

Chouteau County

Long Range Plan

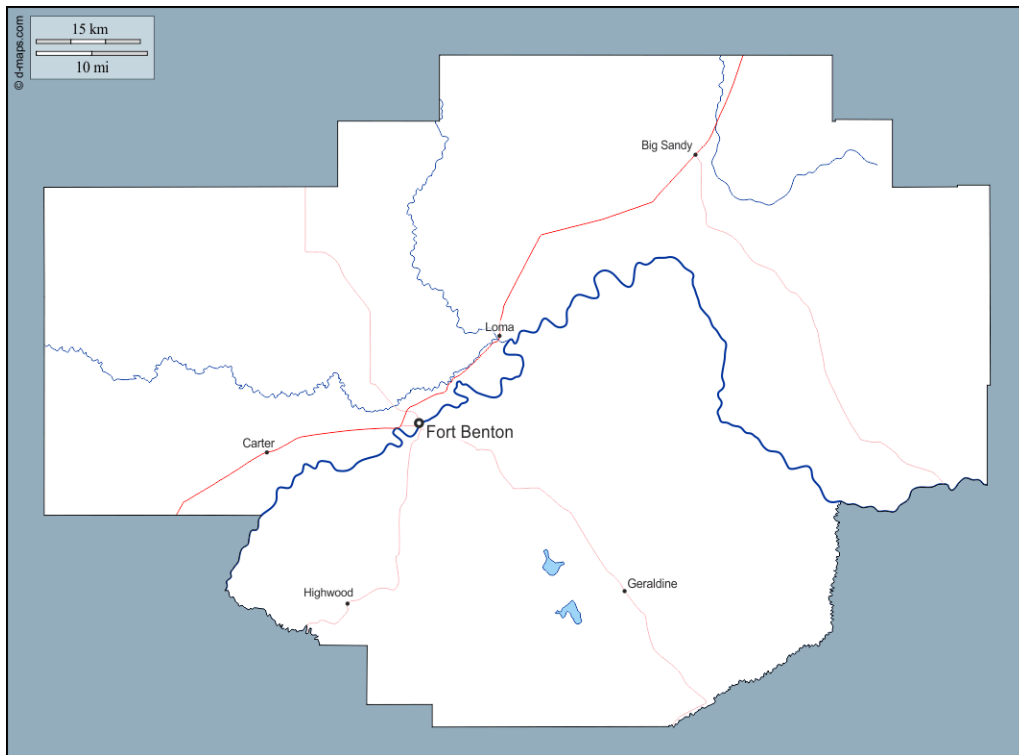


Figure 1. Chouteau County and population center locations.

NRCS PRINCIPLES & BACKGROUND

The Natural Resources Conservation Service: Who We Are

With the mission of “Helping People Help the Land,” the Natural Resources Conservation Service (NRCS) provides products and services that enable people to be good stewards of the Nation’s soil, water, and related natural resources on agricultural lands. With our help, people are better able to conserve, maintain and improve their natural resources. Because of our technical and financial assistance, land managers and communities take a comprehensive approach to the use and protection of natural resources in rural, suburban, urban, and developing areas.

Our guiding principles are service, partnership, and technical excellence.

Since 1935, the Natural Resources Conservation Service (originally the Soil Conservation Service) has provided leadership in a partnership effort to help America's private land owners and managers conserve their soil, water, and other natural resources. NRCS employees provide technical assistance based on science that is suited to a customer's specific needs. We provide financial assistance for many conservation activities. Participation in our programs is voluntary. Our Conservation Technical Assistance (CTA) program provides voluntary conservation technical assistance to land-users, communities, units of state and local government, and other Federal agencies in planning and implementing conservation systems. We reach out to all segments of the agricultural community, including historically underserved (beginning farmers, limited resource and socially disadvantaged farmers and ranchers), to ensure that our programs and services are accessible to everyone. We also provide technical assistance to foreign governments and participate in international scientific and technical exchanges. We manage natural resource conservation programs that provide environmental, societal, financial, and technical benefits. Our science and technology activities provide technical expertise in such areas as animal husbandry and clean water, ecological sciences, engineering, resource economics, and social sciences. We provide expertise in soil science and leadership for soil surveys and for the National Resources Inventory, which assesses natural resource conditions and trends in the United States.

