Section 5-2
Bagaduce River & Tributaries (Bagaduce Watershed Association)

Refer to Chapter 4 of this document for information about sampling methods, sampling sites, and quality assurance.

Overview

The Bagaduce Watershed Association (BWA) was formed in 2002 because of interest and concern for the river. The association began sampling in 2003 and has been very active since then. The volunteer group now includes over 100 members and 14 river monitors. The group has been monitoring several freshwater streams as well as sites in the Bagaduce River estuary. In addition to monitoring, the group has also done eelgrass transplants in cooperation with Maine Department of Transportation.

The Bagaduce River is located on the coast of Maine in the Penobscot Bay region. The watershed includes seven major streams and ponds: Camp Stream, Winslow Stream, Mill Stream, Smelt Brook, Bagaduce Stream, Stoney Brook, Mill Brook, Wight Pond, Snake Pond, Parker Pond, Walker Pond, Frost Pond, Black Pond and Pierce Pond which have all been monitored at one time or another. These waterbodies drain to the Bagaduce River-an estuary that flows into Penobscot Bay. The watershed includes parts of five towns: Brooksville, Blue Hill, Castine, Penobscot and Sedgewick. The river has a total watershed area of 125 square miles. Land use in the watershed consists primarily of forest, wetlands, low intensity residential, roads, agriculture, shoreline development and limited commercial development. Maine Maritime Academy is located in Castine and has an associated ship pier and the training ship *State of Maine*. The headwaters of the Bagaduce, especially Walker Pond, support a unique dwarf alewife (a subspecies of *Alosa pseudoharengus*) and the estuary supports some of the best remaining eelgrass beds (*Zostera marina*) found in Hancock County.

The statutory water class of the freshwater tributaries to the Bagaduce River are Class B and the Bagaduce River estuary is Class SA/SB.[1] All freshwater lakes and ponds are Class GPA-the only classification for lakes. According to the DEP "2010 Integrated Water Quality Monitoring and Assessment Report" the Bagaduce River and streams are placed in "Category 2: Rivers and Streams Attaining some Designated Uses-Insufficient Information for Other Uses". The Penobscot River and Bagaduce River in Castine-Penobscot are placed in "Category 2: Estuarine and Marine Waters Attaining some Designated Uses-Insufficient Information for Other Uses". It is listed here for the Department of Marine Resources' closure of 2.5 square miles to shellfishing due to overboard discharges (on-site sewage treatment systems). Past monitoring by BWA has indicated that the some of the freshwater streams (Camp Stream, Mill Brook, Mill Stream and Smelt Brook) experience water temperature and dissolved oxygen levels that may be of concern. Bacause of the rural nature of the area, most of the problems may be due to natural causes (e.g. low flow, beaver activity). Macroinvertebrate community rapid assessments were also done on

[1] See Water Classification webpage for further clarification of classification of these waters: www.maine.gov/dep/blwq/docmonitoring/classification/index.htm

Mill Stream, Mill Brook, Winslow Stream, Stoney Brook and Camp Stream. There was a good diversity of macroinvertebrates with many mayflies, stoneflies and caddisflies, indicating good water quality.

The overall purpose of monitoring is to assess water quality data to determine whether the river is meeting water quality classification standards. The Bagaduce River Watershed Sampling and Analysis Plan states that the overall objectives of monitoring are to (1) assess overall health of the Bagaduce tributaries and river; and (2) assess habitat value for native coldwater fish species.

Methods

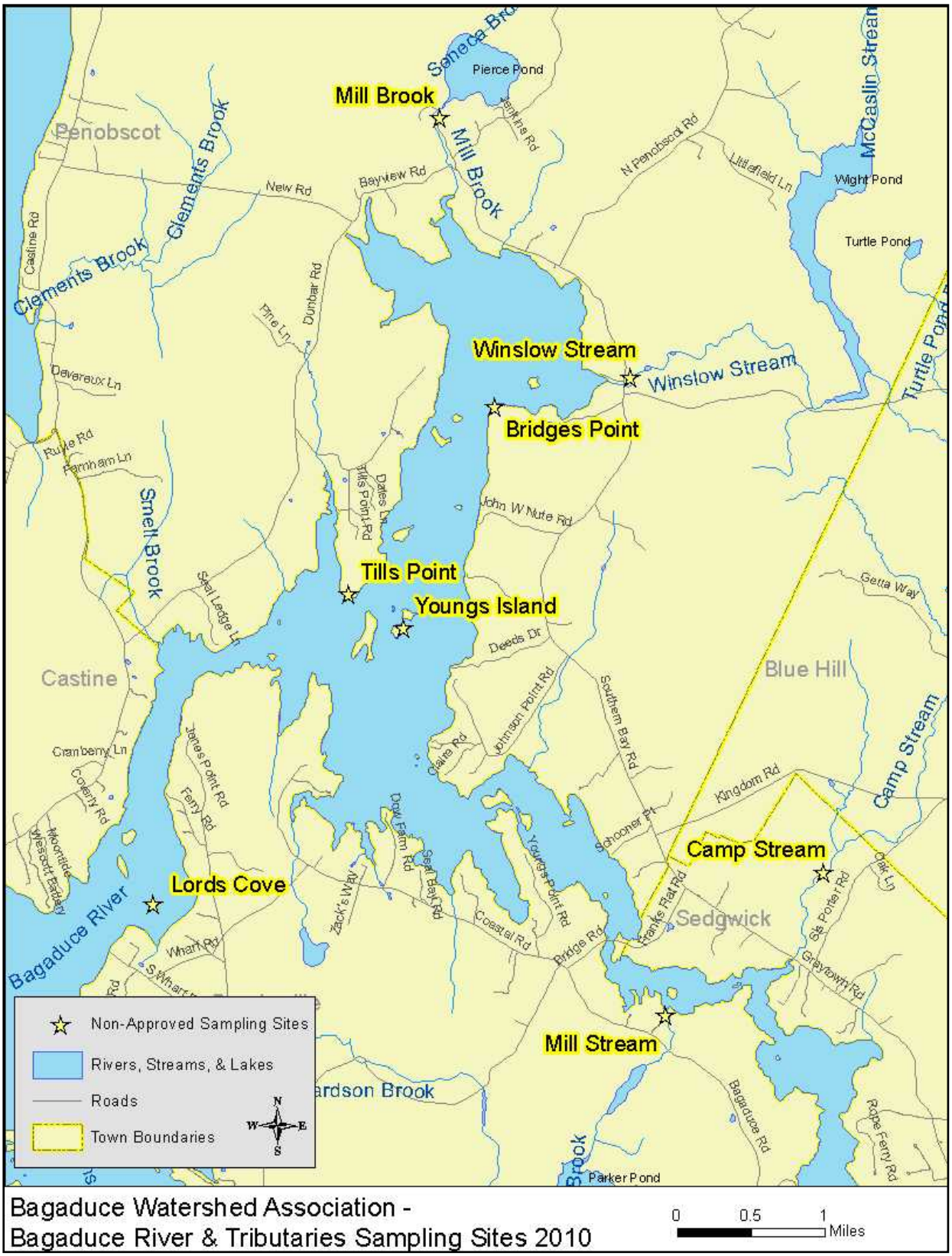
During the 2010 field season, the volunteers monitored the Bagaduce River Estuary at four sites and at four of the freshwater streams: Camp Stream, Mill Brook, Mill Stream and Winslow Stream. All of the sites were non-approved sites in 2010. For next year, all of the stream sites will be approved sites, since the VRMP Coordinator has since determined that these sites meet requirements for approval. Some of the estuary sites may also be approved for next year. Whether or not the estuary sites will be approved depends on sampling location (from shoreline vs. boat) and depth of sample. Some of the monitors were lent dissolved oxygen meters for the 2011 sampling season, which will allow for sampling at deeper depths in the estuary. Table 1 provides a list of the sites and Figure 1 is a map of sampling sites.

