

Section 5-7 Rockport Harbor & Tributaries (Rockport Conservation Commission)

Rockport Harbor & Tributaries

Rockport Harbor is located in Knox County on the mid-coast of Maine in the Penobscot Bay region. The watershed, which has a total area of approximately 10 mi² (25.9 km²) has three sub-watersheds: Goose River, coastal and Lilly Pond. The Goose River, which drains the largest sub-watershed (6.6 mi² or 22.3 km²), arises as the outflow of Hosmer Pond near the base of Bald and Ragged Mountains in Camden, and flows 4.4 miles (7.1 km) southeast to Rockport Harbor. Other smaller streams draining to Rockport Harbor are Harkness Brook and Ott Brook, both of which drain the small coastal subwatershed located along the harbor's western shore, and the unnamed stream draining from Lilly Pond (referred to as Lilly Pond Stream). While relatively small, the Lilly Pond subwatershed contains the Midcoast Solid Waste Corporation facility and grazing pastures associated with the Maine Coast Heritage Trust's Aldermere Farm. A small seasonal stream also drains to the harbor from an upland area to the east. Land uses throughout these subwatersheds include recreation (e.g. golf courses, ski slopes and associated facilities), residential development, light industry, second-growth forest and pasture (Town of Rockport Comprehensive Plan, 2004).

The issuance of public health advisories at Goodies Beach near the head of Rockport Harbor based on bacterial monitoring by Maine Healthy Beaches (MHB) in 2009-2011 prompted efforts by the Rockport Conservation Commission (RCC) to identify potential pollution sources. Results to date were documented in a RCC report (Kennedy 2011). While bacterial levels in Goose River, Ott Brook, Harkness Brook and Lilly Pond stream often exceeded the saltwater criterion for *Enterococcus*, data were insufficient to identify specific upstream sources. However, storm drainage from residential and wetland areas to the west of the harbor clearly had adverse impacts on Goodies Beach. Based on these latter results, the Town of Rockport initiated a house-by-house inspection of plumbing and sewer connections as a means to identify possible sources. The inspection did not identify any sewer problems. However, nonpoint source pollution likely contributes to high bacteria and nutrient levels in storm water discharges. The Town of Rockport posts health advisories based on antecedent precipitation.

Recognizing that Rockport Harbor has significant aesthetic value and is an important natural resource for the Town of Rockport and the surrounding area, the RCC pursued an investigative program designed to better understand factors affecting water and environmental quality. This expanded RCC's initial efforts from the identification and resolution of bacteria-related impairments at Goodies Beach to include eutrophication-related issues in the harbor. Nutrient sampling conducted by RCC indicate that nutrients and particular nitrogen from the Goose River affect water quality and clarity in the harbor.

Rockport Conservation Commission received a Coastal Community Grant from the Maine Department of Agriculture, Conservation and Forestry (MDACF)-Municipal Planning Assistance Program. The grant was used to evaluate nonpoint source pollution using a modeling approach. "A Watershed Approach to Managing Land Use Impacts to Coastal Waters-Final Report" was submitted to MDACF in December 2016.

Monitoring History

- The Maine Biological Monitoring Program monitored the Goose River in 2002. The data is available on DEP's website.
- With assistance from DEP's Marine Unit, Rockport Conservation Commission (RCC) began monitoring Rockport Harbor in 2012. In 2013, RCC joined the Volunteer River Monitoring Program (VRMP) with the purpose of monitoring Rockport Harbor, Goose River and other minor streams draining to the harbor.
- Maine Healthy Beaches has been monitoring bacterial levels at Goodies Beach since 2009 and issues advisories as required.
- The current RCC program has the following goals and objectives:
 - 1) Assess bacterial inputs to Rockport Harbor from the watershed
 - 2) Establish baseline water quality and trophic condition information for Rockport Harbor
 - 3) Assess nutrient inputs to Rockport Harbor from selected freshwater inflows
 - 4) Assess the potential influence of inflow mixing on water quality responses in Rockport Harbor.

Methods and Sampling Sites

Rockport Conservation Commission monitors four sites in Rockport Harbor. They also monitor the Goose River, three streams, and an intermittent stream/ditch. All of the tributary sites are freshwater.

Monitoring is conducted one to two times per month from May through September. Additional sampling has also been conducted at Goose River for nutrient samples and stage for nutrient loading. At the freshwater sites, the monitors measure water temperature and dissolved oxygen using a YSI meter. Conductivity is measured with either a YSI meter or Oakton EC Testr 11+/11 pen. Grab samples may be collected for total nitrogen, total phosphorus, *E. coli* and *Enterococci* bacteria (Goose River). At the harbor sites, vertical profiles are obtained for temperature and dissolved oxygen using a Manta meter. Grab samples are collected at 0.1 meter depths for chlorophyll a, total phosphorus, and total nitrogen. Grab samples are also collected for *Enterococci* bacteria from May to September. Lastly, Secchi depth transparency is measured.

Bacteria samples are transported to Mirror Lake Laboratory (Maine Water, Rockport, ME) for analysis. Chlorophyll a samples are filtered at Mirror Lake Laboratory and frozen. Chlorophyll, along with frozen nutrient samples, are sent to Nutrient Analytical Services Lab, University of Maryland for analysis.

Rockport Harbor & Tributaries Sampling Sites

Rockport Conservation Commission

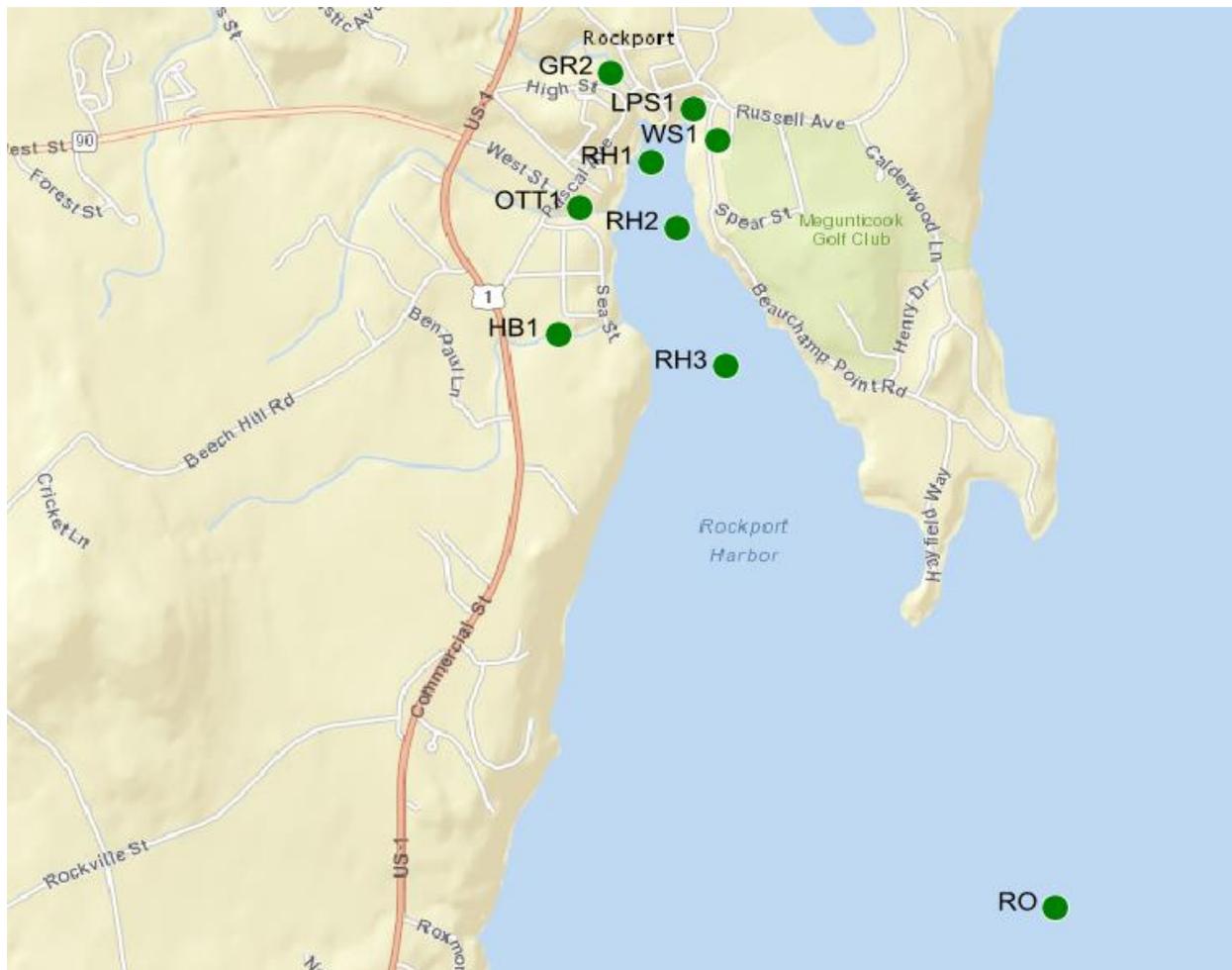


Figure 5-7-1: Map of Rockport Conservation Commission sampling sites.

