Section 5-5
Mousam River (Mousam and Kennebunk Rivers Alliance)

Mousam River

Mousam River is 23 miles long and originates at Square Pond, which flows to Mousam Lake in Shapleigh. From Mousam Lake, the river flows through the towns of Alfred and Sanford to Estes Lake. The Littlefield River and Middle Branch River flow into Estes Lake from the north. From Estes Lake, Mousam River continues through the town of Kennebunk before discharging to the Gulf of Maine at Parsons Beach. Back Creek (tidal creek) enters the Mousam River near the mouth. The river is dammed at several places along its route including at Mill Pond and No. 1 Pond in Sanford, Estes Lake, and Old Falls Pond.

Water quality in the Mousam River was impacted historically by industrial and commercial use related to mills in the towns of Sanford and Kennebunk (Baker, 1999). Today, water quality impacts are caused in large part by stormwater runoff associated with increasing development of the watershed and high levels of impervious surfaces in the town centers of Sanford and Kennebunk. Water quality is also impacted by several point source discharges to the main stem. In addition, the industrial legacy of the ten dams on the main stem of the river may also contribute to degraded water quality.

Maine DEP lists a 9.9-mile segment of the river in Sanford from the Route 224 bridge to Estes Lake as impaired due to toxics, nutrients, and biological oxygen demand (BOD). It is also listed as impaired for E. coli bacteria due to variable causes. According to the DEP Integrated Report, "Sanford has completed CSO abatement; no CSO events since 2006."[1]

According to Maine's statutory Water Classification System, the Mousam River Basin has the designations listed below. Below head of tide, the river is Class SB.

A. Mousam River, main stem.

(1) From the outlet of Mousam Lake to a point located 0.5 miles above Mill Street in Springvale – Class B.

(2) From a point located 0.5 mile above Mill Street in Springvale to its confluence with Estes Lake – Class C.

(3) From the outlet of Estes Lake to tidewater – Class B.

B. Mousam River, tributaries – Class B.

[1] State of Maine Department of Environmental Protection 2016 Integrated Water Quality Monitoring and Assessment Report

Monitoring History

• The Maine DEP Biological Monitoring Program has been monitoring the river since 1995. This data is available on DEP's website.

• The Mousam and Kennebunk Rivers Alliance (MKA) began in 2009 with assistance from the Wells National Estuarine Research Reserve (NERR) and Maine Rivers for the purpose of monitoring the Kennebunk and Mousam rivers. MKA joined the Volunteer River Monitoring Program in 2009.

• In 2009, MKA monitored 11 sites. In 2010, two sites were added to bracket the sewage outfall upstream and downstream in Sanford. Two additional sites in Sanford were added in 2012.

• "Since 2012, several stormwater BMPs have been installed in Sanford and Alfred to treat urban, industrial and agricultural runoff draining to Number One Pond and Estes Lake. Remediation activities at Sanford landfill adjacent to the river were completed in 1999, landfill was capped and an up-gradient slurry wall installed. Surface and groundwater monitoring continues to assess the effect of the landfill and remediation on the river." [2]

Methods and Sampling Sites

Mousam Kennebunk Alliance has eleven sites on the main stem. Four tributary sites are located on the Middle Branch, Littlefield River and Back Creek. All sites are freshwater except sites MOUR04 and BC02. Previous reports identified Station MOUR35 as Class SB, but it has since been determined that this site is just above the hydraulic head of tide and is freshwater. All of the Mousam River sites are VRMP approved.

Monitoring is conducted biweekly from June through September. Monitors take measurements of water temperature and dissolved oxygen using a YSI meter. Specific conductance is measured using either a YSI meter or an Oakton EC 11+/11 Testr pen and salinity is measured at the tidal sites. Grab samples for *E. coli* are collected at some of the freshwater sites and Enterococcus bacteria at the tidal sites. Bacteria samples are transported to Nelson Lab for analysis.

[2] State of Maine Department of Environmental Protection 2016 Integrated Water Quality Monitoring and Assessment Report

Table 5-5-1: Mousam and Kennebunk Rivers Alliance sampling sites for the Mousam River.

Main Stem Sites (Ordered from upstream to downstream)				
VRMP Site ID	**Organization Site Code**	**Sample Location**	**River Mile**	**Class**
SMU290	MOUR290	Headwaters	25.6	B
SMU280	MOUR280	S Curve Road	24.6	B
SMU250	MOUR250	Behind YMCA	21.6	C
SMU232	MOUR232	High Street/Weaver Dr	19.7	C
SMU204	MOUR204	Off Route 4	16.9	C
SMU163	MOUR163	New Dam Road	12.8	C
SMU144	MOUR144	Whicher's Hill Road	10.9	B
SMU80	MOUR80	Mill Street	4.6	B
SMU39	MOUR39	Berry Ct.	0.5	B
SMU35	MOUR35	Roger's Pond	0.1	B
SMU04	MOUR04	Route 9 Bridge	0.4	SB
Tributary Sites				
Middle Branch Mousam River SMUMB58	MOURMB58	Mast Road	6.9	B
Middle Branch Mousam River SMUMB33	MOURMB33	Swett's Bridge	4.4	B
Littlefield River SMUMBLR18	LR18	Back Road	2.2	B
Back Creek SMUBC02	BC02	Above Parson's Beach	0.2	SB

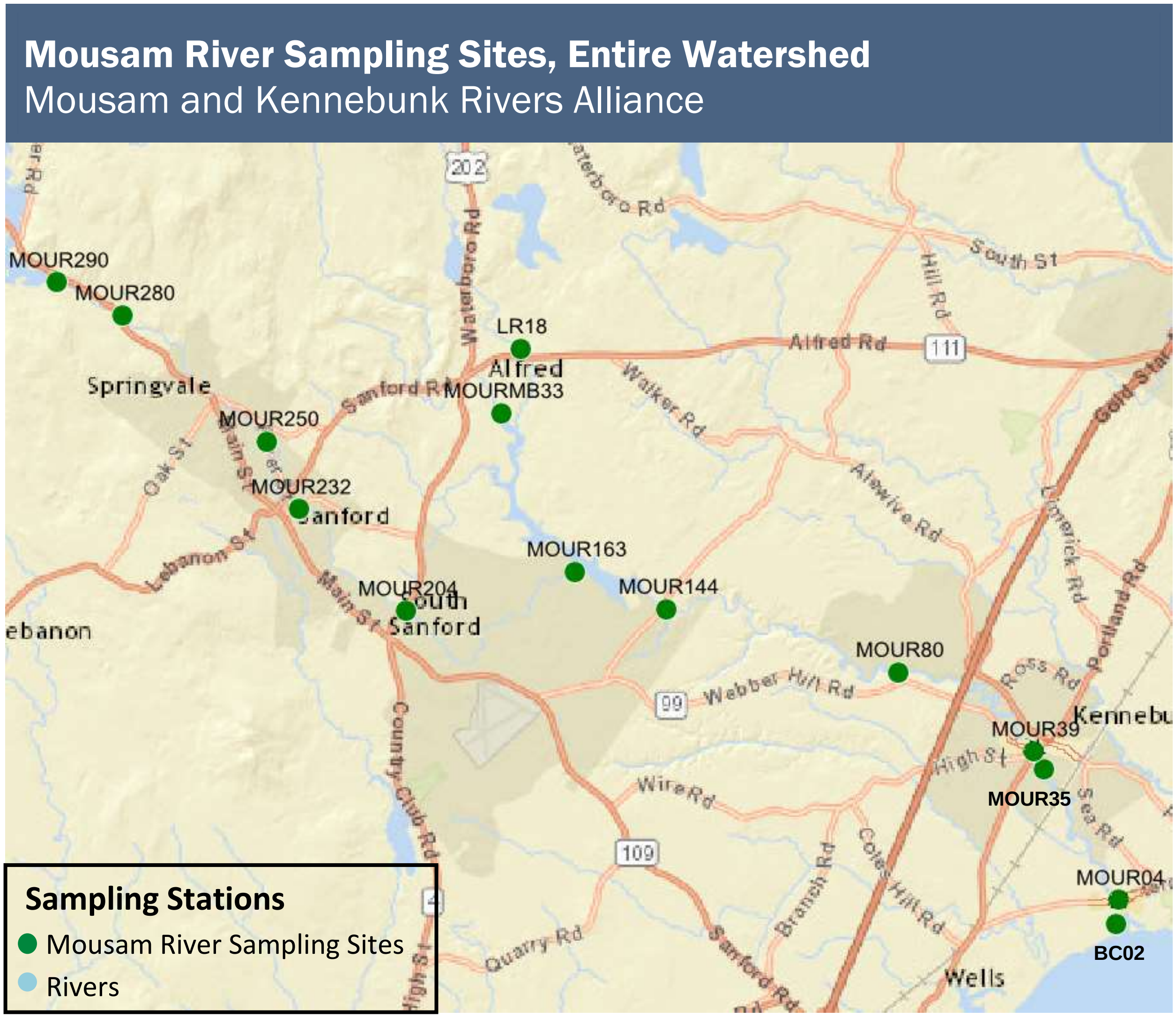


Figure 5-5-1: Map of Mousam and Kennebunk Rivers Alliance sampling sites on Mousam River.

Results

Refer to appendix A for discussion of individual site data and trends.

For the purpose of discussion, the sampling stations are divided into three groups: Upper main stem (MOUR290, MOUR280, MOUR250, MOUR232, MOUR204), middle-lower main stem (MOUR163, MOUR144, MOUR80, MOUR39, MOUR35) and tributaries (MOUR-LR18, MOUR-MB58, MOUR-MB33), and tidal sites (MOUR-04 and BC02).

