and/or increase stewardship of the land.

### Mission

We deliver conservation solutions so agricultural producers can protect natural resources and feed a growing world.

### Time Frame

This long-range plan is for 5 years (2020-2025). The plan will be reviewed annually and amended as needed.

## **Section 2: Natural Resource Inventory**

Fergus County located in Central Montana is made up of a diverse landscape including cropland, grazing land, four mountain ranges, two rivers, and a multitude of perennial and intermittent streams. Gold was discovered in the area in 1880, and in 1885 the county was formed. Lewistown is the county seat, but there are many rural communities scattered throughout the 4,253 square miles. The county includes the Upper Missouri Breaks National Monument, the Wild and Scenic Missouri River, and the C.M. Russell Wildlife Refuge. Fergus County is also home to one of only three Ferry's in the state that can transport vehicles across the Missouri River. The two rivers found in the county are the Judith River, which flows into the Missouri River on the northern boundary of the county.

### Human

Fergus County has always had a strong agriculture base, and this remains the primary economic driver today. There are 2,765,685 acres in the county and include BLM, State Land, US Forest Service, and private ownership.

According to the 2017 Census of Agriculture, there are 845 farms that comprise 2,188,069 acres, with the average size of farm being 2,589 acres<sup>1</sup>. The majority of farmland acreage is pastureland at 68% with cropland at 29%, and woodland at 2%<sup>1</sup>. The population of Fergus County is 11,413 with an average age of 46<sup>2</sup>. Crops grown in the county include winter wheat, spring wheat, barley, dry peas, alfalfa and grass hay. An abundance of big game (i.e. elk, mule deer and upland birds) and access to the Missouri

River, draw hunters and sportsmen to this area, in addition to Big Spring Creek which is a favored fly-fishing attraction in central Montana.

### Soils

Fergus County occurs primarily within Major Land Resource Areas (MLRA) 58A, Sedimentary Plains. Dominant ecosites are Clayey, Silty and Shallow. See ecological site descriptions for these sites for further detail. Most cropped soils in the county are considered Highly Erodible Land with wind erosion being the prominent concern. The remainder of the county is within 46, Northern Rocky Mountain Foothills<sup>3</sup>.

Saline seeps are a concern in some areas of the county on both native range and cropland. Saline seeps reduce soil quality, production ability, and can negatively affect water quality. Overall soil health is impacted due to primarily monoculture crops in rotation with chemical fallow.

Elevation ranges from 2,251ft to 8,648 ft. The average annual precipitation is 12 to 14 inches on the plains and 18 to 30 inches in the mountains.

Prime and other important farmland is located throughout the county, primarily in deeper soils according to the Fergus County soil survey. Most irrigated cropland is on prime soils and is approximately 16,000 acres. Organic matter depletion is moderate to high throughout the county on cropped soils.

### Water

Fergus is home to many perennial and intermittent streams, including the Judith and Missouri Rivers. Tributaries primarily drain directly to the Missouri River or to the Judith or Musselshell River before reaching the Missouri. Big Spring Creek flows through the city of Lewistown, and historically would flood the city with spring runoff. In the 60's and 70's, NRCS (then Soil Conservation Service) worked with local sponsors to develop four reservoirs to help alleviate the flooding issue. These four reservoirs, now managed by the local sponsor, continue to reduce flooding impacts on the city, but also provide recreational activities for the community.

Montana DEQ has identified several Impaired Waters within Fergus County: Armells, Big Spring Creek, Casino Creek, Coffee Creek, Cottonwood, Dry Wolf, Judith River, Missouri River, Ross Fork, Wolf Creek, and Warm Spring Creek. Causes for these impairments include but are not limited to alteration in stream-side vegetation, sedimentation, salinity, nitrate/nitrite, and total dissolved solids<sup>5</sup>. Riparian area health has an impact on the some of these impairments. Woody vegetation, if present on the stream, may have washed away through flooding, died out, or in some cases been removed over the years. Grazing impacts upon riparian areas also have impacts on water quality.

The Judith River Watershed does have a higher number of shallow aquifers and gravelly soils. Due to this combination, unknown sources and potential cropping systems, levels of nitrate are increasing in ground water. This is an issue from Denton to Moore.

Domestic and livestock water is primarily supplied by water wells and pipelines. Water well depths within the county range from 100 feet to 2000 feet in depth. Areas of the county are limited on availability of livestock water which in turn impacts grazing land health. Stock ponds and reservoirs are also used for livestock water, but in recent years, many stock ponds in the north and eastern portions of the county have become "sour" due to increased sulfates caused by subsurface leaching. These sulfates, at high levels, can be toxic for livestock. Livestock water distribution is a limiting factor for grazing

management throughout the county, which contributes to rangeland health concerns by reducing grazing management options.

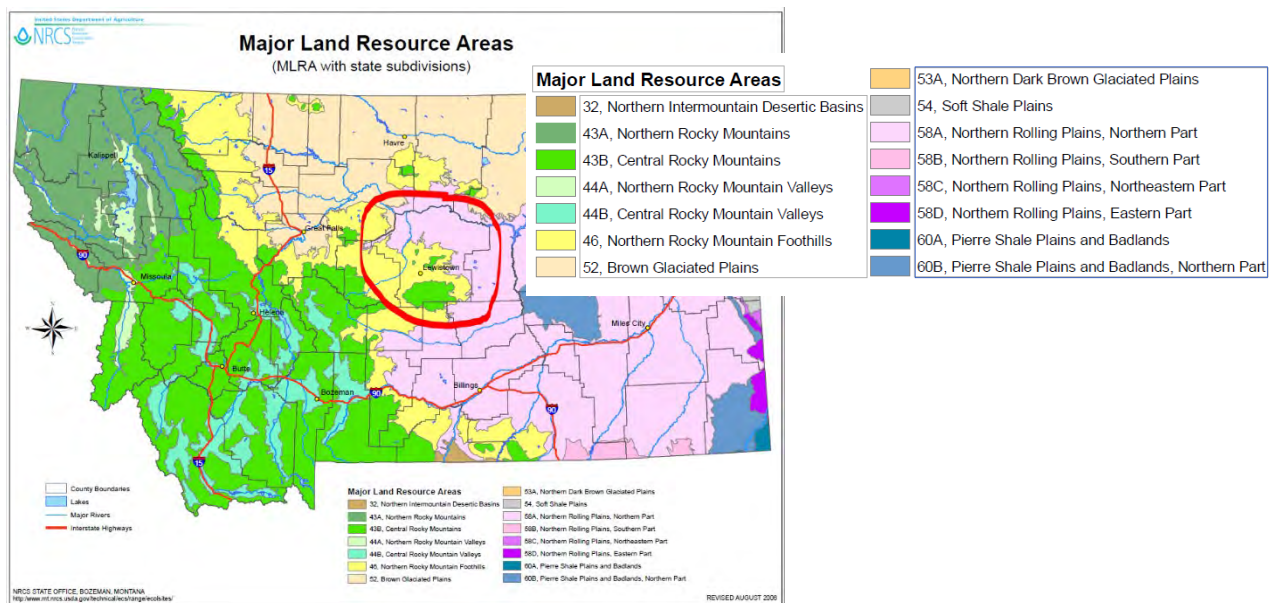
### Air and Energy

Fergus County has no air quality concerns identified by DEQ. There are some confined animal facilities located throughout the county that infrequently have odor complaints from neighbors.

### Plants

Fergus County was founded on agriculture, and this remains the primary economic driver today. Fergus ranks 17<sup>th</sup> in the state for market value of crop products sold<sup>1</sup>. Forage for hay and wheat are the mainstay crops grown in the county. With increased exposure to the importance of soil health and diversity in cropping rotations, cover crops are becoming more popular throughout the county during the fallow year. Typical cropland rotation for the county is crop/fallow (mostly chemical fallow) with some re-cropping rotations. In the last 5 years, there has been an increase in fallow tillage due to chemical resistance in weed control. Annual weeds commonly found in cropland are kochia, Russian thistle, cheatgrass, and other broadleaf annuals.

Grazing land constitutes the largest single land use in the county, at 68% of the land<sup>1</sup>. Fergus County is comprised of 58A, Sedimentary Plains and 46, Northern Rocky Mountain Foothills<sup>3</sup> for the MLRA. The predominant landcover is 20% Great Plains Mixedgrass Prairie, 19% Big Sagebrush Steppe<sup>4</sup>. Native range is composed primarily of western wheatgrass, green needlegrass, needle and thread, bluebunch wheatgrass, prairie Junegrass, Sandberg bluegrass, silver sagebrush and Wyoming big sagebrush. Landowners have been working to improve grazing land health both on their own and with cost share through NRCS. These improvements will continue and are well accepted throughout the county. In portions of the county, availability of livestock water impacts producer’s ability to properly manage grazing land.



Riparian areas make up three percent of the land cover in Fergus County. Though this percentage is small, riparian area health holds an important function in the ecosystem. Degraded riparian health not

only has a negative impact on water quality but impacts overall plant health and function. Woody vegetation, if present on the stream, may have washed away through flooding, died out, or in some cases been removed over the years. Improper grazing practices can impact desired woody and herbaceous vegetation, soil condition, and ecosystem function.

Ponderosa pine is a climax species along rides and breaks. Improper grazing use and lack of historic fire regime has created plant community composition issues across some ecosites. In mountainous areas throughout the county, forest stands have grown thick and in some cases unhealthy due to the decline in timber management and deadfall due to mountain pine beetle infestations.

To protect the soils in the late 80's and early 90's, many producers put highly erosive cropland into the Conservation Reserve Program (CRP). A majority of this land was seeded to monocultures of crested wheatgrass or smooth brome which provide poor forage, reduce plant diversity, and decreased soil health.

Weeds are of high importance to producers and the public throughout the county. Noxious weeds found in Fergus include (but not limited to) Canada thistle, spotted knapweed, Russian knapweed, leafy spurge, dalmatian toadflax, whitetop, and salt cedar. Salt cedar is evident along riparian areas in the Judith River drainage and many tributaries of the Missouri River. Further noxious weed mapping needs to be completed to identify the extent of salt cedar in the county. Invasive winter annuals such as cheatgrass and Japanese brome are not only found in cropland, but are increasingly evident in pasture and native range and are causing rangeland health concerns county wide. Control efforts are in place for these weeds, but more management is needed to keep the noxious weeds from claiming viable grazing land and crop land.

Salinity issues not only affect water quality, but impact both crop land and grazing land productivity. Some areas of salinity concern are natural forming, but proper management of crop land can positively affect the impacts of saline seep caused from farming practices.

Increased flooding has been noted in some watersheds around the county during spring run-off. Affects from flooding increases soil erosion, standing water in fields, and saline seeps.

The Montana Natural Heritage Program (MTNHP) Plant Species of Concern Report last updated on April 16, 2020 lists 19 plants for Fergus County<sup>7</sup>. The MTNHP describes species of concern as native taxa that are at-risk due to declining population trends, threats to their habitats, restricted distribution, and/or other factors.

### Animals

Fergus County is ranked 1<sup>st</sup> in the state for livestock, poultry and products sales. Of this, cattle and calves' sales are number one for the county<sup>2</sup>. Other domestic animals found in the county include poultry, pigs, milk cows, sheep, goats, horses and aquaculture. There are some confined animal operations located in the county which could pose a risk to surface water quality if mis-managed.

Wildlife is abundant and species vary widely throughout the county due to the diversity of habitats from grasslands to foothills and mountains. Species found within the county include, but not limited to, deer, elk, antelope, sage-grouse, coyotes, fox, badgers, prairie dogs, turkey, Canada lynx, black bear, grizzly bear, beavers, bobcats, and mountain lions.

Montana’s State Wildlife Action Plan identifies the Sage Grouse Core Area as one of the top Terrestrial Focal Areas in the state. Part of this core area occurs in Fergus County. “This Focal Area contains one of the greater sage-grouse core areas and has large contiguous habitat...Livestock grazing is a major land use in the area and proper management practices are critical to maintaining the area’s SGCN habitat values.”<sup>8</sup>

The chart below identifies the species on the U.S. Fish and Wildlife Service Endangered, Threatened, Proposed and Candidate Species list dated December 12, 2019 for Fergus County.

6

FERGUS		
Scaphirhynchus albus	Pallid Sturgeon	LE
Lynx canadensis	Canada lynx	LT
Pinus albicaulis	Whitebark pine	C

The MTNHP Animal Species of Concern Report last updated April 16, 2020 identifies 49 animals in Fergus County <sup>7</sup>. The MTNHP describes species of concern as native taxa that are at-risk due to declining population trends, threats to their habitats, restricted distribution, and/or other factors.

