

# Evaluating the Sheyenne River and its Watershed

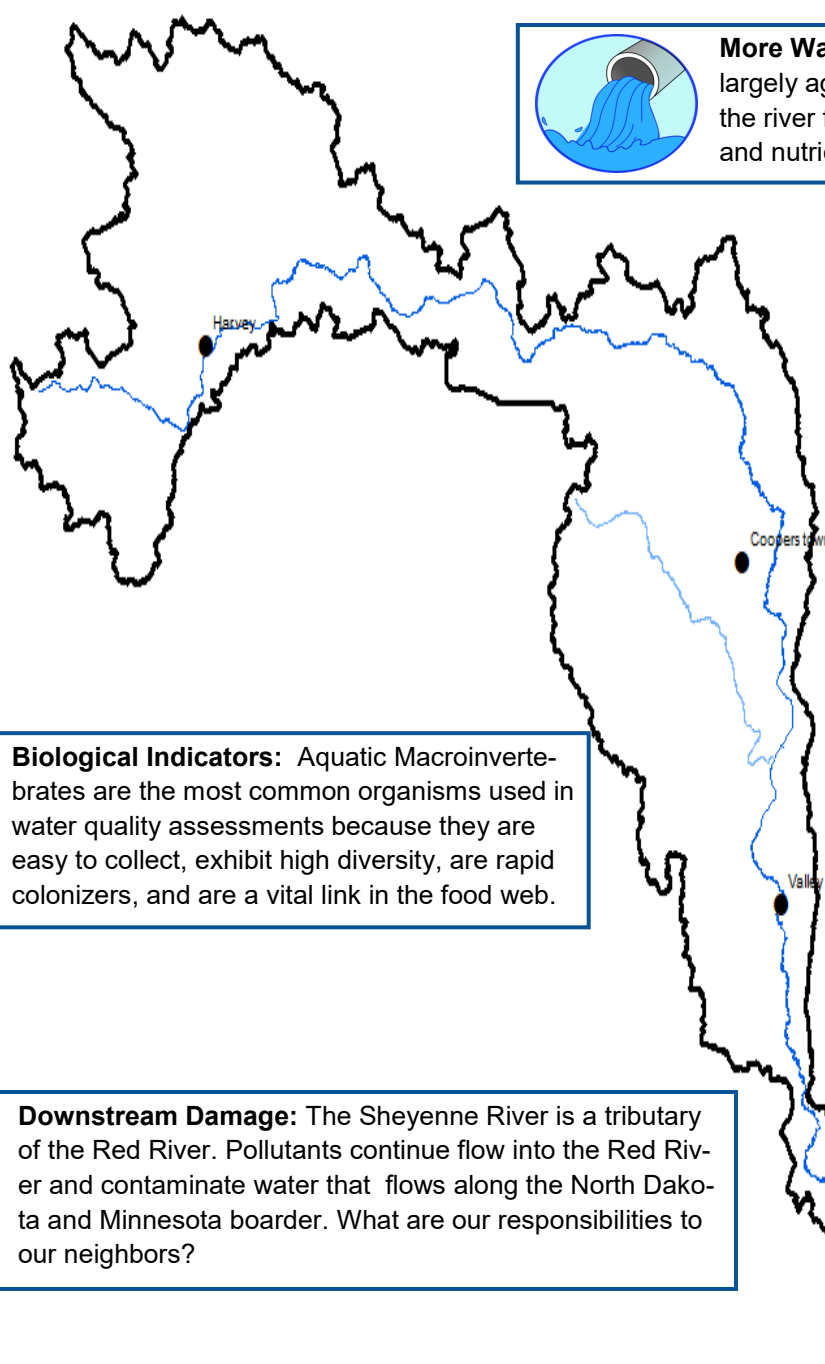
## From McClusky, ND to the Red River



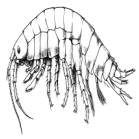
**Fish Species:** The three most abundant fish species are , 1) Fathead Minnow, 2) Longnose Dace, and 3) Spotfin Shiner. There is one game species, Channel Catfish, that is the 4th most abundant species.



**More Water:** Increased rain events combined with a largely ag dominated landscape brings more pollutants to the river from the landscape, such as sediment, bacteria, and nutrients.



