



Paths Forward

CCCD will continue to monitor water quality on the Little Powder River from 2017-2019. In 2017, potential avian contributions will be examined using Microbial Source Tracking. Microbial Source Tracking allows the CCCD to quantify the influence from potential sources. This of the bacteria and more effectively target Best Management Practices (BMPs) to reduce bacteria concentration, improve water quality and work towards stream delisting. Additionally, CCCD is available to consult with residents and landowners regarding any water quality issues and concerns.

Public Involvement

A key component to improving water quality within Campbell County includes public involvement. The following provides a few suggestions for residents.

- Residents not connected to public sewer should know the location of their septic tanks and leach fields and be aware of potential failures.
- Limit grazing in riparian areas , as much as possible
- Landowners should inspect corrals and grazing systems to assess potential influences, particularly during runoff events.

For more information or for a copy of the 2015-2016 Monitoring Project Final Report please contact:

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Campbell County Conservation District

Little Powder River Watershed



**2015 - 2016
Monitoring Project**

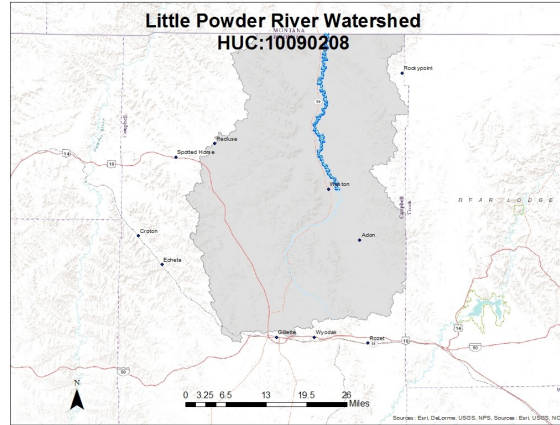
Little Powder River Watershed Monitoring Project 2015-2016

Background

In 2002, the Little Powder River was initially added to Wyoming’s list of threatened waterbodies for fecal coliform. This stream was listed as threatened for contact recreation designated use. In 2006, the threatened status was elevated to “impaired” and the Little Powder River was added to Wyoming’s 303(d) list of Impaired Waterbodies. The impaired segment of the Little Powder River extends from the Wyoming/Montana state line upstream to the confluence with Spring Creek. Since the streams listing, CCCD has monitored water quality and quantity data on the Little Powder River.

E. coli Bacteria Standard

In all waters designated for primary contact recreation, during the summer recreation season (May 1 through September 30). Concentrations of *E.coli* bacteria shall not exceed a geometric mean of 126 organisms per 100 milliliters during any consecutive 60-day period. (Wyoming Water Quality Rules and Regulations Chapter 1, Section 27)



2015 - 2016 Monitoring Project

A total of 34 *E.coli* samples were collected between June 2015 and August 2016. Water quality monitoring on the Little Powder River was made possible, in part by financial support provided by the Campbell County 1% funding and a WDEQ Section 205j Grant .

Field parameters collected in the stream include temperature, electrical conductivity, dissolved oxygen, pH, turbidity, and flow velocities. Water samples were collected at each site and analyzed for inorganic chemistry and nutrients. The District also collected 32 Microbial Source Tracking (MST) samples. MST is a set of biological testing methods, that can be used to determine a host species of fecal indicator bacteria.. In 2015 -2016 CCCD utilized MST to examine the potential human contributions to the water quality of the Little Powder River. This approach, allows CCCD to target best management practices that can maximize water quality benefits per dollars spent on project implementation.

Results

Monitoring completed by CCCD indicated that bacteria concentrations fluctuated greatly from the 2015 to the 2016 monitoring seasons. Exceedances of the WDEQ’s primary recreational standard for *E. coli* were found at both sites on the Little Powder River, during 2015 and 2016. Overall, bacteria concentrations fluctuated greatly during the 2015 and 2016 monitoring seasons.

Site I.D.	Year	E. coli Geometric Means		E. coli Maximum Concentration	
		Spring	Fall	Spring	Fall
LPR2	2015	675.6	109.1	1780	921
	2016	97.9	*	187	*
LPR3	2015	214.9	152.5	6130	1050
	2016	66.3	*	108	*

*No Samples were collected

Microbial Source Tracking

None of the MST samples collected during the 2015-2016 project detected a human associated Bacteroidetes concentration above the detection limit; however, General Bacteroidetes were detected in 100% of the qualified samples. Due to the fact that no Human Bacteroidetes were detected in any of the MST field samples, this would suggest that faulty septic systems are not a major contributor to the watershed at this time. The high percentage of MST field samples that detected measurable levels of General Bacteroides would suggest that wildlife, domestic animals, or some combination of warm blooded animal is contributing to the elevated level of General Bacteroidetes.