Two types of graphs are provided in this report to look at water quality data. The first type of graph is a longitudinal profile graph, which depicts main stem sites according to their position (river mile) on the river (the larger the river mile, the farther upstream the sampling station is). A box and whisker diagram depicts the range of data observed at each station during the course of the sampling season. The box represents the range of the middle 50% of values, the whiskers represent the minimum and maximum extremes, and the line connects the median values at each station. The longitudinal profile plot is useful for showing general water quality trends and can be helpful in identifying the location of specific influences.

The second type of graph is a time series graph, which shows the temporal/seasonal trends of water quality data associated with each station. Time series graphs are useful in assessing the relative influence of external factors (e.g., weather) on water quality trends.

Dissolved Oxygen

Dissolved oxygen (DO) levels are generally lowest early in the morning and then increase during the day, peaking in the mid-to-late afternoon. Monitors should try to collect some samples early in the morning. Dissolved oxygen is also affected by flow conditions and temperature. During high flow conditions, more oxygen is added to the river from the atmosphere as the water is more turbulent and there is more opportunity for mixing. If flow during the summer months is higher or lower than normal, dissolved oxygen will be affected.

Class B criteria for dissolved oxygen are a minimum of 7 mg/l (milligrams/liter) or 75% saturation. Class C criteria for dissolved oxygen are a minimum of 5 mg/l or 60 % saturation. To meet water quality criteria, both concentration and saturation standards must be met. The Class SB criterion is 85% saturation.

2017 Results

The upper Mousam River mainstem sites, which include sites MOUR-290, MOUR-280, MOUR-250 and MOUR-232, all met dissolved oxygen (DO) criteria for both concentration and percent saturation on all dates. Two of these sites are Class C, and so have lower criteria of 5 mg/l and 60% saturation. Sites MOUR-250 and MOUR-232 (which are Class C) met the Class B criteria on all dates. The middle mainstem Mousam River sites include sites MOUR-80, MOUR-39, and MOUR-35. Site MOUR-39 did not meet Class B criteria for concentration on one date in July when it was slightly below criterion. The tidal sites are MOUR-04 and BC-02. Site BC-02 did not meet the Class SB criterion for percent saturation on one sample dates in early July when it was slightly below the criterion. Overall, the dissolved oxygen for the upper Mousam sites is excellent. The middle-lower mainstem sites and tidal sites are good to excellent.

The monitors did a good job of getting to many of the sites earlier in the day (before 8:00 am) and should continue to try and do so. Early morning is the time of day when dissolved oxygen is at its lowest level.

Table 5-5-2: A summary of minimum, maximum, and mean dissolved oxygen concentration (mg/l) values for Mousam and Kennebunk Rivers Alliance monitoring sites on the Mousam River.

Site	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
MOUR-290	B	3	7.6	7.0	8.2	7.0	0
MOUR-280	B	3	7.9	7.6	8.4	7.0	0
MOUR-250	B	3	8.4	8.1	8.9	5.0	0
MOUR-232	B	3	8.5	8.1	9.0	5.0	0
MOUR-80	B	8	7.9	7.2	8.7	7.0	0
MOUR-39	B	8	7.5	6.7	8.0	7.0	1
MOUR-35	B	8	8.5	8.0	9.0	7.0	0
MOUR-04	SB	8	10.3	8.4	11.5	n/a	n/a
BC-02	SB	8	9.8	8.1	11.3	n/a	n/a

Table 5-5-3: A summary of minimum, maximum, and mean dissolved oxygen saturation (%) values for Mousam and Kennebunk Rivers Alliance monitoring sites on the Mousam River.

Site	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
MOUR-290	B	3	88.9	84.2	96.1	75%	0
MOUR-280	B	3	90.2	86.1	96.5	75%	0
MOUR-250	B	3	95.4	91.0	102.6	60%	0
MOUR-232	B	3	97.4	93.7	102.7	60%	0
MOUR-80	B	8	89.7	81.6	98.8	75%	0
MOUR-39	B	8	84.1	78.4	87.9	75%	0
MOUR-35	B	8	95.9	92.6	97.8	75%	0
MOUR-04	SB	8	105.5	93.9	113.8	85%	0
BC-02	SB	8	99.9	83.7	106.5	85%	1

Figure 5-5-2: Graph of dissolved oxygen concentrations on the main stem by river mile.

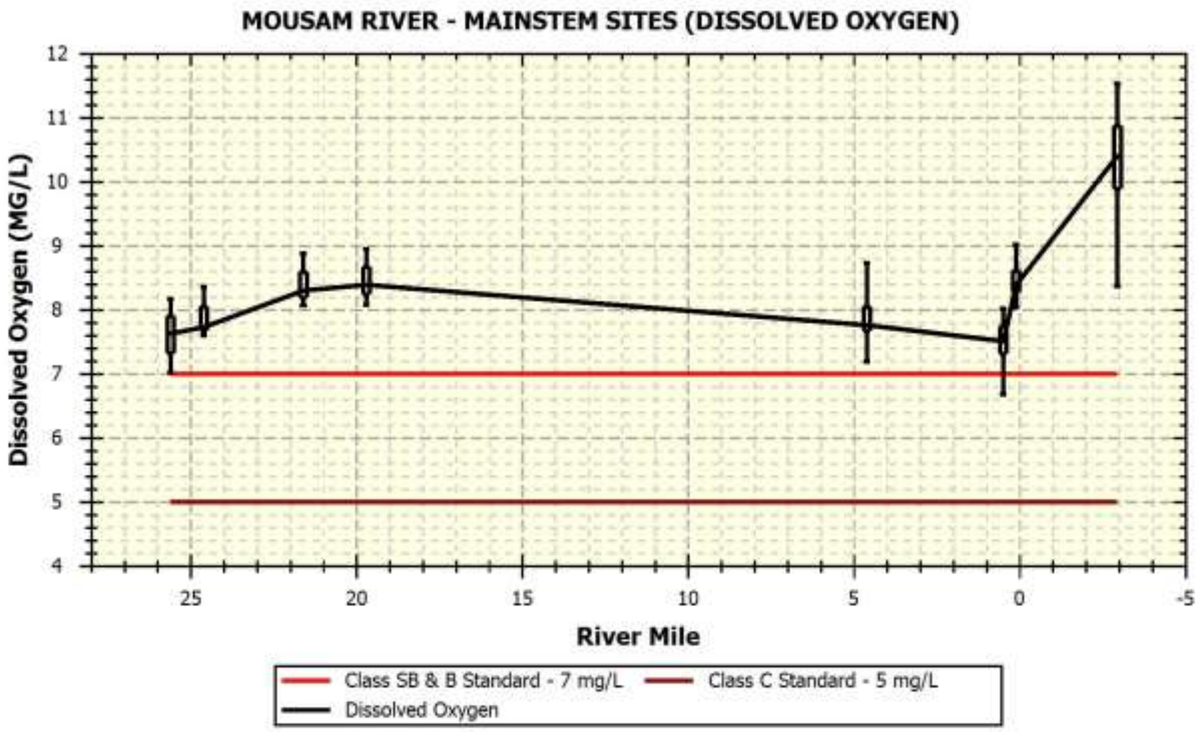


Figure 5-5-3: Graph of dissolved oxygen concentrations on the upper main stem.

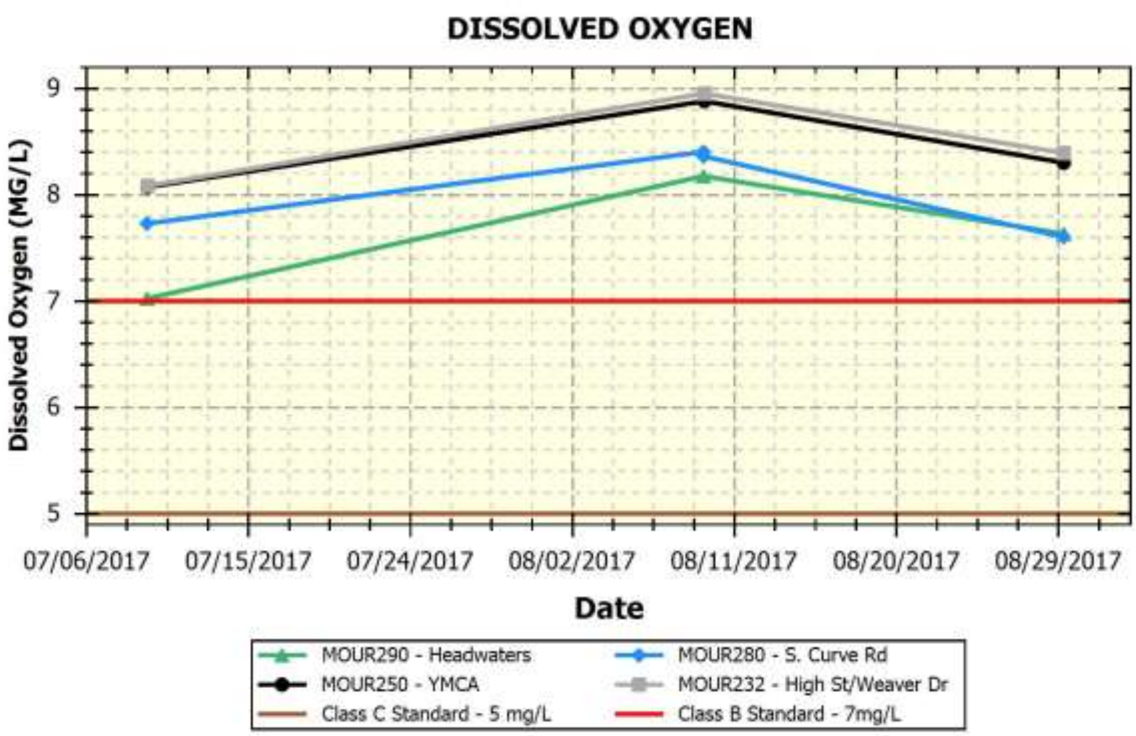


Figure 5-5-4: Graph of dissolved oxygen concentrations on the middle and lower main stem.