Table 1: Sampling Sites

VRMP Site ID	Organization Site Code	Sample Location	Class
BAGADUCE RIVER-NBG-BWA	Bridges Point	Access from Bridges Point Road (shoreline)	SA/SB
BAGADUCE RIVER-NBG-BWA2	Lords Cove	Access from Reynolds Road (boat)	SA/SB
BAGADUCE RIVER-NBG132-BWA	Tills Point	Northern Bay (shoreline or boat)	SA/SB
BAGADUCE RIVER-NBG133-BWA	Youngs Island	West of 3 Youngs Island (boat)	SA/SB
CAMP STREAM-NBGCS08-BWA	Camp Stream	Off Sis Porter Road-road crossing	B
MILL BROOK-NBGMB07-BWA	Site #3	Pierce Pond Road/Dump Road Crossing	B
MILL STREAM-NBGMS02-BWA	Mill Stream	On a private road below Route 175	B
WINSLOW STREAM-NBGWS32-BWA	Site #2	Route 175 Road Crossing	B

Monitoring was conducted 1-2 times per month starting in April, June or July and extending to September or October. At each site, the monitors made direct measurements of water temperature with a handheld thermometer and measured dissolved oxygen with LaMotte Titration kits (Model 5860). Turbidity was also measured at each site using 120 cm turbidity tubes and pH was measured with Oakton Testr1 pH pens. Turbidity tubes are plexiglass tubes with a secchi disk target at the bottom. So they actually report visibility and transparency, just the opposite of turbidity. Specific conductance was measured at Camp Stream, Mill Brook and Winslow Stream with Oakton ECTestr 11+ conductivity pens.

Figure 1: Map of Sampling Sites



Results

Dissolved Oxygen

Dissolved oxygen was measured 3-13 times at each of the eight sampling sites. Dissolved oxygen saturation was a calculated value when both dissolved oxygen in mg/l and temperature were measured. Monitoring occurred from April through October. 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. Class SA standards are "as naturally occurs" and Class SB standards are 85% saturation. Table 2 and Table 3 provide a summary of dissolved oxygen concentration and % saturation for each site including minimum, maximum and average values.

Table 2: Dissolved Oxygen Concentration (mg/l) Summary

Site	Approved Site	# of Samples	Minimum Value	Maximum Value	Average Value
Bridges Point	N	8	7.6	9.0	8.1
Lords Cove	N	5	6.5	8.0	7.0
Tills Point	N	4	8.2	9.8	8.8
Youngs Island	N	7	7.0	8.6	7.6
Camp Stream	N	6	4.8	7.5	5.7
Mill Brook-Site #3	N	13	6.2	9.4	7.5
Mill Stream	N	3	6.9	7.5	7.2
Winslow Stream-Site #2	N	13	6.0	9.2	7.3

Table 3: Dissolved Oxygen Saturation (%) Summary

Site	Approved Site	# of Samples	Minimum Value	Maximum Value	Average Value
Bridges Point	N	8	72	87	80
Lords Cove	N	5	64	81	72
Tills Point	N	3	82	108	90
Youngs Island	N	7	75	80	78
Camp Stream	N	6	61	78	64
Mill Brook-Site #3	N	13	70	88	78
Mill Stream	N	3	77	86	80
Winslow Stream-Site #2	N	13	70	82	76

Dissolved oxygen concentrations measured at Bagaduce River Estuary sites ranged from 6.5 milligrams/liter to 9.8 mg/l. The freshwater sites ranged from 4.8 mg/l to 9.4 mg/l. The estuary sites did not appear to have any seasonal pattern. The lowest readings for these sites were at Lords Cove. Camp Stream had its highest values in early June and the remaining values were

fairly low. Dissolved oxygen dropped below the Class B standard of 7.0 mg/l on 5 out of 6 sampling events, ranging from 4.8 mg/l to 6.1 mg/l. Camp Stream is characterized by alternating riffles and pools, with much more slow water than active riffles in the summer time. Low water, poor circulation, and high temperatures are probably at fault for summer DO problems. Mill Brook was sampled from April through October and generally had its highest values from April to early June. It dropped below the Class B standard on 4 dates: 5/26/10 (6.8 mg/l), 713/10 (6.2 mg/l), 8/10/10 (6.9 mg/l) and 9/25/10 (6.6 mg/l). Mill Stream was sampled 3 times and dropped below the Class B standard slightly on 1 date. Winslow Stream was sampled from April through October and had its highest values in early Spring and October. Dissolved oxygen dropped below the Class B standard on 5/26/10 (6.0) and for the July to August period when values ranged from 6.3 mg/l to 6.8 mg/l.

Dissolved oxygen percent saturation ranged from 64% to 108% at the estuary sites and from 61% to 86% at the freshwater sites. Bridges Point estuary site dropped below the Class SB standard on 6 out of 8 sampling events. Lords Cove was below the Class SB standard on all five sampling events. Tills Point was slightly below Class SB standards on 2 out of 4 sampling events. All of the Youngs Island samples were below Class SB standards for the sample period that ranged from June through October. Camp Stream dropped below the Class B standard of 75% saturation on 5 out of 6 events. Mill Brook and Winslow Stream dropped slightly below the Class B standard of 75% saturation on 4 events at each site.

It is surprising that the estuary sites had values below the Class SB standard for all sites. One reason may be due to sampling approach. One or two of the sites are sampled from the shoreline instead of from a boat. Also all of the sampling in 2010 in the estuary was done with LaMotte kits with samples collected by reaching down in the water. One concern was whether the monitors were able to get obtain a well-mixed sample. For the freshwater sites, Camp Stream had the lowest values and the other sites had a few values slightly below standards. Dissolved oxygen at these sites may in large part be influenced by natural conditions including beaver activity, wetlands, ponds, and flow conditions. Dissolved oxygen is strongly influenced by flow conditions and the large mud flats of Northern Bay (such as at Bridges Point). During high flow conditions, more oxygen is added to the river from the atmosphere, as the water is moving faster and there is more opportunity for mixing. If summer flows are higher or lower than normal, then this will affect the dissolved oxygen.

Water Temperature

Temperature was measured 5-12 times at each of the four estuary sites and 3-13 times at each of the four freshwater sampling sites. Monitoring occurred from April through October. 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. Table 4 provides a summary of temperature values for each site including minimum, maximum and average values.

Table 4: Temperature (˚ Celsius) Summary

Site	Approved Site	# of Samples	Minimum Value	Maximum Value	Average Value
Bridges Point	N	11	6	21	14
Lords Cove	N	5	15	18	16.5
Tills Point	N	5	12	20	15
Youngs Island	N	7	12	20	16
Camp Stream	N	6	17	26	22
Mill Brook-Site #3	N	13	10	23.5	18
Mill Stream	N	3	20	22	21
Winslow Stream-Site #2	N	13	10	25	18

Temperature measured at the estuary sites ranged from 6 to 21˚C (Celsius). At Bridges Point, temperature ranged from 6 to 21˚C with the highest temperatures occurring from July to mid-August (19-21˚). Again the vast mudflats of Northern Bay influence summer water quality (high temperatures) at Bridges Point. At Lords Cove, temperature was measured from late July to October and ranged from 15 to 17.5˚C. At Tills Point, temperature was measured from June through October and ranged from 12 to 20˚C. Youngs Island site was very similar with temperatures measured from June through October and ranged from 12 to 20˚C.

