

Section 5-7 Presumpscot River & Tributaries (Presumpscot River Watch)

Presumpscot River

The Presumpscot River originates at Sebago Lake Basin and flows approximately 25 miles (40 km) to the Atlantic Ocean (Casco Bay) through Cumberland County, Maine. The Presumpscot River contributes the largest freshwater input into Casco Bay, draining approximately 648 square miles. The Presumpscot watershed below Sebago Lake is slightly more than 200 square miles. Nine dams, seven of which are used to generate hydroelectric power, create impoundment and associated tailwater habitats. The uppermost dam is located at the Sebago Lake outlet, whereas the lowermost dam is located at the SAPPI Mill in Westbrook. Major tributaries to the Presumpscot River include the Pleasant River, Little River, and the Piscataqua River; minor tributaries include Otter Brook, Nason Brook, Black Brook, Colley Wright Brook, Inkhorn Brook, and Mill Brook. Highland Lake and Forest Lake are the primary lakes in the Presumpscot River watershed; Mill Brook and the Piscataqua River, respectively, connect them to the main stem of the Presumpscot River. Windham, Gorham, Westbrook, Cumberland, Falmouth, and Portland represent primary municipalities in the Presumpscot River watershed, and are characterized by multiple land uses. Urban areas include residential and commercial dwellings, commercial businesses, light industry, and water and wastewater treatment plants. Westbrook and Portland contribute combined sewer overflow (CSO) discharge to the Presumpscot River below Saccarappa Falls. The SAPPI paper mill is located in Westbrook. Agricultural practices such as row crop and pasture constitute the agricultural land use component, whereas mixed deciduous and coniferous forest comprise the forest component.

According to Maine's statutory Water Classification System, the Presumpscot River Basin has designations listed below.¹

- Presumpscot River, main stem.
 - From the outlet of Sebago Lake to the confluence with the Pleasant River – Class A. (Note: Dundee Pond is a great pond, classified GPA)
 - From the confluence with the Pleasant River to Saccarappa Falls – Class B.
 - From the Saccarappa Falls to tidewater – Class C.
 - Below head-of-tide – Class SC.
- Presumpscot River tributaries below Sebago Lake – Class B.

¹ <http://www.mainelegislature.org/legis/statutes/38/title38sec467.html>

Monitoring History

- The Maine DEP Biological Monitoring Program has been monitoring the river and tributaries since 1985. This data is available on DEP's website.
- Presumpscot River Watch (PRW), incorporated as a not-for-profit organization in 1989. The mission of PRW is to preserve and improve the health of the Presumpscot River watershed by scientifically monitoring water quality and sharing data to increase awareness of the condition of the river. PRW's commitment is primarily accomplished through a seasonal (summer) volunteer water quality monitoring program that enhances public awareness of river water quality in the Presumpscot River watershed. The data generated from the monitoring program also serve other purposes: (1) verification of State water quality standards; (2) identification of specific problem areas; (3) establishment of baseline water quality monitoring data; and (4) use of water quality monitoring results by other organizations.
- Presumpscot River Watch joined the Volunteer River Monitoring Program in 2009.

Methods and Sampling Sites

The volunteers monitor the Presumpscot River annually. There are twenty-five monitoring sites in the watershed. Although PRW's goal is to monitor all sites each year, they generally sample a subset of sites every year. All stations are above the head-of-tide at Presumpscot Falls.

Monitoring is conducted every two weeks from May through August. At each of the sites, the monitors take measurements of dissolved oxygen and temperature using either a YSI 550A or YSI 85 meter. Conductivity is measured with either a YSI 85 meter or EC Testr 11/11+ pen. Grab samples are collected for *E. coli* bacteria and transported to the PRW office for analysis using IDEXX Quanti-Tray 2000 method.

Table 5-7-1. Presumpscot River Watch sampling sites, ordered from upstream down for the main stem and the same for the tributaries at their confluence with the Presumpscot River (*indicates non-approved sites).

Site ID	Organization Site Code	Sample Location	Class
Mainstem (ordered from upstream to downstream)			
Presumpscot River-R225-VRMP	P200	Route 35 Crossing	A
Presumpscot River-R202-VRMP	P170	Presumpscot River	A
Presumpscot River-R195-VRMP	P160	Presumpscot River	A
Presumpscot River-R166-VRMP	P150	Presumpscot River	A
Presumpscot River-R163-VRMP	P140	Presumpscot River	B
Presumpscot River-R161-VRMP	P145	Presumpscot River	B
Presumpscot River-R157-VRMP	P135	Gambo Park	B
Presumpscot River-R133-VRMP	P110	Presumpscot River	B
Presumpscot River-R129-PRW*	P089	Presumpscot River	B
Presumpscot River-R126-PRW*	P080	Presumpscot River	B
Presumpscot River-R47-VRMP	P030	Presumpscot River	C
Presumpscot River-R24-VRMP	P020	Blackstrap River	C
Presumpscot River-R07-VRMP	P015	Presumpscot River	C
Pleasant River & Tributaries			
Pleasant River-RPL47-VRMP	PL040	Route 302	B
Pleasant River-RPL37-VRMP	PL030	Pleasant River	B
Pleasant River-RPL29-VRMP	PL020	Pope Road	B
Pleasant River-RPL06-VRMP	PL010	Lovett Bridge	B
Ditch Brook-RPL00-VRMP	DB010	Ditch Brook	B
Baker Brook-RPLBK17-VRMP	BB010	Baker Brook	B
Upper Presumpscot Tributaries			
Little River-RLT89-VRMP	L050	Little River	B
Little River-RLT15-VRMP	L020	Little River	B
Little River-RLT08-PRW	L010	Little River	B
Douglas Brook-RLTNBDG20-VRMP	DG010	Douglas Brook	B
Tannery Brook-RLTTN06-VRMP	TA010	Queen Street	B

Black Brook-RBK05-VRMP	BL010	Black Brook	B
Otter Brook-ROT06-VRMP	OB010	Otter Brook	B
Nason Brook-RNS11-VRMP	NO10	Nason Brook	B
Colley Wright Brook-RCW28-VRMP	CW020	Colley Wright Brook	B
Colley Wright Brook-RCW10-VRMP	CW010	Colley Wright Brook	B
Inkhorn Brook-RIK05-VRMP	IN010	Inkhorn Brook	B
Lower Presumpscot River Tributaries			
Piscataqua River-RPS12-VRMP	PI020	Leighton Road	B
E. Branch Piscataqua River-RPSEB05-VRMP	PI010	Falmouth Road	B
Mill Brook-RML63-VRMP	M030	Below Highland Lake	B
Mill Brook-RML01-VRMP	M010	Bridge Street	B

Presumpscot River Sampling Sites, Main Stem Presumpscot River Watch



Figure 5-7-1: Map of Presumpscot River Watch main stem sampling sites.

Presumpscot River Sampling Sites, Pleasant River Presumpscot River Watch

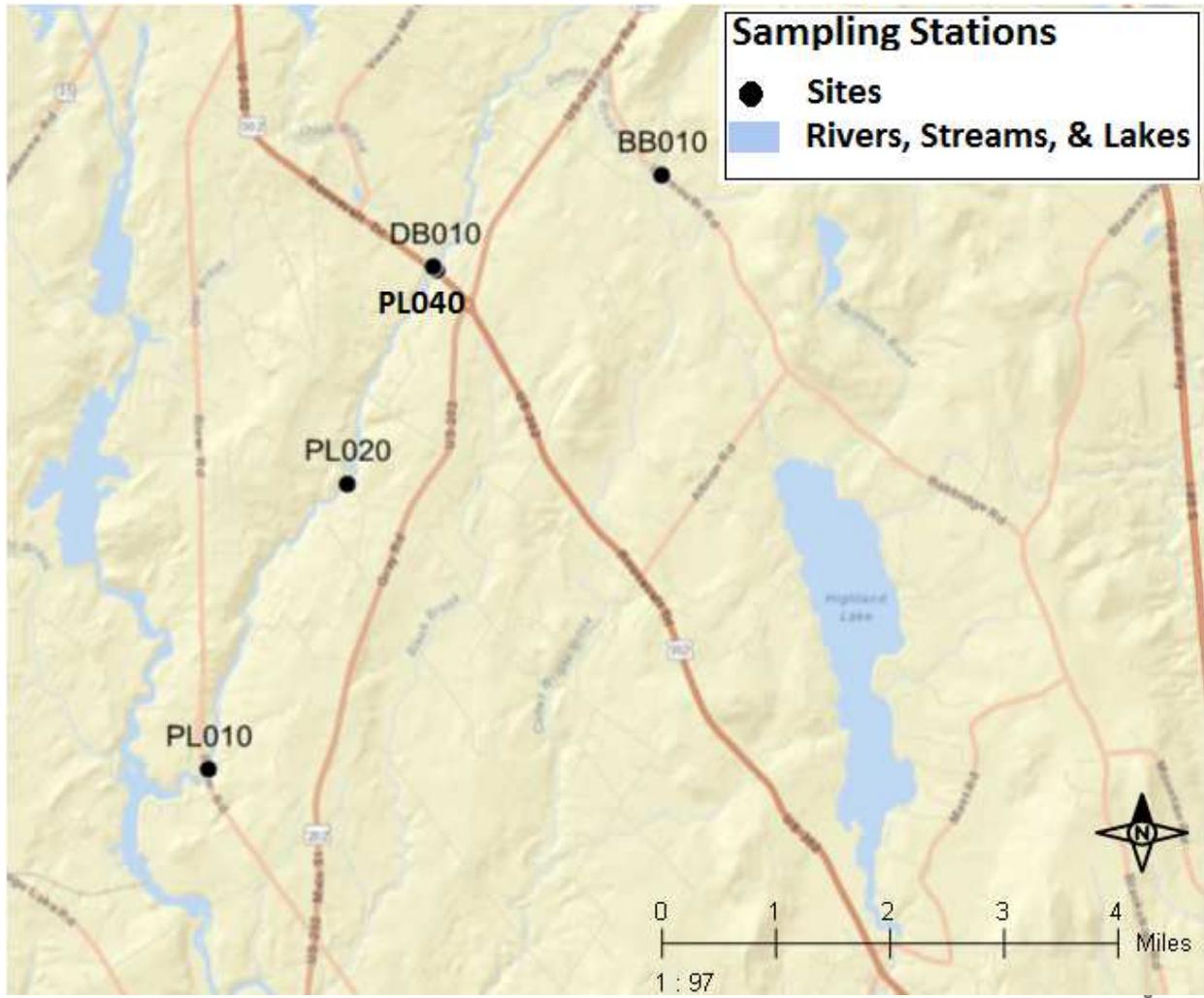


Figure 5-7-2: Map of Presumpscot River Watch sampling sites at Pleasant River and tributaries.

Presumpscot River Sampling Sites, Upper Presumpscot Tributaries Presumpscot River Watch

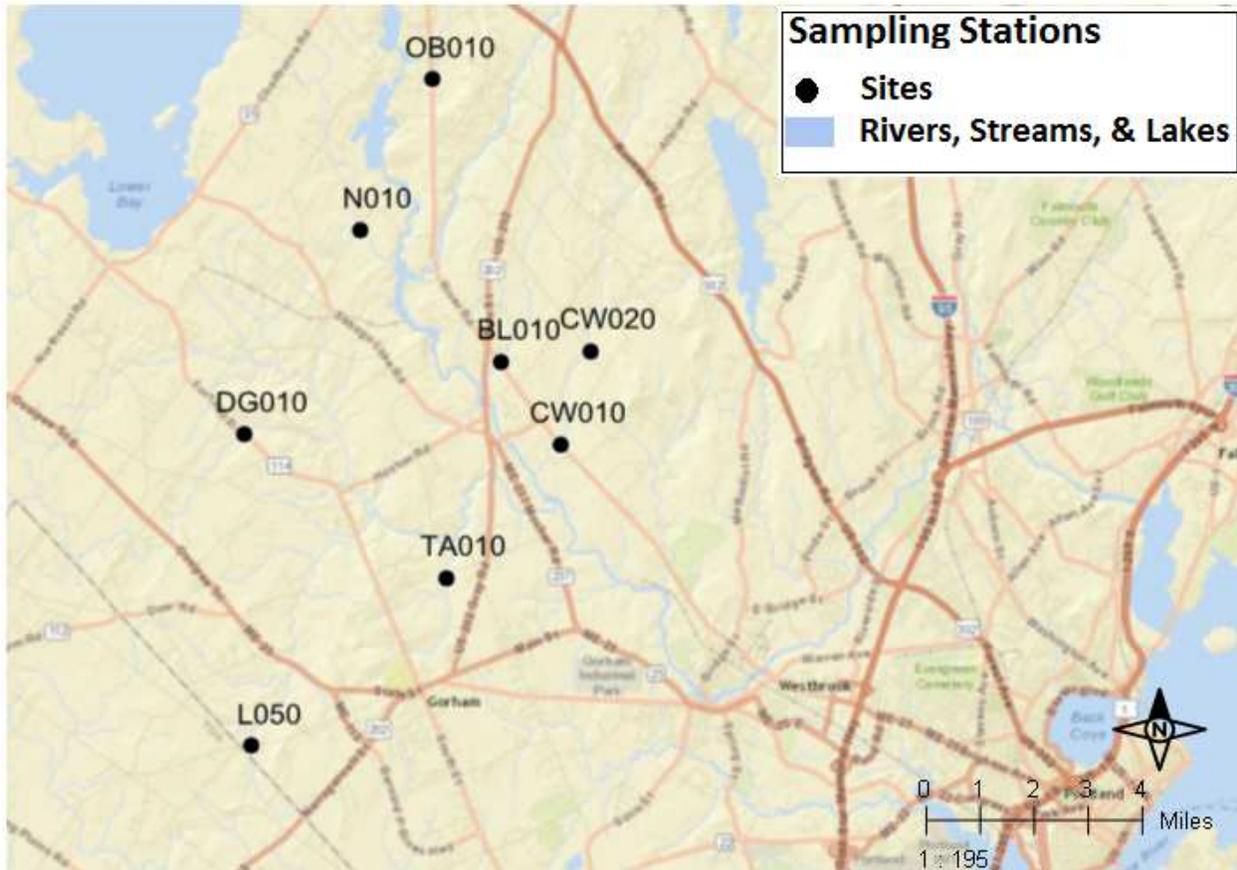


Figure 5-7-3: Map of Presumpscot River Watch sampling sites, Upper Presumpscot tributaries.