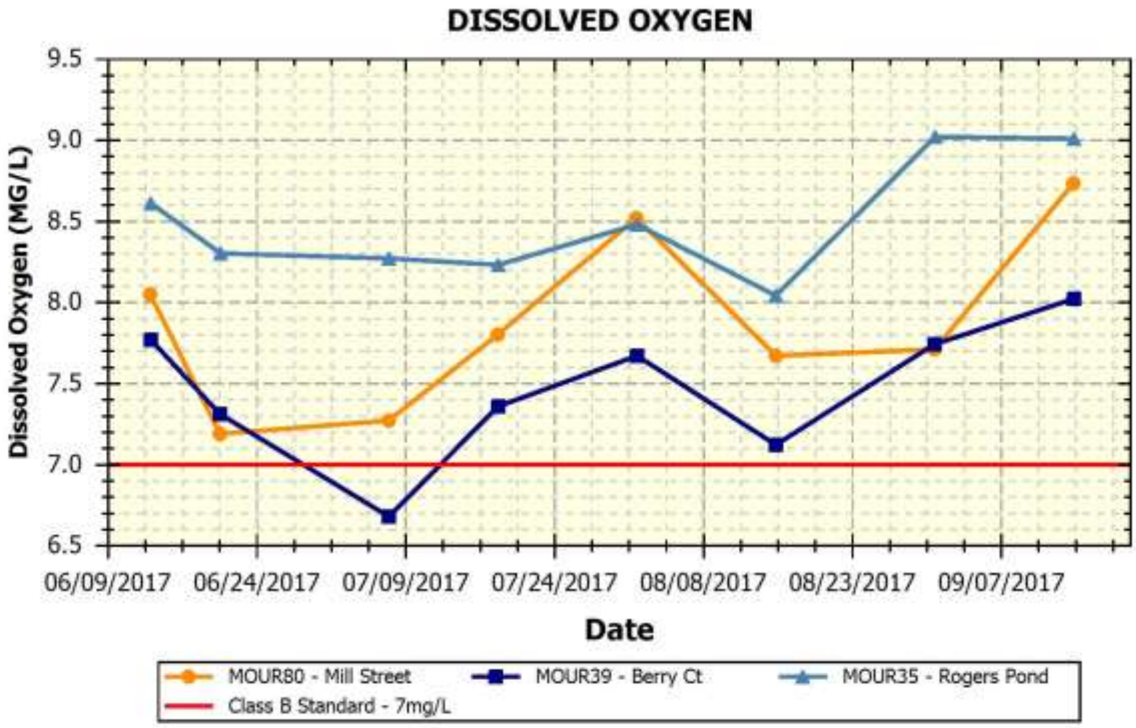


Figure 5-5-5: Graph of dissolved oxygen concentrations on the tidal sites.

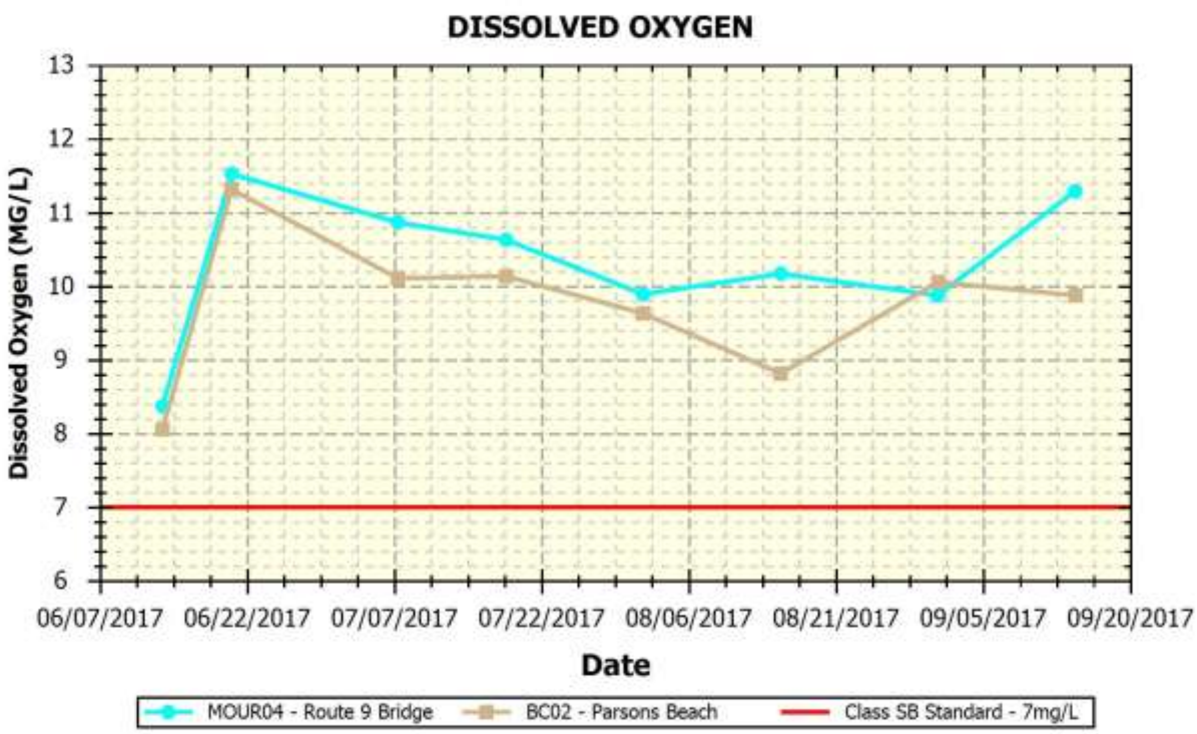


Figure 5-5-6: Graph of dissolved oxygen saturation on the main stem by river mile.

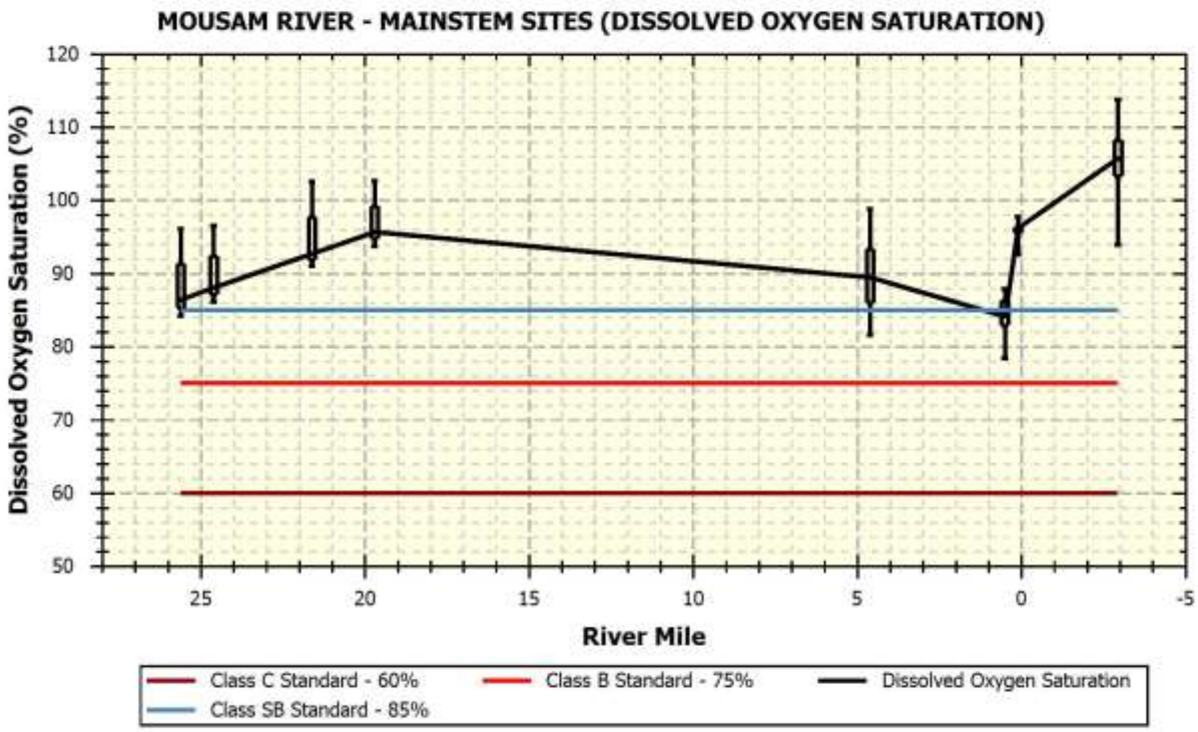


Figure 5-5-7: Graph of dissolved oxygen saturation on the upper main stem.

