A Long-Range Plan for Conservation Delivery in Treasure County, MT

Effective 2020-2024

A strategic plan for conservation implementation in Treasure County, MT that is updated annually to reflect the changing priorities and resource concerns of local natural resource managers and users.

Introduction

The Treasure County Natural Resources Conservation Service (NRCS) has developed a Long Rang Plan (LRP) for 2020-2024 to strategically address specific natural resources concerns within Treasure County, MT. NRCS's goal is to work with conservation partners, like federal, state and local agencies and non-governmental organizations, in order to fulfill objectives of this plan.

The NRCS takes a lead role along with partners in Treasure County to address natural resource concerns by providing both technical and financial assistance. NRCS is focused on getting projects completed that impact specific resource concerns within defined geographic areas. The first step is having a long-term strategy to ensure NRCS is engaging in projects important to Treasure County stakeholders that provide beneficial outcomes.

NRCS gathers local resource concern information by working with the Treasure County Conservation District to host a Local Working Group (LWG). The LWG meets annually to allow farmers, ranchers, landowners, conservation partners, and other members of the community to discuss the natural resource needs for the county. NRCS uses the LWG meeting feedback to update NRCS's LRP for Treasure County and develop new Targeted Implementation Plans (TIPs) to address prioritized resource concerns. We encourage everyone to contact the local NRCS office to share their insight regarding the resource concerns and conservation needs of Treasure County or to attend the next Treasure County LWG meeting.

Vision: Local Action Improving the Resources of Treasure County

Mission: Collaborate with partners to implement conservation projects important to the community and resources of Treasure County

Local Conservation Partners

Treasure Conservation District
Treasure County Local Working Group
Treasure Weed District
Treasure County Land Owners & Managers
Treasure County Commissioners
Northern Plains Resource Council
Trout Unlimited
Montana State University Extension Service
Rancher Irrigation District
Hysham Irrigation District
Yellowstone Irrigation District
Yellowstone River Conservation District Council
Northern Great Plains Joint Venture
MT Fish, Wildlife & Parks
MT Dept. of Environmental Quality
MT Bureau of Mines & Geology
MT Dept. of Natural Resources
MT Dept. of Agriculture
US Geological Survey
USDA Farm Service Agency

USDA Agricultural Research Service
USDA Forest Service
USDI Bureau of Land Management
USDI Bureau of Reclamation
USDI Fish and Wildlife Service
USDI Bureau of Indian Affairs

Treasure County's Natural Resources

Humans and Land Use

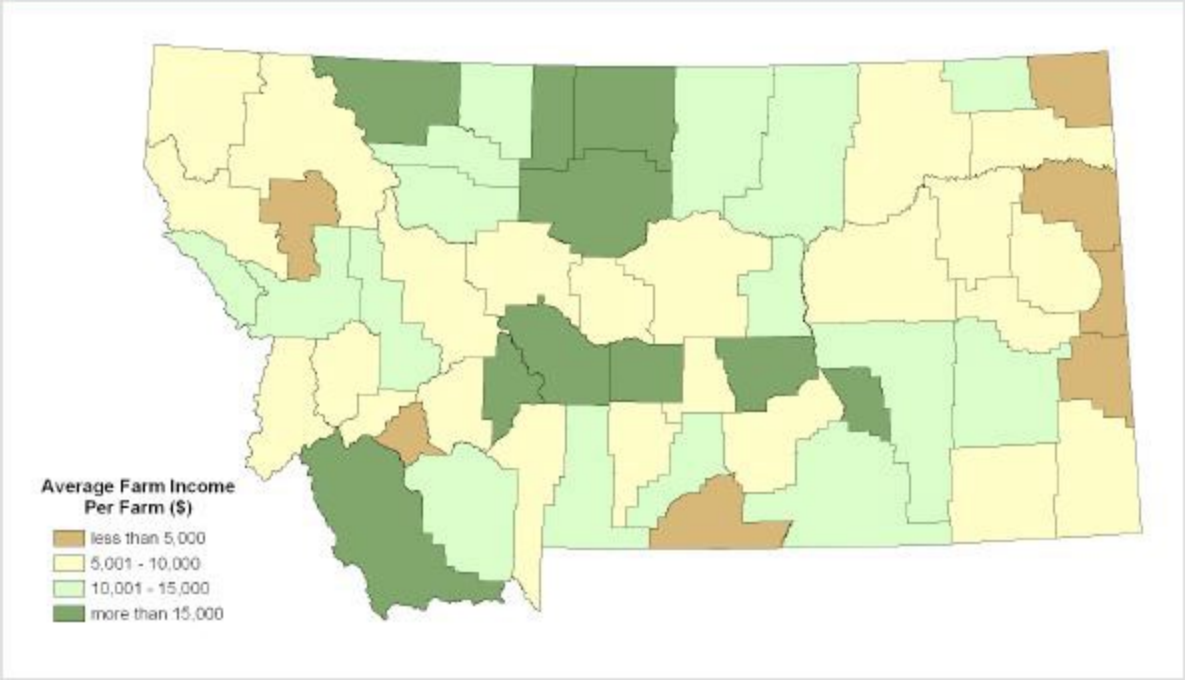
Land managers face different resource challenges depending on where they are in the county. Interstate 94 is south of Hysham, the county seat. The Yellowstone River divides the county into a north and south half. North Treasure County is remote prairie with several dirt county roads. South county is rougher terrain dominated by grasslands and ponderosa pine with two main roads along Sarpy Creek and Tullock Creek. There is one high school in Treasure County located in Hysham. Agriculture is the most important financial industry in Treasure County with gross farm income for Treasure County of $48,775,000 in 2017 (NASS, 2019).

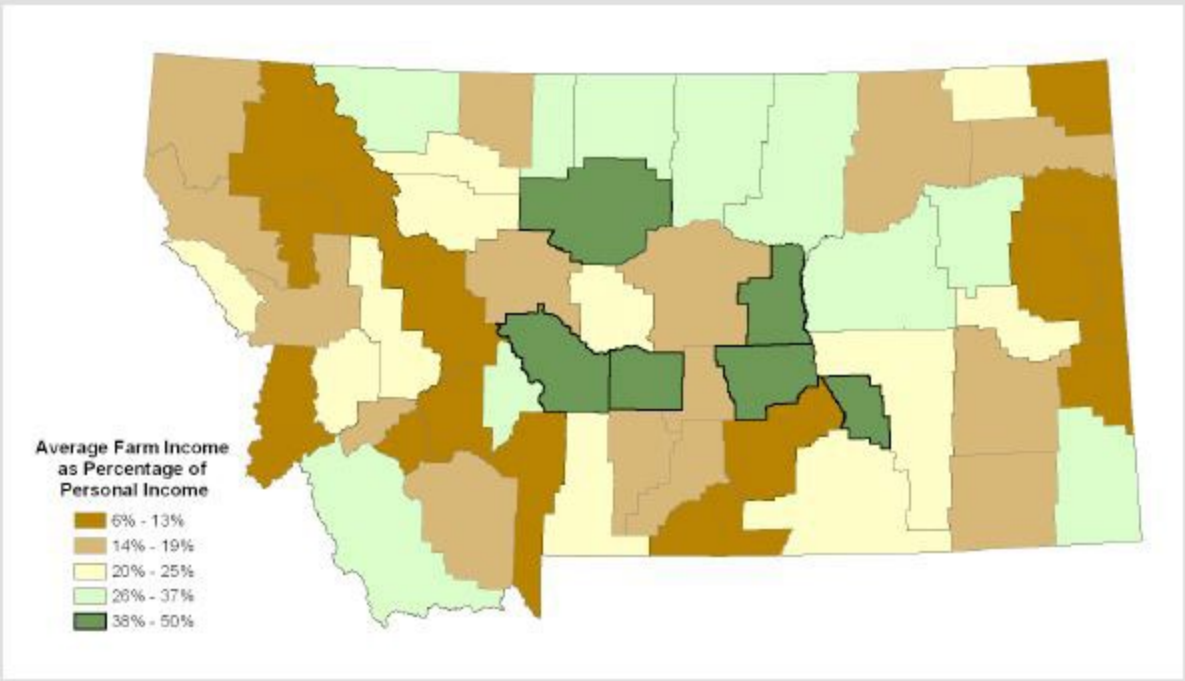
Treasure County Snapshot

Area	977.4 sq mi	**Total Ag Producers**	209
Population	718	Number of Farms	121
County Seat	Hysham	Land in Farms	614,142 ac
		Average Farm Size	5,076 ac
County Demographics		**Age**	
White	93.1%	<35	2
Hispanic/Latino	3.8%	35-64	126
Other	3.1%	65 and older	81
Age		**Top Crops in Acres**	
Under 5 years	8.1%	Forage (hay/haylage), all	13,377
Under 18 years	20.9%	Wheat for grain, all	9,413
65 and Over	28.6%	Barley for grain, all	6,593
		Corn for silage or greenchop	5,876
Median Income	$42,292	Sugarbeets for sugar	4,400
Persons in Poverty	11.4%		
		Livestock Inventory (Dec 31, 2017)	
		Cattle and calves	28,375
		Goats	20
		Horses and ponies	246
		Chickens for egg production	82
		Sheep and lambs	514

-Census of Agriculture, 2017

Figure 12. Average Farm Income per Farm and as a Percent of Personal Income per Household, by County, 2002





Source: ECONorthwest, with data from USDA, National Agricultural Statistics Service (2004a). See *Technical Memorandum 2.3 – Net Economic Impacts of Irrigation in Montana* for more detail.