Montana Focused Conservation

Montana Focused Conservation is locally led. NRCS, Chouteau County Conservation District, and Big Sandy Conservation District, with the help of additional partners, will convene a local working group to gather input from farmers, ranchers, conservation partners and other members of the community to develop a vision for conservation in Chouteau County. This focused conservation will be “Partner-Centric,” meaning that NRCS will be working with local, state, federal, and tribal partners along with nongovernmental organizations to strategically focus agency investments on the highest-priority resource needs in Chouteau County. By collaborating with partners, NRCS will be able to leverage funding sources from other groups to make the most effective use of limited federal conservation dollars. Leveraging funds increases the total conservation investment and ensures that conservation is developed to address a resource concern. By focusing and targeting conservation projects to specific

areas, NRCS and partners will be able to invest time and funds more efficiently. This will help landowners achieve clearly identified natural resource goals on a landscape scale. These projects will also be focused on results. By emphasizing planning, NRCS staff will be able to work with local partners to set measurable goals and to track and achieve meaningful conservation results.

Introduction

VISION: Target and focus efficient management to shovel ready projects that address resource concerns (through/with/by/from) locally led objectives and partnerships.

MISSION: Develop and employ strategies that target, enhance and promote resource health and strength.

Mission Tagline: Locally Led Focused Conservation.

The purpose of the long-range plan is to concentrate NRCS's time and money in a more strategic and efficient manner. To take steps to solve resource concerns in Chouteau County while partnering with other entities to leverage dollars or any other assistance available to achieve clearly defined natural resource goals. This plan will have a five-year timeframe and the plan can be adjusted as needed during this timeframe as more is learned about conservation areas of interest from partner collaboration.

Partners:

NRCS, Chouteau County Conservation District, Big Sandy Conservation, Ducks Unlimited, Pheasants Forever, DNRC, DEQ, Fish, Wildlife & Parks, BLM, USDA Forest Service, FSA, Irrigation Districts and Missouri River Conservation Districts Council. More to come as focused conservation is developed.

Chouteau County Information

The Montana Territorial Legislature established Chouteau County in February 1865 and the county seat of Fort Benton is the oldest inhabited town in the state. It is the ninth largest county in Montana, encompassing 3,936 square miles and is located in the north-central portion about 100 miles from the Canadian border. The county is home to the Chippewa-Cree tribe on the Rocky Boys Indian reservation in the Bear's Paw Mountains to the northeast and contains part of the Lewis and Clark National Forest in the Highwood Mountains to the south.

POPULATION

The population of Chouteau County is 5,738 and is classified as entirely rural. There reportedly has been a decline in population since 1960 and an increase in proportion of senior citizens in the community due to increased longevity and influx of retirees. Big Sandy, Fort Benton and Geraldine are the populations centers (587, 1,451, 265 persons respectively) with smaller communities in Loma, Carter, Floweree, Highwood, Shonkin and Square Butte. Census data indicates that largest employment by industry is in farming (26%), followed by educational services (12%), with health care, retail, food services and construction comprising the bulk of the other fields. Median household income is \$39,577, which is less than the median annual income of \$61,937 across the entire United States.

Natural Resource Inventory

CLIMATE

Chouteau County generally has pleasant summers with cool nights and warm sunny days with little weather that is very hot or humid. The summer temperatures reach 85 degrees F in July (2 in 10 years reaches 100) with nighttime temperatures averaging about 60 degrees F. Early spring and fall have periods of strong winds that last for days at a time. Winters are not terribly cold for this latitude largely as a result of warm chinook winds that produce sharp temperature increases and melt snow cover. As a result, the snow seldom accumulates to any great depth and is bare or nearly so most of the winter except in the mountains and foothills. Artic cold invasions may plummet temperatures to less than -40 degrees F but generally for only a week or two at a time. Although this area is considered semi-arid about 70% of the annual total precipitation falls during the April to September growing season. Most summer rainfall occurs as showers or thunderstorms (occasionally with hail) but steady rains may occur during the spring and early summer. Due to the large variations in elevation and topography across the county precipitation amounts vary widely. The majority of the county is in a 10-14" zone, 16-18" in the southern portions of the county, and wetter yet in the foothills and mountains. The amount and timing of moisture combined with long day lengths, warm days and nights makes the climate very favorable for dryland farming.

