Section 5-2
Androscoggin River (Friends of Merrymeeting Bay)

Androscoggin River

The Androscoggin River is the third largest river in the state of Maine. It has a length of 177 miles and drainage area of 3,450 square miles (2,730 sq. mi. in Maine).[1] The Androscoggin River's headwaters are Umbagog Lake in Maine/New Hampshire. From there it flows into New Hampshire and then back into Maine through the towns of Gilead and Bethel. It continues flowing through the towns and cities of Rumford, Mexico, Dixfield, Jay, Livermore Falls, Lewiston, Auburn, Lisbon, Lisbon Falls, Durham, Brunswick, and Topsham where it joins the Kennebec River at Merrymeeting Bay.

The Androscoggin River has a long history of industrial and municipal use over the last 200 years.[1] Beginning in the early 1800s, many dams were constructed for mills, primarily in the lower part of the river. By the late 1800s, many textile and lumber mills were in operation, mostly from Lewiston to Brunswick. Pulp and paper mills that are still in operation today were established in the late 1800s in New Hampshire, Rumford, and Jay. Beginning in the late 1920s, Central Maine Power built hydroelectric dams that impounded much of the river from Lewiston to Livermore Falls. Some of these uses continue today. "Along its course to the sea, the river is repeatedly dammed. It receives discharges from industrial and municipal sources, as well as polluted runoff from a variety of sources."[2] Specific problems include mill discharges, combined sewer overflows (CSOs), dam impacts (28 dams exist), and historical sediment toxins.

The Androscoggin River is assigned Class B from the Maine/New Hampshire boundary to its confluence with the Ellis River. It is assigned Class C from the confluence with the Ellis River to Merrymeeting Bay.

Friends of Merrymeeting Bay (FOMB) is a nonprofit organization that focuses on the lower part of the Androscoggin River and other waterbodies draining into Merrymeeting Bay. FOMB has been in existence since 1975 and its mission is "to preserve, protect and improve the unique ecosystem of Merrymeeting Bay"[3].

[1] Maine Rivers Website- Androscoggin River Profile
[2] Androscoggin River Alliance Website- Androscoggin River slideshow
[3] Friends of Merrymeeting Bay website

Monitoring History

• The Maine Department of Environmental Protection's (DEP) Biological Monitoring Program has been monitoring the lower Androscoggin River since 1984. This data is available on DEP's website.

• The lower Androscoggin River is monitored by Friends of Merrymeeting Bay (FOMB). They have been monitoring the lower part of the Androscoggin River, tributaries to Merrymeeting Bay, and the Bay since 1999. Their monitoring has extended up the Androscoggin at times (depending on volunteers) to Livermore Falls. FOMB joined the VRMP in 2009 with an interest in bringing about water classification upgrades where possible.

• In 2011, FOMB requested that two of the three approved sites (Water Street Mooring, WSM and Brunswick Canoe Mooring, BCM) be moved from mid-channel to shore. They submitted monitoring data from mid-channel and shore to demonstrate similarity. The Department approved relocation of these approved sites. FOMB renamed these sites Brunswick Water Street (BWS) and Brunswick Canoe Portage (BCP), respectively.

• In 2010, a water quality model to predict the effect of discharges and river flows on attainment of Maine's Water Quality Standards was developed for the lower Androscoggin River by the Maine DEP. The model report and data are available on DEP's website.

Methods and Sampling Sites

Volunteers monitor the Androscoggin River at eight sites on the main stem. All of the sites are now VRMP approved sites. In 2015, FOMB added site Durham Boat New (DBN) to replace Durham Boat Launch (DBL) and in 2016 added site Island View Lane (IVL) to replace site Bay Bridge Jetty (BBB).

Monitoring is conducted once a month from May through October. 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. Samples are collected for *E. coli* bacteria and transported to Bowdoin College for analysis by FOMB volunteers using the IDEXX Colilert system.

Table 5-2-1: Friends of Merrymeeting Bay sampling sites at Androscoggin River, listed from upstream to downstream.

VRMP Site ID	Organization Site Code	Sample Location	Class
Androscoggin River-A149-VRMP	DBN	Durham Boat New	C
Androscoggin River-A71-VRMP	PBL	Pejepscot Boat Launch	C
Androscoggin River-A47-VRMP	FPU	Fish Park Upstream	C
Androscoggin River-A45-VRMP	FPD	Fish Park Downstream	C
Androscoggin River-A24-VRMP	BIL	Brunswick Interstate Ledges	C
Androscoggin River-A06-VRMP	BCP	Brunswick Canoe Portage	C
Androscoggin River-A281-VRMP	BWS	Brunswick Water Street	C
Androscoggin River-A-45-VRMP	IVL	Island View Lane	C

Androscoggin River Sampling Sites
Friends of Merrymeeting Bay

Figure 5-2-1: Map of all Friends of Merrymeeting Bay sampling sites on the Androscoggin River.

Results

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

Dissolved Oxygen

Dissolved oxygen levels are generally lowest early in the morning and then increase during the day, peaking 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, this will affect the dissolved oxygen.

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

2017 Results

Dissolved oxygen (DO) was measured six times from May through October at seven sampling sites. At all the sites, DO concentration was above the Class C criterion of 5 mg/l. It was also above the Class B criterion of 7 mg/l at all sites, except for site FPD which had 1 value slightly below 7 mg/l in late July. Dissolved oxygen percent saturation was above the Class C criterion of 60% saturation for all dates and above Class B criterion of 75% saturation for all dates. Overall, sites BCP, BWS and IVL are very similar to each other. The sites upstream (BIL, FPD, FPU, and PBL) are also very similar. Dissolved oxygen was good to excellent overall.

Table 5-2-2: A summary of minimum, maximum, and mean dissolved oxygen concentration values (mg/l) at Friends of Merrymeeting Bay monitoring sites on the Androscoggin River.

Site	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
DBN	C	-	-	-	-	-	-
PBL	C	6	8.5	7.4	10.0	5ppm	0
FPU	C	6	8.4	7.0	10.1	5ppm	0
FPD	C	6	8.5	6.9	10.3	5ppm	0
BIL	C	6	8.4	7.1	10.2	5ppm	0
BCP	C	6	8.5	7.3	10.4	5ppm	0
BWS	C	6	8.6	7.4	10.7	5ppm	0
IVL	C	6	8.5	7.0	10.6	5ppm	0

Table 5-2-3: A summary of minimum, maximum, and mean dissolved oxygen saturation (%) values at Friends of Merrymeeting Bay monitoring sites on the Androscoggin River.