Temperature measured at the freshwater sites from ranged from 10˚ to 26˚C. Camp Stream had high temperatures which ranged from 17 to 26˚C for the period from early June to early September. All but the early June value were 20˚C or higher. At Mill Brook, temperature ranged from 10 to 23.5˚C for the period from April to late October. The highest temperatures occurred from late June to late August with temperatures in this period ranging from 20 to 24˚C. At Mill Stream, temperature was 20 to 22˚C from late June to early September. Winslow Stream temperatures ranged from 10 to 26˚C for the period of April through October. The highest temperatures were in July and August (21-26˚C). Temperatures were high at these sites during the summer months. This is likely in large part due to natural conditions and where temperature is measured. These factors include lack of canopy cover at the sample site, shallowness, and upstream pond or wetland.

Specific Conductance

Specific conductance was measured 6 to 11 times at three of the freshwater sampling sites. Monitoring occurred from May through October. 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. Table 5 provides a summary of specific conductance values for each site including minimum, maximum and average values.

Table 5: Specific Conductance (micro-ohms/centimeter) Summary

Site	Approved Site	# of Samples	Minimum Value	Maximum Value	Average Value
Bridges Point	N				NA-Estuary
Lords Cove	N				NA-Estuary
Tills Point	N				NA-Estuary
Youngs Island	N				NA-Estuary
Camp Stream	N	6	25	50	40
Mill Brook-Site #3	N	10	23	30	24
Mill Stream	N				
Winslow Stream-Site #2	N	11	28	45	37

All of the specific conductivity values were fairly consistent and ranged from 25 to 50 us/cm for the three freshwater sites. These values are all considered low and are likely due to fact that these watersheds are not highly developed.

pH

River pH was measured 5 to 11 times at the estuary sites and ranged from 6.9 to 8.0. Tributary stream pH was measured 3 to 13 times at the freshwater sites and ranged from 5.2 to 7.1. Camp Stream had one low value of 5.2 (6/8/10). The rest of the values ranged from 6.1 to 6.7 from June through September. The other freshwater sites were all similar with values ranging from 6.4 to 7.1 from April to October. Table 6 provides a summary of pH values for each site including minimum, maximum and average values.

Table 6: pH Summary

Site	Approved Site	# of Samples	Minimum Value	Maximum Value	Average Value
Bridges Point	N	11	7.4	8.0	7.7
Lords Cove	N	5	6.9	7.7	7.4
Tills Point	N	5	7.5	8.0	7.7
Youngs Island	N	7	7.4	7.6	7.6
Camp Stream	N	6	5.2	6.7	6.2
Mill Brook-Site #3	N	13	6.4	7.1	6.6
Mill Stream	N	3	6.5	7.1	6.6
Winslow Stream-Site #2	N	13	6.3	6.9	6.7

The high pH of the estuary sites indicates a strong seawater influence (around pH 8), while low pH values (around pH 7) indicate a freshwater influence. Freshwater streams in this part of Maine typically range from around 6 in the spring to around 7 in the summer, so our reported values are mostly in the normal range. Camp Stream is the exception, and the low values reflect the coffee-colored water and boggy conditions of this watershed.

Turbidity

Turbidity/transparency was measured 5 to 11 times at the estuary sites. With the exception of 1 sample at Bridges Point, all the other samples exceeded the maximum value that can be recorded using the 120 cm turbidity tubes, meaning they were not turbid. Turbidity was measured 3 to 13 times at the freshwater sites. With the exception of Camp Stream, the rest of these sites all exceeded 120 cm. Camp Stream had 3 out of 6 samples that were below 120 cm (these 3 values ranged from 81-115 cm and indicate some turbidity). These occurred throughout the sampling season and were all taken during high baseflow conditions. Table 7 provides a summary of turbidity values for each site including minimum, maximum and average values.

Table 7: Turbidity (cm) Summary

Site	Approved Site	# of Samples	Minimum Value	Maximum Value	Average Value
Bridges Point	N	11	120	>120	
Lords Cove	N	5	>120	>120	>120
Tills Point	N	6	>120	>120	>120
Youngs Island	N	7	>120	>120	>120
Camp Stream	N	6	81	>120	
Mill Brook-Site #3	N	13	>120	>120	>120
Mill Stream	N	3	>120	>120	>120
Winslow Stream-Site #2	N	13	>120	>120	>120

Visibility was mostly good in both estuarine and freshwater samples. Some turbidity is reported, but was short term and related to strong storm runoff events.

Discussion and Recommendations

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

- Nonpoint source pollution (e.g., eroded soil, fertilizers, pesticides, sewage systems, heavy metals, petroleum residues, road salt, wildlife and pet feces) and polluted stormwater originating from impervious surfaces (e.g., streets, parking lots, driveways, rooftops) (even though development and roads are fairly sparse in the watershed), 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 is characteristic of many wetlands).

The following are recommendations for future monitoring:

- Monitoring should include some early morning (before 8:00 am) sampling to 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 to early September when temperatures are warmest and dissolved oxygen tends to be at the lowest levels.
- Focus monitoring on dissolved oxygen and temperature which appear to be the parameters of primary concern.
- pH monitoring was dropped in 2011. Conductivity and turbidity also do not appear to be problems during the field season. The exception to this is turbidity in Camp Stream. The lower turbidity values here may indicate watershed disturbance, which might warrant further investigation. Also, high conductivity due to road salt has been reported elsewhere in Maine. The highest values typically occur during the first thaw events in late winter and early summer (February to April). The BWA may want to begin their monitoring program in the small wadeable streams in February to evaluate road salt impacts. Volunteers need to be careful, since this can be a dangerous time of year due to ice and high flows. Samples should not be taken if the situation is thought to be dangerous.
- Continue monitoring at all stations to develop a long term trend database.