TOPOGRAPHY

The terrain is primarily gently rolling plains that are dissected in the central portion by the eastward flowing Missouri River. This river is the final destination for most of the surface water flow. The land is a complex of uplands, valleys, coulees, and broad plains. Surface elevations range from approximately 2,450' to over 7,500 feet above sea level. The glaciated uplands have an average elevation of 2,700' – 3,600' with relatively low relief. Higher elevation foothills are encountered when approaching the isolated mountain ranges of the Bear's Paw and Highwood's sporting maximum 6,260' and 7,625' peaks respectively. The isolated buttes of Goosebill, Square, Round and the Knees rise above the surrounding plains providing directional landmarks for the county and served as focal points of past and present communities.

SOILS

The northern portion of the county is the southern end of the most recent continental glaciation. The southern portion is mainly of sedimentary origin with some volcanic influence. Eight general soil associations are mapped in the county according to their landform and genesis. These associations define the soils by the following three characteristics: (1) precipitation (semi-arid or sub-humid), (2) topographic location (including on valley sides, floodplains and fans); and (3) topographic position (glaciated plains; terraces and fans; sedimentary uplands; foothills and mountains).

SURFACE WATER RESOURCES

The primary surface water sources are the Missouri, Marias, and Teton Rivers. Streams of secondary importance are Highwood, Shonkin, Big Sandy and Arrow Creek. Surface water supplies are limited with some streams drying up during the summer. This requires hauling of potable water in areas not serviced

by community water lines or municipal systems. The dewatering of the Teton River on nearly an annual basis has been identified as a concern by a multi-county watershed group. There are no public reservoirs in the county though large dams and ponds have been constructed for private purposes. A rise in nitrate levels and subsequent salinization has resulted in many farm ponds being breached as the water supply was rendered unusable. An impervious layer of saline marine shales near the ground surface at Geraldine have created a drinking water dilemma for that community. Several proposals have been made to divert county surface waters to other watersheds but no final plans have been presented.

GROUNDWATER RESOURCES

Groundwater in the Chouteau County area is obtained from three different aquifers: sandstone bedrock, glacial outwash, and river alluvium. In general, the sandstone bedrock aquifers are several hundred to several thousand feet below the surface and often contain artesian water in the southwestern portion of the county. Much of the groundwater is highly mineralized and not suitable for human consumption. Groundwater can also be developed at springs, which are numerous though generally low volume. Springs and unconsolidated aquifers of glacial and alluvial gravels commonly produce the best quality water, however wells in shallow aquifers are subject to contamination.

ECONOMIC DEPOSITS

There are five producing gas fields in the Bear's Paw region, one of which also produces crude oil. While Chouteau County is not a significant oil and gas producing county, the largest gas field in Montana lies in the adjacent counties of Hill and Blaine. Minor amounts of coal, bentonite and lignite are present. The deepest coal beds are 2.5 feet thick in limited size and areal extent. Terrace alluvium and glaciofluvial gravel deposits are mined for sand and gravel.

TRANSPORTATION

The first steamboat reached Fort Benton from St. Louis via the Missouri River in 1860. River traffic faded when the railroad arrived and cattle were herded along the Chiselm Trail. Now the railroad has declined to noncontiguous spurs and are freight-ways transporting grain out of the country through elevators at Carter, Fort Benton, Big Sandy, and the privately owned CMR Railroad at Geraldine. There are 83 miles of paved roads, 2,367 miles of unpaved roads, two ferries across the Missouri River, and 18 bridges on various streams. Three paved airports and numerous country airstrips are used by spray pilots and travelers alike with commercial air service available 45 miles south at Great Falls. Daily north and south bound bus service have scheduled stops in several county communities.

LAND OWNERSHIP

The vast majority of land ownership in the county is private, about 81%. The second largest owner is the State of Montana with 10.5%, with the federal government controlling another 6.4%. The following table is an estimate by the NRCS of land ownership in the county:

Table 1 total acres of private, state and federal land.

Landowner	Acres
Private	2,085,412
State	267,698
Rocky Boy Reservation	36,096
Non-federal total	2,389,206
BLM	128,703
Forest Service	31,979
BOR, USFWS, etc	2,092
Federal total	162,774
Water surface area	6,081
Chouteau County Total	2,558,061

CLASSIFICATION OF LAND BY USE

The following table estimates the predominate land use of county non-federal acreage.

Table 2 land use, acres and percentage in Chouteau County.

Land use	Acres	% of total
Range	829,849	40.4
Dry crop	1,297,630	54.4
Irrigated crop	10,400	.4
Forest	19,484	.8
Pasture	30,000	1.3
Dry hayland	23,700	1.0
Irrigated hayland	5,300	.2
Urban	1,739	.1
Rural roads	35,383	1.4

With the assumption that all the rangeland is used for livestock grazing, 97.5% of the nonfederal land use in Chouteau County is agricultural.

