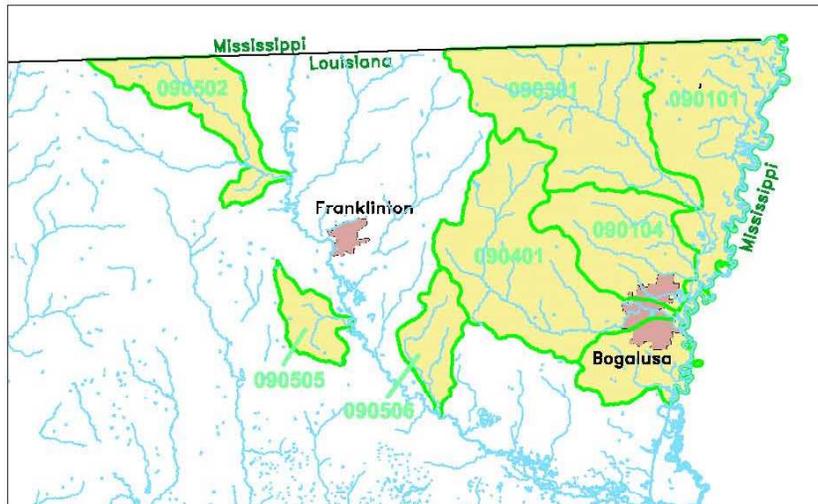


TMDLS FOR FECAL COLIFORMS FOR SUBSEGMENTS 090101, 090104, 090301, 090401, 090502, 090505, AND 090506 IN THE PEARL RIVER BASIN, LOUISIANA

Fact Sheet



Section 303(d) of the Clean Water Act and the U.S. Environmental Protection Agency's (EPA) Regulations (Title 40 of the *Code of Federal Regulations* [CFR] Part 130) require states to develop total maximum daily loads (TMDLs) for waterbodies that are not meeting water quality standards. A TMDL establishes the amount of a pollutant that a waterbody can assimilate without exceeding its water quality standard for that pollutant. TMDLs provide the scientific basis for establishing water quality-based controls to reduce pollution from both point and nonpoint sources to restore and maintain the quality of the state's water resources.

A TMDL for a given pollutant and waterbody is composed of the sum of individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background levels. In addition, the TMDL must include an implicit or explicit margin of safety (MOS) to account for the uncertainty in the relationship between pollutant loads and the quality of the receiving waterbody, and may include a future growth (FG) component.

This report presents TMDLs that have been developed for fecal coliforms for 090101 (Pearl River), 090104 (Peters Creek), 090301 (Pushpatapa Creek), 090401 (Bogue Lusa Creek), 090505 (Bonner Creek), and 090506 (Thigpen Creek). All of these subsegments are located in the Pearl River basin in southeastern Louisiana. The portion of the Pearl River basin that is in Louisiana is bounded by the State of Mississippi on the north and east. Most of the stream flow in Subsegment 090101 (the main stem of the Pearl River) is from upstream drainage areas in Mississippi. These seven subsegments are primarily undeveloped areas with significant amounts of wetlands, forest, and grass/shrub in each subsegment. Some of the subsegments have significant numbers of dairy farms.

All seven of these subsegments were included on Louisiana's final 2004 303(d) list as not supporting primary contact recreation. Two of the subsegments (090301 and 090401) were also included on the 303(d) list as not supporting secondary contact recreation. All seven of the subsegments were ranked as priority #2 for TMDL development. The suspected sources of impairment included on-site treatment systems (septic systems and similar decentralized systems), sanitary system overflows (collection system failures), sources upstream or outside state jurisdiction or borders, wildlife other than waterfowl, municipal point source discharges, and unknown sources.

These TMDLs were developed using a load duration curve method. This method determines allowable pollutant loadings for a wide range of stream flow conditions. There are five primary steps for applying this methodology. Each of these steps was carried out separately for summer and for winter because the Louisiana water quality standards specify different numeric criteria for fecal coliforms for summer and winter.