Figure 1: Farm Income as Percent of Personal Income

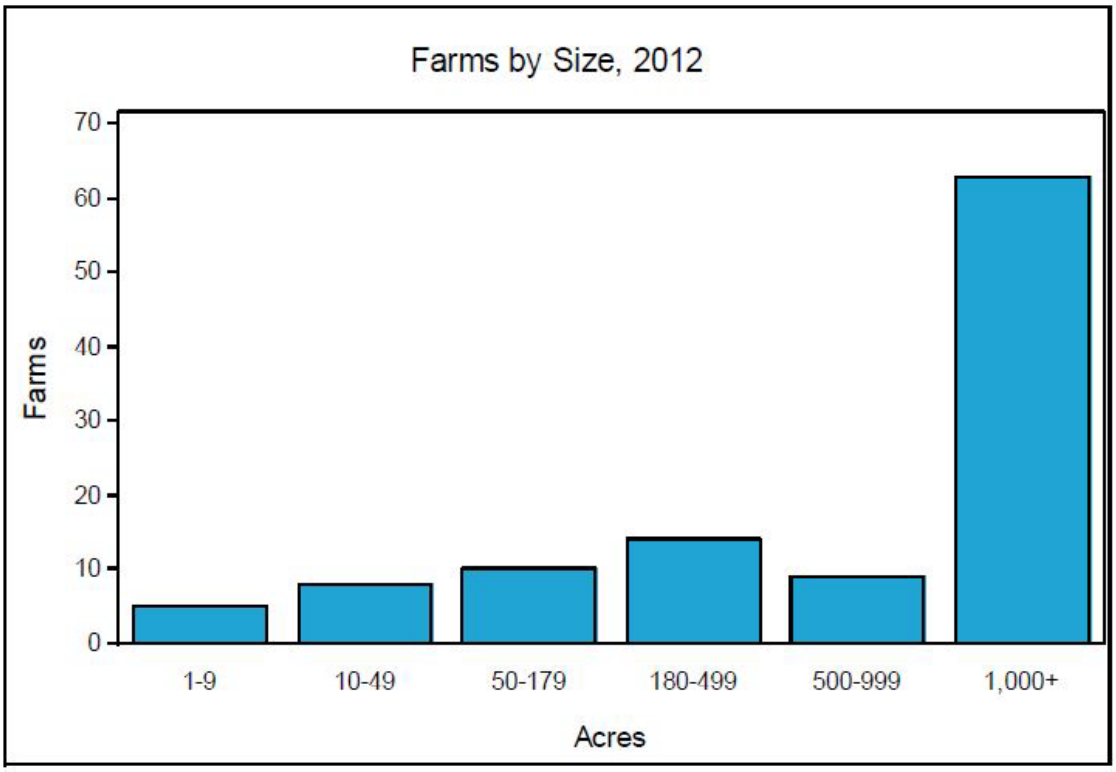


Figure 2: Treasure County Farm by Size, 2012

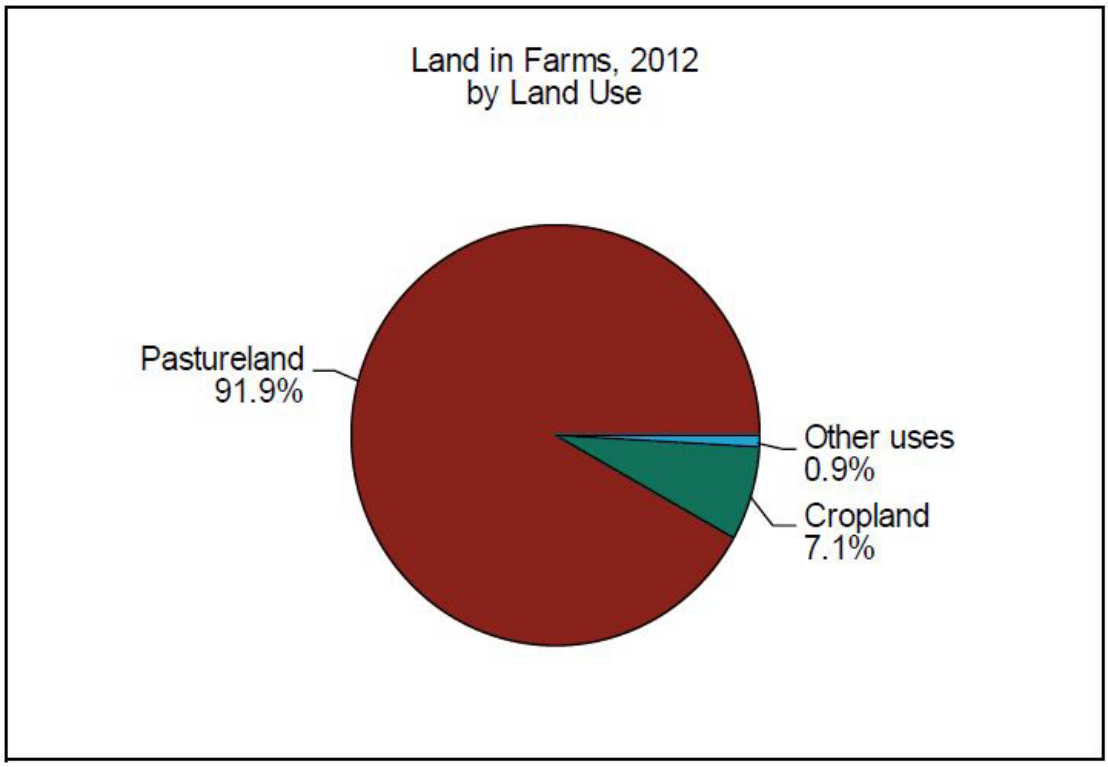
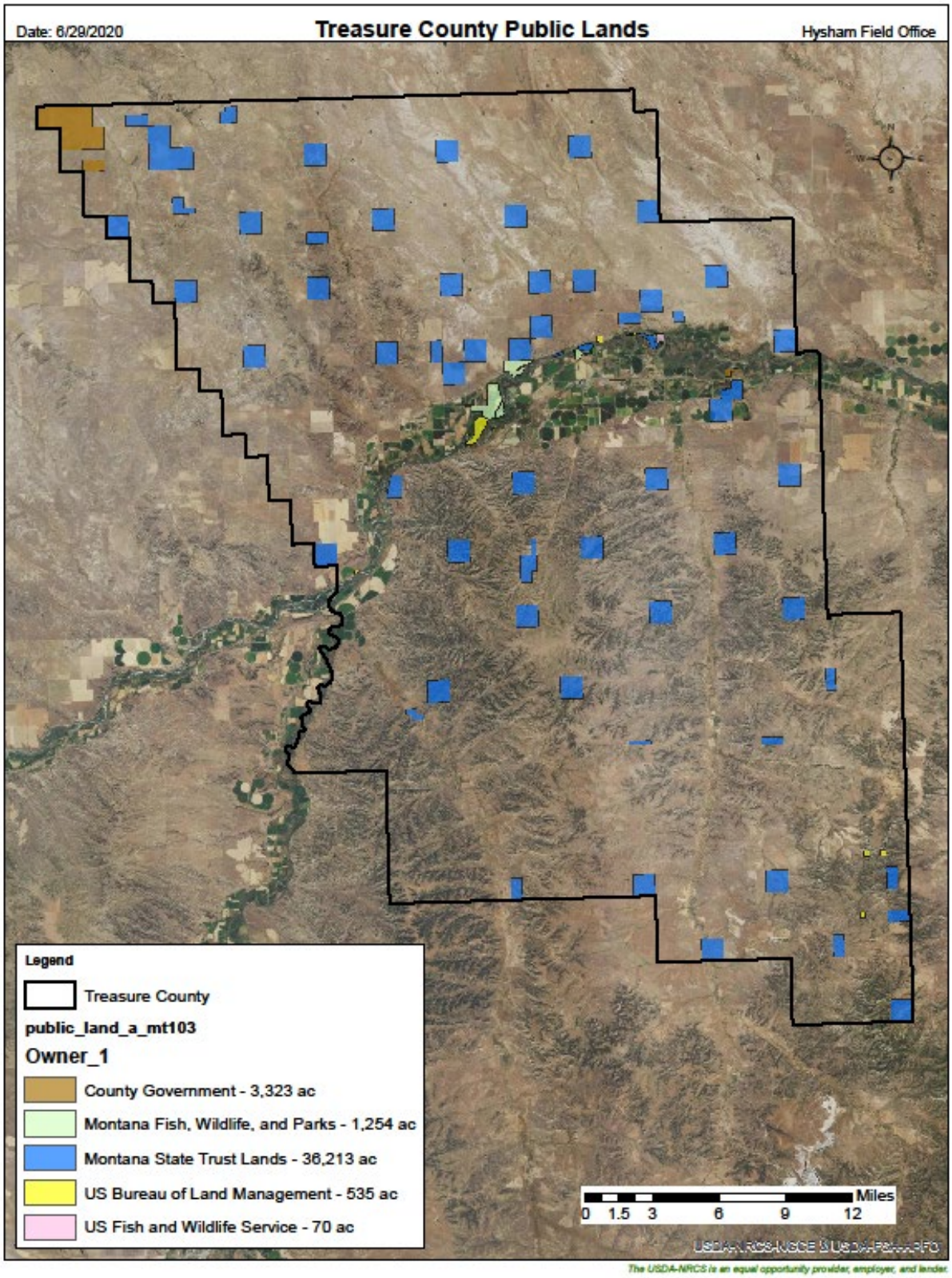


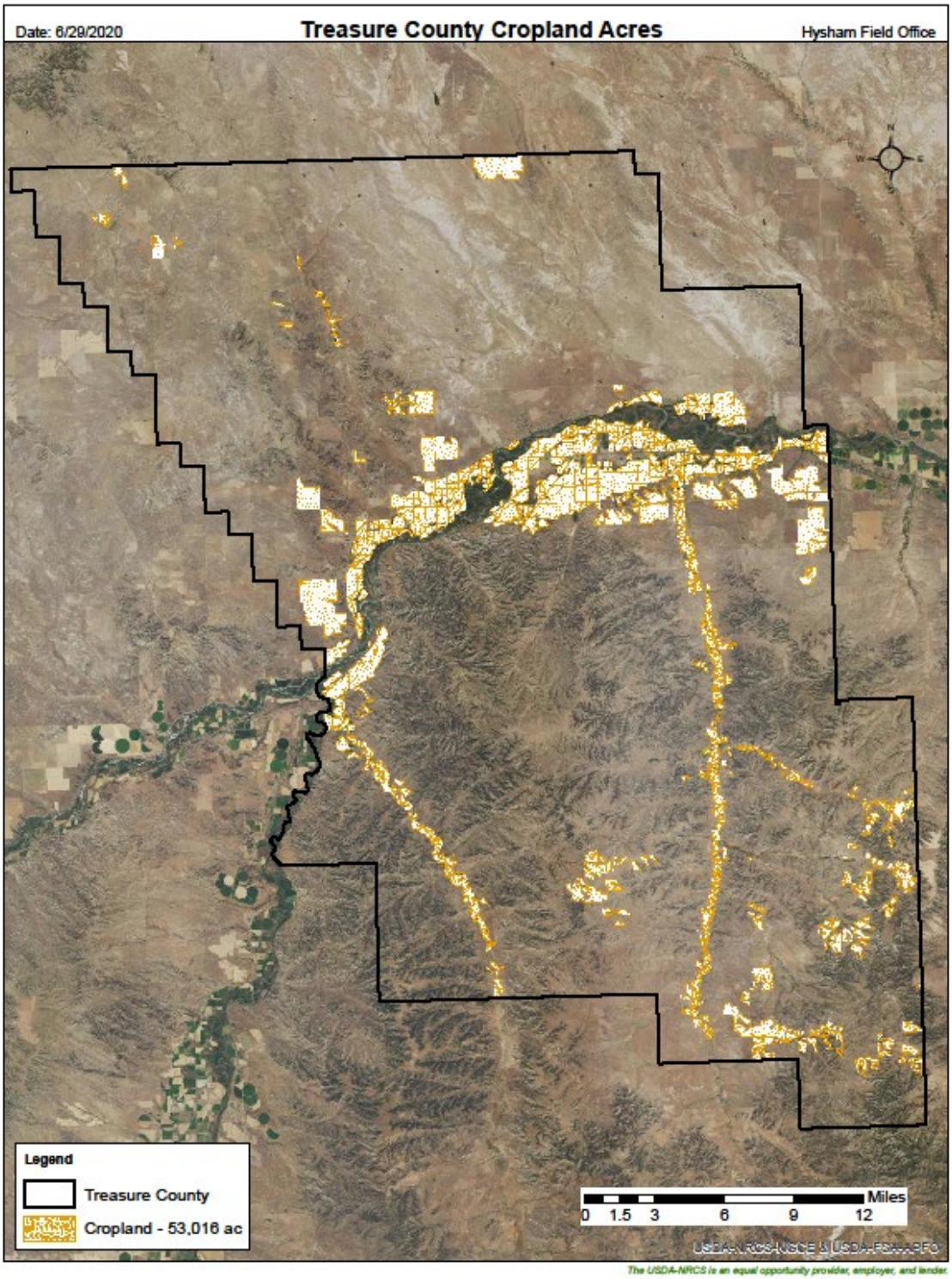
Figure 3: Landuse in Treasure County Farms in 2012 (NASS, 2012)