Table 5-7-1: Rockport Harbor and Tributaries Sampling Sites

VRMP Site ID	Organization Site Code	Sample Location	Class
Goose River-NGR01-VRMP	GR-2	Pascal Avenue Bridge	B
Harkness Brook-NHK00-VRMP	HB-1	Elm Street	B
Lily Pond Stream-NLP00-VRMP	LPS-1	Outlet by Head of Cove	B
Ott Brook-NOT02-VRMP	OTT-1	Footbridge in Harkness Preserve	B
Winter Street Ditch-Ditch-N01	WS-1	Southern side of Winter St	B
Rockport Harbor-RH1-VRMP	RH1	Rockport Harbor	SB
Rockport Harbor-RH2-VRMP	RH2	Rockport Harbor	SB
Rockport Harbor-RH3-VRMP	RH3	Rockport Harbor	SB
Penobscot Bay-RO-VRMP	RO	Penobscot Bay	SB

Results

Refer to Appendix A in discussion of individual site data and trends at the end of this report.

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, dissolved oxygen will be affected.

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. The Class SB standard is 85% saturation.

2016 Results

Freshwater sites: Dissolved oxygen (DO) was measured two times at Goose River late in the season. The measurements were high and were above the Class B dissolved oxygen criteria of 7 mg/l and percent saturation of 75%. The other freshwater sites were not sampled in 2016. Dissolved oxygen, at least at Goose River, was excellent but is not representative of values throughout the sampling season.

Harbor sites: Dissolved oxygen was measured four times (June, August, September and October) and included depth profiles. The four sampling sites follow similar patterns through the sampling season and were overall similar. Differences in the sites relate to depth and stratification (i.e. when sites stratified and depth of stratification). Dissolved oxygen never fell below the Class SB criterion of 85% saturation, except at site RH-3 late in the season at lower depths. At site RH1, saturation values ranged from 89.4% - 128.9% (depths 0-7 meters). Site RH2 saturation values ranged from 93.4% - 124.2% (depths 0-16 meters). Site RH3 saturation values ranged from 78.3% - 124.8% (depths 0-19 meters). Site RH4 saturation values ranged from 88.0% - 124.1% (depths 0-26 meters). Observed maxima in concentration and saturation at depths near or immediately above the thermocline, or strata of rapidly changing temperature, are common for surface waters and likely related to increased algal photosynthesis at these depths.

Table 5-7-2: A summary of minimum, maximum, and mean dissolved oxygen concentration (mg/l) values at Rockport Conservation Commission monitoring sites. * (Rockport Harbor sites use shallowest point for each station on each sample day. Depths range from 0.0-0.4 meters).

Site	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
GR-2	B	2	9.4	8.4	10.3	7	0
HB-1	B	-	-	-	-	7	0
LPS-1	B	-	-	-	-	7	0
OTT-1	B	-	-	-	-	7	0
WS-1	B	-	-	-	-	7	0
RH1	SB	4	8.7	8.0	10.1	n/a	n/a
RH2	SB	4	8.7	8.1	9.8	n/a	n/a
RH3	SB	4	8.7	7.9	9.9	n/a	n/a
RO	SB	4	9.0	8.0	10.1	n/a	n/a

Table 5-7-3: A summary of minimum, maximum, and mean dissolved oxygen saturation (%) values at Rockport Conservation Commission monitoring sites. * (Rockport Harbor sites use shallowest point for each station on each sample day. Depths range from 0.0-0.4 meters).

Site	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion
GR-2	B	2	92.0	89.5	94.5	75	0
HB-1	B	-	-	-	-	75	0
LPS-1	B	-	-	-	-	75	0
OTT-1	B	-	-	-	-	75	0
WS-1	B	-	-	-	-	75	0
RH1	SB	4	106.3	97.5	120.2	85	0
RH2	SB	4	108.1	100.5	118.1	85	0
RH3	SB	4	107.3	101.5	117.8	85	0
RO	SB	4	110.2	93.7	119.7	85	0

Figure 5-7-2: Graph of dissolved oxygen concentrations at stream sites.

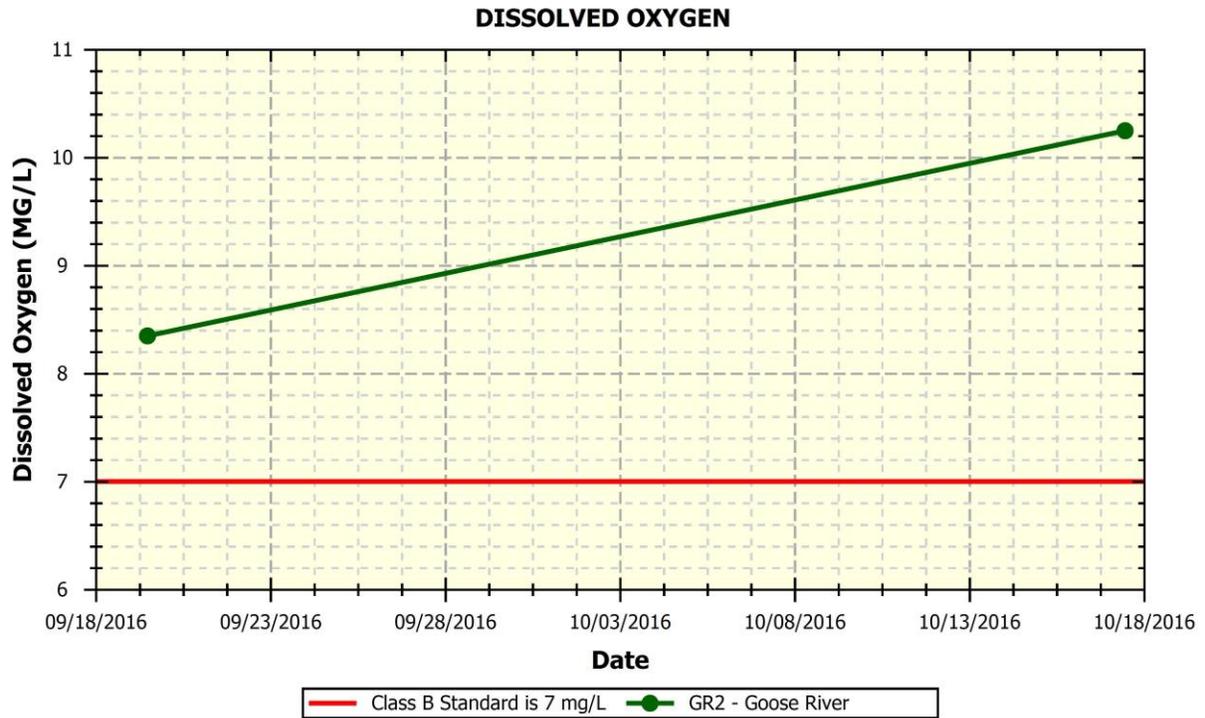


Figure 5-7-3: Graph of dissolved oxygen saturation at stream sites.