The first step is to develop a flow duration curve using a long record of daily flows from a USGS flow gage on the impaired stream or as close as possible to it. Next a load duration curve is developed by multiplying the stream flow values in the flow duration curve by the appropriate numeric criterion for fecal coliforms in the water quality standards (400 colonies/100 mL for May-October and 2000 colonies/100 mL for November-April). The resulting values are numbers of fecal coliform colonies per day, which are referred to as “loads” in this report even though they are not actually a measure of mass per unit time. In the third step, observed “loads” are calculated by multiplying observed fecal coliform counts by the stream flow for that day. The observed “loads” are plotted with the load duration curves made in the second step.

The fourth step is to calculate the TMDL, MOS, FG, WLA, and LA. The TMDL is calculated as the area underneath the load duration curve. The MOS and FG were each set to 10% of the TMDL to be consistent with typical TMDL procedures used by the Louisiana Department of Environmental Quality (LDEQ). The WLAs were calculated based on LDEQ’s policy of setting fecal coliform permits to a monthly average value of 200 colonies/100 mL for treated sanitary wastewater discharges. Because point sources are already permitted to meet water quality criteria for fecal coliforms at the end of the discharge pipe, no reductions of point source loadings are necessary for these TMDLs. Each LA for nonpoint sources was then calculated as the TMDL minus the MOS, FG, and WLA.

The fifth step is to calculate percent reductions required to meet water quality criteria. The percent reductions were calculated by reducing the observed fecal coliform counts until no more than 25% of the observed “loads” are above the load duration curve. Using 25% as an allowable percentage of exceedances is consistent with the numeric criteria for fecal coliforms in the water quality standards. The results of the calculations for the TMDL components and percent reductions are summarized in Table 1.

Table 1. Summary of fecal coliform TMDLs for seven subsegments in the Pearl River basin.

Subsegment	Season	Loads (colonies/day)					Percent Reduction
		WLA	LA	MOS	FG	TMDL	
090101 Pearl River	Summer	5.10E+10	4.31E+15	5.39E+14	5.39E+14	5.39E+15	55%
	Winter	5.10E+10	5.04E+16	6.31E+15	6.31E+15	6.31E+16	0%
090104 Peters Creek	Summer	1.07E+8	3.75E+13	4.68E+12	4.68E+12	4.68E+13	60%
	Winter	1.07E+8	3.52E+14	4.40E+13	4.40E+13	4.40E+14	0%
090301 Pushapatapa Creek	Summer	0	1.66E+14	2.08E+13	2.08E+13	2.08E+14	86%
	Winter	0	2.92E+16	3.65E+15	3.65E+15	3.65E+16	0%
090401 Bogue Lusa Creek	Summer	2.25E+8	6.91E+13	8.63E+12	8.63E+12	8.63E+13	98%
	Winter	2.25E+8	1.21E+16	1.52E+15	1.52E+15	1.52E+16	90%
090502 Big Silver Creek	Summer	2.73E+7	8.14E+13	1.02E+13	1.02E+13	1.02E+14	60%
	Winter	2.73E+7	8.26E+14	1.03E+14	1.03E+14	1.03E+15	90%
090505 Bonner Creek	Summer	2.95E+7	1.55E+14	1.94E+13	1.94E+13	1.94E+14	36%
	Winter	2.95E+7	1.57E+15	1.97E+13	1.97E+13	1.97E+14	0%
090506 Thigpen Creek	Summer	0	1.52E+13	1.90E+12	1.90E+12	1.90E+13	55%
	Winter	0	1.43E+14	1.78E+13	1.78E+13	1.78E+14	0%

For More Information

EPA is seeking input on these draft TMDLs, including comments, information, and data from the general and affected public. For additional information on this TMDL project, please contact the EPA staff listed below:

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