

7. NATURAL RESOURCES

7.1 Executive Summary – Key Findings

- Precipitation, elevation, and topography are varied across the county. The diversity of soils, vegetation, and wildlife distribution vary with these factors.
- Western areas of the county are more fire prone due to steeper slopes and heavier fuels.
- The higher elevations in the western tip of the county provides key habitat for a variety of important species including elk, moose, bighorn sheep, mountain goats, and the two species in the county listed as threatened under the Endangered Species Act, grizzly bear and lynx. Wolves have been listed and de-listed over the course of the past year and status will be in flux with pending litigation and possible congressional legislation.
- Grizzly bear numbers have been increasing with a resulting increase in corresponding sightings and expansion of range to the east.
- In general, streams in the county that have been surveyed for impairment support the entire range of uses. Probable sources for waters in the county that do not fully support uses relate to either flow alterations from diversions or agricultural uses, or both.
- Flood plains have not been designated or mapped in the county.
- Air quality in the county is presumed to be good.
- All of the 17 water discharge permits in the county have expired, including the municipal waste water discharge permits.
- An area of the Rocky Mountain Front has been determined by the Keeper of the National Register of Historic Places to be an eligible Traditional Cultural District. The Forest Service in consultation with the Blackfoot Tribe will give consideration to this situation in decision making related to all proposed uses (recreation, oil and gas development, and others) on the National Forest lands within this district.
- Noxious weeds are present in the county and primarily spread by roads and waterways. Noxious weed spread is an economic burden to the county and agricultural producers, and diminishes wildlife habitat.

7.2 Key Issues/Perspectives/Preferences raised via public involvement relevant to this topic

Comments received at public meetings held in Valier, Conrad, Brady, and Dupuyer in 2009 raised some natural resource-related issues: noxious weeds (Valier, Dupuyer), flood-prone areas and flood map problems (Conrad, Dupuyer), water quality (Brady, Dupuyer), water quantity, wildlife management for bear, mountain lions, and deer (Dupuyer). (Cossitt Meeting Notes, April 2010).

7.3 Existing Conditions

7.3.1 Water Resources

1. Lakes and Streams

The county sits on the east side of the Continental Divide, rising all the way to the divide, and drains into the Marias River. The Marias eventually flows into the Missouri River. Badger, Birch, and Dupuyer Creeks, along with the Dry Fork of the Marias are the primary tributaries to the Marias flowing generally west to east through Pondera County dropping from approximately 8000 to 3400 feet above sea level.

The county has three sizeable bodies of water. Swift Reservoir, created by a dam, is filled by both the South and North Forks of Birch Creek. Lake Frances on the south edge of Valier, also created by a dam, is filled by Dupuyer Creek. Alkalai Lake sits in the northwest corner of the county. Many small lakes dot the glaciated areas of the high country in the National Forest.

2. Wetlands

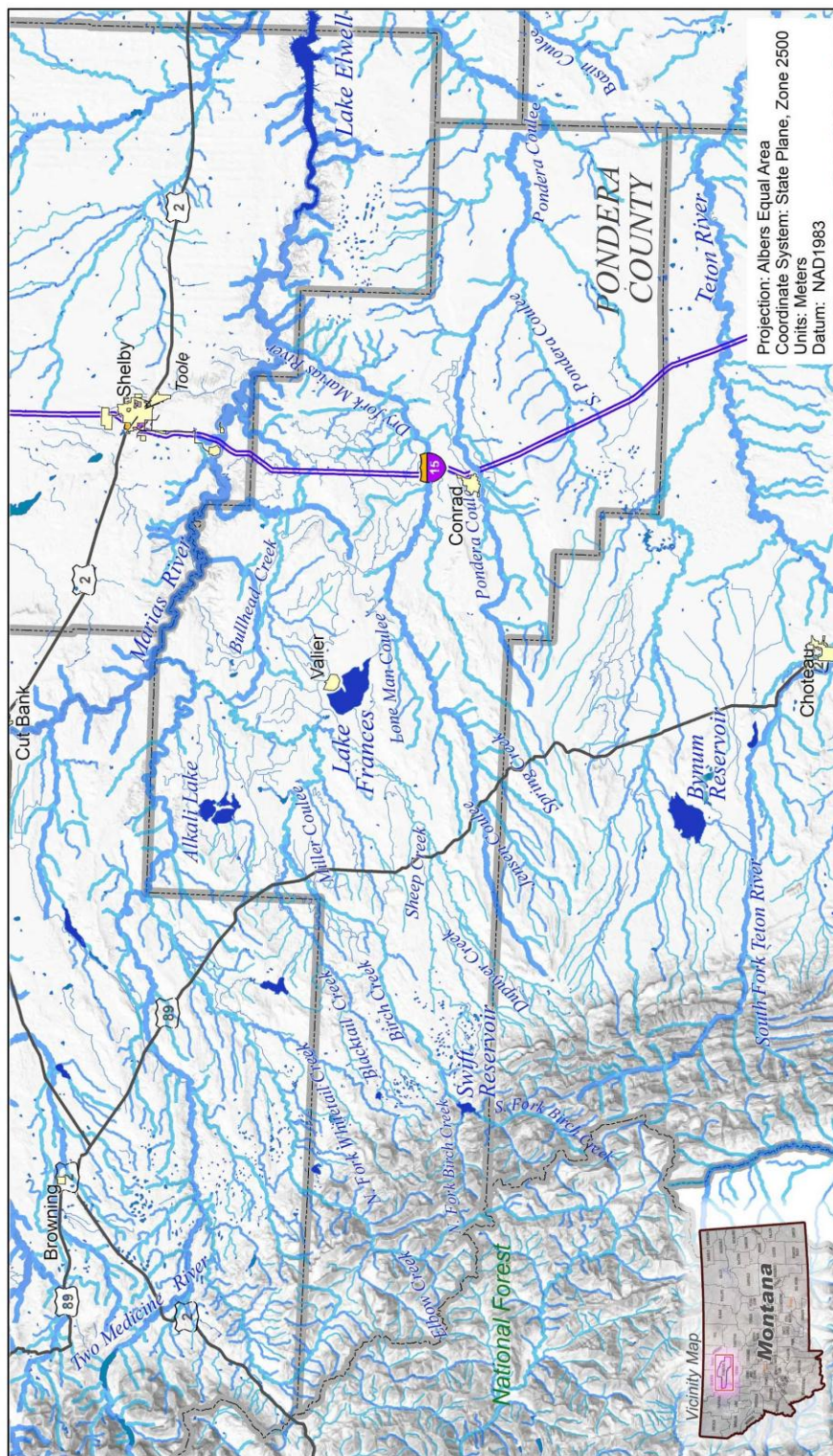
According to the National Wetland Inventory, there are 27,913 acres of wetlands in Pondera County. This is comprised of 15,084 acres of freshwater emergent wetland, 2302 acres of freshwater forested/shrub wetland, 1731 acres of ponds, 6970 acres in lakes, 391 riverine acres, and 321 acres of “other” wetlands. The wetlands are found across the county.