Presumpscot River Sampling Sites, Lower Presumpscot Tributaries Presumpscot River Watch

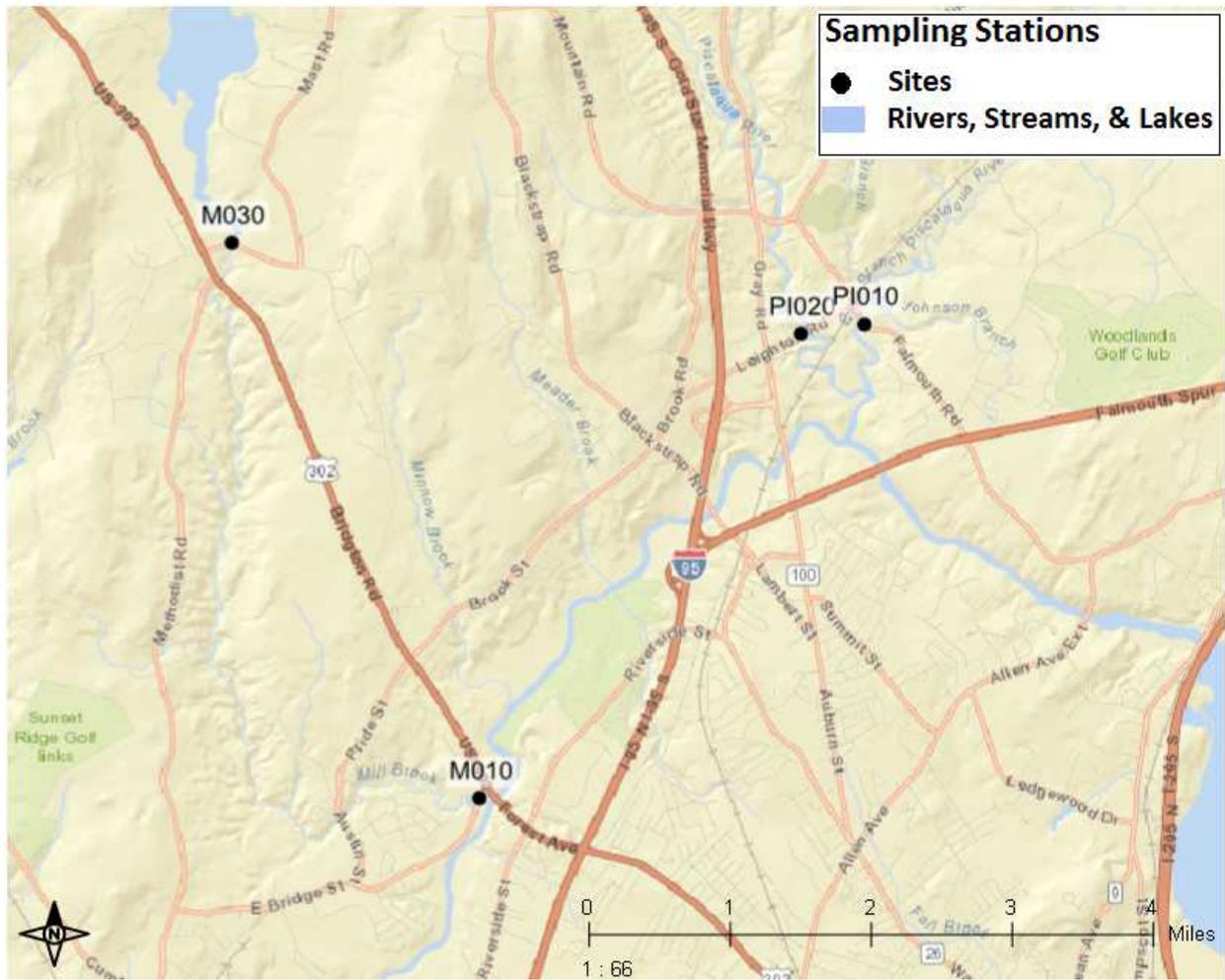


Figure 5-7-4: Map of Presumpscot River Watch sampling sites on the lower Presumpscot tributaries.

Results

For the purpose of discussion, the sampling stations were divided into Presumpscot River main stem (site code P200 – P020), and the tributaries collectively. Refer to Appendices A-1 and A-2 in 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 A and 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.

2015 Results:

Mainstem sites: Six mainstem sampling sites were monitored. All but one of these sites met criterion for both dissolved oxygen (DO) concentration and percent saturation. Site P135 did not meet the criterion for DO concentration for 1 sample date [6.7 mg/l on 8/22/16]. Overall DO was excellent on the mainstem sites.

Pleasant River and tributaries: The Pleasant River sampling sites and tributary BB010 met criterion for both DO concentration and percent saturation. Site DB010 did not meet criterion on 1 date [6.6 mg/l and 70.5 % on 8/8/16]. Overall DO was excellent on the Pleasant River and tributaries.

Upper Presumpscot Tributaries: For the upper Presumpscot tributaries, there were a few excursions. Site DG010 did not meet the DO concentration criterion on 4 of 7 sampling dates and percent saturation was not met on 5 of 7 dates. This site did not follow a typical pattern where DO is generally good early in the season and then declines through the season. Site CW010 was slightly below the DO concentration criteria on 1 date in June and Sites BL010, OB010 and N010 were slightly below the DO percent saturation on 1 date in July. Overall, DO was excellent at all these tributaries, except for Site DG010 which was fair.

Lower Presumpscot Tributaries: For the lower Presumpscot tributaries, all tributaries except for PI010 met the DO criteria for both concentration and percent saturation. Site PI010 did not meet DO concentration criterion on any sampling dates and did not meet percent saturation criterion on 5 of 6 sampling dates. Overall, DO was excellent at all these tributaries except site PI010 which was poor. The reason for the poor DO at this site for 2015 is unknown.

Table 5-7-2: A summary of minimum, maximum, and mean dissolved oxygen concentration values (mg/l) at Presumpscot River Watch monitoring sites.

Mainstem Sites (Ordered from upstream to downstream)							
Site	Class	#Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
P200	A	6	8.6	7.6	9.7	7	0
P160	A	7	8.0	7.1	8.9	7	0
P150	A	7	7.9	7.1	9.0	7	0
P135	B	7	7.7	6.7	8.9	7	1
P030	C	6	7.8	7.4	8.1	5	0
P020	C	6	7.6	7.2	7.9	5	0
Pleasant River and Tributaries							
PL040	B	2	7.5	7.1	7.8	7	0
PL020	B	5	8.5	8.1	8.7	7	0
PL010	B	-	-	-	-	7	0
DB010	B	2	7.6	6.6	8.5	7	1
BB010	B	6	8.4	8.2	8.8	7	0
Upper Presumpscot Tributaries							
L010	B	7	7.8	7.2	8.0	7	0
DG010	B	7	6.9	6.1	7.6	7	4
TA010	B	7	8.4	7.7	8.7	7	0
BL010	B	7	8.2	7.1	9.4	7	0
OB010	B	2	9.9	9.7	10.1	7	0
N010	B	2	8.6	7.9	9.3	7	0
CW020	B	7	7.9	7.2	9.2	7	0
CW010	B	7	7.7	6.9	9.4	7	1
Lower Presumpscot River Tributaries							
PI020	B	6	8.6	8.1	8.9	7	0
PI010	B	6	6.3	5.6	6.8	7	6
M030	B	6	7.5	7.1	8.2	7	0

M010	B	6	8.1	7.8	8.8	7	0
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Table 5-7-3: A summary of minimum, maximum, and mean dissolved oxygen saturation values (%) at Presumpscot River Watch monitoring sites.

Mainstem Sites (Ordered from upstream to downstream)							
Site	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
P200	A	6	96.0	89.4	101.0	75	0
P160	A	7	92.2	87.3	98.3	75	0
P150	A	7	90.3	84.1	95.9	75	0
P135	B	7	89.6	82.1	97.5	75	0
P030	C	6	91.1	87.6	93.8	60	0
P020	C	6	88.3	84.5	91.6	60	0
Pleasant River and Tributaries							
PL040	B	4	79.7	76.2	83.7	75	0
PL020	B	5	90.7	86.6	94.1	75	0
PL010	B	-	-	-	-	75	0
DB010	B	4	87.5	70.5	95.5	75	1
BB010	B	6	86.8	82.7	91.0	75	0
Upper Presumpscot Tributaries							
L010	B	7	83.7	80.7	85.1	75	0
DG010	B	7	72.5	66.6	78.2	75	5
TA010	B	7	87.1	83.8	89.4	75	0
BL010	B	7	84.2	74.8	94.5	75	1
OB010	B	4	86.9	69.4	100.0	75	1
N010	B	4	82.0	70.9	93.5	75	1
CW020	B	7	82.2	75.4	94.8	75	0
CW010	B	7	82.4	75.4	98.9	75	0
Lower Presumpscot River Tributaries							
PI020	B	6	90.6	85.5	97.0	75	0

PI010	B	6	68.4	60.4	76.7	75	5
MO30	B	6	87.3	81.4	95.2	75	0
MO10	B	6	86.4	82.5	92.3	75	0

Figure 5-7-5: Graph of dissolved oxygen concentrations at sites on the mainstem of the Presumpscot River

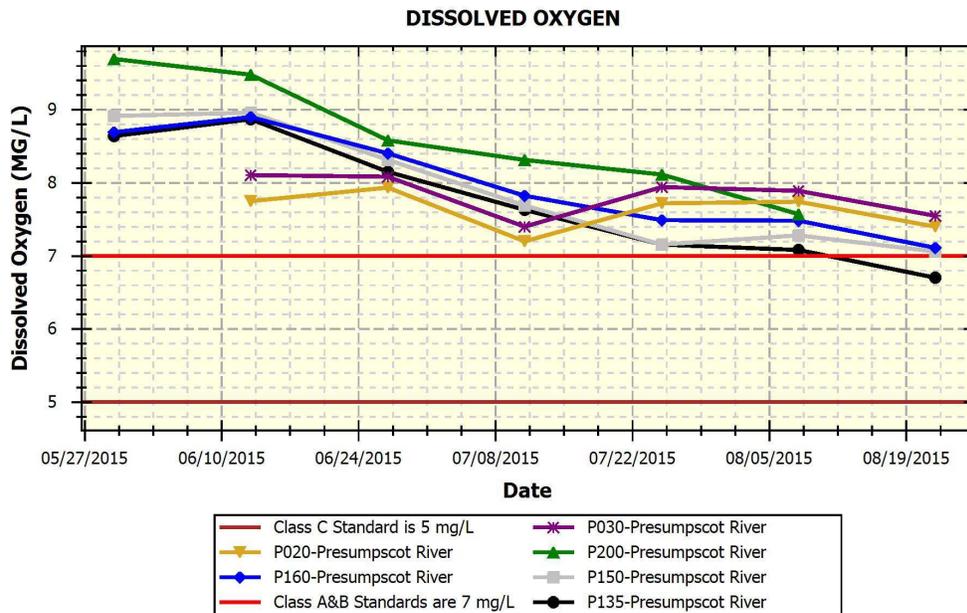


Figure 5-7-6: Graph of dissolved oxygen concentrations at sites on the Pleasant River and tributaries

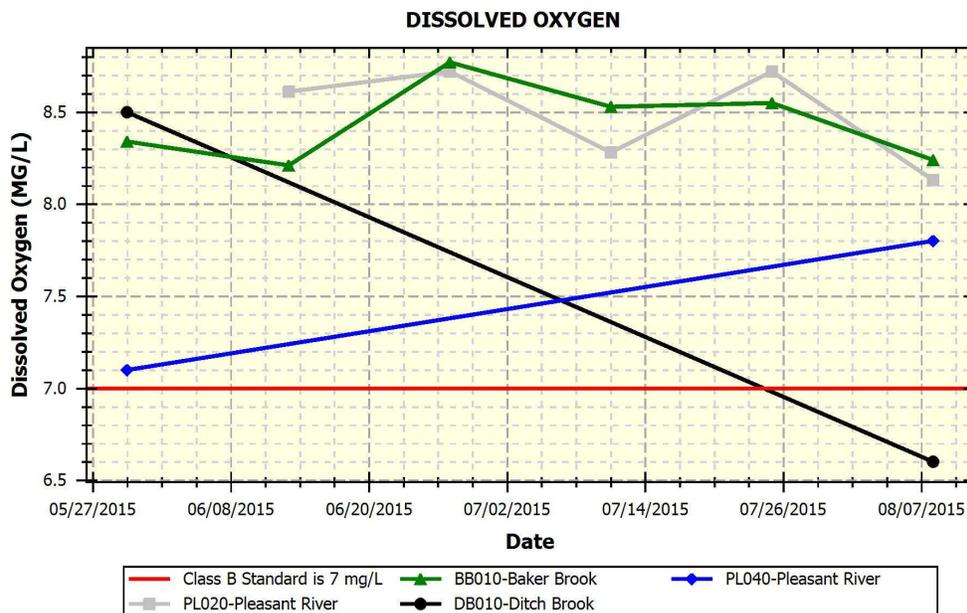


Figure 5-7-7: Graph of dissolved oxygen concentrations at sites on the upper Presumpscot tributaries-I.