Land Ownership



Land Use

Approximately 53,016 ac Cropland and 472,520 ac of Rangeland



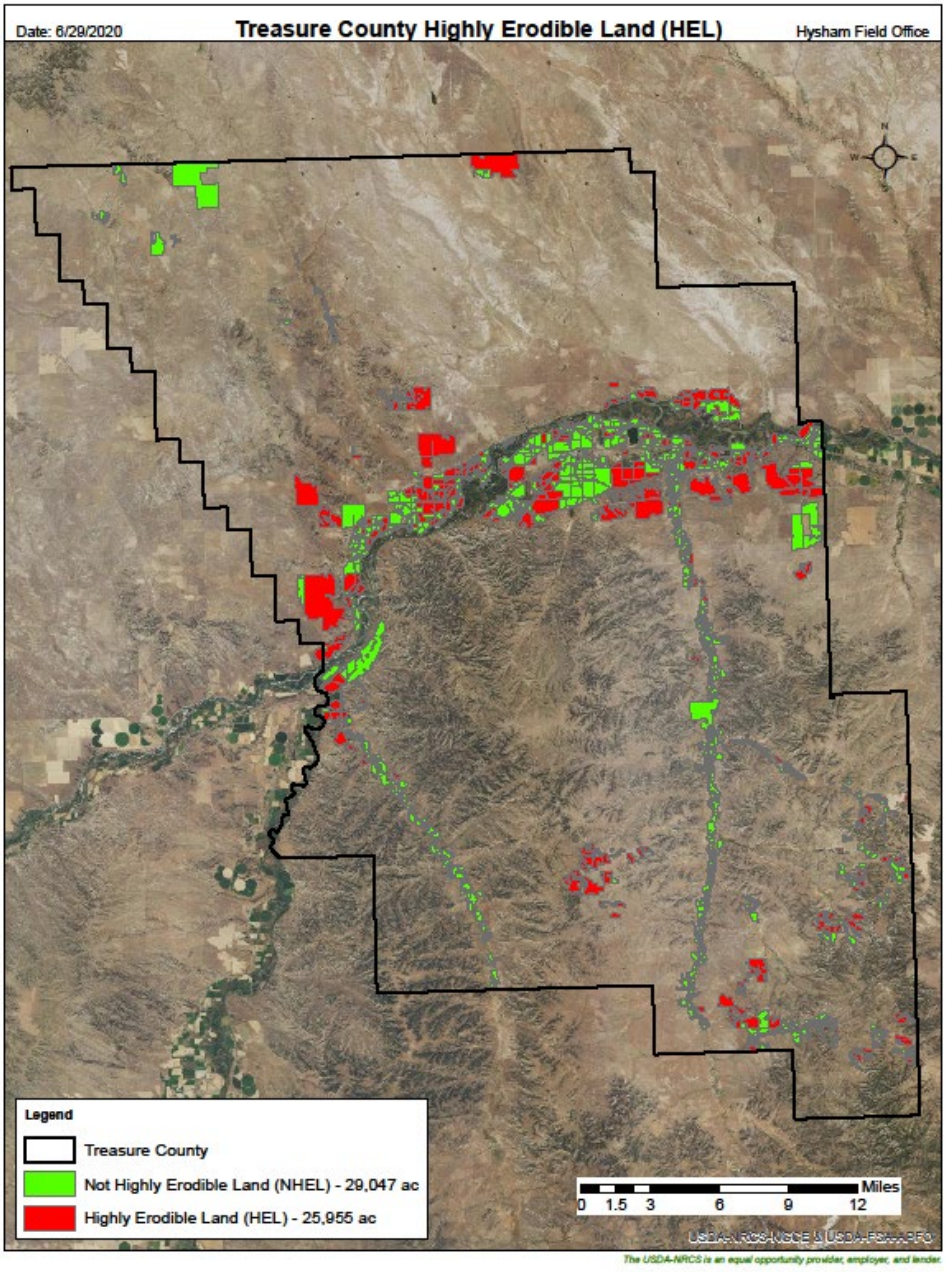
Treasure County Cropland (Farm Service Agency, 2019)

Soils

Soil is an irreplaceable resource for production of food and fiber. Soil provides other essential functions such as natural water filtration and controlling runoff. Understanding soils is a key component to managing natural resources as a healthy soil can alleviate many resource concerns.

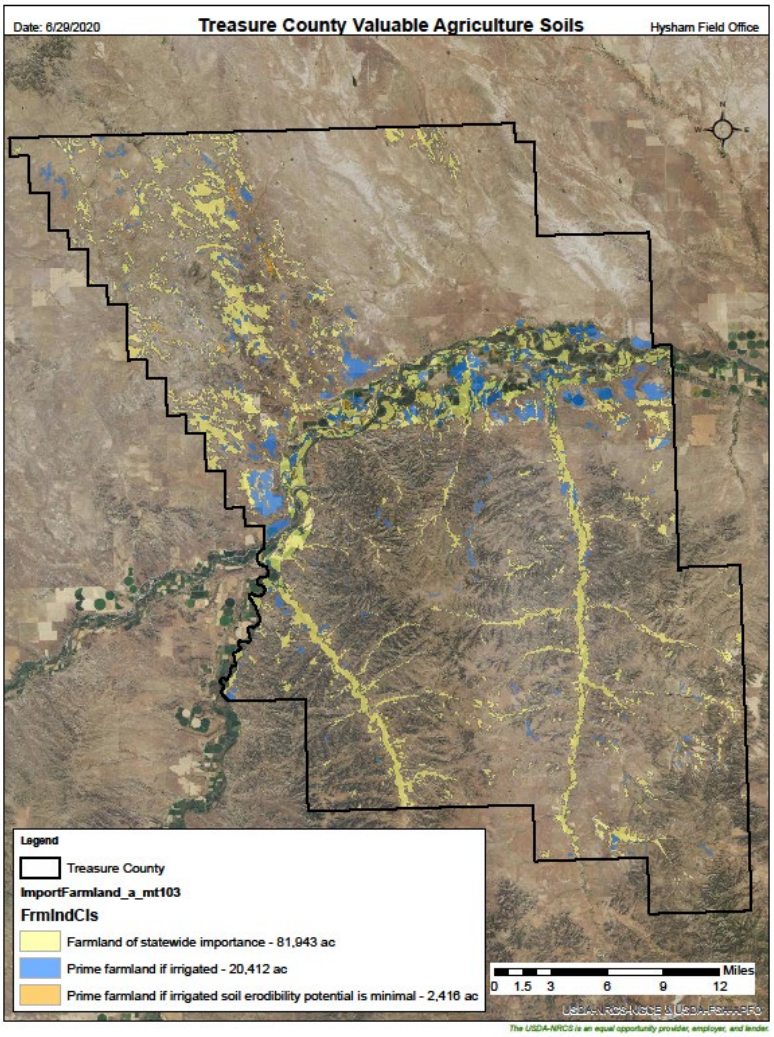
Highly Erodible Land (HEL)

HEL land accounts for 47% of the cropland that has a HEL determination on it. NRCS works on numerous HEL plans each year implementing practices such as residue management, cover crops, improving irrigation systems, and conservation crop rotation to assist in reduction of soil loss. (Farm Service Agency, 2019)



Prime Farmland

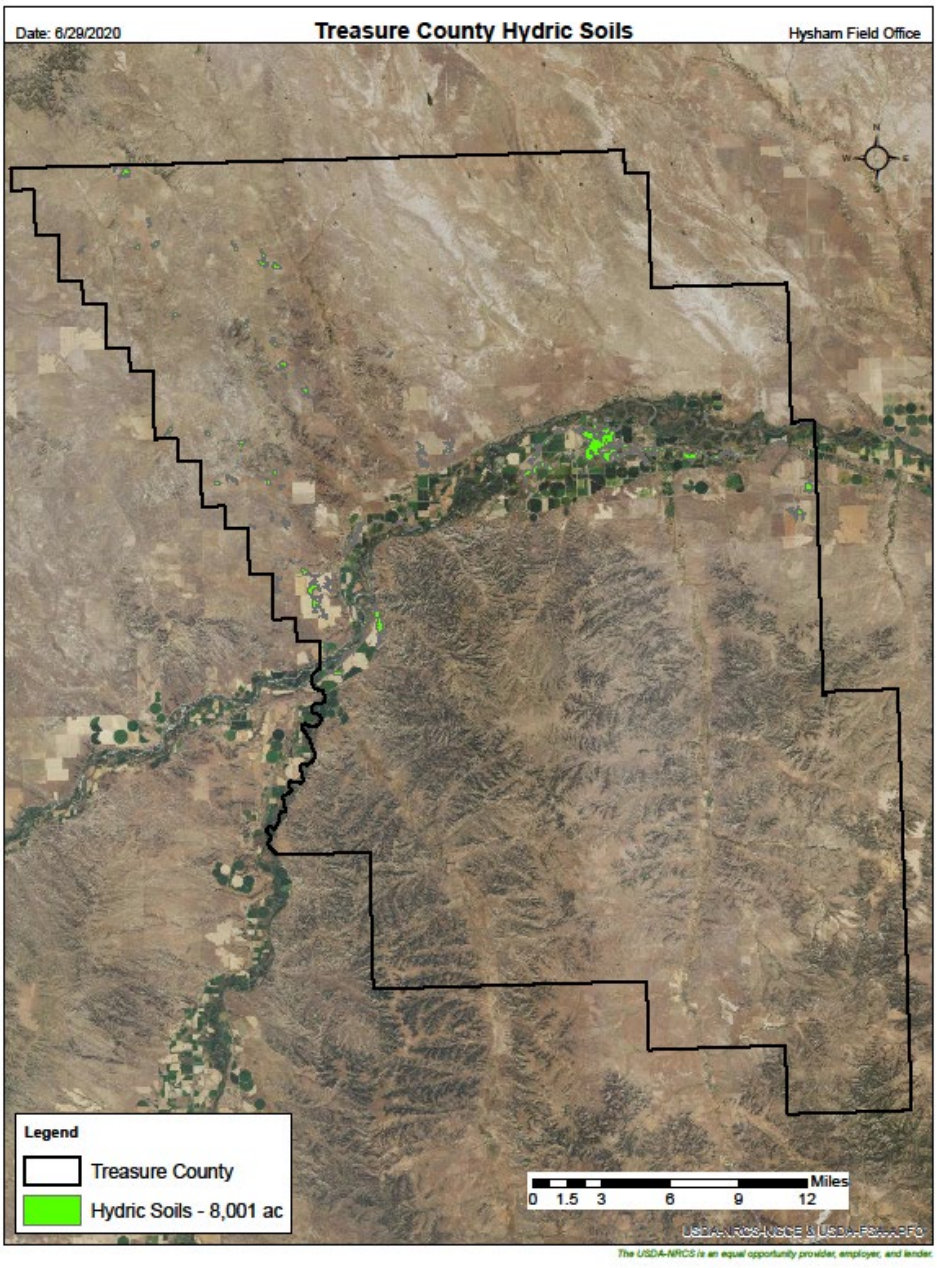
Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our nation's prime farmland. Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods. Either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent.