Appendix A-1. 2010 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" = normal environmental sample ; "D" = field duplicate; "D.O." = dissolved oxygen; "Spec. Cond" = specific conductance; "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)	pH	Salinity(PPTH)	Turbidity(NTU)
Bagaduce River & Estuary - Bagaduce Watershed Association (Non-Approved Sites)													
BRIDGES POINT	BAGADUCE RIVER - NBG - BWA	4/23/2010	10:20 AM	N			10				8		>120
BRIDGES POINT	BAGADUCE RIVER - NBG - BWA	5/12/2010	9:30 AM	N			10				7.4		>120
BRIDGES POINT	BAGADUCE RIVER - NBG - BWA	5/26/2010	8:55 AM	N			15				7.6		>120
BRIDGES POINT	BAGADUCE RIVER - NBG - BWA	6/7/2010	9:50 AM	N			6	72.3	9		7.8		>120
BRIDGES POINT	BAGADUCE RIVER - NBG - BWA	6/24/2010	10:45 AM	N			15	79.3	8		7.6		>120
BRIDGES POINT	BAGADUCE RIVER - NBG - BWA	7/13/2010	1:30 PM	N			20	88	8		7.8		>120
BRIDGES POINT	BAGADUCE RIVER - NBG - BWA	7/31/2010	2:05 PM	N			21	87.5	7.8		7.8		>120
BRIDGES POINT	BAGADUCE RIVER - NBG - BWA	8/10/2010	10:45 AM	N			19	81.9	7.6		7.8		>120
BRIDGES POINT	BAGADUCE RIVER - NBG - BWA	8/24/2010	10:05 AM	N			16	77	7.6		7.6		>120
BRIDGES POINT	BAGADUCE RIVER - NBG - BWA	9/19/2010	9:40 AM	N			14	75.7	7.8		7.6		120
BRIDGES POINT	BAGADUCE RIVER - NBG - BWA	9/19/2010	9:40 AM	D			14		7.5		7.7		>120
BRIDGES POINT	BAGADUCE RIVER - NBG - BWA	10/21/2010	9:40 AM	N			10	76.2	8.6		7.6		>120
LORDS COVE	BAGADUCE RIVER - NBG - BWA2	7/30/2010	1:30 PM	N			16	81	8		7.7		>120
LORDS COVE	BAGADUCE RIVER - NBG - BWA2	8/16/2010	2:20 PM	N			17.5	73.2	7		7.6		>120
LORDS COVE	BAGADUCE RIVER - NBG - BWA2	9/2/2010	10:00 AM	N			18	68.7	6.5		7.5		>120
LORDS COVE	BAGADUCE RIVER - NBG - BWA2	9/17/2010		N			16	70.9	7		7.1		>120
LORDS COVE	BAGADUCE RIVER - NBG - BWA2	10/5/2010	1:30 PM	N			15	64.5	6.5		6.9		>120
TILLS POINT	BAGADUCE RIVER - NBG132 - BWA	6/9/2010	9:33 AM	N			14	82.5	8.5		7.7		>120
TILLS POINT	BAGADUCE RIVER - NBG132 - BWA	7/14/2010	3:20 PM	N					8.6				>120
TILLS POINT	BAGADUCE RIVER - NBG132 - BWA	9/5/2010	10:30 AM	N			20	107.8	9.8		7.9		>120
TILLS POINT	BAGADUCE RIVER - NBG132 - BWA	9/21/2010	10:35 AM	N			15	81.3	8.2		8		>120
TILLS POINT	BAGADUCE RIVER - NBG132 - BWA	10/3/2010	7:50 AM	N			16				7.6		>120
TILLS POINT	BAGADUCE RIVER - NBG132 - BWA	10/19/2010	9:40 AM	N			12				7.5		>120
YOUNGS ISLAND	BAGADUCE RIVER - NBG133 - BWA	6/9/2010	9:33 AM	N			14	75.7	7.8		7.6		>120
YOUNGS ISLAND	BAGADUCE RIVER - NBG133 - BWA	6/30/2010	8:20 AM	N			17	78.6	7.6		7.6		>120
YOUNGS ISLAND	BAGADUCE RIVER - NBG133 - BWA	8/1/2010	10:30 AM	N			20	79.2	7.2		7.6		>120
YOUNGS ISLAND	BAGADUCE RIVER - NBG133 - BWA	8/22/2010	1:45 PM	N			19	75.5	7		7.6		>120
YOUNGS ISLAND	BAGADUCE RIVER - NBG133 - BWA	9/14/2010	1:45 PM	N			17	77	7.5		7.6		>120
YOUNGS ISLAND	BAGADUCE RIVER - NBG133 - BWA	10/5/2010	4:00 PM	N			16	79	7.8		7.4		>120
YOUNGS ISLAND	BAGADUCE RIVER - NBG133 - BWA	10/26/2010	2:00 PM	N			12	79.8	8.6		7.6		>120
CAMP STREAM	CAMP STREAM - NBGCS08 - BWA	6/8/2010	2:30 PM	N			17	77.6	7.5	24.7	5.2		>120
CAMP STREAM	CAMP STREAM - NBGCS08 - BWA	6/8/2010	2:30 PM	D					7.4				
CAMP STREAM	CAMP STREAM - NBGCS08 - BWA	6/30/2010	1:45 PM	N			20	67	6.1	30.9	6.3		82

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)	pH	Salinity(PPTH)	Turbidity(NTU)
CAMP STREAM	CAMP STREAM - NBGCS08 - BWA	6/30/2010	1:45 PM	D					6				
CAMP STREAM	CAMP STREAM - NBGCS08 - BWA	7/24/2010	11:00 AM	N			24	57	4.8	46.6	6.1		>120
CAMP STREAM	CAMP STREAM - NBGCS08 - BWA	7/31/2010	2:15 PM	N			23	60.6	5.2	43.6	6.7		81
CAMP STREAM	CAMP STREAM - NBGCS08 - BWA	8/11/2010	3:10 PM	N			26.4	67	5.4	45	6.6		>120
CAMP STREAM	CAMP STREAM - NBGCS08 - BWA	9/3/2010	4:00 PM	N			24	58	5	49.8	6.1		115
SITE #3	MILL BROOK - NBGMB07 - BWA	4/20/2010	10:00 AM	N			10	72.6	8.2		6.6		>120
SITE #3	MILL BROOK - NBGMB07 - BWA	5/12/2010	9:10 AM	N			13	79.7	8.4		6.9		>120
SITE #3	MILL BROOK - NBGMB07 - BWA	5/26/2010	8:20 AM	N			21	76.3	6.8		6.9		>120
SITE #3	MILL BROOK - NBGMB07 - BWA	6/7/2010	9:30 AM	N			17	86.9	8.4	30.3	6.4		>120
SITE #3	MILL BROOK - NBGMB07 - BWA	6/24/2010	9:10 AM	N			20	79.2	7.2	23.9	6.5		>120
SITE #3	MILL BROOK - NBGMB07 - BWA	7/13/2010	9:25 AM	N			24	73.6	6.2	25.5	6.6		>120
SITE #3	MILL BROOK - NBGMB07 - BWA	7/31/2010	9:20 AM	N			22.1	82.5	7.2	23.5	6.6		>120
SITE #3	MILL BROOK - NBGMB07 - BWA	8/10/2010	9:50 AM	N			23.5	79.7	6.9	23.8	6.4		>120
SITE #3	MILL BROOK - NBGMB07 - BWA	8/24/2010	9:20 AM	N			19.7	80.9	7.3	24	6.7		>120
SITE #3	MILL BROOK - NBGMB07 - BWA	9/10/2010	9:45 AM	N			18.1	81.5	7.7	23.9	6.6		>120
SITE #3	MILL BROOK - NBGMB07 - BWA	9/25/2010	10:10 AM	N			18.2	70	6.6	23.3	6.6		>120
SITE #3	MILL BROOK - NBGMB07 - BWA	10/11/2010	9:50 AM	N			12.3	87.8	9.4	23.4	6.4		>120
SITE #3	MILL BROOK - NBGMB07 - BWA	10/28/2010	9:20 AM	N			11.9	70	7.6	23.3	7.1		>120
MILL STREAM	MILL STREAM - NBGMS02 - BWA	6/26/2010	10:30 AM	N			21	77.4	6.9		6.5		>120
MILL STREAM	MILL STREAM - NBGMS02 - BWA	7/30/2010	11:00 AM	N			22	85.8	7.5		7.1		>120
MILL STREAM	MILL STREAM - NBGMS02 - BWA	9/5/2010	11:00 AM	N			20	78.1	7.1		6.6		>120
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	4/20/2010	10:10 AM	N			10	81.5	9.2		6.7		>120
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	5/12/2010	9:20 AM	N			12	70.5	7.6		6.9		>120
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	5/26/2010	8:35 AM	N			20.5	66.6	6	28.4	6.8		>120
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	6/7/2010	9:40 AM	N			17.2	79	7.6	28.4	6.3		>120
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	6/24/2010	9:30 AM	N			19	73.3	6.8	36.6	6.7		>120
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	7/13/2010	9:55 AM	N			26	78	6.3	39.6	6.8		>120
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	7/31/2010	9:45 AM	N			22.7	78.8	6.8	38.9	6.9		>120
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	8/10/2010	10:10 AM	N			24.9	77	6.4	39.7	6.9		>120
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	8/24/2010	9:50 AM	N			20.7	81.4	7.3	43.5	6.9		>120
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	9/10/2010	10:09 AM	N			18.7	75	7	44.9	6.8		>120
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	9/25/2010	10:30 AM	N			17.3	72.9	7	38.7	6.7		>120
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	10/11/2010	10:10 AM	N			12.1	81.8	8.8	37.1	6.6		>120
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	10/28/2010	9:40 AM	N			12.9	75.8	8	36.1	6.4		>120