The U.S. Army Corp has issued “404” wetland permits for 100 locations in the county since 1990. Approximately one third of these permitted locations were issued to Cenex in 1995 for a buried oil pipeline. Other permits were issued for road and bridge construction and repair, dyke maintenance and repair, and one for a fisheries improvement project (MNRIS “Map of Corp 404 Wetlands Permits”).

3. Aquifers and Wells

Domestic water comes from a number of geological formations across the county. According to the Montana Bureau of Mines and Geology, sandstone and limestone formations, shale, glacial till, and alluvium all produce well water in Pondera County (Montana Bureau of Mines and Geology).

The overview for Pondera County in the Groundwater Information Center at the Bureau of Mines and Geology provides the following information about wells in the county. There are 1391 wells recorded in the county. The deepest well is 2080 feet, the shallowest well is 3 feet deep. The oldest well on record is January 1, 1885. The most recent well as of May 17, 2010, was April 4, 2010. There are 12 statewide monitoring network wells in Pondera County.



Water Features

Water features shown are from the National Hydrography Dataset (NHD) which identifies surface water features. The NHD is a feature-based dataset that interconnects and uniquely identifies stream segments and surface water. The stream level is a numeric code that identifies each main path of water flow through a drainage network. The stream level value is incremented by one and is assigned to all transport reaches that terminate at this path.

June 2010

MAP LEGEND

National Hydrography Dataset

- Stream Level 3
- Stream Level 4
- Stream Level 5
- Stream Level 6
- Waterbody

Stream level assignment for a simple drainage network.

0 2.5 5 10 15 20 Miles

13° 44' 0" 270 180 13° 44' E
 -Magnetic Declination-

Table 1: Wells by Depth	
Well Depth in Feet	Number of Wells
0-99	1155
100-199	193
200-299	29
300-399	7
400-499	1
500-599	1
600-999	0
>1000	5
	1391

Source: Montana Groundwater Information Center, May 2010

Most of the wells in the county are less than 100-feet deep and a small number of wells are greater than 1000-feet.

Table 2: Reported Water Uses	
Reported Use	Number of Wells
Monitoring	680
Domestic	350
Stockwater	341
Irrigation	41
Test Well	41
Geotech	34
Public Water Supply	25
Unknown	22
Other	2
Unused	8
Research	7
Commercial	2
Medical	1
Total	1554

(Note: Some wells report more than one type of use)

Source: Montana Groundwater Information Center,
May 2010

The Groundwater Information Center also maintains records of how many wells were recorded in each of the past 20 years. The highest number of wells recorded in one year was 136 in 1994. The second highest year for wells was 1993 with 116 wells. The previous five years have had 13 wells in 2009, 33 wells in 2008, 37 wells in 2007, 50 wells in 2006, and 93 wells in 2005 (Montana Bureau of Mines and Geology).

4. Irrigation Systems

(Note: The following information was excerpted from "Irrigation in Montana, A Preliminary Inventory of Infrastructure Condition" PBS&J, Missoula, January 2009 for Montana Department of Natural Resources and Conservation.)

One of the largest privately run irrigation systems in Montana can be attributed in part to consolidation of lands claimed under the Desert Land Act. W.G. Conrad and his brothers obtained title to some 50,000 acres in the area around Conrad which became a large part of the ground now served by the Pondera County Canal and Reservoir Company (PCCRC). Successors in interest to the Conrad Brothers used the provisions of the Carey Land Act to organize a large irrigation project to serve this land and other adjacent ground. Under the provisions of this act, two companies were formed in 1909. One consisted of the owners of the land within the project and the other was the construction company that was contracted to build the ditch system. The Carey Land Act Board accepted the project as complete in 1953. At the time of the final acceptance, 72,000 acres were authorized for irrigation.

Currently approximately 80,000 acres of ground are irrigated in the county from the PCCRC and the Brady Canals (Cossitt Meeting Notes, April 2010).

5. Dams

There are no state or federal dams in Pondera County. The National Inventory of Dams maintained by the U.S. Army Corp of Engineers and the U.S. Geological Survey (GNIS) show 41 dams in the county. Swift Reservoir and Lake Frances have been created by dams. The Pondera County Pre-Disaster Mitigation Plan (PDM Plan, 2004) indicates that a failure of the Swift Dam could cause loss of life and significant property damage. Failure of the Lake Frances Dam would likely only result in property damage. Dams in the county are used for flood control, fire protection, irrigation, and stock watering (PDM Plan 2004).

6. Water Rights

Pondera County is situated in watershed 41P, the Marias Watershed. According to the Water Resources Division of the Department of Natural Resources and Conservation, this watershed is currently being examined. This means that no decrees, temporary, preliminary, or final have been issued (DNRC Basin Location and Adjudication Status Map, March 2010).

7. Water Quality

According to the Montana Department of Environmental Quality's Clean Water Act Information Center, CWAIC, the Dry Fork of the Marias, the Marias River, and the South Fork of Birch Creek have been fully assessed and support all uses (<http://cwaic.mt.gov>). The findings are based on biological, habitat, and physical/chemical assessment. The uses that are fully supported include agricultural, aquatic life, drinking water, industrial, primary contact recreation, and warm or cold water fishery.

Birch Creek from Blacktail Creek to the Two Medicine River fully supports agricultural, drinking water, and industrial uses. Aquatic life and primary contact recreation are partially supported and there is insufficient information to determine support of the cold water fishery. Birch Creek from Swift Dam to Blacktail Creek has not been assessed. Pondera Creek/Coulee has not been assessed for agricultural, drinking water, industrial, or primary contact recreation, but partially supports aquatic life and cold water fishery uses based on physical/chemical assessment.

Dupuyer Creek (North and South Forks to the mouth of Birch Creek) has been assessed biologically, for habitat, and physically/chemically. Agriculture, drinking water, and industrial uses are fully supported. Primary contact recreation is partially supported. Aquatic life is not supported and there is insufficient information to determine support for the cold water fishery. Low flow alterations, nitrates, sedimentation, and water temperatures are the probably causes for uses that are not fully supported in Dupuyer Creek.

In general, probable sources for waters in the county that do not fully support uses relate to either flow alterations from diversions or agricultural uses, or both.

Based on data extracted on April 24, 2010, there are 17 entities with water discharge permits located in Pondera County. According to the Environmental Protection Agency's data base, none of the permits are current.