Potential Partners

- Fergus Conservation District (FCD)
- Fergus/Petroleum Farm Service Agency (FSA)
- MSU Extension Service – Fergus
- Montana Salinity Control Association (MSCA)
- Fergus County Commissioners
- MSU Central Ag Research Center – Moccasin (CARC)
- Fergus County Weed Supervisor
- Montana Fish, Wildlife & Parks (MFTWP)
- Pheasants Forever
- Montana Department of Natural Resources & Conservation (DNRC)
- Bureau of Land Management (BLM)
- Missouri River Conservation Districts Council (MRCCDC)

**Section 3: Conservation Activity Analysis**

**NRCS:**

In the past 5 years, the NRCS office in Lewistown has addressed resource concerns on cropland, grazing land, and wildlife habitat through Conservation Technical Assistance (CTA), Environmental Quality Incentives Program (EQIP), and the Conservation Stewardship Program (CSP).

Cover crop, crop rotation, and nutrient management practices have been installed to address individual issues with soil health and proper use of nutrients. Soil erosion and overall soil health are an ongoing resource concern within the county. The use of cover crops has increased within the last 5 years, but the potential use of cover crops to add diversification to the cropping rotation is still ongoing. Due to chemical resistance in weeds and breaking of disease cycles, there has been an increase in tillage use which is having a direct effect on soil erosion and soil health. NRCS will continue to educate and work with producers to develop management to address these concerns.

Grazing land practices that have been installed to improve grazing land health and management include cropland conversion to grass, fencing, water developments, prescribed grazing, and herbaceous weed treatment. Again, these practices address individual issues, and continued interest has been expressed throughout the county.

Wildlife management and pollinator practices have also been installed in the last 5 years. It is known that pollinator species are on the decline, so planting pollinator friendly plots provide a food source and habitat for these pollinators. Tree/shrub plantings and upland wildlife habitat management practices have also been installed.

Riparian area and stream management have also been addressed on Big Spring Creek. There are issues along the creek that include streambank erosion for flooding, improper bank management, and straightening of the stream. Close to the urban setting, landowners have removed vegetation that helps stabilize the creek bank, which makes it more vulnerable to erosion. Stream straightening occurred 30-40 years ago. This practice has increased the velocity of the creek also increasing bank erosion, sediment load in the stream, and reduced the amount of fish habitat. NRCS, in partnership with MT FWP, FCD, Trout Unlimited and others have re-meandered 2 separate portion of Big Spring Creek, one above and one below the city of Lewistown.

#### **Section 4: Natural Resource Problems and Desired Future Outcomes**

##### Grazing land Health

Cattle are the largest agriculture market in Fergus County. Although many producers are or having been implementing grazing management and facilitating practices to improve the health of grazing land over the past 20 years, efforts need to continue throughout the county. Overgrazing continues to be a concern whether it is from excessive stocking rates or low stocking rates left for too long in individual pastures. Degraded Plant Condition, Undesirable Plant Productivity and Health, and Inadequate Structure and Composition are resource concerns associated with livestock grazing on range and pasture. Lack of watering facilities to help distribute cattle throughout the pasture also contributes to overgrazing patterns and livestock distribution issues. Development of new watering sources can be a challenge in many areas of the county due to drill depths of 1000 to 2000 feet, and the cost associated with these deep wells. Cross fencing and proper stocking rates will help improve grazing land health and wildlife habitat. There is also a rising concern of erosion on grazing lands which may be caused from extended winter grazing patterns leaving soil exposed and impacted by snow melt runoff or lack of proper water distribution.

Education on proper grazing management strategies and the use of introduced pastures or cover crops used for grazing are options to decrease pressure on native rangeland. The soil health of crop land can be improved with the use of cover crops and the biological element of cattle grazing, while providing a positive impact to native range by decreasing the amount of time it is grazed. Areas that have high cropland acres may lack infrastructure (fence and water) for grazing and will need to be addressed.

Riparian health is a resource concern identified throughout the county. Degraded riparian health has a negative impact on water quality, overall plant health and ecosystem function. Proper use and grazing management in conjunction with structural practices will help address this concern.

Noxious weeds have a negative impact on grazing land. Though efforts have been made in the past to address leafy spurge, spotted knapweed, and whitetop in the past, more treatment is needed. The

spread of noxious weeds is a real fear throughout the county, as these weeds take over grazing areas, reducing the desirable vegetation and reducing stocking rate ability.

Inadequate Habitat is a concern on range and pasture. Proper grazing management facilitated by structural practices, will help to combat this concern. Conversion of native range to cropland continues to be a concern regarding habitat continuity and cover for grassland birds as well as erosion (wind and water).

Addressing resource concerns on grazing land will improve rangeland health and help meet the needs of wildlife and ranchers.

#### Forestland Health

Heavy fuel loads in the forested areas is a concern not only to the increased risk of catastrophic wildfires, but overall forest stand health. Proper tree spacing and the removal of unhealthy or overpopulated stands will improve forest stand resistance to disease and overall resiliency in addition to providing useable livestock grazing of the understory.

Ponderosa pine and Rocky Mountain juniper encroachment is an identified concern. The areas of encroachment are susceptible to the same increased risk of wildfires due to the increased biomass causing a buildup of hazardous fuels and reduced plant health and vigor of the understory.

#### Soil Health

Poor soil health impacts the overall function of the soil and may result in resource concerns such as wind and water erosion, soil compaction, crop pests, disease, soil acidity, and chemical resistance by weeds. Soil health on cropland is a concern throughout the county. Producers in Fergus County have begun to adopt components of the 5 soil health principles, but more education and information needs to be provided to help producers understand the importance of adopting soil health principles on the resource. With typical cropland rotations consisting of crop/fallow, and the crop being primarily wheat, the living microbes in the soil have been depleted due to the monoculture crop grown, use of chemicals during the fallow year, and increased soil temperatures in the fallow year. Diversification of the cropping system, including the use of cover crops during the fallow year, will help increase microbial activity, reduce tillage which impacts soil structure, and overall improve the health of the soil. Some producers in the county have made management decisions to implement the 5 principles of soil health, while others have dabbled in one or two principles and have not been able/willing to adopt all 5 principles. By implementing strong soil health measures throughout the county, all ecological processes can be improved over time. The use of cover crops will not only have a positive impact on cropland, but they can be used as a nutritious grazing source to reduce pressure on native range which will also have a positive effect on rangeland health.

Improved soil health will help address wind and water erosion, soil compaction, crop pests, disease, soil acidity, and chemical resistance by weeds.

Salinity caused from cropping rotation is also a concern in specific areas of the county. Saline seeps negatively impact the production ability of the soil in both cropland and grazing land by souring the soil and making the discharge areas unproductive. While the discharge area is what is seen by the human eye, the recharge area needs to be addressed with vegetation (usually perennial, deep rooted species) that will utilize the excess moisture, not allowing it to move through the soil collecting salts and surfacing in the discharge area.



### Water Quality

Water quality concerns are tied to soil and plant health. In a functioning ecosystem, soil and plants act as a filter for water whether it be surface or ground water. Agronomic practices can impact water quality with increased turbidity, contaminants, and salinity. Flooding issues also increase soil erosion and may leave stream banks exposed with no vegetation for filtering or protection. Improved soil and grazing land health will positively affect water quality. Agronomic practices including cropping and grazing near riparian areas, can impact water quality with increased turbidity, sediments, salts and other contaminants. Annual flooding increases soil erosion and may leave stream banks exposed with no vegetation for filtering or protection. Improved soil and grazing land health will positively affect water quality and riparian health. The use of low-tech riparian restoration techniques will improve riparian health and water quality, extend the green zone, provide connectivity between the riparian area and floodplain, and can potentially mitigate flooding issues. Water quality is highly important for livestock health and production. Stock ponds are often of poor quality for cattle and are frequently high in sulfates and total dissolved solids. From an animal health and production perspective, there is a need for higher quality water that may only come from well sources.

Excessive nitrate levels in certain areas of the county are attributed to natural and agronomic processes. By implementing good soil health practices such as diverse crop rotations, use of cover crops during the fallow year, planting less productive soils back to permanent vegetation, and proper nutrient management, nitrate levels in water would be decreased.

### Water Quantity

Water quantity is a limiting factor in areas around the county. Colorado shales and clay are thick and usually produce limited amounts of water. Wells drilled in these areas are often dry or if water is found, the yield cannot sustain over the long term. To provide viable wells where this is an issue, the depth is up to 2000 feet which is an economic hardship for many producers. A possible solution would be to consider a shared deep well with multiple users that could provide reliable water for grazing systems.

## **Section 5: Prioritization of Natural Resource Problems and Desired Outcomes**

The Fergus Local Work Group (FLWG) met May 8, 2019 to gather and prioritize resource concerns within Fergus County. Addressing the problems identified by this group meets NRCS' Vision and Mission. A concern identified during the process is that agriculture is struggling financially, and producers are often limited in what they can implement to improve resource concerns. Efforts to address resource concerns need to be economical for the community and producers.

The FLWG did not prioritize the resource concerns but have identified the following:

- 1- Soils:
  - a. Salinity
  - b. Soil Acidity
  - c. Soil Health
- 2- Water:
  - a. Riparian Area Health
  - b. Weeds
  - c. Un-useable livestock ponds
  - d. Grazing Management
  - e. Off Stream water sources
  - f. Bioengineering for streambank protection
  - g. Water Quality
- 3- Plants:
  - a. Riparian Area Health
  - b. Forest Stand Improvement (forest health)
    - i. Reduce hazardous fuels
    - ii. Improve range productivity and health
  - c. Pine Encroachment
    - i. Reduce hazardous fuels
    - ii. Improve range productivity and health
  - d. Pre-Commercial timber thinning/Fire management
  - e. Weeds (cheatgrass encroachment on native range)
  - f. Conversion of Cropland to Grass
  - g. CRP conversion (how to keep in permanent vegetation)
    - i. Livestock water facilities and fencing
  - h. Cover Crops/Soil Health
  - i. Grazing Management
- 4- Animals:
  - a. Migratory Corridors
    - i. Critical winter range

The FLWG will meet annually as a minimum to review this long-range plan and identify other resource concerns and priorities if needed.

#### **Section 6: Targeted Implementation Plans (TIP)**

Fergus county has identified many resource concerns, the local NRCS staff has identified producers ready, willing and able to address riparian area health and forest stand improvement (forest health) issues. For FY21 the following 2 TIPS are being developed in Fergus County:

- 1- Forest stand health – Due to heavy fuel loads increasing the risk of catastrophic wildfires, reducing stand resistance to disease and reducing grazeable forest acreage, a TIP is being developed to improve forest stand health. This proposal will provide proper tree spacing with the removal of unhealthy and/or overpopulated stands, increase stand resistance to disease, increase overall stand resiliency, and provide managed livestock grazing of the understory.

- 2- Low-Tech Riparian Restoration – To address riparian health, a small group of producers are willing to install structures to improve riparian health. Structures to be installed include Beaver Dam Analogs (BDA) and Post-Assisted Log Structures (PALS). The installation of these structures has the potential to improve water quality and riparian vegetation, extend the green zone in the riparian area, and provide connectivity between the riparian area and floodplain.

Other potential TIPs include the use of cover crops in grazing systems, the use of cover crops and permanent vegetation to address high nitrate levels in water, and noxious weed management.