Appendix A-2. 2010 observational data and quality assurance/quality control (QA/QC) notes for "approved" and "non-approved" sites.
** "N" = normal environmental sample; "D" = field duplicate; "D.O." = dissolved oxygen; "Spec. Cond" = specific conductance; "TSS" = total suspended solids
Refer to Appendix A-1 for water quality data

Organization Site Code	VRMP Site ID	Date	Time	** Sample Type Qualifier	Flow	Stage	Air Temp (DEG C)	Sample Location	Current Weather	Air Con-dition	Past 24HR Weather	Habitat	Tide Stage	Water Appearance	Comments
Bagaduce River & Estuary - Bagaduce Watershed Association (Non-Approved Sites)															
BRIDGES POINT	BAGADUCE RIVER NBG - BWA	4/23/2010	10:20 AM	`	BASE-FLOW	MEDIUM	13		CLOUDY		LIGHT RAIN			CLEAR	DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. PH OF DISTILLED WATER EQUALS 7 (SHOULD BE LOWER).
BRIDGES POINT	BAGADUCE RIVER NBG - BWA	5/12/2010	9:30 AM	N	BASE-FLOW	MEDIUM	11		CLOUDY		CLEAR			CLEAR	DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. PH OF DISTILLED WATER EQUALS 6.3 (SHOULD BE LOWER).
BRIDGES POINT	BAGADUCE RIVER NBG - BWA	5/26/2010	8:55 AM	N	BASE-FLOW	MEDIUM	25							CLEAR	DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. PH OF DISTILLED WATER EQUALS 6.8 (SHOULD BE LOWER). DID NOT RECORD WEATHER DATA.
BRIDGES POINT	BAGADUCE RIVER NBG - BWA	6/7/2010	9:50 AM	N	BASE-FLOW	MEDIUM	15	BANK	CLEAR	BREEZE	HEAVY RAIN, MOSTLY CLOUDY, SHOWERS	RUN	HIGH EBB	CLEAR	2.5 INCHES OF RAIN IN LAST 48 HOURS. DID NOT FULLY COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT COMPLETE QA/QC FOR DO KIT OR PH.
BRIDGES POINT	BAGADUCE RIVER NBG - BWA	6/24/2010	10:45 AM	N	BASE-FLOW	HIGH	17	BANK	CLOUDY, FOGGY	BREEZE	HEAVY RAIN, LIGHT RAIN, SHOWERS	RUN	HIGH FLOOD	CLEAR	1 INCH OF RAIN YESTERDAY. DID NOT FULLY COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT COMPLETE QA/QC FOR DO KIT OR PH.
BRIDGES POINT	BAGADUCE RIVER NBG - BWA	7/13/2010	1:30 PM	N	BASE-FLOW	HIGH	23	BANK	CLOUDY, FOGGY	BREEZE	FOGGY, PARTLY CLOUDY, MOSTLY CLOUDY	RUN	HIGH	CLEAR	DID NOT FULLY COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT COMPLETE QA/QC FOR DO KIT OR PH.
BRIDGES POINT	BAGADUCE RIVER NBG - BWA	7/31/2010	2:05 PM	N	BASE-FLOW	HIGH	22	BANK	CLEAR, PARTLY CLOUDY	BREEZE	CLEAR, PARTLY CLOUDY	RUN	HIGH FLOOD	CLEAR	DID NOT FULLY COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT COMPLETE QA/QC FOR DO KIT OR PH.
BRIDGES POINT	BAGADUCE RIVER NBG - BWA	8/10/2010	10:45 AM	N	BASE-FLOW	HIGH	28	BANK	CLEAR	CALM	CLEAR, FOGGY	RUN	HIGH FLOOD	OPAQUE	DID NOT FULLY COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT COMPLETE QA/QC FOR DO KIT OR PH.
BRIDGES POINT	BAGADUCE RIVER NBG - BWA	8/24/2010	10:05 AM	N	BASE-FLOW	MEDIUM	22	BANK	CLEAR	STRON	CLEAR, PARTLY CLOUDY	RUN	HIGH FLOOD	CLEAR	DID NOT FULLY COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT COMPLETE QA/QC FOR DO KIT OR PH.
BRIDGES POINT	BAGADUCE RIVER NBG - BWA	9/19/2010	9:40 AM	N	BASE-FLOW	HIGH	15.5	BANK	CLOUDY	CALM	CLEAR	RUN	HIGH	CLEAR	PH OF DISTILLED WATER = 7? DID NOT FULLY COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID SODIUM THIOSULFATE TEST (WHICH IS GOOD).
BRIDGES POINT	BAGADUCE RIVER NBG - BWA	9/19/2010	9:40 AM	D				BANK							PH OF DISTILLED WATER = 7? DID NOT FULLY COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID SODIUM THIOSULFATE TEST (WHICH IS GOOD).
BRIDGES POINT	BAGADUCE RIVER NBG - BWA	10/21/2010	9:40 AM	N			12	BANK	CLOUDY	BREEZE	CLEAR, MOSTLY CLOUDY, PARTLY CLOUDY		FLOOD		DID NOT FULLY COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT COMPLETE QA/QC FOR DO KIT OR PH. DID NOT COMPLETE OBSERVATIONAL DATA.
LORDS COVE	BAGADUCE RIVER NBG - BWA2	7/30/2010	1:30 PM	N			25		PARTLY CLOUDY	BREEZE	PARTLY CLOUDY		FLOOD		VALUES PUT ON FRONT. NO PH CALIBRATION VALUE. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. NO SAMPLE LOCATION OR DEPTH. NO OBSERVATIONAL DATA. NO DO KIT QA/QC CHECK.