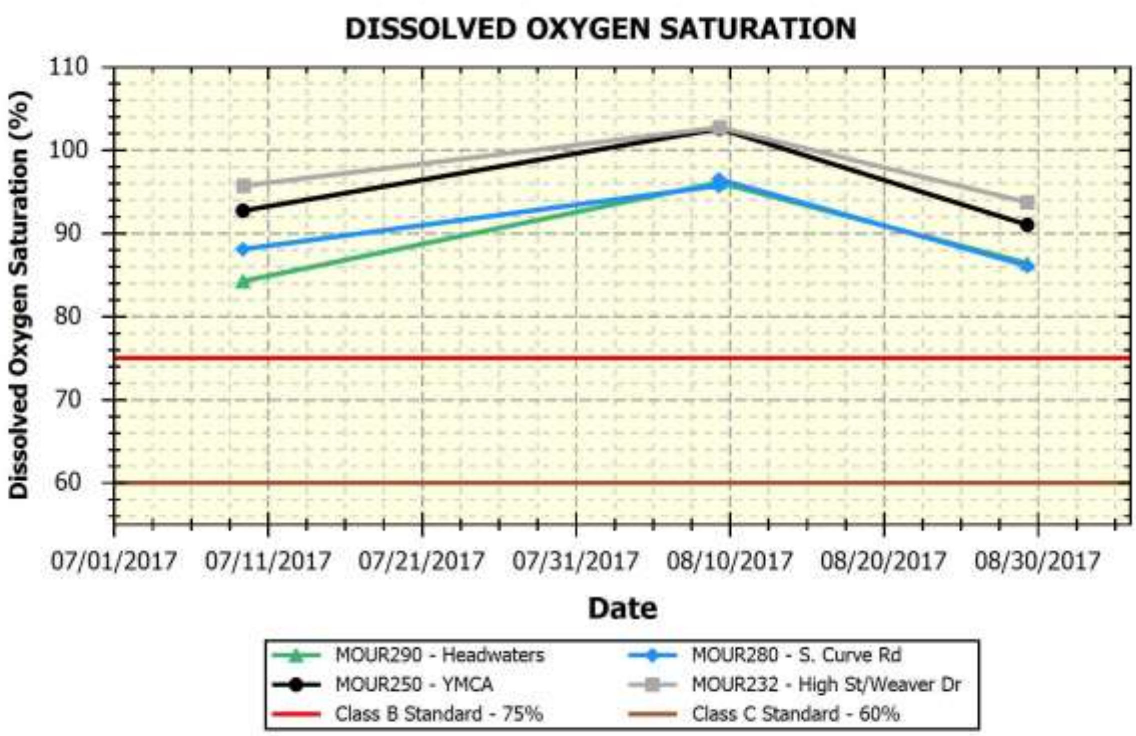


Figure 5-5-8: Graph of dissolved oxygen saturation on the middle and lower main stem.

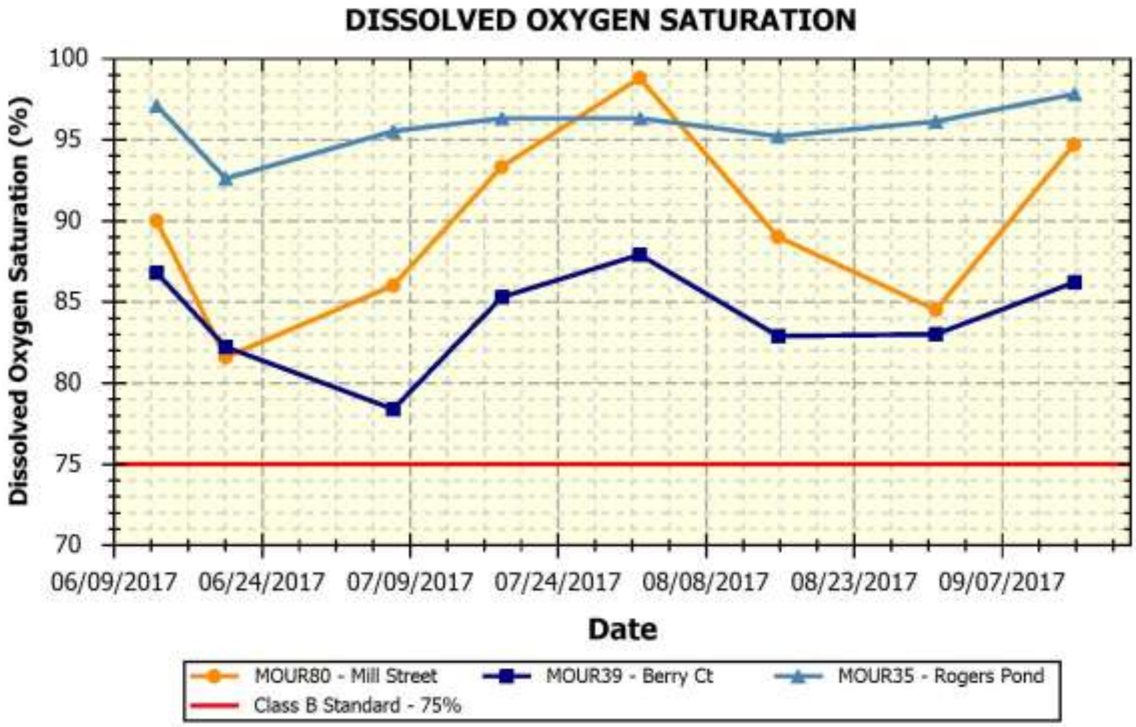
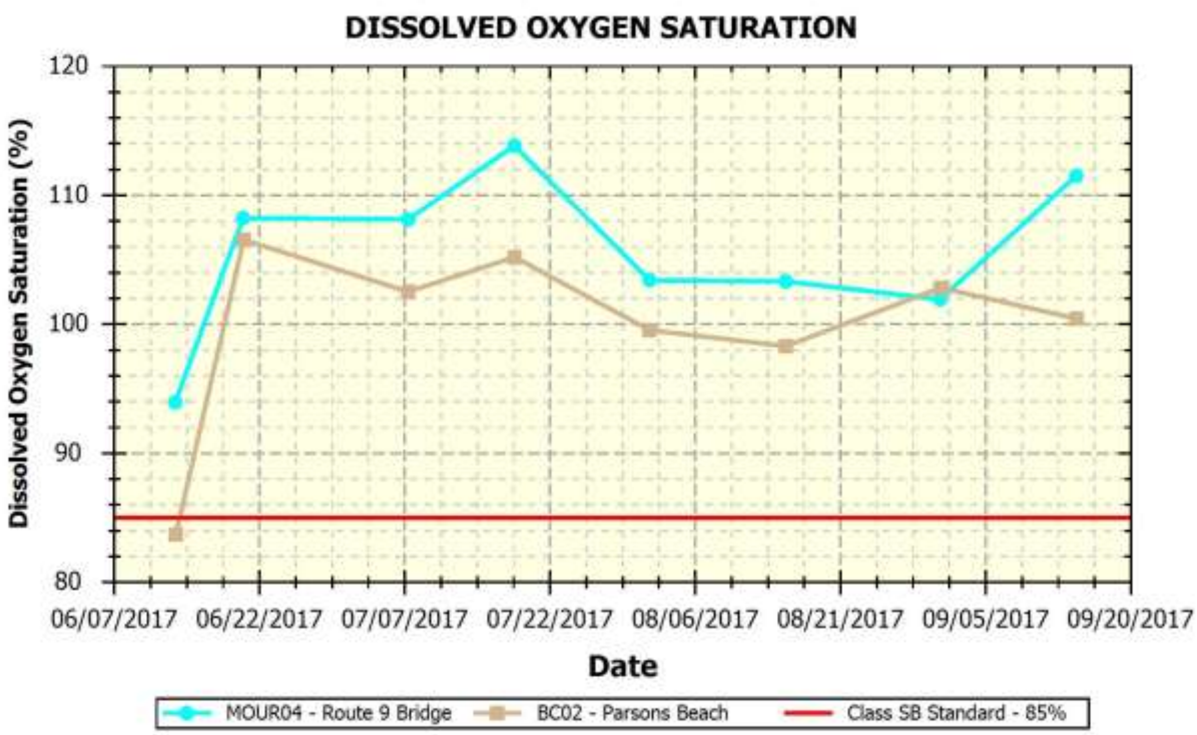


Figure 5-5-9: Graph of dissolved oxygen saturation on the tidal sites.



Water Temperature

Maine's Regulations Relating to Temperature (06-096 CMR Chapter 582) require that discharge of pollutants not raise the temperature of any river and stream above the EPA criteria for indigenous species (23°C maximum and 19°C weekly average) or 0.3°C (0.5°F) above the temperature that would naturally occur outside a mixing zone established by the Board of Environmental Protection. Pollutant is defined in statute as many things including dirt and heat. For tidal waters, discharge of pollutants may not raise the temperature more than 4°F (2.2°C) or more than 1.5°F (0.8°C) from June 1 to September 1, and may not cause the temperature of any tidal waters to exceed 85°F (29°C) at any point outside a mixing zone established by the Board of Environmental Protection. These temperature criteria do not apply to this VRMP data.

2017 Results

Mean temperature on the mainstem sites ranged from 21.2˚- 22.2˚ C and maximum temperature ranged from 21.9˚- 24.3˚ C. Temperature remained above 20.0˚ C for the July-August period at all the mainstem sites. Temperatures are overall somewhat elevated. This likely reflects that there are a number of impoundments along the river and it is a larger open river. The 2 tidal sites were similar with mean temperatures of 16.4˚- 16.6˚ C and maximum temperatures of 18.9˚- 20.8˚ C.

Table 5-5-4: A summary of minimum, maximum, and mean water temperature (°C) values for Mousam and Kennebunk Rivers Alliance monitoring sites on the Mousam River.

Site	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Exceeding Criterion
MOUR-290	B	3	21.9	20.2	23.5	n/a	n/a
MOUR-280	B	3	21.2	20.0	21.9	n/a	n/a
MOUR-250	B	3	21.3	19.5	22.6	n/a	n/a
MOUR-232	B	3	22.2	20.2	23.8	n/a	n/a
MOUR-80	B	8	22.0	19.6	24.3	n/a	n/a
MOUR-39	B	8	21.4	18.8	23.2	n/a	n/a
MOUR-35	B	8	21.2	18.7	22.9	n/a	n/a
MOUR-04	SB	8	16.6	12.5	20.8	n/a	n/a
BC-02	SB	8	16.4	12.5	18.9	n/a	n/a

Figure 5-5-10: Graph of temperature on the main stem by river mile.