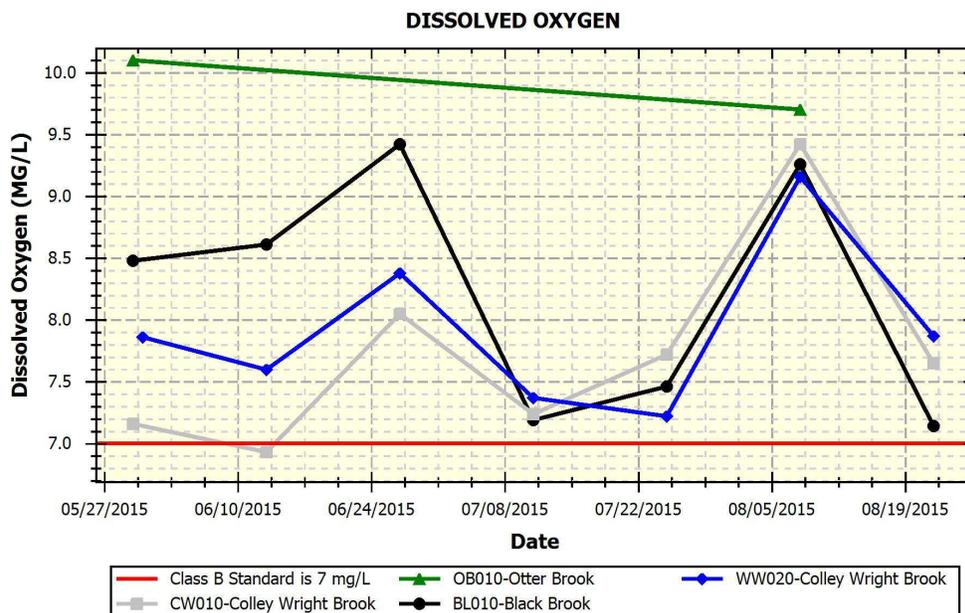


Figure 5-7-8: Graph of dissolved oxygen concentrations at sites on the upper Presumpscot tributaries-II.

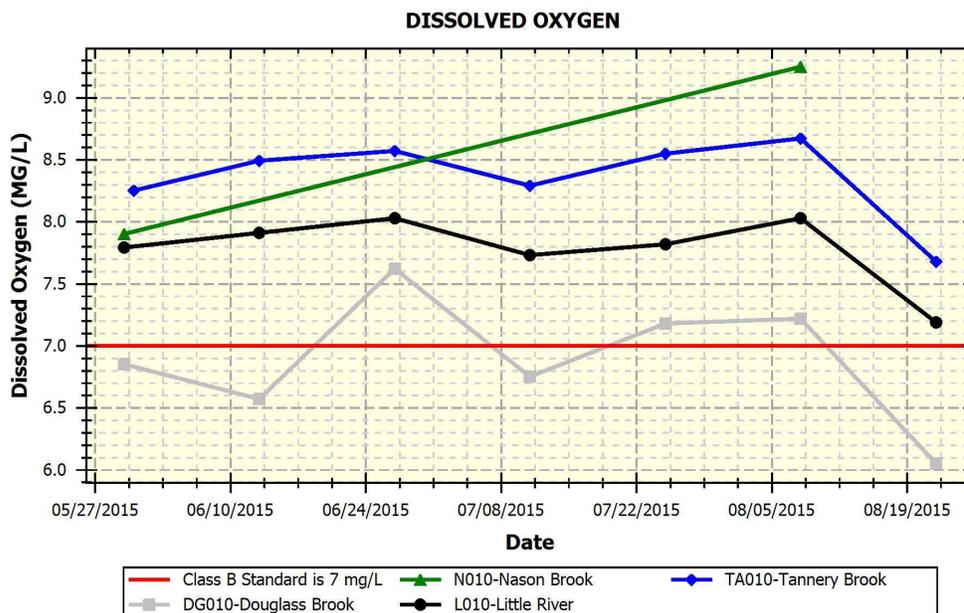


Figure 5-7- 9: Graph of dissolved oxygen concentrations at sites on the lower Presumpscot tributaries.

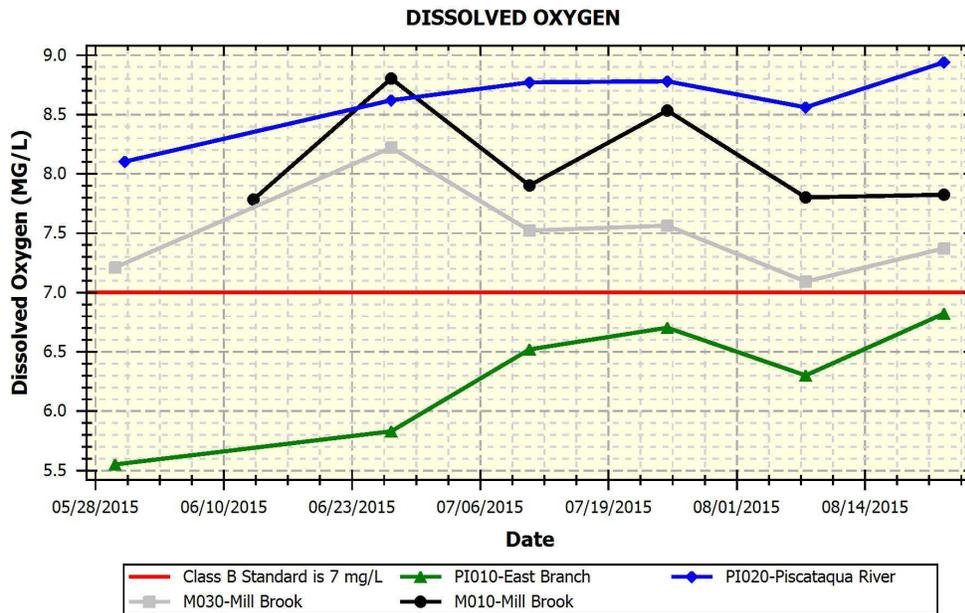


Figure 5-7-10: Graph of dissolved oxygen saturation at sites on the mainstem of the Presumpscot River

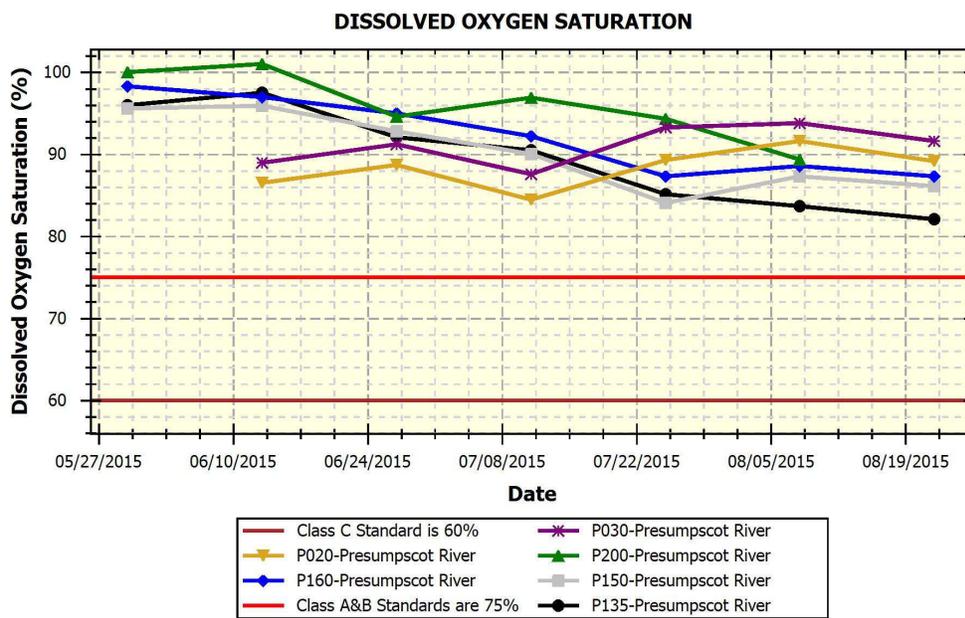


Figure 5-7-11: Graph of dissolved oxygen saturation at sites on the Pleasant River and tributaries

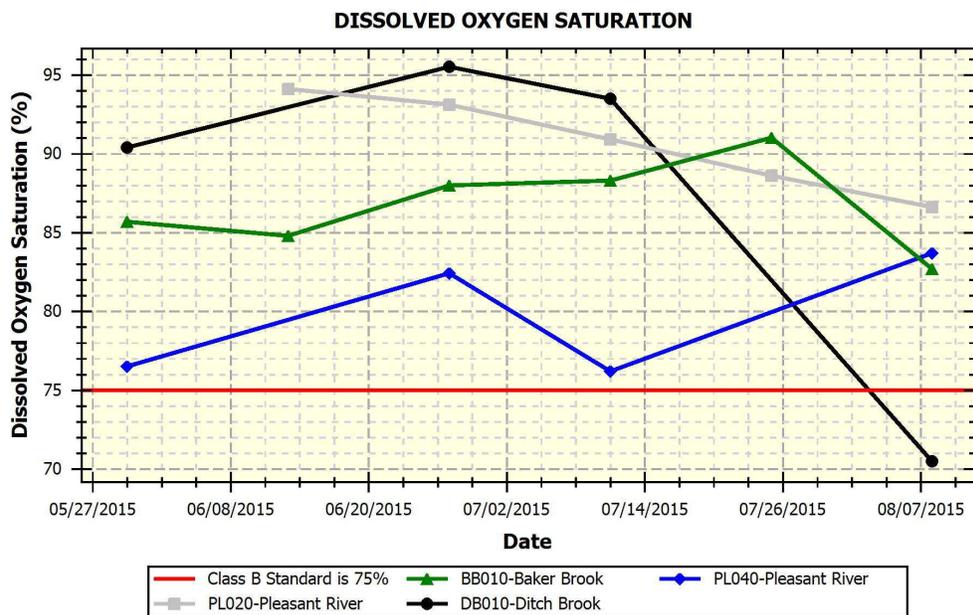


Figure 5-7-12: Graph of dissolved oxygen concentrations at sites on the upper Presumpscot tributaries-I.

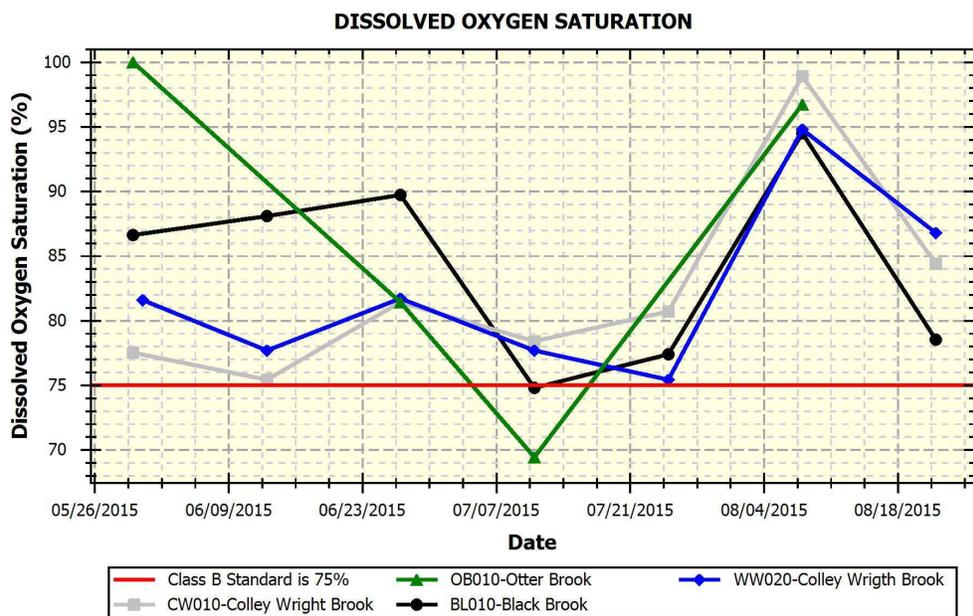


Figure 5-7-13: Graph of dissolved oxygen saturation at sites on the upper Presumpscot tributaries-II.

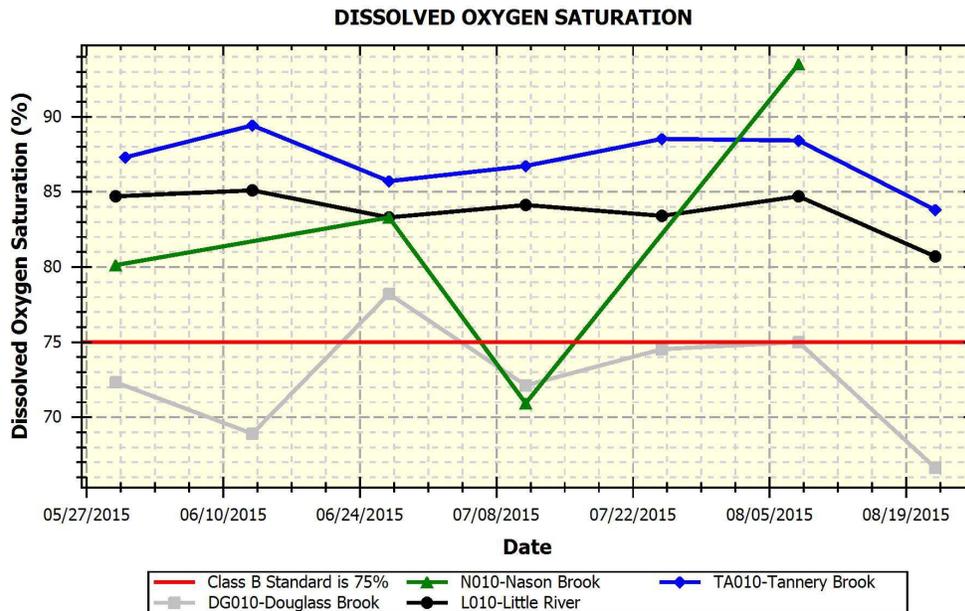
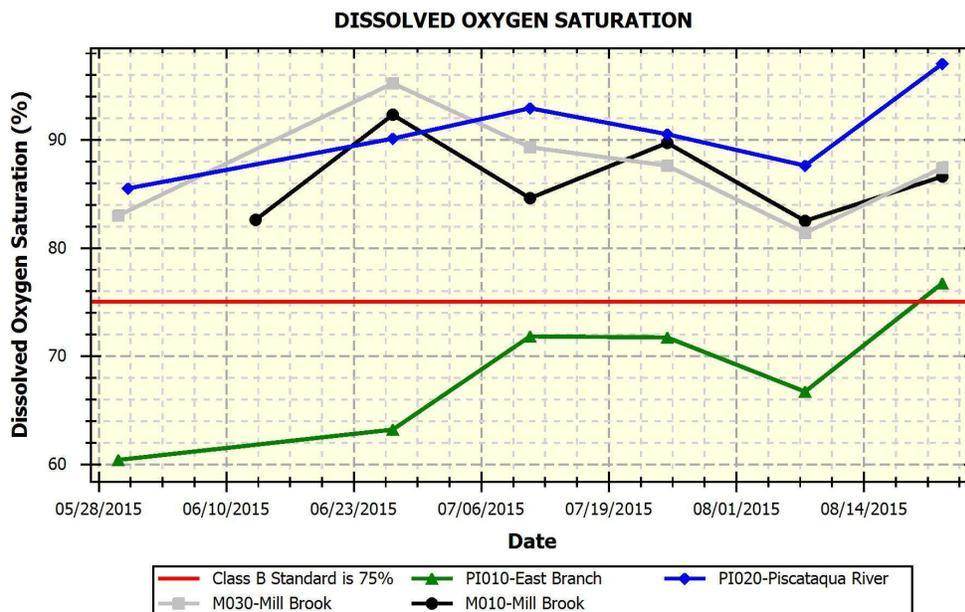


Figure 5-7- 14: Graph of dissolved oxygen saturation at sites on the lower Presumpscot tributaries.