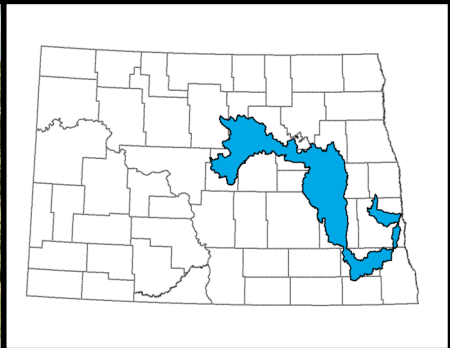
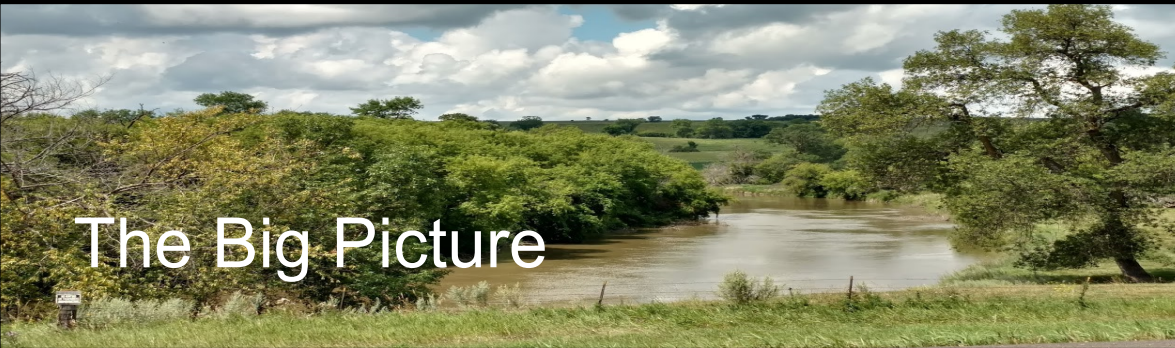
**Swimmers and Boaters Beware:** Harmful Algal Blooms (HABs) are becoming more prevalent in recreational waterbodies. HABs cause toxins that can be harmful to humans, pets, and livestock.



**Biological Indicators:** Aquatic Macroinvertebrates are the most common organisms used in water quality assessments because they are easy to collect, exhibit high diversity, are rapid colonizers, and are a vital link in the food web.



**Downstream Damage:** The Sheyenne River is a tributary of the Red River. Pollutants continue flow into the Red River and contaminate water that flows along the North Dakota and Minnesota boarder. What are our responsibilities to our neighbors?



# The Big Picture

**An important tributary .** The Sheyenne River is approximately 591 miles long, running from about 15 miles north of McClusky, ND to the Red River near Fargo, ND, and drains an area of 5,543 square miles.

**An impacted river.** Land use in the Sheyenne River Basin (ND) is dominated by agriculture. (58% crop cover and 25% of grassland/ pasture) .


**Sediment.** 158.560 US tons of sediment moves through the Sheyenne River in North Dakota annually. That is 3,964 semi-loads!

**Pesticides.** In 2021 the Sheyenne River 6 pesticide detections. None of the detections exceeded the Aquatic Life Benchmark. \* For more information on pesticides visit [nd.gov/ndda](http://nd.gov/ndda)


**Nutrients.** Nutrient loads have slowly decreased over the last 20 years. This is likely due to a large influx of water from the Devil's Lake output diluting the water.

**Moving nutrients.** The Sheyenne River carries a lot of nitrogen and phosphorus downstream, impacting slow-flow areas in North Dakota and reservoirs downstream. On average the Sheyenne River moves 240 US tons of phosphorus and 720 US tons of nitrogen through ND yearly.

**Phosphorus: 6 semi-loads**



**Nitrogen: 18 semi-loads**



**Harmful Algal Blooms (HABS)**

Excess nutrients cause HABS to appear more frequently and with more severity. Lake Ashtabula has recurrent blooms that result in advisories and/or warnings.