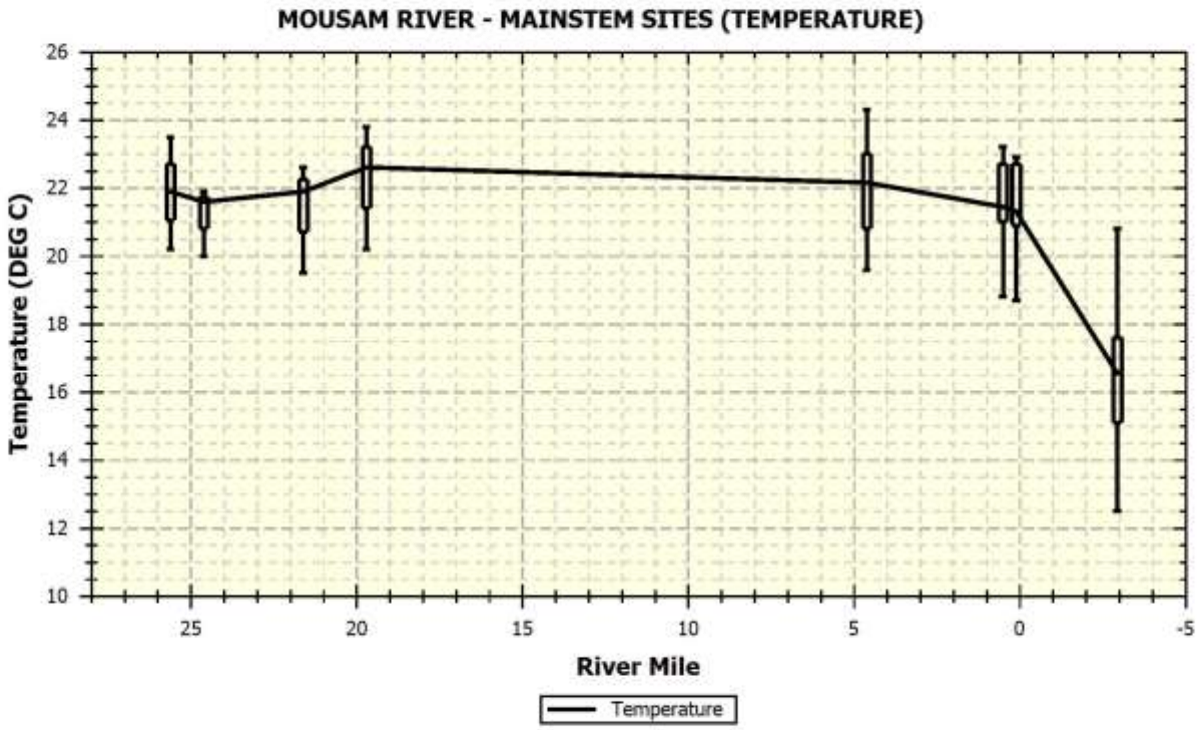


Figure 5-5-11: Graph of temperature on the upper main stem.

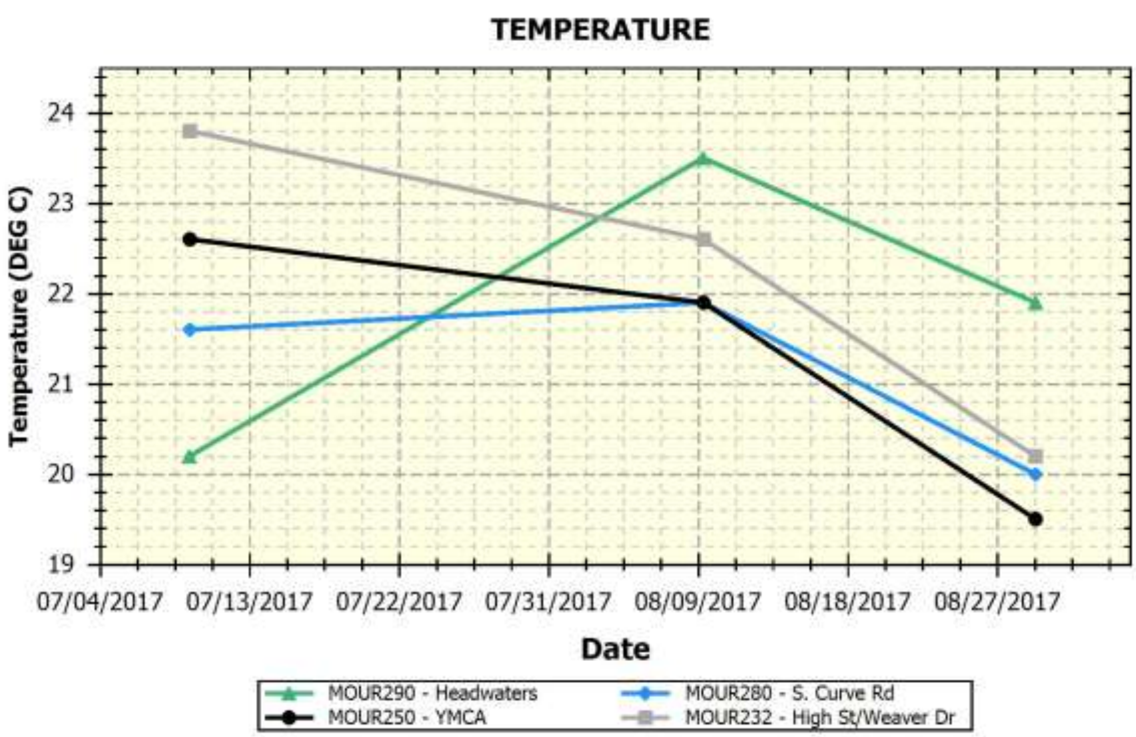


Figure 5-5-12: Graph of temperature on the middle and lower main stem.

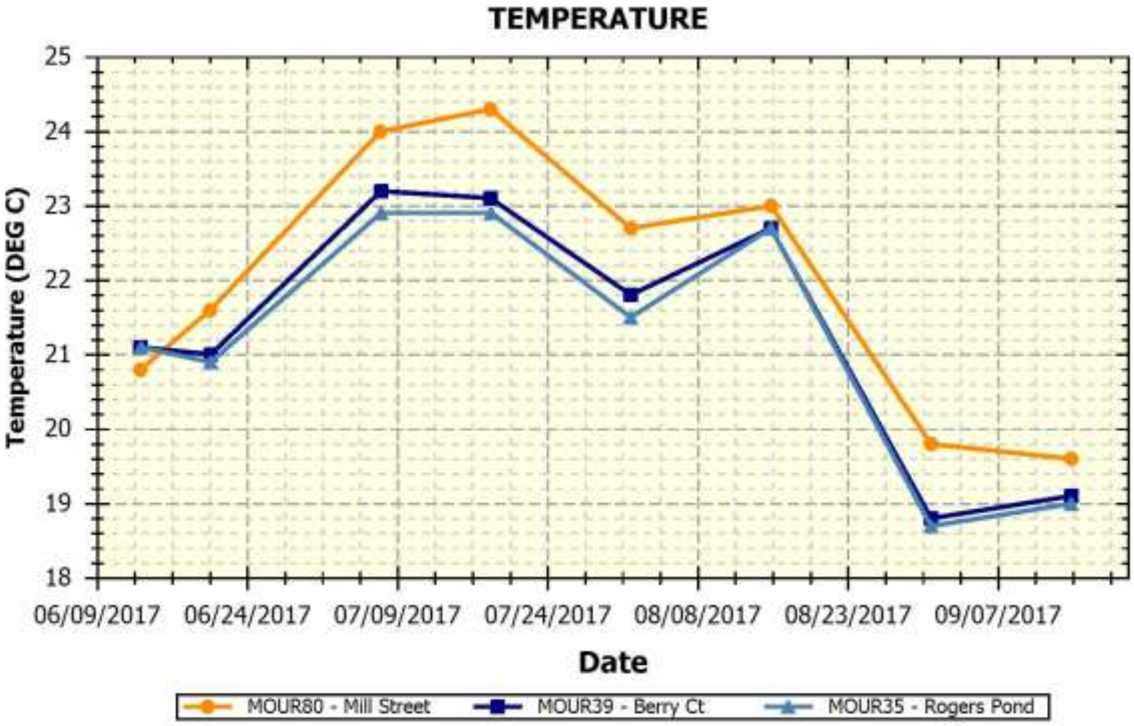
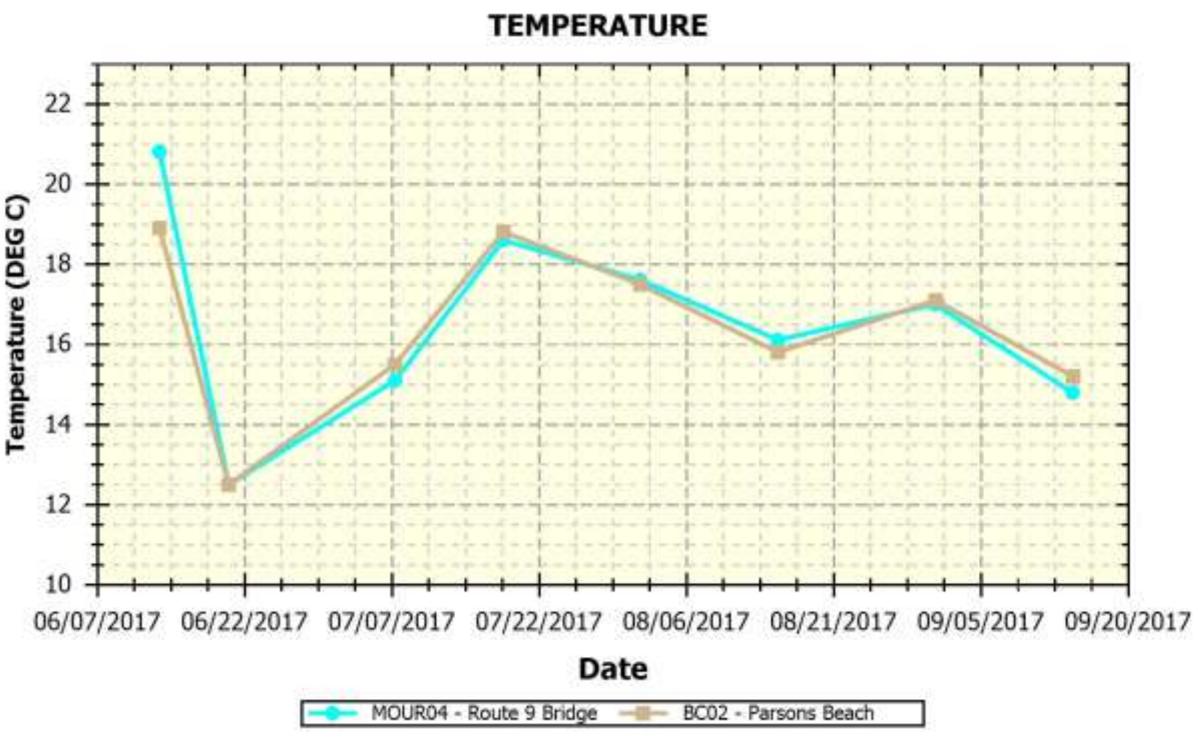