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.

2015 Results:

Mainstem sites: Temperature at the mainstem sites were very similar especially as the season progressed. Minimum temperatures ranged from 17.3-20.4°C and maximum temperatures ranged from 23.5-25.9°C. Main stem sites are generally higher than tributary sites. Higher temperatures at these sites is likely due to the river being open with limited shade.

Pleasant River and tributaries: The Pleasant River sites and tributaries had overall cool temperatures with minimum values ranging from 16.7-18.7°C and maximum temperatures ranging from 18.4-19.9°C. Overall temperature at these sites was excellent.

Upper Presumpscot tributaries: The Presumpscot River tributaries had overall cool temperatures. The coolest sites were Black Brook, Colley Wright (CW020), Nason Brook and Otter Brook. The maximum temperatures at these sites ranged from 16.4-21.0°C. Four of the sites reached temperatures just barely above 20.0°C on 1 date. Overall temperature was excellent.

Lower Presumpscot tributaries: Temperatures at the lower Presumpscot tributaries were low with the exception of site ML030. Site ML030 is at the outlet of Highland Lake, so higher temperatures are expected there.

Table 5-7-4: A summary of minimum, maximum, and mean water temperature values (°C) at Presumpscot River Watch monitoring sites.

Mainstem Sites (Ordered from upstream to downstream)							
Site	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Exceeding Criterion
P200	A	6	20.9	17.3	23.5	n/a	n/a
P160	A	7	22.6	19.6	25.4	n/a	n/a
P150	A	7	22.1	18.6	25.9	n/a	n/a
P135	B	7	22.6	19.8	25.6	n/a	n/a
P030	C	6	22.8	20.4	25.2	n/a	n/a
P020	C	6	22.7	20.2	24.9	n/a	n/a
Pleasant River and Tributaries							
PL040	B	4	17.3	14.1	19.7	n/a	n/a
PL020	B	5	18.5	16.1	19.9	n/a	n/a
PL010	B	-	-	-	-	n/a	n/a
DB010	B	4	18.7	17.6	19.9	n/a	n/a

BB010	B	6	16.7	15.4	18.4	n/a	n/a
Upper Presumpscot Tributaries							
L010	B	7	18.8	17.0	21.0	n/a	n/a
DG010	B	7	17.9	16.5	20.2	n/a	n/a
TA010	B	7	17.5	15.1	19.5	n/a	n/a
BL010	B	7	16.5	13.1	19.9	n/a	n/a
OB010	B	4	15.3	11.7	19.7	n/a	n/a
N010	B	4	15.6	14.0	16.4	n/a	n/a
CW020	B	7	17.2	14.5	20.1	n/a	n/a
CW010	B	7	18.5	15.8	20.2	n/a	n/a
Lower Presumpscot River Tributaries							
PI020	B	6	17.7	16.4	19.3	n/a	n/a
PI010	B	6	19.5	18.1	21.1	n/a	n/a
M030	B	6	22.9	22.2	23.9	n/a	n/a
M010	B	6	18.6	17.3	20.5	n/a	n/a

Figure 5-7-15: Graph of water temperature at sites on the main stem of the Presumpscot River

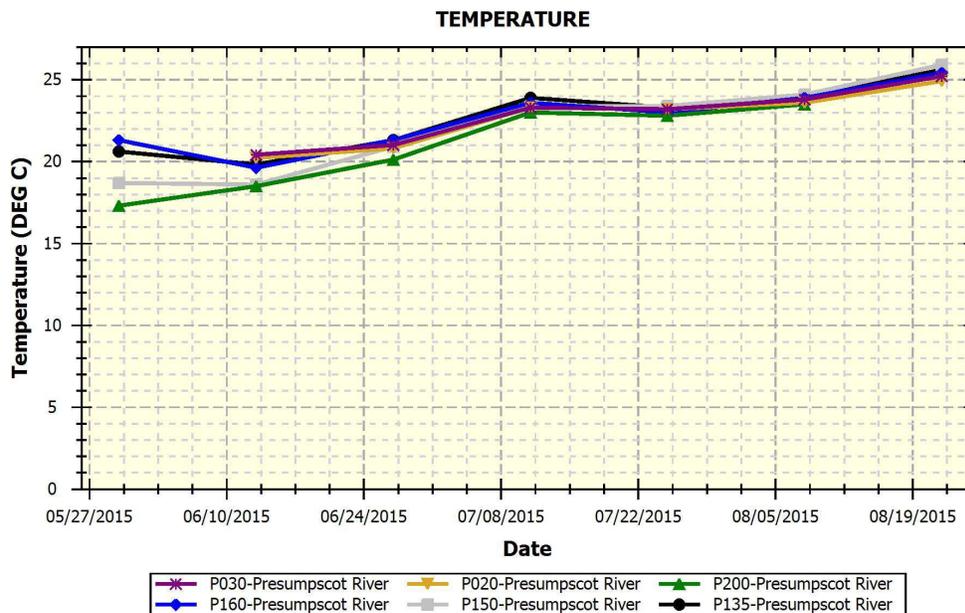


Figure 5-7-16: Graph of water temperature at sites on the Pleasant River and tributaries

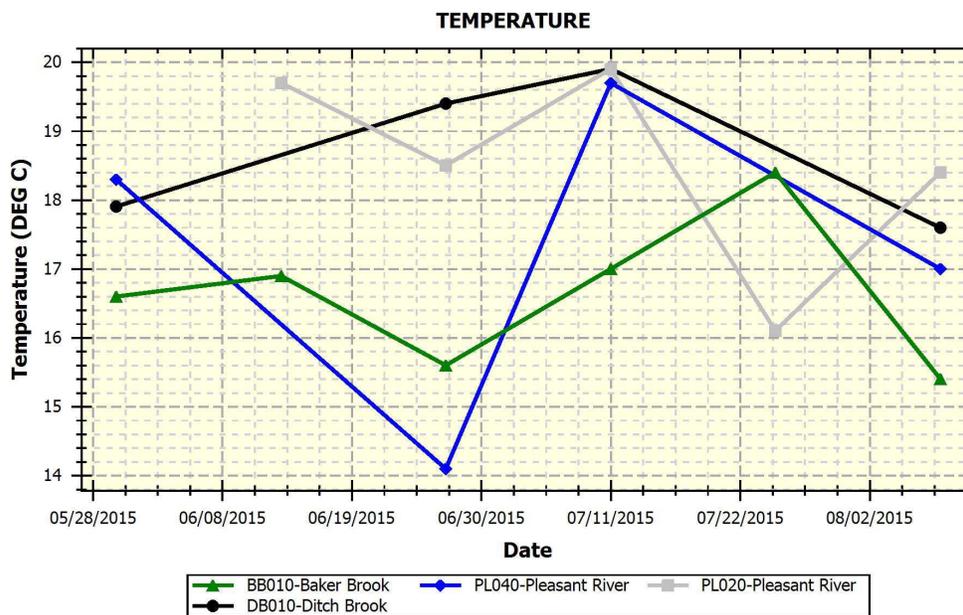


Figure 5-7-17: Graph of water temperature at sites on the upper Presumpscot tributaries-I.

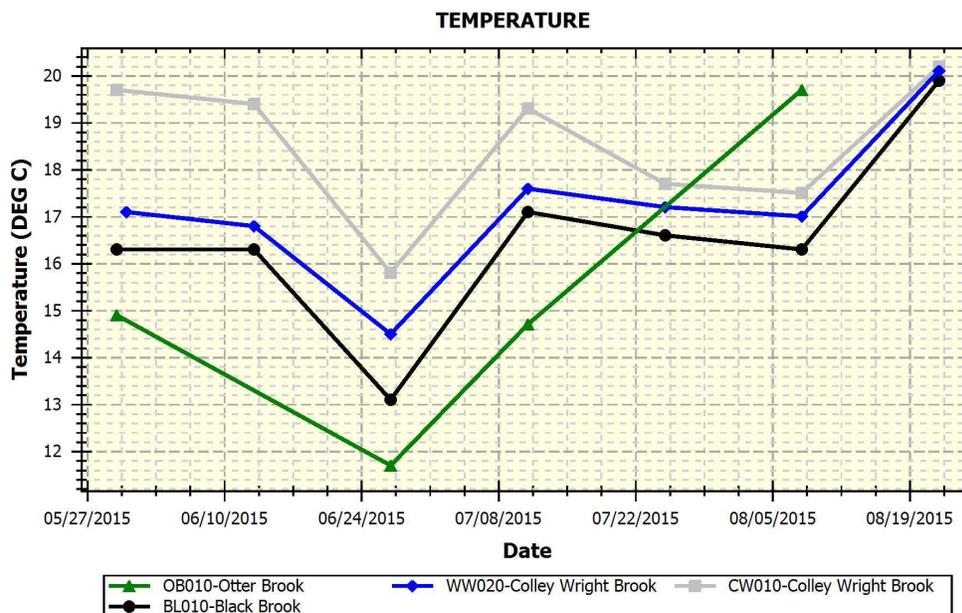


Figure 5-7-18: Graph of water temperature at sites on the upper Presumpscot Tributaries-II.

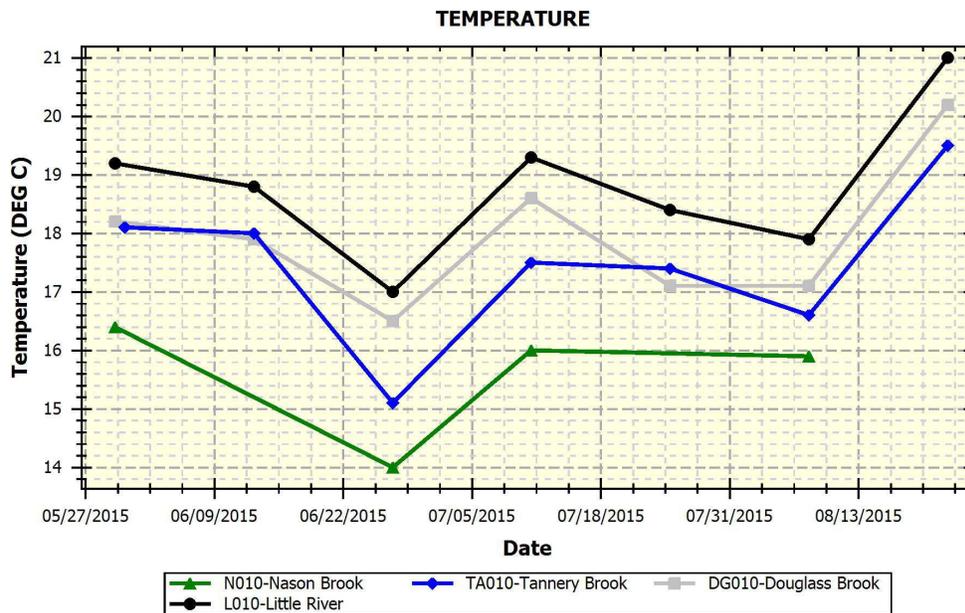
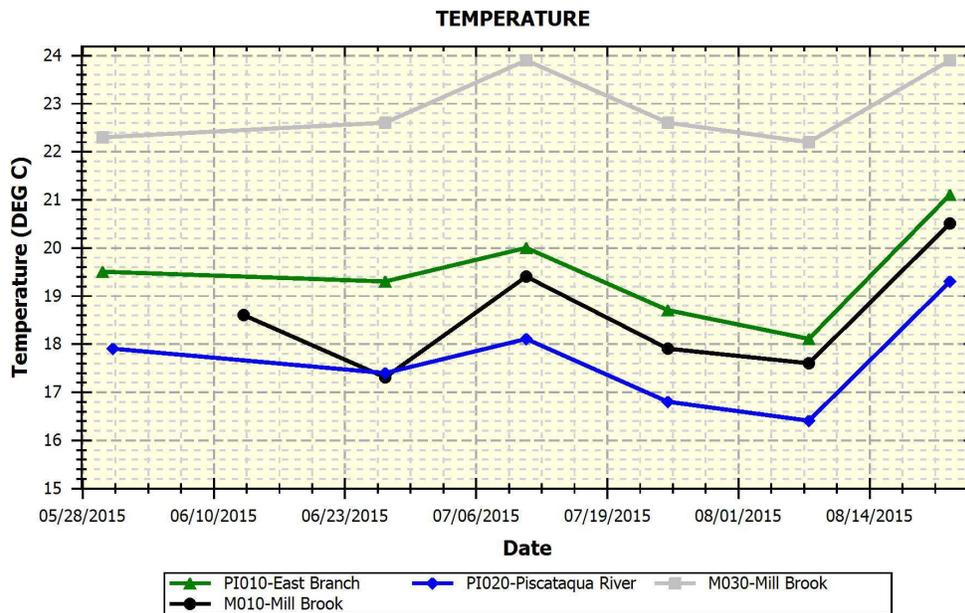


Figure 5-7- 19: Graph of water temperature at sites on the lower Presumpscot tributaries.