**Tributaries in trouble**

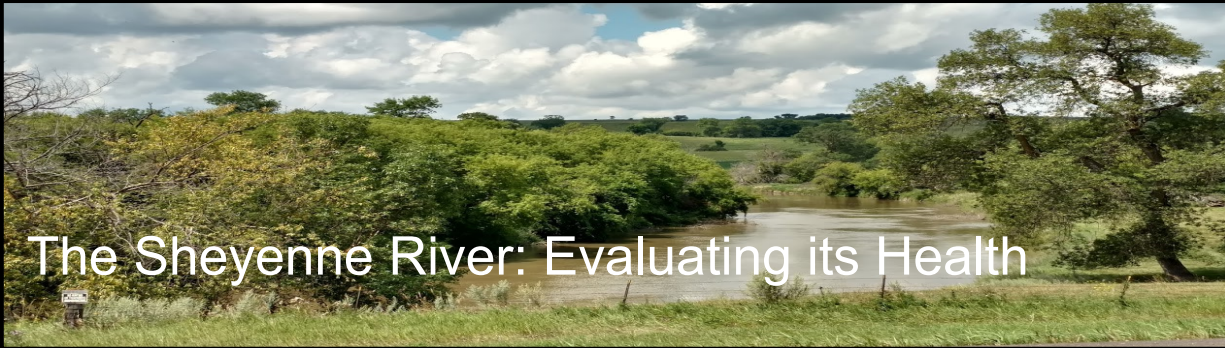
Many tributaries to the Sheyenne River are negatively affected by agriculture. Run off from crops and cattle are a large contributor to the high amounts of nutrients, sediment, and *E. coli*.

## Major pollutants in the Sheyenne River

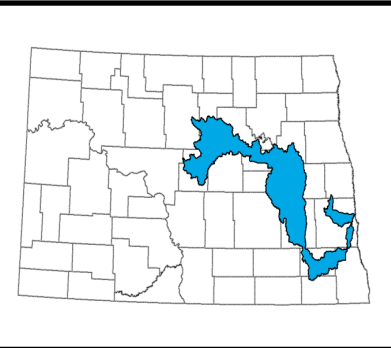
**Phosphorus and Nitrogen.** It fuels harmful algal blooms and excessive plant growth.