Site	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
DBN	C	-	-	-	-	n/a	n/a
PBL	C	6	92.9	88.8	99.8	60%	0
FPU	C	6	92.9	88.8	99.8	60%	0
FPD	C	6	91.8	83.9	101.3	60%	0
BIL	C	6	90.7	83.7	100.7	60%	0
BCP	C	6	91.4	86.8	102.6	60%	0
BWS	C	6	93.5	87.6	104.9	60%	0
IVL	C	6	91.3	83.3	102.8	60%	0

Figure 5-2-2: Graph of dissolved oxygen concentrations - Lower sites.

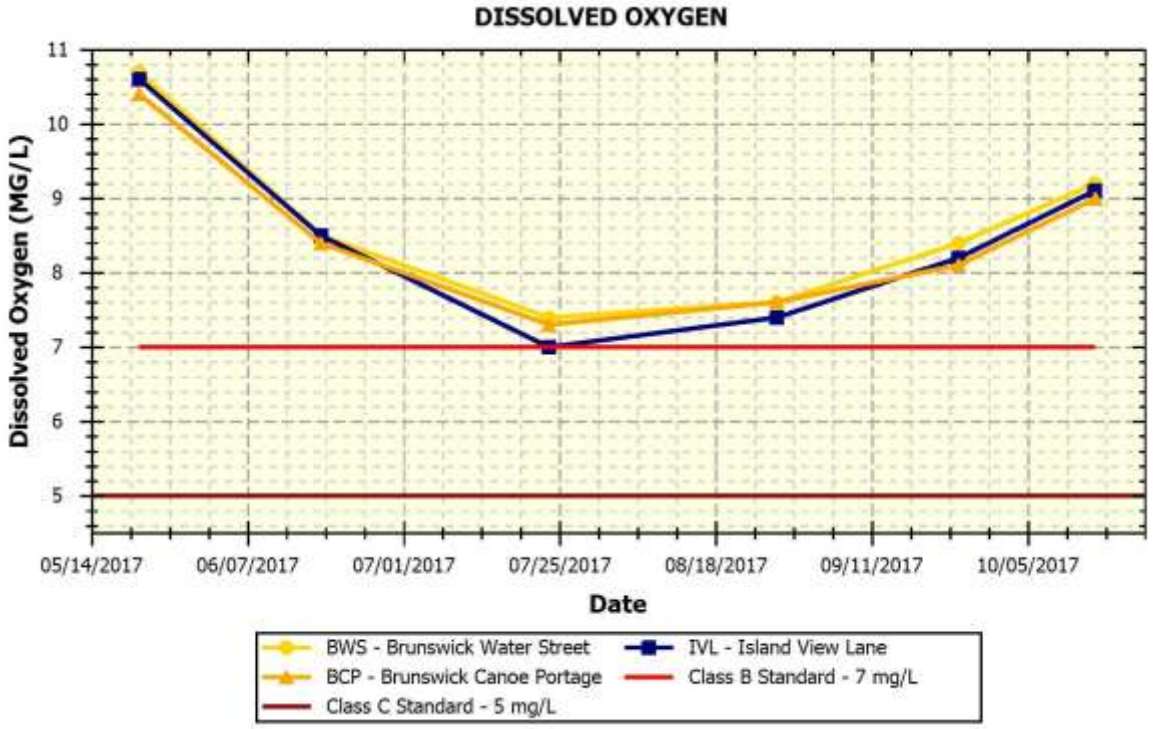


Figure 5-2-3: Graph of dissolved oxygen concentrations - Upper sites.

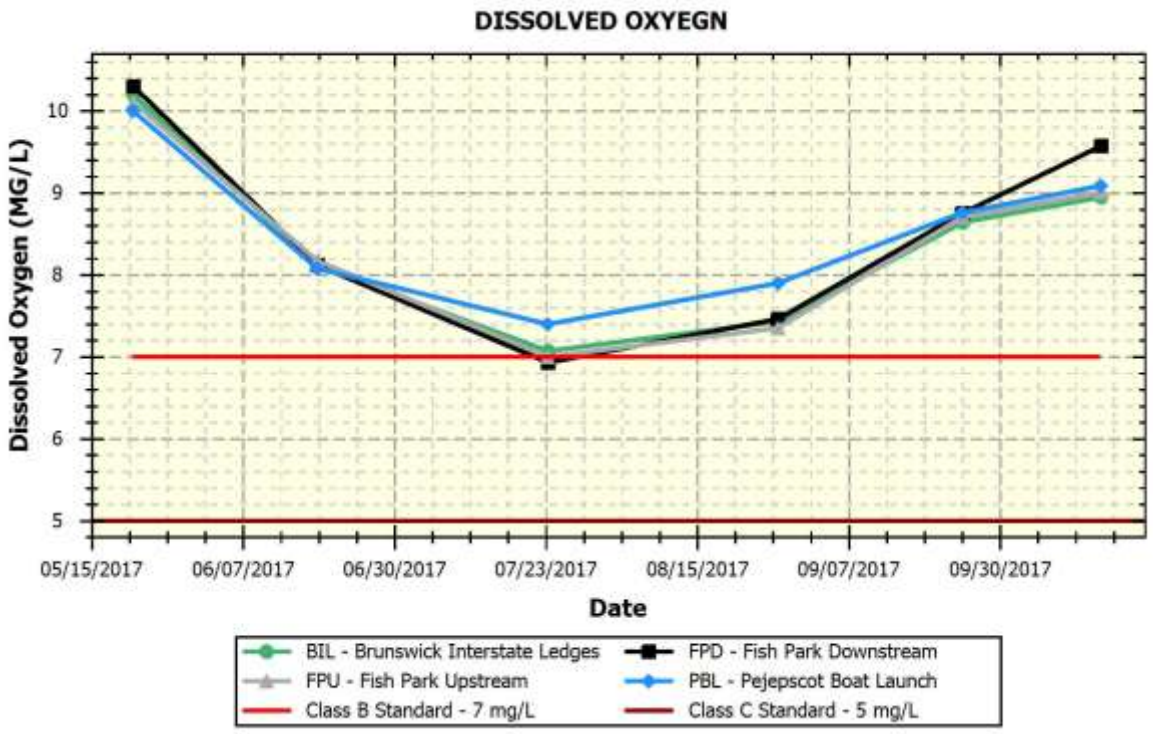


Figure 5-2-4: Graph of dissolved oxygen saturation - Lower sites.