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.

2015 Results:

Mainstem sites: Specific conductance at the mainstem sites was overall low. Sites P030 and P020 had slightly elevated values on 1 date in June. Specific conductance at the mainstem sites was excellent.

Pleasant River and tributaries: The one site on the Pleasant River (PL020) that was sampled for specific conductance had somewhat high conductivity [mean of 270 $\mu\text{S}/\text{cm}$]. Baker Brook had 1 somewhat high value in July, but was overall low. The Pleasant River site was fair and Baker Brook was excellent.

Upper Presumpscot tributaries: Tannery Brook had the highest specific conductance with values ranging from 315-454 $\mu\text{S}/\text{cm}$. Black Brook was second highest with values ranging from 165-324 $\mu\text{S}/\text{cm}$. The other 4 tributaries were similar with values at these sites ranging from 122-223 $\mu\text{S}/\text{cm}$. Specific conductance at these sites ranged from poor to good.

Lower Presumpscot tributaries: The Piscataqua River site (PI020) was overall somewhat high with values ranging from 274-351 $\mu\text{S}/\text{cm}$. At site PI030, 4 of 6 values were somewhat high. The Mill Brook sites were overall low. Specific conductance at these sites ranged from excellent to fair.

Table 5-7-5: A summary of minimum, maximum, and mean values for specific conductance ($\mu\text{S}/\text{cm}$) at Presumpscot River Watch monitoring sites.

Mainstem Sites (Ordered from upstream to downstream)							
Site	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Exceeding Criterion
P200	A	5	76	65	89	n/a	n/a
P160	A	7	37	34	48	n/a	n/a
P150	A	7	37	34	50	n/a	n/a
P135	B	7	43	36	55	n/a	n/a
P030	C	5	67	46	120	n/a	n/a
P020	C	5	75	49	145	n/a	n/a
Pleasant River and Tributaries							
PL040	B	0	-	-	-	n/a	n/a
PL020	B	4	270	223	319	n/a	n/a

PL010	B	-	-	-	-	n/a	n/a
DB010	B	0	-	-	-	n/a	n/a
BB010	B	5	82	52	192	n/a	n/a
Upper Presumpscot Tributaries							
L010	B	6	192	171	223	n/a	n/a
DG010	B	6	139	122	162	n/a	n/a
TA010	B	6	386	315	454	n/a	n/a
BL010	B	5	257	165	324	n/a	n/a
OB010	B	0	-	-	-	n/a	n/a
N010	B	0	-	-	-	n/a	n/a
CW020	B	5	149	131	160	n/a	n/a
CW010	B	5	150	127	162	n/a	n/a
Lower Presumpscot River Tributaries							
PI020	B	6	309	274	351	n/a	n/a
PI010	B	6	198	45	283	n/a	n/a
M030	B	5	69	22	84	n/a	n/a
M010	B	6	117	85	159	n/a	n/a

Figure 5-7-20: Graph of specific conductance at sites on the main stem of the Presumpscot River

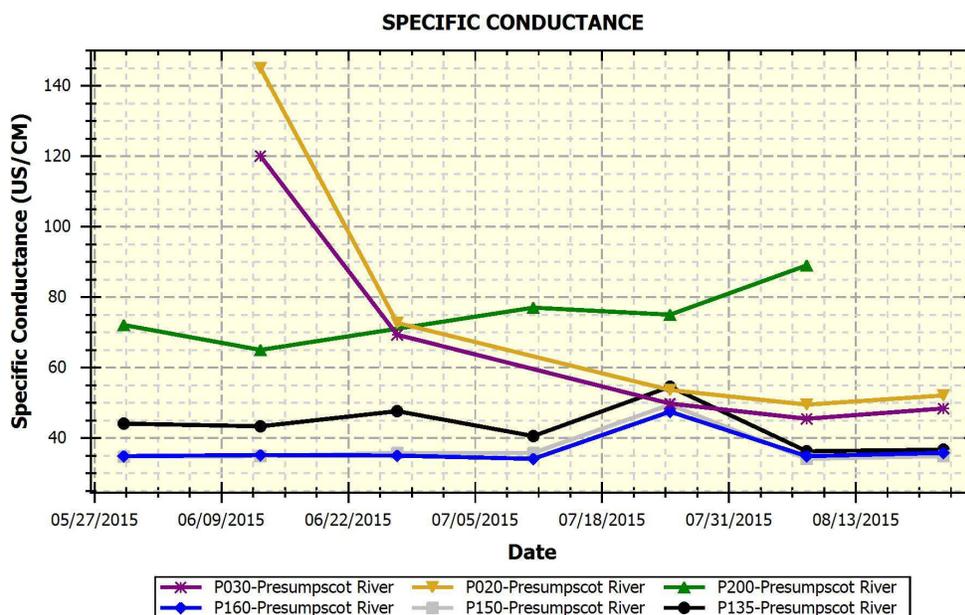


Figure 5-7-21: Graph of specific conductance at sites on the Pleasant River and tributaries.

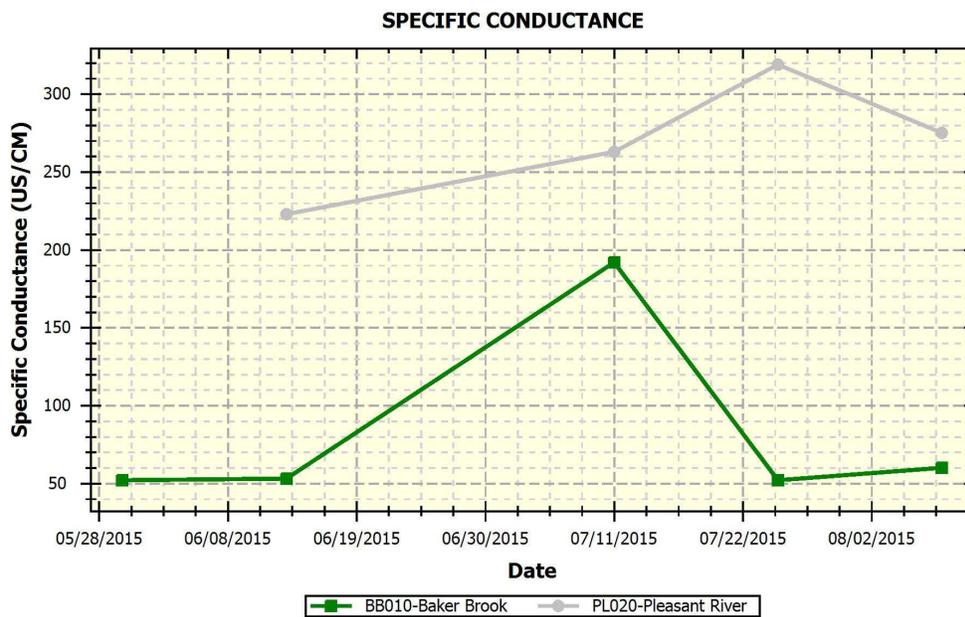


Figure 5-7-22: Graph of specific conductance at sites on the upper Presumpscot tributaries-I.

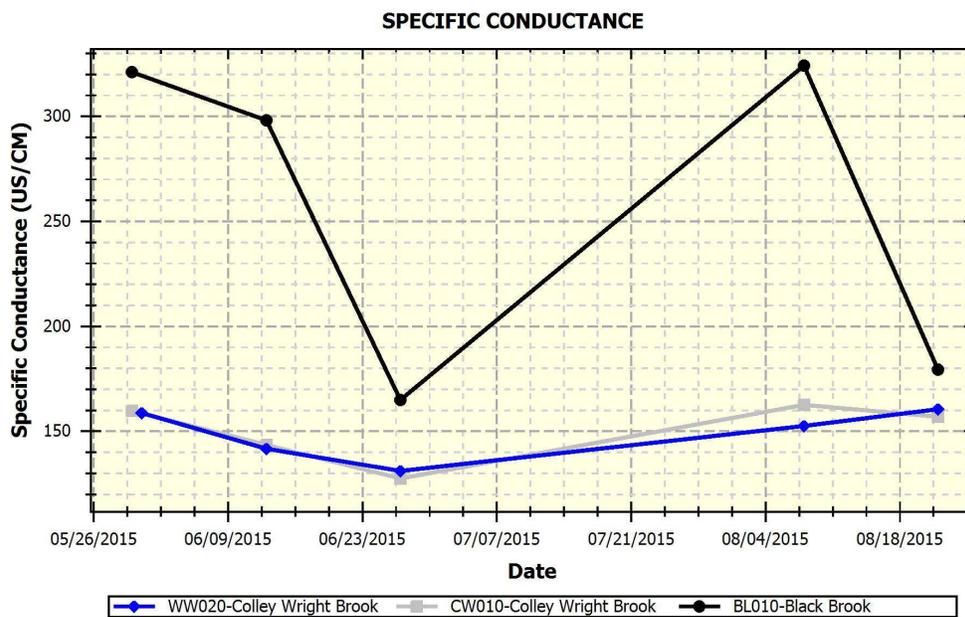


Figure 5-7-23: Graph of specific conductance at sites in the upper Presumpscot tributaries-II.

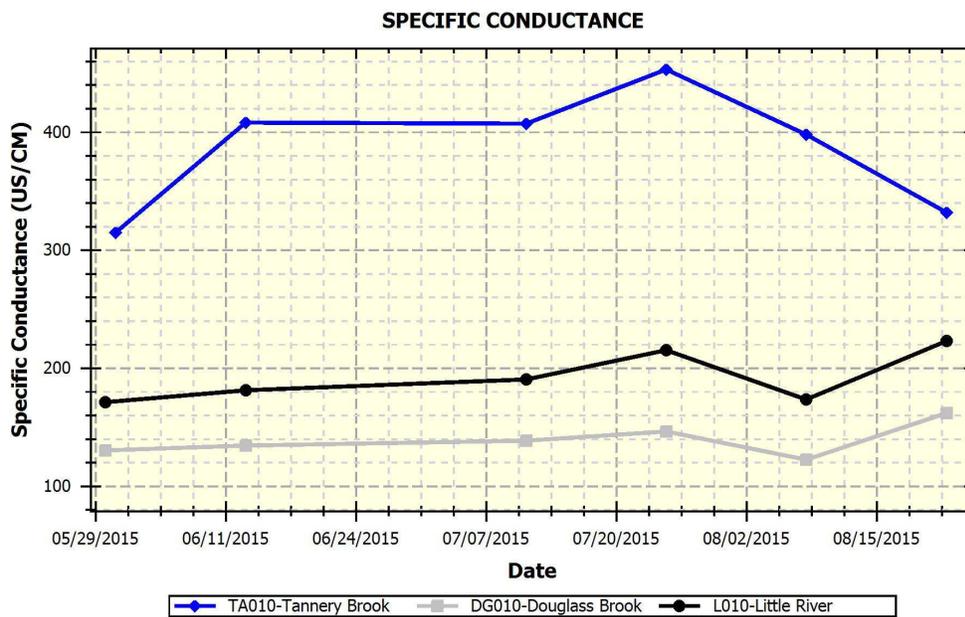
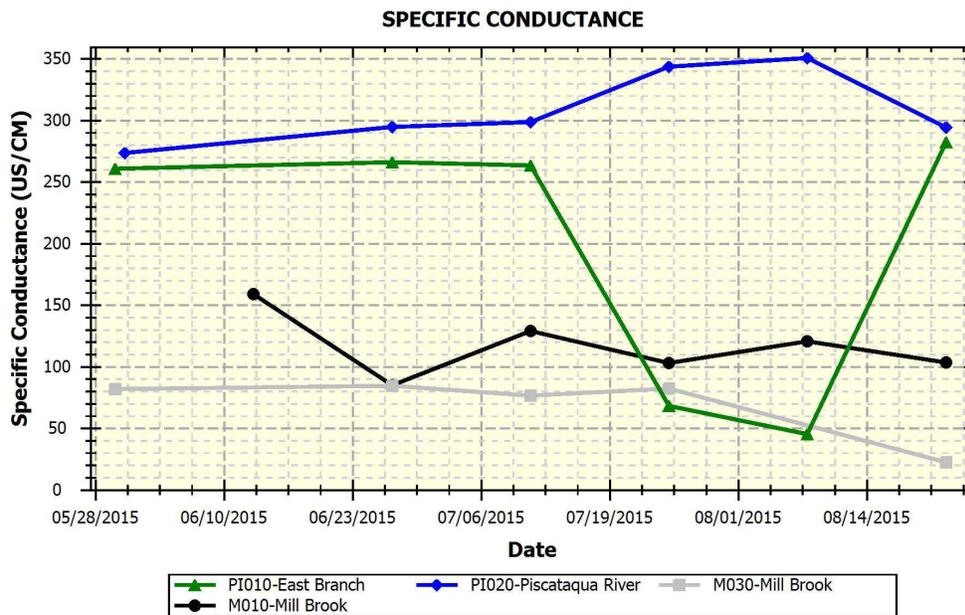


Figure 5-7- 24: Graph of specific conductance at sites on the lower Presumpscot tributaries.



Bacteria

Escherichia coli bacteria are used as the indicator organism for freshwaters. While this type of bacteria is not a pathogen, its 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.” 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 high or low values that can skew the mean.

2015 Results:

Mainstem sites: *Bacteria at the mainstem sites was overall low. Sites PO30 and P020 exceeded the instantaneous criterion on 1 date (8/22/15) which coincided with a heavy rain event in the previous 24 hours. Overall, bacteria at the mainstem sites was good.*

Pleasant River and tributaries: *The Pleasant River site (PL040) had high bacteria, exceeding the instantaneous criterion on 6 of 7 sample dates, as well as exceeded the geometric mean criterion. Sites PL020 and BB010 did not have any very high values, but overall bacteria was elevated enough to exceed the geometric mean criteria. Overall, these sites ranged from poor (PL040) to excellent (DB010).*

Upper Presumpscot River tributaries: *All of these tributaries were generally high. All sites exceeded the instantaneous criterion 2-6 times and all exceeded the geometric mean criterion. The worst site was CW010 which exceeded the instantaneous criterion on all sample dates. Generally, these sites ranged from poor to fair.*

Lower Presumpscot River tributaries: *All the lower Presumpscot River tributaries were high with the exception of site M030. The Piscataqua River sites and Mill Brook (M010) exceeded the instantaneous criterion on 5-7 sample dates and exceeded the geometric mean criterion.*

Table 5-7-6: A summary of minimum, maximum, and geometric mean values (MPN/100 mL) for bacteria at Presumpscot River Watch monitoring sites.