Hydric Soils

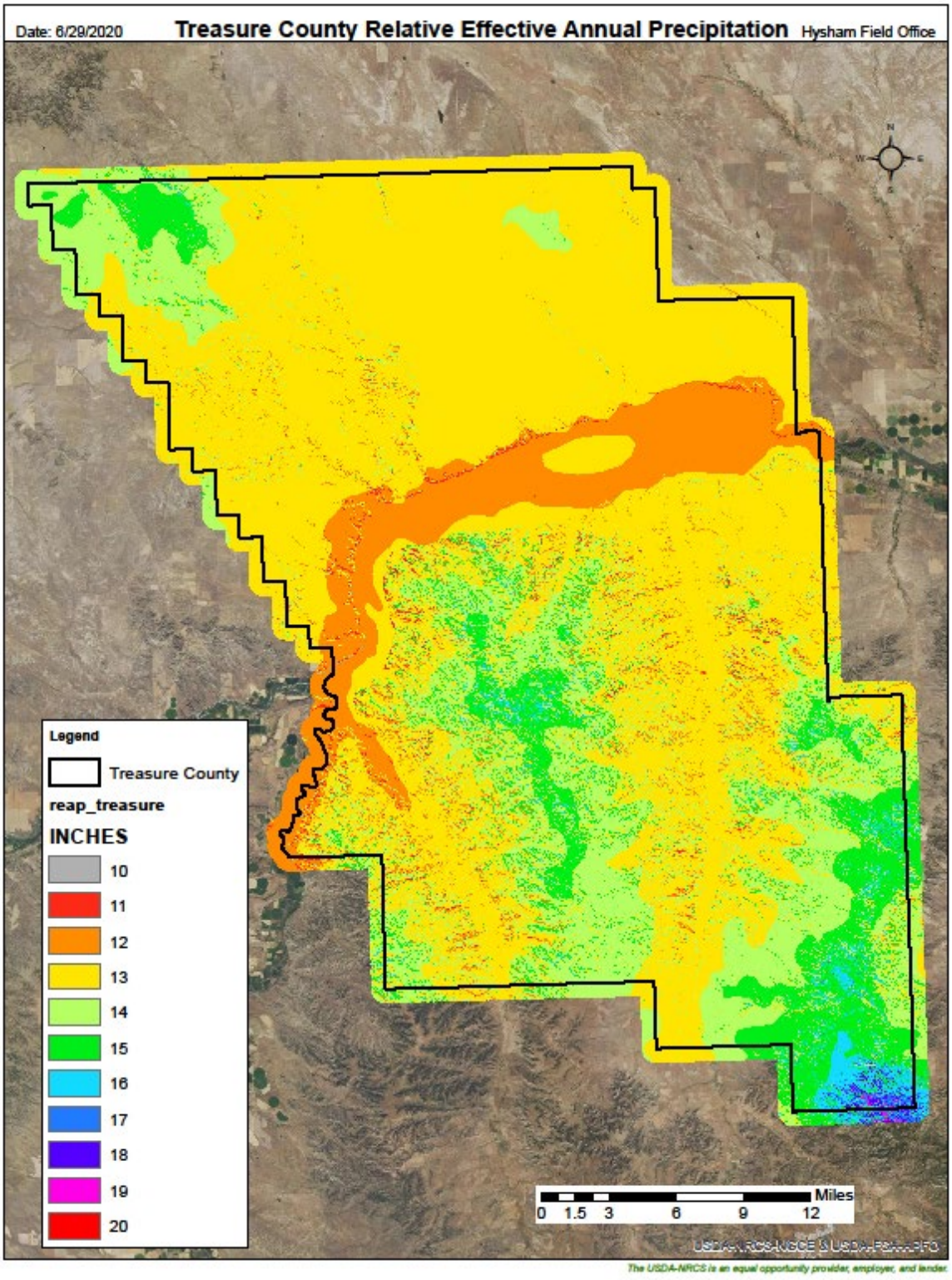
Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

If soils are wet enough for a long enough period to be considered hydric, they typically exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. In Treasure County, hydric soils are predominantly found along waterways and low-lying drainages.

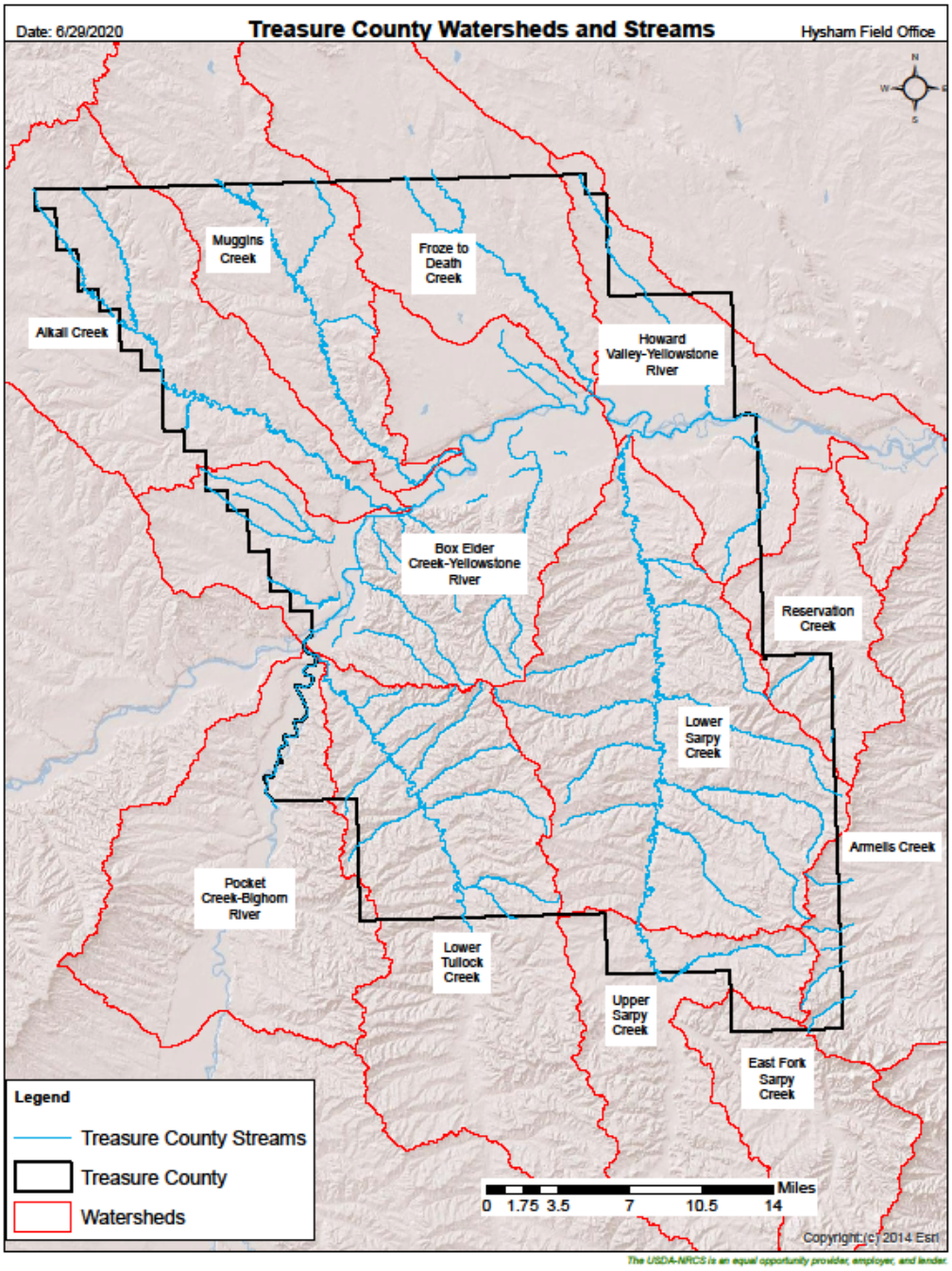


Water

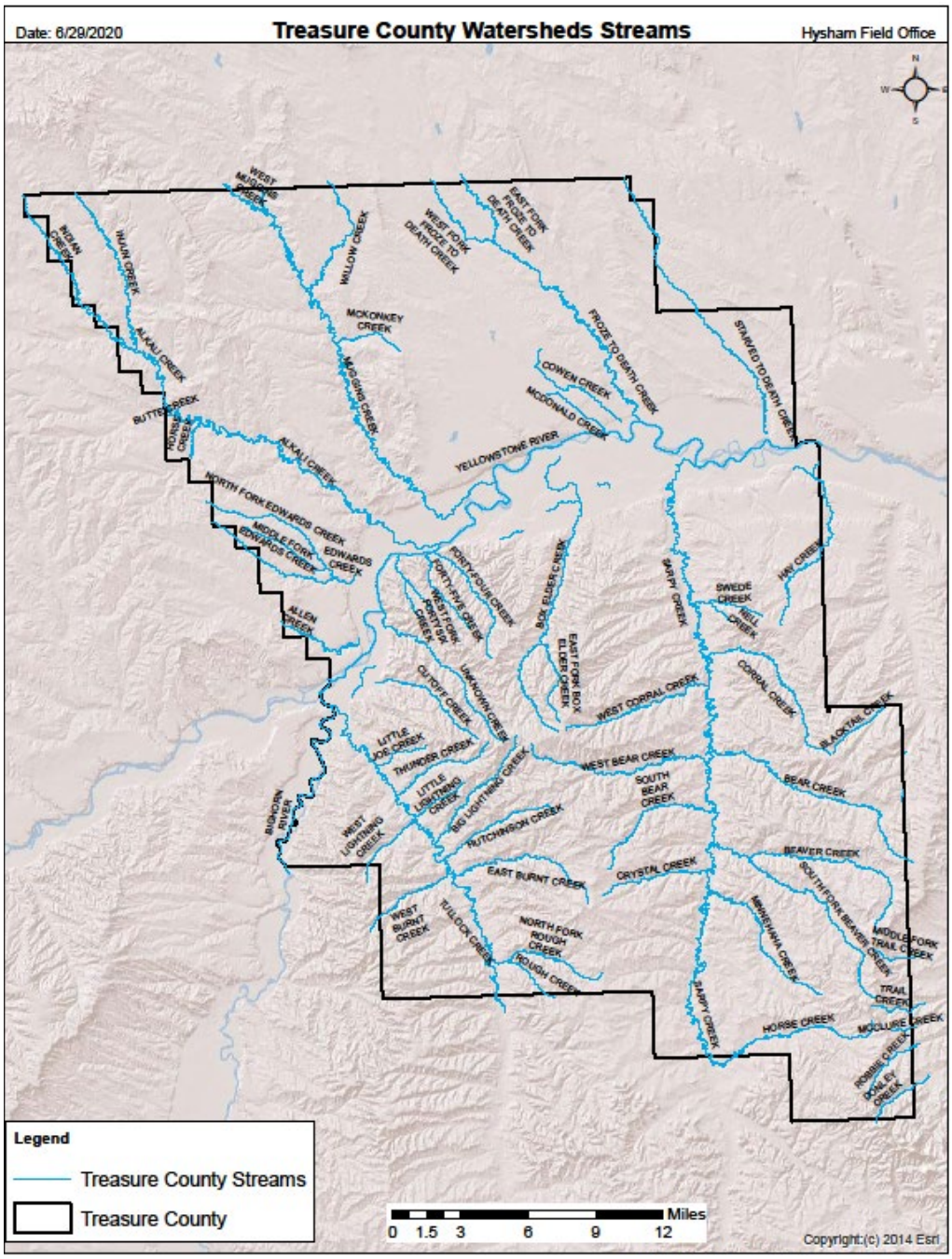
Annual precipitation is 12 to 13 inches on the prairie and higher elevations receive up to 20 inches annual precipitation.