Table 3: Facilities with Discharge Permits			
NPDES ID	Name	Expiration Date	Description
MTG10157	Birch Creek Colony	7/31/2005	General livestock
MTG580022	Brady County Water/Sewer Dist.	9/30/2004	Sewerage
MTG010164	Camrose Colony	7/31/2005	General livestock
MT0020079	Conrad Waste Water Treatment	4/30/2011	Sewerage
MTR101234	Conrad SW	12/31/2006	Highway and street Construction
MTG651005	Heart Butte Lagoon	No info	Sewerage
MTR101809	Lake Francis Intake	12/31/2006	Heavy construction
MTG010209	Midway Colony	8/31/2006	Hogs
MTR101608	Midway Colony	12/31/2006	Heavy construction
MTR101947	MDT-Dupuyer	12/31/2006	Highway and street construction
MTG010168	New Miami Colony	12/31/2005	General livestock
MTR000368	Northern MT. joint refuse	9/30/2006	Refuse systems
MTG010163	Pondera Co. holding pond	7/31/2005	General livestock
MTR102220	Pondera Co. C&R Co.	No info	No info
MTG010127	Sill Feedlot	7/31/2005	Beef cattle feedlots
MT0021792	Valier Waste Water Treatment	4/30/2010	Sewerage
MTR101008	Valier-West Project	12/31/2006	Heavy construction

Source: <http://oaspub.epa.gov/enviro>

7.3.2 Air Quality

Air quality is important to county residents for health and visual quality. Pondera County is currently in an unclassified status which means that air quality regulators believe all standards for air quality are being met, but insufficient monitoring is occurring to verify that assumption.

Under the Clean Air Act, the state of Montana is responsible for permitting operations which discharge between 25 and 100 tons per year. Larger projects must undergo a PSD or prevention of significant deterioration review by the U.S. Environmental Protection Agency. According to the Environmental Protection Agency there are currently seven facilities in the county that produce and release air pollutants (USEPA, Facilities with Discharge Permits). These facilities are

the Balko Inc-Ledger Field Compressor Station, Busch Agricultural Resources, Buttrey Food Stores, and Conrad Cooling and Heating in Conrad. The Genesis Lake Francis Compressor Station, the Lake Francis Compressor Station, and the Shelby Williams Field Station are the additional sites located within Pondera County that produce and/or release air pollutants. Detailed information on each facility is available on line at the EPA web site.

The Clean Air Act of 1970 provided three designations of air quality. Class One is the most pristine and offers the greatest level of protection from future deterioration. In a Class One airshed, ambient sources are limited and there is a system of review for proposed new sources of air pollution. Permitting within a Class One airshed would allow only a very small amount of deterioration. All major new projects within a 100 kilometer radius of a Class One airshed are subject to review since they could affect the air quality of that airshed. There are no Class One airsheds in Pondera County. The two closest Class One airsheds are Glacier National Park (www.nps.gov) and the Bob Marshall Wilderness Area (www.fs.fed.us).

Impacts to air quality come from a number of sources within the county. Air quality in the county is affected by natural processes and human activity. In agricultural areas, tillage, pesticide application, burning, and animal waste can all affect air quality. Travel on unpaved roads throughout the county and gravel operations raise significant amounts of dust. Emissions from the burning of fossil fuels are caused by vehicles and structural heating.

Impacts to air quality may also come from outside of the county. In both grassland and forest habitats, wildland fires can result in large amounts of smoke. Air quality is also affected by meteorological conditions such as wind and temperatures. Relatively low population density combined with climactic conditions which produce a constant dispersal of air pollutants have contributed to the good air quality found in Pondera County.

Potential impacts to air quality in the county, whether the activity occurs within or adjacent to the county, should be carefully considered along with the benefits of future development. Air quality is of significant importance to the health, quality of life, scenic quality, and economy of Pondera County.

7.3.3 Fish and Wildlife

The diversity and extent of high quality habitat in the county supports a wide range of wildlife species. These species are enjoyed by residents and viewers, hunted for sport, and used for commercial purposes. In addition to numerous ungulates, Pondera County is home to two species of bears, mountain lions, fur-bearers, a variety of birds, and non-game species.

The county has the full complement of big game ungulates including antelope, white-tailed and mule deer, elk, moose, big horn sheep, and mountain goats. Each species has different habitat needs. Antelope are found in the eastern two-thirds of the county. Whitetail and mule deer are found throughout the county as are black bears. Whitetail deer especially have proven themselves to be very adaptable to human presence.

The area richest in intact wildlife habitat and numbers of species in the county is that area along and up into the Rocky Mountain Front. The area is home to deer, elk, bighorn sheep, mountain goats, moose, wolves, mountain lions, black bear, and grizzly bears.

Game damage to agricultural operations occurs sporadically throughout the county. Deer and elk are responsible for damage, but at present the damage is mostly attributable to antelope. (Olson, May 2010.) Elk and numbers of other species are affected by the quality and extent of habitat available and landowner tolerance. According to Montana Fish, Wildlife and Parks Biologist, Gary Olson, most of the property in the county (estimated 80%+) is open to at least some hunting. (Olson, May 2010) The majority of private land leasing for hunting occurs for pheasant hunting. Sharp-tailed grouse and Hungarian partridges are also hunted in the county.

With the exception of antelope, ungulates are found all along the Rocky Mountain Front. In general, sheep, goats, elk, and moose range higher in elevation along the Front during the summer, and winter down along the creeks and at the base of the Front. Public lands provide the summering habitat and winter range is a combination of public and private land.

Black bears range throughout the county. Grizzly bear numbers are steadily increasing in the county. The grizzly population in the Northern Continental Divide is estimated to be increasing at 3% per year. And as the population increases, individuals are dispersing from the west and north (Bob Marshall Wilderness Area and the Blackfoot Reservation) to the east. Grizzly bears have large home ranges with some males ranging up to 1000 square miles. Habitat in the county provides a diversity of food sources for grizzlies.

Animals classified by the state as fur-bearers are found in the county as well. These include; mink, muskrat, beaver, otter, and bobcats. Several trappers operate in the county. The highest density of mountain lions is found in the west half of the county. Olson estimates that the population of lions in the county is stable at or slightly below a 20-year average.

Wolves, previously listed under the Endangered Species Act, have been de-listed. Montana held its first hunting season for wolves in 2009. One of the wolves harvested during that first season was taken just west of the county. Olson believes that wolves are so far transient in the county, but that there have been attempts to establish a pack.

Pondera County also has upland game birds and raptors. Pheasants have been introduced and provide good hunting opportunities in the county.

The county is home to a diverse fishery, including both cold- and warm-water species. Brook, rainbow, and west slope cutthroat trout are all present in county streams. Longnose dace, suckers, sculpins, shiners, chubs, minnows, stickleback, northern pike, and walleye are also found in streams and lakes in the county. Angling is available to county residents and serves as a draw to the county by non-residents. Lake Frances is noted for walleye, perch and a few northern pike. More information can be found related to fisheries in the county, including angler days and management, on the Montana Department of Fish, Wildlife and Parks' web site (<http://fwpiis.mt.gov>).

The U.S. Fish and Wildlife Service (FWS) maintains a listing of all species classified as endangered, threatened, or candidate under the federal Endangered Species Act (ESA.) Pondera County has two wildlife species listed as threatened under the ESA. Threatened species are those that are likely to become endangered in the foreseeable future throughout all or a significant portion of their range.

Table 4: Species Classified Under the Endangered Species Act	
Species Designation	Species Name
Threatened	Lynx
Threatened	Grizzly bear

Source: <http://www.fws.gov/endangered>.