Mainstem Sites (Ordered from upstream to downstream)							
Site	Class	# Sample Points	Geometric Mean	Minimum	Maximum	Criterion Inst/Geo	# Exceeding Criterion
P200	A	6	6	3	26	194/29	0
P160	A	7	13	5	34	194/29	0
P150	A	7	17	11	25	194/29	0
P135	B	7	19	9	47	236/64	0
P030	C	6	146	38	921	236/126	1

P020	C	6	155	49	649	236/126	1
Pleasant River and Tributaries							
PLO40	B	7	613	236	2419	236/64	6
PLO20	B	5	158	125	250	236/64	1
PL010	B	-	-	-	-	236/64	-
DB010	B	7	31	11	115	236/64	0
BB010	B	6	103	57	210	236/64	0
Upper Presumpscot Tributaries							
L010	B	6	201	104	866	236/64	2
DG010	B	6	210	40	980	236/64	2
TA010	B	6	336	196	1300	236/64	3
BL010	B	6	417	135	1733	236/64	3
OB010	B	7	318	135	770	236/64	4
N010	B	6	352	115	2419	236/64	3
CW020	B	6	504	101	1733	236/64	4
CW010	B	6	922	276	2419	236/64	6
Lower Presumpscot River Tributaries							
PI020	B	7	246	154	517	236/64	5
PI010	B	7	401	261	770	236/64	7
M030	B	7	38	7	261	236/64	1
M010	B	6	637	416	1230	236/64	6

Figure 5-7-25: Graph of E. coli (MPN/ml) at sites on the main stem of the Presumpscot River

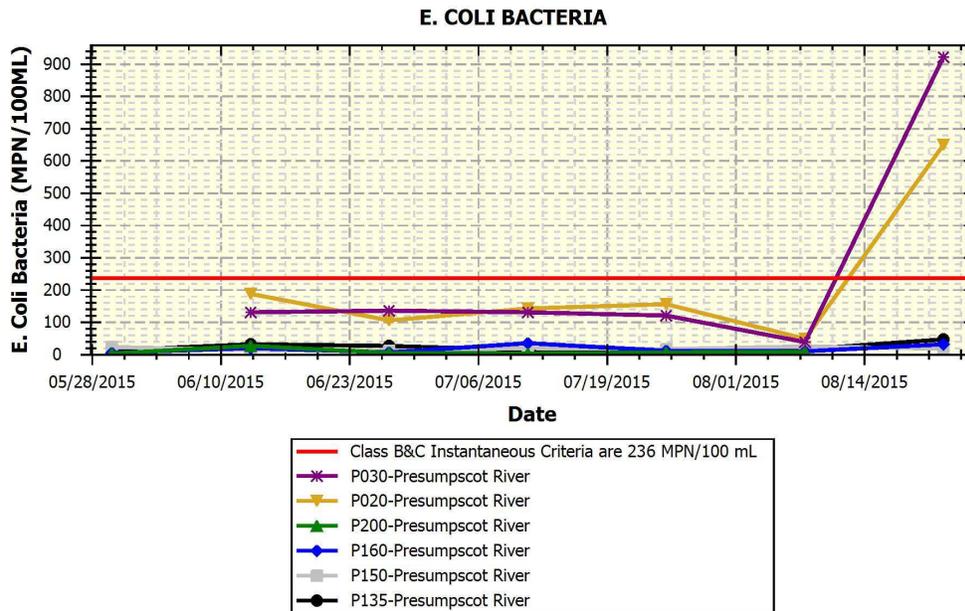


Figure 5-7-26: Graph of E. coli (MPN/ml) at sites on the Pleasant River and Tributaries

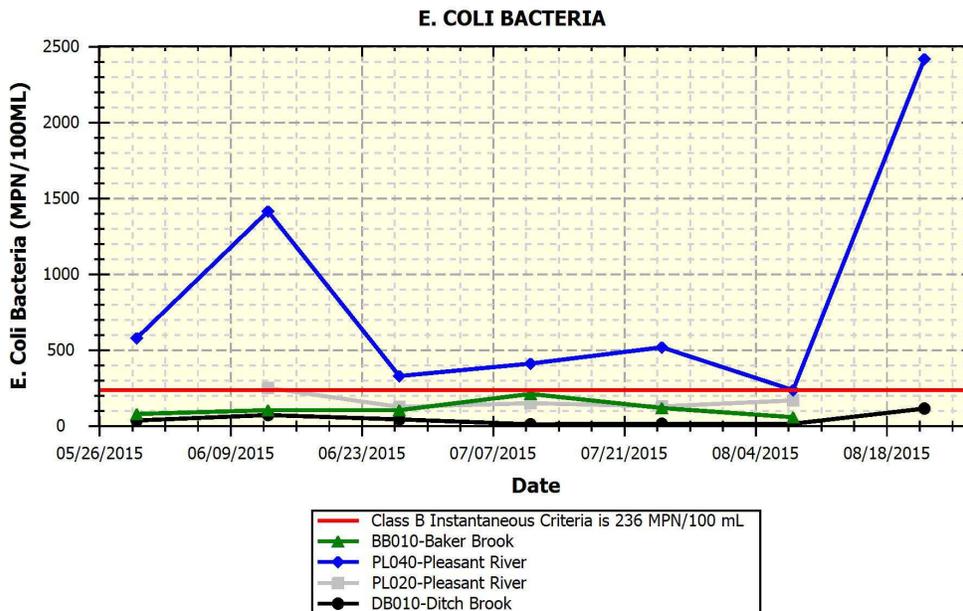


Figure 5-7-27: Graph of E. coli (MPN/ml) at sites on the upper Presumpscot tributaries-I.

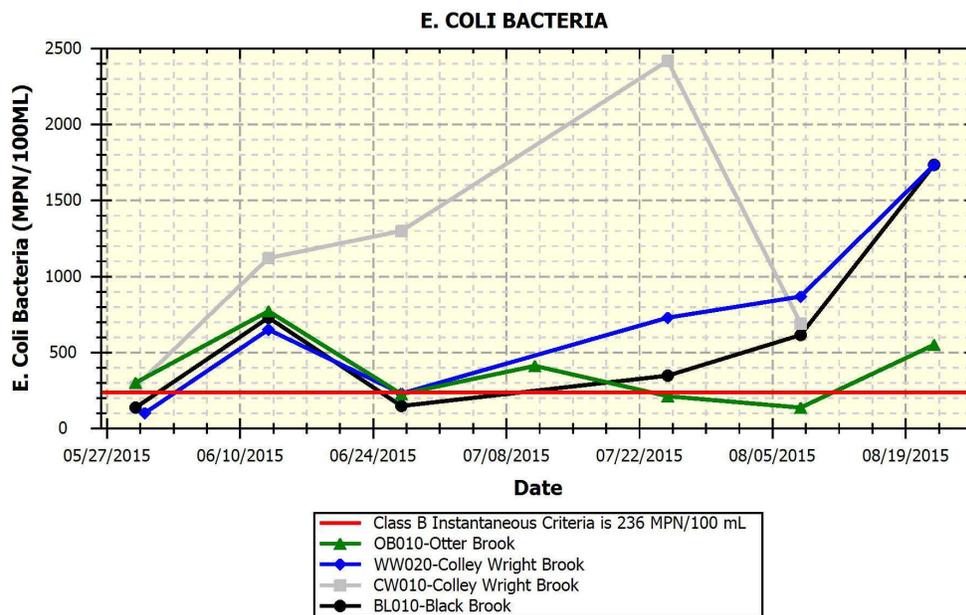


Figure 5-7-28: Graph of E. coli (MPN/ml) at sites at sites in the upper Presumpscot tributaries-II.

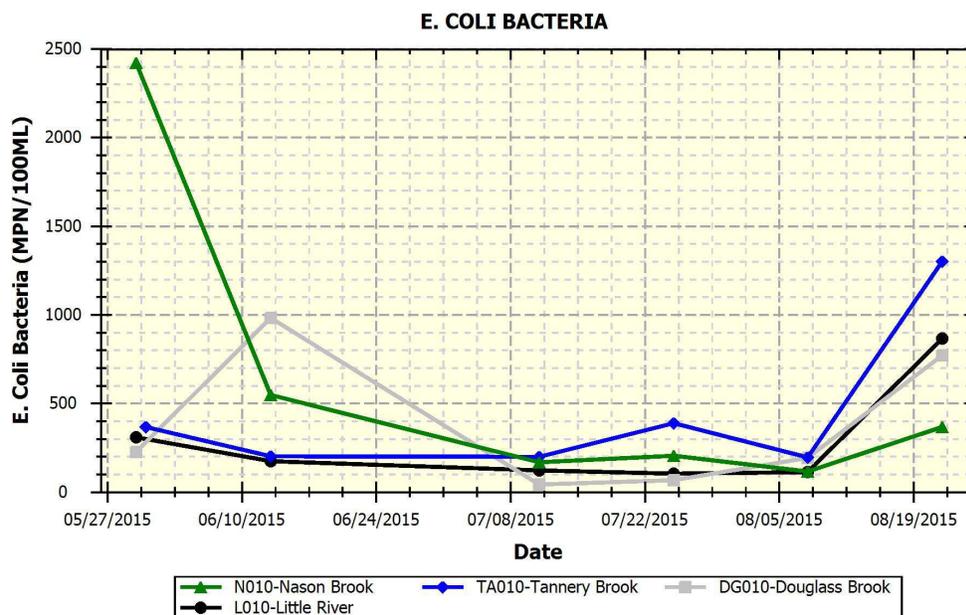
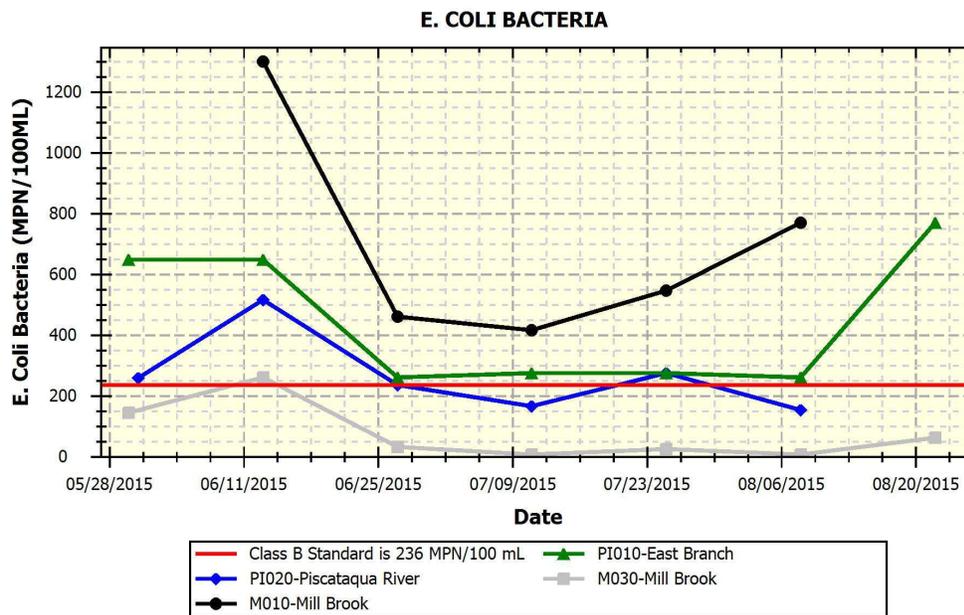


Figure 5-7- 29: Graph of E. coli (MPN/ml) at sites on the lower Presumpscot tributaries.

Discussion and Recommendations

There are numerous sources of pollution and other stresses to the Presumpscot River watershed 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., eroded soil, fertilizers, pesticides, heavy metals, petroleum residues, road salt, wildlife and pet feces) and polluted stormwater originating from impervious surfaces (e.g., streets, parking lots, driveways, rooftops), agriculture, and forestry
- Dams and impoundments (which often create more pond-like aquatic habitat conditions that may have higher water temperatures and lower dissolved oxygen concentrations than if the river section was free-flowing)
- 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 is characteristic of many wetlands)
- Point sources (e.g., failing private septic systems, wastewater treatment plants, combined sewer overflows [CSO], and industrial discharges) of pollution.

The following are recommendations for future monitoring:

- **Continue early morning sampling to document daily low dissolved oxygen readings. This is particularly important during the summer months of July to early September when**

temperatures are warmest, flows are low and dissolved oxygen tends to be at the lowest levels.

- **Although access may be difficult, we strongly recommend an additional site directly upstream of Presumpscot Falls in order to document dissolved oxygen levels in the lowest freshwater reach of the river. This is where, longitudinally, the lowest dissolved oxygen readings for the lower Presumpscot are expected to be found.**
- **Further monitoring of *E. coli* bacteria in the tributaries in order to determine sources. Consider bracketing expected sources. Possible partner with DEP to do some follow-up monitoring. In 2015, there were a few sites that had very high bacteria levels: CW010, M010, PI010, Pi020 and PL040.**
- **There is now five plus years of record for the majority of most sample sites. Consider re-evaluating the necessity of some sites and the potential for additions. The Department can assist in data analysis.**

Appendix A-1. 2011 water quality data for "Approved" and "Non-Approved" sites. Non-Approved sites do not yet meet official VRMP sample location criteria and/or require further inspection and review.

* 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; "Turb" = turbidity; "TSS" = total suspended solids"

Refer to Appendix A-2 for observational data and quality assurance/quality control (QA/QC) notes.