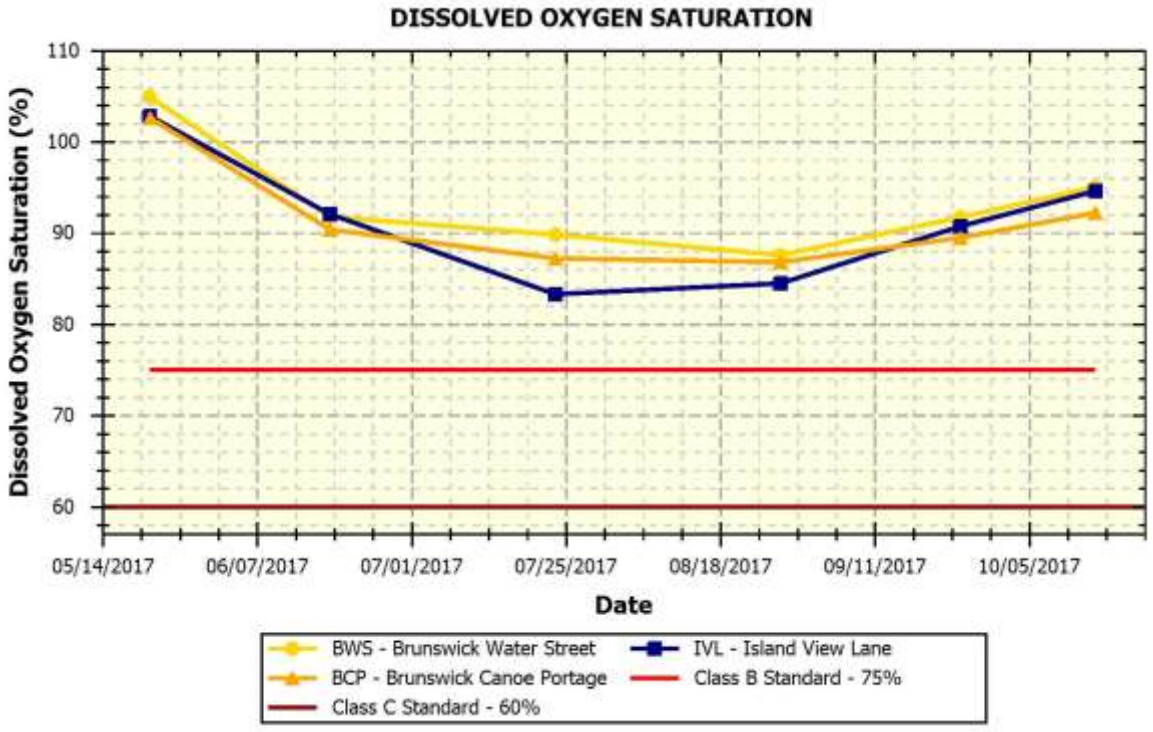
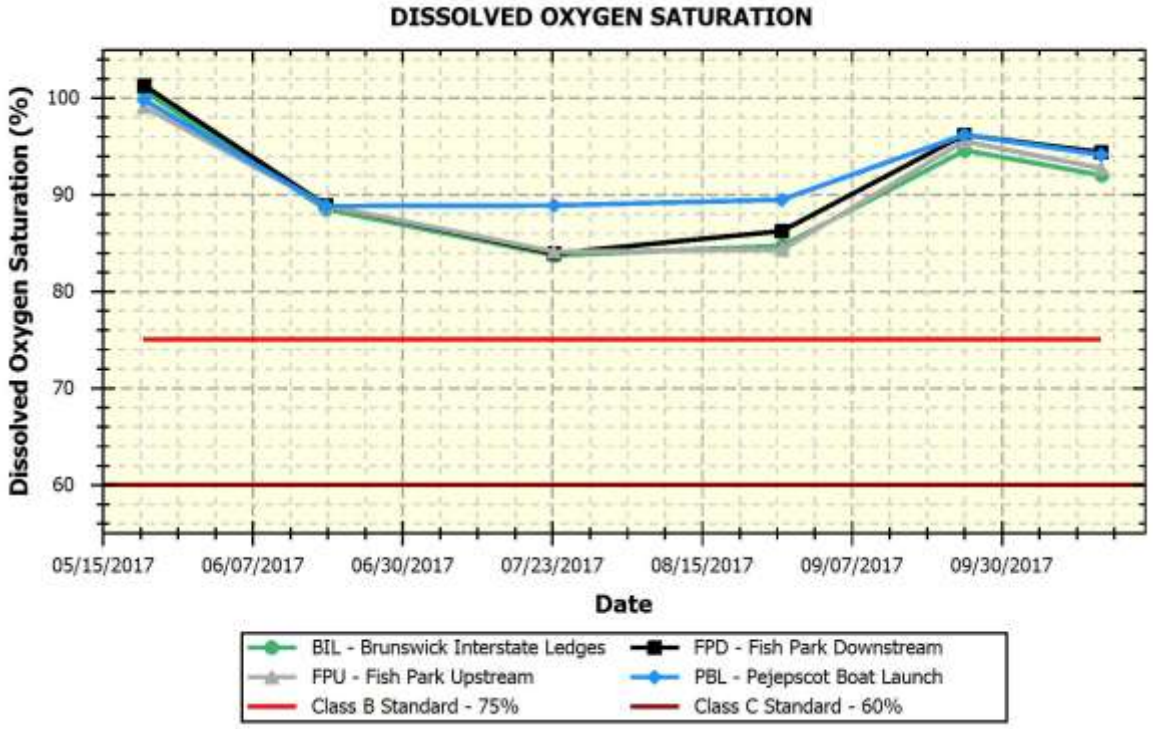


Figure 5-2-5: Graph of dissolved oxygen saturation - Upper sites.



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.

2017 Results

Temperatures at the three lowest sampling sites (BCP, BWS and IVL) were quite similar with highest temperatures occurring in July and August (20˚ - 25˚ C). Temperature was similar at the five sampling sites above (BIL, FPD, FPU, PBL and DBN) with highest readings occurring in July and August also (22˚ - 25˚ C). Since measurements are taken close to the surface (1.5 - 3 ft.), it is not surprising that temperatures can get quite warm in July and August in the large open river.