AGRICULTURE

According to 2017 agricultural statistics, Montana ranks second in the nation for land in farm and ranches and in barley production while ranking third for wheat production. Among Montana's 56 counties Chouteau County is the leading producer of wheat, ranks fourth for durum, fifth for barley, and falls to 35th in all hay production. Livestock production in Chouteau County is also important, ranking 29th for cattle, 12th for swine, and 36th for sheep and lambs. The average size farm increased 8% between 2012 and 2017 to 3,271 acres resulting in a decrease in the actual number of farms from 774 to 633 in the same time period.

CROPLAND

Dryland crop production is the leading land use in Chouteau County. Small grains are the most widely planted crops consisting of both winter and spring wheat and barley. High protein wheat is the norm for the county and coveted in national and global grain trade. The barley is predominantly for the feed market though favorable growing conditions occasionally produce malting quality grain. Secondary crops are oats, sunflower, safflower, and buckwheat. There are some specialty market growers and organic farmers which include peas, lentils, beans and specialty grains in their rotations. Any of the aforementioned crops may be irrigated but acreage is very limited. A total of 657,090 cropland acres were reported harvested in 2017.

According to the 2017 agriculture census, 57% of farms practice No till, 8% Reduced Till, 6% Intensive till and 3% cover crop. Due to the semi-arid nature of the county the predominate cropping system used is crop-fallow to store often limiting moisture in the fallowed ground for next year's crop. Many producers use flexible cropping to plant two of three years, often with the use of a moisture probe to determine soil water storage. Rotations in the wetter portions of the county are often continuous cropping. Continuous cropping in conjunction with planting alfalfa and salt tolerant species is used to combat saline seeps, especially in the Highwood Bench and Geraldine areas where excess soil moisture has surfaced after contact with impervious saline shales. Both the recharge and discharge areas are identified in cropland and treatment designed appropriately. The majority of the cropland in Chouteau County has the potential to experience wind erosion and conservation practices, particularly residue management, have been implemented on those acres. With the exception of unusual spring run-off events or rare heavy storms water erosion is uncommon.

A small percentage of the cropland are irrigated due to the location of the water sources to the irrigable land. In general, there is a minimum of several hundred feet lift to the arable land and the high inherent productivity of the land for small grains has so far discouraged investment in irrigation. Sixteen projects on 14,199 acres were identified during the DNRC water reservation process so there is good potential for irrigation use to increase in the future. Current irrigation is mostly wheel line or center pivot. Border dike systems exist but are rare. Canals are limited to direct delivery points. The extent of irrigation water management implementation is unknown.

PASTURE AND HAYLAND

The total estimate of pasture and hayland is 48,200 acres, including irrigated and dryland. It is difficult to separate the discussion of these resources because land that is predominantly grazed pasture may be hayed when conditions are especially favorable and hayland is grazed in unfavorable hay production years and frequently grazed following normal baling operations. Common pasture species are the cool season grasses of crested and pubescent wheatgrass, Russian wildrye, smooth brome, and occasionally native western wheatgrass. The most prevalent use of pastures is for standing feed during winter through calving until it's time to utilize native range and again when livestock are removed from the range. Few livestock operators rely solely on pasture as a grazing resource. Hayland is generally seeded to alfalfa or alfalfa-grass mix with other legumes incorporated as well. Most growers maximized moisture and protein levels by well timed cuttings. In favorable years two cuttings are possible, generally in June and August. Hay production is predominantly to meet winter livestock feeding needs of the grower although local and regional sales do occur.

Irrigation methods on pasture and hayland are primarily sprinklers. Proper hayland management is commonly practiced. Increased adoption of proper pasture management could improve resource conditions.