Organization Site Code	VRMP Site ID	Date	Time	** Sample Type Qualifier	* Sample Depth	Depth Unit	Water Temp (DEG C)	** D.O. Sat. (%)	** D.O. (MG/L)	** Spec. Cond. (US/CM)	Salinity (PPTH)	Turbidity (NTU)	Total Diss. Solids (MG/L)	** TSS (MG/L)	E Coli Bacteria (MPN/100ML)	Enterococci (MPN/100ML)
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Presumpscot River-Presumpscot River Watch: Approved Sites

BB010	BAKER BROOK - RPLBK17 - VRMP	5/30/2015	7:35 AM	NA			16.6	85.7	8.3	52					77.6	
BB010	BAKER BROOK - RPLBK17 - VRMP	6/13/2015	6:40 AM	NA			16.9	84.8	8.2	53					104.6	
BB010	BAKER BROOK - RPLBK17 - VRMP	6/27/2015	6:47 AM	NA			15.6	88.0	8.8						104.3	
BB010	BAKER BROOK - RPLBK17 - VRMP	6/27/2015	6:47 AM	D											125.9	
BB010	BAKER BROOK - RPLBK17 - VRMP	7/11/2015	6:42 AM	NA			17.0	88.3	8.5	192					209.8	
BB010	BAKER BROOK - RPLBK17 - VRMP	7/11/2015	6:42 AM	D			17.0	87.8	8.5	186					228.2	
BB010	BAKER BROOK - RPLBK17 - VRMP	7/25/2015	6:27 AM	NA			18.4	91.0	8.6	52					116.2	
BB010	BAKER BROOK - RPLBK17 - VRMP	8/8/2015	6:45 AM	NA			15.4	82.7	8.2	60					57.3	
BL010	BLACK BROOK- RBK05 -VRMP	5/30/2015	8:20 AM	NA			16.3	86.6	8.5	321					135.4	
BL010	BLACK BROOK- RBK05 -VRMP	6/13/2015	7:59 AM	NA			16.3	88.1	8.6	298					727	
BL010	BLACK BROOK- RBK05 -VRMP	6/13/2015	7:59 AM	D											461.1	
BL010	BLACK BROOK- RBK05 -VRMP	6/27/2015	7:45 AM	NA			13.1	89.7	9.4	164.9					146.7	
BL010	BLACK BROOK- RBK05 -VRMP	7/11/2015	6:55 AM	NA			17.1	74.8	7.2							
BL010	BLACK BROOK- RBK05 -VRMP	7/25/2015	7:10 AM	NA			16.6	77.4	7.5						344.8	
BL010	BLACK BROOK- RBK05 -VRMP	7/25/2015	7:10 AM	D			16.6	76.7	7.5						365.4	
BL010	BLACK BROOK- RBK05 -VRMP	8/8/2015	7:53 AM	NA			16.3	94.5	9.3	324					613.1	
BL010	BLACK BROOK- RBK05 -VRMP	8/22/2015	7:59 AM	NA			19.9	78.5	7.1	179.3					1732.87	
CW010	COLLEY WRIGHT BROOK - RCW10 - VRMP	5/30/2015	7:40 AM	NA			19.7	77.5	7.2	159.6					275.5	
CW010	COLLEY WRIGHT BROOK - RCW10 - VRMP	6/13/2015	7:10 AM	NA			19.4	75.4	6.9	143.5					1119.85	
CW010	COLLEY WRIGHT BROOK - RCW10 - VRMP	6/27/2015	7:10 AM	NA			15.8	81.4	8.1	127.4					1299.65	
CW010	COLLEY WRIGHT BROOK - RCW10 - VRMP	7/11/2015	6:20 AM	NA			19.3	78.4	7.2							
CW010	COLLEY WRIGHT BROOK - RCW10 - VRMP	7/25/2015	6:15 AM	NA			17.7	80.7	7.7						2419.17	
CW010	COLLEY WRIGHT BROOK - RCW10 - VRMP	7/25/2015	6:15 AM	D			17.7	79.3	7.5						1299.65	
CW010	COLLEY WRIGHT BROOK - RCW10 - VRMP	8/8/2015	7:20 AM	NA			17.5	98.9	9.4	162.4					686.7	
CW010	COLLEY WRIGHT BROOK - RCW10 - VRMP	8/22/2015	7:30 AM	NA			20.2	84.4	7.7	156.7					>2419.6	
CW020	COLLEY WRIGHT BROOK - RCW28 - VRMP	5/31/2015	8:00 AM	NA			17.1	81.6	7.9	158.7					101.4	
CW020	COLLEY WRIGHT BROOK - RCW28 - VRMP	6/13/2015	7:40 AM	NA			16.8	77.7	7.6	141.6					648.8	
CW020	COLLEY WRIGHT BROOK - RCW28 - VRMP	6/27/2015	7:30 AM	NA			14.5	81.7	8.4	131.1					228.2	
CW020	COLLEY WRIGHT BROOK - RCW28 - VRMP	7/11/2015	6:35 AM	NA			17.6	77.7	7.4							
CW020	COLLEY WRIGHT BROOK - RCW28 - VRMP	7/25/2015	6:43 AM	NA			17.2	75.4	7.2						727	
CW020	COLLEY WRIGHT BROOK - RCW28 - VRMP	7/25/2015	6:43 AM	D			17.2	74.3	7.2						648.8	
CW020	COLLEY WRIGHT BROOK - RCW28 - VRMP	8/8/2015	7:40 AM	NA			17.0	94.8	9.2	152.4					866.4	
CW020	COLLEY WRIGHT BROOK - RCW28 - VRMP	8/22/2015	7:48 AM	NA			20.1	86.8	7.9	160.3					1732.87	
DB010	DITCH BROOK - RPL00 - VRMP	5/30/2015	6:21 AM	NA			17.9	90.4	8.5						36.8	
DB010	DITCH BROOK - RPL00 - VRMP	6/13/2015	6:28 AM	NA											71.1	
DB010	DITCH BROOK - RPL00 - VRMP	6/27/2015	6:32 AM	NA			19.4	95.5							41	
DB010	DITCH BROOK - RPL00 - VRMP	7/11/2015	6:09 AM	NA			19.9	93.5							11	
DB010	DITCH BROOK - RPL00 - VRMP	7/25/2015	6:37 AM	NA											14.8	

Organization Site Code	VRMP Site ID	Date	Time	** Sample Type Qualifier	* Sample Depth	Depth Unit	Water Temp (DEG C)	** D.O. Sat. (%)	** D.O. (MG/L)	** Spec. Cond. (US/CM)	Salinity (PPTH)	Turbidity (NTU)	Total Diss. Solids (MG/L)	** TSS (MG/L)	E Coli Bacteria (MPN/100ML)	Enterococci (MPN/100ML)
DB010	DITCH BROOK - RPL00 - VRMP	7/25/2015	6:37 AM	D											11.9	
DB010	DITCH BROOK - RPL00 - VRMP	8/8/2015	6:42 AM	NA			17.6	70.5	6.6						14.6	
DB010	DITCH BROOK - RPL00 - VRMP	8/22/2015	6:45 AM	NA											115.3	
DG010	DOUGLAS BROOK - RLTNBDG20 - VRMP	5/30/2015	7:48 AM	NA			18.2	72.3	6.9	130.2					224.7	
DG010	DOUGLAS BROOK - RLTNBDG20 - VRMP	6/13/2015	8:14 AM	NA			17.9	68.9	6.6	134.2					980.4	
DG010	DOUGLAS BROOK - RLTNBDG20 - VRMP	6/13/2015	8:14 AM	D											461.1	
DG010	DOUGLAS BROOK - RLTNBDG20 - VRMP	6/27/2015	7:23 AM	NA			16.5	78.2	7.6							
DG010	DOUGLAS BROOK - RLTNBDG20 - VRMP	7/11/2015	7:22 AM	NA			18.6	72.1	6.8	138.4					40.4	
DG010	DOUGLAS BROOK - RLTNBDG20 - VRMP	7/25/2015	7:17 AM	NA			17.1	74.5	7.2	146.4					66.9	
DG010	DOUGLAS BROOK - RLTNBDG20 - VRMP	7/25/2015	7:17 AM	D			17.1	73.8	7.2	146.5					59.4	
DG010	DOUGLAS BROOK - RLTNBDG20 - VRMP	8/8/2015	8:29 AM	NA			17.1	75.0	7.2	122.2					190.4	
DG010	DOUGLAS BROOK - RLTNBDG20 - VRMP	8/22/2015	8:10 AM	NA			20.2	66.6	6.1	161.7					770.1	
PI010	EAST BRANCH PISCATAQUA RIVER - RPSEB05 - VRMP	5/30/2015	7:39 AM	NA			19.5	60.4	5.6	260.5					648.8	
PI010	EAST BRANCH PISCATAQUA RIVER - RPSEB05 - VRMP	6/13/2015	7:30 AM	NA											648.8	
PI010	EAST BRANCH PISCATAQUA RIVER - RPSEB05 - VRMP	6/27/2015	7:33 AM	NA			19.3	63.2	5.8	265.8					261.3	
PI010	EAST BRANCH PISCATAQUA RIVER - RPSEB05 - VRMP	6/27/2015	7:33 AM	D											209.8	
PI010	EAST BRANCH PISCATAQUA RIVER - RPSEB05 - VRMP	7/11/2015	7:20 AM	NA			20.0	71.8	6.5	263.3					275.5	
PI010	EAST BRANCH PISCATAQUA RIVER - RPSEB05 - VRMP	7/11/2015	7:20 AM	D			20.0	71.6	6.5	269.4					365.4	
PI010	EAST BRANCH PISCATAQUA RIVER - RPSEB05 - VRMP	7/25/2015	7:25 AM	NA			18.7	71.7	6.7	68.3					275.5	
PI010	EAST BRANCH PISCATAQUA RIVER - RPSEB05 - VRMP	8/8/2015	7:28 AM	NA			18.1	66.7	6.3	45.4					261.3	
PI010	EAST BRANCH PISCATAQUA RIVER - RPSEB05 - VRMP	8/22/2015	7:45 AM	NA			21.1	76.7	6.8	282.5					770.1	
L010	LITTLE RIVER - RLT08 - VRMP	5/30/2015	7:28 AM	NA			19.2	84.7	7.8	171.2					307.6	
L010	LITTLE RIVER - RLT08 - VRMP	5/30/2015	7:28 AM	D											224.7	
L010	LITTLE RIVER - RLT08 - VRMP	6/13/2015	7:48 AM	NA			18.8	85.1	7.9	181					172	
L010	LITTLE RIVER - RLT08 - VRMP	6/27/2015	7:00 AM	NA			17.0	83.3	8.0							
L010	LITTLE RIVER - RLT08 - VRMP	7/11/2015	7:01 AM	NA			19.3	84.1	7.7	190.2					122.3	
L010	LITTLE RIVER - RLT08 - VRMP	7/25/2015	6:48 AM	NA			18.4	83.4	7.8	215					104.3	
L010	LITTLE RIVER - RLT08 - VRMP	7/25/2015	6:48 AM	D			18.3	82.7	8.0	219					118.7	
L010	LITTLE RIVER - RLT08 - VRMP	8/8/2015	8:05 AM	NA			17.9	84.7	8.0	173.5					111.9	
L010	LITTLE RIVER - RLT08 - VRMP	8/22/2015	7:50 AM	NA			21.0	80.7	7.2	223					866.4	
M010	MILL BROOK - RML01 - VRMP	6/13/2015	7:35 AM	NA			18.6	82.6	7.8	159					1299.65	
M010	MILL BROOK - RML01 - VRMP	6/27/2015	8:15 AM	NA			17.3	92.3	8.8	85					461.1	
M010	MILL BROOK - RML01 - VRMP	7/11/2015	7:10 AM	NA			19.4	84.6	7.9	128.9					416	
M010	MILL BROOK - RML01 - VRMP	7/11/2015	7:10 AM	D											325.5	
M010	MILL BROOK - RML01 - VRMP	7/25/2015	7:05 AM	NA			17.9	89.7	8.5	103.1					547.5	
M010	MILL BROOK - RML01 - VRMP	8/8/2015	7:45 AM	NA			17.6	82.5	7.8	120.4					770.1	
M010	MILL BROOK - RML01 - VRMP	8/22/2015	8:00 AM	NA			20.5	86.6	7.8	103.5					>2419.6	
M030	MILL BROOK - RML63 - VRMP	5/30/2015	8:09 AM	NA			22.3	83.0	7.2	81.7					145.5	
M030	MILL BROOK - RML63 - VRMP	6/13/2015	8:00 AM	NA											261.3	
M030	MILL BROOK - RML63 - VRMP	6/27/2015	8:09 AM	NA			22.6	95.2	8.2	84.3					33.1	
M030	MILL BROOK - RML63 - VRMP	7/11/2015	7:55 AM	NA			23.9	89.3	7.5	76.7					8.5	
M030	MILL BROOK - RML63 - VRMP	7/11/2015	7:55 AM	D			24.0	89.3	7.5	51.7					14.3	
M030	MILL BROOK - RML63 - VRMP	7/25/2015	7:55 AM	NA			22.6	87.6	7.6	82.1					26.2	
M030	MILL BROOK - RML63 - VRMP	8/8/2015	7:58 AM	NA			22.2	81.4	7.1						7	
M030	MILL BROOK - RML63 - VRMP	8/22/2015	8:15 AM	NA			23.9	87.4	7.4	22.4					63.1	
N010	NASON BROOK - RNS11 - VRMP	5/30/2015	7:05 AM	NA			16.4	80.1	7.9						2419.17	
N010	NASON BROOK - RNS11 - VRMP	6/13/2015	7:00 AM	NA											547.5	
N010	NASON BROOK - RNS11 - VRMP	6/27/2015	5:57 AM	NA			14.0	83.3								