Table 5-2-4: A summary of minimum, maximum, and mean water temperature (°C) values at Friends of Merrymeeting Bay monitoring sites on the Androscoggin River.

Site	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Exceeding Criterion
DBN	C	4	19.7	15.5	23.4	n/a	n/a
PBL	C	6	19.4	14.3	24.8	n/a	n/a
FPU	C	6	19.5	14.7	24.7	n/a	n/a
FPD	C	6	19.6	14.7	24.8	n/a	n/a
BIL	C	6	19.4	14.7	24.6	n/a	n/a
BCP	C	6	19.5	14.6	24.6	n/a	n/a
BWS	C	6	19.0	14.3	25.0	n/a	n/a
IVL	C	6	19.5	14.2	24.4	n/a	n/a

Figure 5-2-6: Graph of temperature - Lower sites.

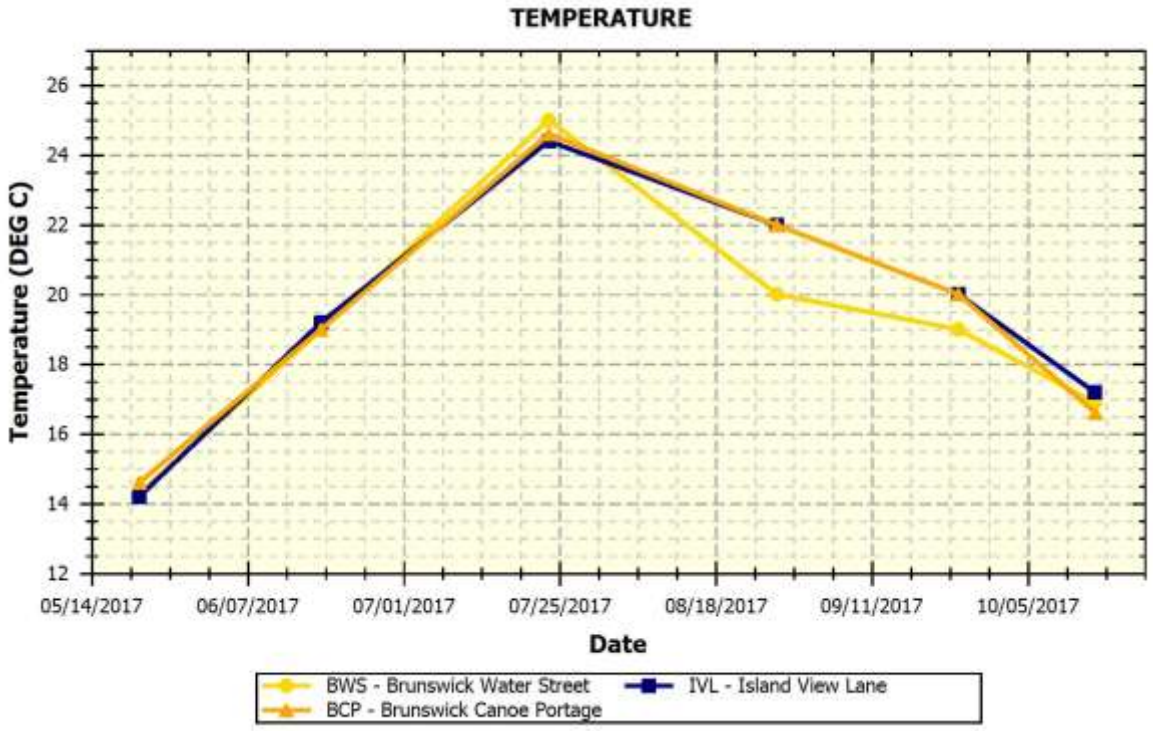
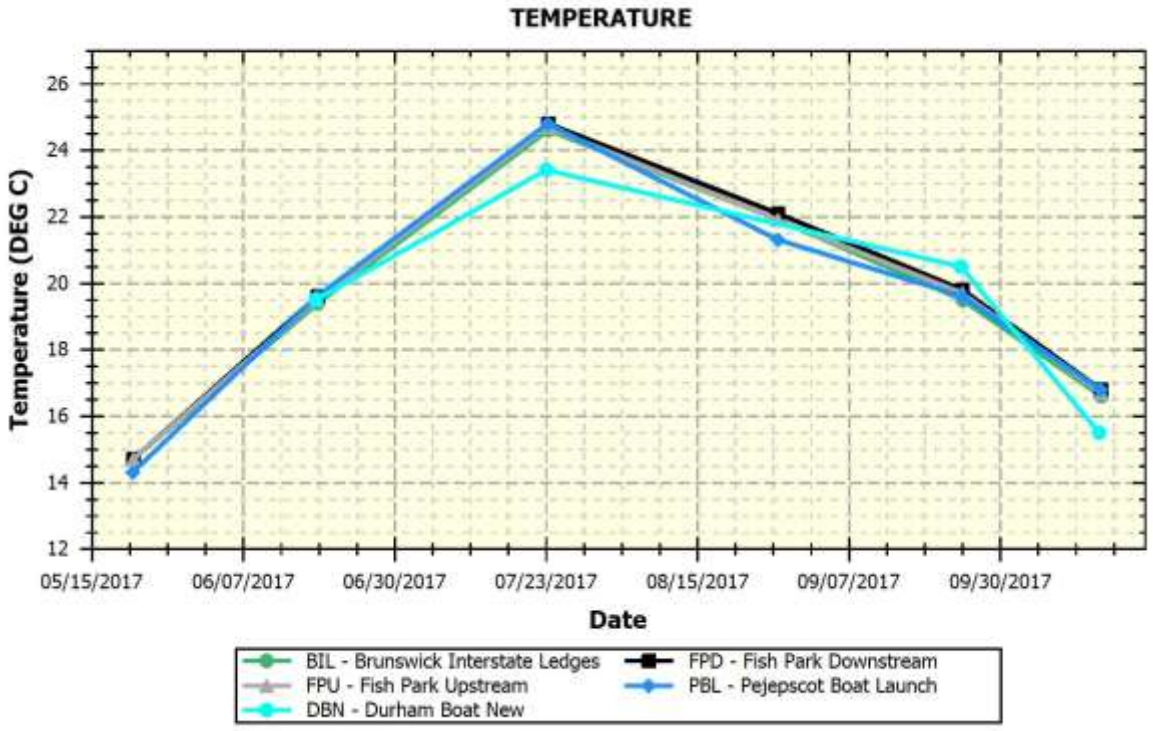


Figure 5-2-7: Graph of temperature - Upper sites.