#### Bibliography Sources

- 1) 2017 Census of Agriculture – Fergus County Profile
- 2) 2016 US Census
- 3) NRCS eFOTG Section 1 Reference maps - MRLA
- 4) Montana Natural Heritage Program – Land Cover (see attachment)
- 5) Montana DEQ 2018 Integrated Report and 303(d) list
- 6) US Department of Interior Fish & Wildlife Service – Endangered, Threatened, Proposed, & Candidate Species – MT Counties
- 7) mt.gov – Montana Natural Heritage Program – Species of Concern Report Fergus
- 8) Montana’s State Wildlife Action Plan 2015 Final – page 106



# Fergus County Montana

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

	2017	% change since 2012
Number of farms	845	+7
Land in farms (acres)	2,188,069	+12
Average size of farm (acres)	2,589	+4
<b>Total</b>	<b>(\$)</b>	
Market value of products sold	133,624,000	-8
Government payments	12,281,000	+83
Farm-related income	8,925,000	+36
Total farm production expenses	131,283,000	+18
Net cash farm income	23,546,000	-50
<b>Per farm average</b>	<b>(\$)</b>	
Market value of products sold	158,135	-14
Government payments (average per farm receiving)	28,038	+82
Farm-related income	20,470	+27
Total farm production expenses	155,365	+10
Net cash farm income	27,865	-54

**4** Percent of state agriculture sales

### Share of Sales by Type (%)

Crops	27
Livestock, poultry, and products	73

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

Cropland	29
Pastureland	68
Woodland	2
Other	1

**Acres irrigated: 16,250**

1% of land in farms

### Land Use Practices (% of farms)

No till	22
Reduced till	10
Intensive till	9
Cover crop	6

## Farms by Value of Sales

	Number	Percent of Total <sup>a</sup>
Less than \$2,500	196	23
\$2,500 to \$4,999	40	5
\$5,000 to \$9,999	65	8
\$10,000 to \$24,999	66	8
\$25,000 to \$49,999	59	7
\$50,000 to \$99,999	72	9
\$100,000 or more	347	41

## Farms by Size

	Number	Percent of Total <sup>a</sup>
1 to 9 acres	41	5
10 to 49 acres	116	14
50 to 179 acres	134	16
180 to 499 acres	74	9
500 to 999 acres	72	9
1,000 + acres	408	48

**Market Value of Agricultural Products Sold**

	Sales (\$1,000)	Rank in State <sup>b</sup>	Counties Producing Item	Rank in U.S. <sup>b</sup>	Counties Producing Item
<b>Total</b>	<b>133,624</b>	<b>3</b>	<b>56</b>	<b>874</b>	<b>3,077</b>
<b>Crops</b>	<b>35,964</b>	<b>17</b>	<b>56</b>	<b>1,315</b>	<b>3,073</b>
Grains, oilseeds, dry beans, dry peas	25,863	17	54	1,035	2,916
Tobacco	-	-	-	-	323
Cotton and cottonseed	-	-	-	-	647
Vegetables, melons, potatoes, sweet potatoes	(D)	27	42	(D)	2,821
Fruits, tree nuts, berries	(D)	20	27	(D)	2,748
Nursery, greenhouse, floriculture, sod	(D)	10	35	(D)	2,601
Cultivated Christmas trees, short rotation woody crops	(D)	5	9	(D)	1,384
Other crops and hay	9,498	10	56	265	3,040
<b>Livestock, poultry, and products</b>	<b>97,660</b>	<b>1</b>	<b>56</b>	<b>528</b>	<b>3,073</b>
Poultry and eggs	41	21	53	1,339	3,007
Cattle and calves	93,478	1	56	136	3,055
Milk from cows	(D)	11	25	(D)	1,892
Hogs and pigs	18	29	54	1,397	2,856
Sheep, goats, wool, mohair, milk	479	22	55	347	2,984
Horses, ponies, mules, burros, donkeys	342	15	56	635	2,970
Aquaculture	(D)	4	13	(D)	1,251
Other animals and animal products	(D)	9	52	(D)	2,878

<b>Total Producers <sup>c</sup></b>	<b>1,499</b>	<b>Percent of farms that:</b>	<b>Top Crops in Acres <sup>d</sup></b>
<b>Sex</b>		Have internet access	84
Male	950		
Female	549		
<b>Age</b>		Farm organically	(Z)
<35	178		
35 – 64	837		
65 and older	484		
<b>Race</b>		Sell directly to consumers	3
American Indian/Alaska Native	7		
Asian	2		
Black or African American	-		
Native Hawaiian/Pacific Islander	-	Hire farm labor	29
White	1,490		
More than one race	-		
<b>Other characteristics</b>		Are family farms	93
Hispanic, Latino, Spanish origin	7		
With military service	136		
New and beginning farmers	345		
			<b>Livestock Inventory (Dec 31, 2017)</b>
			Broilers and other meat-type chickens
			693
			Cattle and calves
			119,336
			Goats
			121
			Hogs and pigs
			195
			Horses and ponies
			1,828
			Layers
			1,592
			Pullets
			143
			Sheep and lambs
			2,990
			Turkeys
			(D)

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

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

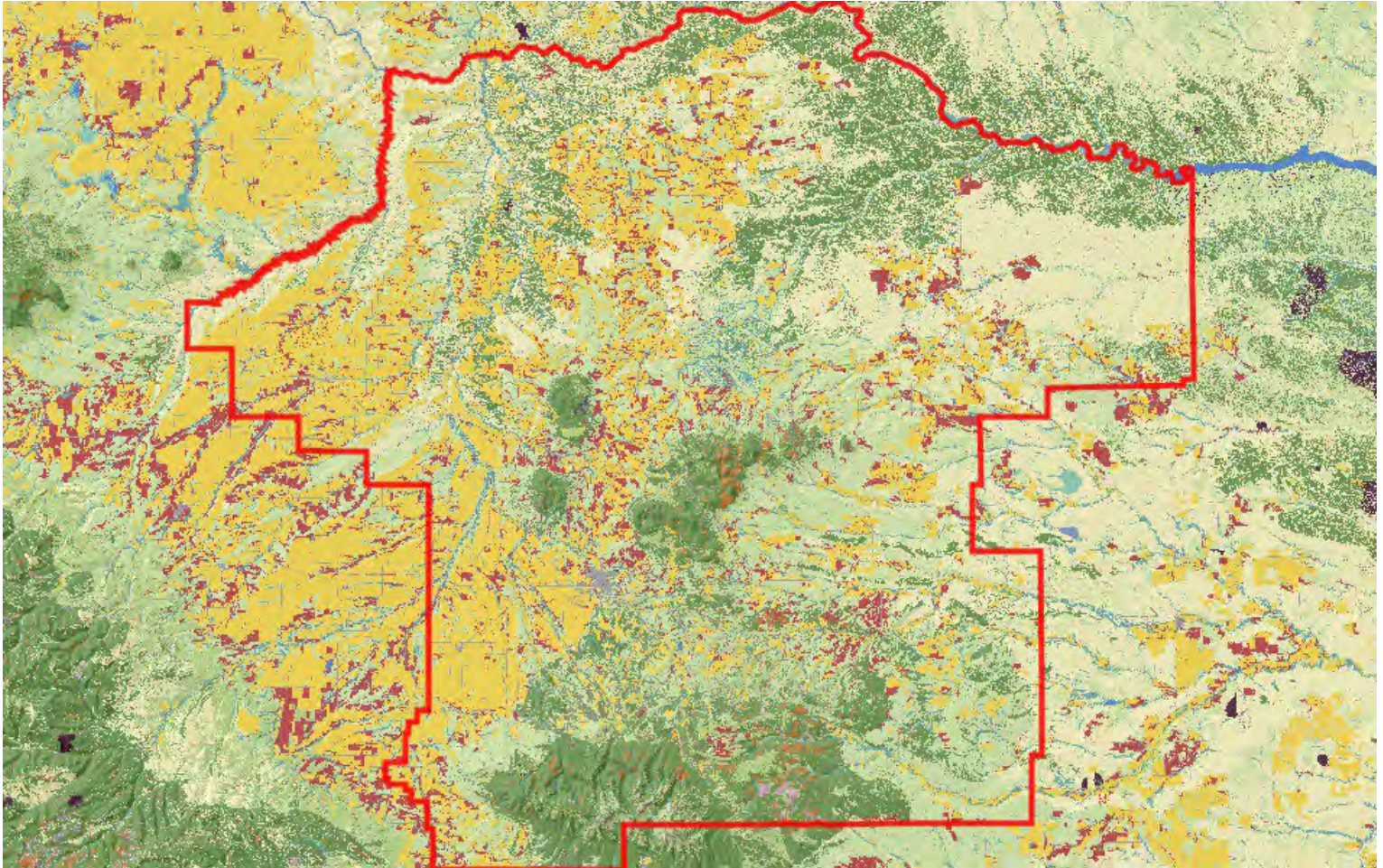
<sup>d</sup> Crop commodity names may be shortened; see full names at [www.nass.usda.gov/go/cropnames.pdf](http://www.nass.usda.gov/go/cropnames.pdf). <sup>e</sup> Position below the line does not indicate rank.

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



## Land Cover

Summarized by: **Fergus** (County)



20%  
(554,652  
Acres)

### Grassland Systems

#### Lowland/Prairie Grassland

#### Great Plains Mixedgrass Prairie

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



19%  
(528,690  
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.



14%  
(396,271  
Acres)

## Human Land Use

### Agriculture

#### Cultivated Crops

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



9%  
(262,407  
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.



6%  
(166,420  
Acres)

## Human Land Use

### Agriculture

#### Pasture/Hay

These agriculture lands typically have perennial herbaceous cover (e.g. regularly-shaped plantings) used for livestock grazing or the production of hay. There are obvious signs of management such as irrigation and haying that distinguish it from natural grasslands. Identified CRP lands are included in this land cover type.



6%  
(166,420  
Acres)

## Recently Disturbed or Modified

### Introduced Vegetation

#### Introduced Upland Vegetation - Annual and Biennial Forbland

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



4%  
(121,673  
Acres)

## Forest and Woodland Systems

### Conifer-dominated forest and woodland (xeric-mesic)

#### Rocky Mountain Foothill Woodland-Steppe Transition

This inland Pacific Northwest ecological system occurs in the foothills of the Montana Rocky Mountains, where it forms a broad ecotone between true forests and true steppe, shrublands, or grasslands, typically on warm, dry, exposed sites too droughty to support a closed tree canopy. This is not a fire-maintained system. The "steppe" character results from a climate-edaphic interaction that results in a graminoid-dominated landscape with widely scattered trees; even in the absence of fire, a "woodland" or "forest" structure will not be obtained. Occurrences are found on all slopes and aspects; however, moderately steep to very steep slopes or ridgetops on southerly or western aspects are most common. They can be found on glacial till, glacio-fluvial sand and gravel, dune, basaltic rubble, colluvium, deep loess or volcanic ash-derived soils, with characteristic features of good aeration and drainage, coarse texture, and an abundance of mineral material. Ponderosa pine (*Pinus ponderosa*) or Douglas-fir (*Pseudotsuga menziesii*) are the predominant conifers. Limber pine (*Pinus flexilis*) may be present in some occurrences. In fire-protected transition areas with big sagebrush steppe systems, antelope bitterbrush (*Purshia tridentata*), Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*), big sagebrush (*Artemisia tridentata* ssp. *tridentata*), and three-tip sagebrush (*Artemisia tripartita*) may be common. Deciduous shrubs such as common ninebark (*Physocarpus malvaceus*), common snowberry (*Symphoricarpos albus*), or birch leaf spiraea (*Spiraea betulifolia*) may be abundant in occurrences west of the Continental Divide. Important grass species include bluebunch wheatgrass (*Pseudoroegneria spicata*), Sandberg's bluegrass (*Poa secunda*), needle and thread (*Hesperostipa comata*), needlegrass (*Achnatherum* species), and bottlebrush squirreltail (*Elymus elymoides*). This system is very similar to Northern Rocky Mountain Ponderosa Pine Woodland and Savanna, but with more widely scattered trees.



## Shrubland, Steppe and Savanna Systems Deciduous Shrubland

3% (94,910  
Acres)

### Great Plains Shrubland

This ecological system is found from southern Alberta through northern Montana's glaciated and unglaciated plains, typically at elevations ranging from 1,220 to 1,524 meters (4,000-5,000 feet). It can occur on all aspects but is more common on mesic sites with moderately shallow or deep, fine to sandy loam soils. Often it is located on slopes near breaklands and on the edge of coulees, or on upper terraces of rivers and streams. It differs from the Northwestern Great Plains Mixedgrass Prairie in that shrub cover is more than 10%, although the grass component is similar, and may occur where fire suppression in grasslands has allowed shrubs to establish. Dominant shrubs include serviceberry (*Amelanchier alnifolia*), skunkbush sumac (*Rhus trilobata*), snowberry (*Symphoricarpos* species), silver buffaloberry (*Shepherdia argentea*), shrubby cinquefoil (*Dasiphora fruticosa* ssp. *floribunda*), silverberry (*Elaeagnus commutata*) and horizontal rug juniper (*Juniperus horizontalis*). Silver sage (*Artemisia cana* ssp. *cana*) shrublands may occur on flat alluvial deposits on floodplains, terraces or benches, and alluvial fans.



## Wetland and Riparian Systems Floodplain and Riparian

3% (78,900  
Acres)

### 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 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 systems 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.



## Sparse and Barren Systems Bluff, Badland and Dune

2% (61,612  
Acres)

### 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 Hookers 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.





## Grassland Systems Lowland/Prairie Grassland

### Great Plains Sand Prairie

2% (57,682 Acres)

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 systems 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 (*Psoralegium* species) and Indian breadroot (*Pediomelum*) 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.



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






















### Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest

2% (54,687 Acres)

This ecological system, composed of highly variable montane conifer forests, is found throughout Montana. It is associated with a submesic climate regime with annual precipitation ranging from 250 to 1,000 millimeters (10-39 inches), with most precipitation occurring during winter, and April through June. Winter snowpacks typically melt off in early spring at lower elevations. Elevations range from valley bottoms to 1,676 meters (5,500 feet) in northwestern Montana and up to 2,286 meters (7,500 feet) on warm aspects in southern Montana. In northwestern and west-central Montana, this ecosystem forms a forest belt on warm, dry to slightly moist sites. It generally occurs on gravelly soils with good aeration and drainage and a neutral to slightly acidic pH. In the western part of the state, it is seen mostly on well drained mountain slopes and valleys from lower treeline to up to 1,676 meters (5,500 feet). Immediately east of the Continental Divide, in north-central Montana, it occurs at montane elevations. Douglas-fir (*Pseudotsuga menziesii*) is the dominant conifer both as a seral and climax species. West of the Continental Divide, occurrences can be dominated by any combination of Douglas-fir and long-lived, seral western larch (*Larix occidentalis*), grand fir (*Abies grandis*), ponderosa pine (*Pinus ponderosa*) and lodgepole pine (*Pinus contorta*). Aspen (*Populus tremuloides*) and western white pine (*Pinus monticola*) have a minor status, with western white pine only in extreme western Montana. East of the Continental Divide, larch is absent and lodgepole pine is the co-dominant. Engelmann spruce (*Picea engelmannii*), white spruce, (*Picea glauca*) or their hybrid, become increasingly common towards the eastern edge of the Douglas-fir forest belt.