RANGELANDS

Native rangeland encompasses approximately 829,849 acres of private land and is second most extensive land use in Chouteau County. Additionally, a large percentage of the 162,774 acres of federal land are also rangeland. The prevalent parameters defining rangeland are that it exists where conditions were unsuitable for farming, as a general observation. Chouteau County and most of Montana is considered short-grass prairie, referring to the height of the native species. Range plant species are dictated by climate, soils and management. Our climate dictates a predominance of cool season species that break dormancy following snowmelt and have fast growth in the early spring to optimize their reproductive options in the rather short growing season. Key cool season species for livestock use and rangeland productivity include green needlegrass, and bluebunch, thickspike and western wheatgrasses on clayey sites with needle and thread and a warm season species, prairie sandreed, appearing on siltier sites. Later emergence of warm season species extends the grazing season and include such species as little bluestem, plains reedgrass and alkali sacaton. Productivity varies with precipitation zone, soil type and management. 1,000 to 1,800 lbs/ac of forage is a general estimate for range production. Range condition is predominantly fair and adoption of grazing systems and proper grazing use varies. Noxious weeds that pose a threat to county rangelands are leafy spurge, Canada thistle, and knapweed species. Most livestock operations in the county are cow-calf ventures. Herd size varies from simply home-use to several hundred pairs. Retention of steers and yearlings are dictated by the rancher's market strategies and herd building needs. Registered cattle and seed stock sales are becoming more common. Confinement areas are present on nearly all ranches for herd management, breeding and calving purposes but no commercial feedlots are present. Dairy cows are limited to home-use interests. High management levels are evident in implementing grazing systems, renovation, and weed control.

FORESTLAND

The Bear's Paw and Highwood Mountains are the locations of forestland in the county and are comprised of both private and public lands. A discussion of forestry is generally directed at timber harvest but presently the grazing resource is the primary land use. There have been private land logging operations in the Bear's Paw mountains in recent year evidenced by logs loaded on rail cars in Big Sandy. Montana state trust lands reports there has been very little logging on their Bear's Paw land. A small amount of post and poles have been harvested in the past on USFS land in the Highwood's. Logging has occurred on private lands in the Highwood's. Grazing and recreation are presently the primary land use on the federal forest lands. Twenty-one grazing permittees have cattle on five allotments in the Highwood's sometime between July 1 and October 15. Recreation opportunities in the forest include camping, hiking, fishing and hunting but off-road motorized vehicle use is not permitted in the entire Highwood Mountain range. Resource concerns currently identified on the forest land include timber management and harvest, access, road building, streamside management zones, protecting and improving riparian habitats, noxious weeds, and implementation of best management practices.

PLANT SPECIES OF CONCERN

The Montana Natural Heritage Program (MTNHP) Plant Species of Concern Report last updated on October 31, 2019 lists six plant species of concern for Chouteau County (Table X). The MTNHP Field Guide 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.

FISH AND WILDLIFE

Wildlife are plentiful in Chouteau County. The only big game species missing from the landscape since Lewis and Clark's journey are the grizzly bear, bison, and wolves. Chouteau County is near the western edge of the pronghorn antelope's range. White-tailed deer are another plentiful game species. Chouteau County is one of the highest harvest districts in Montana for mule deer, predominantly in the Highwood Mountains and their foothills. Other big game species include a herd of 400-500 elk in the Highwood Mountains and approximately 75 mountain goats on Square Butte, spilling over to Round Butte and the Highwood Mountains. The volcanic landforms provide important escape terrain for the goats. Rocky Mountain bighorn sheep can be found in the Missouri River Breaks near the PN Bridge with possible range into the Arrow Creek Breaks. Surveys show increasing numbers of mountain lions in the Highwood Mountains, with small numbers of black bears present there too. Furbearers including bobcats, mink, beaver and muskrat are found in suitable habitat, and foxes, coyotes, and badgers are ubiquitous.

Upland game birds are an important component of the wildlife resources. The sharp-tailed grouse population is possibly the strongest in the state, utilizing the native prairie in the foothills of the mountains. Pheasant hunting is popular as well in areas providing them the necessary shelter, cover and winter feed. Greater sage-grouse populations are small and are generally limited to the Arrow Creek Breaks. Non-native Hungarian partridges abound and turkeys are found in suitable riparian habitats. The most important resource issue facing wildlife is fragmentation of the native prairie landscape and conversion of native prairie to cropland.

Songbirds are abundant, probably due to CRP habitat. Resident birds of prey include a variety of hawks, owls, buteos and falcons. Golden and the bald eagles are frequently seen. Located on the edge of the Pacific flyway, migrating waterfowl use the area resources predominantly during spring and fall stop over periods. Shallow water areas are of particular importance to the waterfowl. A primary resource concern is maintaining healthy riparian areas that provide travel corridors for migratory, resident, and big game species.