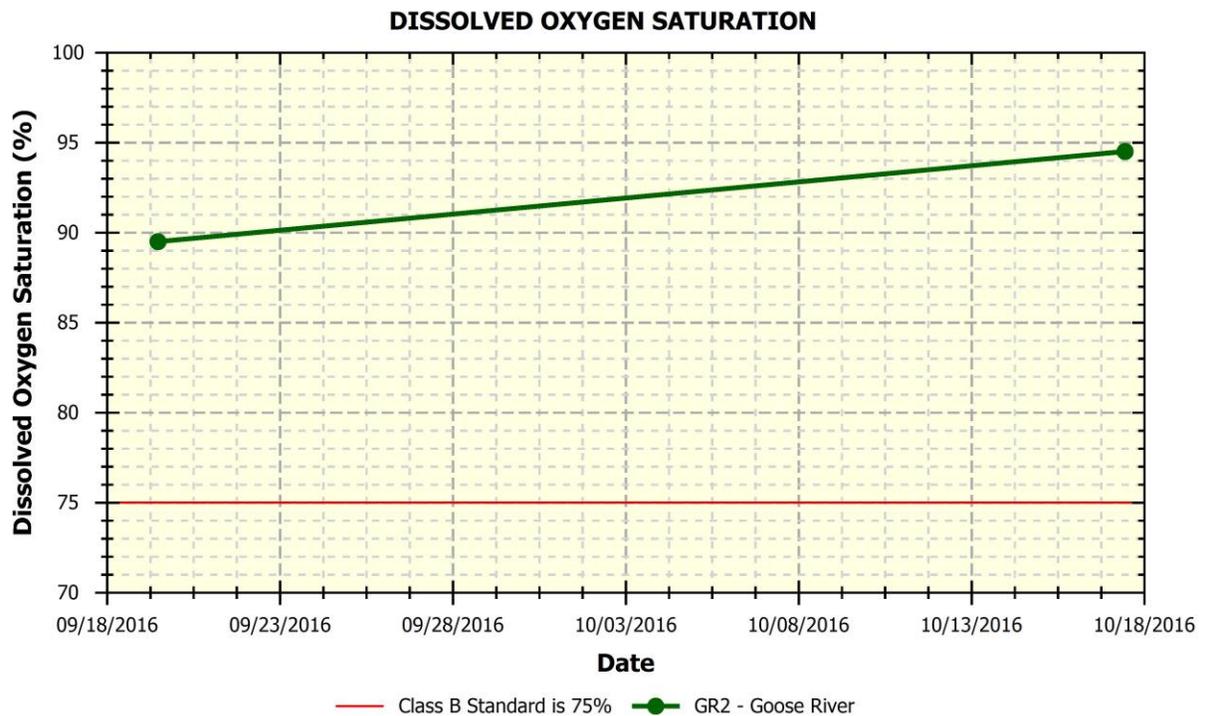
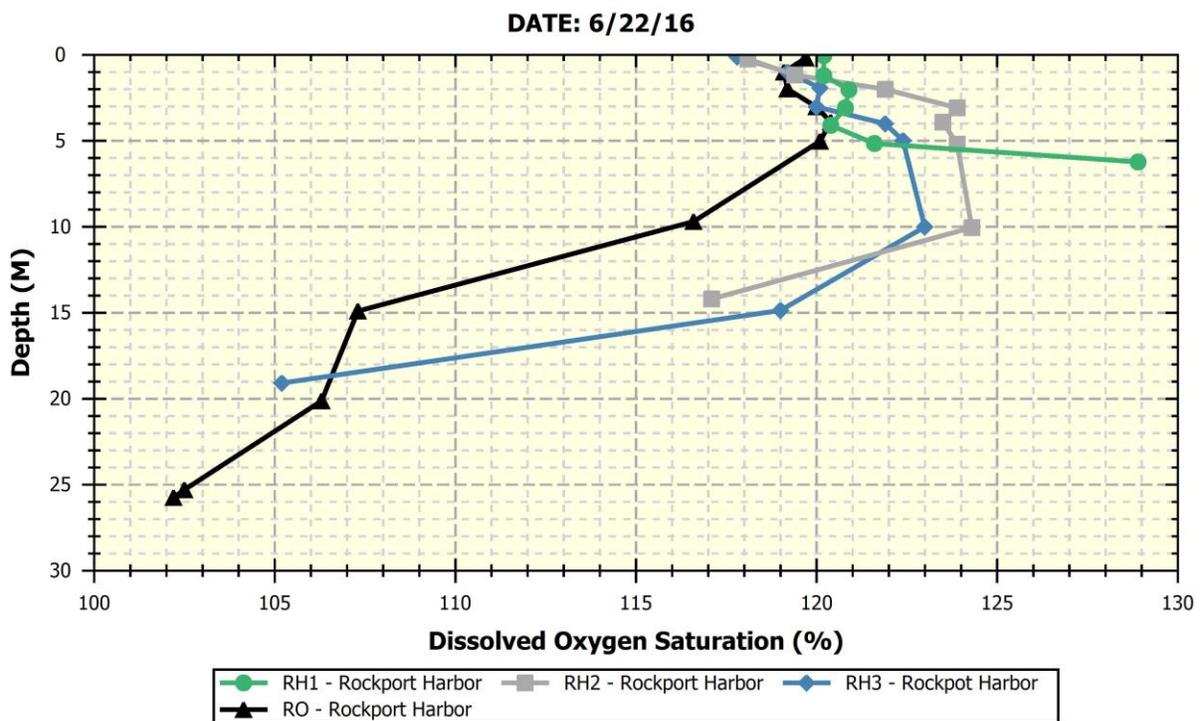
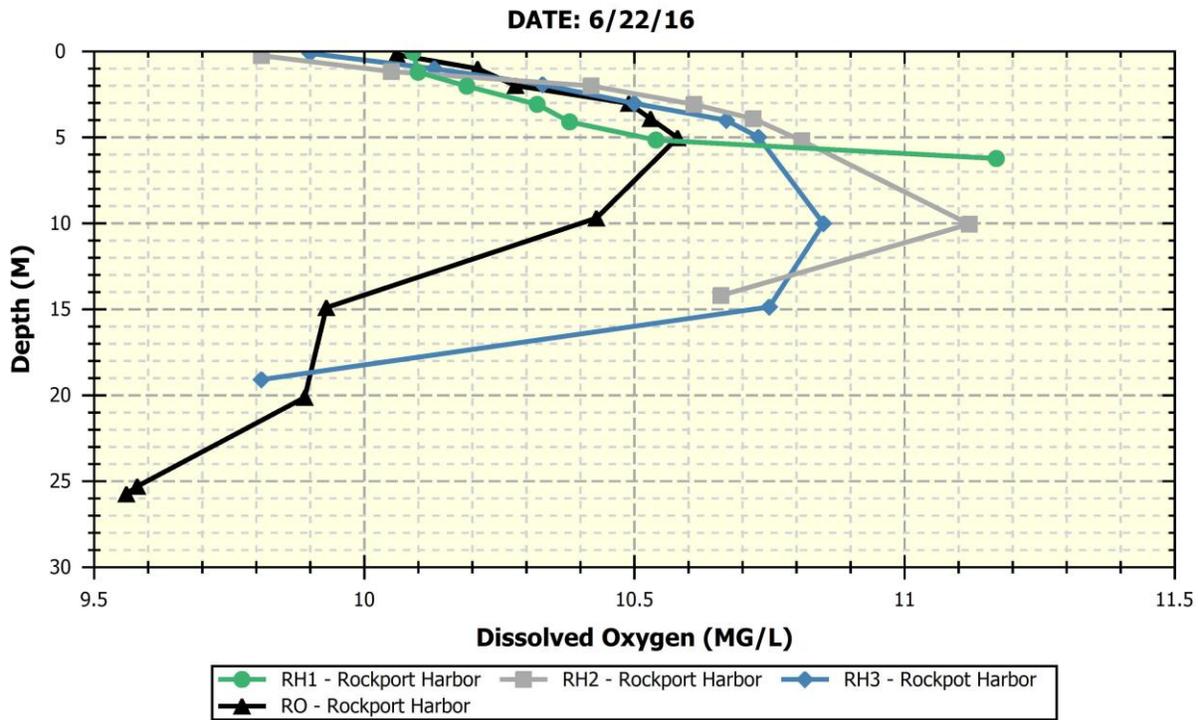


Figure 5-7-4: Depth profile graphs of dissolved oxygen concentration, dissolved oxygen saturation and water temperature at harbor sites on June 22th.



