



Montana Focused Conservation

Flathead County Long Range Plan

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Section I - Introduction

The purpose of this long-range plan is to create a working and living document that will help guide resource conservation decisions within Flathead County as they relate to Natural Resources Conservation Service (NRCS) programs. The goal is to document and identify specific resource concerns throughout the county that can be addressed through available conservation programs offered either by NRCS or other conservation partners. To achieve this, collaboration will be key both with existing partners along with continually trying to develop new partnerships to expand the knowledge base to lead to a greater positive impact on the landscape.

The program that can be used to address these issues is the Environmental Quality Incentive Program (EQIP) through Targeted Implementation Plans (TIPs). TIPs are a funding strategy for a specific geographic area that address natural resource issues associated with that area as defined by NRCS and their local partners. NRCS can also use other programs to assist with natural resources issues including the Conservation Stewardship Program (CSP), Regional Conservation Partnership Program (RCP), and Agricultural Conservation Easement Program (ACEP). More information on NRCS funding and programs can be found at <https://www.nrcs.usda.gov/wps/portal/nrcs/mt/programs/financial/>.

Given the diversity and size of Flathead County, many partners were involved in the development of this long-range plan including:

- Natural Resources Conservation Service
- Flathead Conservation District (FCD)
- Farm Services Agency (FSA)
- Montana Fish, Wildlife & Parks (FWP)
- Montana Department of Natural Resources Conservation (DNRC)
- US Forest Service (USFS)
- US Fish and Wildlife Service (USFWS)
- Flathead Lakers
- Weyerhaeuser
- F.H. Stoltze Land & Lumber Co.
- Flathead Economic Policy Center
- Soil and Water Conservation Districts of Montana (SWCDM)
- Montana Association of Conservation Districts (MACD)
- Flathead County Weed District
- Montana State University Extension Office (MSU Extension)

This plan was developed by the NRCS Kalispell Field Office (FO) with input and assistance from partners listed above. This will be a living document that will be reviewed annually and updated as needed but will have a planned lifespan of no more than 5 years.

Section II - Natural Resources Inventory

Flathead County is in the northwest corner of Montana and occupies approximately 5,256 square miles, making it the second largest county in Montana by total area. Of this, 5,088 square miles (97%) is consumed by land mass and the remaining 169 square miles (3%) is occupied by surface waters including streams, rivers, lake, and wetlands. The county is home to eight mountain ranges including the Cabinet and Salish Ranges in the west, the Whitefish and Livingston Ranges in the north, and the Lewis, Flathead, Swan, and Lewis and Clark Ranges in the east (Montana State Library). Surrounding Flathead County are Lincoln County to the west; Sanders, Lake, Missoula, and Powell counties to the south; Lewis & Clark, Teton, Pondera, and Glacier counties to the east; and Canada to the north.

Flathead County is situated in what is called the Crown of the Continent Ecosystem (Figure 1), which is a transboundary system encompassing 18 million acres located in Western Montana and expanding north to Alberta and British Columbia in Canada. When looking at conservation in Flathead County it is important to think about how these efforts can affect the larger ecosystem including the soils, water, air, plants, animals as well as the people that occupy the land. Pressures that threaten the integrity of the ecosystem include population growth as well as increased recreation in the communities and wild areas within the ecosystem.

Humans

The land now known as Flathead County has long been occupied by humans. Pre-European settlement, this area was occupied by Ql'ispé (Pend d'Oreille or Kalispel), Séliš (Salish or Flathead) and the Kootenai (Ktunaxa, used in Canada) People. Tribes lived and traveled to this area to hunt, fish, and gather (Flathead Watershed Sourcebook). In 1855, the Hellgate Treaty was signed establishing what is now known as the Flathead Indian Reservation which is home to three tribes, the Bitterroot Salish, Upper Pend d'Orielle and the Kootenai and together they are known as the Confederated Salish and Kootenai Tribes (CSKT). The Reservation covers approximately 1.3 million acres with 28,641 acres located in Flathead County, this area is known as Niarada. According to CSKT's 2019 Annual Report, the Reservation has approximately 8,087 enrolled tribal members, 5,364 of which live on the reservation. The city of Pablo, located in Lake County, serves as the seat of government for the CSKT.

After the signing of the Hellgate Treaty settlers came to Flathead County. The federal government encouraged settlement in this area by giving homesteaders the task of making the land they acquired productive. In addition to this, large amounts of land were purchased by individuals and corporations after the Timber and Stone Act of 1878. Even more settlers came to Northwest Montana after the completion of the Northern Pacific Railroad in 1883 (Flathead County Growth Policy).

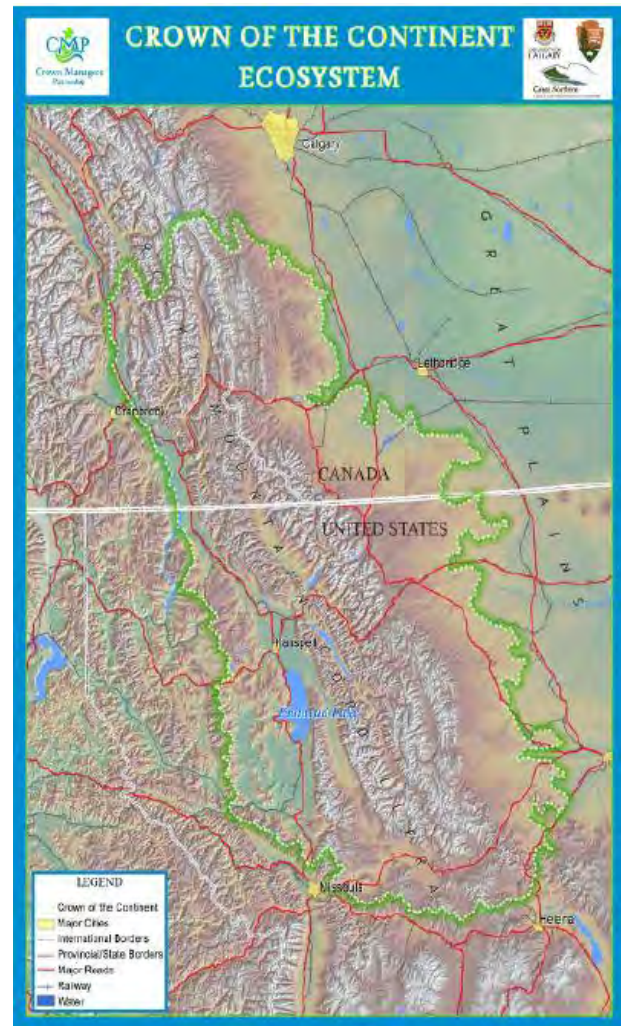


Figure 1. Crown of the Continent Ecosystem.
Source: Flathead-Stillwater WRP.

Flathead County has seen a constant population rise in the past 100 years, according to the Flathead County Growth Policy the population has grown around 10% in each decade starting in 1900, apart from two decades. Recently the county has seen more rapid population growth with a 22% increase from 2000 to 2010 and a constant 2% raise each year. The population is predicted to rise 39% from the 2010 population by the year 2030 (Flathead County Growth Policy).

In the 2010 Census, Flathead County was home to 90,928 residents, as of 2018 the county was estimated to have 102,106 residents making it the third most populated county in Montana. Within the county there are three incorporated towns the largest being Kalispell (estimated population 23,938), followed by Whitefish (estimated population 7,870), and Columbia Falls (estimated population 5,575). This leaves over approximately 60% of the population in unincorporated areas of the county, these areas include 15 unincorporated communities (US Census). The population of Flathead County does not take in to account seasonal fluctuations as it is a popular place to have summer homes in addition to a popular tourist destination. The exact number of seasonal residents is hard to quantify but has been estimated to be around 90,000 people (Flathead County Growth Policy).

Flathead County is unique with public lands dominating the landscape and making up around 81% of the land mass. Public lands include a combination of National Forest including two wilderness areas the Bob Marshall and Great Bear Wilderness which make up 57% of the county, Glacier National Park making up 19% of the county, State lands, National Wildlife Refuges, and Waterfowl Production Areas. Making up 8 to 9% of the private land holdings is land owned by industrial timber companies devoted to timber production. Also included in the county is a small portion of the Flathead Indian Reservation which makes up about 1% of the total landmass. This leaves only 10% of the county for non-industrial private land ownership. These privately-owned areas are primarily located in the valley proper along with scattered parcels (Flathead County Growth Policy). Flathead County contains a total of 38,469 acres (1% of County total) under some form of conservation easement. Of these, 18,017 acres are associated with private easement holders (land trusts, animal conservation organizations, etc.). The remaining easements are federally owned (10,491 acres) and state or locally owned (9,961 acres). Of the federal acres, the United States Department of Agriculture currently holds 7,706 acres under easement within the county. Conservation easements are generally considered a valuable conservation tool. Depending on the specific parameters written into the deed language, land can be safeguarded for decades or even perpetuity for the purposes of protecting plant or animal habitat, landscape features (e.g. wetlands) or land management activities like farming and ranching. A map of landownership along with major cities and highway corridors is shown in Appendix C.

Table 1. Land ownership in Flathead County.
Source: Flathead County Wildfire Protection Plan (CWPP).

Owner	Acres	Percentage
US Forest Service	1,760,584	52.4%
National Park Service	619,612	18.4%
Private	415,237	12.3%
Industrial Timber Lands	297,580	8.8%
State Trust Lands	130,239	3.9%
Water	94,942	2.8%
Tribal Land	28,641	0.9%
US Fish & Wildlife Service	11,472	0.3%
Other State Land	2,889	0.1%
Other Federal Land	292	0.0%
Private Conservation	168	0.0%
Local Government	155	0.0%
Total	3,361,810	100%

Agriculture has been an important part of Flathead County, in the earlier days, oats and hay were important because many horses were used in logging. Mechanization of logging decreased the demand for oats, hay, and pasture. As of 2017 there are 1,146 farms in total averaging 159 acres with 181,882 total acres in farmland. Operations in the county produce crops including hay, wheat, canola, barley, and peas in addition to fruits and vegetables. There are also livestock operations in the county with cattle, chickens, pigs, sheep, goats, and turkeys. As Table 2 suggests, the trends of Flathead County's agricultural systems have an increased number of operations in total with less acreage in farmland overall. Meaning there are more farm owners with the individual farm becoming smaller in size (USDA Agriculture Census).

Table 2. Farm records from the USDA National Agricultural Statistics Survey from 2017.

Farm Statistics from, 1997, 2002, 2007, 2012, and 2017	2017	2012	2007	2002	1997
Number of Farms	1,146	1,035	1,094	1,075	898
Average Size (Acres)	159	164	230	218	241
Land in Farms (Acres)	181,882	169,898	251,597	234,861	216,303
Irrigated Land (Acres)	22,088	18,193	23,279	32,346	26,983

Geology and Soils

Flathead County contains three soil survey areas that are commonly used by NRCS when working on private lands including: The Upper Flathead Valley Area (MT617), The Flathead County Area and part of Lincoln County (MT618), and the Flathead National Forest Area (MT619). There are many other soil surveys in Flathead County on public land including MT603, MT629, MT634, MT633, MT651, and MT663. Much of the information in this plan is taken from these Soil Survey Manuscripts along with land-use data from the Montana Department of Revenue Final Land Unit Classification (FLU).

General Nature of the Area

Flathead County contains portions of 8 mountain ranges: Cabinet, Salish, Whitefish, Livingston, Lewis, Flathead, Swan, and Lewis and Clark Ranges (Montana State Library). The county is largely made up of forest lands with about 85% of the land being forested, with approximately 12% is range and dry cropland. Dry hay land and irrigated land make up less than 3% of the total area in the county. The soil survey lies within three Major Land Resource Areas (MLRA) including: 44A - Northern Rocky Mountain Valleys, 43B - Central Rocky Mountains, and the majority of the county is in 43A - Northern Rocky Mountains.

Parent Material

The north and east parts of the survey area were glaciated with soils formed in glacial till, glacial lake sediments, glacial outwash, or alluvium from these parent materials. Many soils throughout the survey area have volcanic ash in the surface layer. At depths below 20-30 inches the material is mainly coarse fragments with loamy sand and sand in the interstices. Near the moraines, particularly along the east side of the valley, the outwash contains a moderate to high portion of cobbles and gravel, which are mixed with coarse to medium textured soils.

Prime Farmland and Other Important Farmland

- Prime Farmland - There are some significant acreages of Prime farmland in Flathead County which are mostly found in the Creston area. They make up around 1 percent of the total acreage in the county.
- Prime if Irrigated - These areas make up about 1 percent and occur mainly along the Flathead River near the outlet into Flathead Lake.
- Farmland of Statewide Importance - These are mainly found northwest of Kalispell along the Stillwater River and make up around 1 percent of total area.

- Farmland of Unique Importance - These soils are very concentrated along the shorelines of Flathead Lake. The moderating effect of the lake on climate, allows for production of sweet cherries and other fruit crops. These lands make up less than 1 percent of the total acreage of the county but have a significant economic impact.