There are twelve prominent watersheds in Treasure County that extend into neighboring counties. Most watersheds are dominated by prairie which is primarily grazed by livestock. Crop land uses are the exception and this land use is typically tied to watersheds through irrigation or along creek bottoms. The Yellowstone River travels west to east across the county for approximately 36 miles. The Bighorn River follows the southwestern border of Treasure County separating it from Yellowstone County and travels 12 miles in the county before confluence into the Yellowstone River. Sarpy Creek and Tullock Creek are main drainages out of southern Treasure county. Northern Treasure County main drainages are Alkali Creek, Muggins Creek and Froze to Death Creek.



The principal streams in Treasure County from which water is diverted for irrigation purposes are the Yellowstone and Big Horn Rivers and their tributaries. The Yellowstone River from its headwaters in northwestern Wyoming to the its confluence with the Missouri River near the Montana-North Dakota border plays a very important role in Montana economy. Were it not for the Yellowstone River, Treasure County and a major portion of eastern Montana would not be nearly as a productive region that it has become. The main tributary as applied to Treasure County is the Big Horn River, with smaller contributions from Alkali, Muggins, Froze to Death and Starved to Death on the north side and Box Elder, Horse, Beaver, Bear and Sarpy creeks on the south. These creeks are classified as intermittent streams and typically only flow during periods of wet weather or spring run-off.



Irrigation is the largest agriculture water use. The largest irrigation comes from Yellowstone Irrigation District (including Box Elder Ditch) which covers 9,443 acres in Treasure County, Hysham Irrigation District covers 8,200 acres, Rancher Irrigation District covers 6,883 acres and Bighorn Tullock Irrigation District covers 2,549 acres. Treasure County's water supply is adequate to supply present and contemplated future needs in the areas served by the Big Horn and Yellowstone Rivers. The remainder of the county may be classified as intermittent or dry in respect to available water for the purpose of irrigation.

The main diversion ditches from the Yellowstone River are the Rancher Ditch and the Yellowstone Irrigation Ditch. The Hysham Irrigation Ditch is a pumping system from the Yellowstone River, and water for the Box Elder Ditch is pumped from the Yellowstone Irrigation District canal system. The principal diversion ditch from the Big Horn River is the Big Horn-Tullock Ditch. These systems are supplemented by numerous private ditches, both diversion and pumping systems, which normally supply the area adjacent to the rivers with an adequate water supply.

Establishment of Irrigation Districts

The land under the Box Elder Ditch was first irrigated by the Hysham Co-operative Ditch Company. The Box Elder Irrigation District was created in 1919 and the district acquired by purchase the water rights filed by the Hysham Co-operative Ditch Company dated December 6, 1907.

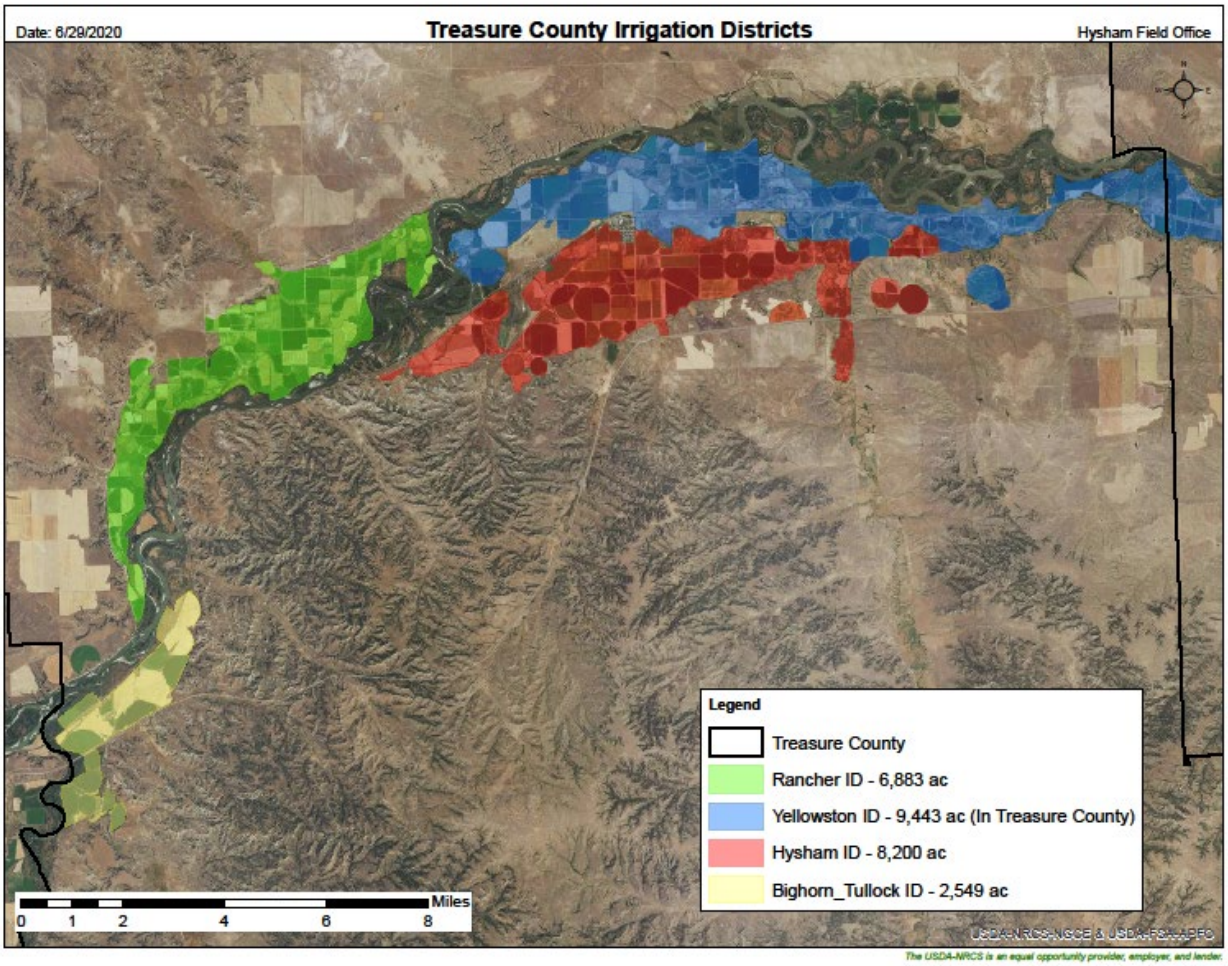
In 1906, the Sanders-Howard Co-operative Ditch Company endeavored to irrigate the lands now occupied by the Yellowstone Irrigation District. On October 11, 1906 the company filed a notice of appropriation for 40,000 miner's inches of water to be diverted from the Yellowstone River. The date appropriated was given as October 10, 1906. The purpose was for domestic, agricultural, and other useful purposes. On June 11, 1909 the Yellowstone Irrigation District was created. On January 1, 1910 a bond was authorized and sold with portion paid to the Sanders Co-operative Ditch Company for their interest, canal, right-of-way, and all water rights from the Yellowstone River. The deed transferring said rights from the Company to the District was dated July 5, 1910.

The Hysham Pumping Project is located on the south side of the Yellowstone River and includes lands lying east, west and south of the town of Hysham in Treasure County, Montana. On September 19, 1945 the State Water Conservation Board filed a declaration of intention to appropriate 200 CFS of the waters of the Yellowstone River and tributaries. Following the declaration, the Board appropriated 200 CFS of the waters of the Yellowstone River.

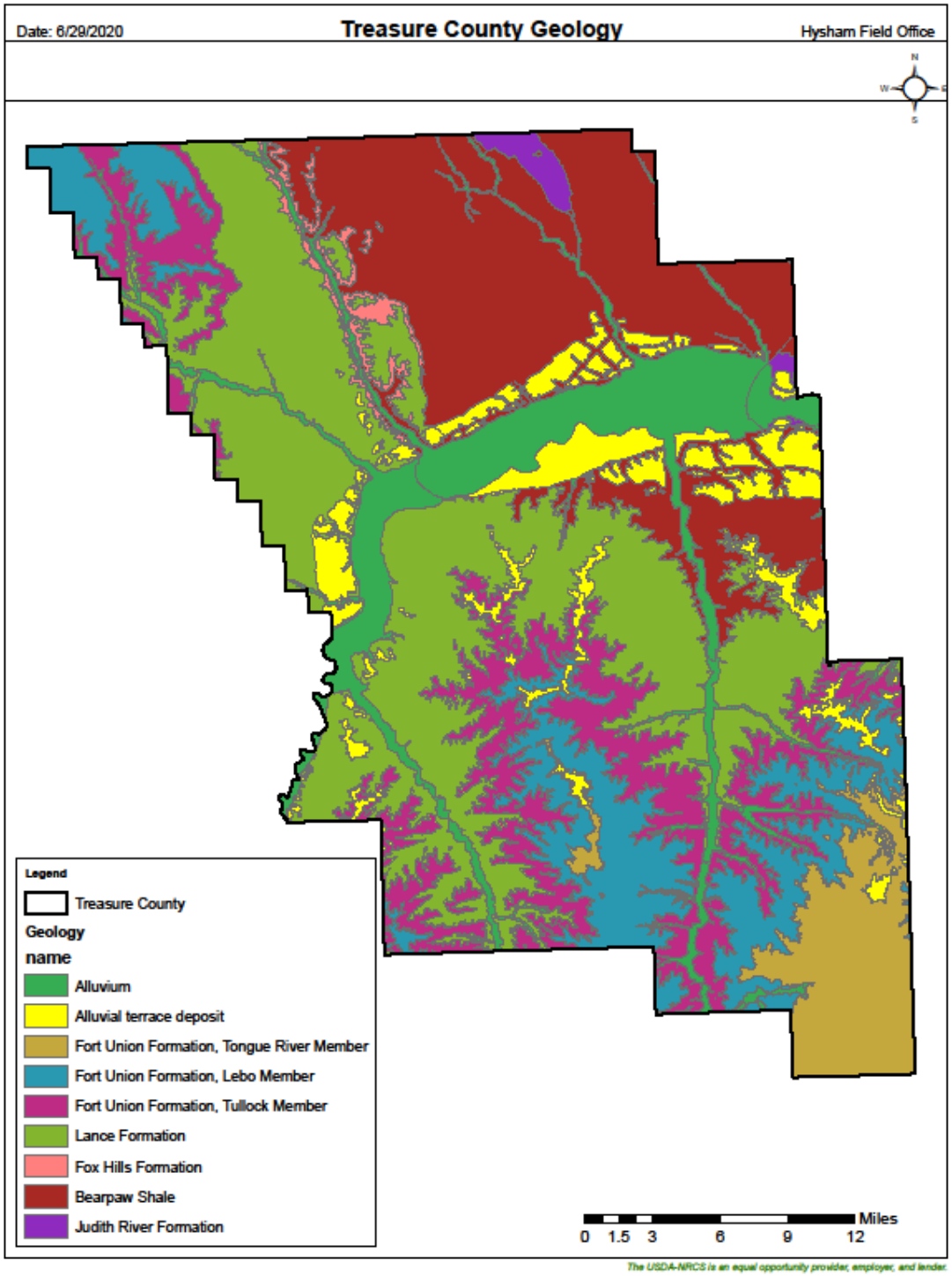
The Rancher Ditch Company project is located on the north side of the Yellowstone River northwest of the town of Hysham in Treasure County, Montana. The Company was first incorporated on December 1, 1903. The purpose of this corporation was for construction, maintaining, extending, and enlarging an irrigation ditch or canal, and to supply irrigation water from the Yellowstone River to and up the lands under the project.