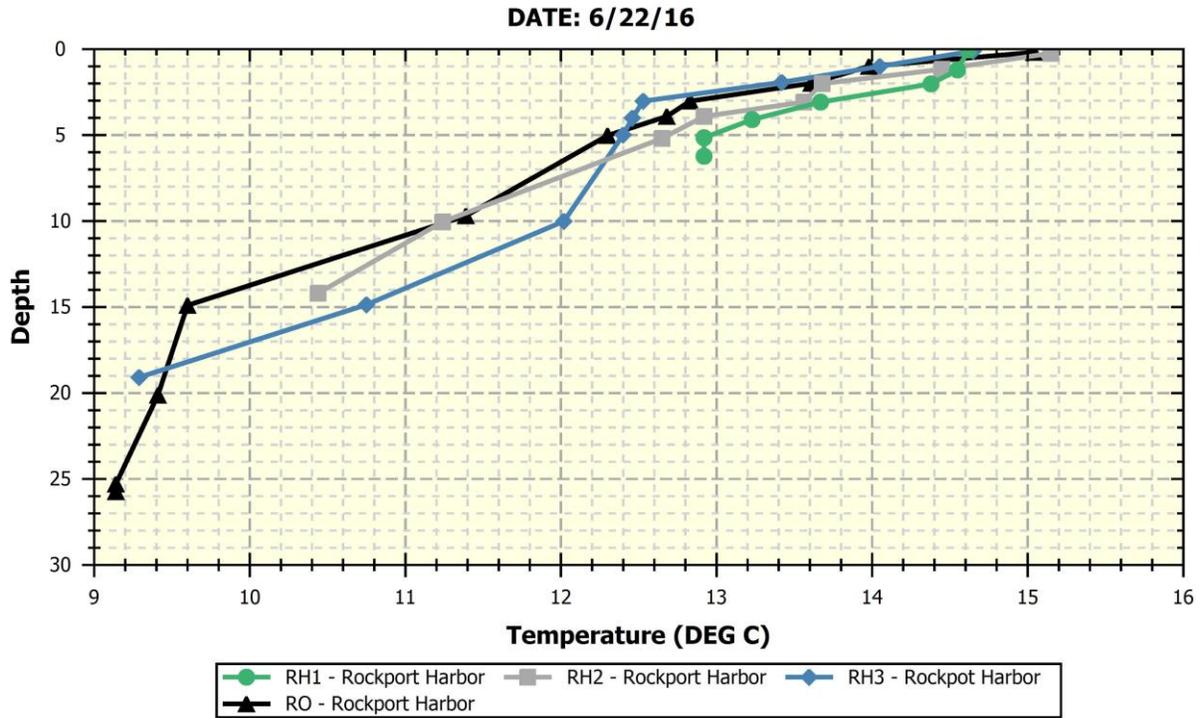
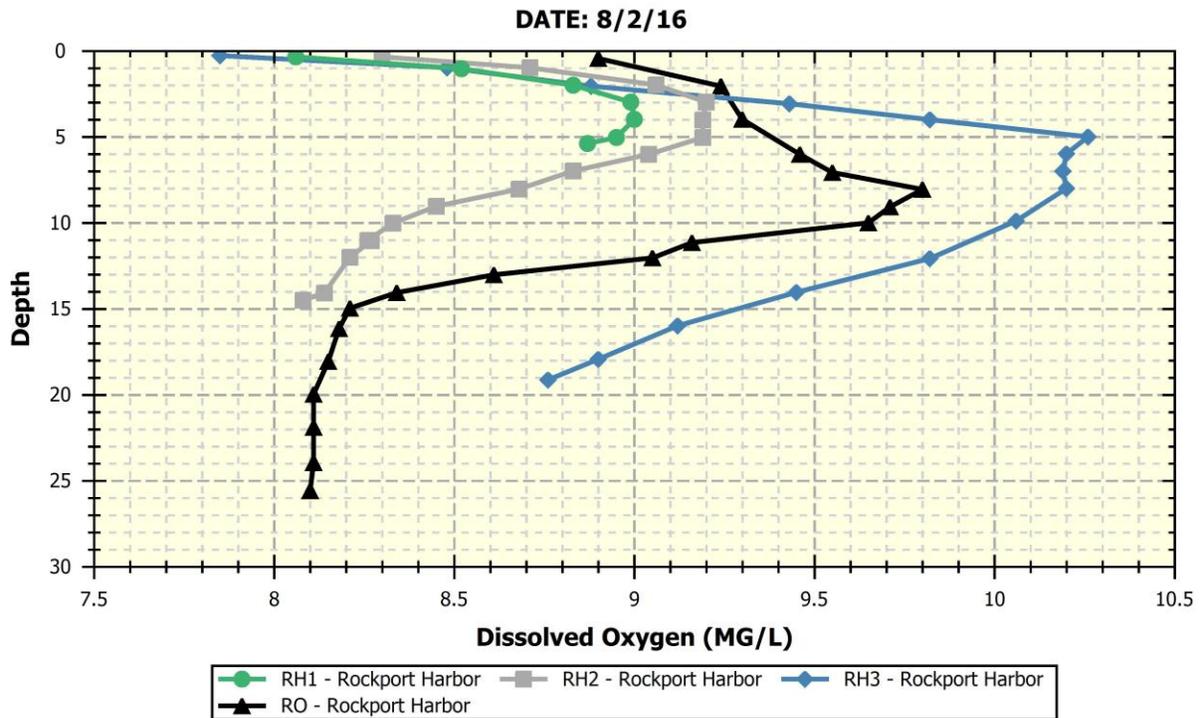


Figure 5-7-5: Depth profile graphs of dissolved oxygen concentration, dissolved oxygen saturation and water temperature at harbor sites on August 2nd.