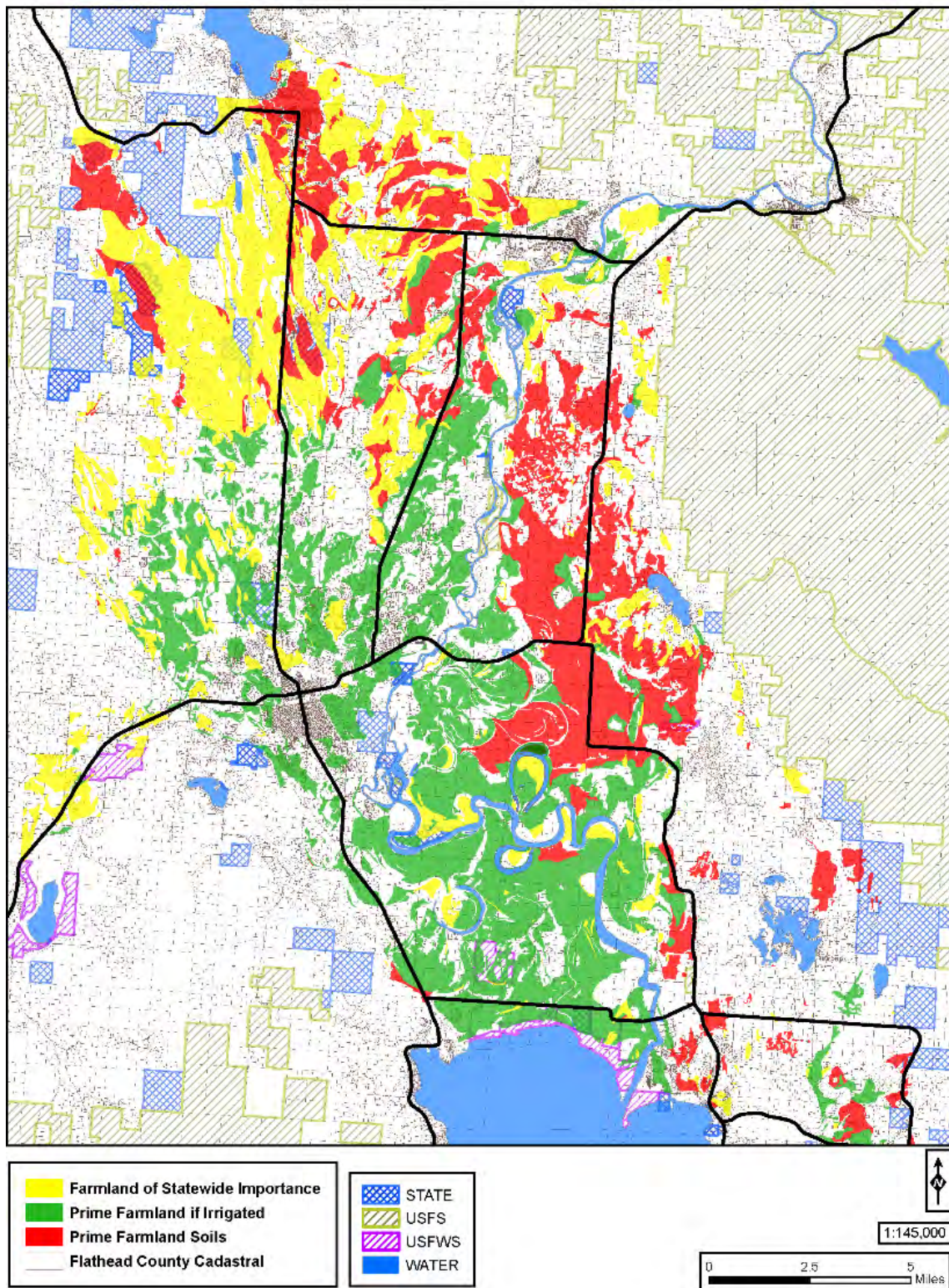


Figure 2. Prime farmland and farmland of importance. Map taken from the Flathead Lakers.

Water Precipitation

The countywide average precipitation is 21 inches of per year. However, the range of annual precipitation varies widely throughout the county with lower valley areas receiving around 17 inches, in the foothill areas such as West Glacier receiving around 30 inches of precipitation and higher mountainous areas receiving well over 50 inches of precipitation every year (Figure 3). The Montana Climate Office Precipitation Map is below (Montana Climate Office). Timing and severity of precipitation events may begin to change due to climatic changes making precipitation less predictable.

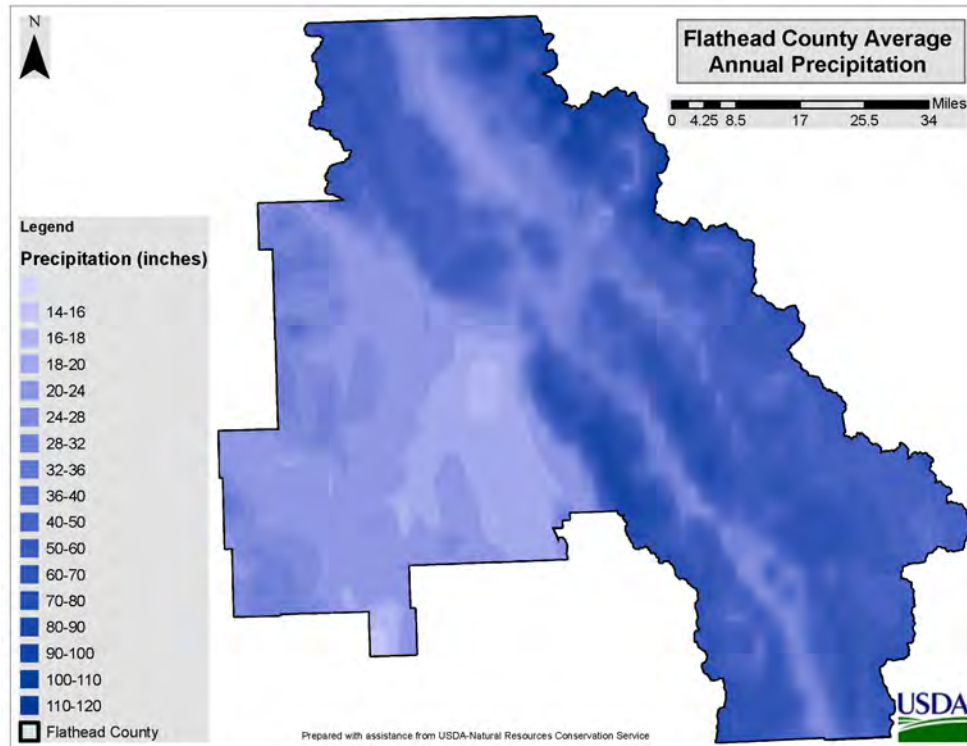


Figure 3. Precipitation in Flathead County.

Watershed & Streams

Flathead County's Growth Policy identifies protecting water resources including lakes, rivers, streams, aquifers and wetlands in 7 of the 9 goals listed under natural resources. Flathead County is situated on the north end of the Flathead Basin, which includes northwest Montana and stretches into southeast British Columbia. The watersheds feeding the Flathead Basin originate in some of the most pristine ecosystems remaining in North America, fed by snowmelt from Glacier National Park and several wilderness areas. This area drains 6 million acres of water into the Clark Fork River and eventually into the Columbia River. It is important to note that Flathead County is part of the headwaters for the Columbia River Basin. The Columbia River Basin along with the Mississippi River Basin to the east, and the Saskatchewan/Nelson River Basin to the northeast, all have a portion of their headwaters at Triple Divide Peak located in Glacier National Park.

The North, Middle and South Forks of the Flathead River join near Columbia Falls and are designated as Wild and Scenic Rivers upstream from this point. When these three rivers converge, they make up the Upper Flathead River which is then joined by the Whitefish River and Stillwater River south of Kalispell. The Upper Flathead River then flows into Flathead Lake, which along with the Swan River on the East side of the lake are the main tributaries to Flathead Lake. About half of Flathead Lake is in the southern part of Flathead County. Flathead Lake is the largest freshwater lake by surface area west of the Mississippi in the lower 48 states, it contains over 200 square miles of water and 185 miles of shoreline. Flathead Lake is known for its deep, crystal clear waters. Inflows to the lake are in part regulated by the Hungry Horse Dam on the South Fork of the Flathead River. This regulation by the

Hungry Horse Dam has caused a change in flows of the Upper Flathead River resulting in excess water at times which contributes to increased erosion beyond what would have occurred if the dam was not in place. Flathead Lake water levels are regulated with fluctuations of approximately 10 feet between winter and summer by the Seli's Ksanka Qlispe' Dam (formerly known as Kerr Dam). The Seli's Ksanka Qlispe' Dam was constructed on the Lower Flathead River near Polson in 1938 is used for power generation.

Impairments

Flathead County has numerous impairments on its streams, rivers, and lakes listed by the state of Montana. Point source causes can come from sewage treatment facilities, storm sewers, and large livestock feedlots. Non-point source causes usually come from agricultural and forestry practices, forest fires, individual septic systems, and many more.

In 2017, a Watershed Restoration Plan (WRP) was published by the FCD for the Flathead-Stillwater Watershed. This document highlights the impaired streams and rivers (Figure 4) and the specific impairments threatening the waterbody (Table 3). It also takes a deeper dive into each waterbody looking at what has been done in the past and what potential restoration could be done. The Flathead Watershed also has a WRP that was written by the Flathead Lakers in 2014 and can also be used to reference impairments within the county. Many partners of NRCS have been working to improve these listed streams (specifics on restoration efforts are in Section III of this document).

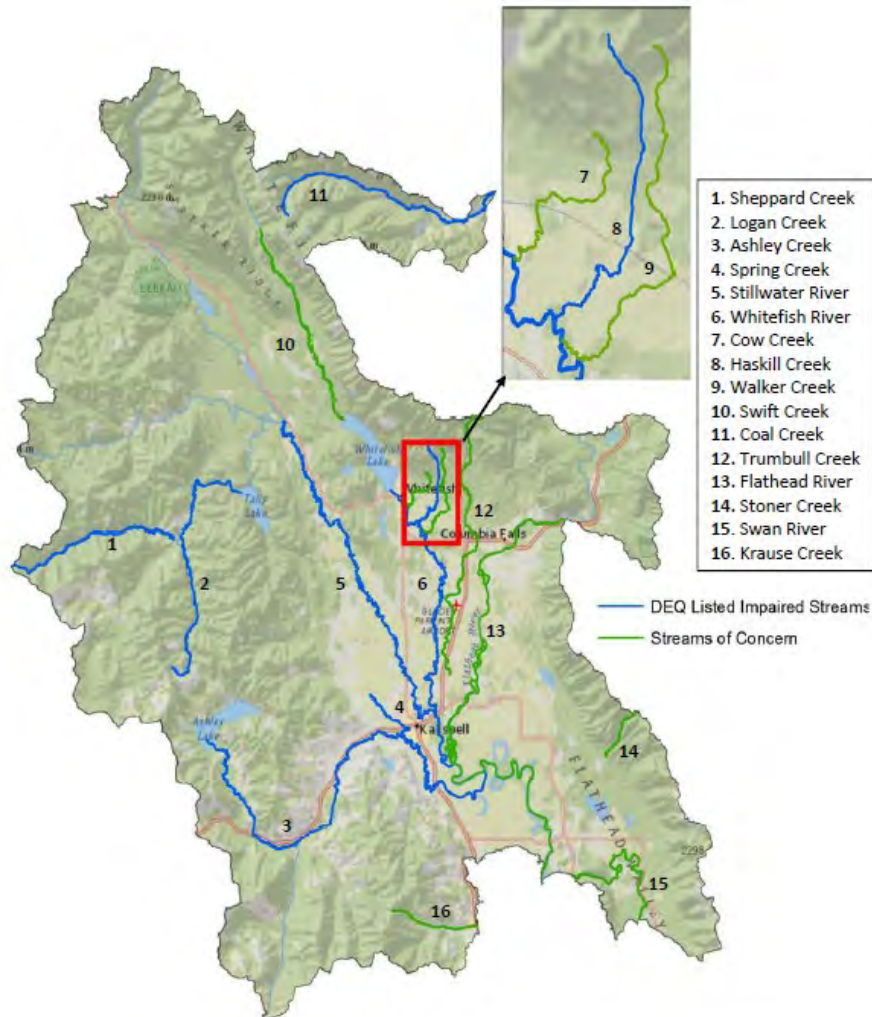


Figure 4. Montana DEQ 303d listed streams and streams of concern defined by the Flathead-Stillwater Watershed WRP.

Table 3. TMDLs and impairments taken from the Flathead-Stillwater WRP. Highlighted rows are not on the Montana DEQ 303d list but are recognized as streams of concern in the WRP.

Water Body	Probable Causes of Impairment										Impaired Use(s)		
	Total Nitrogen	Total Phosphorus	Sediment	Temperature	Alteration in the stream-side vegetation	Low flow alterations	Other flow regime alterations	Physical substrate habitat alterations	Chlorophyll-a	Flooding (Not a listed impairment)	Aquatic Life	Primary Contact Recreation	Stream of Concern Not Listed as impairment by DEQ
(Upper) Ashley Creek - Ashley Lake to Smith Lake	x		x	x	x				x	-	x	x	
(Middle) Ashley Creek - Smith Lake to Kalispell Airport Road	x	x	x	x		x					x	x	
(Lower) Ashley Creek - Kalispell Airport Road to mouth (Flathead River)	x	x	x	x	x				x		x	x	
Coal Creek - Headwaters to mouth (North Fork Flathead River)			x		x						x		
Cow Creek - Headwaters to mouth (Whitefish River)	x	x	x	x	x								x
(Lower) Flathead River - Columbia Falls to Flathead Lake	x	x	x		x								x
Haskill Creek - Haskill Basin Pond to mouth (Whitefish River)			x								x	x	
Krause Creek - Headwaters to mouth (Echo Lake)			x										x
Logan Creek - Headwaters to Tally Lake			x				x	x			x		
Sheppard Creek - Headwaters to mouth (Griffin Creek)			x		x						x		
Spring Creek - Headwaters to mouth (Ashley Creek)	x	x			x		x	x			x		
Stillwater River - Logan Creek to mouth (Flathead River)			x		x						x		
Stoner Creek - Headwaters to mouth (Flathead Lake)			x										x
(Lower) Swan River - Swan Lake to Flathead Lake			x										x
Swift Creek - Headwaters to mouth (Whitefish Lake)			x		x								x
Trumbull Creek - Headwaters to mouth (Stillwater River)			x			x				x			x
Walker Creek - Headwaters to mouth (Whitefish River)	x	x	x	x	x	x							x
Whitefish River - Whitefish Lake to mouth (Stillwater River)													

In addition to the waterbodies listed above in the Flathead-Stillwater Watershed, there are also waterbodies listed on the Montana DEQ 303d list that are in other watersheds within the county, these are listed in Table 4 below. One of the waterbodies listed is Flathead Lake which is known for its high-water quality however research by the University of Montana Flathead Lake Biological Station (FLBS) has shown decreasing trends for water quality. These trends appear to be the result of human causes and include increasing nutrient pollution, shoreline erosion, changing climate and introduction of non-native species into the ecosystem. Flathead Lake is currently listed as impaired by Montana DEQ for mercury, nitrogen, phosphorus and polychlorinated biphenyls (PCBs).

Table 4. Waterbodies listed on the Montana DEQ 303d list that are not within the Flathead-Stillwater WPA but are still located within Flathead County.