Streams with significant fisheries in the county are divided into types associated with their location, either mountain or prairie streams. The mountain streams have highly productive trout fisheries with brook trout being the most abundant, followed by rainbow and brown trout. Westslope cutthroat trout are an identified species of concern and are present in tributary streams of Highwood Creek and Cottonwood Creek. There is considerable angler use of both Highwood and Shonkin Creeks with Highwood Creek identified as one of the most heavily fished streams in the entire Great Falls region. Identified resource concerns for the mountain streams are protecting the riparian areas, bank stabilization, and maintaining adequate instream flows.

Many of the prairie streams throughout the nation and in Montana have been significantly altered due to construction of large dams. The Missouri River reach in Chouteau County represents some of the best remaining warm water riverine habitat in the nation. Several fish species of concern are found in the reach. These species include paddlefish, blue sucker, sturgeon chub, and the federally listed pallid sturgeon. This fishery is especially diverse with a total of forty different species found. It is highly productive based on the sizes and numbers determined during sampling surveys. The Marias and Teton Rivers provide spawning habitat from the Missouri. Good resident populations of sauger, walleye, and channel catfish are present but impacted by dewatering of the Teton River. Resource concerns on the prairie streams include the need to maintain side channel habitats in the Missouri River and the need to maintain adequate stream flows on the Teton River.

Animal Species of Concern

The MTNHP Animal Species of Concern Report last updated on October 31, 2019 lists 57 animal species of concern for Chouteau County. The MTNHP Field Guide 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.

Federally Listed Species

The U.S. Fish and Wildlife Service (USFWS) Endangered, Threatened, Proposed and Candidate Species List dated December 12, 2019 identifies five federally listed species for Chouteau County.

- Pallid Sturgeon (*Scaphirhynchus albus*)—Endangered

The pallid sturgeon is a bottom dwelling, slow growing fish that feeds primarily on small fish and invertebrates from the river bottom. Adults have a flattened, shovel-shaped snout, a long slender tail and are armored with lengthwise rows of bony plates instead of scales. Pallid sturgeon can grow up to six feet long and weigh up to eighty pounds. (Montana Natural Heritage Program Montana Field Guide)

The pallid sturgeon is one of the rarest fishes in North America and are found only in portions of the Missouri and Mississippi River basins; only about 200 adults remain in the upper Missouri River. Pallid sturgeon use large, turbid rivers with sand and gravel bottoms. (Montana Natural Heritage Program Montana Field Guide)

- Canada Lynx (*Lynx canadensis*)—Threatened

The Canada lynx is a mid-sized cat with silver-gray to grayish-brown upperparts and a white belly and throat. Lynx have long legs, short black-tipped tails, and black tufts at the tips of their ears. The facial ruff is longest on either side of the snout and has black markings on these longest hairs. Large feet that are heavily furred help the lynx to travel in snow. (Montana Natural Heritage Program Montana Field Guide)

Canada lynx occur in subalpine forests in stands comprised of subalpine, lodgepole pine, Douglas-fir, grand fir, western larch, and hardwoods. They avoid large openings but often hunt along edges in areas of dense cover. Disturbances that create early successional stages such as fire, insect infestations, and timber harvest, provide foraging habitat for lynx by creating forage and cover for snowshoe hares, their primary prey in the winter. Den sites tend to be in mature or old-growth stands with a high density of logs. (Montana Natural Heritage Program Montana Field Guide)

- Piping Plover (*Charadrius melodus*)—Threatened

Piping plovers are small shorebirds distinguished by a single black band around their necks and very short yellow-to-orange bills with black tips. Piping plovers primarily select unvegetated sand or pebble beaches on shorelines or islands in freshwater and saline wetlands. Vegetation, if present at all, consists of sparse, scattered clumps. Open shorelines and sandbars of rivers and large reservoirs in the eastern and north-central portions of the state provide breeding habitat. In Montana, and throughout the species' range, nesting may occur on a variety of habitat types. If conditions are right, alkali wetlands, lakes, reservoirs, and rivers can all provide the essential features required for nesting. Sites with gravel substrate provide the most suitable sites for nesting. (Montana Natural Heritage Program Montana Field Guide)

- Red Knot (*Calidris canutus rufa*)—Threatened

The red knot is a medium-sized bulky sandpiper that exhibits distinctive reddish plumage during the breeding season. These birds migrate between their arctic tundra breeding grounds and marine winter habitat as far south as Tierra del Fuego. They are rarely observed at wetlands in Montana during migration in May or July through October. Migratory stopovers are most common at larger wetlands. (Montana Natural Heritage Program Montana Field Guide)