- The status of wolves under the Endangered Species classifications alternated from not listed in April 2010, then listed by court order. In March 2011, the listing had changed again and gray wolves (*canis lupus*) were classified as “experimental, non-essential.” (USFWS website) The status of wolves is in flux with pending litigation and possible congressional legislation.

7.4 Unique and Important Habitats

The Rocky Mountain Front provides important high-quality habitat for many species. The Marias River is also important. The river provides a movement corridor for bears, ungulates, and fur-bearers--in addition to the fishery. Montana Fish, Wildlife and Parks recently purchased land in Pondera and neighboring Toole County to create the Marias River State Park and Wildlife Management Area. Approximately 1200 acres of this new state park are situated in Pondera County. (Olson, May 2010)

While there are opportunities for conflict between humans and wildlife, the numbers of incidents have been small. Land conversion that compromises wildlife habitat has slowed considerably with the economic downturn and is not currently a significant concern in the county. There is potential for conflict between wildlife and people, and the more people there are on the landscape, the greater the potential becomes. Managing development to minimize loss of critical habitat and minimize the number of attractants will benefit both humans and wildlife.

7.4.1 Geology, Soil and Minerals

1. Geology

According to the Soil Survey, the county “is underlain by a thick sequence of Cambrian to Cretaceous-aged sedimentary rocks that range in age from 600 to 65-million years. These rocks dip gently to the west and consist of both marine and terrestrial sediments.” The Rocky Mountains on the western edge of the county formed during a time of compression and uplift with extensive folding and faulting. Some early lake and streambed sediments now stand out as elevated terraces. Glaciation both eroded and deposited material on the plains.

2. Soils

The Pondera Soil Conservation District was established in 1945. (*Soil Survey of Choteau-Conrad Area; Parts of Teton and Pondera Counties*, 2003)

The USDA Natural Resources Conservation Service in cooperation with the Montana Agricultural Experiment Station has prepared a Soil Survey. *The Soil Survey of Choteau-Conrad Area; Parts of Teton and Pondera Counties, Montana*, was issued in 2003. The survey includes all lands in Pondera County except for the Lewis and Clark National Forest and the Blackfeet Indian Reservation. The lands within the Blackfeet Reservation within Pondera County are included in the *Soil Survey of Glacier County Area and Part of Pondera County, Montana*, published in 1980. The Soil Survey lists the acreage and proportionate extent of each of the soil types present in the county. The survey also contains detailed maps showing the locations of the soil types. Information in Part II of the Soil Survey can be used “to plan the use and management of soils for crops and pasture; as rangeland and woodland; as sites for buildings; sanitary facilities, highways, and other transportation systems, and parks and other recreational facilities; and for wildlife habitat. This information can be used to identify the potentials and limitations for each soil and specific land uses and to help prevent construction failures caused by unfavorable soil properties.” (*The Soil Survey of Choteau-Conrad Area; Parts of Teton and Pondera Counties, Montana, 2003*)

3. Minerals

Pondera County has produced significant amounts of oil and gas since the late 1920’s when deposits were discovered in the Sweetgrass Arch. (*Soil Survey of Choteau-Conrad Area; Parts of Teton and Pondera Counties*, 2003) Exploration and leasing in the county has slowed in recent years and is not active along the higher elevation Rocky Mountain Front due to the Traditional Cultural area. More information can be found in the Cultural Resources section of this chapter.

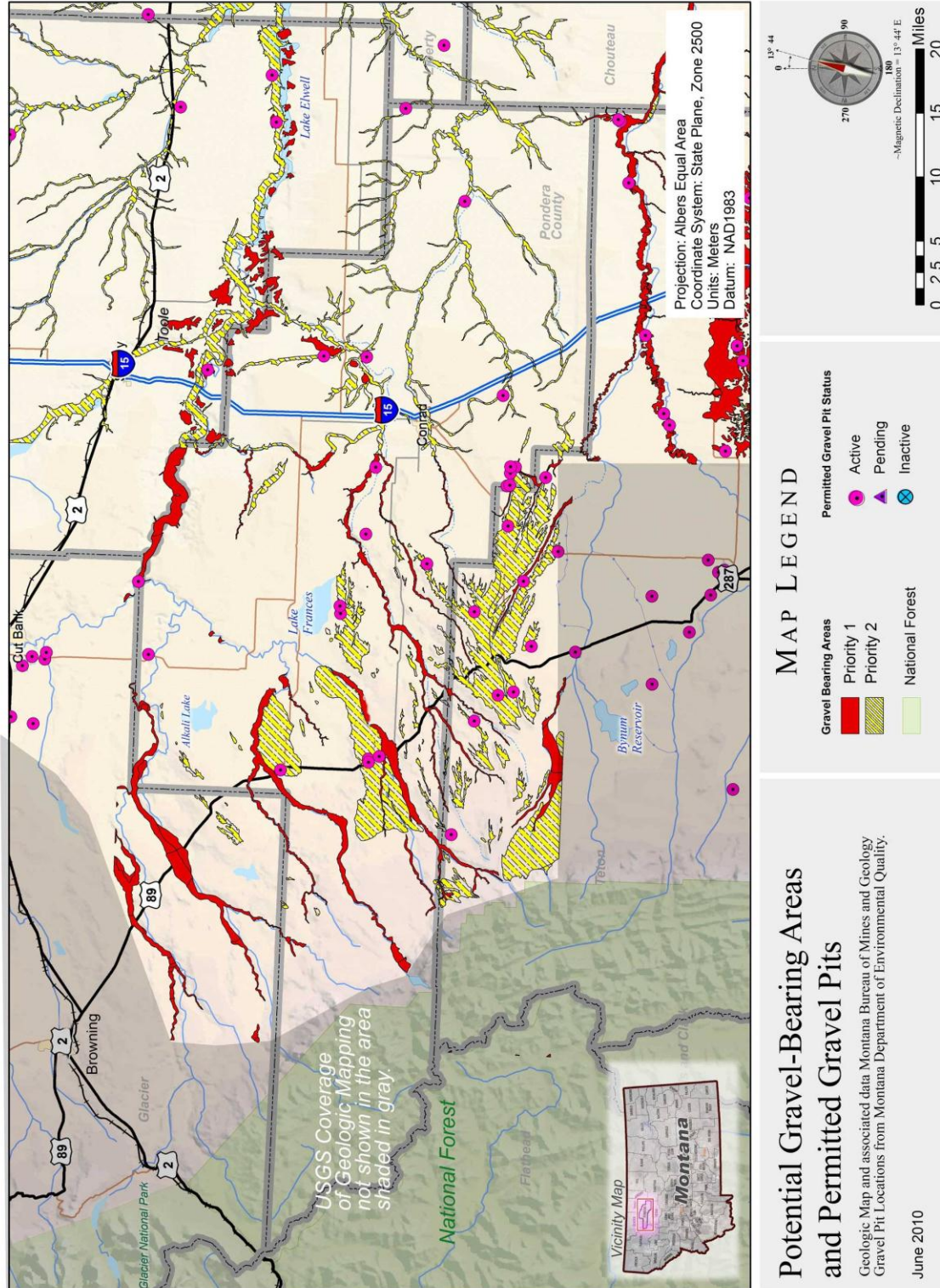
Outcrops of moderate to good quality bituminous coal are distributed throughout the Pondera and Teton County area, but the total volume is small. Despite some personal use, the deposits have not been economically valuable to date. Pondera County contains no major hard rock mining districts. However, small amounts of titanium, iron, and zircon have been produced in the area. (*Soil Survey of Choteau-Conrad Area; Parts of Teton and Pondera Counties*, 2003)