Organization Site Code	VRMP Site ID	Date	Time	** Sample Type Qualifier	Flow	Stage	Air Temp (DEG C)	Sample Location	Current Weather	Air Con-dition	Past 24HR Weather	Habitat	Tide Stage	Water Appearance	Comments
LORDS COVE	BAGADUCE RIVER NBG - BWA2	8/16/2010	2:20 PM	N			28		PARTLY CLOUDY	CALM	FOGGY		FLOOD		DEBRIS IN WATER; EXCEPTIONALLY HIGH TIDE LAST WEEK. FIELD DATASHEET COMPLETED INCORRECTLY - DATA VALUES PUT ON FRONT. NO PH CALIBRATION VALUE. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. NO SAMPLE LOCATION OR DEPTH. NO OBSERVATIONAL DATA. NO DO KIT
LORDS COVE	BAGADUCE RIVER NBG - BWA2	9/2/2010	10:00 AM	N			33		PARTLY CLOUDY	CALM	CLEAR		EBB		HURRICANE APPROACHING. FIELD DATASHEET COMPLETED INCORRECTLY - DATA VALUES PUT ON FRONT. NO PH CALIBRATION VALUE. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. NO SAMPLE LOCATION OR DEPTH. NO OBSERVATIONAL DATA. NO DO KIT QA/QC CHECK. NON-WADEABLE/M
LORDS COVE	BAGADUCE RIVER NBG - BWA2	9/17/2010		N			27				CLEAR				FIELD DATASHEET COMPLETED INCORRECTLY - DATA VALUES PUT ON FRONT. NO PH CALIBRATION VALUE. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. NO SAMPLE LOCATION OR DEPTH. NO OBSERVATIONAL DATA. NO DO KIT QA/QC CHECK. NO SAMPLE TIME RECORDED.
LORDS COVE	BAGADUCE RIVER NBG - BWA2	10/5/2010	1:30 PM	N			20		CLEAR	CALM	CLEAR		LOW EBB		FIELD DATASHEET COMPLETED INCORRECTLY - DATA VALUES PUT ON FRONT. NO PH CALIBRATION VALUE. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. NO SAMPLE LOCATION OR DEPTH. NO OBSERVATIONAL DATA. NO DO KIT QA/QC CHECK. DID SODIUM THIOSULFATE TEST.
TILLS POINT	BAGADUCE RIVER NBG132 - BWA	6/9/2010	9:33 AM	N			16	BOAT	CLEAR	CALM	CLEAR		HIGH EBB	CLEAR	DATASHEET. PH OF DISTILLED WATER IS 6.5 (SHOULD BE LOWER). NO VERTICAL DEPTH RECORDED.
TILLS POINT	BAGADUCE RIVER NBG132 - BWA	7/14/2010	3:20 PM	N		HIGH	22.5	WADING	CLOUDY	CALM	HEAVY RAIN		HIGH EBB	CLEAR	DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. PH OF DISTILLED WATER IS 8.7 (SHOULD BE LOWER). NO VERTICAL DEPTH RECORDED. NO WATER TEMPERATURE RECORDED.
TILLS POINT	BAGADUCE RIVER NBG132 - BWA	9/5/2010	10:30 AM	N			68	BANK	CLEAR	BREEZE	HEAVY RAIN		EBB	CLEAR	DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO QA/QC CHECK. PH OF DISTILLED WATER 7.9 (SHOULD BE LOWER). SAMPLED FROM BANK-SURFACE.
TILLS POINT	BAGADUCE RIVER NBG132 - BWA	9/21/2010	10:35 AM	N			18.5		CLEAR	BREEZE	CLEAR		HIGH	CLEAR	DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO QA/QC CHECK. PH OF DISTILLED WATER 8.2 (?) (SHOULD BE LOWER). NO SAMPLE LOCATION RECORDED. VERTICAL DEPTH RECORDED AS SURFACE.
TILLS POINT	BAGADUCE RIVER NBG132 - BWA	10/3/2010	7:50 AM	N			12	BOAT	CLEAR	CALM	CLEAR		HIGH	CLEAR	DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO QA/QC CHECK. PH OF DISTILLED WATER 7.6 (?) (SHOULD BE LOWER). VERTICAL DEPTH RECORDED AS 'SURFACE'. DO RECORDED AS 4.0 WITH A ?, SO NOT INCLUDED IN PRE-EDD.
TILLS POINT	BAGADUCE RIVER NBG132 - BWA	10/19/2010	9:40 AM	N			10	BOAT		CALM	CLEAR		HIGH	CLEAR	DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO QA/QC CHECK. PH OF DISTILLED WATER 7.6 (?) (SHOULD BE LOWER). VERTICAL DEPTH RECORDED AS 'SURFACE'.
YOUNGS ISLAND	BAGADUCE RIVER NBG133 - BWA	6/9/2010	9:33 AM	N			16	BOAT	CLEAR	CALM	CLEAR		HIGH EBB	CLEAR	VERTICAL DEPTH SAMPLED AT 1.5 FEET BELOW SURFACE.
YOUNGS ISLAND	BAGADUCE RIVER NBG133 - BWA	6/30/2010	8:20 AM	N			17	BOAT	CLEAR	BREEZE	LIGHT RAIN, FOGGY		LOW EBB	CLEAR	VERTICAL DEPTH SAMPLED AT 1.5 FEET BELOW SURFACE.

Organization Site Code	VRMP Site ID	Date	Time	** Sample Type Qualifier	Flow	Stage	Air Temp (DEG C)	Sample Location	Current Weather	Air Condition	Past 24HR Weather	Habitat	Tide Stage	Water Appearance	Comments
YOUNGS ISLAND	BAGADUCE RIVER NBG133 - BWA	8/1/2010	10:30 AM	N			25	BOAT	CLEAR	CALM	CLEAR		LOW EBB	CLEAR	VERTICAL DEPTH SAMPLED AT 1.5 FEET BELOW SURFACE. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. LOTS OF EEL GRASS VISIBLE IN SHALLOWS AT LOW TIDE. NON-WADEABLE/3 FT BELOW SURFACE
YOUNGS ISLAND	BAGADUCE RIVER NBG133 - BWA	8/22/2010	1:45 PM	N			19	BOAT	CLOUDY, SHOWERS	CALM	CLEAR, MOSTLY CLOUDY		LOW EBB	CLEAR	VERTICAL DEPTH SAMPLED AT 1.5 FEET BELOW SURFACE. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET.
YOUNGS ISLAND	BAGADUCE RIVER NBG133 - BWA	9/14/2010	1:45 PM	N			23	BOAT	SHOWERS, CLOUDY	CALM	MOSTLY CLOUDY, SHOWERS		FLOOD	CLEAR	VERTICAL DEPTH SAMPLED AT 1.5 FEET BELOW SURFACE (?). DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET.
YOUNGS ISLAND	BAGADUCE RIVER NBG133 - BWA	10/5/2010	4:00 PM	N			18	BOAT	CLEAR	CALM	CLEAR		LOW	CLEAR	VERTICAL DEPTH SAMPLED AT 1.5 FEET BELOW SURFACE (?). DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET.
YOUNGS ISLAND	BAGADUCE RIVER NBG133 - BWA	10/26/2010	2:00 PM	N			16	BOAT	CLOUDY	CALM	MOSTLY CLOUDY		HIGH	CLEAR	VERTICAL DEPTH SAMPLED AT 1.5 FEET BELOW SURFACE (?). DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET.
CAMP STREAM	CAMP STREAM - NBGCS08 - BWA	6/8/2010	2:30 PM	N	STORM FLOW	HIGH	22	BANK	PARTLY CLOUDY	CALM	LIGHT RAIN	RUN		MEDIUM	LEVEL HIGH. DID SODIUM THIOSULFATE TEST. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD PH CALIBRATION VALUE. SAMPLE IS FROM BANK, NOT CENTER OF
CAMP STREAM	CAMP STREAM - NBGCS08 - BWA	6/8/2010	2:30 PM	D				BANK							LEVEL HIGH. DID SODIUM THIOSULFATE TEST. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD PH CALIBRATION VALUE. SAMPLE IS FROM BANK, NOT CENTER OF FLOW. WADEABLE/1.5 FT BELOW SURFACE
CAMP STREAM	CAMP STREAM - NBGCS08 - BWA	6/30/2010	1:45 PM	N	BASE-FLOW	HIGH	21.5	BANK	PARTLY CLOUDY	CALM	CLEAR	RUN		DARKLY	HEAVY RAIN W/I LAST 48 HOURS. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD PH CALIBRATION VALUE. SAMPLE IS FROM BANK, NOT CENTER OF FLOW. WADEABLE/1.5 FT BELOW SURFACE
CAMP STREAM	CAMP STREAM - NBGCS08 - BWA	6/30/2010	1:45 PM	D				BANK							HEAVY RAIN W/I LAST 48 HOURS. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD PH CALIBRATION VALUE. SAMPLE IS FROM BANK, NOT CENTER OF FLOW. WADEABLE/1.5 FT BELOW SURFACE
CAMP STREAM	CAMP STREAM - NBGCS08 - BWA	7/24/2010	11:00 AM	N			20	BANK	CLOUDY	CALM	CLEAR, PARTLY CLOUDY, LIGHT RAIN				DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD PH CALIBRATION VALUE. SAMPLE IS FROM BANK, NOT CENTER OF FLOW. NO OBSERVATIONAL DATA. WADEABLE/1.5 FT
CAMP STREAM	CAMP STREAM - NBGCS08 - BWA	7/31/2010	2:15 PM	N	BASE-FLOW	HIGH	22	BANK	CLEAR	CALM	CLEAR	RUN		DARKLY	BEAVER ACTIVITY, STREAM DAMMED, PARTIALLY REMOVED TO ALLOW FLOW. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD PH CALIBRATION VALUE. SAMPLE IS FROM BANK, NOT CENTER OF FLOW. ELECTRONIC DATASHEET DATED 9/30/10, BUT HARDCOPY DATED 7/31/1
CAMP STREAM	CAMP STREAM - NBGCS08 - BWA	8/11/2010	3:10 PM	N	BASEFLOW	HIGH	26.5	BANK	CLOUDY	CALM	HEAVY RAIN, PARTLY CLOUDY	RUN		MEDIUM	BEAVER ACTIVITY CONTINUES, REMOVED PART OF DAM, LITTLE FLOW, HEAVY RAIN THE NIGHT BEFORE. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD PH CALIBRATION VALUE. SAMPLE IS FROM BANK, NOT CENTER OF FLOW. WADEABLE/1.5 FT BELOW SURFACE