Organization Site Code	VRMP Site ID	Date	Time	** Sample Type Qualifier	* Sample Depth	Depth Unit	Water Temp (DEG C)	** D.O. Sat. (%)	** D.O. (MG/L)	** Spec. Cond. (US/CM)	Salinity (PPTH)	Turbidity (NTU)	Total Diss. Solids (MG/L)	** TSS (MG/L)	E Coli Bacteria (MPN/100ML)	Enterococci (MPN/100ML)
N010	NASON BROOK - RNS11 - VRMP	7/11/2015	6:50 AM	NA			16.0	70.9							167.4	
N010	NASON BROOK - RNS11 - VRMP	7/25/2015	7:05 AM	NA											204.6	
N010	NASON BROOK - RNS11 - VRMP	7/25/2015	7:05 AM	D											172.3	
N010	NASON BROOK - RNS11 - VRMP	8/8/2015	7:11 AM	NA			15.9	93.5	9.3						115.3	
N010	NASON BROOK - RNS11 - VRMP	8/22/2015	7:04 AM	NA											365.4	
OB010	OTTER BROOK - ROT06 - VRMP	5/30/2015	5:43 AM	NA			14.9	100.0	10.1						298.7	
OB010	OTTER BROOK - ROT06 - VRMP	6/13/2015	6:06 AM	NA											770.1	
OB010	OTTER BROOK - ROT06 - VRMP	6/27/2015	6:02 AM	NA			11.7	81.4							224.7	
OB010	OTTER BROOK - ROT06 - VRMP	7/11/2015	5:30 AM	NA			14.7	69.4							410.6	
OB010	OTTER BROOK - ROT06 - VRMP	7/25/2015	6:00 AM	NA											209.8	
OB010	OTTER BROOK - ROT06 - VRMP	7/25/2015	6:00 AM	D											185	
OB010	OTTER BROOK - ROT06 - VRMP	8/8/2015	6:04 AM	NA			19.7	96.7	9.7						135	
OB010	OTTER BROOK - ROT06 - VRMP	8/22/2015	6:01 AM	NA											547.5	
PIO20	PISCATAQUA RIVER - RPS12 - VRMP	5/31/2015	7:57 AM	NA			17.9	85.5	8.1	273.5					260.2	
PIO20	PISCATAQUA RIVER - RPS12 - VRMP	6/13/2015	7:40 AM	NA											517.2	
PIO20	PISCATAQUA RIVER - RPS12 - VRMP	6/27/2015	7:47 AM	NA			17.4	90.1	8.6	294.8					235.9	
PIO20	PISCATAQUA RIVER - RPS12 - VRMP	7/11/2015	7:35 AM	NA			18.1	92.9	8.8	298.7					166.4	
PIO20	PISCATAQUA RIVER - RPS12 - VRMP	7/11/2015	7:35 AM	D			18.1	92.4	8.7	307.1					98.7	
PIO20	PISCATAQUA RIVER - RPS12 - VRMP	7/25/2015	7:35 AM	NA			16.8	90.5	8.8	343.6					275.5	
PIO20	PISCATAQUA RIVER - RPS12 - VRMP	8/8/2015	7:42 AM	NA			16.4	87.6	8.6	350.7					153.9	
PIO20	PISCATAQUA RIVER - RPS12 - VRMP	8/22/2015	7:55 AM	NA			19.3	97.0	8.9	294.1					>2419.6	
PLO20	PLEASANT RIVER - RPL29 - VRMP	6/13/2015	7:20 AM	NA			19.7	94.1	8.6	223					249.5	
PLO20	PLEASANT RIVER - RPL29 - VRMP	6/27/2015	7:35 AM	NA			18.5	93.1	8.7						125	
PLO20	PLEASANT RIVER - RPL29 - VRMP	7/11/2015	7:42 AM	NA			19.9	90.9	8.3	263					148.3	
PLO20	PLEASANT RIVER - RPL29 - VRMP	7/11/2015	7:42 AM	D			19.9	90.6	8.3	272					155.3	
PLO20	PLEASANT RIVER - RPL29 - VRMP	7/25/2015	7:10 AM	NA			16.1	88.6	8.7	319					128.1	
PLO20	PLEASANT RIVER - RPL29 - VRMP	8/8/2015	7:23 AM	NA			18.4	86.6	8.1	275					166.4	
PLO40	PLEASANT RIVER - RPL47 - VRMP	5/30/2015	6:05 AM	NA			18.3	76.5	7.1						579.4	
PLO40	PLEASANT RIVER - RPL47 - VRMP	6/13/2015	6:17 AM	NA											1413.6	
PLO40	PLEASANT RIVER - RPL47 - VRMP	6/27/2015	6:12 AM	NA			14.1	82.4							328.2	
PLO40	PLEASANT RIVER - RPL47 - VRMP	7/11/2015	5:51 AM	NA			19.7	76.2							410.6	
PLO40	PLEASANT RIVER - RPL47 - VRMP	7/25/2015	6:18 AM	NA											517.2	
PLO40	PLEASANT RIVER - RPL47 - VRMP	7/25/2015	6:18 AM	D											461.1	
PLO40	PLEASANT RIVER - RPL47 - VRMP	8/8/2015	6:29 AM	NA			17.0	83.7	7.8						235.9	
PLO40	PLEASANT RIVER - RPL47 - VRMP	8/22/2015	6:24 AM	NA											2419.17	
P015	PRESUMPCOT RIVER - R07 - VRMP	6/27/2015	6:55 AM	NA			20.3	79.3	7.1	119.3					104.6	
P135	PRESUMPCOT RIVER - R157 - VRMP	5/30/2015	10:05 AM	NA			20.6	96.0	8.6	44.1					12.1	
P135	PRESUMPCOT RIVER - R157 - VRMP	6/13/2015	7:51 AM	NA			19.8	97.5	8.9	43.3					31.3	
P135	PRESUMPCOT RIVER - R157 - VRMP	6/27/2015	8:22 AM	NA			21.3	92.1	8.2	47.6					25.5	
P135	PRESUMPCOT RIVER - R157 - VRMP	7/11/2015	8:08 AM	NA			23.9	90.5	7.6	40.5					13.5	
P135	PRESUMPCOT RIVER - R157 - VRMP	7/11/2015	8:08 AM	D			23.9	90.6	7.6	40.4					25.6	
P135	PRESUMPCOT RIVER - R157 - VRMP	7/25/2015	6:35 AM	NA			23.3	85.1	7.2	54.5					8.6	
P135	PRESUMPCOT RIVER - R157 - VRMP	7/25/2015	6:35 AM	D											16	
P135	PRESUMPCOT RIVER - R157 - VRMP	8/8/2015	7:20 AM	NA			23.9	83.7	7.1	36.2					15.8	
P135	PRESUMPCOT RIVER - R157 - VRMP	8/22/2015	7:15 AM	NA			25.6	82.1	6.7	36.6					47.2	
P150	PRESUMPCOT RIVER - R166 - VRMP	5/30/2015	9:25 AM	NA			18.7	95.6	8.9	34.7					23.3	
P150	PRESUMPCOT RIVER - R166 - VRMP	5/30/2015	9:25 AM	D											32.3	
P150	PRESUMPCOT RIVER - R166 - VRMP	6/13/2015	8:16 AM	NA			18.6	95.9	9.0	34.8					12.2	

Organization Site Code	VRMP Site ID	Date	Time	** Sample Type Qualifier	* Sample Depth	Depth Unit	Water Temp (DEG C)	** D.O. Sat. (%)	** D.O. (MG/L)	** Spec. Cond. (US/CM)	Salinity (PPTH)	Turbidity (NTU)	Total Diss. Solids (MG/L)	** TSS (MG/L)	E Coli Bacteria (MPN/100ML)	Enterococci (MPN/100ML)
P150	PRESUMPCOT RIVER - R166 - VRMP	6/13/2015	8:16 AM	D											14.3	
P150	PRESUMPCOT RIVER - R166 - VRMP	6/27/2015	7:53 AM	NA			20.9	92.8	8.3	35.8					10.9	
P150	PRESUMPCOT RIVER - R166 - VRMP	7/11/2015	7:35 AM	NA			23.4	90.0	7.7	35.8					18.7	
P150	PRESUMPCOT RIVER - R166 - VRMP	7/11/2015	7:35 AM	D			23.4	90.3	7.7	34.7					17.3	
P150	PRESUMPCOT RIVER - R166 - VRMP	7/25/2015	6:55 AM	NA			23.4	84.1	7.2	49.5					16.1	
P150	PRESUMPCOT RIVER - R166 - VRMP	8/8/2015	7:42 AM	NA			24.1	87.3	7.3	34.1					24.6	
P150	PRESUMPCOT RIVER - R166 - VRMP	8/22/2015	7:39 AM	NA			25.9	86.1	7.1	34.8					18.5	
P160	PRESUMPCOT RIVER - R195 - VRMP	5/30/2015	8:57 AM	NA			21.3	98.3	8.7	34.8					5.2	
P160	PRESUMPCOT RIVER - R195 - VRMP	6/13/2015	8:45 AM	NA			19.6	97.0	8.9	35.1					19.9	
P160	PRESUMPCOT RIVER - R195 - VRMP	6/27/2015	7:26 AM	NA			21.3	95.0	8.4	34.9					6.3	
P160	PRESUMPCOT RIVER - R195 - VRMP	7/11/2015	7:01 AM	NA			23.6	92.2	7.8	34					34.1	
P160	PRESUMPCOT RIVER - R195 - VRMP	7/11/2015	7:01 AM	D			23.6	92.4	7.8	33.8					23.8	
P160	PRESUMPCOT RIVER - R195 - VRMP	7/25/2015	7:20 AM	NA			23.0	87.3	7.5	47.5					11	
P160	PRESUMPCOT RIVER - R195 - VRMP	8/8/2015	8:00 AM	NA			23.9	88.6	7.5	34.8					9.5	
P160	PRESUMPCOT RIVER - R195 - VRMP	8/22/2015	7:59 AM	NA			25.4	87.3	7.1	35.7					31.7	
P160	PRESUMPCOT RIVER - R195 - VRMP	8/22/2015	7:59 AM	D											37.9	
P200	PRESUMPCOT RIVER - R225 - VRMP	5/30/2015	8:00 AM	NA			17.3	100.0	9.7	72					3.1	
P200	PRESUMPCOT RIVER - R225 - VRMP	6/13/2015	7:00 AM	NA			18.5	101.0	9.5	65					25.9	
P200	PRESUMPCOT RIVER - R225 - VRMP	6/27/2015	7:08 AM	NA			20.1	94.6	8.6						4.1	
P200	PRESUMPCOT RIVER - R225 - VRMP	7/11/2015	7:09 AM	NA			23.0	96.9	8.3	77					3.1	
P200	PRESUMPCOT RIVER - R225 - VRMP	7/11/2015	7:09 AM	D			23.0	97.4	8.4	73					7.4	
P200	PRESUMPCOT RIVER - R225 - VRMP	7/25/2015	6:47 AM	NA			22.8	94.3	8.1	75					6.2	
P200	PRESUMPCOT RIVER - R225 - VRMP	8/8/2015	7:02 AM	NA			23.5	89.4	7.6	89					7.4	
P020	PRESUMPCOT RIVER - R24 - VRMP	6/13/2015	6:45 AM	NA			20.2	86.5	7.8	145					187.2	
P020	PRESUMPCOT RIVER - R24 - VRMP	6/27/2015	7:25 AM	NA			20.8	88.7	7.9	72.6					104.6	
P020	PRESUMPCOT RIVER - R24 - VRMP	7/11/2015	6:30 AM	NA			23.3	84.5	7.2						142.1	
P020	PRESUMPCOT RIVER - R24 - VRMP	7/11/2015	6:30 AM	D			23.3	84.5	7.2							
P020	PRESUMPCOT RIVER - R24 - VRMP	7/25/2015	6:30 AM	NA			23.2	89.3	7.7	53.6					155.3	
P020	PRESUMPCOT RIVER - R24 - VRMP	8/8/2015	7:10 AM	NA			23.6	91.6	7.7	49.4					48.8	
P020	PRESUMPCOT RIVER - R24 - VRMP	8/22/2015	7:25 AM	NA			24.9	89.2	7.4	52					648.8	
P030	PRESUMPCOT RIVER - R47 - VRMP	6/13/2015	7:20 AM	NA			20.4	89.0	8.1	120					129.6	
P030	PRESUMPCOT RIVER - R47 - VRMP	6/27/2015	8:00 AM	NA			21.0	91.2	8.1	69.3					135.4	
P030	PRESUMPCOT RIVER - R47 - VRMP	7/11/2015		NA			23.3	87.6	7.4						129.6	
P030	PRESUMPCOT RIVER - R47 - VRMP	7/25/2015	6:50 AM	NA			23.2	93.3	7.9	49.8					119.8	
P030	PRESUMPCOT RIVER - R47 - VRMP	8/8/2015	7:30 AM	NA			23.8	93.8	7.9	45.5					38.4	
P030	PRESUMPCOT RIVER - R47 - VRMP	8/22/2015	7:40 AM	NA			25.2	91.6	7.6	48.3					920.8	
TA010	TANNERY BROOK - RLTTN06 - VRMP	5/31/2015	8:08 AM	NA			18.1	87.3	8.3	315					365.4	
TA010	TANNERY BROOK - RLTTN06 - VRMP	6/13/2015	8:38 AM	NA			18.0	89.4	8.5	408					201.4	
TA010	TANNERY BROOK - RLTTN06 - VRMP	6/27/2015	6:38 AM	NA			15.1	85.7	8.6							
TA010	TANNERY BROOK - RLTTN06 - VRMP	7/11/2015	7:44 AM	NA			17.5	86.7	8.3	407					198.9	
TA010	TANNERY BROOK - RLTTN06 - VRMP	7/25/2015	7:44 AM	NA			17.4	88.5	8.6	453					387.3	
TA010	TANNERY BROOK - RLTTN06 - VRMP	7/25/2015	7:44 AM	D			17.4	88.8	8.5	454					866.4	
TA010	TANNERY BROOK - RLTTN06 - VRMP	8/8/2015	8:50 AM	NA			16.6	88.4	8.7	398					195.6	
TA010	TANNERY BROOK - RLTTN06 - VRMP	8/22/2015	8:34 AM	NA			19.5	83.8	7.7	332					1299.65	
TA010	TANNERY BROOK - RLTTN06 - VRMP	8/22/2015	8:34 AM	D											1119.85	