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 high 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. Also, discharges from pulp and paper mills upstream measurably increase the conductivity of the river.

2017 Results

Specific conductance was measured six times at the sampling sites with measurements ranging from 40-120 µS/cm. Specific conductance increased as the season progressed with maximum values occurring in August-October when values were slightly elevated. Specific conductance overall is low.

Table 5-2-5: A summary of minimum, maximum, and mean specific conductance values (micro-ohms/cm, µS/cm) at Friends of Merrymeeting Bay monitoring sites on the Androscoggin River.

Site	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Exceeding Criterion
DBN	C	-	-	-	-	n/a	n/a
PBL	C	6	93	50	120	n/a	n/a
FPU	C	6	87	40	120	n/a	n/a
FPD	C	6	87	40	120	n/a	n/a
BIL	C	6	87	40	120	n/a	n/a
BCP	C	6	92	50	120	n/a	n/a
BWS	C	6	98	70	120	n/a	n/a
IVL	C	6	88	40	120	n/a	n/a

Figure 5-2-8: Graph of specific conductance - Lower sites.

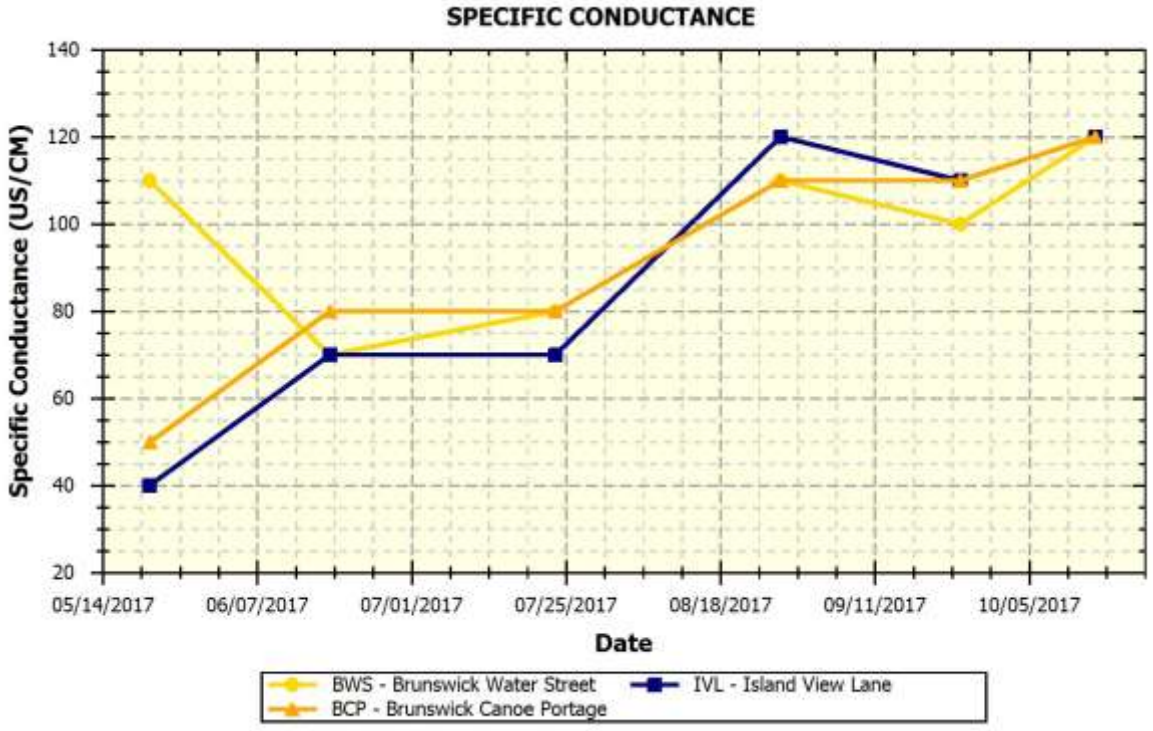
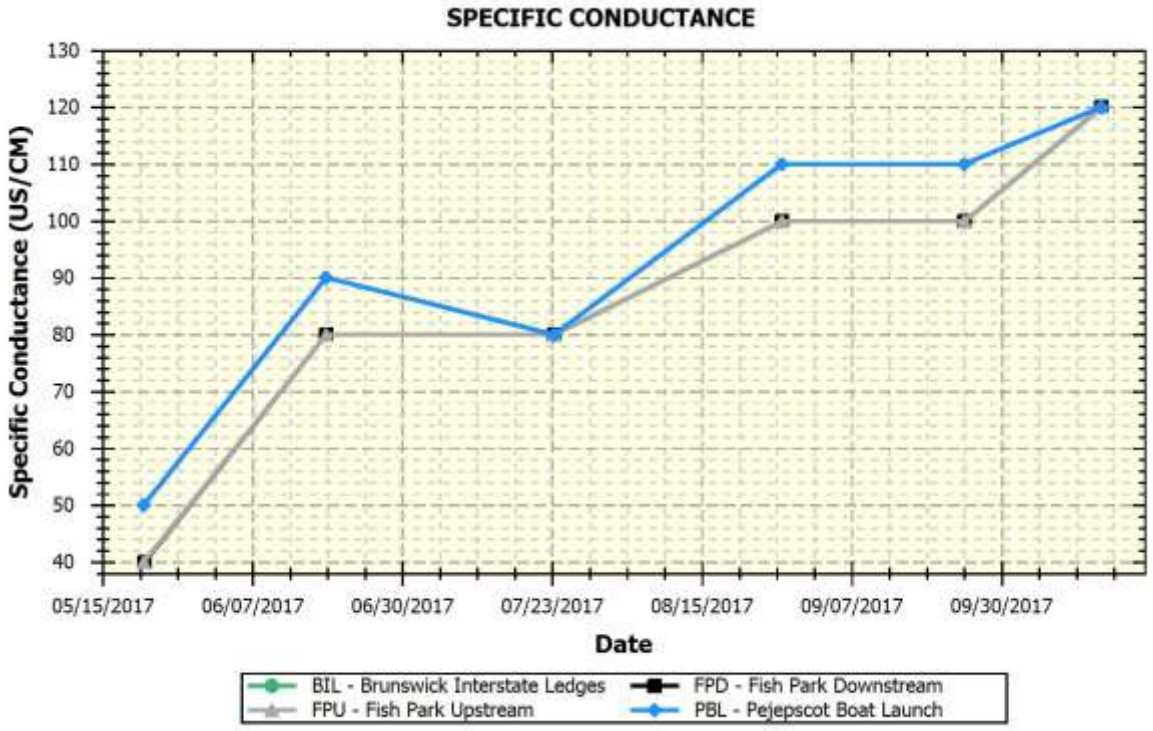


Figure 5-2-9: Graph of specific conductance - Upper sites.