Figure 5-5-13: Graph of temperature on the tidal sites.



Specific Conductance

Specific conductance is related to the amount of dissolved materials in the water. While there are no numerical standards, a relationship exists between conductivity and chloride which has numerical criteria. In general, streams located in urban areas tend to have higher specific conductance due to polluted urban stormwater runoff. This may also in large part be due to salt buildup in surface and groundwater from road maintenance practices.

2017 Results

Mean specific conductance at all the sites ranged from 83-151 µS/cm and maximum specific conductance ranged from 84-173 µS/cm. The values for the upper part of the river were low. The middle-lower mainstem sites were all similar to each other and slightly higher than the upper mainstem sites overall. Specific conductivity is good overall.

Table 5-5-5: A summary of minimum, maximum, and mean specific conductivity (µS /cm) values for Mousam and Kennebunk Rivers Alliance monitoring sites on the Mousam River.

Site	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Exceeding Criterion
MOUR-290	B	3	83	80	85	n/a	n/a
MOUR-280	B	2	81	78	84	n/a	n/a
MOUR-250	B	2	100	90	109	n/a	n/a
MOUR-232	B	2	119	105	132	n/a	n/a
MOUR-80	B	7	140	113	160	n/a	n/a
MOUR-39	B	7	148	122	169	n/a	n/a
MOUR-35	B	7	151	128	173	n/a	n/a
MOUR-04	SB	-	-	-	-	n/a	n/a
BC-02	SB	-	-	-	-	n/a	n/a

Figure 5-5-14: Graph of specific conductance on the upper main stem.

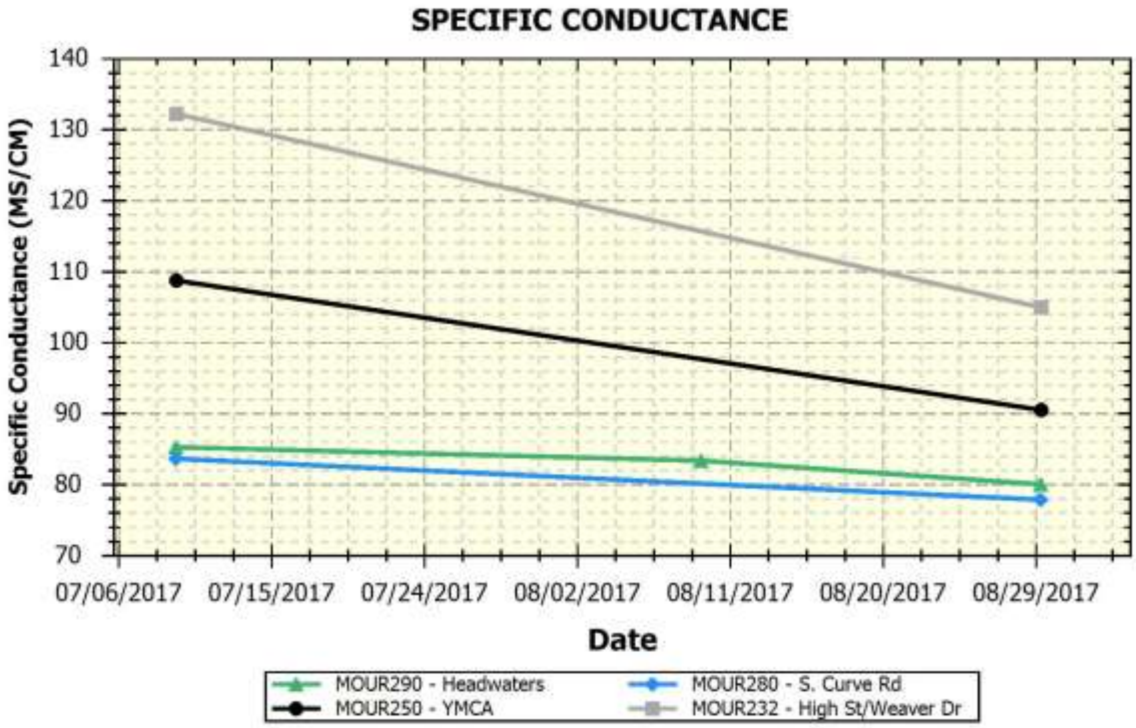
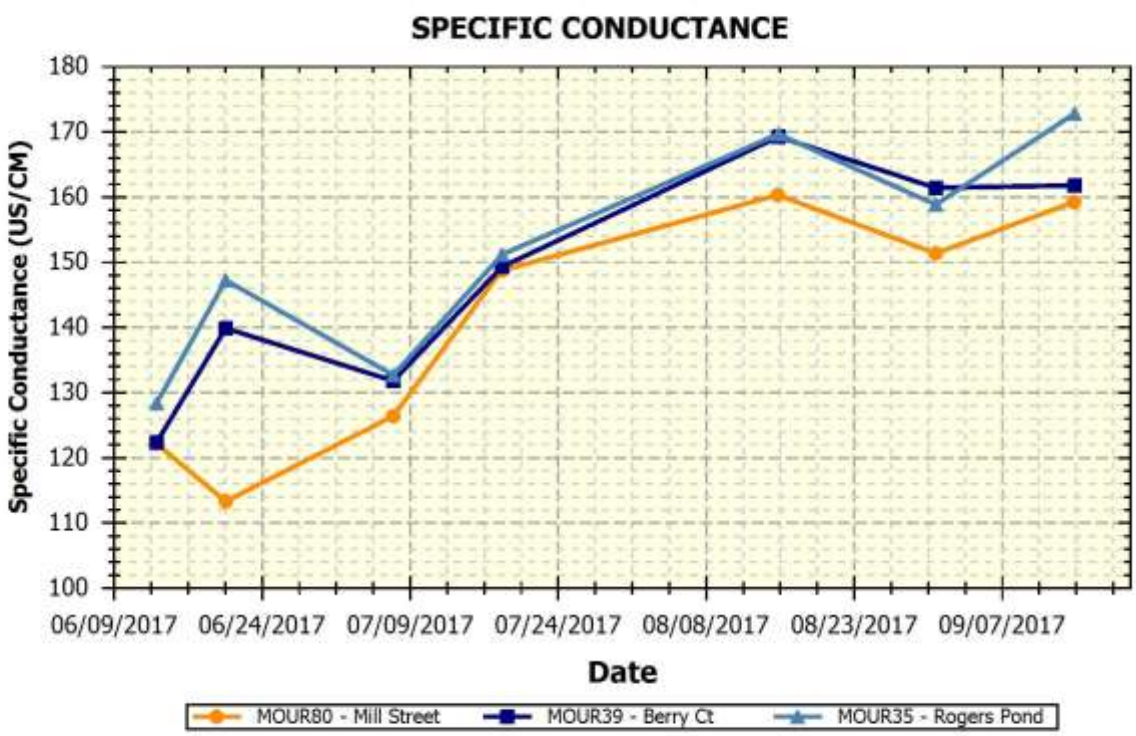


Figure 5-5-15: Graph of specific conductance on the middle and lower main stem.



Bacteria

Enterococcus bacteria are used as the indicator organism for marine waters and *E. coli* bacteria are used for freshwaters. While these types of bacteria are not pathogens, their presence in the water may indicate the presence of other organisms including bacteria and viruses that can cause gastrointestinal illnesses. Monitoring should include at least 6 samples and include a mix of dry and storm event sampling.

Class B criteria for bacteria are as follows: "Between May 15th and September 30th, the number of *Escherichia Coli* of human and domestic origin shall not exceed a geometric mean of 64/100 ml (milliliters) or an instantaneous level of 236/100 ml." Class C criteria are: "Between May 15th and September 30th, the number of *Escherichia coli* of human and domestic origin shall not exceed a geometric mean of 126/100 ml (milliliters) or an instantaneous level of 236/100 ml." Class SB criteria are as follows: "Between May 15th and September 30th, the numbers of enterococcus bacteria of human and domestic animal origin in these waters may not exceed a geometric mean of 8 per 100 milliliters or an instantaneous level of 54 per 100 milliliters." Geometric means are calculated instead of averages because it is more appropriate to use this calculation for something like bacteria where there may be one or more very high or low values that can skew the mean.