- Grizzly Bear (*Ursus arctos horribilis*)—Threatened

Grizzly bears have a massive head with a prominent nose, rounded inconspicuous ears, small eyes, short tail, and a large, powerful body. The facial profile is concave and there is a noticeable hump above the shoulders. Grizzly bears range widely in color and size. (Montana Natural Heritage Program Montana Field Guide)

In Montana, grizzly bears primarily use meadows, seeps, riparian zones, mixed shrub fields, closed timber, open timber, sidehill parks, snow chutes, and alpine slabrock habitats. Habitat use is highly variable between areas, seasons, local populations, and individuals. Historically, the grizzly bear was primarily a plains species occurring throughout most of eastern Montana. Grizzly bears are opportunistic omnivores that feed on a wide variety of food items. Their diet can include carrion, fish, large and small mammals, fruit and berries, insects, grasses, forbs, roots, and mushrooms. (Montana Natural Heritage Program Montana Field Guide)

Under the authority of the ESA, the USFWS listed the grizzly bear as a threatened species in the lower 48 states in 1975. There are six recovery ecosystems for grizzly bears; Chouteau County occurs in the Northern Continental Divide Ecosystem (NCDE).

AIR

Air quality is very good throughout Chouteau County. There are no industries that produce noticeable emissions though cropland stubble burning and far ranging forest fires occasionally cloud the air with smoke. Characteristically a light breeze prevents any air stagnation from occurring in low lying communities and there is no noticeable effect of home heating with wood. Extremely windy days increase dust levels from unpaved streets, the extensive gravel road systems in rural areas, and poorly protected dry cropland.

CULTURAL RESOURCES AND PARKS

Chouteau County sports a rich cultural heritage, due in part to the importance of the Missouri River in development of the northwest. In 1976, 149 miles of the river, from Fort Benton to the Fred Robinson Bridge, were designated Wild & Scenic. Thousands of people from around the world come to float the Missouri and stay in the riverside BLM campgrounds. Historic sites are abundant documenting former forts, camps, and trading posts. Native American cultural sites and artifacts are prevalent throughout the county. Big Sandy, Geraldine, and Fort Benton have instructive museums detailing the lore of the area. The Whoop-Up, Mullan and Cow Island historic trails can be located as well as Lewis and Clark campsites. Nearly thirty sites have been given National Historic status, including much of the town of Fort Benton, the Highwood Grain Elevator Historic District, and public and private building in Geraldine, Square Butte and Big Sandy. Scenic sites in the county include unusual rock formations along the Missouri River and the BLM administered Square Butte Natural Area. Rocks and minerals are displayed in a comprehensive museum in Loma. The Agricultural Museum of Northern Great Plains in Fort Benton displays restored buildings from Montana's homesteading period, hosts a group of preserved buffalo among other educational exhibits. All of the communities have outdoor park and recreation facilities. Recreational opportunities are available on US Forest Service land in the Highwood Mountains.

ANALYSIS OF CONSERVATION ACTIVITY

Local working group meetings held in five different locations throughout Chouteau County (Big Sandy, Fort Benton, Carter, Highwood and Geraldine) helped identify practices that have been popular and successfully installed through NRCS programs such as EQIP as well as CTA. They are as follows:

Windbreak, grassed waterways, livestock water (pipelines, reservoir development, spring developments and wells), grazing rotations, fences, soil health practices (crop rotations, cover crops, no till), nutrient management, bank erosion control, herbaceous weed control, diversions/drainage ditches, saline seep management.

NATURAL RESOURCE PROBLEMS

The Local Working Group meetings held in 2019 and 2020 prioritized the following resource concerns:

- 1). Soil Quality – This resource concern encompasses the majority of grass land and cropland resources within the county. There are issues with soil structure, compaction, ground cover, water infiltration, nutrient cycling, soil biological biomass/diversity, low pH, and organic matter loss. All of which relate to Soil Health. It is the single most important issue to agricultural sustainability and viability.
- 2). Soil Erosion – Erosion continues to be a symptom of marginal soil quality. Although no-till has significantly improved erosion as a concern over the last 30 years, improvements to soil quality are still needed to facilitate continued reduction to top soil losses which can carry organic and inorganic materials leading to reduced resource sustainability and other concerns such as water quality.
- 3.) Degraded Plant Condition – Many grass land plant communities display signs of reduced plant vigor, species composition, ground cover, and plant community structure from many decades of continuous or

season-long grazing. This has led to opportunities for invader species such as dense clubmoss, blue grama, noxious weeds, and cheatgrass to get established leading to reduced productivity and forage quality.

