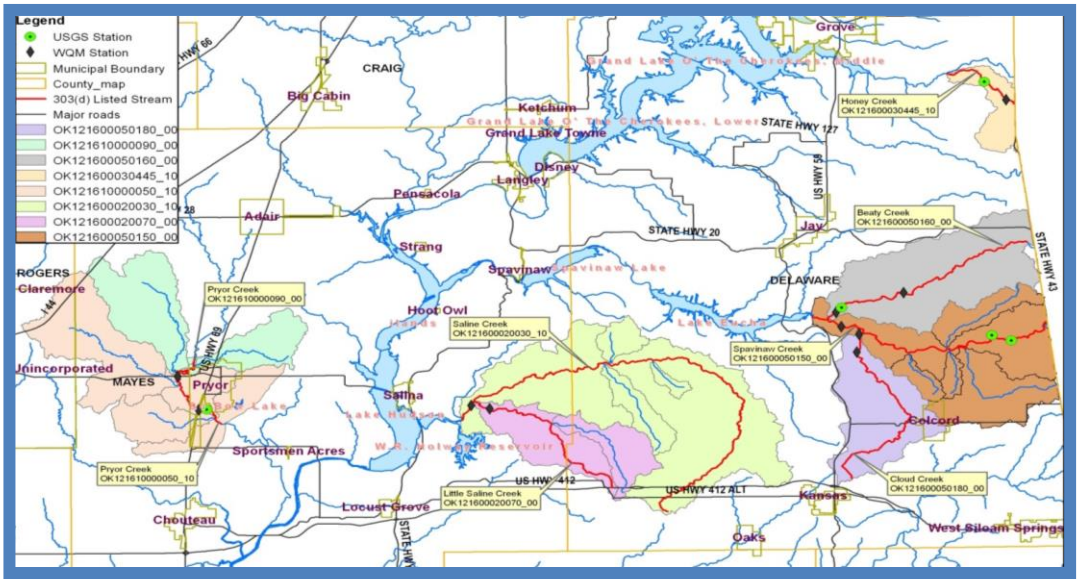
208 FACTSHEET FOR BACTERIAL AND TURBIDITY TMDLs in the LOWER NEOSHO WATERSHED

Watershed: The Lower Neosho Watershed TMDL Study Area is located in the northeastern part of Oklahoma in the Lower Neosho (USGS HUC 11070209) and Grand Lake O' The Cherokees (USGS HUC 11070206) watersheds. The Study Area is in Delaware and Mayes counties with a very small part located in Rogers County.



Beneficial Uses in this Study Area:

According to the Oklahoma Water Quality Standards, the designated beneficial uses for the waterbodies in the Lower Neosho River Study Area are Aesthetics (AES), Agriculture (AG), Fish & Wildlife Propagation-Cool Water Aquatic Community Subcategory (CWAC), Fish & Wildlife Propagation-Warm Water Aquatic Community Subcategory (WWAC), Fish Consumption (FISH), Primary Body Contact Recreation (PBCR), Secondary Body Contact Recreation (SBCR), Public & Private Water Supply (PPWS), HQW – High Quality Waters, SWS – Sensitive Public & Private Water Supply. The designated beneficial uses addressed in the Lower Neosho Watershed Study Area were WWAC, CWAC, and PBCR. The table below is the assessment from Oklahoma's 2010 Integrated Report on whether or not these waterbodies met these beneficial uses.

Waterbody Identification	Waterbody Name	CWAC	WWAC	PBCR	SBCR	Other
OK121600020030_10	Saline Creek	F		N		
OK121600020070_00	Little Saline Creek	F		N		
OK121600030445_10	Honey Creek	F		N		HQW
OK121600050150_00	Spavinaw Creek	F		N		SWS
OK121600050160_00	Beaty Creek	F		N		HQW
OK121600050180_00	Cloud Creek	F		N		SWS
OK121610000050_10	Pryor Creek		N	N		
OK121610000090_00	Pryor Creek		N		N	

(F = Fully supporting that designated use; N = Not supporting that use)

Impaired Waterbodies in this Study Area:

Waterbodies that were shown as impaired with bacteria or turbidity on Oklahoma's 2010 303(d) list, are designated with an "**x**" in the part of the following table with a yellow header:

WBID	Waterbody Name	Waterbody Impairments from the 2010 303(d) List			TMDLs needed after sampling results analyzed		
		Enterococci	*E. coli*	Turbidity	Enterococci	*E. coli*	Turbidity
OK121600020030_10	Saline Creek	X			X		
OK121600020070_00	Little Saline Creek	X			X		
OK121600030445_10	Honey Creek	X	X		X		
OK121600050150_00	Spavinaw Creek	X			X		
OK121600050160_00	Beaty Creek	X			X		
OK121600050180_00	Cloud Creek	X			X		
OK121610000050_10	Pryor Creek	X	X		X	X	
OK121610000090_00	Pryor Creek		X	X			X

Bacterial water quality monitoring results from 2000 – 2010 and turbidity water quality monitoring results from 1999 - 2001 were examined to verify if these waterbodies were still impaired. An "**x**" in the area of this table with the blue header indicates that those waterbodies were found to still be impaired for bacteria or turbidity. TMDLs were developed for these waterbodies.

Possible Sources of Impairments:

Point sources - The point sources examined in this Study Area were:

- NPDES regulated municipal and industrial wastewater treatment facilities (WWTF) – The City of Pryor Creek WWTF is the only NPDES-permitted facility that discharges wastewater to waters in the Study Area.
- NPDES regulated stormwater discharges
  - Municipal Separate Storm Sewer Systems (MS4s) - There aren't any in the Study Area.
  - Industrial Sites - There aren't any industrial facilities with Multi-Sector General Permits in the Study Area.
  - Construction Sites - There was one DEQ-permitted construction site during the time period that water samples were taken in the Study Area.
- Rock, Sand, and Gravel Quarries – There aren't any in the Study Area
- NPDES regulated Concentrated Animal Feeding Operations (CAFOs) – There is 1 CAFO with 40 swine & 420 dairy cows and 69 PFOs (Poultry Feeding Operations) with over 6.2 million birds in the Study Area.
- No-Discharge Facilities – There are two municipal no-discharge facilities in the Study Area.
- Sanitary Sewer Overflows (SSO) and – There were 54 reported SSO occurrences and in the Study Area with amounts ranging from 0 to 40,000 gallons.

Nonpoint sources - The nonpoint sources examined in this Study Area were:

- Wildlife – There are about 3,176 deer in the Study Area. This is thought to be a minor contributor of bacteria.
- Farm animals – There are an estimated 32,406 head of cattle in the Study Area. This is thought to be a major contributor of fecal coliform in the Study Area.
- Pets – There are an estimated 12,485 dogs and 16,159 cats in the Study Area. They are considered to be a minor contributor of bacteria in the Study Area.
- Failing Septic Systems – There are 386 failing septic systems in the Study Area which is considered to be a minor contributor of bacteria.

For details about each of these sources and their impact on the impairment of waterbodies in the Study Area, consult the full TMDL report at the following DEQ webpage: http://www.deq.state.ok.us/WQDnew/tmdl/index.html.

TMDLs: The TMDLs were calculated using load duration curves. Nine TMDLs and one WLA were developed for the eight streams in the Lower Neosho Watershed Study Area. The following table indicates the amount that each pollutant will need to be reduced [Percent Reduction Goal (PRG)] in order for that waterbody to meet water quality standards and its designated beneficial uses:

WBID	Waterbody Name	These impairments must be reduced by the following amounts in order to meet water quality standards.		
		Enterococci	*E. coli*	Turbidity
OK121600020030_10	Saline Creek	48%	-------	-------
OK121600020070_00	Little Saline Creek	65%	-------	-------
OK121600030445_10	Honey Creek	74%	-------	-------
OK121600050150_00	Spavinaw Creek	37%	-------	-------
OK121600050160_00	Beaty Creek	67%	-------	-------
OK121600050180_00	Cloud Creek	59%	-------	-------
OK121610000050_10	Pryor Creek	83%	4%	-------
OK121610000090_00	Pryor Creek	-------	-------	56%

The TMDL for Pryor Creek (OK121610000050_10) includes a bacterial WLA for the Pryor Creek WWTF:

Waterbody ID & Waterbody Name	NPDES Permit No.	Name	Disinfection?	Design Flow (mg/d)	EC Wasteload Allocation (cfu/day)	ENT Wasteload Allocation (cfu/day)
OK121610000050_10 Pryor Creek	OK0040479	City of Pryor Creek Municipal Utilities Authority	Yes	1.67	7.97E+09	2.09E+09

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