<u>Waterbody Name/Location</u>	<u>Impairments</u>	<u>TMDL Planning Area</u>
Flathead Lake	Phosphorus, Total; Nitrogen, Total	Flathead Lake
Big Creek, headwaters to mouth (North Fork to Flathead River)	Sedimentation/Siltation	Big Creek (Columbia)
Little Bitterroot River, Hubbart Reservoir to Flathead Reservation Boundary	Sedimentation/Siltation; Phosphorus, Total; Nitrogen, Total; Nitrate/Nitrite	Lower Flathead
Sullivan Creek, headwaters to Flathead Indian Reservation	Sedimentation/Siltation; Copper; pH; Cadmium; Zinc; Aluminum; Phosphorus, Total	Lower Flathead

Irrigation

Irrigated acres in Flathead County have fluctuated up and down throughout the past 20 years but have been around 20,000 acres for the past 10 years (refer to Table 2 for exact acres). Irrigation sources in the county are directly from surface water or from wells. Most irrigation is done with sprinklers, mostly wheel line and/or pivot but irrigators also use handlines, pods, and other sprinklers to irrigate their crops, hay land, and pastures.

Groundwater

The groundwater in Flathead County is primarily used for domestic, irrigation, industrial, and public water. Groundwater used in the Flathead Basin is primarily from alluvial aquifers that are located in the valley bottoms. All the major communities except Whitefish, which gets its public water from surface water, rely on these shallow aquifers for their water supply. Areas around Kalispell access groundwater primarily through intermediate and deep alluvial aquifers. A smaller number of groundwater use is through the tertiary and fractured aquifers located in the Flathead Basin (US EPA). Below is a map of the depth to water table for the Flathead Valley highlighting the shallow groundwater, much of which is shallower than 5 feet deep. There is a total of 19,371 wells in Flathead County from depths ranging from 0 ft to over 1000 ft deep. The use of the wells in the county varies but a majority are for domestic use followed by irrigation and stock water (Ground Water Information Center). Groundwater quality in the Flathead Basin is generally good; below is a summary of the groundwater quality.

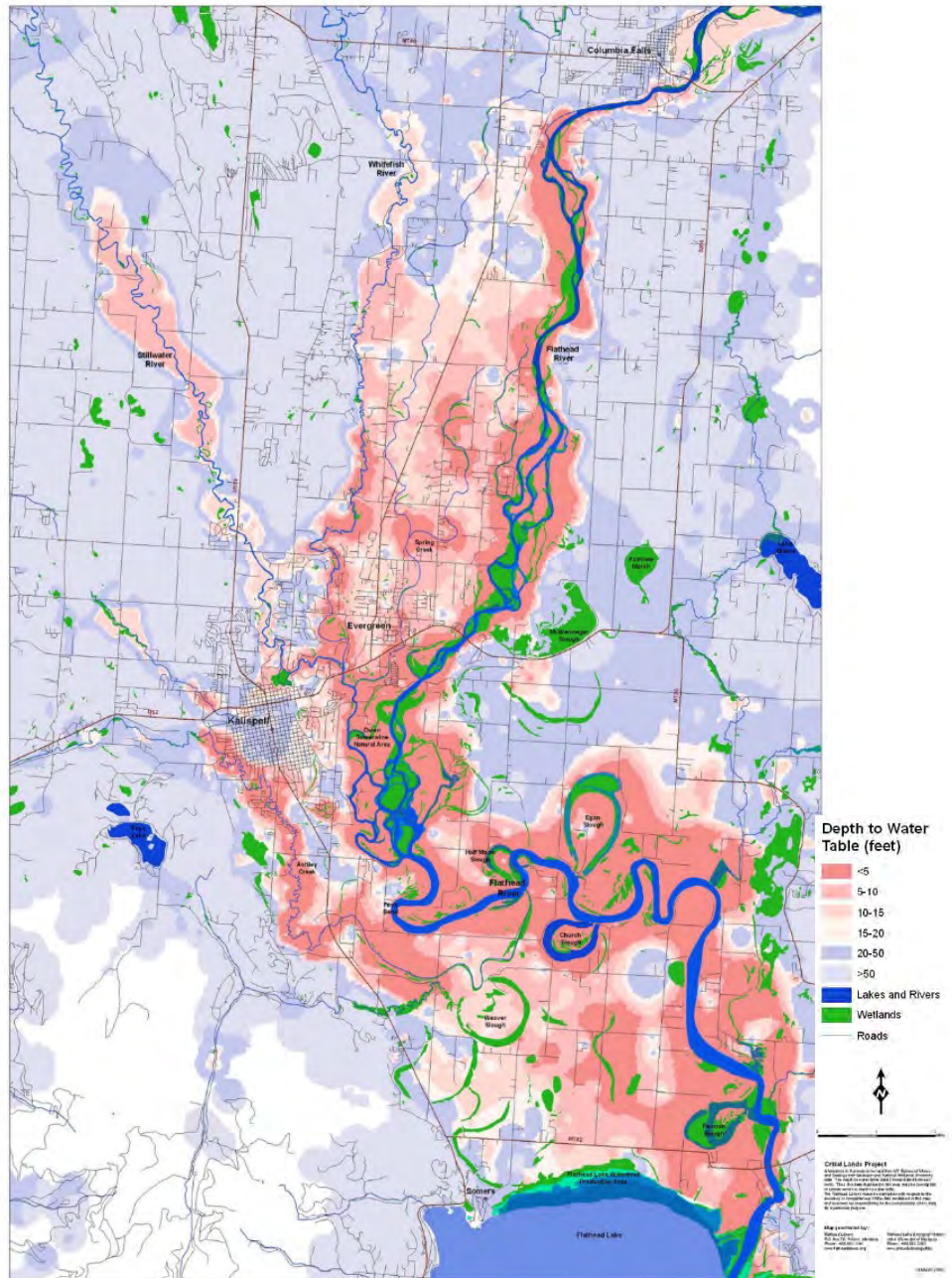


Figure 5. Depth to water table for the Flathead Valley. Produced by the Flathead Lakers.

Table 5. Summary of groundwater data. (EPA)

Subarea	Water Quality Characteristics
Kalispell	generally high quality; nitrate ranged from 0.05 to 3.6 mg/L; phosphorus generally less than 0.2 mg/L; groundwater nutrients a localized problem around Whitefish Lake; higher values were detected in the Lost Creek Fan
Flathead Lake Perimeter	groundwater quality reported to be good, with only one sample from 1984 above 10 mg/L for nitrate; phosphorus reported to be highest within the Basin
Smith	nitrate concentrations from five samples low with a maximum of 0.35 mg/L
Coram	all nitrate samples below 0.90 mg/L
North Fork	not available

Wetlands and Riparian Areas

Wetlands are amongst the most important and beneficial ecosystems on the landscape. They are defined by their soil and vegetation characteristics and are influenced by surrounding waterbodies and groundwater systems. These systems are important for water filtration, decreasing the amount of pollutants in either surface water entering a waterbody or water percolating in to an aquifer. There are many types of wetlands serving a multitude of purposes throughout the county. Riparian areas, also known as a transition zone between a waterbody and terrestrial land, can have wetlands within them that are important for the health of a waterbody as they provide a buffer usually comprised of vegetation including grasses, shrubs, and trees which provide shade to cool the waterbody and bank stabilization. According to the Montana Natural Heritage Program Flathead County has a total of 195,233 acres of wetlands. Of these, 54,058 (28%) acres are palustrine (lacking flowing water), 91,843 (47%) are lacustrine (lake associated) in nature, 18,288 (9%) acres are riverine (river associated), and 30,841 (16%) acres are located within riparian zones. Wetlands provide critical biological, ecological, and economic benefits including flood attenuation, water filtration, carbon sequestration, and drought resiliency. Further, wetlands are home to 31% of all U.S. plant species, half of all North American bird species use wetlands as some point in their lifecycle, and nearly half of all threatened or endangered species in the US are also associated with wetlands. There are many threats to wetlands and riparian areas in Flathead County with some of the threats being increased development due to urban sprawl, increase impacts from septic systems with increasing populations, negative impacts associated with conventional farming practices, and grazing/watering of livestock in riparian areas.

Floodplains

Floodplains are an important part of Flathead County as the county sees more precipitation than most parts of the state of Montana. Floodplains are important for natural stream and river migration and movement allowing the watercourse to evolve naturally through time. They also provide habitat for a wide variety of species. Most of the Flathead River along with its tributaries located in the valley floor flow through glacial outwash which makes up the river's floodplains and terraces. Flooding in the county usually happens in correlation with spring/early summer snowmelt when water levels are naturally high. The Flathead Valley in the recent past has seen severe floods in 1894, 1926, 1948, 1964, 1975, and 1991 (Refer to Figure 6). Of the land in the Flathead Valley, about 12% is in the 100-year floodplain of the Flathead River and its tributaries. Construction has been limited in the 100-year floodplain also known as Special Flood Hazard Area (SFHA) and requires permits, also limiting the amount of structures that would be affected by a major flood (Flathead County Growth Policy).

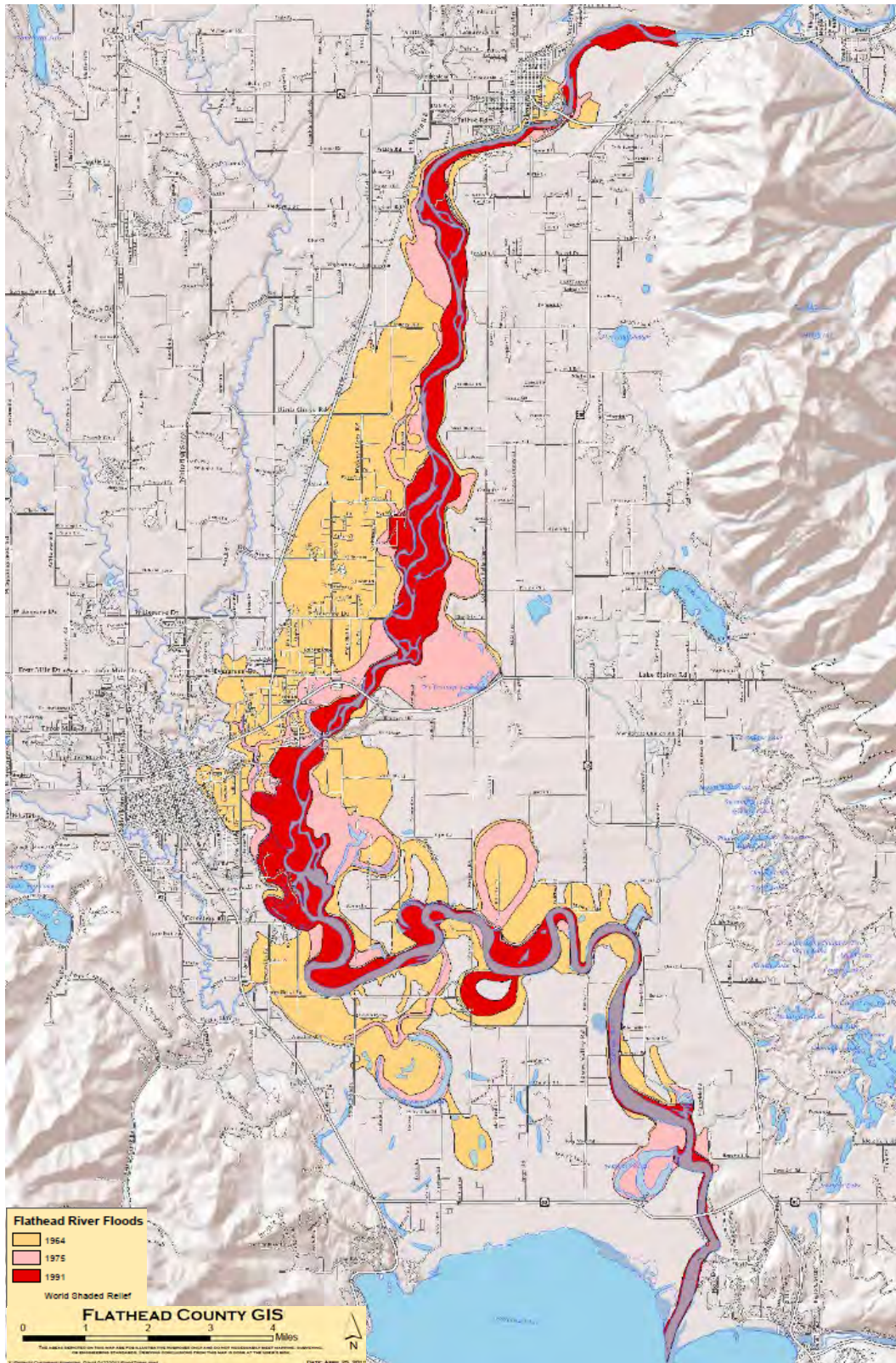


Figure 6. Map of major floods in the Flathead Valley (1964, '75, and '91). Made by Flathead County GIS Department.