Lands under the Big Horn-Tullock Project are located along the south side of the Yellowstone River, east of the Big Horn River and immediately below its mouth, in Treasure County. The town of Big Horn is in the heart of the irrigable area. The first irrigation development of the land was made by the Big Horn-Tullock Ditch Company in the year 1909. On February 8, 1909, the Company filed an appropriation for

62.5 cubic feet of water to be diverted from a slough or branch of the Big Horn River. The Big Horn-Tullock Irrigation District was established on August 4, 1919 and the water right from February 8, 1909 were conveyed by the Big Horn-Tullock Ditch Company to the Big Horn-Tullock Irrigation District by deed.



Groundwater developments are concentrated on alluvial benches near creeks and rivers. They are primarily used for homes, operation headquarters, or stock water systems. Wells are less frequent further from the natural waterways because aquifers are deep (expensive to reach) and the aquifers may not produce good quality water or not enough water.



Alluvium (Qal) (Holocene) - Light-brown and gray gravel, sand, silt, and clay deposited in stream and river channels and on flood plains. Clasts are well rounded to subrounded. Deposits are poorly to well stratified. Thickness as much as 26 ft under flood plain of Yellowstone River and less than 13 ft under flood plains of tributaries.

Alluvial terrace (Qat) (Holocene and Pleistocene) - Light-gray to light-brown gravel, sand, silt and clay in terrace remnants at elevations from 2 to 275 ft above rivers and streams. Along the Yellowstone River unit includes colluvium. Clasts are generally well sorted and most are well rounded. Deposits are poorly to well stratified and poorly to well sorted. Thickness generally less than 15 ft, but locally as much as 30 ft thick

Fort Union Formation (TKfu)

Tongue River Member of Fort Union Formation (Tftr)— Yellow, orange, or tan, fine- to medium-grained sandstone with thinner interbeds of yellowish-brown, orange, or tan siltstone, light colored mudstone and clay, brownish-gray carbonaceous shale, and coal. Sand bodies are generally channels that do not persist laterally. Clay dominantly nonswelling. Upper part of member was removed by erosion in map area. As much as 450 ft exposed in map area.

Lebo Member of Fort Union Formation (Tfl e)— Gray and greenish-gray smectite shale and mudstone that contain lenses and interbeds of gray and yellow, very fine to medium-grained, poorly resistant sandstone. Brown ironstone nodules ranging from granule to small boulder size are locally abundant. The Big Dirty coal bed and associated dark-gray or grayish-brown carbonaceous shales are at or near the base of the member; shale contains numerous plant impressions. Thickness of member 150-300 ft.

Tullock Member of Fort Union Formation (Tftu)— —Light-yellow and light-brown, planar-bedded, very fine to medium-grained sandstone and subordinate gray shale with thin beds of dark-brown to black carbonaceous shale and coal. Locally contains silcrete beds. Thickness of member 200-220 ft.

Lance Formation (Kl): Light-orange or light-tan, medium-grained, massive to cross-bedded sandstone in lenses and channels interbedded with light gray or greenish-yellow sandy shale. Calcium carbonate-cemented concretions occur locally in fine-grained sandstone. Crossbedded conglomerate lenses at the base contain quartzite and limonite pebbles as much as 1 inch in diameter and armored claystone balls as much as 9 inches in diameter. Thickness 330-525 ft.

Fox Hills Formation (Kfh): Light-brown or light-orange, thin- to thick bedded, micaceous, fine- to medium-grained sandstone in the upper part and thin-bedded siltstone and silty shale in the lower part. Thickness 0-75 ft.

Bearpaw Formation (Kb): —Dark-brownish-gray, montmorillonitic, fissile shale, and mudstone, with numerous thin bentonite beds and zones of calcareous and less common ferruginous concretions. Most bentonite beds are less than 6 inches thick but some are as much as 4 ft thick in the Vananda area (Berg, 1970). Several intervals contain concretions with Inoceramus, Baculites, and other fossils. Basal Bearpaw contains fissile shale that is rich in organic matter (Heald, 1927). Thickness 900-1500 ft.

Judith River Formation (Kjr): Upper: Light-gray, thin- to thickbedded, fine- to medium-grained, cross-bedded sandstone that weathers lightgrayish-white, and thin coal lenses. Middle: Dark-gray, thin- to thick-bedded shale unit. Lower: Light-gray, thin- to thick-bedded, fine- to medium-grained sandstone that weathers light-grayish-white, and may contain limonitic concretions. Casts of Halymenites major occur throughout the formation and bones of turtles and dinosaurs have been found in the lower concretionary beds (Heald, 1927). Thickness about 245 ft (Heald, 1927).

303 (d) List

Impaired waterways identified on the 2018 Montana Department of Environmental Quality *Impaired Waters Report* (i.e.303(d) list) are:

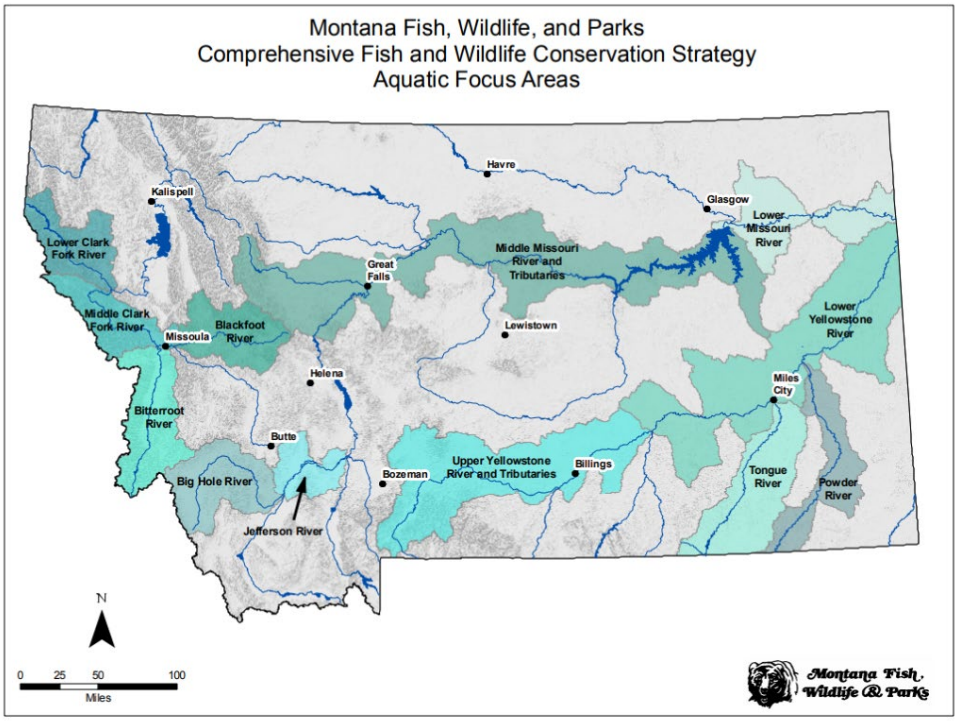
2018 WATER QUALITY INFORMATION					
WATER NAME	**CATEGORY**	**USE_CLASS**	**IMPAIRMENTS**	**PROBABLE SOURCE**	**ASSOCIATED USES**
Yellowstone River	4C	B-3	Dam Construction	Fish Passage Barrier	Aquatic Life
Sarpy Creek	5	C-3	Nitrate-Nitrite	Crop Production (Non-Irrigated), Grazing in Riparian or Shoreline Zones	Aquatic Life
Sarpy Creek	5	C-3	Nitrogen, Total	Crop Production (Non-Irrigated), Grazing in Riparian or Shoreline Zones	Aquatic Life
Sarpy Creek	5	C-3	Phosphorus, Total	Crop Production (Non-Irrigated), Grazing in Riparian or Shoreline Zones	Aquatic Life
Bighorn River	5	B-2	Lead	Unknown	Drinking Water
Bighorn River	5	B-2	Mercury	Unknown	Drinking Water
Tullock Creek	5	C-3	Alteration in stream-side or littoral vegetative covers	Rangeland Grazing, Loss of Riparian Habitat, Nautral Sources, Dam or Impoundment	Aquatic Life
Tullock Creek	5	C-3	Flow Regime Modification	Dam or Impoundment, Water Diversions, Natural Sources	Aquatic Life
Tullock Creek	5	C-3	Iron	Loss of Riparian Habitat, Natural Sources	Aquatic Life
Tullock Creek	5	C-3	Nitrogen, Total	Rangeland Grazing, Crop Production (Irrigated)	Aquatic Life
Tullock Creek	5	C-3	Phosphorus, Total	Rangeland Grazing, Crop Production (Irrigated)	Aquatic Life
Tullock Creek	5	C-3	Sedimentation-Siltation	Rangeland Grazing, Loss of Riparian Habitat	Aquatic Life
Water Quality Category-Each waterbody is assigned a unique assessment category as listed					
4C-Identified threats or impairments result from pollution categories such as dewatering or habitat modification and, thus, a TMDL is not required					
5 - Waters where one or more applicable beneficial uses are impaired or threatened, and a TMDL is required to address the factors causing the impairment or threat.					
Use Class-Montana's Water Quality Act establishes a systematic classification of waters in accordance to their "present and future most beneficial uses"					
B-2 Waters classified as suitable for drinking, culinary, and food processing purposes after conventional treatment; bathing, swimming and recreation; growth and marginal propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply.					
B-3 Waters classified as suitable for drinking, culinary, and food processing purposes after conventional treatment; bathing, swimming and recreation; growth and propagation of non-salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply.					
C-3 Waters classified as suitable for drinking, culinary, and food processing purposes after conventional treatment; bathing, swimming and recreation; growth and propagation of non-salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply. The quality of these waters is naturally marginal for drinking, culinary and food processing purposes, agriculture, and industrial water supply.					