## Additional Limited Land Cover

- 1% (33,891 Acres) ■ [Rocky Mountain Lower Montane, Foothill, and Valley Grassland](#)
- 1% (26,983 Acres) ■ [Other Roads](#)
- 1% (23,149 Acres) ■ [Aspen Forest and Woodland](#)
- 1% (20,137 Acres) ■ [Rocky Mountain Lodgepole Pine Forest](#)
- 1% (18,393 Acres) ■ [Great Plains Wooded Draw and Ravine](#)
- 1% (14,482 Acres) ■ [Insect-Killed Forest](#)
- <1% (13,072 Acres) ■ [Greasewood Flat](#)
- <1% (12,407 Acres) ■ [Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland](#)
- <1% (10,517 Acres) ■ [Great Plains Floodplain](#)
- <1% (9,274 Acres) ■ [Open Water](#)
- <1% (8,157 Acres) ■ [Rocky Mountain Cliff, Canyon and Massive Bedrock](#)
- <1% (5,501 Acres) ■ [Great Plains Open Freshwater Depression Wetland](#)
- <1% (5,417 Acres) ■ [Aspen and Mixed Conifer Forest](#)
- <1% (5,332 Acres) ■ [Rocky Mountain Subalpine Deciduous Shrubland](#)
- <1% (5,049 Acres) ■ [Shale Badland](#)
- <1% (4,725 Acres) ■ [Major Roads](#)
- <1% (3,668 Acres) ■ [Low Intensity Residential](#)
- <1% (3,174 Acres) ■ [Rocky Mountain Subalpine-Upper Montane Grassland](#)
- <1% (2,554 Acres) ■ [Rocky Mountain Montane-Foothill Deciduous Shrubland](#)
- <1% (2,115 Acres) ■ [Harvested forest-shrub regeneration](#)
- <1% (1,899 Acres) ■ [Great Plains Cliff and Outcrop](#)
- <1% (1,844 Acres) ■ [Rocky Mountain Subalpine Woodland and Parkland](#)
- <1% (1,692 Acres) ■ [Rocky Mountain Subalpine-Montane Riparian Shrubland](#)
- <1% (1,628 Acres) ■ [Developed, Open Space](#)

- <1% (1,429 Acres)  [Recently burned forest](#)
- <1% (1,379 Acres)  [Commercial / Industrial](#)
- <1% (1,328 Acres)  [Railroad](#)
- <1% (1,154 Acres)  [Rocky Mountain Lower Montane-Foothill Riparian Woodland and Shrubland](#)
- <1% (894 Acres)  [Rocky Mountain Foothill Limber Pine - Juniper Woodland](#)
- <1% (739 Acres)  [Post-Fire Recovery](#)
- <1% (727 Acres)  [Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland](#)
- <1% (709 Acres)  [Emergent Marsh](#)
- <1% (482 Acres)  [Quarries, Strip Mines and Gravel Pits](#)
- <1% (394 Acres)  [Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland](#)
- <1% (370 Acres)  [High Intensity Residential](#)
- <1% (218 Acres)  [Great Plains Saline Depression Wetland](#)
- <1% (164 Acres)  [Great Plains Closed Depressional Wetland](#)
- <1% (112 Acres)  [Recently burned shrubland](#)
- <1% (66 Acres)  [Introduced Riparian and Wetland Vegetation](#)
- <1% (48 Acres)  [Rocky Mountain Ponderosa Pine Woodland and Savanna](#)
- <1% (6 Acres)  [Burned Sagebrush](#)
- <1% (6 Acres)  [Montane Sagebrush Steppe](#)
- <1% (4 Acres)  [Gas and Gas Storage](#)
- <1% (3 Acres)  [Rocky Mountain Poor Site Lodgepole Pine Forest](#)
- <1% (0 Acres)  [Injection](#)

# 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 1:100000, and interpreted with supporting ground-level data. The baseline map is adapted from the Northwest ReGAP (NWGAP) project land cover classification, which used 30m resolution multi-spectral Landsat imagery acquired between 1999 and 2001. Vegetation classes were drawn from the Ecological System Classification developed by NatureServe (Comer et al. 2003). The land cover classes were developed by Anderson et al. (1976). The NWGAP effort encompasses 12 map zones. Montana overlaps seven of these zones. The two NWGAP teams responsible for the initial land cover mapping effort in Montana were Sanborn and NWGAP at the University of Idaho. Both Sanborn and NWGAP employed a similar modeling approach in which Classification and Regression Tree (CART) models were applied to Landsat ETM+ scenes. The Spatial Analysis Lab within the Montana Natural Heritage Program was responsible for developing a seamless Montana land cover map with a consistent statewide legend from these two separate products. Additionally, the Montana land cover layer incorporates several other land cover and land use products (e.g., MSDI Structures and Transportation themes and the Montana Department of Revenue Final Land Unit classification) and reclassifications based on plot-level data and the latest NAIP imagery to improve accuracy and enhance the usability of the theme. Updates are done as partner support and funding allow, or when other MSDI datasets can be incorporated. Recent updates include fire perimeters and agricultural land use (annually), energy developments such as wind, oil and gas installations (2014), roads, structures and other impervious surfaces (various years): and local updates/improvements to specific ecological systems (e.g., central Montana grassland and sagebrush ecosystems). Current and previous versions of the Land Use/Land Cover layer with full metadata are available for download at the Montana State Library's [Geographic Information Clearinghouse](#).

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

## Literature Cited

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

# Montana Natural Heritage - SOC Report

## Animal Species of Concern

Species List Last Updated **04/16/2020**



A program of the Montana State Library's Natural Resource Information System operated by the University of Montana.

**49** Species of Concern  
**1** Special Status Species  
**Filtered by the following criteria:**  
 County = Fergus (based on mapped Species Occurrences)

[Expand All](#) | [Collapse All](#)

### Introduction

### Species of Concern

**Species of Concern**  
**49** Species  
**Filtered by the following criteria:**  
 County = Fergus (based on mapped Species Occurrences)

MAMMALS (MAMMALIA)										10 SPECIES
										COUNTY = FERGUS ( based on mapped Species Occurrences )
SCIENTIFIC NAME COMMON NAME TAXA SORT	FAMILY (SCIENTIFIC) FAMILY (COMMON)	GLOBAL RANK	STATE RANK	USFWS	USFS	BLM	FWP SWAP	% OF GLOBAL BREEDING RANGE IN MT	% OF MT THAT IS BREEDING RANGE	HABITAT
<b>Corynorhinus townsendii</b> Townsend's Big-eared Bat	<b>Vespertilionidae</b> Bats	G4	S3		Sensitive - Known on Forests (BD, BRT, CG, HLC, KOOT, LOLO)	SENSITIVE	SGCN3	5%	87%	Caves in forested habitats
		Species Occurrences verified in these Counties: Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Carter, Cascade, Chouteau, Custer, Fergus, Flathead, Gallatin, Garfield, Granite, Jefferson, Judith Basin, Lake, Lewis and Clark, Lincoln, Madison, McCone, Meagher, Mineral, Missoula, Musselshell, Park, Phillips, Powder River, Powell, Prairie, Ravalli, Richland, Roosevelt, Rosebud, Sanders, Silver Bow, Stillwater, Treasure, Valley, Yellowstone State Rank Reason: Species is widespread, but uncommon and appears to occur at low densities. Disturbance of cave and mine roosts and the hard closure of occupied mines threaten long-term persistence.								
<b>Cynomys ludovicianus</b> Black-tailed Prairie Dog	<b>Sciuridae</b> Squirrels	G4	S3		Sensitive - Known on Forests (CG)	SENSITIVE	SGCN3	15%	71%	Grasslands
		Species Occurrences verified in these Counties: Big Horn, Blaine, Carbon, Carter, Cascade, Chouteau, Custer, Fallon, Fergus, Garfield, Golden Valley, Hill, Jefferson, Judith Basin, Lewis and Clark, Liberty, McCone, Musselshell, Petroleum, Phillips, Powder River, Prairie, Richland, Rosebud, Stillwater, Sweet Grass, Toole, Treasure, Valley, Wheatland, Yellowstone State Rank Reason: Across much of eastern Montana this species occurs in areas with suitable soil and topography. However sylvatic plague has caused the species to decline and has affected colony size and dynamics. Ongoing threats from disease and persecution due to perceived competition with grazing make long-term status of this species uncertain.								
<b>Euderma maculatum</b> Spotted Bat	<b>Vespertilionidae</b> Bats	G4	S3		Sensitive - Known on Forests (BD, CG)	SENSITIVE	SGCN3, SGIN	5%	27%	Cliffs with rock crevices
		Species Occurrences verified in these Counties: Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Cascade, Chouteau, Dawson, Fergus, Gallatin, Jefferson, Judith Basin, Lewis and Clark, Madison, Musselshell, Phillips, Powder River, Richland, Rosebud, Silver Bow, Stillwater, Treasure, Yellowstone State Rank Reason: Little is known about this species in Montana. Although widely distributed, the species is quite rare in almost all of its range. Little is known about trends, trends in abundance or occupancy, or life history.								
<b>Lasiurus borealis</b> Eastern Red Bat	<b>Vespertilionidae</b> Bats	G3G4	S3			SENSITIVE		0%	46%	Riparian forest
		Species Occurrences verified in these Counties: Big Horn, Blaine, Carbon, Carter, Cascade, Chouteau, Custer, Daniels, Fergus, Garfield, Glacier, Hill, Judith Basin, Lewis and Clark, McCone, Musselshell, Park, Petroleum, Phillips, Powder River, Prairie, Richland, Roosevelt, Rosebud, Sweet Grass, Toole, Valley, Wheatland, Yellowstone State Rank Reason: Recent surveys using acoustic detectors have shown this species to be present across much of central and eastern Montana during the summer and fall. Tree roosting bat species, including the Eastern Red Bat, are commonly killed at wind farms, which presents a substantial threat to the long-term viability of populations within the state.								