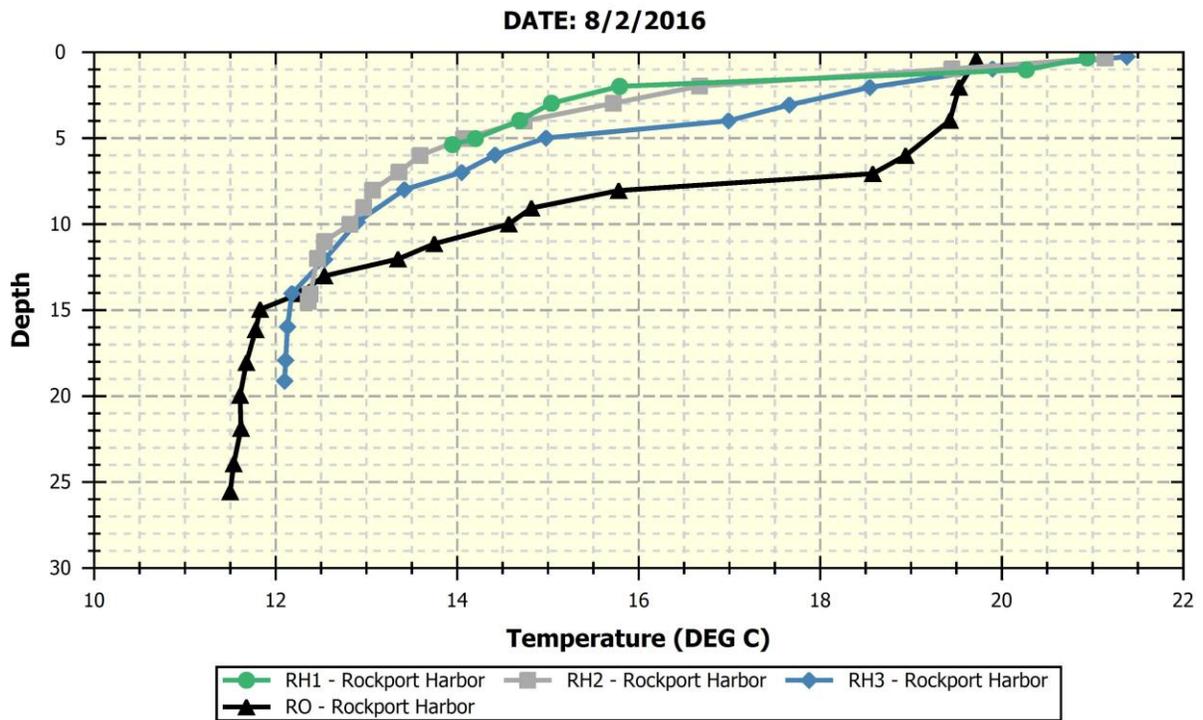
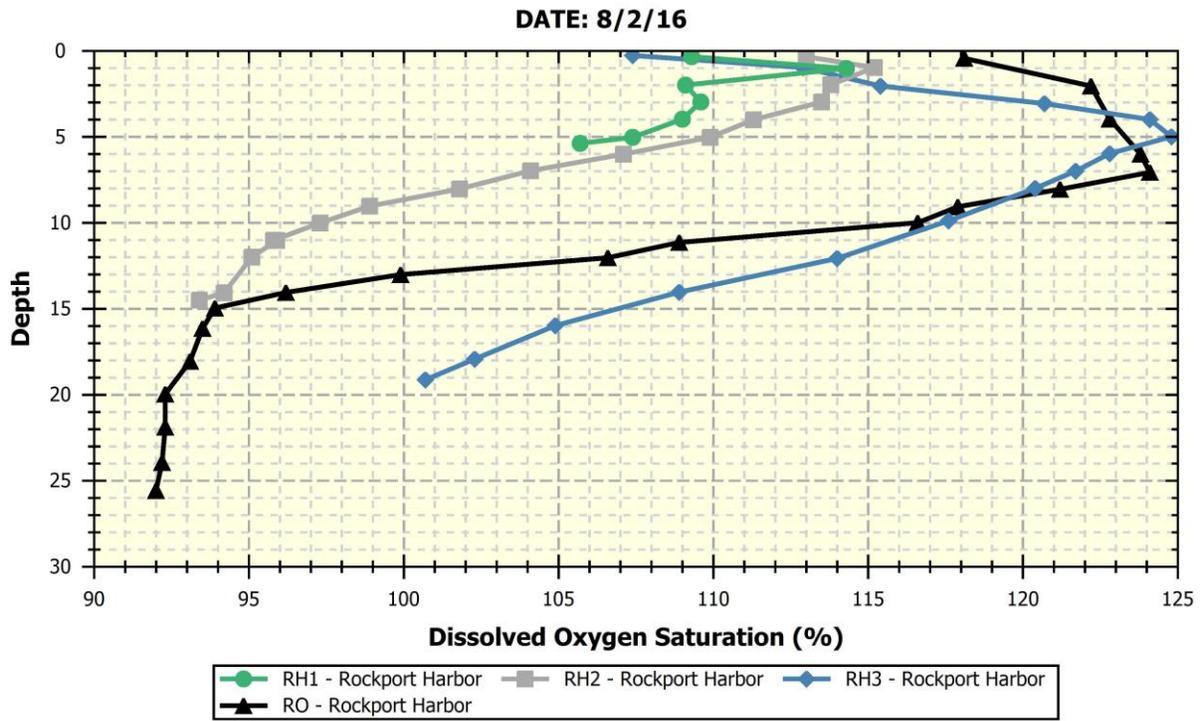
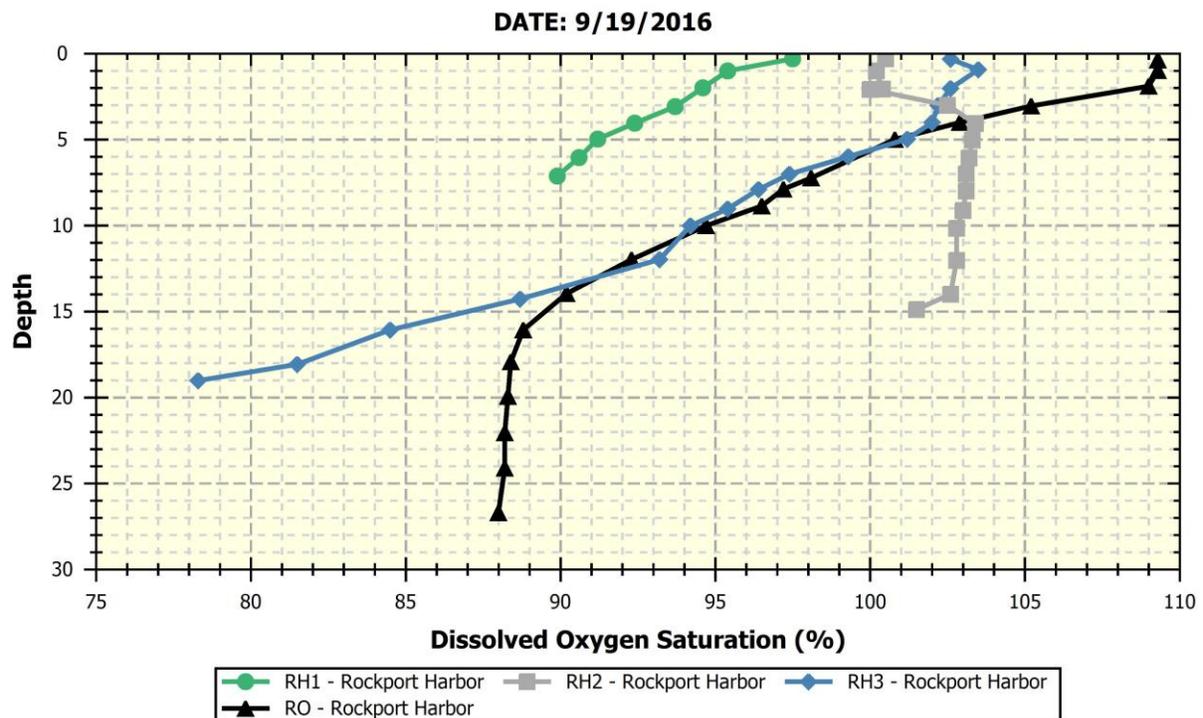
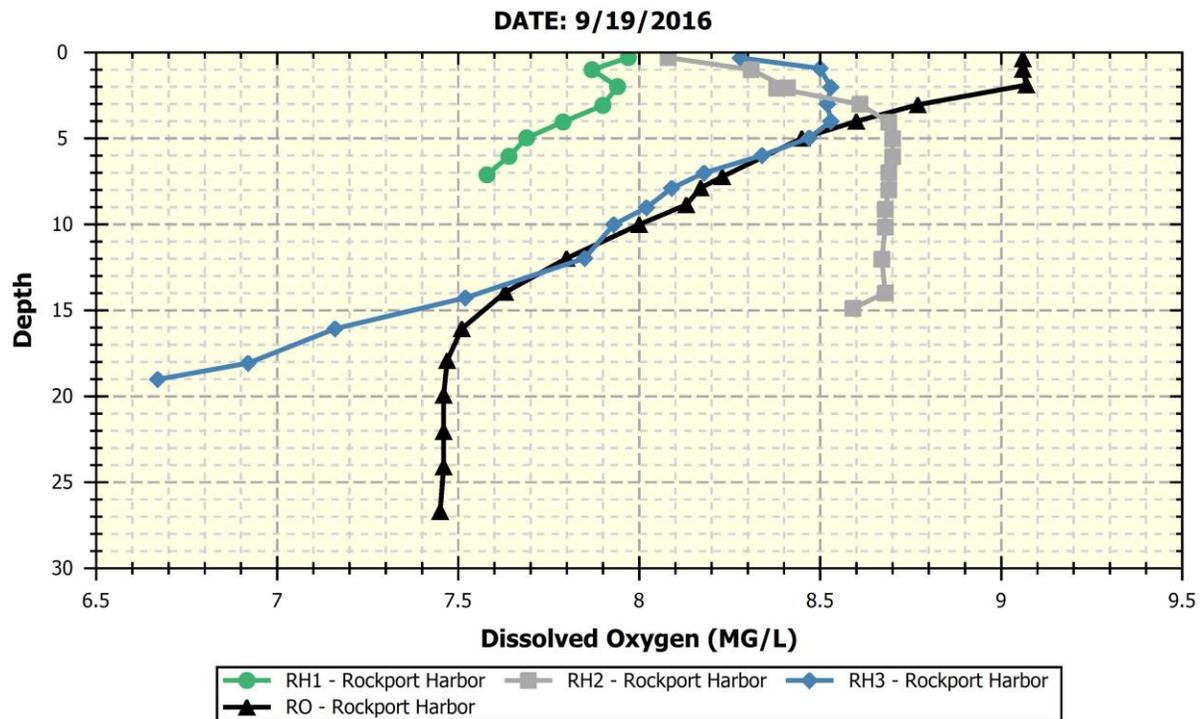


Figure 5-7-6: Depth profile graphs of dissolved oxygen concentration, dissolved oxygen saturation and water temperature at harbor sites on September 19th.