Figure 4: Treasure County impaired water bodies

Aquatic Community Types

Montana's State Wildlife Action Plan (SWAP) identifies all streams, rivers, floodplain and riparian, and wetland community types across the state as "Community Types of Greatest Conservation Need". The plan defines this as meaning there is a clear obligation to use resources to implement conservation actions that provide direct benefit to these community types. The plan also provides lists of species of concern associated with each community type. Montana's SWAP is available at http://fwp.mt.gov/fishAndWildlife/conservationInAction/actionPlan.html

SWAP focus areas were developed based on the largest number of species and communities that would benefit from conservation. Treasure County includes the Lower Yellowstone River Tier I Aquatic Focus Areas, shown in figure below. Tier I communities are those is greatest need of conservation, for which there is a clear obligation to use resources to implement conservation actions that provide direct benefit to these community types.



Energy

Mid-Yellowstone Electric Cooperative (MYEC) is a rural cooperative headquartered in Hysham, Montana. Service area includes all or part of four counties including Big Horn, Custer, Rosebud and Treasure. MYEC began energization June 17, 1940 and now serves approximately 740 members and has more than 2025 meters. MYEC has 1,042 miles of lines and 0.71 members per mile.

Plants & Animals

Rangeland is the dominant habitat type in the county. Native rangelands dominate lands north of the Yellowstone River. Native range is still prominent south of the river, but ponderosa pine is frequently found in the uplands. Natural riparian communities exist along perennial streams where they aren't displaced by farm fields.

Southern Treasure County most prominent rangeland ecosite is Clayey-Steep and Silty-Steep. Northern Treasure County has a wide range of ecosites with shallow clay and silty being the most prominent.

Southern Treasure County			Northern Treasure County		
Ecological Site	**Vegetation**	**% Composition**	**Ecological Site**	**Vegetation**	**% Composition**
Clayey-Steep	Green Needlegrass	20	Shallow Clay	Sandberg Bluegrass	30
	Western Wheatgrass	20		Western Wheatgrass	15
	Bluebunch Wheatgrass	10		Fourwing Saltbrush	13
	Little Bluestem	10		Other Perennial Grass	10
	Sideoats Grama	10		Thickspike Wheatgrass	10
	Thickspike	10		Greasewood	5
	Big Sagebrush	5		Montana Wheatgrass	5
	Other Perennial Forbs	5		Other Shrubs	5
	Plains Muhly	5		Other Perennial Forb	5
Silty-Steep	Bluebunch	25		Big Sagebrush	2
	Little Bluestem	15	Silty	Bluebunch Wheatgrass	20
	Plains Muhly	10		Western Wheatgrass	20
	Sideoats Grama	10		Green Needlegrass	10
	Skunkbrush Sumac	10		Needle and Thread	10
	Green Needlegrass	5		Big Sagebrush	5
	Juniper	5		Blue Grama	5
	Needle and Tread	5		Sandberg Bluegrass	5
	Other Perennial Forbs	5		Threadleaf Sedge	5
	Western Wheatgrass	5			

Figure 5: Vegetation found in Treasure County

Greater Sage-grouse

Montana, along with several other western states, has been the focus of multiple past petitions to list the greater sage-grouse (*Centrocercus urophasianus*) under the federal Endangered Species Act (ESA). The primary concerns for sage-grouse are loss and fragmentation of their habitat. In Montana, habitat loss due to conversion of sagebrush steppe to cropland and energy development are thought to be the biggest threats to the species.

On September 22, 2015 the USFWS determined that the greater sage-grouse did not warrant listing protections under the ESA. It was decided that the primary threats to populations had been ameliorated by conservation efforts implemented by Federal, State, and private landowners.

The Montana Natural Heritage Program (MTNHP) Animal Species of Concern Report lists the greater sage-grouse as category S2: 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.

Treasure County contains both general and core area greater sage-grouse habitat. Core area is defined as the area that contains the species of concern, having, exemplary natural plant and animal communities, or exceptional native diversity. Core areas delineate essential habitat that would not be able to absorb significant levels of disturbance without substantial impact to the species of concern.

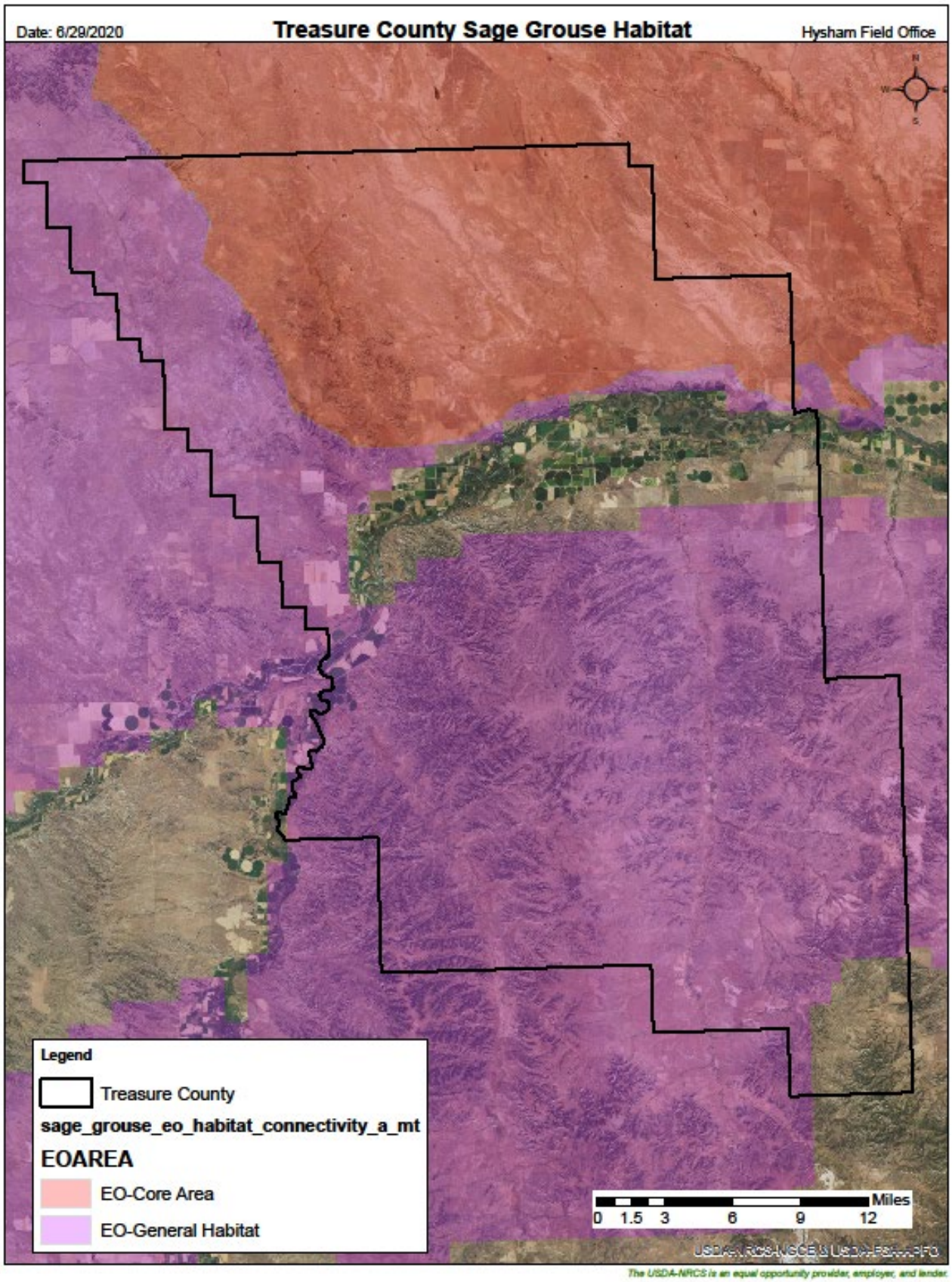
Sage-grouse core areas provide habitat for 75% of all known breeding sage-grouse in Montana and represent landscapes of greatest biological importance to the long-term persistence of the species.

General habitat areas are also important to sage-grouse and critical to the effort to maintain the abundance and distribution of sage-grouse in the state. These areas also include leks and nesting areas, but at a lower density than core areas.

Date: 6/29/2020

Treasure County Sage Grouse Habitat

Hysham Field Office



Animal and Plant Species of Concern

As of December 8, 2020, the U.S. Fish and Wildlife Service (USFWS) has no endangered, threatened, proposed and candidate species listed in Treasure County.

The Species of Concern Report, last updated on April 16, 2020, from the MTNHP lists 23 animal species of concern, 1 animal of special status, 3 plant species of concern, and 1 plant species of potential concern for Treasure County.

Animal Species of Concern

Mammals – Townsend Big-eared Bat, Black-tailed Prairie Dog, Spotted Bat, Hoary Bat, Little Brown Myotis

Birds – Golden Eagle, Great Blue Heron, Burrowing Owl, Greater Sage-Grouse, Baird's Sparrow, Mountain Plover, Black-billed Cuckoo, Peregrine Falcon, Red-headed Woodpecker, Long-billed Curlew, Brewer's Sparrow

Reptiles – Spiny Softshell, Snapping Turtle, Plains Hog-nosed Snake, Greater Short-horned Lizard

Fish – Blue Sucker, Sauger

Animal Species Status Special – Bald Eagle

Plant Species of Concern – Alderleaf mountain-mahogany, Bush morning-glory, Persistent-sepal Yellow-cress

Plant Species Potential Species of Concern – Western Centaury

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.

Yellowstone River Corridor Study

In 2011, The US Army Corps of Engineers and the Yellowstone River Conservation District Council examined a 565-mile reach of the Yellowstone River. The Cumulative Effects Analysis serves as the base tool for analyzing all hydraulic, biological, and socioeconomic impacts of human activity on the Yellowstone River. The area along the Yellowstone River in Treasure County is an aquatic focal area (Montana's State Wildlife Action Plan 2015).