<b>Lasiurus cinereus</b> Hoary Bat	<b>Vespertilionidae</b> Bats	G3G4	S3			SENSITIVE	SGCN3	2%	100%	Riparian and forest
<p><b>Species Occurrences verified in these Counties:</b> Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Carter, Cascade, Chouteau, Custer, Daniels, Dawson, Deer Lodge, Fallon, Fergus, Flathead, Gallatin, Garfield, Glacier, Golden Valley, Granite, Hill, Jefferson, Judith Basin, Lake, Lewis and Clark, Liberty, Lincoln, Madison, McCone, Meagher, Mineral, Missoula, Musselshell, Park, Petroleum, Phillips, Pondera, Powder River, Powell, Prairie, Ravalli, Richland, Roosevelt, Rosebud, Sanders, Sheridan, Silver Bow, Stillwater, Sweet Grass, Teton, Toole, Treasure, Valley, Wheatland, Wibaux, Yellowstone</p>										
<b>Mustela nigripes</b> Black-footed Ferret	<b>Mustelidae</b> Weasels	G1	S1	LE; XN	Endangered, Experimental Nonessential on Forests (CG)	ENDANGERED	SGCN1	12%	1%	Grasslands
<p><b>Species Occurrences verified in these Counties:</b> Big Horn, Blaine, Fergus, Garfield, Petroleum, Phillips, Valley</p>										
<b>Myotis lucifugus</b> Little Brown Myotis	<b>Vespertilionidae</b> Bats	G3	S3				SGCN3	3%	100%	Generalist
<p><b>Species Occurrences verified in these Counties:</b> Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Carter, Cascade, Chouteau, Custer, Daniels, Dawson, Deer Lodge, Fallon, Fergus, Flathead, Gallatin, Garfield, Glacier, Golden Valley, Granite, Hill, Jefferson, Judith Basin, Lake, Lewis and Clark, Lincoln, Madison, McCone, Meagher, Mineral, Missoula, Musselshell, Park, Petroleum, Phillips, Pondera, Powder River, Powell, Prairie, Ravalli, Richland, Roosevelt, Rosebud, Sanders, Sheridan, Silver Bow, Stillwater, Sweet Grass, Teton, Toole, Treasure, Valley, Wheatland, Wibaux, Yellowstone</p> <p><b>State Rank Reason:</b> Species is common and widespread, but under significant threat of catastrophic declines due to White-Nose Syndrome, a fungal disease responsible for the collapse of populations of this species in the eastern US.</p>										
<b>Myotis thysanodes</b> Fringed Myotis	<b>Vespertilionidae</b> Bats	G4	S3			SENSITIVE	SGCN3	0%	64%	Riparian and dry mixed conifer forest
<p><b>Species Occurrences verified in these Counties:</b> Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Carter, Cascade, Custer, Deer Lodge, Fergus, Flathead, Gallatin, Granite, Jefferson, Judith Basin, Lake, Lewis and Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Powder River, Powell, Prairie, Ravalli, Rosebud, Sanders, Silver Bow, Teton, Treasure</p> <p><b>State Rank Reason:</b> Although this species is distributed across much of Montana, recent surveys have found it to be uncommon within range. Species occasionally uses caves to over-winter so threats to persistence from White-Nose Syndrome are a concern, but due to its western distribution the extent of impacts are as yet unknown.</p>										
<b>Sorex nanus</b> Dwarf Shrew	<b>Soricidae</b> Shrews	G4	S2S3				SGCN2-3	14%	67%	Rocky habitat
<p><b>Species Occurrences verified in these Counties:</b> Beaverhead, Carbon, Carter, Chouteau, Dawson, Deer Lodge, Fergus, Golden Valley, Hill, Judith Basin, Pondera, Toole</p> <p><b>State Rank Reason:</b> Observations of this species are infrequent resulting in limited data to assess threats. Species may only breed once in its brief life, so is more vulnerable than many small mammal species.</p>										
<b>Sorex preblei</b> Preble's Shrew	<b>Soricidae</b> Shrews	G4	S3				SGCN3	28%	79%	Sagebrush grassland
<p><b>Species Occurrences verified in these Counties:</b> Beaverhead, Big Horn, Chouteau, Dawson, Deer Lodge, Fergus, Gallatin, Golden Valley, Granite, Judith Basin, Lewis and Clark, Lincoln, Madison, Missoula, Phillips, Powell, Ravalli, Sheridan, Silver Bow, Sweet Grass, Teton, Valley, Wheatland</p> <p><b>State Rank Reason:</b> Observations of this species are infrequent resulting in limited data to assess threats. Species may only breed once in its brief life, so is more vulnerable than many small mammal species.</p>										

BIRDS ( AVES)										
										25 SPECIES
COUNTY = FERGUS ( based on mapped Species Occurrences )										
SCIENTIFIC NAME COMMON NAME TAXA SORT	FAMILY (SCIENTIFIC) FAMILY (COMMON)	GLOBAL RANK	STATE RANK	USFWS	USFS	BLM	FWP SWAP	% OF GLOBAL BREEDING RANGE IN MT	% OF MT THAT IS BREEDING RANGE	HABITAT
<b>Accipiter gentilis</b> Northern Goshawk	<b>Accipitridae</b> Hawks / Kites / Eagles	G5	S3	MBTA			SGCN3	2%	68%	Mixed conifer forests
<p><b>Species Occurrences verified in these Counties:</b> Beaverhead, Big Horn, Broadwater, Carbon, Carter, Cascade, Deer Lodge, Fergus, Flathead, Gallatin, Glacier, Granite, Jefferson, Judith Basin, Lake, Lewis and Clark, Liberty, Lincoln, Madison, Meagher, Mineral, Missoula, Park, Pondera, Powder River, Powell, Ravalli, Rosebud, Sanders, Silver Bow, Stillwater, Sweet Grass, Teton, Wheatland</p>										
<b>Anthus spragueii</b> Sprague's Pipit	<b>Motacillidae</b> Pipits	G3G4	S3B	MBTA; BCC11; BCC17		SENSITIVE	SGCN3	18%	67%	Grasslands
<p><b>Species Occurrences verified in these Counties:</b> Blaine, Carter, Cascade, Chouteau, Custer, Daniels, Dawson, Fallon, Fergus, Gallatin, Garfield, Glacier, Golden Valley, Hill, Judith Basin, Lewis and Clark, Liberty, Madison, McCone, Meagher, Musselshell, Park, Petroleum, Phillips, Pondera, Prairie, Richland, Roosevelt, Rosebud, Sheridan, Stillwater, Sweet Grass, Teton, Toole, Valley, Wheatland, Wibaux</p> <p><b>State Rank Reason:</b> Although population trends in Montana appear to be relatively stable in recent years, populations have been in decline over the long run and the species faces threats from covertype conversion, overgrazing, exotic plant invasions, altered fire regimes, and mowing prior to fledging of young.</p>										

<p><b>Aquila chrysaetos</b> Golden Eagle</p>	<p><b>Accipitridae</b> Hawks / Kites / Eagles</p>	<p>G5</p>	<p>S3</p>	<p>BGEPA: MBTA; BCC17</p>		<p>SENSITIVE</p>	<p>SGCN3</p>	<p>3%</p>	<p>100%</p>	<p>Grasslands</p>
<p><b>Species Occurrences verified in these Counties:</b> Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Carter, Cascade, Chouteau, Custer, Dawson, Deer Lodge, Fallon, Fergus, Flathead, Gallatin, Garfield, Glacier, Golden Valley, Granite, Hill, Jefferson, Judith Basin, Lake, Lewis and Clark, Liberty, Lincoln, Madison, Mccone, Meagher, Missoula, Musselshell, Park, Petroleum, Phillips, Pondera, Powder River, Powell, Prairie, Ravalli, Richland, Roosevelt, Rosebud, Sanders, Sheridan, Silver Bow, Stillwater, Sweet Grass, Teton, Toole, Treasure, Valley, Wheatland, Wibaux, Yellowstone</p>										
<p><b>Ardea herodias</b> Great Blue Heron</p>	<p><b>Ardeidae</b> Bitterns / Egrets / Herons / Night-Herons</p>	<p>G5</p>	<p>S3</p>	<p>MBTA</p>			<p>SGCN3</p>	<p>3%</p>	<p>100%</p>	<p>Riparian forest</p>
<p><b>Species Occurrences verified in these Counties:</b> Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Carter, Cascade, Chouteau, Custer, Dawson, Deer Lodge, Fallon, Fergus, Flathead, Gallatin, Garfield, Glacier, Golden Valley, Granite, Hill, Jefferson, Judith Basin, Lake, Lewis and Clark, Liberty, Lincoln, Madison, Mccone, Meagher, Mineral, Missoula, Musselshell, Park, Petroleum, Phillips, Pondera, Powder River, Powell, Prairie, Ravalli, Richland, Roosevelt, Rosebud, Sanders, Sheridan, Silver Bow, Stillwater, Sweet Grass, Teton, Treasure, Valley, Wheatland, Wibaux, Yellowstone</p>										
<p><b>State Rank Reason:</b> Small breeding population size, evidence of recent declines, and declining regeneration of riparian cottonwood forests due to altered hydrology and grazing.</p>										
<p><b>Athene cucularia</b> Burrowing Owl</p>	<p><b>Strigidae</b> Owls</p>	<p>G4</p>	<p>S3B</p>	<p>MBTA; BCC17</p>	<p>Sensitive - Known on Forests (CG) Sensitive - Suspected on Forests (HLC)</p>	<p>SENSITIVE</p>	<p>SGCN3</p>	<p>2%</p>	<p>82%</p>	<p>Grasslands</p>
<p><b>Species Occurrences verified in these Counties:</b> Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Carter, Cascade, Chouteau, Custer, Dawson, Fallon, Fergus, Gallatin, Garfield, Glacier, Golden Valley, Hill, Jefferson, Lewis and Clark, Liberty, Madison, Mccone, Musselshell, Petroleum, Phillips, Pondera, Powder River, Prairie, Ravalli, Roosevelt, Rosebud, Sheridan, Stillwater, Teton, Toole, Treasure, Valley, Wheatland, Yellowstone</p>										
<p><b>State Rank Reason:</b> Species has a negative short-term population trend.</p>										
<p><b>Botaurus lentiginosus</b> American Bittern</p>	<p><b>Ardeidae</b> Bitterns / Egrets / Herons / Night-Herons</p>	<p>G5</p>	<p>S3B</p>	<p>MBTA; BCC11; BCC17</p>		<p>SENSITIVE</p>	<p>SGCN3</p>	<p>4%</p>	<p>100%</p>	<p>Wetlands</p>
<p><b>Species Occurrences verified in these Counties:</b> Blaine, Carter, Cascade, Chouteau, Fallon, Fergus, Flathead, Glacier, Golden Valley, Lake, Missoula, Phillips, Powell, Ravalli, Roosevelt, Sanders, Sheridan, Teton, Valley, Yellowstone</p>										
<p><b>State Rank Reason:</b> The American Bittern is dependent on large wetland complexes, which have declined across the species range. Declines in Montana and the species specialized habitat requirements warrant general concern about the persistence of the species.</p>										
<p><b>Buteo regalis</b> Ferruginous Hawk</p>	<p><b>Accipitridae</b> Hawks / Kites / Eagles</p>	<p>G4</p>	<p>S3B</p>	<p>MBTA; BCC10; BCC17</p>		<p>SENSITIVE</p>	<p>SGCN3</p>	<p>11%</p>	<p>95%</p>	<p>Sagebrush grassland</p>
<p><b>Species Occurrences verified in these Counties:</b> Beaverhead, Blaine, Broadwater, Carter, Cascade, Chouteau, Custer, Daniels, Dawson, Fallon, Fergus, Gallatin, Garfield, Glacier, Golden Valley, Hill, Jefferson, Judith Basin, Lewis and Clark, Liberty, Madison, Mccone, Meagher, Musselshell, Park, Petroleum, Phillips, Pondera, Powder River, Prairie, Roosevelt, Rosebud, Sheridan, Stillwater, Teton, Toole, Valley, Wheatland, Wibaux, Yellowstone</p>										
<p><b>Calcarius ornatus</b> Chestnut-collared Longspur</p>	<p><b>Calcariidae</b> Longspurs and Snow Buntings</p>	<p>G5</p>	<p>S2B</p>	<p>MBTA; BCC11; BCC17</p>		<p>SENSITIVE</p>	<p>SGCN2</p>	<p>32%</p>	<p>67%</p>	<p>Grasslands</p>
<p><b>Species Occurrences verified in these Counties:</b> Big Horn, Blaine, Carbon, Carter, Cascade, Chouteau, Custer, Daniels, Dawson, Fallon, Fergus, Garfield, Glacier, Golden Valley, Hill, Judith Basin, Lewis and Clark, Liberty, Mccone, Musselshell, Petroleum, Phillips, Powder River, Prairie, Richland, Roosevelt, Rosebud, Sheridan, Stillwater, Sweet Grass, Teton, Toole, Valley, Wheatland, Wibaux, Yellowstone</p>										
<p><b>State Rank Reason:</b> Species has a negative short-term population trend and faces threats from loss of native prairie grassland habitats and altered frequency, intensity, and spatial distribution of grazing and fire regimes it is dependent on.</p>										
<p><b>Catharus fuscescens</b> Veery</p>	<p><b>Turdidae</b> Thrushes</p>	<p>G5</p>	<p>S3B</p>	<p>MBTA</p>		<p>SENSITIVE</p>	<p>SGCN3</p>	<p>6%</p>	<p>100%</p>	<p>Riparian forest</p>
<p><b>Species Occurrences verified in these Counties:</b> Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Cascade, Chouteau, Custer, Deer Lodge, Fergus, Flathead, Gallatin, Glacier, Granite, Hill, Jefferson, Lake, Lewis and Clark, Liberty, Lincoln, Madison, Mccone, Meagher, Mineral, Missoula, Musselshell, Park, Petroleum, Phillips, Pondera, Powder River, Powell, Ravalli, Richland, Roosevelt, Rosebud, Sanders, Silver Bow, Stillwater, Sweet Grass, Teton, Wheatland, Yellowstone</p>										
<p><b>Centrocercus urophasianus</b> Greater Sage-Grouse</p>	<p><b>Phasianidae</b> Upland Game Birds</p>	<p>G3G4</p>	<p>S2</p>		<p>Sensitive - Known on Forests (BD) Sensitive - Suspected on Forests (CG, HLC)</p>	<p>SENSITIVE</p>	<p>SGCN2</p>	<p>17%</p>	<p>75%</p>	<p>Sagebrush</p>
<p><b>Species Occurrences verified in these Counties:</b> Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Carter, Chouteau, Custer, Dawson, Deer Lodge, Fallon, Fergus, Gallatin, Garfield, Golden Valley, Hill, Madison, Mccone, Meagher, Musselshell, Park, Petroleum, Phillips, Powder River, Prairie, Rosebud, Silver Bow, Stillwater, Sweet Grass, Treasure, Valley, Wheatland, Wibaux, Yellowstone</p>										