4. Sand and gravel resources

The Montana Bureau of Mines and Geology (MBMG) in cooperation with the Montana Department of Environmental Quality (DEQ) has mapped potential gravel-bearing areas and permitted gravel pits in Pondera County. DEQ is the permitting agency for gravel pits in the state of Montana. Active, pending, and inactive gravel pits were mapped. According to the work by the DEQ and MBMG, there are 21 active, no pending, and no inactive permitted gravel pits in the County.

MBMG also prioritized gravel bearing areas as either Priority 1 or Priority 2. The most extensive Priority 1 areas are linear and follow the beds of Dupuyer Creek, Birch Creek, the Marias River, and the Dry Fork of the Marias. The Priority 2 gravel-bearing areas in the County are found

largely on the stream terraces of Dupuyer and Birch Creeks. Sand and gravel resources are widely available in Pondera County.



7.4.3 Vegetation

1. General – types of vegetation and distribution

Vegetation varies across the county with elevation and precipitation. According to the Soil Survey, Conrad averages 11.91 inches of precipitation annually and Valier averages 12.7 inches. By contrast, the higher elevation western reaches receive 60-85 inches per year. ((Montana NRIS)

Land cover maps confirm that the highest western slopes are timbered with evergreens, the foothills have mixed evergreen and deciduous vegetation, the central area of the county is covered in grasslands, and the eastern portion of the county is used for hay/pasture, and small grain production. Woody wetlands are not uncommon in the foothill areas and follow several of the drainages.

Table 5. Landcover Types in Pondera County		
Category	Acres	Percent
Urban	1,644	0
Agricultural	331,391	32
Upland Grassland	494,659	47
Moist shrubland	25,702	2
Dry shrubland	172	0
Moist shrub/grassland	373	0
Dry shrub/grassland	172	0
Tree/grassland	2,771	0
Mixed deciduous/aspen	16,934	2
Mixed deciduous	10,176	1
Moist conifer forest	34,615	3
Conifer forest	30,199	3
Mixed moist forest	12,966	1
Mixed deciduous-conifer	409	0
Standing burned or dead	80	0

(Source: Community Wildfire Protection Plan, 2007)

2. Species of Concern or T&E

Threatened wildlife species are discussed in the Fish and Wildlife section of this chapter. According to the Montana Natural Heritage Program, Pondera County has 11 plant species of special concern. The species are as follows.

Table 6: Plant Species of Special Concern in Pondera County			
Common Name	Scientific Name	State Rank	Status
Peculiar Moonwort	Botrychium paradoxum	S2	At risk
Dense-leaf Draba	Draba densifolia	S2	At risk
Lackschwitz Fleabane	Erigeron Lackschwitzii	S3	Potentially at risk
Rocky Mountain Twinpod	Polygonum austinae	S2S3	Potentially at risk
Dwarf saw-wort	Saussurea densa	S1S2	At high risk, at risk
Round-leaved orchis	Ameriorchus rotundifolia	S2S3	At risk, potentially at risk
Crawe's sage	Carex crawei	S2	At risk
Saprow's egg Lady Slipper	Cypripedium passerinum	S2	At risk
Northern Wildrye	Elymus innovatus	S1	At high risk

Source: Montana Natural Resource Information System (<http://mtnhp.org>)

3. Noxious Weeds

The Pondera County weed district has had a weed management plan since 1987. The weed district implements the County Noxious Weed Control Act. The Noxious Weed Management Plan for Pondera County is updated every two years. As stated in the plan, the goals of the Weed District are:

- 1) Provide management of noxious weeds on all land or right-of-way owned or controlled by the county or municipality;
- 2) Work cooperatively with private, state, and federal land managers to control noxious weeds and maintain native rangeland and cropland ecosystems.
- 3) Provide weed education and materials, workshops, and meetings for the county and public.

The current noxious weed situation is described in the Noxious Weed Management Plan (2008) as follows:

- Spotted Knapweed infests the Birch Creek drainage from Swift Dam to where it runs into the Marias River, with substantial scatterings of Leafy Spurge, Russian Knapweed, Houndstongue, and Whitetop.
- The Dry Fork of the Marias is primarily infested with Spotted Knapweed. Whitetop is also established along with Houndstongue with a large infestation of Leafy Spurge from Ledger north to the Marias River.
- The Marias River is infested with all of the common noxious weeds, including Leafy Spurge, Spotted Knapweed, Russian Knapweed, Houndstongue, Perennial Pepperweed, Bindweed, and Canada Thistle.
- Pondera Creek is primarily infested with Whitetop. Canada Thistle, Russian Knapweed, and Houndstongue are spread throughout the County.

- Dupuyer Creek and Sheep Creek have scattered Leafy Spurge patches, with quite a bit of Houndstongue, and Spotted Knapweed, especially from Dupuyer to Birch Creek.
- The Montana Department of Transportation highways are heavily infested with Spotted Knapweed, Canada Thistle, Field bindweed and scattered infestations of Leafy Spurge and other noxious weeds. The rights-of-ways, having traffic from other areas of the state and nation are a constant threat for the introduction of noxious Weeds from other areas that are not currently established locally. The state highways are a primary source of spread for noxious weeds and infestations are in direct proportion to the amount of vehicle traffic. Pondera County Weed District maintains state rights-of-ways with an active integrated management program. The 200 miles of state rights-of-way have around 5000 acres in Pondera County.
- The County rights-of-ways also have continual noxious weed problems, again directly proportional to the amount of traffic. The problem is held in check with maintenance spraying.
- Rights-of-ways are continually re-infested with noxious weeds as vehicles are a primary source of noxious weeds from area to area. Pondera County has about 1400 miles of county roads amounting to 7000 acres of rights-of-ways.

Weed District Supervisor, Steve Becker, reports that spotted and Russian knapweed, leafy spurge, and field bindweed are his greatest concerns (Becker, May 2010). In general weed infestations have come from the western part of the state and are spread in the county by vehicles, and water.

The county uses education, prevention, early detection, biological, cultural, mechanical, and chemical means to prevent and combat noxious weeds. The county has received grants from the Montana Noxious Weed Trust Fund to purchase herbicides, spray, equipment, and sheep fencing to support weed control efforts. The county also assists groups of local landowners through grants to help with weed control costs. The county weed district inspects forage that will be sold as weed free. Most public lands now require weed seed free feed/hay.