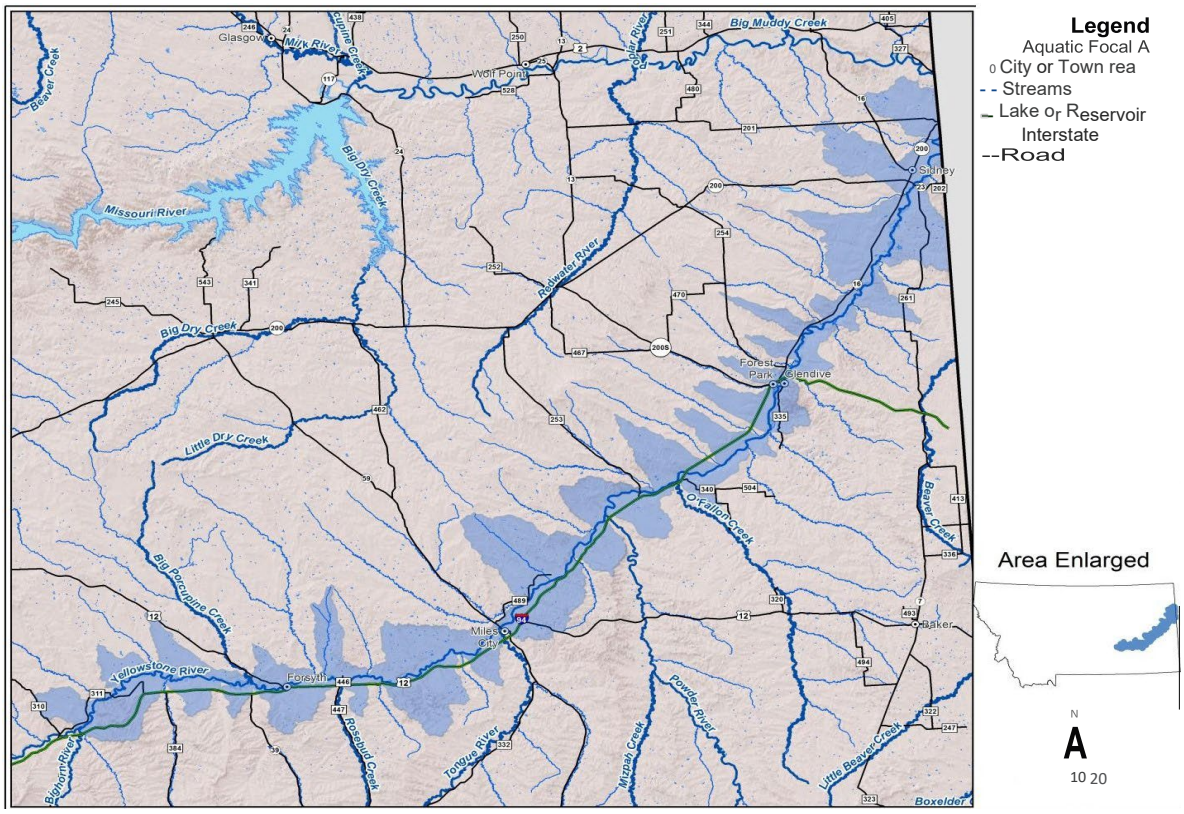


Figure 6: Yellowstone River Focal Area in FWP Region 7

The Yellowstone River mainstem is home for many aquatic Species of Greatest Conservation Need (SGCN), native species, and a great diversity of game fish. There are several partnerships in this area including local conservation districts, state and federal agencies, and occasionally individual landowners. Most of this watershed is held in private ownership. This area is heavily used by anglers, hunters, wildlife watchers, and other river recreationists.

Coal and gas development is a current impact to this Focal Area. Dewatering, as it relates to instream flow and fish habitat, and fish passage at multiple low head diversion dams, are other issues for the Focal Area. The future threats remain the same as current impacts if they are not addressed.

Associated SGCN in Focal Area for Treasure County include blue sucker and sauger.

Conservation History

NRCS has implemented conservation practices through programs and conservation technical assistance on thousands of acres and multiple land uses. Since 2008, conservation practices have been implemented on the following land uses:

Range Total	496,029	ac
Crop Total	23,729	ac
Pasture Total	3,202	ac
Other Rural Land Total	126	ac
Farmstead Total	55	ac
Associated Ag Land Total	136	ac

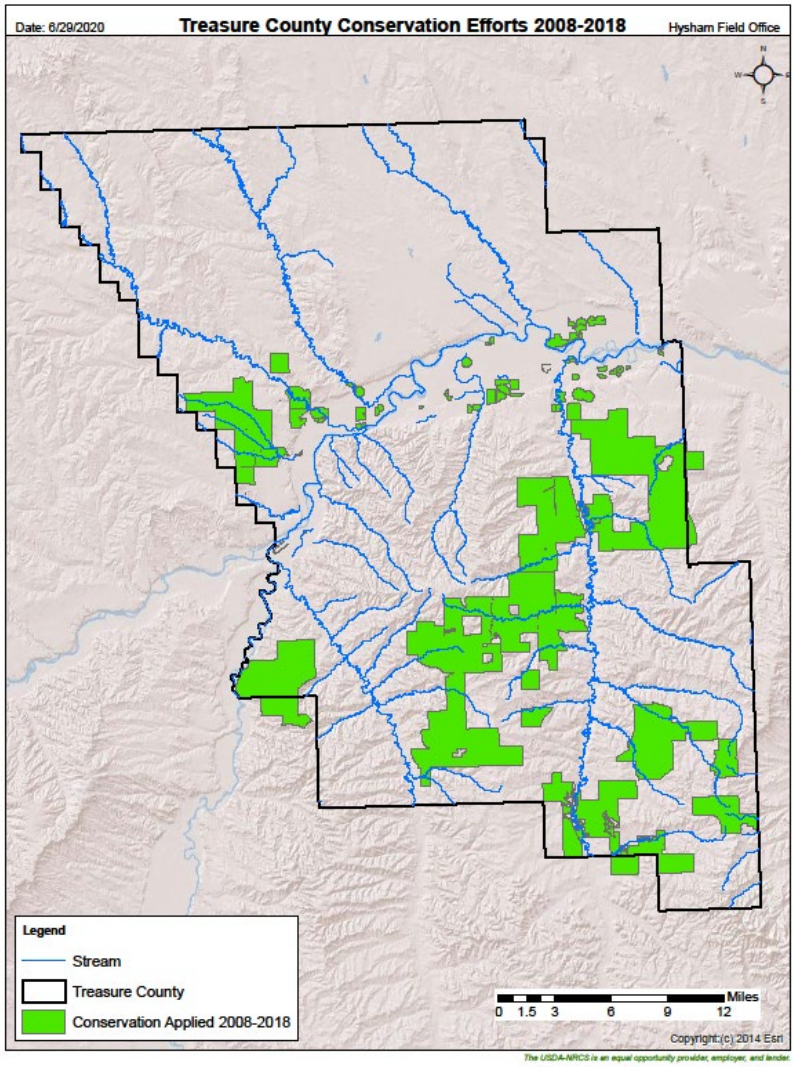
Prescribed grazing, irrigation water management, watering facility, livestock pipeline, upland wildlife habitat management, and conservation crop rotation were the primary management practices voluntarily implemented by producers. The top practices based on number of times implemented in Treasure County are:

PRACTICE	# Times Applied
Prescribed Grazing	202
Irrigation Water Management	192
Watering Facility	94
Livestock Pipeline	82
Upland Wildlife Habitat Management	69
Conservation Crop Rotation	63
Fence	62
Pest Management Conservation System	59
Forage and Biomass Planting	55
Sprinkler System	50
Pumping Plant	45
Residue and Tillage Management, Reduced Till	43
Structure for Water Control	41
Irrigation Water Conveyance, Pipeline, High-Pressure, Underground, Plastic	37
Nutrient Management	35
Forage Harvest Management	25
Irrigation Pipeline	24
Conservation Cover	20

The Treasure Conservation District has been a partner in the soil health program by renting a no-till drill, offering a cover crop seed cost share program, and by hosting a regional soil health seminar and various field days.

Opportunities Remain

Nearly one sixth of the county's acreage has had NRCS conservation practices implemented on it. Remaining opportunities require targeted outreach and implementation in order to create meaningful outcomes. Soil degradation, water quantity, and fuels reduction are the priority resource concerns identified by the Local Working Group (LWG) in 2019. All resource concerns can be meaningfully addressed using NRCS investments.



Implementing Montana Focused Conservation (MFC), an EQIP strategy, NRCS field offices will identify priority resource concerns within their administrative area so that the resource can be addressed through a Targeted Implementation Plan (TIP). Local Working Groups comprised of diverse local cooperators will be utilized to get feedback to inform NRCS field offices. NRCS field offices will also accept input from cooperators, partners, and community members outside of these LWG meetings.

Problems and Outcomes

The Hysham NRCS office has developed the following conservation management strategies to address resource concerns identified by the Treasure County Local Working Group.

Inadequate Livestock Water – Rangelands

Livestock water is limited on rangelands. Pits, reservoirs, and other methods of storing seasonal run-off have been implemented in the past, but they aren't reliable enough to meet livestock needs consistently. Groundwater resources haven't been developed because aquifers are deep enough that producers have a hard time coming up with the capital to develop them. The problem is worse on rangelands north of the Yellowstone River. Additional information regarding range carrying capacity would help determine the scope of the conservation efforts required to positively impact the problem. As this concern is addressed, cattle grazing will be able to reliably graze range units so managers will be able to invest more time on grass management

Water Quantity –Crop Lands

Insufficient water is a concern on irrigated and dry crop lands based on poor water infiltration rates on dry land and poor irrigation water use efficiency on irrigated lands. Heavy rainfalls over the past several years have made the problem more apparent. Addressing surface erosion and irrigation use efficiency is the solution and conservation efforts should be focused. Producers realize many practices will have to be implemented in order to greatly improve water quantity resource concern on cropland. Such as installing conservation practices under a pivot to lead to greater efficiency of the pivot. Another major concern on water quantity is irrigation ditches seeping. Entire ditches will not be able to be piped and lined so NRCS and producers will need to focus on areas of ditches with the most seepage. Irrigation water that is pumped into seeping ditches is reducing the energy efficiency of the pumps as the pumps need to operate longer hours to replace water seeping. Addressing energy efficiency is priority for multiple producers as electric energy is becoming more expensive.

Soil Degradation – Rangelands

Organic matter is depleted or decreasing on rangelands across the county based on feedback from the Local Working Group. Grazing management is the solution; however, structures such as fence and water development will need to be installed first in order to give producers more management options to improve soil degradation on rangelands.

Soil Degradation – Crop Lands

Many current annual crop fields in the county has less than 60% permanent ground cover or negative Soil Condition Index (SCI) ratings. There is a core group of soil health conscious producers that have adopted managements to address this resource concern and their outreach could be leveraged to get additional managers to adopt the soil health practices. With low commodity prices producers in Treasure County are looking to improve soil quality in order to become more sustainable. Producers are interested in improving soil quality in order to improve net profit. Soil degradation caused by low diversity, high tillage, salinity, and poor irrigation efficiency has left soil susceptible to erosion and organic matter depletion. Producers realize the importance of soil quality and how it relates to net profit. Many of Treasure County cropland soils can have 2 to 3% organic matter while soil tests more commonly show 1 to 2% organic matter.

Wildfire Hazard – Rangeland/Forestland

Southern Treasure county is home to many livestock producers, as well as intermixed private residences and ranch headquarters. Much of the woody vegetation within the areas is ponderosa pine and Rocky Mountain juniper. The century long fire suppression, corresponding with significant conifer (ponderosa pine, Rocky Mountain juniper) encroachment, have set the scene for a perfect combination of topography, fuels, and limited accessibility in an area particularly susceptible to fire damage. The likelihood of a catastrophic fire continues to increase each year. Livestock producers run the greatest risk of loss from a wildfire disaster. The likely catastrophic fire would detrimentally impact the grazing lands for these ranches, along with ranch headquarters and private residences. Many ranches depend on the availability of forage within the rough terrain of southern Treasure County. Agriculture operations are the main economic driver in Treasure county, supporting many of the local businesses. Wildfire Hazard was top resource concern at Treasure County Local Work Group (LWG) meeting in 2019.

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