<b>Centronyx bairdii</b> Baird's Sparrow	<b>Passerellidae</b> New World Sparrows	G4	S3B	MBTA; BCC11; BCC17		SENSITIVE	SGCN3	27%	67%	Grasslands
		Species Occurrences verified in these Counties: Blaine, Carter, Cascade, Chouteau, Custer, Daniels, Dawson, Fallon, Fergus, Glacier, Hill, Judith Basin, Lewis and Clark, Liberty, Mccone, Meagher, Musselshell, Petroleum, Phillips, Powder River, Prairie, Richland, Roosevelt, Rosebud, Sheridan, Stillwater, Sweet Grass, Teton, Toole, Treasure, Valley, Wheatland, Wibaux, Yellowstone State Rank Reason: Montana populations were declining until recently and the species is declining in most or the surrounding states and provinces.								
<b>Certhia americana</b> Brown Creeper	<b>Certhiidae</b> Creepers	G5	S3	MBTA			SGCN3	4%	53%	Moist conifer forests
		Species Occurrences verified in these Counties: Beaverhead, Broadwater, Carbon, Carter, Cascade, Chouteau, Deer Lodge, Fergus, Flathead, Gallatin, Glacier, Golden Valley, Granite, Jefferson, Judith Basin, Lake, Lewis and Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Park, Powder River, Powell, Ravalli, Rosebud, Sanders, Silver Bow, Stillwater, Sweet Grass, Teton, Wheatland								
<b>Charadrius montanus</b> Mountain Plover	<b>Charadriidae</b> Plovers	G3	S2B	MBTA; BCC11; BCC17		SENSITIVE	SGCN2	20%	73%	Grasslands
		Species Occurrences verified in these Counties: Blaine, Broadwater, Carbon, Fergus, Garfield, Golden Valley, Jefferson, Madison, Musselshell, Petroleum, Phillips, Rosebud, Teton, Toole, Treasure, Valley, Wheatland								
<b>Coccothraustes vespertinus</b> Evening Grosbeak	<b>Fringillidae</b> Finches	G5	S3	MBTA			SGCN3	3%	100%	Conifer forest
		Species Occurrences verified in these Counties: Beaverhead, Broadwater, Carbon, Carter, Cascade, Chouteau, Fergus, Flathead, Gallatin, Glacier, Golden Valley, Granite, Jefferson, Judith Basin, Lake, Lewis and Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Musselshell, Park, Pondera, Powder River, Powell, Ravalli, Sanders, Silver Bow, Stillwater, Sweet Grass, Teton, Wheatland State Rank Reason: Populations in Montana and across North America have experienced rangewide declines, although the causes of these declines are unclear (Bonter and Harvey 2008).								
<b>Coccyzus erythrophthalmus</b> Black-billed Cuckoo	<b>Cuculidae</b> Cuckoos	G5	S3B	MBTA; BCC11; BCC17		SENSITIVE	SGCN3, SGIN	4%	95%	Riparian forest
		Species Occurrences verified in these Counties: Big Horn, Cascade, Chouteau, Custer, Dawson, Fallon, Fergus, Garfield, Mccone, Musselshell, Petroleum, Phillips, Powder River, Prairie, Richland, Roosevelt, Rosebud, Stillwater, Treasure, Valley, Wibaux, Yellowstone								
<b>Dolichonyx oryzivorus</b> Bobolink	<b>Icteridae</b> Blackbirds	G5	S3B	MBTA			SGCN3	9%	100%	Moist grasslands
		Species Occurrences verified in these Counties: Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Carter, Cascade, Chouteau, Custer, Daniels, Dawson, Fallon, Fergus, Flathead, Gallatin, Garfield, Glacier, Granite, Hill, Jefferson, Judith Basin, Lake, Lewis and Clark, Liberty, Madison, Mccone, Meagher, Missoula, Musselshell, Park, Petroleum, Phillips, Powder River, Powell, Prairie, Ravalli, Richland, Roosevelt, Rosebud, Sanders, Sheridan, Stillwater, Sweet Grass, Teton, Valley, Wheatland, Wibaux, Yellowstone State Rank Reason: Species has undergone recent large population declines in Montana and a patchwork of declines and increases have been documented in surrounding states and provinces.								
<b>Gymnorhinus cyanocephalus</b> Pinyon Jay	<b>Corvidae</b> Jays / Crows / Magpies	G3	S3	MBTA; BCC17			SGCN3	5%	55%	Open conifer forest
		Species Occurrences verified in these Counties: Big Horn, Blaine, Broadwater, Carbon, Carter, Cascade, Chouteau, Custer, Fergus, Gallatin, Garfield, Golden Valley, Jefferson, Lewis and Clark, Musselshell, Park, Petroleum, Phillips, Powder River, Rosebud, Stillwater, Sweet Grass, Wheatland, Yellowstone								
<b>Haemorhous cassinii</b> Cassin's Finch	<b>Fringillidae</b> Finches	G5	S3	MBTA; BCC10			SGCN3	11%	62%	Drier conifer forest
		Species Occurrences verified in these Counties: Beaverhead, Big Horn, Broadwater, Carbon, Cascade, Chouteau, Custer, Deer Lodge, Fergus, Flathead, Gallatin, Glacier, Golden Valley, Granite, Jefferson, Judith Basin, Lake, Lewis and Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Musselshell, Park, Petroleum, Phillips, Powder River, Powell, Ravalli, Rosebud, Sanders, Silver Bow, Stillwater, Sweet Grass, Teton, Wheatland, Yellowstone State Rank Reason: Data show recent short-term declines in population for this species								
<b>Lanius ludovicianus</b> Loggerhead Shrike	<b>Laniidae</b> Shrikes	G4	S3B	MBTA; BCC10; BCC17		SENSITIVE	SGCN3	4%	100%	Shrubland
		Species Occurrences verified in these Counties: Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Carter, Cascade, Chouteau, Custer, Daniels, Dawson, Fallon, Fergus, Gallatin, Garfield, Glacier, Golden Valley, Hill, Jefferson, Liberty, Madison, Mccone, Meagher, Musselshell, Petroleum, Phillips, Pondera, Powder River, Prairie, Richland, Roosevelt, Rosebud, Sheridan, Stillwater, Sweet Grass, Teton, Toole, Valley, Wheatland, Wibaux, Yellowstone								
<b>Nucifraga columbiana</b> Clark's Nutcracker	<b>Corvidae</b> Jays / Crows / Magpies	G5	S3	MBTA	Species of Conservation Concern on Forests (FLAT)		SGCN3	9%	84%	Conifer forest
		Species Occurrences verified in these Counties: Beaverhead, Big Horn, Broadwater, Carbon, Carter, Cascade, Chouteau, Custer, Deer Lodge, Fergus, Flathead, Gallatin, Glacier, Golden Valley, Granite, Jefferson, Judith Basin, Lake, Lewis and Clark, Liberty, Lincoln, Madison, Meagher, Mineral, Missoula, Musselshell, Park, Petroleum, Phillips, Pondera, Powder River, Powell, Ravalli, Sanders, Silver Bow, Stillwater, Sweet Grass, Teton, Toole, Wheatland, Yellowstone								
<b>Numenius americanus</b> Long-billed Curlew	<b>Scolopacidae</b> Sandpipers	G5	S3B	MBTA; BCC10; BCC11; BCC17		SENSITIVE	SGCN3	19%	100%	Grasslands
		Species Occurrences verified in these Counties: Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Carter, Cascade, Chouteau, Custer, Daniels, Dawson, Deer Lodge, Fallon, Fergus, Flathead, Gallatin, Garfield, Glacier, Golden Valley, Granite, Hill, Jefferson, Judith Basin, Lake, Lewis and Clark, Liberty, Madison, Mccone, Meagher, Missoula, Musselshell, Park, Petroleum, Phillips, Pondera, Powder River, Powell, Prairie, Ravalli, Richland, Roosevelt, Rosebud, Sanders, Sheridan, Stillwater, Sweet Grass, Teton, Toole, Treasure, Valley, Wheatland, Wibaux, Yellowstone								

<b>Pipilo chlorurus</b> Green-tailed Towhee	<b>Passerellidae</b> New World Sparrows	G5	S3B	MBTA			SGCN3	3%	60%	Shrub woodland
<p><b>Species Occurrences verified in these Counties:</b> Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Chouteau, Custer, Deer Lodge, Fergus, Gallatin, Garfield, Granite, Jefferson, Judith Basin, Lewis and Clark, Madison, Meagher, Musselshell, Park, Petroleum, Phillips, Powder River, Silver Bow, Stillwater, Sweet Grass, Valley, Wheatland, Yellowstone</p> <p><b>State Rank Reason:</b> Populations in Montana and across the Northern Rockies have undergone recent declines.</p>										
<b>Rhynchophanes mccownii</b> McCown's Longspur	<b>Calcariidae</b> Longspurs and Snow Buntings	G4	S3B	MBTA; BCC10; BCC11; BCC17		SENSITIVE	SGCN3	41%	79%	Grasslands
<p><b>Species Occurrences verified in these Counties:</b> Beaverhead, Blaine, Broadwater, Chouteau, Daniels, Fergus, Glacier, Golden Valley, Hill, Judith Basin, Lewis and Clark, Liberty, Madison, McCone, Musselshell, Petroleum, Phillips, Pondera, Roosevelt, Rosebud, Sheridan, Stillwater, Sweet Grass, Teton, Toole, Valley, Wheatland, Yellowstone</p> <p><b>State Rank Reason:</b> Species faces threats from cover type conversion and altered grazing and fire regimes, and although populations in the core of their breeding range in northeast Montana appear to be relatively stable, declines are occurring in much of the species' global breeding range.</p>										
<b>Spizella breweri</b> Brewer's Sparrow	<b>Passerellidae</b> New World Sparrows	G5	S3B	MBTA; BCC10; BCC17		SENSITIVE	SGCN3	12%	100%	Sagebrush
<p><b>Species Occurrences verified in these Counties:</b> Beaverhead, Big Horn, Blaine, Broadwater, Carbon, Carter, Chouteau, Custer, Dawson, Deer Lodge, Fallon, Fergus, Flathead, Gallatin, Garfield, Glacier, Golden Valley, Granite, Hill, Jefferson, Lake, Lewis and Clark, Liberty, Lincoln, Madison, McCone, Meagher, Missoula, Musselshell, Park, Petroleum, Phillips, Pondera, Powder River, Powell, Prairie, Ravalli, Richland, Roosevelt, Rosebud, Sanders, Sheridan, Silver Bow, Stillwater, Sweet Grass, Teton, Toole, Treasure, Valley, Wheatland, Wibaux, Yellowstone</p> <p><b>State Rank Reason:</b> Species faces threats from loss of sagebrush habitats it is dependent on as a result of habitat conversion for agriculture and increased frequency of fire as a result of weed encroachment and drought.</p>										
<b>Troglodytes pacificus</b> Pacific Wren	<b>Troglodytidae</b> Wrens	G5	S3	MBTA			SGCN3	1%	39%	Moist conifer forests
<p><b>Species Occurrences verified in these Counties:</b> Beaverhead, Broadwater, Cascade, Fergus, Flathead, Gallatin, Glacier, Granite, Jefferson, Judith Basin, Lake, Lewis and Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Park, Powell, Ravalli, Sanders, Stillwater, Sweet Grass, Teton</p>										

REPTILES (REPTILIA)										
										3 SPECIES
COUNTY = FERGUS ( based on mapped Species Occurrences )										
SCIENTIFIC NAME COMMON NAME TAXA SORT	FAMILY (SCIENTIFIC) FAMILY (COMMON)	GLOBAL RANK	STATE RANK	USFWS	USFS	BLM	FWP SWAP	% OF GLOBAL BREEDING RANGE IN MT	% OF MT THAT IS BREEDING RANGE	HABITAT
<b>Apalone spinifera</b> Spiny Softshell	<b>Trionychidae</b> Softshell Turtles	G5	S3			SENSITIVE	SGCN3	2%	26%	Prairie rivers and larger streams
<p><b>Species Occurrences verified in these Counties:</b> Big Horn, Blaine, Carbon, Cascade, Chouteau, Custer, Dawson, Fergus, Garfield, Glacier, Golden Valley, Lewis and Clark, Musselshell, Petroleum, Phillips, Pondera, Prairie, Richland, Rosebud, Stillwater, Sweet Grass, Teton, Toole, Treasure, Wheatland, Wibaux, Yellowstone</p>										
<b>Lampropeltis gentilis</b> Western Milksnake	<b>Colubridae</b> Colubrid Snakes	G5	S2		Sensitive - Known on Forests (CG)	SENSITIVE	SGCN2	2%	51%	Rock outcrops
<p><b>Species Occurrences verified in these Counties:</b> Big Horn, Blaine, Carbon, Custer, Dawson, Fergus, Garfield, Musselshell, Petroleum, Phillips, Powder River, Rosebud, Stillwater, Yellowstone</p>										
<b>Phrynosoma hernandesi</b> Greater Short-horned Lizard	<b>Phrynosomatidae</b> Sagebrush / Spiny Lizards	G5	S3		Sensitive - Known on Forests (CG) Sensitive - Suspected on Forests (HLC)	SENSITIVE	SGCN3, SGIN	19%	66%	Sandy / gravelly soils
<p><b>Species Occurrences verified in these Counties:</b> Big Horn, Blaine, Broadwater, Carbon, Carter, Cascade, Chouteau, Custer, Dawson, Fergus, Gallatin, Garfield, Glacier, Golden Valley, Hill, Lewis and Clark, Liberty, McCone, Musselshell, Petroleum, Phillips, Pondera, Powder River, Prairie, Richland, Roosevelt, Rosebud, Silver Bow, Stillwater, Sweet Grass, Teton, Toole, Treasure, Valley, Wheatland, Wibaux, Yellowstone</p>										