**Bacteria.** Mainly from cow manure.

**Sediment.** Eroding banks and fields as a result of human impact.



# The Sheyenne River: Evaluating its Health

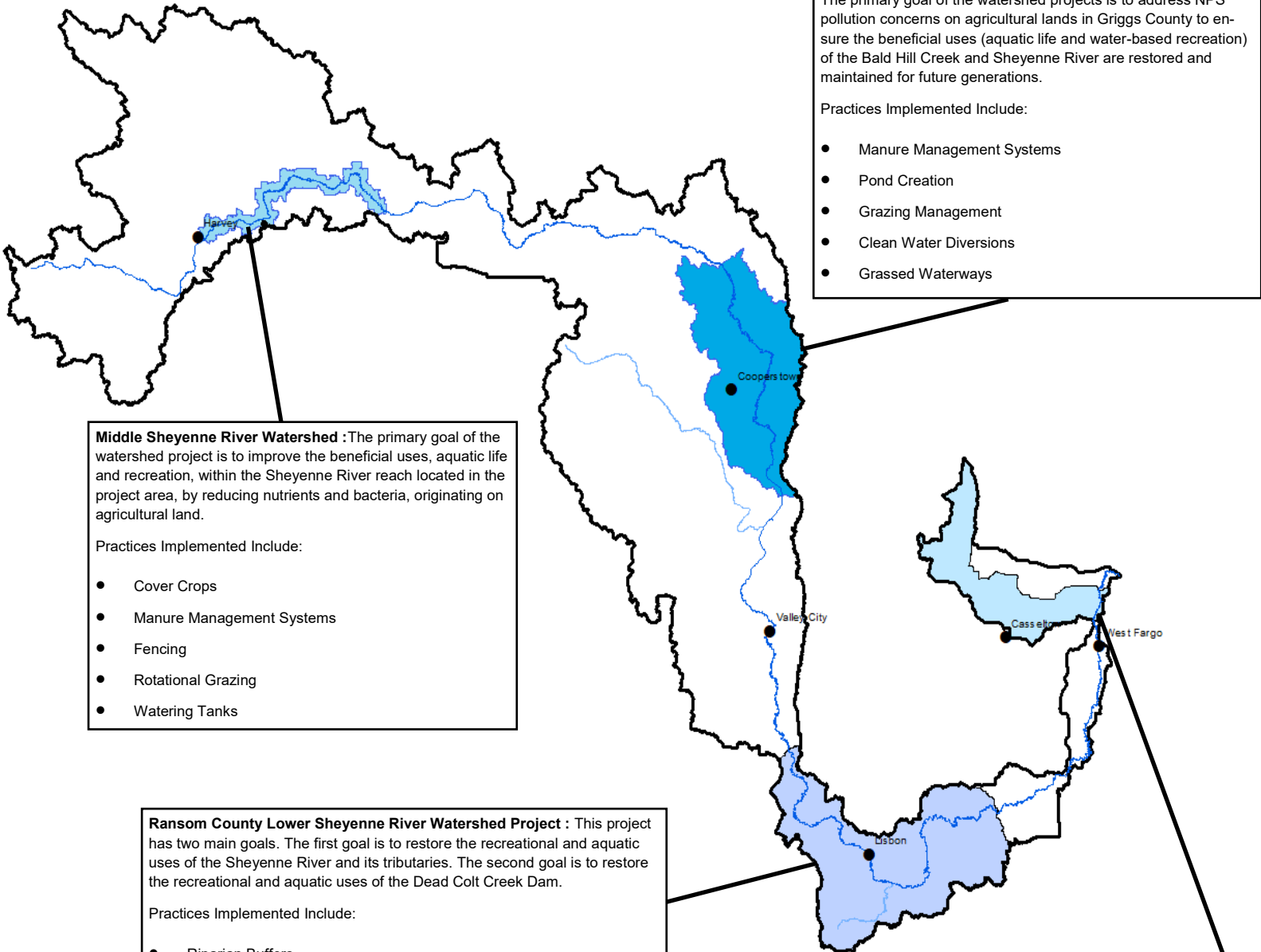


**Reach by reach:** The Sheyenne River is divided into “reaches” for the purpose of determining if water quality standards are being met. These standards are the benchmarks used to determine the ability of waters to support healthy aquatic life, aquatic recreation, and fish consumption. In the table below: Fully Supporting = Green, Fully Supporting but Threatened= Yellow, Not Supporting= Red, Not Enough Information to Assess= Blue.

Reach Description	Aquatic Life	Recreation	Impairments
Sheyenne River from its confluence with <b>Warsing Dam Watershed</b> , downstream to the end of the hydrologic unit. Located along the Benson and Eddy County Line.	Red	Green	<ul style="list-style-type: none"> <li>Not supporting <b>Aquatic Life</b> due to elevated Sedimentation.</li> </ul>
Sheyenne River from its confluence with <b>Big Coulee</b> , downstream to its confluence with the Warsing Dam Watershed.	Yellow	Green	<ul style="list-style-type: none"> <li>Fully supporting, but threatened <b>Aquatic Life</b> due to Sedimentation and Benthic-Macroinvertebrate Bioassessments.</li> </ul>
Sheyenne River from <b>Harvey Dam</b> , downstream to its confluence with Big Coulee. Located near the Pierce, Benson and Wells County junction.	Yellow	Green	<ul style="list-style-type: none"> <li>Fully supporting, but threatened <b>Aquatic Life</b> due to Sedimentation and Benthic-Macroinvertebrate Bioassessments.</li> </ul>
Sheyenne River from <b>Coal Mine Lake</b> downstream to Harvey Dam. Located along the Sheridan and Wells County border.	Yellow	Green	<ul style="list-style-type: none"> <li>Fully supporting, but threatened <b>Fish and Aquatic Biota</b> due to Dissolved Oxygen.</li> </ul>
<b>Lake Ashtabula</b>	Green	Red	<ul style="list-style-type: none"> <li>Not supporting <b>Recreation</b> due to Nutrient/ Eutrophication Biological Indicators.</li> </ul>
Sheyenne River, from its confluence with an <b>unnamed tributary watershed</b> , downstream to its confluence with the Maple River. Located in SE Cass County.	Blue	Yellow	<ul style="list-style-type: none"> <li>Fully supporting, but threatened <b>Recreation</b> due to Fecal Coliform.</li> </ul>
Sheyenne River from its confluence with the <b>Maple River</b> , downstream to its confluence with the Red River Of The North. Located in Eastern Cass County.	Green	Red	<ul style="list-style-type: none"> <li>Not supporting <b>Recreation</b> due to Fecal Coliform.</li> </ul>
Sheyenne River, from its confluence with <b>tributary watershed</b> , downstream to tributary. Located along the Richland and Cass County border.	Blue	Red	<ul style="list-style-type: none"> <li>Fully supporting, but threatened <b>Aquatic Life</b> due to Combined Biota/ Habitat Bioassessments and Sedimentation.</li> <li>Not supporting <b>Recreation</b> due to elevated <i>E. coli</i>.</li> </ul>
Sheyenne River from <b>unnamed tributary</b> , downstream to unnamed tributary watershed. Located in northern Ransom and Richland County.	Yellow	Green	<ul style="list-style-type: none"> <li>Fully supporting, but threatened <b>Aquatic Life</b> due to Benthic-Macroinvertebrate Bioassessments, Fishes Bioassessments, and Sedimentation.</li> </ul>
Sheyenne River from <b>tributary near Lisbon</b> , downstream to its confluence with Dead Colt Creek. Located in central Ransom County.	Blue	Yellow	<ul style="list-style-type: none"> <li>Fully supporting, but threatened <b>Aquatic Life</b> due to Fishes Bioassessment.</li> <li>Fully supporting, but threatened <b>Recreation</b> due to elevated <i>E. coli</i>.</li> </ul>
Sheyenne River, from its confluence with a tributary near <b>Highway 46</b> downstream to its confluence with a tributary near Lisbon, ND.	Green	Yellow	<ul style="list-style-type: none"> <li>Fully supporting, but threatened <b>Recreation</b> due to Fecal Coliform.</li> </ul>
Sheyenne River, from its confluence with a <b>tributary watershed below Valley City</b> , downstream to its confluence with a tributary near Highway 46. Located in south central Barnes County.	Yellow	Green	<ul style="list-style-type: none"> <li>Fully supporting, but threatened <b>Aquatic Life</b> due to Benthic-Macroinvertebrate Bioassessments and Sedimentation.</li> </ul>
Sheyenne River from its confluence with a <b>tributary above Valley City</b> , near railroad bridge, downstream to its confluence with a tributary below Valley City. Located in Central Barnes County.	Yellow	Green	<ul style="list-style-type: none"> <li>Fully supporting, but threatened <b>Aquatic Life</b> due to Benthic-Macroinvertebrate Bioassessments and Sedimentation.</li> </ul>
Sheyenne River from <b>Lake Ashtabula</b> downstream to its confluence with a tributary above Valley City, near rail road bridge. Located in Central Barnes County.	Yellow	Green	<ul style="list-style-type: none"> <li>Fully supporting, but threatened <b>Aquatic Life</b> due to Sedimentation.</li> </ul>