2017 Results

One freshwater site (MOUR-39) exceeded the geometric mean criterion of 64 MPN/100 ml slightly. The two tidal sites (MOUR-04 and BC02) also exceeded the geometric mean criterion of 8 MPN/100ml slightly. Overall, bacteria levels were good to excellent at the freshwater sites and good at the tidal sites. There was only one sample date when there was significant rain (6/20/17-heavy rain in previous 24 hours). The summer months of July and August were mostly dry so it was not possible to collect many rain event samples in the sampling time period.

Table 5-5-6: A summary of minimum, maximum, and geometric means for bacteria (MPN/100 mL) values for Mousam and Kennebunk Rivers Alliance monitoring sites on the Mousam River.

Site	Class	Bacteria Type	# Sample Points	Mean	Minimum	Maximum	Criterion (Insta/geo)	# Exceeding Criterion
MOUR-290	B	-	-	-	-	-	n/a	n/a
MOUR-280	B	-	-	-	-	-	n/a	n/a
MOUR-250	B	-	-	-	-	-	n/a	n/a
MOUR-232	B	-	-	-	-	-	n/a	n/a
MOUR-80	B	E. Coli	6	20	6	47	236/64	0
MOUR-39	B	E. Coli	6	71	56	115	236/64	0
MOUR-35	B	E. Coli	6	38	10	115	236/64	0
MOUR-04	SB	Enterococci	6	13	10	41	54/8	0
BC-02	SB	Enterococci	6	14	10	41	54/8	0

Figure 5-5-16: Graph of *E.Coli* at middle and lower main stem.

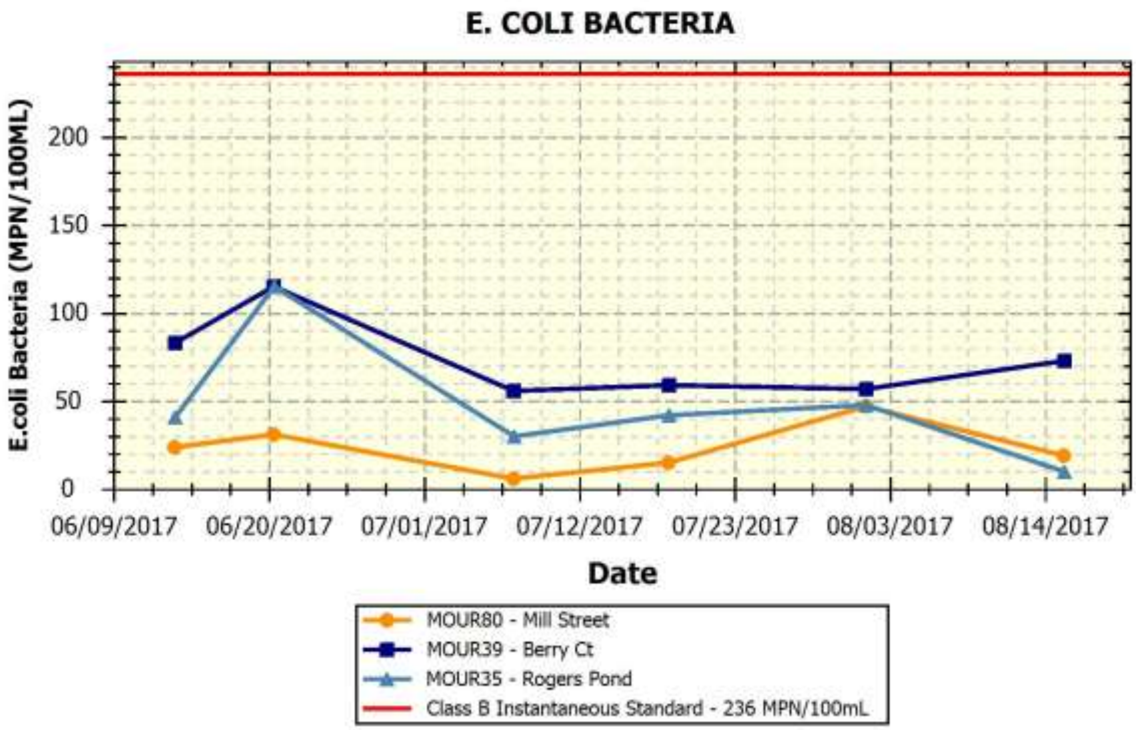
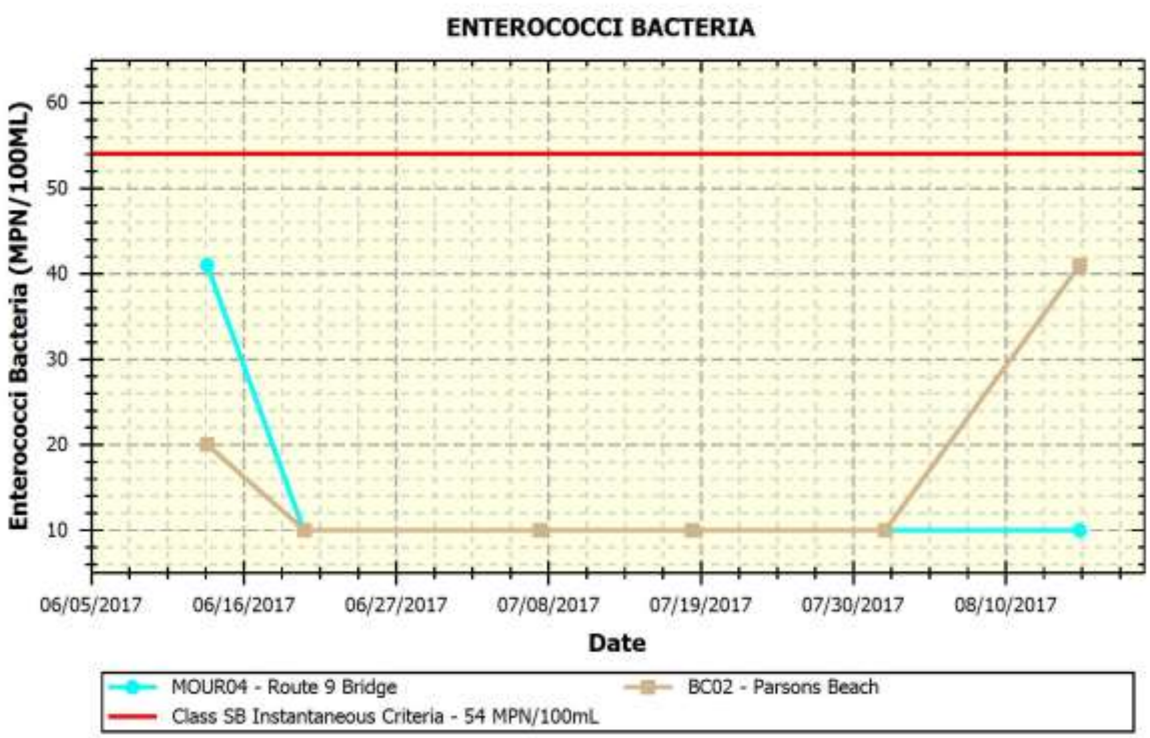


Figure 5-5-17: Graph of Enterococci bacteria at the tidal sites.



Discussion and Recommendations

There are numerous sources of pollution and other stresses to the Mousam River and tributary sites monitored by the Mousam and Kennebunk Rivers Alliance that could potentially have an impact on water quality. Some of those sources of pollution and stress may include:

- Non-point source pollution (e.g., septic systems, eroded soil, fertilizers, pesticides, heavy metals, petroleum residues, road salt, wildlife and pet feces) and polluted stormwater originating from urban impervious surfaces (e.g. streets, parking lots, driveways, rooftops) (even though urban development and roads are fairly sparse in the watershed), agriculture, and forestry.
- Point source pollution (pollution originating from a direct discharge including wastewater treatment plant discharge, combined sewer overflows and overboard discharges).
- Ponds and impoundments (which often create more pond-like aquatic habitat conditions that may have higher water temperatures and lower dissolved oxygen concentrations than free-flowing waters).
- Natural effects of wetlands (such as contributing waters to a stream/river that have low dissolved oxygen levels due to the decomposition of larger amounts of organic matter, respiration of abundant plant matter, and low re-aeration rates that is characteristic of many wetlands).

The following are recommendations for future monitoring:

- **Monitoring should continue to focus on early morning (before 8:00 am) sampling to best document potential dissolved oxygen problems. Over a 24-hour period, the lowest readings occur in the early morning and highest readings in mid to late afternoon. This occurs because oxygen is used up during the night due to plant respiration and during the day, plant life is photosynthesizing. This is particularly important during the summer months of July through early September when temperatures are warmest and dissolved oxygen tends to be at the lowest levels.**
- **Bacteria sampling should include sampling during both dry and wet weather conditions (one to two storm events) and include at least six to seven samples. This is important to calculate an accurate geometric mean value.**
- **Recruit new volunteers so that all the monitoring sites can be consistently monitored from year to year.**
- **Continue monitoring at all stations to continue building a long-term trend database.**

Appendix A

* Sampling depths are only reported for Tier 1 VRMP sites.