FISH (ACTINOPTERYGII)										
										9 SPECIES
COUNTY = FERGUS ( based on mapped Species Occurrences )										
SCIENTIFIC NAME COMMON NAME TAXA SORT	FAMILY (SCIENTIFIC) FAMILY (COMMON)	GLOBAL RANK	STATE RANK	USFWS	USFS	BLM	FWP SWAP	% OF GLOBAL BREEDING RANGE IN MT	% OF MT THAT IS BREEDING RANGE	HABITAT
<b>Chrosomus eos</b> Northern Redbelly Dace	<b>Cyprinidae</b> Minnows	G5	S3				SGCN3	4%	27%	Small prairie rivers
<p><b>Species Occurrences verified in these Counties:</b> Blaine, Cascade, Chouteau, Daniels, Dawson, Fergus, Golden Valley, Hill, Judith Basin, Lewis and Clark, McCone, Meagher, Musselshell, Petroleum, Phillips, Pondera, Richland, Roosevelt, Sheridan, Stillwater, Sweet Grass, Teton, Toole, Valley, Wheatland, Wibaux</p> <p><b>State Rank Reason:</b> The Northern Redbelly Dace is currently listed as an "S3" species of concern in Montana because they are potentially at risk because of limited and/or declining numbers, range and/or habitat, even though it may be abundant in some areas.</p>										



<b>Chrosomus eos x Chrosomus neogaeus</b> Northern Redbelly X Finescale Dace	<b>Cyprinidae</b> Minnows	GNA	S3			SENSITIVE	SGCN3		20%	Small prairie streams	
		Species Occurrences verified in these Counties: Blaine, Cascade, Chouteau, Fergus, Golden Valley, Judith Basin, Meagher, Musselshell, Petroleum, Phillips, Pondera, Stillwater, Teton, Valley, Wheatland State Rank Reason: The Northern Redbelly/Finescale Dace Hybrid is currently listed as an "S3" species of concern in Montana because they are potentially at risk because of limited and/or declining numbers, range and/or habitat, even though it may be abundant in some areas.									
<b>Cycleptus elongatus</b> Blue Sucker	<b>Catostomidae</b> Suckers	G3G4	S2S3				SGCN2-3		1%	7%	Large prairie rivers
		Species Occurrences verified in these Counties: Blaine, Cascade, Chouteau, Custer, Dawson, Fergus, Garfield, Hill, Liberty, Mccone, Petroleum, Phillips, Powder River, Prairie, Richland, Roosevelt, Rosebud, Treasure, Valley, Wibaux State Rank Reason: The Blue Sucker is currently listed as an "S2S3" species of concern in Montana because they are potentially at risk of extirpation in the state, because of limited and/or declining numbers, range and/or habitat, even though it may be abundant in some areas.									
<b>Macrhybopsis gelida</b> Sturgeon Chub	<b>Cyprinidae</b> Minnows	G3	S2S3			SENSITIVE	SGCN2-3		17%	7%	Large prairie rivers
		Species Occurrences verified in these Counties: Blaine, Cascade, Chouteau, Custer, Dawson, Fergus, Mccone, Petroleum, Phillips, Powder River, Prairie, Richland, Roosevelt, Rosebud, Valley, Wibaux State Rank Reason: The Sturgeon Chub is currently listed as an "S2S3" species of concern in Montana because they are potentially at risk of extirpation in the state, because of limited and/or declining numbers, range and/or habitat, even though it may be abundant in some areas. Population losses from the Fort Peck Section of the Missouri River and the Bighorn River are likely permanent, but recent losses from the Powder River basin are being reversed through recolonization (Stagliano 2014).									
<b>Macrhybopsis meeki</b> Sicklefin Chub	<b>Cyprinidae</b> Minnows	G3	S1				SGCN1		16%	3%	Large prairie rivers
		Species Occurrences verified in these Counties: Blaine, Custer, Dawson, Fergus, Mccone, Petroleum, Phillips, Prairie, Richland, Roosevelt, Valley, Wibaux State Rank Reason: The Sicklefin Chub is currently listed as "S1" in MT due to extremely limited and/or rapidly declining population numbers, range and/or habitat, making it highly vulnerable to extirpation in the state. It only occupies specific sections of the large mainstem Missouri and Yellowstone Rivers unaffected by reservoirs.									
<b>Oncorhynchus clarkii lewisi</b> Westslope Cutthroat Trout	<b>Salmonidae</b> Trout	G5T4	S2		Sensitive - Known on Forests (BD, BRT, CG, HLC, KOOT, LOLO)	SENSITIVE	SGCN2			34%	Mountain streams, rivers, lakes
		Species Occurrences verified in these Counties: Beaverhead, Broadwater, Cascade, Chouteau, Deer Lodge, Fergus, Flathead, Gallatin, Glacier, Granite, Jefferson, Judith Basin, Lake, Lewis and Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Park, Pondera, Powell, Ravalli, Sanders, Silver Bow, Teton, Wheatland State Rank Reason: The Westslope Cutthroat trout is currently ranked "S2" in Montana because it is at risk due to very limited and/or potentially declining population numbers, range and/or habitat, making it vulnerable to extirpation in the state.									
<b>Polyodon spathula</b> Paddlefish	<b>Polyodontidae</b> Paddlefishes	G4	S2			SENSITIVE	SGCN2		1%	5%	Large prairie rivers
		Species Occurrences verified in these Counties: Blaine, Chouteau, Custer, Dawson, Fergus, Garfield, Hill, Liberty, Mccone, Petroleum, Phillips, Prairie, Richland, Roosevelt, Rosebud, Valley, Wibaux State Rank Reason: The paddlefish is currently ranked "S2" in Montana because it is at risk, because of very limited and/or potentially declining population numbers, range and/or habitat, making it vulnerable to global extinction or extirpation in the state.									
<b>Sander canadensis</b> Sauger	<b>Percidae</b> Perches	G5	S2			SENSITIVE	SGCN2		1%	15%	Large prairie rivers
		Species Occurrences verified in these Counties: Big Horn, Blaine, Carbon, Carter, Cascade, Chouteau, Custer, Dawson, Fallon, Fergus, Garfield, Hill, Liberty, Mccone, Musselshell, Petroleum, Phillips, Powder River, Prairie, Richland, Roosevelt, Rosebud, Stillwater, Teton, Treasure, Valley, Wibaux, Yellowstone State Rank Reason: The Sauger is currently listed as an "S2" species of concern in Montana because they are at risk of extirpation in the state, because of limited and/or declining numbers, range and/or habitat, even though it may be abundant in some areas. Population losses from the reservoir sections of the Missouri River and the Bighorn River are likely permanent. Competition and hybridization from the introduced walleye is another threat to native sauger populations.									
<b>Scaphirhynchus albus</b> Pallid Sturgeon	<b>Acipenseridae</b> Sturgeons	G2	S1	LE		ENDANGERED	SGCN1		10%	1%	Large prairie rivers
		Species Occurrences verified in these Counties: Blaine, Cascade, Chouteau, Custer, Dawson, Fergus, Garfield, Mccone, Petroleum, Phillips, Powder River, Prairie, Richland, Roosevelt, Rosebud, Valley, Wibaux State Rank Reason: The Pallid Sturgeon is currently listed as "S1" in MT due to extremely limited and/or rapidly declining population numbers, range and/or habitat, making it highly vulnerable to global extinction or extirpation in the state. The pallid sturgeon is one of the rarest fishes in North America and was federally listed as endangered in 1990. The Pallid Sturgeon has been declining during at least the past 50 years with only about 200 adults remaining in the upper Missouri River and limited natural reproduction.									

INVERTEBRATES - INSECTS										1 SPECIES	
										COUNTY = FERGUS ( based on mapped Species Occurrences )	
SCIENTIFIC NAME COMMON NAME TAXA SORT	FAMILY (SCIENTIFIC) FAMILY (COMMON)	GLOBAL RANK	STATE RANK	USFWS	USFS	BLM	FWP SWAP	% OF GLOBAL BREEDING RANGE IN MT	% OF MT THAT IS BREEDING RANGE	HABITAT	
BUTTERFLIES											
<b>Euphydryas gillettii</b> Gillette's Checkerspot	<b>Nymphalidae</b> Brush-footed Butterflies	G3	S2						42%	Wet meadows	
		Species Occurrences verified in these Counties: Beaverhead, Cascade, Deer Lodge, Fergus, Flathead, Glacier, Madison, Mineral, Missoula, Pondera, Powell									

INVERTEBRATES - MOLLUSKS								1 SPECIES COUNTY = FERGUS ( based on mapped Species Occurrences )		
SCIENTIFIC NAME COMMON NAME TAXA SORT	FAMILY (SCIENTIFIC) FAMILY (COMMON)	GLOBAL RANK	STATE RANK	USFWS	USFS	BLM	FWP SWAP	% OF GLOBAL BREEDING RANGE IN MT	% OF MT THAT IS BREEDING RANGE	HABITAT
<a href="#">Oreohelix strigosa berryi</a> Berry's Mountainsnail	<a href="#">Oreohelicidae</a> Mountain Snails	G5T2	S1S2					67%	1%	Limestone talus
Species Occurrences verified in these Counties: Broadwater, Carbon, Fergus, Golden Valley, Meagher, Park										

**Potential Species of Concern**

**Special Status Species**

**Additions To Statewide List**

**Species Removed From Statewide List**

**Species of Greatest Inventory Need**

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# Montana Natural Heritage - SOC Report

## Plant Species of Concern

Species List Last Updated **04/16/2020**



A program of the Montana State Library's Natural Resource Information System operated by the University of Montana.

19 Species of Concern

2 Potential Species of Concern - Species Occurrences are not maintained for Animal PSOC, therefore we cannot filter these species geographically

Filtered by the following criteria:

County = Fergus (based on mapped Species Occurrences)

[Expand All](#) | [Collapse All](#)

### Introduction

### Species of Concern

<b>Species of Concern</b> <b>19 Species</b> Filtered by the following criteria: County = Fergus (based on mapped <b>Species Occurrences</b> )
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FERNS AND FERN ALLIES (PTERIDOPHYTA)								1 SPECIES	
								COUNTY = FERGUS ( based on mapped <b>Species Occurrences</b> )	
SCIENTIFIC NAME COMMON NAME TAXA SORT	OTHER NAMES	FAMILY (SCIENTIFIC) FAMILY (COMMON)	GLOBAL RANK	STATE RANK	USFWS	USFS	BLM	MNPS THREAT CATEGORY	HABITAT
<a href="#">Asplenium trichomanes-ramosum</a> Limestone Maidenhair Spleenwort	<a href="#">Asplenium viride</a>	<a href="#">Aspleniaceae</a> Spleenwort Family	G5	S3					
Species Occurrences verified in these Counties: Carbon, Fergus, Flathead, Glacier, Lake, Lewis and Clark, Pondera, Teton State Rank Reason: S3 SOC: Asplenium trichomanes-ramosum plants are never common, grow in habitat that is limited in Montana, and occur where land management (example: national park, wilderness) provides some protections.									

GYMNOSPERM (CONIFERS)								1 SPECIES	
								COUNTY = FERGUS ( based on mapped <b>Species Occurrences</b> )	
SCIENTIFIC NAME COMMON NAME TAXA SORT	OTHER NAMES	FAMILY (SCIENTIFIC) FAMILY (COMMON)	GLOBAL RANK	STATE RANK	USFWS	USFS	BLM	MNPS THREAT CATEGORY	HABITAT
<a href="#">Pinus albicaulis</a> Whitebark Pine		<a href="#">Pinaceae</a> Fir / Hemlock / Larch / Pine / Spruce	G3?	S3	C	Candidate on Forests (BD, BRT, CG, HLC, KOOT, LOLO)	SENSITIVE		Subalpine forest, timberline
Species Occurrences verified in these Counties: Beaverhead, Broadwater, Carbon, Cascade, Deer Lodge, Fergus, Flathead, Gallatin, Glacier, Granite, Jefferson, Judith Basin, Lake, Lewis and Clark, Liberty, Lincoln, Madison, Meagher, Mineral, Missoula, Park, Pondera, Powell, Ravalli, Sanders, Silver Bow, Stillwater, Sweet Grass, Teton, Toole, Wheatland State Rank Reason: Whitebark pine is a common component of subalpine forests and a dominant species of treeline and krummholtz habitats. It occurs in almost all major mountain ranges of western and central Montana. Populations of whitebark pine in Montana and across most of western North America have been severely impacted by past mountain pine beetle outbreaks and by the introduced pathogen, white pine blister rust. The results of which have been major declines in whitebark pine populations across large areas of its range. Additionally, negative impacts associated with encroachment and increased competition from other trees, primarily subalpine fir have occurred as a result of fire suppression in subalpine habitats.									