Organization Site Code	VRMP Site ID	Date	Time	** Sample Type Qualifier	Flow	Stage	Air Temp (DEG C)	Sample Location	Current Weather	Air Con-dition	Past 24HR Weather	Habitat	Tide Stage	Water Appearance	Comments
CAMP STREAM	CAMP STREAM - NBGCS08 - BWA	9/3/2010	4:00 PM	N	BASE-FLOW	HIGH	25	BANK	PARTLY CLOUDY	CALM	MOSTLY CLOUDY			MEDIUM	NO FLOW BEAVER BLOCK UP, GAS ON WATER IN SPOTS. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD PH CALIBRATION VALUE. SAMPLE IS FROM BANK, NOT CENTER OF FLOW. WADEABLE/1.5 FT BELOW SURFACE
SITE #3	MILL BROOK - NBGMB07 - BWA	4/20/2010	10:00 AM	N		LOW	13		CLEAR		LIGHT RAIN				WOODEN STAKE : NO FINDING ALEWIVES UPSTREAM FROM THIS POINT. WATER LEVEL LOW FOR THIS TIME OF YEAR. DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO KIT QA/QC CHECK. NO SAMPLE LOCATION OR SAMPLE DEPTH RECOR
SITE #3	MILL BROOK - NBGMB07 - BWA	5/12/2010	9:10 AM	N	BASE-FLOW		11		PARTLY CLOUDY		PARTLY CLOUDY				DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO KIT QA/QC CHECK. NO SAMPLE LOCATION OR SAMPLE DEPTH RECORDED. NO OBSERVATIONAL DATA. PH OF DISTILLED WATER = 6.3 (SHOULD BE LOWER).
SITE #3	MILL BROOK - NBGMB07 - BWA	5/26/2010	8:20 AM	N		LOW	24		CLEAR		CLEAR				TRACE RAIN OVERNIGHT. GOOD FLOW, LOW LEVEL.DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO KIT QA/QC CHECK. NO SAMPLE LOCATION OR SAMPLE DEPTH RECORDED. NO OBSERVATIONAL DATA. PH OF DISTILLED WATER = 6.8 (
SITE #3	MILL BROOK - NBGMB07 - BWA	6/7/2010	9:30 AM	N	STORM FLOW	HIGH	18		CLEAR		HEAVY RAIN				2.5 INCHES RAIN PAST 48 HOURS. CONDUCTANCE MEASURED NEAR SALT STORAGE AREA WAS 135.9. DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO KIT QA/QC CHECK. NO SAMPLE LOCATION OR SAMPLE DEPTH RECORDED. NO OBSERV
SITE #3	MILL BROOK - NBGMB07 - BWA	6/24/2010	9:10 AM	N		LOW	17		OVER-CAST		OVERCAST				CONDUCTANCE AT ATV BRIDGE 32.1, AT RT 175 BRIDGE 116.6. ONE INCH OF RAIN OVER PAST 48 HOURS.DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO KIT QA/QC CHECK. NO SAMPLE LOCATION OR SAMPLE DEPTH RECORDED. NO
SITE #3	MILL BROOK - NBGMB07 - BWA	7/13/2010	9:25 AM	N	BASEFLOW	LOW	22		OVER-CAST, FOGGY		OVERCAST, FOGGY				LITTER, BEERCAN, CONDUCTANCE ATV BRIDGE= 35.6, RT 175 BRIDGE 416. OVER PAST 48 HOURS, 0.5 INCHES OF RAIN. DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO KIT QA/QC CHECK. NO SAMPLE LOCATION OR SAMPLE DEPTH R
SITE #3	MILL BROOK - NBGMB07 - BWA	7/31/2010	9:20 AM	N	BASEFLOW	LOW	22		CLEAR		CLEAR				VERY HOT LAST TWO WEEKS, VERY LOW WATER LEVEL, FLOW MOVING 8"/SECOND, 20 FT FROM SAND AREA: CONDUCTANCE 36.9, BELOW SAND AREA: 152.5. DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO KIT QA/QC CHECK. NO SAMP

Organization Site Code	VRMP Site ID	Date	Time	** Sample Type Qualifier	Flow	Stage	Air Temp (DEG C)	Sample Location	Current Weather	Air Con-dition	Past 24HR Weather	Habitat	Tide Stage	Water Appearance	Comments
SITE #3	MILL BROOK - NBGMB07 - BWA	8/10/2010	9:50 AM	N	BASE-FLOW	LOW	27		CLEAR		CLEAR				TRACE AMOUNT OF RAIN OVER LAST 48 HRS. LOW WATER AND FLOW, 6"/SECOND, CONDUCTANCE ABOVE GRAVEL SITE: 43.3, BELOW GRAVEL SITE 326. DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO KIT QA/QC CHECK. NO SAMPLE
SITE #3	MILL BROOK - NBGMB07 - BWA	8/24/2010	9:20 AM	N	BASE-FLOW	LOW	19		CLEAR		CLEAR				0 INCHES OF RAIN OVER LAST 48 HOURS, VERY LOW WATER LEVEL, FLOW IS A TRICKLE, CONDUCTANCE AT ATV BRIDGE 57.2, AT SAND/SALT PILE 220. DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO KIT QA/QC CHECK. NO SAMPL
SITE #3	MILL BROOK - NBGMB07 - BWA	9/10/2010	9:45 AM	N	BASE-FLOW	MEDIUM	14		OVER-CAST		OVERCAST				0.25 INCHES RAIN OVER LAST 48 HOURS. BETTER FLOW, HIGHER WATER LEVEL THAN 2 WEEKS AGO, 2.5 INCHES RAIN 4 DAYS AGO, CONDUCTANCE AT ATV BRIDGE 37.8, AT SALT/SAND PILE 338, MORE BRANCHES AND DEAD WOOD DEBRIS.DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAI
SITE #3	MILL BROOK - NBGMB07 - BWA	9/25/2010	10:10 AM	N	BASE-FLOW	MEDIUM	20		OVER-CAST		OVERCAST				0.25 INCHES RAIN OVER LAST 48 HOURS. CONDUCTANCE AT ATV BRIDGE 36.6, AT SAND AND SALT PILE 156.1. DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO KIT QA/QC CHECK. NO SAMPLE LOCATION OR SAMPLE DEPTH RECORDE
SITE #3	MILL BROOK - NBGMB07 - BWA	10/11/2010	9:50 AM	N	BASE-FLOW	MEDIUM	11.5		CLEAR		CLEAR				TRACE RAIN IN LAST 48 HOURS. CONDUCTANCE AT ATV BRIDGE 30.4, AT SAND AND SALT PILE 115.7, FALLEN LEAVES. DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO KIT QA/QC CHECK. NO SAMPLE LOCATION OR SAMPLE DEPTH
SITE #3	MILL BROOK - NBGMB07 - BWA	10/28/2010	9:20 AM	N	STORM FLOW	HIGH	13		FOGGY		FOGGY				CONDUCTANCE AT ATV BRIDGE 28.7, AT SAND AND SALT PILE 92.6, HIGH WATER AND FLOW, LOOKED LIKE SPRING, 2.3" RAIN PAST 48 HOURS. DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO KIT QA/QC CHECK. NO SAMPLE LOCAT
MILL STREAM	MILL STREAM - NBGMS02 - BWA	6/26/2010	10:30 AM	N	BASE-FLOW	MEDIUM	21	BANK	PARTLY CLOUDY	CALM	CLEAR	CASCADE		CLEAR	SAMPLE TAKEN FROM BANK. TURBIDITY RECORDED AS 120CM (MAY BE >120?). SODIUM THIOSULFATE TEST DONE. NON-WADEABLE/MID-DEPTH
MILL STREAM	MILL STREAM - NBGMS02 - BWA	7/30/2010	11:00 AM	N	BASE-FLOW	LOW	21	BANK	CLEAR	BREEZE	CLEAR	RUN		CLEAR	SAMPLE TAKEN FROM BANK. TURBIDITY RECORDED AS 120CM (MAY BE >120?). SODIUM THIOSULFATE TEST DONE. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. NON-WADEABLE/MID-DEPTH
MILL STREAM	MILL STREAM - NBGMS02 - BWA	9/5/2010	11:00 AM	N	STORM FLOW	HIGH	20.5	BANK	CLEAR	BREEZE	CLEAR, PARTLY CLOUDY, HEAVY RAIN	RUN		CLEAR	EXCEPTIONALLY HIGH FLOW DUE TO 2" RAINFALL ON 9/4, REMNANTS OF HURRICANE EARL. SAMPLE TAKEN FROM BANK. TURBIDITY RECORDED AS 120CM (MAY BE >120?). SODIUM THIOSULFATE TEST DONE. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. NON-WADEABLE/MID-DEPTH
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	4/20/2010	10:10 AM	N	BASE-FLOW	LOW	14		CLEAR		MOSTLY CLOUDY				LOW WATER LEVEL FOR APRIL DID NOT USE VRMP DATASHEET. PH IS 6.0 FOR PH CHECK. NO INDICATION OF SAMPLE DEPTH OR APPROACH. PARTIAL OBSERVATIONAL DATA. NO CHAIN OF CUSTODY FOR DATA.