** "N/A" = normal environmental sample ; "D" = field duplicate; "D.O." = dissolved oxygen; "Spec. Cond" = specific conductance; "TDS" = Total disolved solids; "TSS" = total suspended solids"

Organization Site Code	VRMP Site ID	Date	Time	** Sample Type Qualifier	* Sample Depth	Depth Unit	Water Temp (DEG C)	** D.O. (MG/L)	** D.O. Sat. (%)	** Spec. Cond. (US/CM)	Salinity (PPTH)	Turbidity (NTU)	** TDS (MG/L)	** TSS (MG/L)	E. coli Bacteria (MPN/ 100ML)	Entero-cocci (MPN/ 100ML)
Mousam River & Tributaries - Mousam-Kennebunk Alliance: Approved Sites																
BC-02	BACK CREEK - SMUBC02 - VRMP	6/13/2017	8:50 AM	NA			18.9	8.1	83.7		28.4					20
BC-02	BACK CREEK - SMUBC02 - VRMP	6/13/2017	8:50 AM	L												30
BC-02	BACK CREEK - SMUBC02 - VRMP	6/20/2017	8:55 AM	NA			12.5	11.3	106.5		26.5					10
BC-02	BACK CREEK - SMUBC02 - VRMP	6/20/2017	8:55 AM	L												10
BC-02	BACK CREEK - SMUBC02 - VRMP	7/7/2017	8:41 AM	NA			15.5	10.1	102.5		25.9					10
BC-02	BACK CREEK - SMUBC02 - VRMP	7/7/2017	8:41 AM	L												L 10
BC-02	BACK CREEK - SMUBC02 - VRMP	7/18/2017	8:22 AM	NA			18.8	10.1	105.2		23.1					L 10
BC-02	BACK CREEK - SMUBC02 - VRMP	8/1/2017	7:51 AM	NA			17.5	9.6	99.5							L 10
BC-02	BACK CREEK - SMUBC02 - VRMP	8/15/2017	8:34 AM	NA			15.8	8.8	98.3		29.1					41
BC-02	BACK CREEK - SMUBC02 - VRMP	8/31/2017	8:14 AM	NA			17.1	10.1	102.8		30.1					
BC-02	BACK CREEK - SMUBC02 - VRMP	9/14/2017	8:55 AM	NA			15.2	9.9	100.4		30.1					
MOUR-04	MOUSAM RIVER - SMU04 - VRMP	6/13/2017	8:30 AM	NA			20.8	8.4	93.9		26.3					41
MOUR-04	MOUSAM RIVER - SMU04 - VRMP	6/20/2017	8:40 AM	NA			12.5	11.5	108.2		26.6					L 10
MOUR-04	MOUSAM RIVER - SMU04 - VRMP	7/7/2017	8:36 AM	NA			15.1	10.9	108.1		26.7					L 10
MOUR-04	MOUSAM RIVER - SMU04 - VRMP	7/18/2017	8:10 AM	NA			18.6	10.6	113.8		22					L 10
MOUR-04	MOUSAM RIVER - SMU04 - VRMP	7/18/2017	8:10 AM	L												L 10
MOUR-04	MOUSAM RIVER - SMU04 - VRMP	8/1/2017	7:40 AM	NA			17.6	9.9	103.4							L 10
MOUR-04	MOUSAM RIVER - SMU04 - VRMP	8/15/2017	8:19 AM	NA			16.1	10.2	103.3		27.1					L 10
MOUR-04	MOUSAM RIVER - SMU04 - VRMP	8/31/2017	8:00 AM	NA			17.0	9.9	101.9		29.7					
MOUR-04	MOUSAM RIVER - SMU04 - VRMP	9/14/2017	8:35 AM	NA			14.8	11.3	111.5		30.3					
MOUR-232	MOUSAM RIVER - SMU232-VRMP	7/9/2017	9:45 AM	NA			23.8	8.1	95.7	132.2						
MOUR-232	MOUSAM RIVER - SMU232-VRMP	8/9/2017	7:55 AM	NA			22.6	9.0	102.7							
MOUR-232	MOUSAM RIVER - SMU232-VRMP	8/29/2017	7:40 AM	NA			20.2	8.4	93.7	104.9						
MOUR-250	MOUSAM RIVER - SMU250 - VRMP	7/9/2017	9:30 AM	NA			22.6	8.1	92.7	108.7						
MOUR-250	MOUSAM RIVER - SMU250 - VRMP	8/9/2017	7:45 AM	NA			21.9	8.9	102.6							
MOUR-250	MOUSAM RIVER - SMU250 - VRMP	8/29/2017	7:30 AM	NA			19.5	8.3	91.0	90.5						
MOUR-280	MOUSAM RIVER - SMU280 - VRMP	7/9/2017	9:15 AM	NA			21.6	7.7	88.1	83.6						
MOUR-280	MOUSAM RIVER - SMU280 - VRMP	8/9/2017	7:20 AM	NA			21.9	8.4	96.5							
MOUR-280	MOUSAM RIVER - SMU280 - VRMP	8/9/2017	7:20 AM	D			21.9	8.4	95.7							
MOUR-280	MOUSAM RIVER - SMU280 - VRMP	8/29/2017	7:15 AM	NA			20.0	7.6	86.1	77.8						
MOUR-290	MOUSAM RIVER - SMU290 - VRMP	7/9/2017	9:05 AM	NA			20.2	7.0	84.2	85.2						
MOUR-290	MOUSAM RIVER - SMU290 - VRMP	8/9/2017	7:05 AM	NA			23.5	8.2	96.1	83.3						
MOUR-290	MOUSAM RIVER - SMU290 - VRMP	8/29/2017	7:10 AM	NA			21.9	7.6	86.4	80						

Mousam River & Tributaries - Mousam-Kennebunk Alliance: Approved Sites																
MOUR-35	MOUSAM RIVER - SMU35 - VRMP	6/13/2017	8:07 AM	NA			21.1	8.6	97.1	128.3					41	
MOUR-35	MOUSAM RIVER - SMU35 - VRMP	6/20/2017	8:10 AM	NA			20.9	8.3	92.6	147.2					115	
MOUR-35	MOUSAM RIVER - SMU35 - VRMP	7/7/2017	8:08 AM	NA			22.9	8.3	95.5	132.6					30	
MOUR-35	MOUSAM RIVER - SMU35 - VRMP	7/18/2017	7:19 AM	NA											42	
MOUR-35	MOUSAM RIVER - SMU35 - VRMP	7/18/2017	7:49 AM	NA			22.9	8.2	96.3	151.1						
MOUR-35	MOUSAM RIVER - SMU35 - VRMP	8/1/2017	7:21 AM	NA			21.5	8.5	96.3						48	
MOUR-35	MOUSAM RIVER - SMU35 - VRMP	8/15/2017	7:56 AM	NA			22.7	8.0	95.2	169.6					10	
MOUR-35	MOUSAM RIVER - SMU35 - VRMP	8/31/2017	7:39 AM	NA			18.7	9.0	96.1	158.8						
MOUR-35	MOUSAM RIVER - SMU35 - VRMP	9/14/2017	8:11 AM	NA			19.0	9.0	97.8	172.8						
MOUR-39	MOUSAM RIVER - SMU39 - VRMP	6/13/2017	7:50 AM	NA			21.1	7.8	86.8	122.3					83	
MOUR-39	MOUSAM RIVER - SMU39 - VRMP	6/20/2017	7:53 AM	NA			21.0	7.3	82.2	139.8					115	
MOUR-39	MOUSAM RIVER - SMU39 - VRMP	7/7/2017	7:50 AM	NA			23.2	6.7	78.4	131.8					56	
MOUR-39	MOUSAM RIVER - SMU39 - VRMP	7/18/2017	7:35 AM	NA			23.1	7.36	85.3	149.3					59	
MOUR-39	MOUSAM RIVER - SMU39 - VRMP	8/1/2017	7:03 AM	NA			21.8	7.67	87.9						57	
MOUR-39	MOUSAM RIVER - SMU39 - VRMP	8/15/2017	7:40 AM	NA			22.7	7.12	82.9	169.2					73	
MOUR-39	MOUSAM RIVER - SMU39 - VRMP	8/31/2017	7:23 AM	NA			18.8	7.74	83	161.4						
MOUR-39	MOUSAM RIVER - SMU39 - VRMP	9/14/2017	7:55 AM	NA			19.1	8.02	86.2	161.8						
MOUR-80	MOUSAM RIVER - SMU80 - VRMP	6/13/2017	7:03 AM	NA			20.8	8.05	90	122.1					24	
MOUR-80	MOUSAM RIVER - SMU80 - VRMP	6/20/2017	7:05 AM	NA			21.6	7.19	81.6	113.3					31	
MOUR-80	MOUSAM RIVER - SMU80 - VRMP	7/7/2017	7:00 AM	NA			24	7.27	86	126.4					6	
MOUR-80	MOUSAM RIVER - SMU80 - VRMP	7/7/2017	7:08 AM	D											6	
MOUR-80	MOUSAM RIVER - SMU80 - VRMP	7/18/2017	6:58 AM	NA			24.3	7.8	93.3	148.7					15	
MOUR-80	MOUSAM RIVER - SMU80 - VRMP	8/1/2017	6:33 AM	NA			22.7	8.52	98.8						47	
MOUR-80	MOUSAM RIVER - SMU80 - VRMP	8/1/2017	6:36 AM	D											56	
MOUR-80	MOUSAM RIVER - SMU80 - VRMP	8/15/2017	6:59 AM	NA			23	7.67	89	160.3					19	
MOUR-80	MOUSAM RIVER - SMU80 - VRMP	8/31/2017	6:42 AM	NA			19.8	7.71	84.5	151.3						
MOUR-80	MOUSAM RIVER - SMU80 - VRMP	9/14/2017	7:05 AM	NA			19.6	8.73	94.7	159.2						