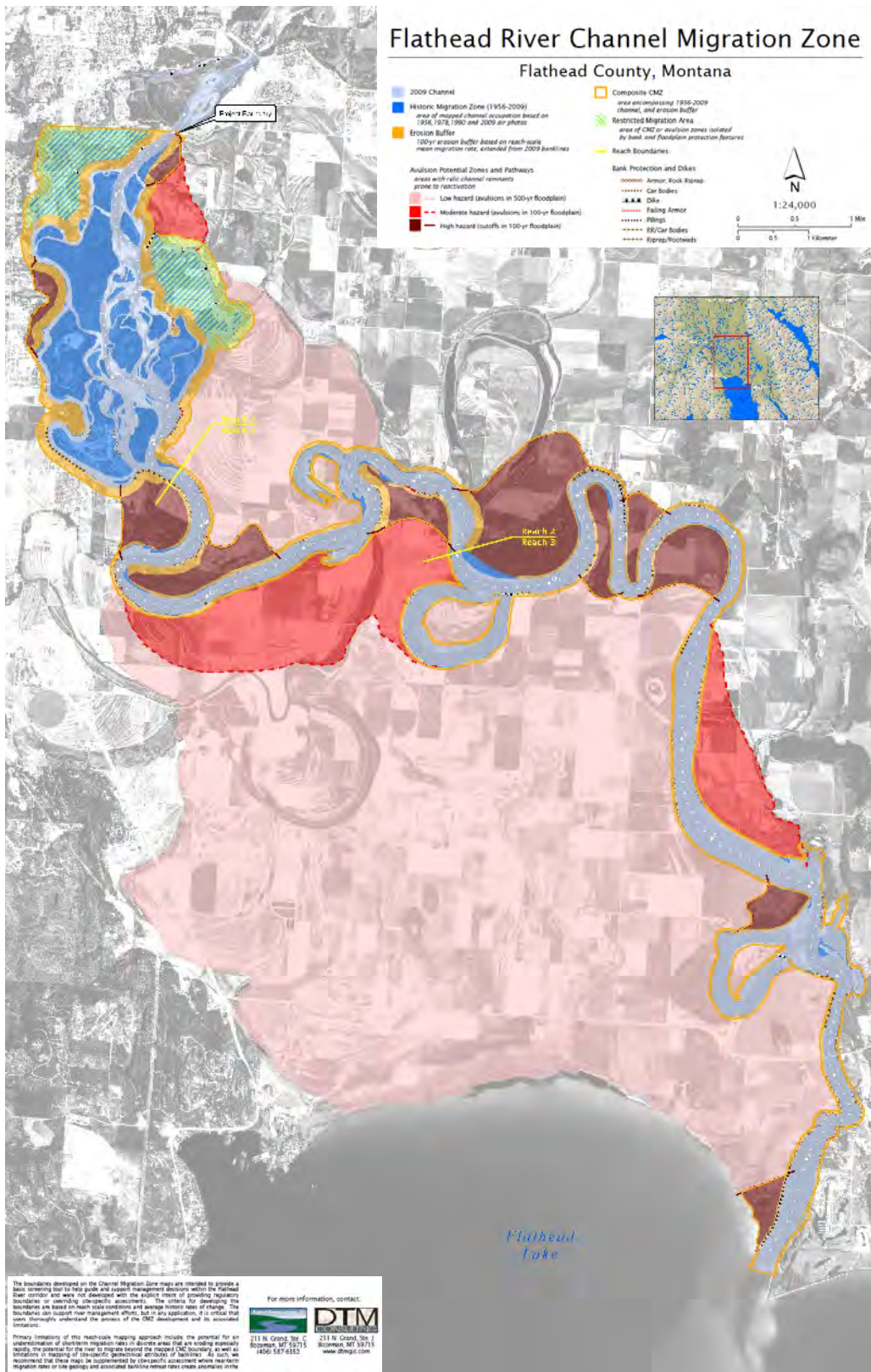


Figure 7. Map of the Upper Flathead River Channel Migration Zone from a report for the Flathead Lakers called Flathead River Migration Channel Zone Mapping.

Air Quality

Flathead County has an Air Pollution Control Program that is under the Flathead City-County Health Department and has Air Pollution Control Districts for the towns of Kalispell, Whitefish, and Columbia Falls. All three of these cities also have state implementation plans (SIP) requirements for PM-10 contingency measures, PM-10 nonattainment NSR, and PM-10 SIP that have been approved (US EPA). The Flathead City-County Health Department does define standards for air quality with visibility and particulate levels defining good to hazardous air quality with good air quality as having visibility over 13.4 miles and hazardous at 1.3 miles of visibility. All these air quality standards can be found on the Flathead City-County Health Department under Air Quality.

Utilities

The Flathead Electric Coop

The Flathead Electric Coop (FEC) services much of Flathead County. The cooperative was founded in 1937 and has grown to have over 52,000 members today making it the second largest power company in Montana. The FEC has a Board of Trustees with nine members who are voted in by cooperative members (Flathead Electric Cooperative). FEC does not service the area known as the North Fork (just west of Glacier National Park and the North Fork of the Flathead River) so residents living in these areas must rely on other sources of electricity.

Hungry Horse Dam - Bureau of Reclamation

The Hungry Horse Dam was completed in 1953 on the South Fork of the Flathead River after 5 years of construction. The dam was constructed to store water for downstream Grand Coulee and Bonneville dams. About 1 billion kilowatt hours of power are generated by the dam per year providing electricity to surrounding areas including Kalispell, Whitefish, and Columbia Falls. The dam is a concrete arch dam that stands 564 feet high making it one of the largest of its kind in the United States (National Park Service).

Plants and Animals

Where they are found, federal and state listed plant and animal species offer valuable opportunities for partnering with landowners and conservation partners to protect and improve associated habitats. As of December 12, 2019, the US Fish and Wildlife Service's (USFWS) Ecological Services Division lists the following six threatened species as present within areas of Flathead County: bull trout (*Salvelinus confluentus*), Canada lynx (*Lynx canadensis*), Spaulding's campion (*Silene spaldingii*), yellow-billed cuckoo (*Coccyzus americanus*), meltwater lednian stonefly (*Lednia tumana*), and grizzly bear (*Ursus arctos horribilis*). None of Montana's federally endangered species are known to reside within the county but one proposed species (wolverine, *Gulo gulo luscus*) and one candidate species (whitebark pine, *Pinus albicaulis*) are considered present.

According to the Montana Natural Heritage Program Species of Concern Report last updated October 31, 2019, Flathead County contains 74 animal Species of Concern. These species consist of 10 mammal species, 32 bird species, 2 reptile species, 2 amphibians, 5 fish species, 15 insect species, 6 mollusk species, 1 isopod, and 1 amphipod. Habitats generally associated with these species are diverse including both terrestrial and aquatic types and comprise mountain streams, rivers, lakes, grasslands, riparian forests, conifer forests, wetlands, and sagebrush. More specialized species on the list can be found only in association with Flathead County's rocky slopes, waterfalls, alpine zones, and forested habitat caves. A total of 118 state listed plant Species of Concern also can be found within Flathead County. They are generally comprised of 14 fern species, 1 conifer, 41 flowering dicot species, 31 flowering monocot species, 9 lichens, and 22 bryophytes. Most of these species subsist in Flathead's common general habitat types (grasslands, riparian, forests) but a few specialized species can only be found in more limited habitats including rock talus, alpine zones, and fens. Lists of both animal (Appendix A) and plant (Appendix B) Species of Concern are listed in the Appendix.

Grizzly Bear (*Ursus arctos*)

Table 6. Estimated grizzly bear densities in NCDE areas. (Courtesy Grizzly Bear Management Plan for Western Montana)

Area	Size (mi ²)	Density (mi ² /bear)	Number of Bears
Red Meadow	215	10-15	14-22
Whitefish	831	18-25	33-46
Glacier National Park	1,583	6-8	198-264
St. Mary	211	10-20	11-21
Badger-Two Medicine	323	27-38	9-12
South Fork Flathead River	1,624	10-13	125-162
East Front	1,119	25-31	35-45
Swan Front	780	20-30	26-39
Mission Mountains	1,044	25-45	23-42
Scapegoat	1,903	56-112	17-34
Total	9,633	14-20	492-687
Total excluding GNP	8,050	19-27	294-423

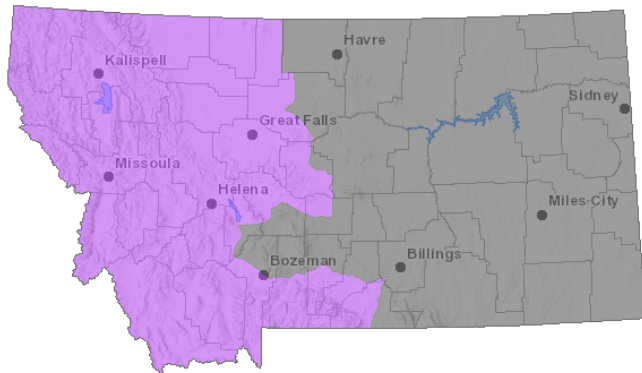


Figure 8. Current range of grizzly bears in Montana, dark grey is the historic range (Montana Field Guide).

The USFWS, in cooperation with FWP, the USFS, National Park Service (NPS), Bureau of Land Management (BLM), Blackfeet Tribe and Confederated Salish and Kootenai Tribes (CSKT) manage grizzly bears in Montana as ‘threatened’ under authority of the Endangered Species Act (ESA). This cooperative management is under the Interagency Grizzly Bear Committee (IGBC) within which all agencies and tribes are partners (Grizzly Bear Management Plan for Western Montana). Flathead County falls within the Northern Continental Divide Ecosystem area which has a target goal of 500 or more grizzly bears (USFWS Grizzly Bear Recovery Plan Supplement: Habitat-based Recovery Criteria for the Northern Continental Divide Ecosystem, 2018). The population is now known to have over 1,000 individuals. Grizzly bears are known to occur in most areas of Flathead County including Glacier National Park and extending down into the wilderness areas and over to the North Fork of the Flathead River. Over the recent past both grizzly and black bears (*Ursus americanus*) have become increasingly drawn to the valley floor in search of human attractants. Limiting human-bear conflicts is a critical component of grizzly bear recovery plans.

Bull Trout (*Salvelinus confluentus*)

Bull trout are listed as a ‘threatened’ species in Flathead County. Bull trout require a specific habitat and are more vulnerable to environmental degradation than are other fish species. They require clean, cold, clear, complex and connected habitat (the five C’s). Bull trout populations have declined due to habitat loss and degradation from a variety of human-caused factors. Critical habitat for bull trout is shown in figure 10. Collaborative efforts by many partners including USFWS, FWP, USFS, CSKT, DNRC and many others developed the Montana Bull Trout Restoration Plan.



Figure 9. Current range of bull trout in Montana (Montana Field Guide).

According to a report issued by the Montana Bull Trout Restoration Team in 2000, bull trout populations in the South Fork of the Flathead River appear to be stable or are increasing, however populations in the Flathead River (including the Lower Flathead River) and its tributaries have suffered large declines. Populations in the South Fork of the Flathead River have been stable due to the Hungry Horse dam serving as a barrier for nonnative species. The biggest threat to this population is over fishing and there are regulations in place to try to prevent this. Below the dam, especially in Flathead Lake, other fish species, primarily lake trout, are one of the biggest threats to native bull trout populations. Lake trout have been prolific in Flathead Lake.

Canada Lynx (*Lynx canadensis*)

Canada lynx are listed as a 'threatened' species and reside within portions of Flathead County. Canada lynx are limited to areas occupied by their main prey source, the snowshoe hare (*Lepus americanus*). Both the lynx and hare are typically found inhabiting moist, cool, boreal forests, typically above 4,000 feet in elevation. As snowshoes make up approximately 90% of the lynx diet in winter, any degradation to snowshoe hare habitat that reduces hare populations has a direct commensurate negative impact on lynx populations as well.

Critical habitat has been designated for Canada lynx and a portion of the area is in Flathead County, specifically the eastern portion of the county associated with Glacier National Park and the wilderness areas to the south as well as areas in the far west of the county (Figure 11). Protection of habitat quality within the designated critical habitat boundary is essential to the long term survival of the species. Both these areas have land use restrictions that are beneficial to lynx. Lynx habitat outside areas designated as critical habitat have fewer protections and as such are susceptible to practices and uses which have the potential to result in negative impacts to local populations.

Historic lynx population declines in Flathead County mimic those found in other occupied Montana counties and are largely a result of anthropogenic causes including timber harvest, infrastructure establishment, overharvest, and wildfire suppression. Currently, although exact populations levels are uncertain for the area, according to the USFWS 2017 Species Status

Critical Habitat for Bull Trout (*Salvelinus confluentus*)

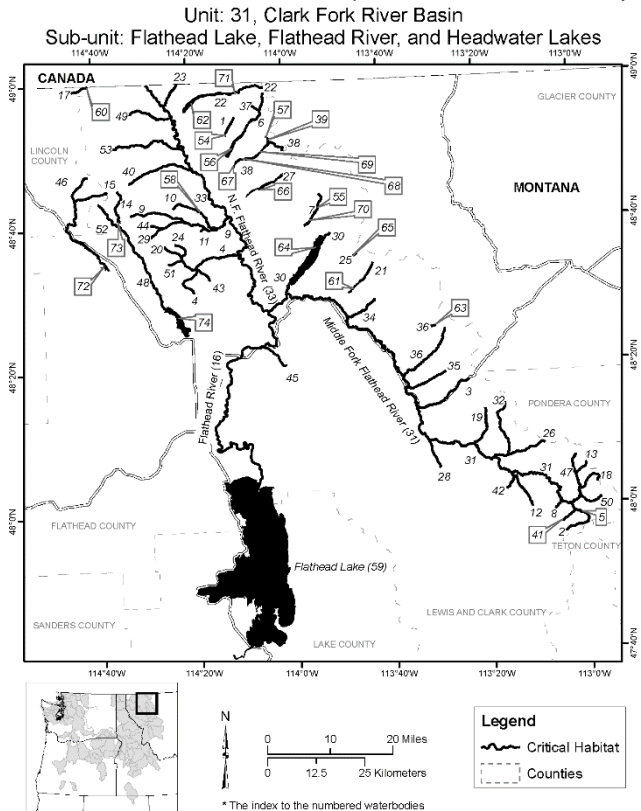


Figure 10. Bull trout critical habitat in the headwaters of the Clark Fork River Basin. USFWS

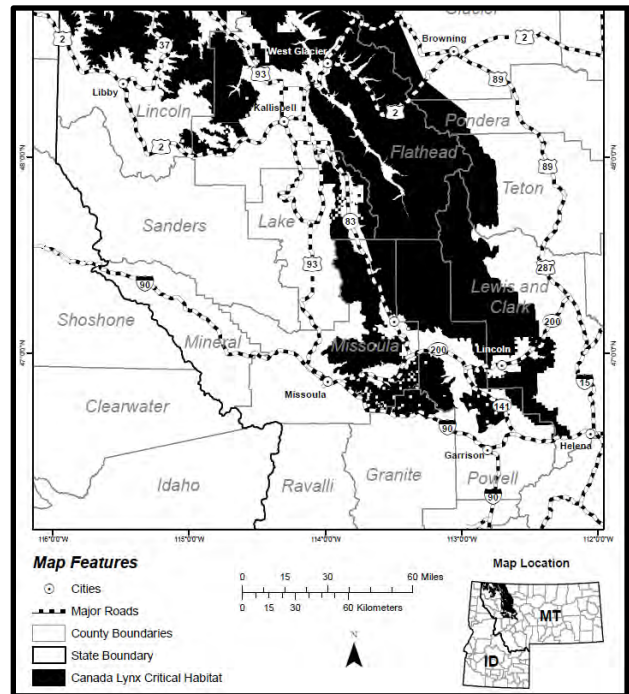


Figure 11. Canada lynx critical habitat in Western Montana.