Bacteria

Escherichia coli (E. coli) bacteria are used as the indicator organism for freshwater. While these types of bacteria are not pathogens, their presence in the water may indicate the presence of other organisms, including bacteria and viruses, which can cause gastrointestinal illnesses. Class C 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 126/100 ml (milliliters) or an instantaneous level of 236/100 ml." Class B criteria 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." Geometric means are calculated instead of averages because it is more appropriate to use geometric mean for something like bacteria where there may be one or more very high or low values that can skew the mean.

2017 Results

***Escherichia coli* bacteria were sampled four to six times at eight sampling sites. Weather conditions were clear to light rain on all sample dates and previous 24 hours. All of the sample sites exceeded the Class B and Class C bacteria instantaneous criterion of 236 (MPN/100ml) on 1 date (October), except for site IVL which was elevated. The Class C geometric mean criterion of 126 (MPN/100ml) was not exceeded at any of the sites. The Class B geometric mean criterion of 64 (MPN/100ml) was not exceeded at any of the sites. Typically, high bacteria levels are associated with stormwater runoff and/or combined sewer overflows. None of the sample dates coincided with any significant rainfall, which may explain why bacteria concentrations were low with the exception of the October date. FOMB suggests that high bacteria levels also may reflect the seasonal September cessation of chlorine inputs by wastewater treatment plants along the river. Because bacteria counts are**

typically lower in colder water, treatment plants are only required to chlorinate May - September. Overall, bacteria levels are excellent for the dates except in October.

Table 5-2-6: A summary of minimum, maximum, and geometric mean values (MPN/100mL) for bacteria at Friends of Merrymeeting Bay monitoring sites on the Androscoggin River.

Site	Class	Bacteria Type	# Sample Points	Geo-Mean	Minimum	Maximum	Criterion (Insta/geo)	# Exceeding Criterion
DBN	C	E. Coli	4	11	10	345	236/126	1
PBL	C	E. Coli	6	15	7	1300	236/126	1
FPU	C	E. Coli	6	15	5	1986	236/126	1
FPD	C	E. Coli	6	14	7	1986	236/126	1
BIL	C	E. Coli	6	15	7	1986	236/126	1
BCP	C	E. Coli	6	21	9	1046	236/126	1
BWS	C	E. Coli	6	22	10	727	236/126	1
IVL	C	E. Coli	6	27	13	214	236/126	0

***Geometric mean excludes October results (beyond the criteria inclusion date range of May 15-September 30). Maximum values beyond the range were included in the table and graphs.**

Figure 5-2-10: Graph of *E. coli* (MPN/100 ml) - Lower sites.

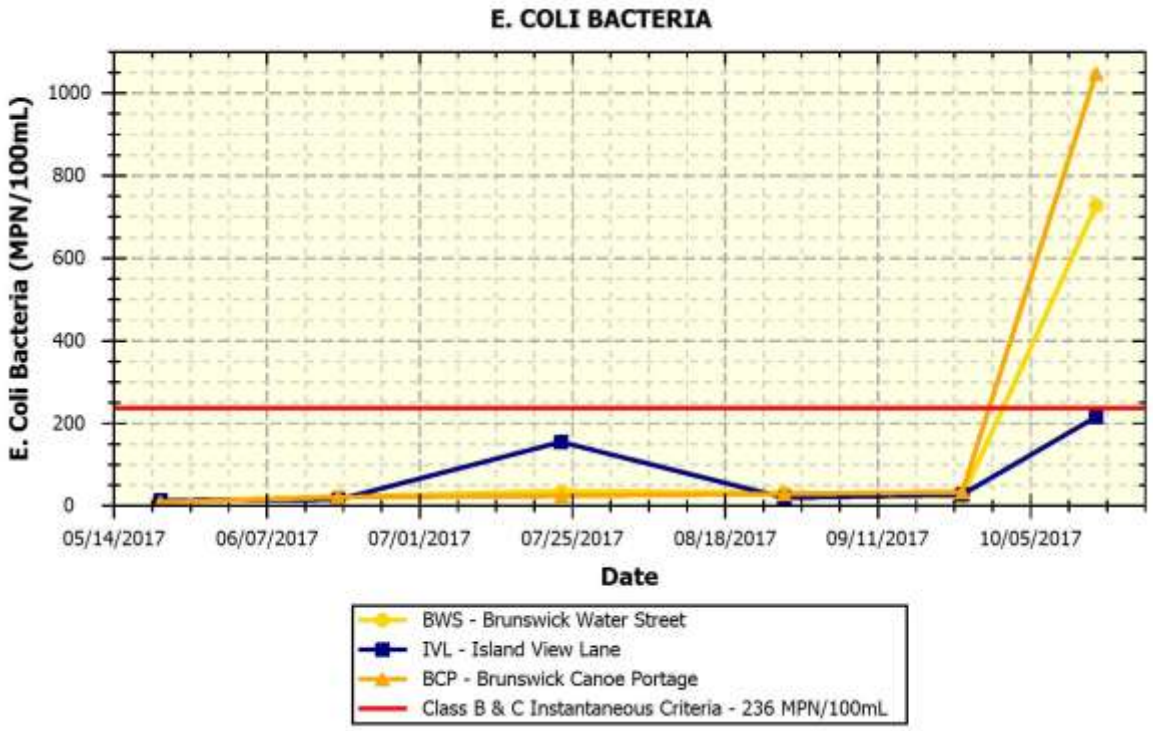
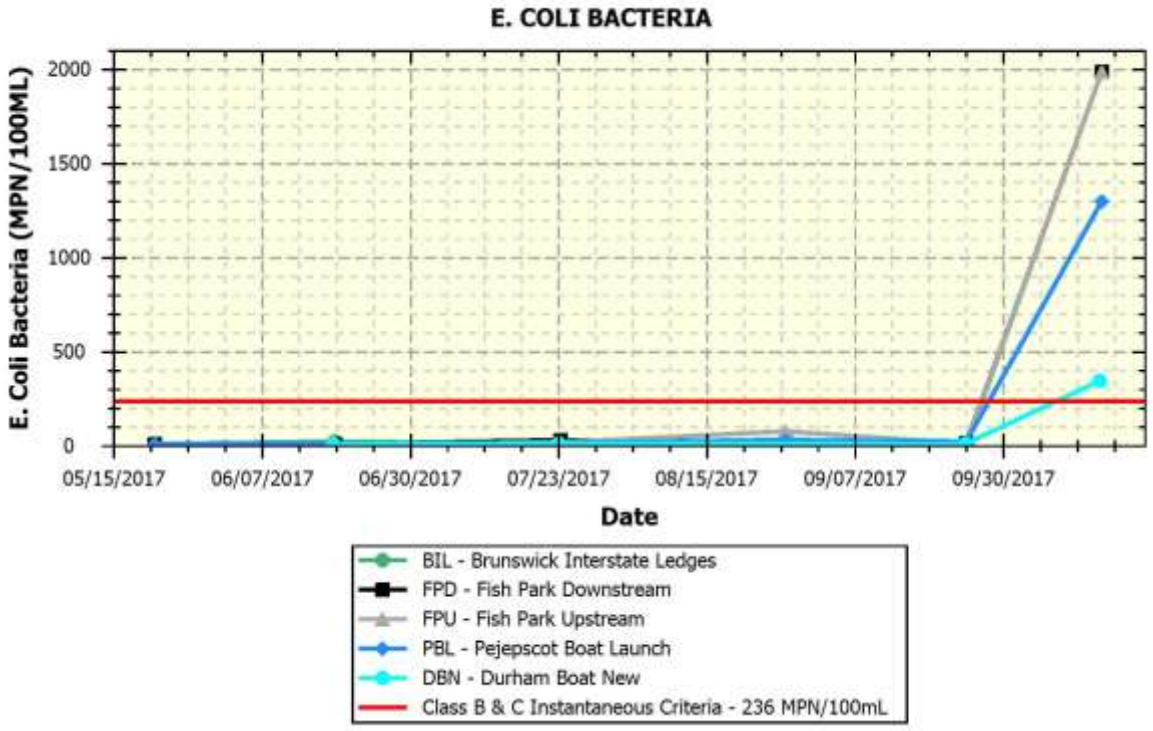