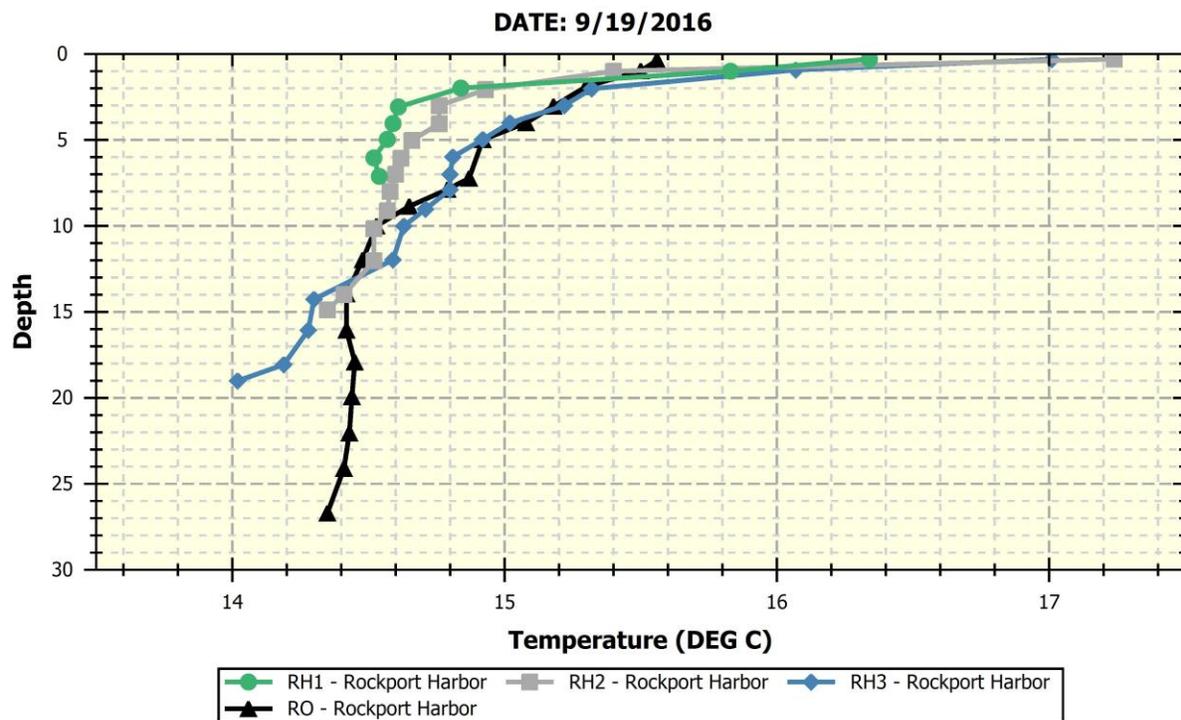
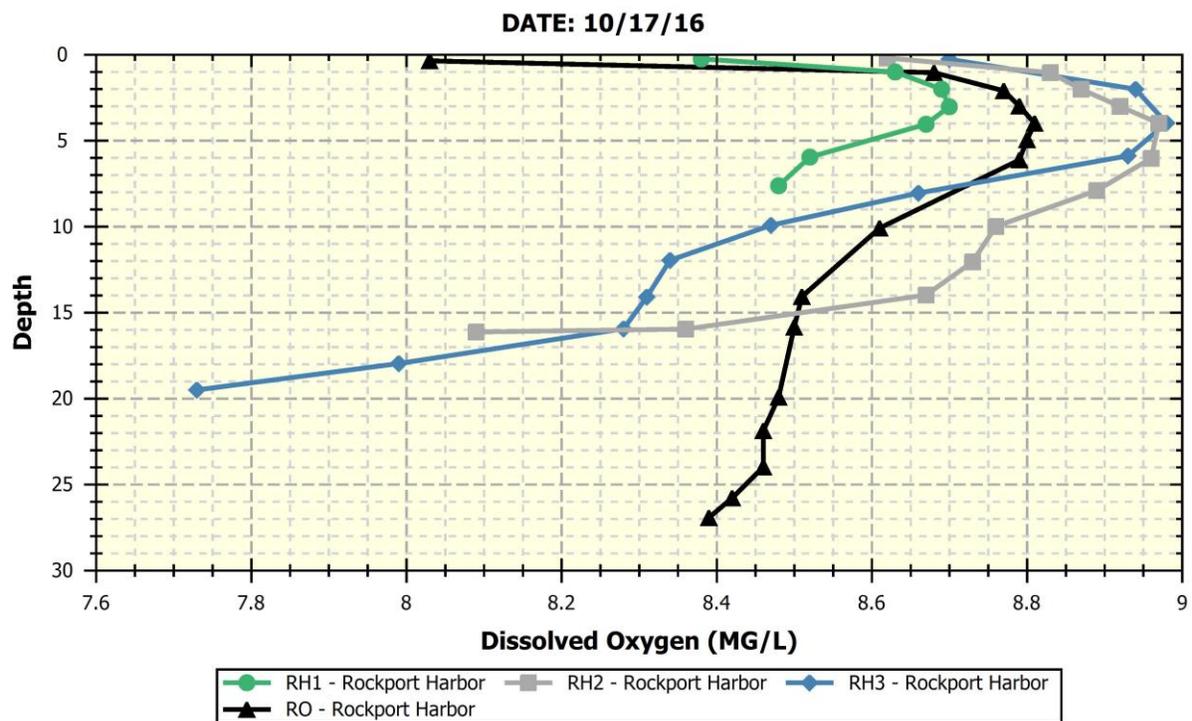
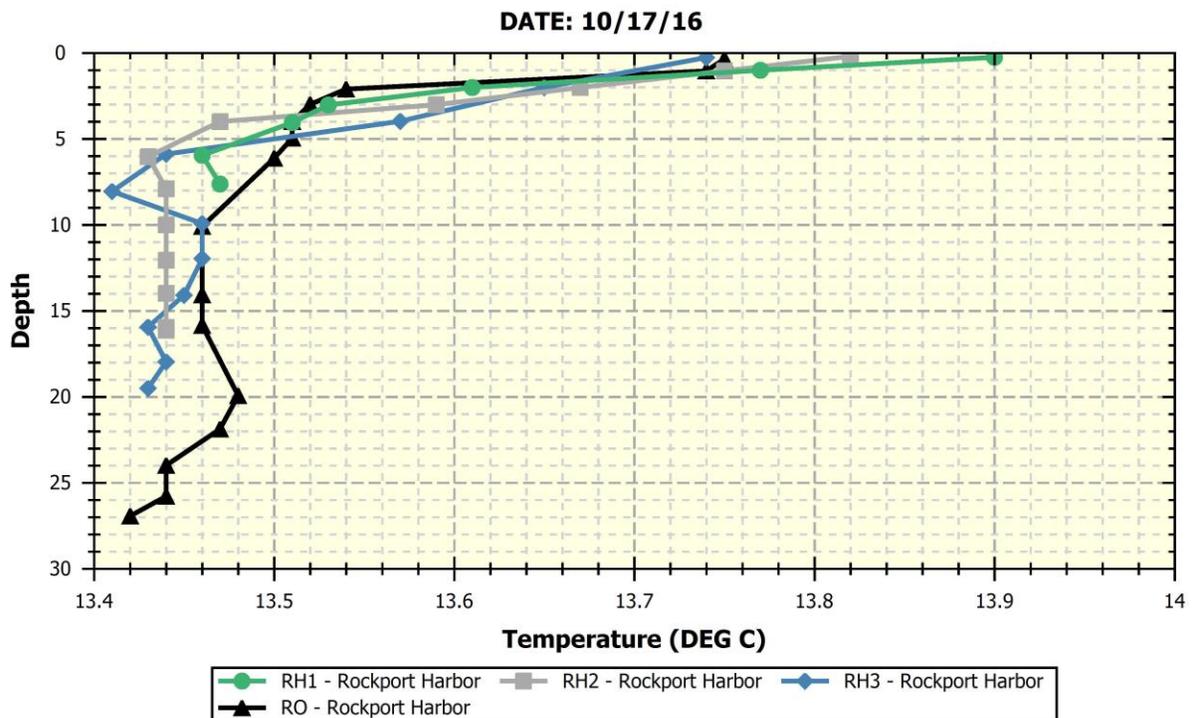
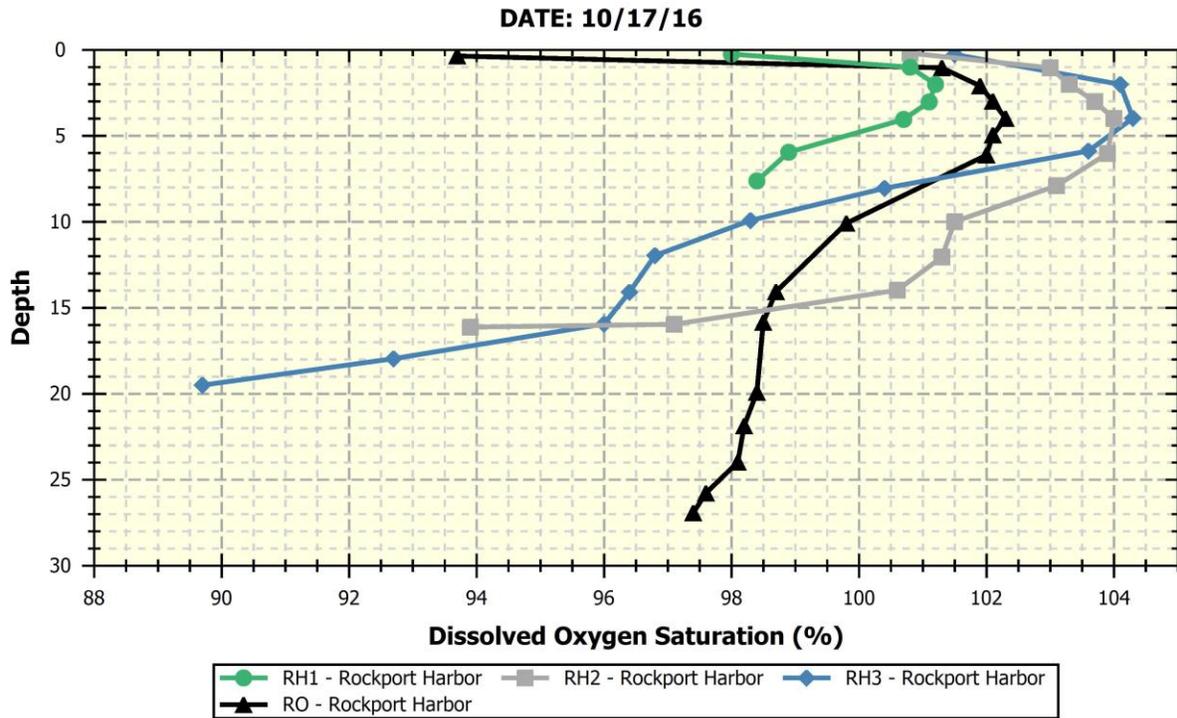


Figure 5-7-7: Depth profile graphs of dissolved oxygen concentration, dissolved oxygen saturation and water temperature at harbor sites on October 17th.