Assessment for the Canada lynx, recent studies have indicated that both lynx reproduction and recruitment are occurring at healthy levels. To maintain these healthy numbers, conservation partners should seek to implement the Interagency Lynx Biology Team’s Conservation Assessment and Strategy (2013) including: managing vegetation for a mosaic of successional stages, reducing habitat fragmentation, minimizing winter related recreational disturbances, avoiding backcountry road construction, and where possible maintaining fire as a key ecological process and disturbance mechanism.



Figure 12. Current range of wolverines in Montana (Montana Field Guide).

Yellow-billed Cuckoo (*Coccyzus americanus*)

The only bird species listed as threatened or endangered in Flathead County is the yellow-billed cuckoo (western population) which was listed as ‘threatened’ west of the Continental Divide in 2014 by the USFWS. Primary factors threatening the population include loss and degradation of habitat from altered watercourse hydrology and natural stream processes, livestock overgrazing, encroachment from agriculture and conversion of native habitat.

Wolverine (*Gulo gulo*)

The wolverine is listed as a ‘proposed’ species for Flathead County. Wolverines are limited to alpine tundra and primarily coniferous forests in Western Montana. They are generally solitary having a wide range and are opportunistic omnivores. The comment period was reopened by the USFWS in 2016 for the listing of the wolverine, final listing is expected in 2020 (USFSW, 2016).



Figure 13. Current summer range of yellow-billed cuckoo in Montana (Montana Field Guide).



Figure 14. Current range of Spalding’s campion in Montana (Montana Field Guide).

Spalding’s Campion (*Silene spaldingii*)

The USFWS lists Spalding’s campion as a ‘threatened’ plant species in Flathead County. Spalding’s campion, also known as Spalding’s catchfly, occupies open, mesic grasslands in valleys and foothills usually co-existing with rough fescue and Idaho fescue. It is known to exist in only a few locations in the northwest corner of Montana including the western portion of Flathead County. Invasive plant species are the most pressing threat along with overgrazing, fire exclusion and lack of gene flow due to isolation of populations.

Whitebark Pine (*Pinus albicaulis*)

Whitebark pine is listed as a 'candidate' species. Whitebark pine is a common component of subalpine forests occurring in all major mountain ranges of western and central Montana. Populations have been severely impacted by mountain pine beetle (*Dendroctonus ponderosae*) outbreaks and by the introduction of white pine blister rust (*Cronartium ribicola*) caused by a non-native fungus. Major declines in whitebark pine have been noted across its range. This decline in whitebark pine populations also has implications for grizzly bear populations who rely on the whitebark pine as a high energy and calorie food source in higher elevations, helping to reduce grizzly interactions with humans during large cone crop years.

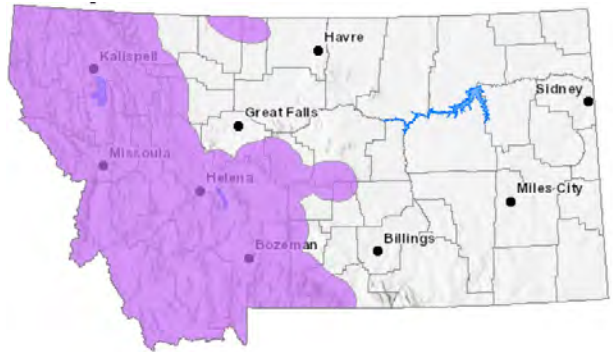


Figure 15. Current range of whitebark pine in Montana (Montana Field Guide).



Figure 16. Current range of meltwater lednian stonefly in Montana (Montana Field Guide).

Meltwater Lednian Stonefly (*Lednia tumana*)

The meltwater lednian stonefly is listed as a 'threatened' species. This stonefly inhabits extremely cold glacier-fed streams at high elevations and is at risk due to climate change, loss of glaciers and permanent snowfields and changes in streamflow and temperatures.

Big Game Species

Big game species present within Flathead County include mule deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus*), moose (*Alces alces*), elk (*Cervus canadensis*), black bear (*Ursus americanus*), mountain goats (*Oreamnos americanus*), bighorn sheep (*Ovis canadensis*) as well as small number of pronghorn antelope (*Antilocapra Americana*).

FWP has identified the Heart of the Salish Priority Area as a priority big-game winter range and migration corridor. A portion of this priority area and one of the two focal areas within the priority area lies within Flathead County (Figures 17 & 18). The area serves as a migration corridor and wintering ground for both mule deer and elk as well as providing essential habitat for several species protected under the ESA. Risks for this area include habitat fragmentation due to conversion of timber lands to private residential



Figure 17. Migratory corridors located in Flathead County defined by FWP in their Montana Action Plan.

use as well as degradation of habitat quality via the spread of noxious weeds (FWP Montana Action Plan).

In addition to the Heart of the Salish Priority Areas, the Highway 2 Railroad Corridor in Priority Area A is also located within Flathead County (Figure 19). Highway 2 and the Burlington Northern-Santa Fe (BNSF) railroad is located between the boundaries of Glacier National Park and the Bob Marshall Wilderness Complex. Moose, elk, mule deer, white-tail deer, grizzly bears are just a few of the species that use this corridor. One of the main threats to wildlife movement throughout this priority area is increased traffic. Studies have been done and locations have been determined for possible wildlife crossing structures. In addition, it has been found that some wildlife have currently been using culverts for crossings if possible (FWP Montana Action Plan, Oct 2019).

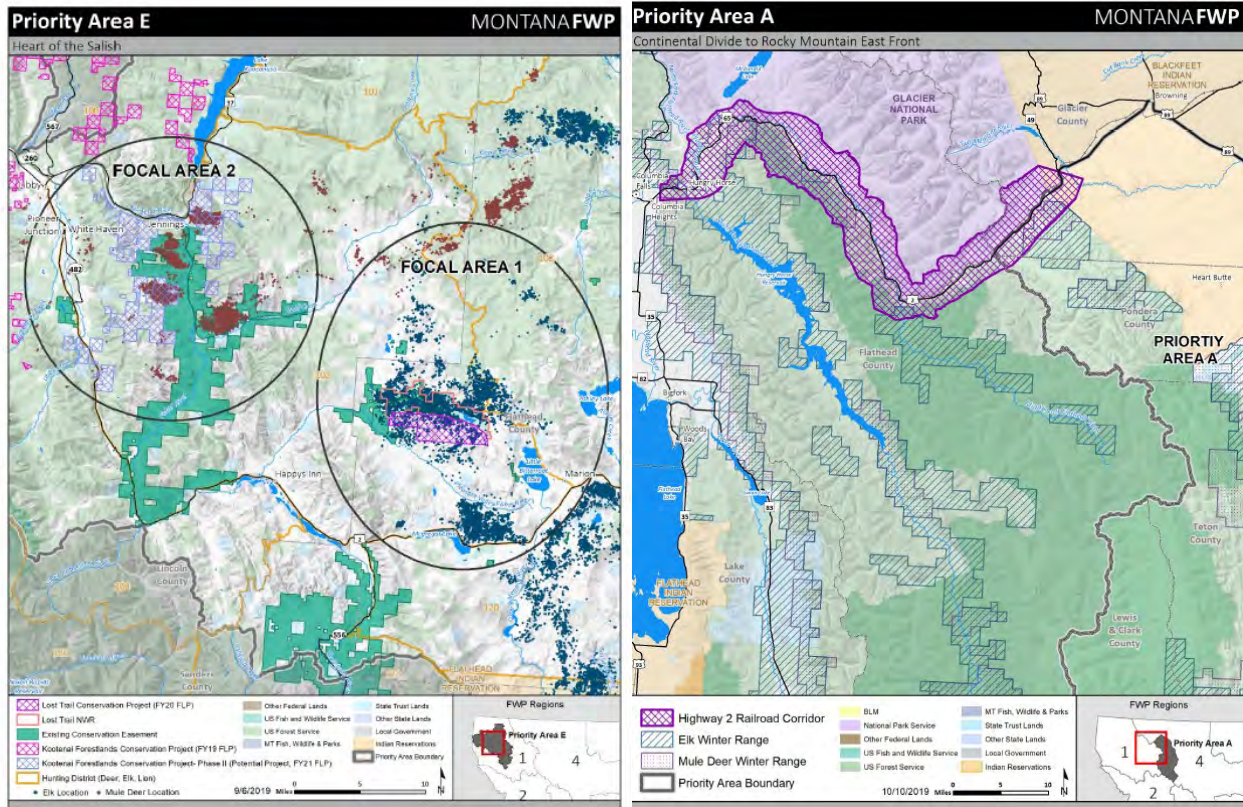


Figure 18 & 19. Left: Focal areas within the Heart of the Salish Priority Area defined by FWP in their Montana Action Plan. Right: Highway 2/Railroad Corridor within Priority Area A defined by FWP in their Montana Action Plan.

Noxious & Invasive Species

Flathead County along with the state of Montana has a long list of noxious weeds. Below is the list of all the noxious weeds in both Montana and Flathead County. Priority levels are as defined below:

- 1A - Weeds that are not known to be present in Montana. Management required is to eradication if detected; education; and prevention.
- 1B - Weeds that have limited presence in Montana. Management required is to eradicate or contain and to educate.
- 2A - Weeds are common in isolated areas of Montana. Management required is to eradicate or contain where less abundant.
- 2B - Weeds are abundant and widespread in my counties. Management required is to eradicate or contain where less abundant.

- 3 - Weeds that are regulated and have potential to have significant negative impacts. These plants may not be intentionally spread or sold other than as a contaminant in agricultural products. Management recommended is to research, educate, and prevent the spread.

Table 7. List of Noxious weeds in Flathead County from the Flathead County Weed Department. The species highlighted in red are the highest priority identified by either the county or state.

Common Name	Scientific Name	State or County	Priority Level
Yellow starthistle	<i>Centaurea solstitialis</i>	State	1A
Dyer's woad	<i>Isatis tinctorial</i>	State	1A
Common reed	<i>Phragmites australis ssp. australis</i>	State	1A
Medusahead	<i>Taeniatherum caput-medusae</i>	State	1A
Knotweed complex	<i>Polygonum</i>	State	1B
Purple loosestrife	<i>Lythrum salicaria</i>	State	1B
Rush skeletonweed	<i>Chondrilla juncea</i>	State	1B
Scotch broom	<i>Cytisus scoparius</i>	State	1B
Blueweed	<i>Echium vulgare</i>	State	1B
Tansy ragwort	<i>Senecio jacobaea</i>	State	2A
Meadow hawkweed complex	<i>Hieracium spp.</i>	State	2A
Orange hawkweed	<i>Hieracium aurantiacum</i>	State	2A
Tall buttercup	<i>Ranunculus acris</i>	State	2A
Perennial pepperweed	<i>Lepidium latifolium</i>	State	2A
Yellowflag iris	<i>Iris pseudacorus</i>	State	2A
Eurasian watermilfoil	<i>Myriophyllum spicatum</i>	State	2A
Flowering rush	<i>Butomus umbellatus</i>	State	2A
Common buckthorn	<i>Rhamnus cathartica</i>	State	2A
Canada thistle	<i>Cirsium arvense</i>	State	2B
Field bindweed	<i>Convolvulus arvensis</i>	State	2B
Leafy spurge	<i>Euphorbia esula</i>	State	2B
Whitetop	<i>Cardaria draba</i>	State	2B
Russian knapweed	<i>Centaurea repens</i>	State	2B
Spotted knapweed	<i>Centaurea stoebe, maculosa</i>	State	2B
Diffuse knapweed	<i>Centaurea diffusa</i>	State	2B
Dalmatian toadflax	<i>Linaria dalmatica</i>	State	2B
St. Johnswort	<i>Hypericum perforatum</i>	State	2B
Sulfur cinquefoil	<i>Potentilla recta</i>	State	2B
Common tansy	<i>Tanacetum vulgare</i>	State	2B
Oxeye daisy	<i>Chrysanthemum leucanthemum, Leucanthemum vulgare</i>	State	2B
Houndstongue	<i>Cynoglossum officinale</i>	State	2B
Yellow toadflax	<i>Linaria vulgaris</i>	State	2B
Saltcedar	<i>Tamarix spp.</i>	State	2B
Curlyleaf pondweed	<i>Potamogeton crispus</i>	State	2B
Hoary alyssum	<i>Berteroa incana</i>	State	2B
Cheatgrass	<i>Bromus tectorum</i>	State	3
Hydrilla	<i>Hydrilla verticillata</i>	State	3
Russian olive	<i>Elaeagnus angustifolia</i>	State	3
Brazilian waterweed	<i>Egeria densa</i>	State	3
Parrot feather watermilfoil	<i>Myriophyllum aquaticum, brasiliense</i>	State	3
Baby's breath	<i>Gypsophila paniculate</i>	County	2A
Russian thistle	<i>Salsola tragus</i>	County	2A
Tumble mustard	<i>Sisymbrium altissimum</i>	County	2A
White campion	<i>Silene latifolia</i>	County	2A
Creeping bellflower	<i>Campanula rapunculoides</i>	County	3
Scentless chamomile	<i>Matricaria perforate</i>	County	3

Absinth wormwood	<i>Artemisia absinthium</i>	County	3
Noble yarrow	<i>Achillea nobilis</i>	County	3
Kochia	<i>Kochia scoparia</i>	County	3

It is important to remain vigilant regarding new and invasive weeds. New weed species of concern include the annual grass *Ventenata dubia*. *Ventenata* is known to take over native range, forest understories, pastures, hay fields, and right of ways. It is also found in Idaho where they have seen a 50% decrease in production of land that this species has invaded (MSU Extension, 2018).

Montana has recently had a positive detection for invasive mussels. Since this detection the state of Montana has set up check stations around the state and CSKT has also set up their own check stations in two locations on the Flathead Indian Reservation. There have not been any detections of zebra or quagga mussels in Flathead County yet but there is extensive monitoring done on Flathead Lake by the Flathead Lake Biological Station.

The lakes, reservoirs, streams and rivers in Flathead County also have invasive fish, amphibians, and crustacean species. The Flathead Lake Biological Station lists 18 nonnative species that have been introduced into the Flathead Basin some of which include lake trout, northern pike, and Mysis shrimp. In Flathead Lake specifically the release of nonnative species such as Mysis shrimp (*Hemimysis anomala*) has altered the food web, contributing to the decline of bull trout and westslope cutthroat trout and the increase of the nonnative lake trout (<https://www.pnas.org/content/108/3/1070>).