4.) Livestock Production Limitation (Inadequate livestock water) – This concern continues to be at the forefront of livestock operations in the county. Livestock are generally limited to existing surface sources which may have limited longevity and quality during the grazing season. Management of grazing land is hampered due to grazing strategies centered on water availability and location and not the forage resource.

5.) Water Quality – Sediment appears to be a significant driver in degrading water quality. All of the main rivers and streams within the county are affected as observed during runoff events. Sediment negatively impacts fish habitat, irrigation infrastructure and stream dynamics. A secondary issue is that some contributing tributaries are also carrying salts transported from saline seeps on cropland and salinized drainageways on grazing lands. Salt-laden sediment also gets trapped and released into surface impoundments leading to water quality issues for livestock and wildlife.

6.) Water Quantity – Water is a limiting factor to most all of the county's production agriculture, whether trying to find more or retain what is provided. Groundwater accessibility is highly variable or generally quite deep to reach as a source for livestock. Surface water development is difficult as well, as the cost is high and adequate locations with suitable soils and geology for construction are questionable. Many older impoundments have been breached over the years due to water quality issues with nitrates or salinity. Water infiltration across grass land and crop land systems is less than adequate due to soil quality factors.

7.) Fish and Wildlife Habitat – A large portion of the county is involved in crop production agriculture which limit habitat diversity for a number of wildlife species, especially upland big game and various bird species. Commodity prices influenced the conversion of large acreages of CRP land within the county during the last decade which provided significant habitat resources. Habitat loss as well as connectivity is a concern for meeting food, shelter and cover needs of wildlife.

8.) Air Quality – This resource concern is primarily related to dust particulates associated with wind erosion from cropland. Lack of adequate soil surface cover and degraded soil structure allow release of soil particles which become airborne causing potential issues with transportation safety and respiratory health.

9.) Inefficient Energy Use – This concern is related to mostly on-farm energy efficiency. Many farms have grain drying systems which may be older and subsequently less efficient, as well as other older equipment using combustible fuels. Upgrading as economic conditions allow would increase on-farm efficiency.

Additionally, the locally led meetings identified resource concerns or lesser priority but still of enough significance to be mentioned and addressed. They are as follows:

Noxious Weeds – Canada thistle, spotted knapweed, leafy spurge, white top.

Resistant Weeds – Kochia and Russian thistle

Nuisance weeds – Salsify

Heath Snail – affecting annual crop harvest in the Highwood area.

Wildlife conflicts – Mule deer, whitetail deer, Prairie dogs

Forest health – management of trees already killed by pine beetles to decrease fire fuel and increase forest grazing.

The above lists do not mean that all these resource concerns have been addressed throughout the county. Solving resource concerns is not a static approach and should not be addressed as such. In general, if there is an issue that needs to be addressed it will be done so by locally driven process. This Long-Range Plan is taking the approach to address resource concerns based off information received from the Local Working Group meetings.

Prioritization of Natural Resource Problems and Desired Outcomes

When setting goals to address the resource concerns the strategy of SMART will be used. The SMART strategy is as follows:

S= Specific

M= Measurable

A= Attainable

R= Realistic

T= Trackable over a specific time period

For Chouteau County the field office will deliver the following:

- Specific action to address the resource concern.
- A measurable amount to address that is feasible and financially responsible.
- Attainable within the timeframe of the objective 3-5 years.
- Realistic results and change from current condition to predicted condition.
- Trackable will be conducted by monitoring and follow up before, during and after plan is developed.

All resource concerns are important, however NRCS in Chouteau County does not have the means and capability to address every resource concern. Priority to resource concerns will be given if preliminary planning has been conducted to give a plan of action based off quantities for materials needed, timeframe, financial needs and partners involved. A preliminary plan is needed for NRCS to measure what the potential success and investment will be. This will also give NRCS a measure or a pulse on what producer is ready, willing and able to participate.

Targeted Implementation Plans and Investment Portfolio

The strategic plan for Implementation of Targeted Implementation Plans (TIP) is to host a landowners meeting every other year or on an as needed basis in each of the initial meeting areas. This will represent the Local Workgroup Meeting. In these meetings we will review what has been done, what is

currently being done and ask for suggestions to where our focus should be for the next project. Once a resource concern priority has been completed, we will discuss a new resource concern to be added.