Organization Site Code	VRMP Site ID	Date	Time	** Sample Type Qualifier	Flow	Stage	Air Temp (DEG C)	Sample Location	Current Weather	Air Con-dition	Past 24HR Weather	Habitat	Tide Stage	Water Appearance	Comments
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	5/12/2010	9:20 AM	N	BASE-FLOW	MEDIUM	11		PARTLY CLOUDY		PARTLY CLOUDY				PH IS 6.3 FOR PH CHECK. NO INDICATION OF SAMPLE DEPTH OR APPROACH. DID NOT USE VRMP DATASHEET. NO CHAIN OF CUSTODY. NO OBSERVATIONAL DATA.
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	5/26/2010	8:35 AM	N	BASE-FLOW	LOW	25		CLEAR		CLEAR				TRACE RAIN OVER LAST 2 DAYS. DID NOT USE VRMP DATA FORM. PH 6.8 IN DISTILLED WATER FOR PH CHECK. NO INDICATION OF DEPTH OF SAMPLE AND APPROACH. NO CHAIN OF CUSTODY FOR DATASHEET. INCOMPLETE OBSERVATIONAL DATA.
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	6/7/2010	9:40 AM	N	STORM FLOW	HIGH	18		CLEAR		HEAVY RAIN				RAINFALL 2.5 OVER PAST 48 HOURS. PH IS 6.2 IN DISTILLED WATER FOR CHECK. DID NOT USE VRMP DATASHEET. NO INDICATION OF SAMPLE DEPTH AND APPROACH. PARTIAL OBSERVATIONAL DATA. NO CHAIN OF CUSTODY FOR DATA.
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	6/24/2010	9:30 AM	N	STORM FLOW	LOW	18		OVER-CAST		OVERCAST				1 INCH RAIN IN PAST 24 HOURS, PH IS 6.6 FOR PH CHECK. NO INDICATION OF SAMPLE DEPTH OR APPROACH. DID NOT USE VRMP DATASHEET. NO CHAIN OF CUSTODY. NO OBSERVATIONAL DATA.
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	7/13/2010	9:55 AM	N	BASE-FLOW	LOW	26		OVER-CAST, FOGGY		OVERCAST				GOOD FLOW. DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO KIT QA/QC CHECK.
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	7/31/2010	9:45 AM	N	BASE-FLOW	LOW	23		CLEAR		CLEAR				HOT LAST TWO WEEKS, 0" OF RAIN LAST 48 HRS, LOW WATER LEVEL BUT GOOD FLOW. DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO KIT QA/QC CHECK. NO SAMPLE LOCATION OR SAMPLE DEPTH RECORDED. NO OBSERVATIONAL DAT
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	8/10/2010	10:10 AM	N	BASE-FLOW	LOW	28		CLEAR		CLEAR				TRACE AMOUNT OF RAIN LAST 48 HOURS, LOW WATER AND FLOW = 6"/SECOND. DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO KIT QA/QC CHECK. NO SAMPLE LOCATION OR SAMPLE DEPTH RECORDED. NO OBSERVATIONAL DATA.
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	8/24/2010	9:50 AM	N	BASE-FLOW	LOW	20		CLEAR		CLEAR				0" OF RAIN LAST 48 HRS, LOW WATER LEVEL, MODERATE-LOW FLOW.DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO KIT QA/QC CHECK. NO SAMPLE LOCATION OR SAMPLE DEPTH RECORDED. NO OBSERVATIONAL DATA. PH OF DISTILL
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	9/10/2010	10:09 AM	N	BASEFLOW	MEDIUM	14		OVER-CAST		OVERCAST				0.25" RAIN OVER LAST 48 HRS, 2.5" RAIN FOUR DAYS AGO, WATER FLOW AND LEVEL GREATER THAN ONE WEEK AGO. DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO KIT QA/QC CHECK. NO SAMPLE LOCATION OR SAMPLE DEPTH RECO
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	9/25/2010	10:30 AM	N	BASE-FLOW	MEDIUM	20		OVER-CAST		OVERCAST				0.25" RAIN OVER LAST 48 HOURS. DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO KIT QA/QC CHECK. NO SAMPLE LOCATION OR SAMPLE DEPTH RECORDED. NO OBSERVATIONAL DATA. PH OF DISTILLED WATER IS 6.4 (SHOULD BE

Organization Site Code	VRMP Site ID	Date	Time	** Sample Type Qualifier	Flow	Stage	Air Temp (DEG C)	Sample Location	Current Weather	Air Con-dition	Past 24HR Weather	Habitat	Tide Stage	Water Appearance	Comments
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	10/11/2010	10:10 AM	N	BASE-FLOW	MEDIUM	12		CLEAR		CLEAR				TRACE AMOUNT OF RAIN LAST 48 HOURS. FALLEN LEAVES. DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO KIT QA/QC CHECK. NO SAMPLE LOCATION OR SAMPLE DEPTH RECORDED. NO OBSERVATIONAL DATA. PH OF DISTILLED WAT
SITE #2	WINSLOW STREAM - NBGWS32 - BWA	10/28/2010	9:40 AM	N	STORM FLOW	HIGH	13		FOGGY		FOGGY				HIGH WATER LIKE SPRING, 2.3 INCHES LAST 48 HRS. DID NOT USE VRMP DATASHEET. DID NOT COMPLETE CHAIN OF CUSTODY FOR DATASHEET. DID NOT RECORD DO KIT QA/QC CHECK. NO SAMPLE LOCATION OR SAMPLE DEPTH RECORDED. NO OBSERVATIONAL DATA. PH OF DISTILLED WATER I