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.

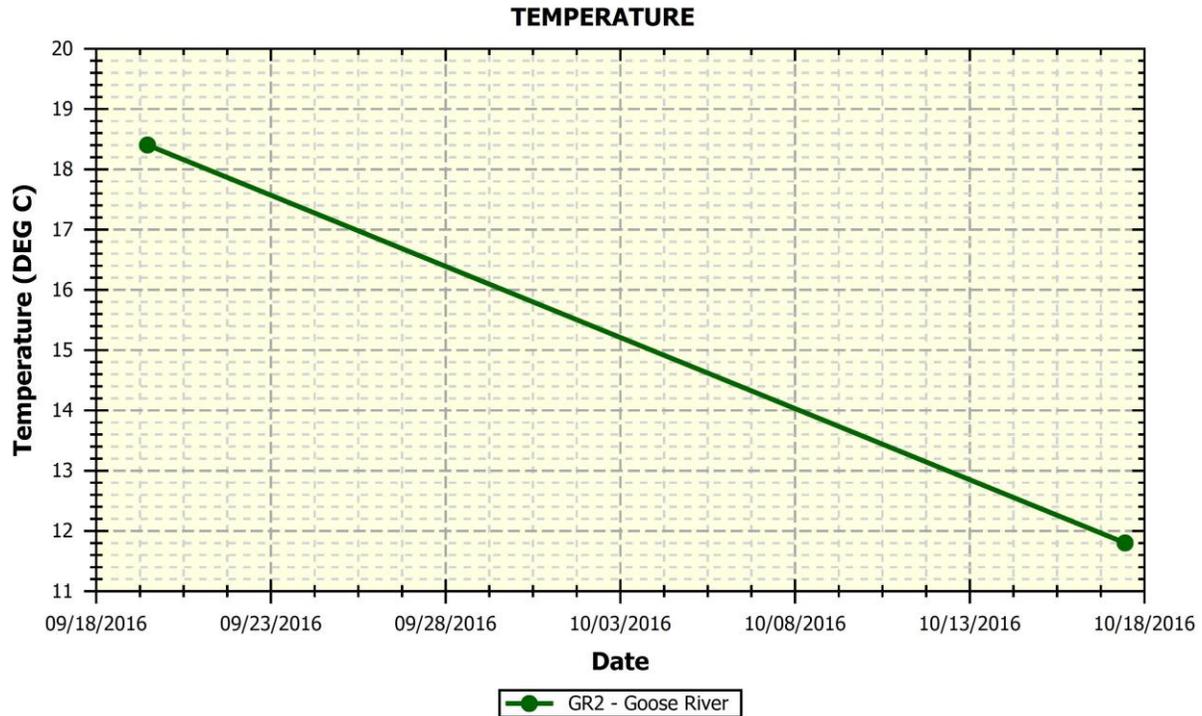
2016 Results

Freshwater sites: Temperature was measured two times at Goose River late in the season. Temperature was low at this site. The other freshwater sites (Harkness Brook, Lily Pond Stream, Ott Brook and Winter Street ditch) were not sampled in 2016. Overall, temperature at Goose River was good, but is not representative of conditions throughout the sampling season.

Harbor sites: Surface temperature at the harbor sites ranged from 13.7-21.4 °C and mean temperatures ranged from 16.0-16.8 °C. Sites RH1, RH2, RH3 and RO were similar, except RO was colder in June and August.

Table 5-7-4: A summary of minimum, maximum, and mean water temperature (°C) values at Rockport Conservation Commission monitoring sites. (Rockport Harbor sites use shallowest point for each station on each sample day. Depths range from 0.0 - 0.4 meters).

Site	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Exceeding Criterion
GR-2	B	2	15.1	11.8	18.4	n/a	n/a
HB-1	B	-	-	-	-	n/a	n/a
LPS-1	B	-	-	-	-	n/a	n/a
OTT-1	B	-	-	-	-	n/a	n/a
WS-1	B	-	-	-	-	n/a	n/a
RH1	SB	4	16.4	13.9	20.9	n/a	n/a
RH2	SB	4	16.8	13.8	21.1	n/a	n/a
RH3	SB	4	16.7	13.7	21.4	n/a	n/a
RO	SB	4	16.0	13.8	19.7	n/a	n/a

Figure 5-7-8: Graph of water temperature at stream sites

Specific Conductance

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

2016 Results

Specific conductance was measured two to six times at Goose River. The value for both dates was 430 $\mu\text{S}/\text{cm}$. Specific conductance for the limited sampling was somewhat elevated and fair. The other freshwater sites were not sampled in 2016.

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

Site	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Exceeding Criterion
GR-2	B	2	430	430	430	n/a	n/a
HB-1	B	-	-	-	-	n/a	n/a
LPS-1	B	-	-	-	-	n/a	n/a
OTT-1	B	-	-	-	-	n/a	n/a
WS-1	B	-	-	-	-	n/a	n/a

Bacteria

Enterococcus bacteria are used as the indicator organism for marine waters and *E. coli* bacteria are used for freshwaters. While these types of bacteria are not pathogens, their presence in the water may indicate the presence of other organisms including bacteria and viruses that can cause gastrointestinal illnesses.

Class B criteria for bacteria are as follows: “Between May 15th and Sept 30th, *E. 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 SB criteria are as follows: “Between May 15th and September 30th, the numbers of enterococcus bacteria of human and domestic animal origin in these waters may not exceed a geometric mean of 8 per 100 milliliters or an instantaneous level of 54 per 100 milliliters.” Geometric means are calculated instead of average because it is more appropriate to use this calculation for an indicator such as bacteria where there may be one or more very high or low values that can skew the mean.

2016 Results

Freshwater sites: Goose River (site GR2) was sampled one to two times for both *E.coli* and Enterococcus bacteria. Enterococcus bacteria levels were high for the September date and both Enterococcus and *E. coli* were low for the October date.

Harbor sites: The harbor sites were sampled two to three times. Sites RH1 and RH2 exceeded the instantaneous criterion on one date. All sites exceeded the geometric mean criterion, but only a limited number of samples were collected. In order to calculate an accurate geometric mean, at least 6 samples should be collected and they should include both baseflow and storm event samples.

Table 5-7-6: A summary of minimum, maximum, and geometric means for bacteria (MPN/100 mL) values at Rockport Conservation Commission monitoring sites.

Site	Class	Bacteria Type	# Sample Points	Geometric Mean*	Minimum	Maximum	Criterion Inst/Geo	# Exceeding Criterion
GR-2	B	<i>E. coli</i>	1	-	6	6	236/64	0
GR-2	B	Entero	2	42	10	178	--	n/a
HB-1	B	<i>E. coli</i>	-	-	-	-	236/64	-
LPS-1	B	<i>E. coli</i>	-	-	-	-	236/64	-
OTT-1	B	<i>E. coli</i>	-	-	-	-	236/64	-
WS-1	B	<i>E. coli</i>	-	-	-	-	236/64	-
RH1	SB	Entero	3	44	27	65	54/5	1
RH2	SB	Entero	2	46	23	93	54/8	1
RH3	SB	Entero	3	37	36	39	54/8	0
RO	SB	Entero	3	15	9	34	54/8	0

***At least 6 samples should be collected to calculate the geometric mean. One sample date was outside the sampling period of May-September established for the Maine Bacteria Criterion (10/17/16).**

Figure 5-7-9: Graph of Enterococci at Site GR1-Goose River (MPN/100ml).