Forestland

Much of Flathead County is forested with most of the forestland publicly owned by the USFS, National Park Service, and the state. Forests in Glacier National Park in addition to the Great Bear and Bob Marshall Wilderness are not actively managed unlike other publicly and privately-owned forestland in the county. A significant amount of private forestland, about 42% of the privately-owned land, is owned by timber companies including F.H. Stoltze Land and Lumber, Weyerhaeuser, and Montana Forest Products (Flathead County Growth Policy).

Forest types in Flathead County include warm, dry forests with ponderosa pine (*Pinus ponderosa*), Douglas fir (*Pseudotsuga menziesii*), and western larch (*Larix occidentalis*) called dry montane at lower elevations, mixed conifer forests also called moist montane which are located at mid elevations, cooler, moist sites called lower subalpine in elevations ranging from 5000 to 7000 feet, and even cooler sites above 7000 feet called upper subalpine (Flathead County Community Wildfire Protection Plan).

The fire regime is as diverse as the forest type, with short, long, and mixed interval and severity. Aggressive fire suppression and short-term forest management decisions have altered the fire regime, the forest mosaic and species composition. Flathead County fire history statistics depict a startling increase in both the number of acres burned annually and the severity of those fires. Fire numbers in the past include about 1 million acres burned from 1889 to 1930 (41 years), approximately 60,000 acres burned from 1930 to 1989 (59 years), and between 1990 to 2018 (28 years) 1.1 million acres burned (Flathead County CWPP).

As stated earlier, the population of Flathead County has grown significantly in the past years and is predicted to keep growing with many of the new and existing residents located in the Wildland Urban Interface (WUI). One of the goals of the Flathead County CWPP is to involve community members in the planning and management of the WUI that they live in. One of the ways partners are working together in Flathead County is through a program called Fire Safe Flathead, this program will be discussed further in Section III of this document. In the latest draft version of the Flathead County CWPP the valley floor has been added to the WUI area.

Rangeland

Approximately 1.5% of Flathead County supports rangeland vegetation, which is less than 40,000 acres. In addition, 2.3% supports forestland understory vegetation that is suitable for grazing. Cow/calf

operations are the major livestock enterprise in the county, constituting about 11% of farm income. Some operations are cow/calf/yearling enterprises and a few units have dairy operations or include sheep or hog production in their operations. The average size of farm units is approximately 159 acres. Most grazing takes place on dryland or irrigated pasture. Rangeland is used primarily for grazing by domestic livestock; however, it also is used as wildlife habitat, recreational areas, and watershed and has esthetic value. Common rangelands in Flathead County consist mostly of wooded or open areas.

Poor grazing management, invasive species, and changes in fire regime are responsible for rangelands moving away from climax plant communities. Despite this, there are still some examples of excellent climax communities in Flathead County. Some rangelands are in an invaded state or have been lost to conifer encroachment and development while other rangelands have decreased in productivity to overgrazing, invasive species, or any combination of these pressures.

The introduction of large numbers of livestock during the early 1900s upset the balance of native plant communities. Continuous, season-long grazing and over stocking has damaged rangelands. Native bunchgrasses declined, and undesirable shrubs, weeds and grasses increased. Exotic grass species such as timothy, redtop, smooth brome and orchardgrass were planted for hay and pasture and these plants displaced native rangeland vegetation in some areas. Houndstongue, orange hawkweed, yellow toadflax, baby's breath, Russian thistle, tumble mustard, white campion, and other noxious weeds were accidentally introduced during the early and mid-1900s. These plants eventually out-competed many native grasses. Annual grasses are also outcompeting native species and include cheatgrass and most recently ventenata. Invasive species management and correct grazing management will improve rangeland resources and bring grazing levels closer to climax community production.

Unique Features

Flathead County is made up of 81% public lands including Glacier National Park, the Flathead National Forest which includes the Great Bear Wilderness and Bob Marshall Wilderness Areas, Lost Trail National Wildlife Refuge, other wildlife production areas, and several State Parks. These areas provide a large connected landscape for plants and animals to inhabit and migrate through. When looking at Flathead County and its large connected landscapes it must be mentioned that these public lands also attract many tourists from across the country and world to the county and surrounding areas. Tourism is great for Flathead County as it a major part of the county's economy, but we have to remain aware of how the influx of people can also affect the natural resources within the ecosystem.

Glacier National Park

Glacier National Park (GNP) attracts tourists from all over the world with one million acres of mountainous views, numerous lakes, rivers and wetlands which all provide great habitat for a variety of wildlife and plants. One of the most prominent attractions is the "Going-to-the-Sun Road" which is only open 2 to 3 months a year and stretches 50 miles over the continental divide. Glacier National Park also has countless hiking trails including the northern most section of the Continental Divide Trail. For the past three years GNP has seen almost 3 million visitors every year. GNP is not only providing a great vacation destination, but it also provides opportunities for research and education. The park has education program for both children and adults giving the opportunity to learn about wildlife, history, and much more. Research is conducted in the park from a variety of government agencies, universities, and other organizations.



Figure 20. Avalanche Lake in Glacier National Park. Photo Credit: Karli Becher

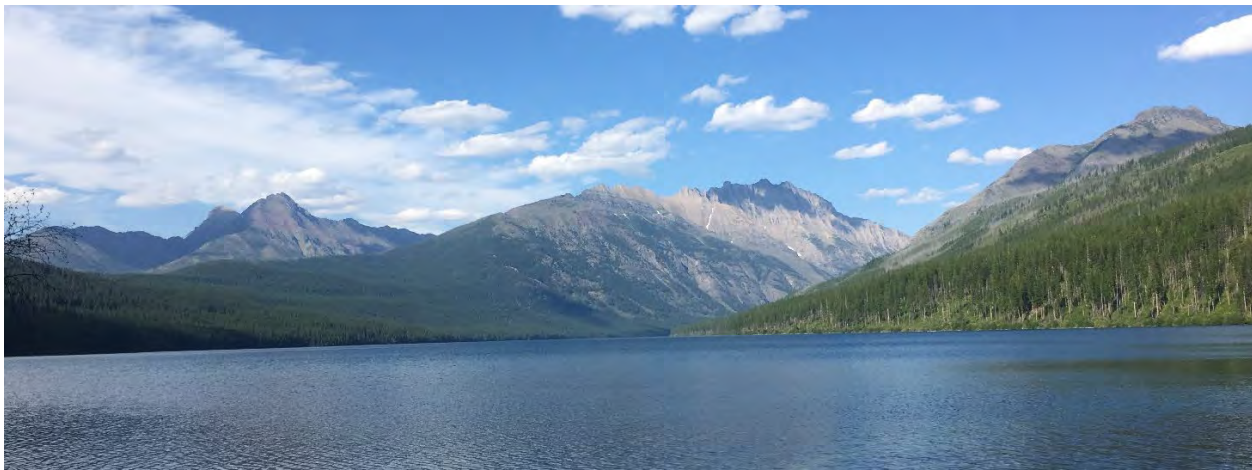


Figure 21. Kintla Lake in Glacier National Park. Photo Credit: Karli Becher

The Bob Marshall Wilderness Complex

The Bob Marshall Wilderness Complex is about 1.5 million acres being made up of the Great Bear (established 1978), Bob Marshall (established 1964), and Scapegoat Wildernesses (established 1972). The Great Bear and parts of the Bob Marshall Wilderness Areas are both in Flathead County. This complex has countless mountainous features ranging from 5,000 to 9,400 feet high. The continental divide goes through the complex along with the Continental Divide Trail. The complex is known for its many different wildlife species including grizzly bears, mountain lions, moose, and much more. The "Bob" is also used for many different recreation activities including hiking, fishing, hunting, rafting, and horseback riding. Many outfitters in surrounding communities provide guided trips into the wilderness area (USFS).



Figure 22. Bob Marshall Wilderness Area, Chinese Wall. Photo Credit: Karli Becher

Section III - Analysis of Conservation Activity

NRCS Kalispell Field Office

The NRCS Kalispell FO in the recent past has mostly focused its efforts on forestlands with Forest Stand Improvement and Woody Residue Treatment being contracted the most in the past 10 years. Below is a table of all EQIP practices applied from 2008 to 2018.

Table 8. Kalispell FO implemented EQIP practices from 2008 to 2018.

Conservation Practice	Amount Applied	Total No. Projects
Animal trails & walkways (Ft)	40	1
Cover Crop (Ac)	18.4	10
Critical Area Planting (Ac)	3.5	3
Fence (Ft)	28,488	20
Firebreak (Ac)	510	1
Forest Stand Improvement (Ac)	2,627.7	221
Fuel Break (Ac)	6.5	2
Heavy Use Area Protection (Ac)	3	2
Herbaceous Weed Treatment (Ac)	629.8	49
High Tunnel System (sq. ft.)	11,592	7
Integrated Pest Management (Ac)	480.1	39
Irrigation System, Micro-irrigation (Ac)	9.3	1
Irrigation System, Sprinkler (Ac)	291.5	3
Irrigation Water Conveyance, Pipeline (Ft)	1,350	1
Irrigation Water Management (Ac)	201.2	7
Nutrient Management (Ac)	901.6	13
Nutrient management (Ac)	105	2
Pasture & hay planting (Ac)	17.8	1
Pasture and Hay Planted (Ac)	6.1	3
Livestock Pipeline (Ft)	800	2
Pumping Plant (No)	3	2
Range Planting (Ac)	15.8	2
Riparian Forest Buffer (Ac)	12.4	6
Structure for Water Control (No)	2	1
Technical Assistance – Certification	1,177.5	5
Technical Assistance - Design	4,393.6	4
Technical Assistance - Installation	693.9	4
Tree & Shrub Establishment (Ac)	234.7	29
Tree/Shrub Site Preparation	23.1	1
Waste Storage Facility	1	1
Water and Sediment Control Basin	1	1
Watering Facility	4	2
Windbreak Shelterbelt Establishment (Ft)	7,444.2	13
Woody Residue Treatment	1,963.4	175

Partners

Flathead Conservation District

The mission of the Flathead Conservation District is to conserve the soil and water resources of Flathead County through education and outreach, on the ground restoration projects, landowner assistance programs, and administration of the Montana Natural Streambed and Land Preservation Act, known as the 310 Law. The District's priority is to facilitate conservation through partnership development and targeted projects to improve water quality in and along impaired waterways.

In 2019, the District began construction of a demonstration garden and outdoor classroom that will be used as an education and outreach tool for youth programs and landowner workshops. This effort will encourage community involvement and will provide landowners with the skills and knowledge for resource conservation on their property. The District is also in the process of expanding its landowner assistance programs. They currently offer a Seedling Program and Cost-share Program and plan to offer a watershed support program for landowners interested in projects to reduce nutrient loads in impaired streams and implement the Flathead Watershed Restoration Plan.

The District, along with several other partners, has also been working on a large restoration project on Cow Creek. This creek is listed as impaired due to temperature, nitrogen, and phosphorus. For this project, the District acted as liaison to secure landowner agreements and successfully applied for DEQ 319 funding. The Cow Creek Restoration Project will be completed by spring of 2020. In addition to this project, the District has also secured funding for large restoration projects on both Trumbull Creek and Krause Creek through the state legislature's Renewable Resource Grants and Loans Program (RRGL). Work will begin on both projects in 2020.

Montana Department of Natural Resources Conservation

The Montana DNRC is currently focused on the Good Neighbor Authority (GNA) projects and cross-boundary collaboration on projects with other federal, state, local and private ownerships.

- GNA: The State Forester has created a new bureau for the express purpose of addressing this opportunity. Indicating of how strongly the State is committed to this initiative over the long-term. To date their efforts have primarily involved timber sale layout and administration on USFS lands.
- Cross-boundary collaboration: Thus far this has primarily been fuel-reduction projects. Many of these projects have been between the USFS and adjacent private lands. A third party in these efforts has been the crucial.
 - Flathead Economic Policy Center (FEPC) as they are the cost-share funding source for private lands. It is the cost-share component of the FEPC that drives the ability to get work done in the forest.
 - The Northwest Land Office (NWLO) efforts have been taken to new levels due to the efforts of several very motivated employees. Over the past two years there has been a marked increase in natural resource management and wildfire awareness educational programs for private landowners provided by NWLO. This too has been collaborative involving MSU Extension, NRCS, FCD, Flathead County, and the USFS. These efforts are anticipated to continue with the anticipated result of more interest from landowners in taking an active forest management role.

Flathead Lakers

The Flathead Lakers is a non-profit organization working to protect clean water in Flathead Lake and the surrounding watershed. Since 1958, Flathead Lakers have encouraged land and water stewardship, built partnerships to address conservation and restoration priorities, and conducted education and outreach to expand stakeholder knowledge and understanding of threats to water quality and pollution sources. Recent outreach projects include the prevention of and proactive planning to address aquatic invasive species (AIS), oil-train spills and septic pollution. In addition, outreach encompasses a summer science monitoring program in Flathead Lake, monthly science presentations, landowner site visit, and K-12 education.

Collaboration opportunities include:

- Riparian restoration in impaired streams and rivers with the River Steward Program, particularly along Ashley Creek or the mainstem Flathead River
- Flathead River to Lake (R2L) Initiative partners, coordinated by the Flathead Lakers, to identify conservation areas (including prime farm soils) and opportunities for coordination with NRCS conservation programs
- Watershed education and outreach for adults, including field trips and site visits

Flathead County Weed District

The Flathead County Weed District is overseen by a board of community members that direct the operations in the county along with assisting to guide the direction and priorities for the county Weed Management Plan. The Weed District has a variety of programs to assist with the management of weeds throughout the county including weed spraying, rental equipment for weed management, weed identification, and education and outreach programs. The Weed District manages county right-of-way and some highway/roadway right-of-way areas in the county by mowing and spraying for weeds. They work with a variety of land owners including public lands (Flathead National Forest, DNRC, USFWS, and FWP) to control and prevent the spread of noxious weeds. One of the main priorities is stopping the spread of tansy ragwort with monitoring and working to eradicate populations that are found in the county (Flathead County Weed Management Plan).

FireSafe Flathead

The goal of FireSafe Flathead is to bring interested members of the community together, including individuals, agencies, organizations and neighborhoods, to work together to promote fire adapted communities. This group gets together once a month to discuss and share ideas, opportunities and resources related to wildfire protection. This group has been specifically helpful to the NRCS Kalispell FO in making partnerships and collaborations for future Targeted Implementation Plan ideas.