## Improving water quality in the Sheyenne River Basin

Section 319 dollars are spent to reduce nutrients and sediment entering small streams and eventually the Sheyenne River. Local Soil Conservation Districts (SCDs) work with landowners to decide what best management practice (BMP) is best for their land and for the river. This is a subset of projects. For information on other 319 projects contact NDDEQ Watershed Management.



**Griggs County Sheyenne River Riparian Corridor Project :**  
 The primary goal of the watershed projects is to address NPS pollution concerns on agricultural lands in Griggs County to ensure the beneficial uses (aquatic life and water-based recreation) of the Bald Hill Creek and Sheyenne River are restored and maintained for future generations.

Practices Implemented Include:

- Manure Management Systems
- Pond Creation
- Grazing Management
- Clean Water Diversions
- Grassed Waterways

**Middle Sheyenne River Watershed :** The primary goal of the watershed project is to improve the beneficial uses, aquatic life and recreation, within the Sheyenne River reach located in the project area, by reducing nutrients and bacteria, originating on agricultural land.

Practices Implemented Include:

- Cover Crops
- Manure Management Systems
- Fencing
- Rotational Grazing
- Watering Tanks

**Ransom County Lower Sheyenne River Watershed Project :** This project has two main goals. The first goal is to restore the recreational and aquatic uses of the Sheyenne River and its tributaries. The second goal is to restore the recreational and aquatic uses of the Dead Colt Creek Dam.

Practices Implemented Include:

- Riparian Buffers
- Manure Management Systems
- Wetland Creation
- No Till Fields
- Grazing Management

**Rush River/ Brewer Lake Watershed Project :** Through agricultural Best Management Practices, the project aims for improvement of the designated uses of the Rush River and Brewer Lake, which includes fish and other aquatic biota, and recreation, while creating measurable reductions in the concentrations of known pollutants (nitrates, phosphorus, and fecal coliform bacteria) throughout the Rush River/Brewer Lake watershed.

Practices Implemented Include:

- Grazing Management
- Grassed Waterways
- Riparian Buffers
- Fencing
- Livestock Watering Sources