Pondera County treats weeds along county roads, state highways and some lands managed by the Bureau of Land Management. The railroad and Forest Service treat their own properties. However, recreational traffic accessing the National Forest lands in the western part of the county contributes to weed issues along those access roads. The county's weed management plan addresses gravel pits, subdivisions, utility rights-of-ways, and weed management in cities and towns.

7.4.4 Cultural Resources

State and federal land managers are required to conduct cultural resource inventories when ground disturbing activities are proposed on their lands. There is no such requirement for private lands. To date, 104 historic and 56 archeological sites have been recorded in Pondera County. Of that number, four have been nominated to and listed on the National Register of Historic Places. A National Register designation affords special protection for publicly-owned sites and access to technical expertise and tax benefits for privately-owned sites (Murdo, **date**).

Table 7: Sites Listed on the National Register of Historic Places		
Name	Closest City	Property Type
Conrad City Hall	Conrad	Building
Froggie's Stopping Place on the Whoop-up Trail	Conrad	District
Two Medicine Fight Site	Browning	District
Valier Public School	Valier	Building

Source: Damon Murdo, Montana State Historic Preservation Office

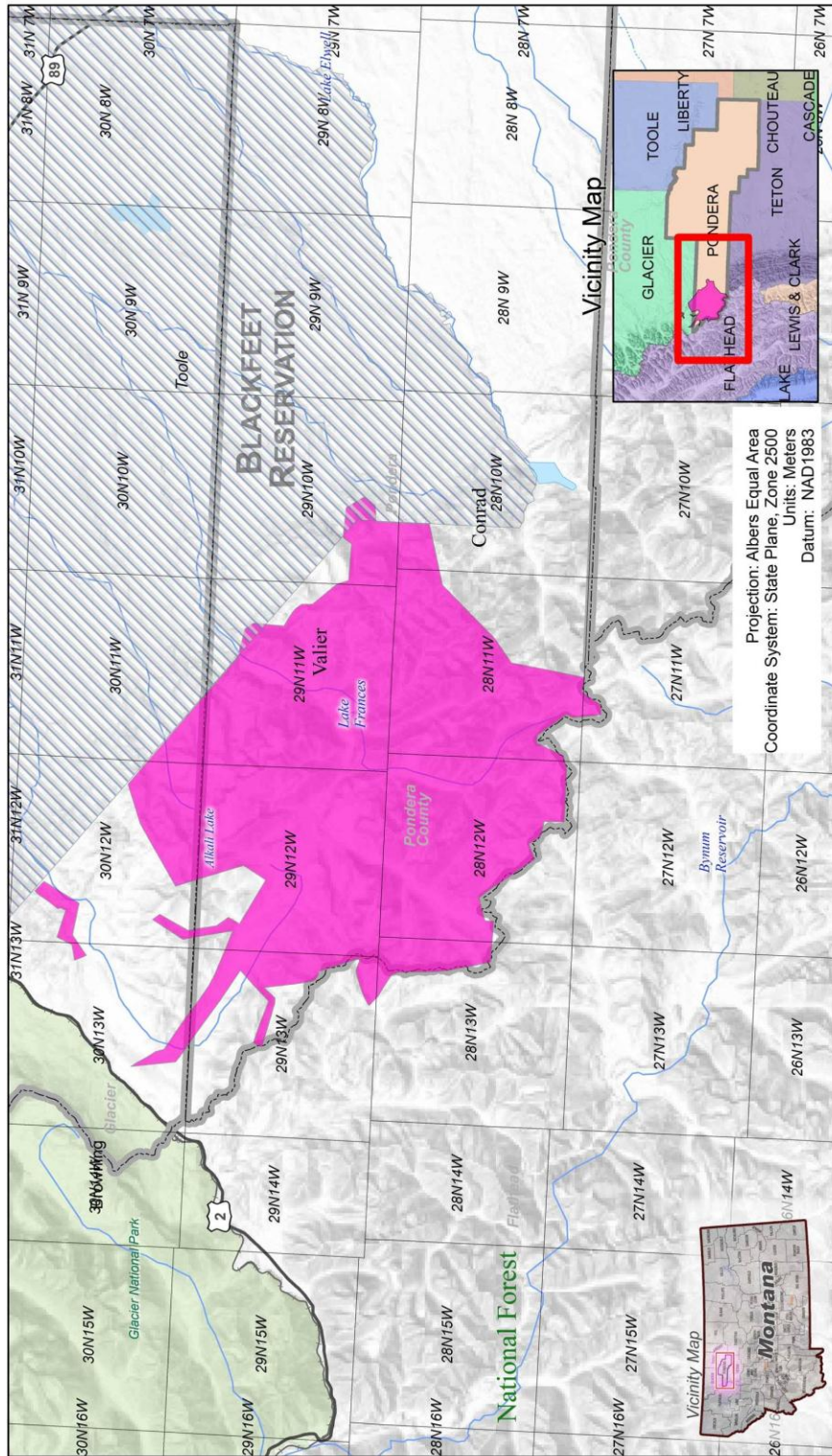
The “Badger-Two Medicine Blackfoot Traditional Cultural District” the first of its kind in the nation, is situated in western Pondera, Glacier, and Teton Counties. The district is made up of individual sites located within the exterior boundary, with location information protected for these individual sites. Although the district is not listed on the National Register of Historic Places, the Keeper of the National Register determined the district eligible for listing on January 31, 2002. This designation means that federal land managers must treat the property as if it was listed on the National Register.

The Keeper commented “The Badger-Two Medicine Blackfoot Traditional Cultural District is eligible for listing in the National Register of Historic Places under Criteria A and B in the area of Ethnic History: Native American. The remote wilderness area is associated with the significant oral traditions and cultural practices of the Blackfoot people, who have used the lands for traditional purposes for generations and continue to value the area as important to maintaining their community’s continuing cultural identity. Under Criterion B the area is directly associated with culturally important spirits, heroes and historic figures central to Blackfoot religion and traditional lifeways and practices” (U.S. Department of the Interior, National Park Service, 2002).

Since the original determination by the Keeper, two studies have been completed. The studies completed by both the Forest Service and Tribe have recommended expansion of the cultural district boundary. To date, adjustments to the boundary are only recommendations. The boundary agreed to by the Keeper, referred to by the Forest Service as the “core district” is the boundary that the Forest Service recognizes in its decision making. The boundary issue is still evolving (French, May 2010).

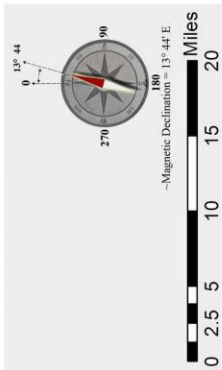
The importance of the cultural district related to land use and the potential for future development is that both the Blackfeet Tribe and Lewis and Clark National Forest will consider potential impacts to the values of the district for any activities that might be proposed. The most likely activities would be oil and gas development and recreation.