FLOWERING PLANTS - DICOTS (MAGNOLIOPSIDA)								14 SPECIES	
								COUNTY = FERGUS ( based on mapped <b>Species Occurrences</b> )	
SCIENTIFIC NAME COMMON NAME TAXA SORT	OTHER NAMES	FAMILY (SCIENTIFIC) FAMILY (COMMON)	GLOBAL RANK	STATE RANK	USFWS	USFS	BLM	MNPS THREAT CATEGORY	HABITAT

<b>Astragalus grayi</b> Gray's Milkvetch		<b>Fabaceae</b> Pea Family	G4?	S2S3					Sagebrush-Grassland
			<p><b>Species Occurrences verified in these Counties:</b> Carbon, Fergus  <b>State Rank Reason:</b> Rare in the state. Locally restricted to Carbon and Big Horn counties. Population levels, trends and threats to the species are poorly documented. Additional information is needed for the species within Montana.</p>						
<b>Bacopa rotundifolia</b> Roundleaf Water-hyssop		<b>Plantaginaceae</b> Plantain Family	G5	S3?				3	Wetland/Riparian
			<p><b>Species Occurrences verified in these Counties:</b> Cascade, Fergus, Garfield, Phillips, Powder River, Yellowstone  <b>State Rank Reason:</b> A rare species known in Montana from only a few observations in the central and eastern portions of the state. However, the species is widely distributed and appears tolerant of brackish waters as well as some degree of nutrient enrichment. As such, it is unclear to what extent the species' viability is at risk in the state and whether it responds negatively to human-induced impacts to water quality. Additional populations of the species are likely to occur in Montana.</p>						
<b>Braya humilis</b> Low Braya	<b>Neotorularia humilis</b>	<b>Brassicaceae</b> Mustards	G5	S2				2	Alpine
			<p><b>Species Occurrences verified in these Counties:</b> Beaverhead, Fergus, Teton  <b>State Rank Reason:</b> Known from four locations in the state, including one site in which only one plant was observed. One population occurs in an area with historical mining activity and may have been detrimentally impacted. Another population occurs along the Rocky Mtn Front and is actively monitored; population levels may be declining at this site based upon preliminary data.</p>						
<b>Castilleja exilis</b> Annual Indian Paintbrush	<b>Castilleja minor ssp. minor</b>	<b>Orobanchaceae</b> Broomrape Family	G5T5	S2				2	Wetland/Riparian
			<p><b>Species Occurrences verified in these Counties:</b> Broadwater, Deer Lodge, Fergus, Gallatin, Jefferson, Madison, Park  <b>State Rank Reason:</b> Annual Indian Paintbrush is known from a half dozen counties in southwest Montana with the majority of documented locations on private lands. Many areas of suitable habitat have been converted to agricultural uses and/or are used for livestock grazing. Additionally, populations are susceptible to hydrologic changes and may negatively impacted by invasive weeds.</p>						
<b>Castilleja gracillima</b> Slender Indian Paintbrush	<b>Castilleja miniata ssp. miniata</b>	<b>Orobanchaceae</b> Broomrape Family	G3G4	S2					Wetland/Riparian
			<p><b>Species Occurrences verified in these Counties:</b> Beaverhead, Cascade, Fergus, Gallatin, Madison, Meagher, Park, Sweet Grass  <b>State Rank Reason:</b> This plant is a regional endemic, known in Montana from a limited number of populations, with most being relatively small. No threats have been observed, though it could be vulnerable to hydrologic alterations or noxious weeds.</p>						
<b>Castilleja nivea</b> Snow Indian Paintbrush		<b>Orobanchaceae</b> Broomrape Family	G3	S3					Alpine
			<p><b>Species Occurrences verified in these Counties:</b> Carbon, Fergus, Golden Valley, Madison, Park, Sweet Grass  <b>State Rank Reason:</b> Currently known from a few collections from the Beartooths, Crazy Mtns, Tobacco Root Mtns and the Centennial Range. It is very likely that additional occurrences exist in the known mountain ranges as well as additional mountain ranges. Additionally, the high elevation habitat generally limits the potential for impacts to the species.</p>						
<b>Chenopodium subglabrum</b> Smooth Goosefoot	<b>Chenopodium leptophyllum var. subglabrum</b>	<b>Amaranthaceae</b> Amaranth (Pigweed) Family	G3G4	S2				4	Sandy sites
			<p><b>Species Occurrences verified in these Counties:</b> Carter, Cascade, Custer, Fergus, Garfield, McCone, Phillips, Powder River, Sheridan  <b>State Rank Reason:</b> Smooth goosefoot is known from just a few locations in Montana, one of which may be extirpated. It occupies an early-succession habitat that is vulnerable to loss of natural disturbance regimes such as fire and flooding. Invasion of exotic plants may also pose a threat. Population data and trend monitoring data are lacking though the populations likely fluctuate widely from year to year.</p>						
<b>Cirsium longistylum</b> Long-styled Thistle		<b>Asteraceae</b> Aster/Sunflowers	G2G3	S2S3				1	Meadows (Montane-subalpine)
			<p><b>Species Occurrences verified in these Counties:</b> Broadwater, Cascade, Fergus, Jefferson, Judith Basin, Lewis and Clark, Meagher, Wheatland  <b>State Rank Reason:</b> Population estimates of approximately 30,000 plants, including seven high quality populations, scattered over four mountain ranges are promising for the long-term viability of the species. Habitat in the largest populations is generally of high quality with few if any problem weeds posing significant and immediate threats. In the near future, little change in habitat quality is expected in these populations. Sites are mostly on National Forest lands that provide a degree of protection and two large populations on private lands that have a history of light to moderate grazing appear stable. Also of benefit at this time is the active weed control program employed by the private landowners on their lands.</p> <p>Long- and short-term population trends are difficult to gauge due to the lack of good survey data over many years. However, available data and observations provide some evidence that population levels have at least remained fairly stable over the past decade, with significant yearly fluctuations possible. Threats posed by invasive weeds and the introduced bio-control agent do provide reason for concern.</p>						
<b>Dryas integrifolia</b> Entire-leaved Avens		<b>Rosaceae</b> Rose Family	G5	S2S3				4	Alpine
			<p><b>Species Occurrences verified in these Counties:</b> Fergus, Golden Valley  <b>State Rank Reason:</b> Known in Montana from the Big Snowy Mountains and possibly from the Tobacco Root Mountains, though location of this latter specimen collection is unknown and cannot be confirmed. Current population levels and trends are unknown. However, its high-elevation habitat is relatively inaccessible, and there does not appear to be any significant threats.</p>						
<b>Mimulus ringens</b> Square-stem Monkeyflower		<b>Phrymaceae</b> Lopseed Family	G5	S2?					Wetland/Riparian
			<p><b>Species Occurrences verified in these Counties:</b> Cascade, Chouteau, Fergus  <b>State Rank Reason:</b> Rare. Currently known from a few riparian sites along the Missouri River in central Montana. Additional survey data are needed.</p>						

<b>Phacelia thermalis</b> Hot Spring Phacelia		<b>Hydrophyllaceae</b> Waterleaf Family	G3G4	S1S3					Barren clay slopes
<p><b>Species Occurrences verified in these Counties:</b> Fergus, Garfield, Phillips, Valley  <b>State Rank Reason:</b> Hot spring phacelia is known from a very small number of sites in northeastern Montana, where it is disjunct from its primary range (northern California to southwestern Idaho). The species is an annual and may be vulnerable to competition from invasive exotics, particularly sweet clover, which is widespread in the type of habitat where hot spring phacelia has been found.</p>									
<b>Physaria ludoviciana</b> Silver Bladderpod	<b>Lesquerella ludoviciana</b>	<b>Brassicaceae</b> Mustards	G5	S2S3					Sandy sites
<p><b>Species Occurrences verified in these Counties:</b> Carbon, Carter, Cascade, Chouteau, Fallon, Fergus, Garfield, Golden Valley, Lewis and Clark, Mccone, Petroleum, Phillips, Powder River, Prairie, Rosebud, Sheridan, Teton, Valley  <b>State Rank Reason:</b> Rare in Montana. Primarily a plains species which barely enters eastern Montana where it is restricted to sandy sites. Locally common at one site and threats to the species' viability appear to be minimal at this time.</p>									
<b>Physaria saximontana</b> <b>var. dentata</b> Rocky Mountain Twinpod		<b>Brassicaceae</b> Mustards	G3T3	S3					Gravelly slopes/talus (Montane/subalpine)
<p><b>Species Occurrences verified in these Counties:</b> Beaverhead, Broadwater, Carbon, Chouteau, Fergus, Flathead, Gallatin, Glacier, Lewis and Clark, Madison, Park, Pondera, Powell, Silver Bow, Sweet Grass, Teton  <b>State Rank Reason:</b> State endemic known from several counties across central and southern Montana mountain ranges.</p>									
<b>Senecio integerrimus</b> <b>var. scribneri</b> Scribner's Ragwort		<b>Asteraceae</b> Aster/Sunflowers	G5T2T3	S2S3					
<p><b>Species Occurrences verified in these Counties:</b> Carbon, Custer, Fergus, Golden Valley, Hill, Liberty, Musselshell, Park, Phillips, Rosebud, Valley, Wheatland, Yellowstone  <b>State Rank Reason:</b> See rank details.</p>									

FLOWERING PLANTS - MONOCOTS (LILIOPSIDA)									
3 SPECIES									
COUNTY = FERGUS ( based on mapped Species Occurrences )									
SCIENTIFIC NAME COMMON NAME TAXA SORT	OTHER NAMES	FAMILY (SCIENTIFIC) FAMILY (COMMON)	GLOBAL RANK	STATE RANK	USFWS	USFS	BLM	MNPS THREAT CATEGORY	HABITAT
<b>Elodea bifoliata</b> Long-sheath Waterweed	<b>Elodea longivaginata</b>	<b>Hydrocharitaceae</b> Waterweeds	G4G5	S2?				3	Wetland/Riparian (Shallow water)
<p><b>Species Occurrences verified in these Counties:</b> Beaverhead, Blaine, Fergus, Glacier, Hill, Lake, Liberty, Phillips, Richland, Stillwater, Teton  <b>State Rank Reason:</b> Rare in Montana, where it is currently known from a few widely scattered locations across the state. Additional population and trend data are needed for the species within Montana.</p>									
<b>Goodyera repens</b> Northern Rattlesnake-plantain		<b>Orchidaceae</b> Orchids	G5	S3		Sensitive - Known on Forests (HLC) Sensitive - Suspected on Forests (CG)		2	Mesic Forest
<p><b>Species Occurrences verified in these Counties:</b> Fergus, Flathead, Judith Basin, Meagher, Wheatland  <b>State Rank Reason:</b> A widespread species that is found in Montana in the Little Belt and Big Snowy Mountains and at one site in Glacier National Park. The species occupies moist, montane forests with a mossy understory. Occurrences are vulnerable to disturbances that open or reduce the canopy such as timber harvesting and fire. Monitoring of the species in the Little Belt Mountains have documented negative impacts associated with both disturbances. However, <i>Goodyera repens</i> is known from approximately 20 moderate to large-sized populations and many additional, smaller occurrences. Recent trends are unknown.</p>									
<b>Lilium philadelphicum</b> Wood Lily		<b>Liliaceae</b> Lilies	G5	S3					
<p><b>Species Occurrences verified in these Counties:</b> Carbon, Carter, Fergus, Lewis and Clark, Lincoln, Pondera, Powder River, Stillwater, Sweet Grass, Teton  <b>State Rank Reason:</b> <i>Lilium philadelphicum</i> has a patchy, but wide distribution in Montana, and is often found in specialized habitats. Observations in eastern Montana have not been made since the 1930's and 1940's. This species is vulnerable to extirpation in Montana because of its attractiveness, potential to be over-collected, and habitat requirements. Native lilies have rarely survived in gardens. Current information on known locations, especially in the eastern counties, is greatly needed.</p>									

- Potential Species of Concern
- Special Status Species
- Additions To Statewide List