Figure 5-2-11: Graph of *E. coli* (MPN/100 ml) - Upper sites.



Discussion and Recommendations

There are numerous sources of pollution and other stresses to the Androscoggin River sites monitored by Friends of Merrymeeting Bay that could potentially have an impact on water quality. Some of those sources of pollution and stress may include:

- Point source pollution (pollution originating from a direct discharge including wastewater treatment plant discharge, combined sewer overflows and overboard discharges).
- Non-point source pollution (e.g., eroded soil, fertilizers, pesticides, heavy metals, petroleum residues, road salt, septic systems, wildlife and pet feces) and polluted stormwater originating from urban impervious surfaces (e.g., streets, parking lots, driveways, rooftops), agriculture, and forestry.
- 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 large amounts of organic matter, respiration of abundant plant matter, and low re-aeration rates that are characteristic of many wetlands).

The following are recommendations for future monitoring:

- **Some of the sites are very similar. Friends of Merrymeeting Bay might consider dropping some sites that are close to each other. They should also consider adding new sites to include streams draining to the Androscoggin River.**
- **Bacteria monitoring should continue to include a mix of sampling events to include both dry and runoff events. If possible, volunteer leaders could try to collect one to two bacteria samples during/after rain events.**
- **Continue monitoring at all stations (or at least a subset of sites) to develop a long-term trend database. FOMB might consider sampling two times per month in July and August.**