Oil and gas leasing on the Rocky Mountain Front is under a moratorium. No new leases are being issued. The policy of the current administration is to encourage relinquishment of existing leases along the Front through incentives or buying out. The application for permit to drill (APD) that triggered the original identification of the cultural



MAP LEGEND

- Indian Reservation
- Badger-Two Medicine
- Blackfoot Traditional Cultural District



Badger-Two Medicine Blackfoot Traditional Cultural District

The Badger-Two Medicine, Blackfoot Traditional Cultural District was digitized from a map showing the boundary of the historic district ownership.

June 2010

district is still in place, but has been suspended. The suspension is not expected to be lifted soon because the Tribe and Forest Service have not identified mitigation for potential impacts to cultural district in the event drilling were to proceed (French, May 2010).

The Lewis and Clark National Forest recently went through a process to update their Travel Management Plan. The decision in the travel plan was based in part on consideration of the cultural district, treaty rights, and consultation with the Blackfeet Tribe. The decision restricted motorized travel on Forest roads and trails in the Badger-Two Medicine area with a few restrictions. The travel management decision is currently in litigation (French, May 2010).

New development has the potential to adversely impact historic and archeological sites. The county has no mechanism in place to inventory or assess potential sites located on private lands.

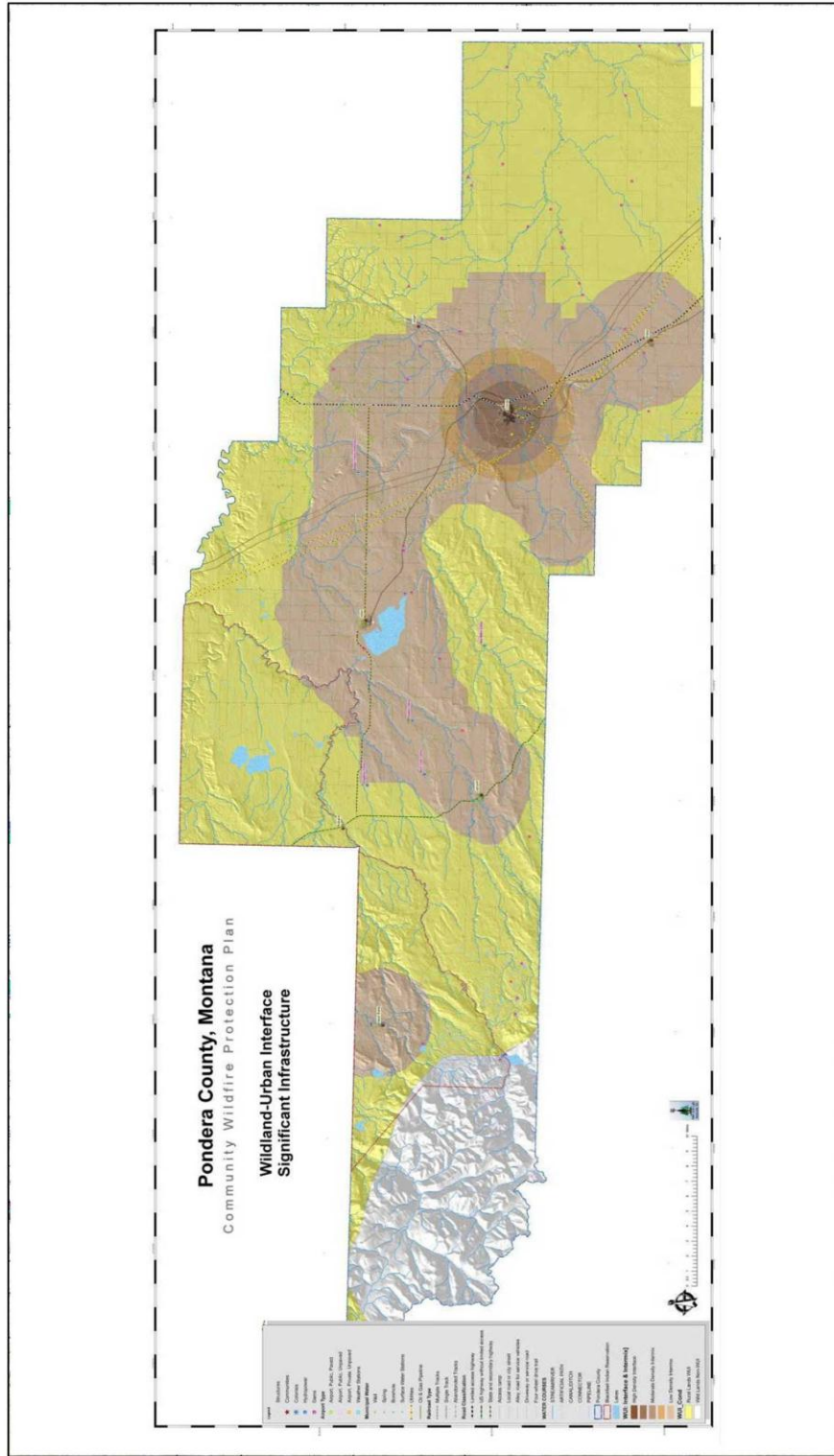
7.4.5 Hazard Areas

1. Seismic Activity

According to the Pondera County Pre-Disaster Mitigation Plan (2004), the west end of the county and Valier are more seismically active than the Conrad area. This is due to proximity to the Continental Divide and faults in Flathead County to the west. Past earthquakes have been felt in the county, but there has been no documented property damage. No injuries or loss of life have occurred from earthquakes in Pondera County.

2. Wildland Fire

The county completed a Community Wildfire Protection Plan (CWPP) in May 2007. In general, the wildland fire hazard increases from east to west due to both steeper slopes and heavier fuels. The CWPP defined and mapped areas of low, moderate, and high density interface. Local jurisdictions in the county should consider risks of wildland fire for proposed development.