Northwest Montana Hazardous Fuels Program

The Northwest Montana Hazardous Fuels Program assists private landowners with creating defensible spaces around structures. The main goal of this program is to reduce hazardous fuels and increase defensible space. The grants that this program uses for funding these projects are through Firewise. NRCS communicates with the Northwest Montana Hazardous Fuels Program on landowners that seem to fit their program and vice versa. The program will be working in forestry TIP area in the future to work with landowners on creating safe spaces directly surrounding structures on their properties.

Section IV - Natural Resources Problems, Desired Outcomes & County Priorities

Flathead County has an abundance of identified natural resource issues. Some of the natural resource issues are being addressed currently by NRCS and partners as expressed above while others need more attention. Below are some of the most pressing natural resource issues in the county that the NRCS Kalispell FO along with partners hope to address in the future. The natural resource issues are listed in order of importance, which has been determined by the Flathead Local Working Group (LWG) along with NRCS and other conservation partners.

Forest Health

Given the landscape of Flathead County and the high percentage of forestland spread out amongst both the private and public entities, forest health is a top concern within the county and has been identified as the primary land use of concern historically by the LWG. Forest health carries with it a wide variety of topics and concerns including wildfire susceptibility, insect and disease pressures, tolerance of timber stands to climate change, species composition, wildlife habitat issues, and the fragmentation of forested areas through urban sprawl leading to increased WUI areas.

Historically, the Kalispell FO has conducted a lot of work involving forest stand improvement activities to address forest health in a number of different arenas. The majority of the efforts have focused on pre-commercial stands that have been generated either from older logging activities or in response to wildfire that have led to very dense stands. Many of the projects have also targeted insect/disease pressures with beetle activity in primarily fir trees, large scale outbreaks of dwarf mistletoe mostly in Douglas fir and some in western larch, and pockets of root rot being the primary targets.

Cropland

Some of the main resource concerns associated with cropland in the Flathead Valley are irrigation infrastructure and efficiency, soil health, and fragmentation and development increasing in rural areas. Irrigation is an important part of cropping in the Flathead Valley and much of the irrigation systems are outdated. Increasing the efficiency of irrigation in the county would help save water and could help to extend the irrigation season. One piece of the soil health puzzle that has been missing in Flathead County is incorporating livestock. The Kalispell FO would like to make soil health more of a priority and would like to bring more awareness to soil health practices such as using no-till or reduced till practices, the importance of having a living root in the soil and incorporating livestock in cropland. As the population of Flathead County increases so does the amount of development in rural areas which results in fragmentation of existing farmland into smaller units and conversion of land uses. Pressures to sell farmland will increase if the prices for agricultural goods decrease as they have in the past. Some agriculture producers might see the benefit of putting their land into an easement instead of selling, possibly an Agricultural Conservation Easement Program (ACEP). One of the current hurdles in getting more ACEP-ALE's put on the ground is finding the non-federal match. The two main ALE partners, Flathead Land Trust and the Montana Land Reliance, both take quite a while to raise the match required to close on an ALE easement. An Open Space Bond is currently being worked on by select partners in the county to try and get it onto a ballot in order to provide a steady and consistent funding source to provide the required match to close on more ALE's.

Water

A plethora of high mountain lakes, reservoirs, lakes and streams support abundant fish populations. However, quality of habitat has been degraded by development activities. Water diversion structures block access to spawning grounds over much of the original ranges of bull trout and cutthroat trout. Irrigation return flows adversely affect streams in the county. Many streams are dewatered each year due to irrigation uses. Numerous opportunities exist to improve water quality and overall aquatic habitat within Flathead County. Some of the main water resource concerns that could be addressed in Flathead County include floodplain connectivity, streambank integrity, and improvement of riparian buffers.

Noxious Weeds

Noxious weeds are an important natural resource issue to be addressed throughout the country. Locally there is an abundance of noxious weed species which can outcompete native vegetation and reduce the economic value of land. Noxious weeds can also alter habitats making them unsuitable for native species that rely on a specific habitat type. Partners of the NRCS are working to stop the spread and prevent new invasions of noxious weeds. The NRCS Kalispell FO can help in these efforts by contracting weed management including incorporating weed management into future TIPs in the county in addition to being a technical resource for community members.

Pollinators

Pollinators have been a focus in the conservation world nationwide as awareness of their decline due to disease and loss of habitat has been in the spotlight. In addition, the public is becoming more aware of just how important pollinators are in the process of producing the food we eat. Flathead County has seen an increasing number of interested community members in establishing pollinator habitat on their property. Pollinator habitat that provides a variety of floral resources throughout the growing season and is widely available is important for keeping both native and non-native pollinators healthy and plentiful.

Currently the Kalispell FO has used the EQIP Honey Bee Pollinator Initiative along with technical assistance to service these customers and plans to continue using these methods to get more pollinator habitat on the ground in Flathead County. The Montana Department of Agriculture requires all apiaries to register and can serve as a great outreach tool for the Kalispell FO to use in the future if pollinator habitat becomes one of the main focuses for the county. The Montana Department of Agriculture has over 100 apiaries registered in Flathead County to date.

Small Diversified Farming

As Flathead County has seen an increase in population it has also seen an increase in fragmentation and subsequently smaller operations with more diverse crops than has been historically grown in the county. These diversified farms grow a variety of crops including fruits and vegetables that are often sold at farmers markets, local stores, and to restaurants. As the number of these types of farms increase, the Kalispell FO has seen more interest in the EQIP High Tunnel Initiative. It is expected that the interest in high tunnels for these types of farms will continue and the Kalispell FO plans to service these producers using this program for the time being.

Section V - Targeted Implementation Plans and Investment Portfolio

Ashley Lake Forest Health TIP

This future TIP application will target the landowners that surround Ashley Lake and make up the private land component of the headwaters to Ashley Creek. This TIP will focus on a combination of overall forest health through forest stand improvement, proper slash treatment, and noxious weed control while also addressing wildfire concerns through fuel breaks along driveways and roadways to help improve ingress/egress in the event of a wildfire.

Much of the networking and outreach have been conducted through the Ashley Lake Property Owners Association (ALPOA) to date and will continue to be a valuable tool moving forward. They have scheduled meetings throughout the year while also maintaining an active email account that information/updates can be sent through to interested land owners.

Due to large initial interest that has been garnered through both the ALPOA meetings and emails, this has the potential to be a very large TIP regarding acres of forest treated. As a result, this TIP will be planned for a 5-year lifespan. Some of this workload will have assistance from outside organizations such as DNRC, a retired forester, and an active forestry consultant who have either offered their services or already provide forest management plans on which to base our planned activities on those parcels already.

North Fork Forest Health TIP

There are multiple areas within the North Fork of the Flathead River that have been identified as areas of need of forestry assistance. Over the last decade or two, the North Fork region has experienced multiple, large-scale fires that have burned large swaths of private lands. These areas have grown back into dog-haired stands of almost pure lodgepole pine which are very susceptible to reburning or disease and insect pressures due to incredible stand densities. Management of this area presents a unique challenge due to the very narrow band of private lands comprising a majority of the valley floor but sandwiched between national forest to the west and Glacier National Park to the east. Fires in that area, especially in Glacier, are typically left to burn naturally unless they threaten structures so the risk of wildfires reaching private lands is elevated.

There is an active North Fork FireWise community that has been involved in helping to determine priority areas in which they would like to see work completed. At the moment there have been two areas identified as the top priorities and those are the Trail Creek area and the Red Meadows/Moose Creek area. These areas have forest stands in need of work being completed and also include a fair amount of residences, increasing the hazard potential.

There has already been some initial contacts made through NRCS as well as the Northwest Montana Hazardous Fuels program in identifying landowner interest in these areas to pursue a TIP.

Appendix

Appendix A. Animal Species of Concern in Flathead County Montana. Definitions of G Rank, S Rank, and FWP SWAP are listed below Appendix B. Source: Montana Field Guide.

Species_Subgroup	Scientific Name	Common Name	G-Rank	S_Rank	FWP_SWAP
Mammals (Mammalia)	<i>Corynorhinus townsendii</i>	Townsend's Big-eared Bat	G4	S3	SGCN3
Mammals (Mammalia)	<i>Gulo gulo</i>	Wolverine	G4	S3	SGCN3
Mammals (Mammalia)	<i>Lasiurus cinereus</i>	Hoary Bat	G3G4	S3	SGCN3
Mammals (Mammalia)	<i>Lynx canadensis</i>	Canada Lynx	G5	S3	SGCN3
Mammals (Mammalia)	<i>Myotis lucifugus</i>	Little Brown Myotis	G3	S3	SGCN3
Mammals (Mammalia)	<i>Myotis thysanodes</i>	Fringed Myotis	G4	S3	SGCN3
Mammals (Mammalia)	<i>Pekania pennant</i>	Fisher	G5	S3	SGCN3
Mammals (Mammalia)	<i>Sorex hoyi</i>	Pygmy Shrew	G5	S3	SGCN3
Mammals (Mammalia)	<i>Synaptomys borealis</i>	Northern Bog Lemming	G5	S2	SGCN3, SGIN
Mammals (Mammalia)	<i>Ursus arctos</i>	Grizzly Bear	G4	S2S3	SGCN2-3
Birds (Aves)	<i>Accipiter gentilis</i>	Northern Goshawk	G5	S3	SGCN3
Birds (Aves)	<i>Ammodramus leconteii</i>	LeConte's Sparrow	G5	S3B	SGCN3
Birds (Aves)	<i>Aquila chrysaetos</i>	Golden Eagle	G5	S3	SGCN3
Birds (Aves)	<i>Ardea herodias</i>	Great Blue Heron	G5	S3	SGCN3
Birds (Aves)	<i>Botaurus lentiginosus</i>	American Bittern	G5	S3B	SGCN3
Birds (Aves)	<i>Catharus fuscescens</i>	Veery	G5	S3B	SGCN3
Birds (Aves)	<i>Certhia americana</i>	Brown Creeper	G5	S3	SGCN3
Birds (Aves)	<i>Chlidonias niger</i>	Black Tern	G4G5	S3B	SGCN3
Birds (Aves)	<i>Coccothraustes vespertinus</i>	Evening Grosbeak	G5	S3	SGCN3
Birds (Aves)	<i>Cygnus buccinator</i>	Trumpeter Swan	G4	S3	SGCN3
Birds (Aves)	<i>Cypseloides niger</i>	Black Swift	G4	S1B	SGCN1, SGIN
Birds (Aves)	<i>Dolichonyx oryzivorus</i>	Bobolink	G5	S3B	SGCN3
Birds (Aves)	<i>Dryocopus pileatus</i>	Pileated Woodpecker	G5	S3	SGCN3
Birds (Aves)	<i>Falco peregrinus</i>	Peregrin Falcon	G4	S3	SGCN3
Birds (Aves)	<i>Gavia immer</i>	Common Loon	G5	S3	SGCN3
Birds (Aves)	<i>Haemorhous cassinii</i>	Cassin's Finch	G5	S3	SGCN3
Birds (Aves)	<i>Histrionicus histrionicus</i>	Harlequin Duck	G4	S2B	SGCN2
Birds (Aves)	<i>Ixoreus naevius</i>	Varied Thrush	G5	S3B	SGCN3
Birds (Aves)	<i>Lagopus leucura</i>	White-tailed Ptarmigan	G5	S3	SGCN3, SGIN
Birds (Aves)	<i>Leucosticte tephrocotis</i>	Gray-crowned Rosy-Finch	G5	S2B, S5N	SGCN3, SGIN
Birds (Aves)	<i>Melanerpes lewis</i>	Lewis' Woodpecker	G4	S2B	SGCN2
Birds (Aves)	<i>Nucifraga colimbiana</i>	Clark's Nutcracker	G5	S3	SGCN3
Birds (Aves)	<i>Numenius americanus</i>	Long-billed Curlew	G5	S3B	SGCN3
Birds (Aves)	<i>Picoides arcticus</i>	Black-backed Woodpecker	G5	S3	SGCN3
Birds (Aves)	<i>Podiceps auratus</i>	Horned Grebe	G5	S3B	SGCN3
Birds (Aves)	<i>Poecile hudsonicus</i>	Boreal Chickadee	G5	S3	SGCN3
Birds (Aves)	<i>Psiloscops flammeolus</i>	Flammulated Owl	G4	S3B	SGCN3
Birds (Aves)	<i>Spizella breweri</i>	Brewer's Sparrow	G5	S3	SGCN3
Birds (Aves)	<i>Sterna hirundo</i>	Common Tern	G5	S3B	SGCN3
Birds (Aves)	<i>Strix nebulosi</i>	Great Gray Owl	G5	S3	SGCN3, SGIN
Birds (Aves)	<i>Surnia ulula</i>	Northern Hawk Owl	G5	S3	SGCN3, SGIN
Birds (Aves)	<i>Troglodytes pacificus</i>	Pacific Wren	G5	S3	SGCN3
Reptiles (Reptilia)	<i>Elgaria coerulea</i>	Northern Alligator Lizard	G5	S3	SGCN3, SGIN
Reptiles (Reptilia)	<i>Plestiodon skiltonianus</i>	Western Skink	G5	S3	SGCN3, SGIN
Amphibians (Amphibia)	<i>Anaxyrus boreas</i>	Western Toad	G4	S2	SGCN2
Amphibians (Amphibia)	<i>Lithobates pipiens</i>	Northern Leopard Frog	G5	S1, S4	SGCN1
Fish (Actinopterygii)	<i>Cottus rhotheus</i>	Torrent Sculpin	G5	S3	SGCN3
Fish (Actinopterygii)	<i>Oncorhynchus clarkia lewisi</i>	Westslope Cutthroat Trout	G5T4	S2	SGCN2
Fish (Actinopterygii)	<i>Oncorhynchus mykiss gairdneri</i>	Columbia River Redband Trout	G5T4	S1	SGCN1
Fish (Actinopterygii)	<i>Prosopium coulteri</i>	Pygmy Whitefish	G5	S3	SGCN3, SGIN
Fish (Actinopterygii)	<i>Salvelinus confluentus</i>	Bull Trout	G5	S2	SGCN2
Invertebrates - Insects	<i>Euphydryas gillettii</i>	Gillette's Checkerspot	G3	S2	-
Invertebrates - Insects	<i>Rhyacophila ebrina</i>	A Rhyacophilan Caddisfly	G2G3	S1	-

Appendix B. Plant Species of Concern in Flathead County Montana. Definitions of G Rank, S Rank, and FWP SWAP are listed below. Source: Montana Field Guide.