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)
Androscoggin River (lower) - Friends of Merrymeeting Bay: Approved Sites																
BCP	ANDROSCOGGIN RIVER - A06 - VRMP	5/21/2017	7:23 AM	NA			14.6	10.4	102.6	50					8.6	
BCP	ANDROSCOGGIN RIVER - A06 - VRMP	6/18/2017	7:05 AM	NA			19.0	8.4	90.4	80					20.1	
BCP	ANDROSCOGGIN RIVER - A06 - VRMP	7/23/2017	7:50 AM	NA			24.6	7.3	87.2	80					24.6	
BCP	ANDROSCOGGIN RIVER - A06 - VRMP	8/27/2017	8:00 AM	NA			22.0	7.6	86.8	110					29.2	
BCP	ANDROSCOGGIN RIVER - A06 - VRMP	8/27/2017	8:00 AM	D			22.0	7.6	86.8	110					16	
BCP	ANDROSCOGGIN RIVER - A06 - VRMP	9/24/2017	7:35 AM	NA			20.0	8.1	89.5	110					32.7	
BCP	ANDROSCOGGIN RIVER - A06 - VRMP	10/15/2017	7:45 AM	NA			16.6	9.0	92.2	120					1046.2	
DBN	ANDROSCOGGIN RIVER - A149 - VRMP	6/18/2017		NA			19.5								9.8	
DBN	ANDROSCOGGIN RIVER - A149 - VRMP	6/18/2017		D											11	
DBN	ANDROSCOGGIN RIVER - A149 - VRMP	7/23/2017		NA			23.4								13.4	
DBN	ANDROSCOGGIN RIVER - A149 - VRMP	9/24/2017		NA			20.5								9.8	
DBN	ANDROSCOGGIN RIVER - A149 - VRMP	10/15/2017		NA			15.5								344.8	
BIL	ANDROSCOGGIN RIVER - A24 - VRMP	5/21/2017	8:00 AM	NA			14.7	10.2	100.7	40					7.4	
BIL	ANDROSCOGGIN RIVER - A24 - VRMP	6/18/2017	7:30 AM	NA			19.4	8.1	88.5	80					21.6	
BIL	ANDROSCOGGIN RIVER - A24 - VRMP	7/23/2017	7:35 AM	NA			24.6	7.1	83.7	80					12.1	
BIL	ANDROSCOGGIN RIVER - A24 - VRMP	8/27/2017	7:07 AM	NA			21.9	7.4	84.7	100					31.3	
BIL	ANDROSCOGGIN RIVER - A24 - VRMP	9/24/2017	7:16 AM	NA			19.5	8.6	94.6	100					13.4	
BIL	ANDROSCOGGIN RIVER - A24 - VRMP	10/15/2017	7:40 AM	NA			16.6	9.0	92.0	120					1986.3	
BWS	ANDROSCOGGIN RIVER - A-09 - VRMP	5/21/2017	7:08 AM	NA			14.3	10.7	104.9	110					9.7	
BWS	ANDROSCOGGIN RIVER - A-09 - VRMP	6/18/2017	6:40 AM	NA			19.0	8.5	91.8	70					23.1	
BWS	ANDROSCOGGIN RIVER - A-09 - VRMP	7/23/2017	7:17 AM	NA			25.0	7.4	89.8	80					35.5	
BWS	ANDROSCOGGIN RIVER - A-09 - VRMP	8/27/2017	7:40 AM	NA			20.0	7.6	87.6	110					31.3	
BWS	ANDROSCOGGIN RIVER - A-09 - VRMP	9/24/2017	7:15 AM	NA			19.0	8.4	91.7	100					22.6	
BWS	ANDROSCOGGIN RIVER - A-09 - VRMP	10/15/2017	7:25 AM	NA			16.9	9.2	95.0	120					727	
BWS	ANDROSCOGGIN RIVER - A-09 - VRMP	10/15/2017	7:25 AM	D			16.9	9.2	95.0	120					866.4	
FPD	ANDROSCOGGIN RIVER - A45 - VRMP	5/21/2017	7:55 AM	NA			14.7	10.3	101.3	40					7.5	
FPD	ANDROSCOGGIN RIVER - A45 - VRMP	5/21/2017	7:55 AM	D			14.7	10.3	101.3	40					8.6	
FPD	ANDROSCOGGIN RIVER - A45 - VRMP	6/18/2017	7:07 AM	NA			19.6	8.1	88.9	80					8.6	
FPD	ANDROSCOGGIN RIVER - A45 - VRMP	7/23/2017	7:15 AM	NA			24.8	6.9	83.9	80					28.5	
FPD	ANDROSCOGGIN RIVER - A45 - VRMP	8/27/2017	6:40 AM	NA			22.1	7.5	86.2	100					18.5	
FPD	ANDROSCOGGIN RIVER - A45 - VRMP	9/24/2017	6:49 AM	NA			19.8	8.8	96.2	100					16	
FPD	ANDROSCOGGIN RIVER - A45 - VRMP	10/15/2017	7:13 AM	NA			16.8	9.6	94.4	120					1986.3	
FPU	ANDROSCOGGIN RIVER - A47 - VRMP	5/21/2017	7:19 AM	NA			14.7	10.1	99.1	40					5.2	

Androscoggin River (lower) - Friends of Merrymeeting Bay: Approved Sites																
FPU	ANDROSCOGGIN RIVER - A47 - VRMP	6/18/2017	6:50 AM	NA			19.5	8.2	88.9	80					8.4	
FPU	ANDROSCOGGIN RIVER - A47 - VRMP	7/23/2017	6:37 AM	NA			24.7	7.0	84.1	80					19.9	
FPU	ANDROSCOGGIN RIVER - A47 - VRMP	7/23/2017	6:37 AM	D			24.7	6.9	83.9	80					23.3	
FPU	ANDROSCOGGIN RIVER - A47 - VRMP	8/27/2017	6:24 AM	NA			21.9	7.4	84.3	100					78	
FPU	ANDROSCOGGIN RIVER - A47 - VRMP	9/24/2017	6:33 AM	NA			19.7	8.7	95.5	100					12.1	
FPU	ANDROSCOGGIN RIVER - A47 - VRMP	10/15/2017	7:00 AM	NA			16.7	9.0	92.7	120					1986.3	
PBL	ANDROSCOGGIN RIVER - A71 - VRMP	5/21/2017	6:45 AM	NA			14.3	10.0	99.8	50					7.3	
PBL	ANDROSCOGGIN RIVER - A71 - VRMP	5/21/2017	6:45 AM	D											9.7	
PBL	ANDROSCOGGIN RIVER - A71 - VRMP	6/18/2017	6:25 AM	NA			19.6	8.1	88.8	90					13.4	
PBL	ANDROSCOGGIN RIVER - A71 - VRMP	7/23/2017	6:15 AM	NA			24.8	7.4	88.9	80					14.8	
PBL	ANDROSCOGGIN RIVER - A71 - VRMP	8/27/2017	5:55 AM	NA			21.3	7.9	89.5	110					27.5	
PBL	ANDROSCOGGIN RIVER - A71 - VRMP	9/24/2017	6:07 AM	NA			19.6	8.8	96.2	110					22.1	
PBL	ANDROSCOGGIN RIVER - A71 - VRMP	10/15/2017	6:11 AM	NA			16.8	9.1	94.1	120					1299.7	
PBL	ANDROSCOGGIN RIVER - A71 - VRMP	10/15/2017	6:11 AM	D			16.8	9.1	94.3	120					1119.9	
IVL	ANDROSCOGGIN RIVER-A-45-VRMP	5/21/2017	6:43 AM	NA			14.2	10.6	102.8	40					13.4	
IVL	ANDROSCOGGIN RIVER-A-45-VRMP	6/18/2017	6:10 AM	NA			19.2	8.5	92.1	70					14.8	
IVL	ANDROSCOGGIN RIVER-A-45-VRMP	7/23/2017	6:51 AM	NA			24.4	7.0	83.3	70					154.1	
IVL	ANDROSCOGGIN RIVER-A-45-VRMP	8/27/2017	7:25 AM	NA			22.0	7.4	84.5	120					18.5	
IVL	ANDROSCOGGIN RIVER-A-45-VRMP	9/24/2017	6:55 AM	NA			20.0	8.2	90.7	110					27.5	
IVL	ANDROSCOGGIN RIVER-A-45-VRMP	9/24/2017	6:55 AM	D			20	8.2	90.7	110					28.5	
IVL	ANDROSCOGGIN RIVER-A-45-VRMP	10/15/2017	7:00 AM	NA			17.2	9.1	94.6	120					214.2	