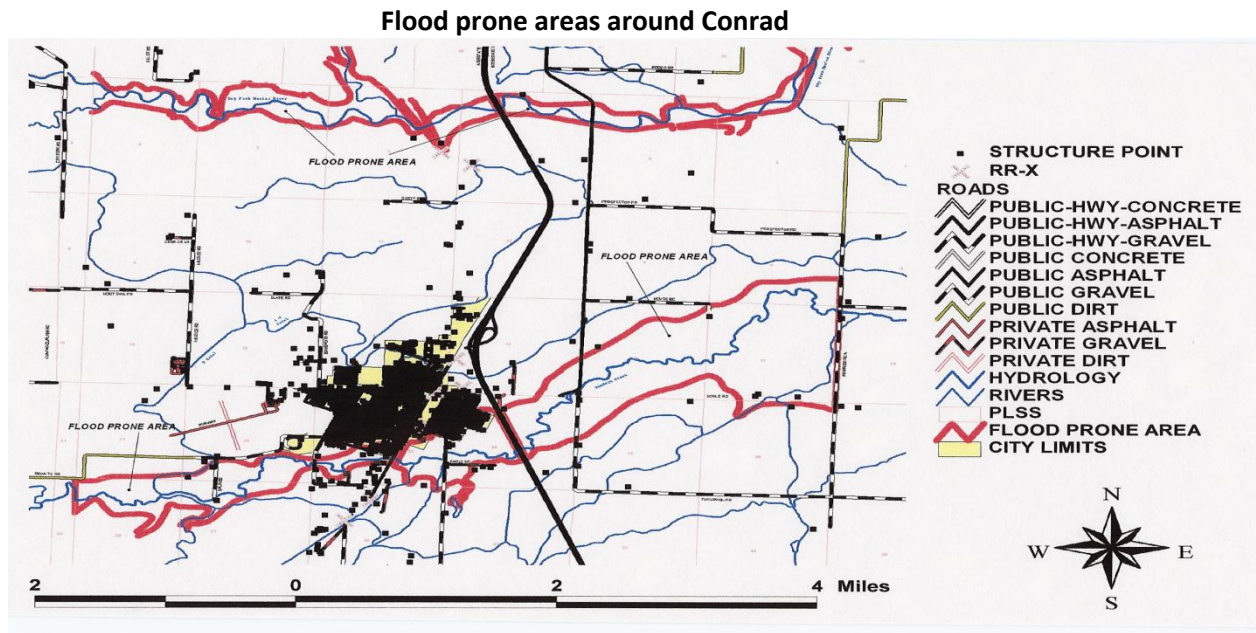


Wildland-Urban Interface and Significant Infrastructure

Map from Pondera County, Montana, Community Wildfire Protection Plan Appendices Page 10.

3. Flood Prone Areas

According to the 2004 and 2008 Pre-Disaster Mitigation Plans for the county, flood plains have not been designated or mapped. The PDM Plan reported that periodic minor flooding occurs in the county and that the south edge of Conrad appears to be the most flood-prone developed area in the county. The level of confidence by the County Floodplain Administrator in this information is low.



Source: 2008 Pondera County Pre-Disaster Mitigation Plan

4. Steep Slopes

Topographic relief is most dramatic in the western portion of the county where the foothills rise up through mountainous country to the Continental Divide. According to the U.S. Geological Survey map in the Pre-Disaster Mitigation Plan (PDM Plan), western areas of the county have slopes from 45-60%, while slopes in the eastern portion are from 0-4%. The Pondera County PDM Plan (2004) states that slope failure is generally not a concern in the county.

5. Areas of High Wind Speed

Average annual wind speeds range from 12 – 13.5 miles per hour to over 19.5 miles per hour. Generally wind speeds are lighter on the eastern side of the county and highest on the Front. The Heart Butte area is the developed area of the county that is subject to the highest wind speeds. A wind speed map of the county can be found in the Montana State Library's Natural Resource Information System at <http://nr.is.state.mt.us>. According to the Pre-Disaster Mitigation Plan for the county (2004) windstorms are frequent occurrences in the county and have caused significant damage in the past. Winds of 100 mph have been recorded during historic events. The state's "Existing and Potential Wind Farms" map does not show locations for wind power development in Pondera County. There is an existing wind farm just north of the county line.

6. Hazardous Materials – Remediation Sites

There are no existing or proposed EPA Superfund sites in Pondera County (USEPA, **date**). There are 20 facilities that reported hazardous waste activities, but none are large quantity hazardous waste generators in the county. The entities that engage in activities with hazardous materials include AT&T Valier, Bob's Auto Service, Cargill Inc, Cenex Crude Oil Pipeline, Conrad City Shop, Conrad Cleaners, Conrad Motor and Tire, Conrad Rural 2 4-D Spill, Conrad Tire Company Storage, Courtesy Ford, Econo Wash, Heart Butte Used Oil Collection Site, Intercontinental Truck Body Paint Room, Joe Russell Trucking, Lee Harrington Residence, LVI Environmental Services, MSE Environmental Inc, USBIA Blackfeet Indian Tribe, Van Motors Inc, and Zomer Truck Company (USEPA, **date**).

7.4.6 Scenic Resources

Consideration for the visual resource can help maintain the overall naturally appearing landscape while recognizing that there are some areas where human activities are evident to the eye, but hopefully not dominant. The highest visual quality exists when the landscape has had little alteration and appears intact when viewed. In general, as human activity becomes more evident to the eye, visual quality decreases. A heavily altered landscape appears fragmented and the eye is drawn to human activities rather than natural features. Some examples of landscape alteration in Pondera County which are visually evident include; roads, transmission lines, billboards, and gravel operations.

Although it is difficult to place a dollar value on scenery, scenery should be considered a significant economic asset for Pondera County. County residents and visitors value the outstanding natural appearing landscape which is an important facet to the quality of life in the county and a draw for recreationists, current residents, and potential future residents.

The landscape in Pondera County is highly scenic with diversity in naturally occurring patterns, shapes and textures. Views in the county include the alpine country on the west end of the county with permanent snowfields, mountain lakes in walled cirque basins, rugged peaks and mountain slopes, less dramatic rounded mountains, deep canyons and waterfalls, rock outcrops, high open benches, river bottoms, pastoral grazing scenes, hay lands, croplands, and dry lands. Vegetation is also diverse with low-growing vegetation on the foothills, timber on the wetter mountain slopes, steep, rocky, dry slopes and open, grassy treeless or thinly timbered areas. Areas of aspen along the Rocky Mountain Front display vivid colors in the fall.

In addition to transportation corridors, communities also have a high visual sensitivity.

Table 8: Scenic Characteristics of Major Transportation Corridors

Highway	Segment	Scenic features/character
State Highway 44	I-15 to Intersection with Hwy 89	Pastoral foreground, scattered residences Lake Frances key feature to south of road at Valier Rocky Mountain Front in background to west
State Highway 89	Choteau to Browning	Dramatic Front rising to the west Rural, rolling grassy hills, scattered residential to east
I-15 (Veterans Memorial Highway)	Conrad to Shelby	Open rolling hills, pastoral, agricultural foreground, distant mountains to west
County 534	Conrad to Swift Dam	Dupuyer Creek crossing Broken foothills and Rocky Mountain Front rising to west

7.5 Projected Future Trends for Natural Resources

Potential future development in the western areas of the county in particular, may be fire-prone due to steeper slopes and heavier fuels.

Wildlife can be both an economic draw and a source of potential conflict. Grizzly bear and wolf numbers are both increasing with corresponding dispersal to the east. Development in the county should seek to minimize human-wildlife conflict to protect public safety and minimize economic losses.

Noxious weeds will continue to be spread by vehicles along roads, and by water. Noxious weeds will remain an on-going issue due to the economic and habitat impacts.

New industrial development of any significant scale may need to consider potential impacts to the Class One airsheds located to the west.

Additional site-specific information about flood-prone areas would be helpful to ensure new investments are not made in at risk areas.

Oil and gas development along the Rocky Mountain Front is not likely to occur on public lands under current policies.

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