Species_Subgroup	Scientific Name	Common Name	G Rank	S Rank
Ferns and Fern Allies (Pteridophyta)	<i>Asplenium trichomanes-ramosum</i>	Limestone Maidenhair Spleenwort	G5	S3
Ferns and Fern Allies (Pteridophyta)	<i>Botrychium sp. (SOC)</i>	Moonworts (SOC)	G1G3	S1S3
Ferns and Fern Allies (Pteridophyta)	<i>Dryopteris cristata</i>	Crested Shieldfern	G5	S3
Ferns and Fern Allies (Pteridophyta)	<i>Equisetum palustre</i>	Marsh Horsetail	G5	S3
Ferns and Fern Allies (Pteridophyta)	<i>Equisetum pretense</i>	Meadow Horsetail	G5	S2
Ferns and Fern Allies (Pteridophyta)	<i>Isoetes echinospora</i>	Spiny-spore Quillwort	G5	S3
Ferns and Fern Allies (Pteridophyta)	<i>Isoetes howellii</i>	Howell's Quillwort	G4G5	S3
Ferns and Fern Allies (Pteridophyta)	<i>Isoetes occidentalis</i>	Western Quillwort	G4G5	S1
Ferns and Fern Allies (Pteridophyta)	<i>Lycopodium dendroideum</i>	Treelike Clubmoss	G5	S2
Ferns and Fern Allies (Pteridophyta)	<i>Lycopodium inundatum</i>	Northern Bog Clubmoss	G5	S2
Ferns and Fern Allies (Pteridophyta)	<i>Lycopodium lagopus</i>	Running-pine	G5	S2
Ferns and Fern Allies (Pteridophyta)	<i>Ophioglossum pusillum</i>	Adder's Tongue	G5	S3
Ferns and Fern Allies (Pteridophyta)	<i>Phegopteris connectilis</i>	Northern Beechfern	G5	S2S3
Ferns and Fern Allies (Pteridophyta)	<i>Polystichum kruckebergii</i>	Kruckeberg's Swordfern	G4	S2S3
Gymnosperm (Conifers)	<i>Pinus albicaulis</i>	Whitebark Pine	G3?	S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Bidens beckii</i>	Beck Water-marigold	G5	S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Brasenia schreberi</i>	Watershield	G5	S1S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Cardamine oligosperma var. kamtschatica</i>	Few-seeded Bittercress	G5T5	S2?
Flowering Plants - Dicots (Magnoliopsida)	<i>Cardamine rupicola</i>	Cliff Toothwort	G3	S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Castilleja cervine</i>	Deer Indian Paintbrush	G4	SH
Flowering Plants - Dicots (Magnoliopsida)	<i>Castilleja cervine</i>	Coville Indian Paintbrush	G3G4	S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Delphinium burkei</i>	Meadow Larkspur	G4	S1S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Corydalis sempervirens</i>	Pale Corydalis	G5	S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Delphinium depauperatum</i>	Slim Larkspur	G5	S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Draba densifolia</i>	Dense-leaf Draba	G5	S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Draba macounii</i>	Macoun's Draba	G5	S2S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Drosera anglica</i>	English Sundew	G5	S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Drosera linearis</i>	Slenderleaf Sundew	G4G5	S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Erigeron lackschewitzii</i>	Lackschewitz' Fleabane	G3	S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Gentiana glauca</i>	Glaucous Gentian	G5	S2S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Gratiola ebracteata</i>	Bractless Hedge-hyssop	G4	S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Hornungia procumbens</i>	Hutchinsia	G5	S1S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Idaho scapigera</i>	Scalegod	G5	S1S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Impatiens aurella</i>	Pale-yellow Jewel-weed	G4	S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Lathyrus bijugatus</i>	Latah Tule Pea	G4	S2S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Lobelia kalmia</i>	Kalm's Lobelia	G5	S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Mimulus ampliatus</i>	Stalk-leaved Monkeyflower	G3	S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Mimulus brevisflorus</i>	Short-flowered Monkeyflower	G4	S2S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Mimulus floribundus</i>	Floriferous Monkeyflower	G5	SH
Flowering Plants - Dicots (Magnoliopsida)	<i>Nymphaea leibergii</i>	Pygmy Water-lily	G5	S1
Flowering Plants - Dicots (Magnoliopsida)	<i>Papaver pygmaeum</i>	Alpine Glacier Poppy	G3	S2S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Petasites frigidus var. frigidus</i>	Arctic Sweet Coltsfoot	G5T5	S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Physaria saximontana var. dentata</i>	Rocky Mountain Twinpod	G3T3	S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Potentilla hyparctica</i>	Low Arctic Cinquefoil	G4G5	S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Potentilla nivea var. pentaphylla</i>	Five-leaf Cinquefoil	G5T4	S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Ranunculus grayi</i>	Arctic Buttercu	G4G5	S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Ranunculus orthorhynchus</i>	Straightbeak Buttercup	G5	S1S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Ranunculus pedatifidus</i>	Northern Buttercup	G5	S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Rubus arcticus</i>	Nagoonberry	G5	S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Saussurea densa</i>	Dwarf Saw-wort	G4Q	S2S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Senecio hydrophilus</i>	Alkali-marsh Ragwort	G5	S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Silene spaldingii</i>	Spalding's Catchfly	G2	S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Synthyris canbyi</i>	Mission Mountains Kittenails	G2G3	S2S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Townsendia condensate</i>	Cushion Townsend-daisy	G4	S1S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Utricularia intermedia</i>	Flatleaf Bladderwort	G5	S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Vaccinium myrtilloides</i>	Velvetleaf Huckleberry	G5	S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Acorus americanus</i>	Sweetflag	G5	S1S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Allium geyeri var. geyeri</i>	Geyer's Onion	G4G5T4	S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Amerorchis rotundifolia</i>	Round-leaved Orchis	G5	S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Carex amplifolia</i>	Big-leaf Sedge	G4	S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Carex chordorrhiza</i>	Creeping Sedge	G5	S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Carex comosa</i>	Bristly Sedge	G5	S1S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Carex glacialis</i>	Alpine Sedge	G5	S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Carex plectocarpa</i>	Goose-grass Sedge	G3	S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Carex prairea</i>	Prairie Sedge	G5	S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Carex rostrate</i>	Glaucus Beaked Sedge	G5	S2S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Carex sychnocephala</i>	Many-headed Sedge	G5	S1S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Carex tenuiflora</i>	Thin-flowered Sedge	G5	S2
Flowering Plants - Dicots (Magnoliopsida)	<i>Cypripedium passerinum</i>	Sparrow's-egg Lady's-slipper	G5	S2S3
Flowering Plants - Dicots (Magnoliopsida)	<i>Dichanthelium acuminatum</i>	Panic Grass	G5	S2S3

Definitions:

Rank			Definition
G1	S1	SGCN1	At high risk because of extremely limited and/or rapidly declining population numbers, range and/or habitat, making it highly vulnerable to global extinction or extirpation in the state.
G2	S2	SGCN2	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.
G3	S3	SGCN3	Potentially at risk because of limited and/or declining numbers, range and/or habitat, even though it may be abundant in some areas.
G4	S4		Apparently secure, though it may be quite rare in parts of its range, and/or suspected to be declining.
G5	S5		Common, widespread, and abundant (although it may be rare in parts of its range). Not vulnerable in most of its range.
GX	SX		Presumed Extinct or Extirpated - Species is believed to be extinct throughout its range or extirpated in Montana. Not located despite intensive searches of historical sites and other appropriate habitat, and small likelihood that it will ever be rediscovered.
GH	SH		Historical, known only from records usually 40 or more years old; may be rediscovered.
GNR	SNR		Not Ranked as of yet.
GU	SU		Unrankable - Species currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
GNA	SNA		A conservation status rank is not applicable because the species or ecosystem is not suitable target for conservation activities as a result of being: 1) not confidently present in the state; 2) non-native or introduced; 3) a long distance migrant with accidental or irregular stopovers; or 4) a hybrid without conservation value.

Combination or Range Ranks

G#G# Indicates a range of uncertainty about the status of the species (e.g., *G1G3* = Global Rank ranges between *G1* and *G3*).
S#S#

S#, S# Indicates that populations in different geographic portions of the species' range in Montana have a different conservation status (e.g., *S1* west of the *Continental Divide* and *S4* east of the *Continental Divide*).

Sub-rank

T# Rank of a subspecies or variety. Appended to the global rank of the full species, e.g. *G4T3* where the G-rank reflects the global status of the entire species and the T-rank reflects the global status of just the subspecies.

Qualifiers

Q **Questionable taxonomy** that may reduce conservation priority-Distinctiveness of this entity as a taxon at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon in another taxon, with the resulting taxon having a lower-priority (numerically higher) conservation status rank. Appended to the global rank, e.g. *G3Q*

? **Inexact Numeric Rank** - Denotes uncertainty; inexactness.

HYB **Hybrid** - Entity not ranked because it represents an interspecific hybrid and not a species.

C **Captive or Cultivated Only** - Species at present exists only in captivity or cultivation, or as a reintroduced population not yet established.

A **Accidental** - Species is accidental or casual in Montana, in other words, infrequent and outside usual range. Includes species (usually birds or butterflies) recorded once or only a few times at a location. A few of these species may have bred on the few occasions they were recorded.

SYN **Synonym** - Species reported as occurring in Montana, but the Montana Natural Heritage Program does not recognize the taxon; therefore the species is not assigned a rank.

B **Breeding** - Rank refers to the breeding population of the species in Montana. Appended to the state rank, e.g. *S2B, S5N* = At risk during breeding season, but common in the winter

N **Nonbreeding** - Rank refers to the non-breeding population of the species in Montana. Appended to the state rank, e.g. *S5B, S2N* = Common during breeding season, but at risk in the winter

M **Migratory** - Species occurs in Montana only during migration.

SWAP – State Wildlife Action Plan from FWP

SGIN – Species of Greatest Inventory Need; Species of Concern or Potential Species of Concern and they lack, or have outdated, statewide baseline surveys that can be used to assess their state conservation status.

Tables and definitions taken from the Montana Field Guide.

Flathead County Map

Legend

Incorporated Cities

- ★ Columbia Falls
- ★ Kalispell
- ★ Whitefish

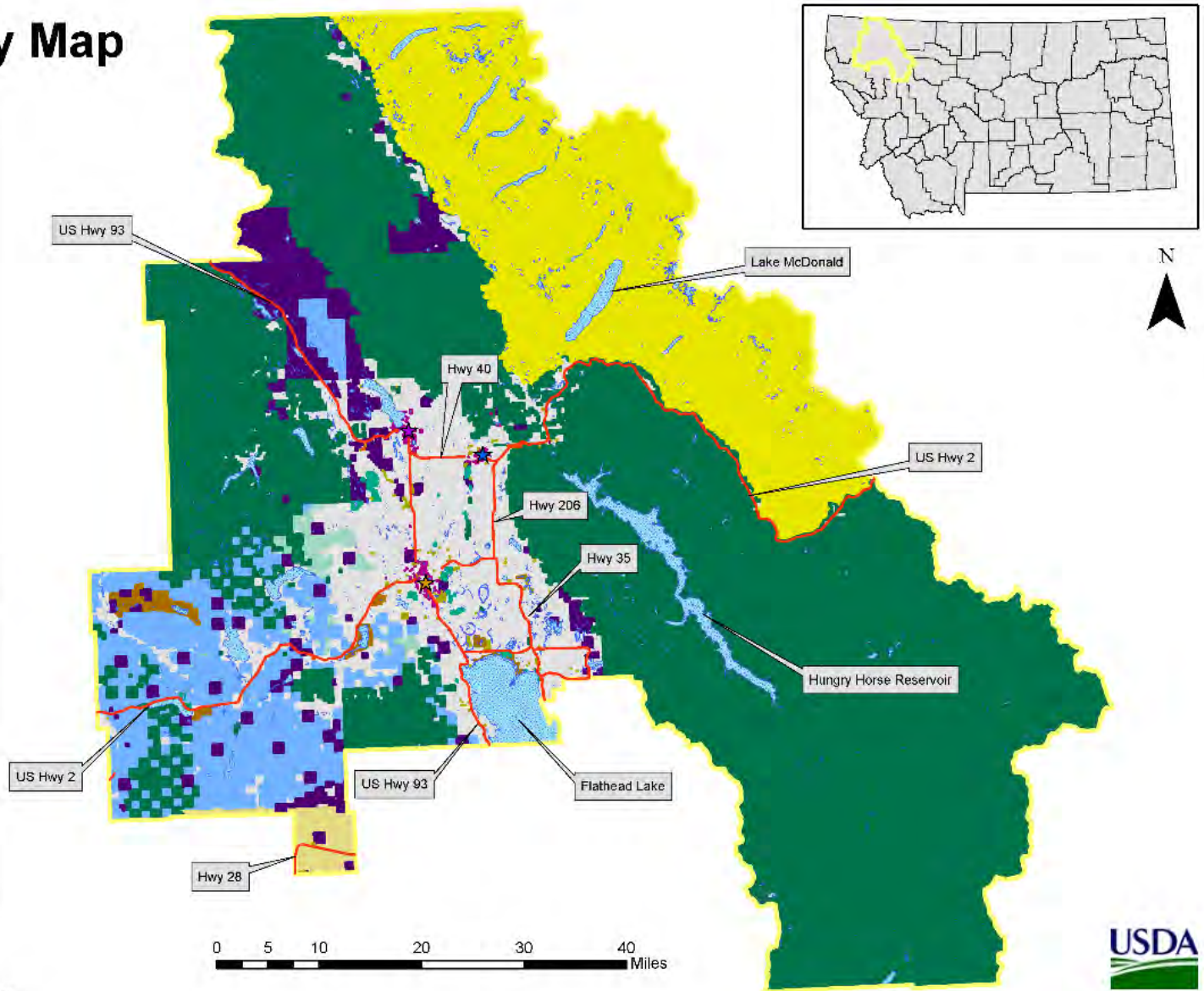
— Major Highways

□ Flathead County

□ Lakes

Ownership

- National Park Service
- City Government
- County Government
- Montana Dept of Transportation
- Montana Fish, Wildlife, and Parks
- Montana State Trust Lands
- State of Montana
- US Fish and Wildlife Service
- US Forest Service
- US Government
- Weyerhaeuser
- Stoltze
- Flathead Reservation
- Private



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Sources

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