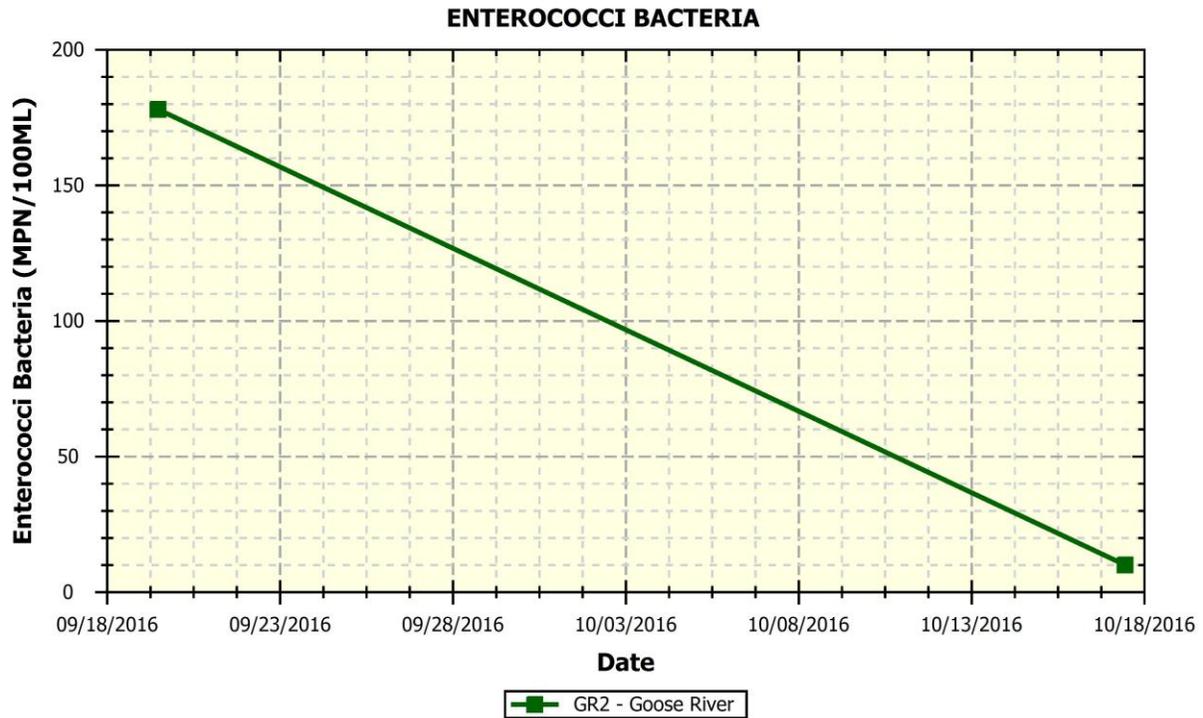
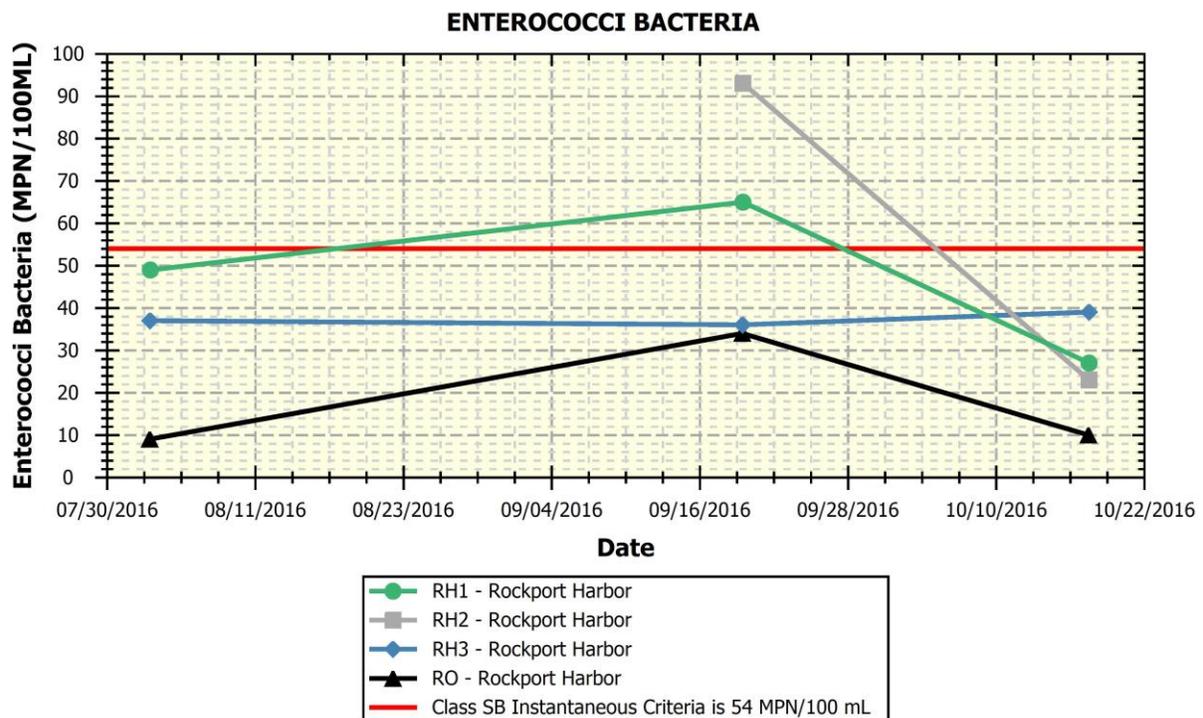


Figure 5-7-10: Graph of Enterococci at Harbor sites (MPN/100ml).



Nutrients and Chlorophyll *a*

Nutrient criterion for freshwaters have been developed, but not yet adopted. The draft criteria for Class B waters are ≤ 0.03 mg/l (total phosphorus). In regards to total nitrogen, DEP Biomonitoring Program staff suggests that good water streams have values below 0.6 mg/l. Nutrient criteria for marine waters have not been developed.

2016 Results

Freshwater sites: Total phosphorus and total nitrogen were measured eight times at Goose River (site GR2) and between one and six times at the other freshwater sites (for the March-May period). At Goose River, one sample was above 0.60 mg/l [600 μ g/l] for total nitrogen. The value of 0.03 mg/l is the proposed nutrient criterion value for total phosphorus and 0.6 mg/l of nitrogen is the value that DEP biologists estimate distinguishes between enriched versus non-enriched streams. Site OTT-1 had one value above 0.03 mg/l for total phosphorus. The total nitrogen for five of six samples taken at site WS-1 was above 0.6 mg/l. Overall, nutrients were low to moderate at the freshwater site, with the exception of site WS-1 which had high total nitrogen.

Harbor sites: Total phosphorus was similar at all the harbor sites. Total nitrogen levels at the harbor sites were all similar (RO slightly lower) with mean values ranging from 0.18-0.23 mg/l. At the harbor sites, chlorophyll *a* was low (< 5 μ g/l is considered low).

Table 5-7-7: A summary of minimum, maximum, and mean total phosphorus (mg/l) values at Rockport Conservation Commission monitoring sites.

Site	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Exceeding Criterion
GR-2	B	8	0.0212	0.0091	0.0739	n/a	n/a
HB-1	B	6	0.0194	0.0143	0.0285	n/a	n/a
LPS-1	B	1	0.0221	0.0221	0.0221	n/a	n/a
OTT-1	B	6	0.0232	0.0143	0.0487	n/a	n/a
WS-1	B	6	0.0111	0.0081	0.0157	n/a	n/a
RH1	SB	4	0.0389	0.0280	0.0537	n/a	n/a
RH2	SB	4	0.0327	0.0245	0.0426	n/a	n/a
RH3	SB	4	0.0325	0.0235	0.0431	n/a	n/a
RO	SB	4	0.0274	0.0219	0.0357	n/a	n/a

Table 5-7-8: A summary of minimum, maximum, and mean total nitrogen (mg/l) values at Rockport Conservation Commission monitoring sites.

Site	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Exceeding Criterion
GR-2	B	8	0.30	0.21	0.63	n/a	n/a
HB-1	B	6	0.40	0.35	0.53	n/a	n/a
LPS-1	B	1	0.50	0.49	0.49	n/a	n/a
OTT-1	B	6	0.40	0.30	0.78	n/a	n/a
WS-1	B	6	1.10	0.77	1.52	n/a	n/a
RH1	SB	4	0.23	0.17	0.33	n/a	n/a
RH2	SB	4	0.20	0.16	0.27	n/a	n/a
RH3	SB	4	0.21	0.14	0.31	n/a	n/a
RO	SB	4	0.18	0.15	0.19	n/a	n/a

Table 5-7-9: A summary of minimum, minimum and mean chlorophyll a (ug/l) values at Rockport Conservation Commission monitoring sites.

Site	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Exceeding Criterion
RH1	SB	3	3.20	2.04	5.32	n/a	n/a
RH2	SB	3	3.00	2.00	4.95	n/a	n/a
RH3	SB	3	4.00	1.82	7.37	n/a	n/a
RO	SB	3	2.30	0.72	3.88	n/a	n/a

Table 5-7-10: A summary of minimum, maximum, and mean phaeophytin (ug/l) values at Rockport Conservation Commission monitoring sites.

Site	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Exceeding Criterion
RH1	SB	3	1.01	0.58	1.75	n/a	n/a
RH2	SB	3	0.91	0.60	1.42	n/a	n/a
RH3	SB	3	0.84	0.49	1.38	n/a	n/a
RO	SB	3	0.42	0.28	0.50	n/a	n/a

Table 5-7-11: A summary of minimum, maximum, and mean chlorophyll a minus phaeophytin (ug/l) values at Rockport Conservation Commission monitoring sites.

Site	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Exceeding Criterion
RH1	SB	3	2.62	1.72	4.34	n/a	n/a
RH2	SB	3	2.49	1.63	4.16	n/a	n/a
RH3	SB	3	3.48	1.55	6.61	n/a	n/a
RO	SB	3	2.09	0.57	3.62	n/a	n/a

Figure 5-7-11: Graph of Total Phosphorus at harbor sites.

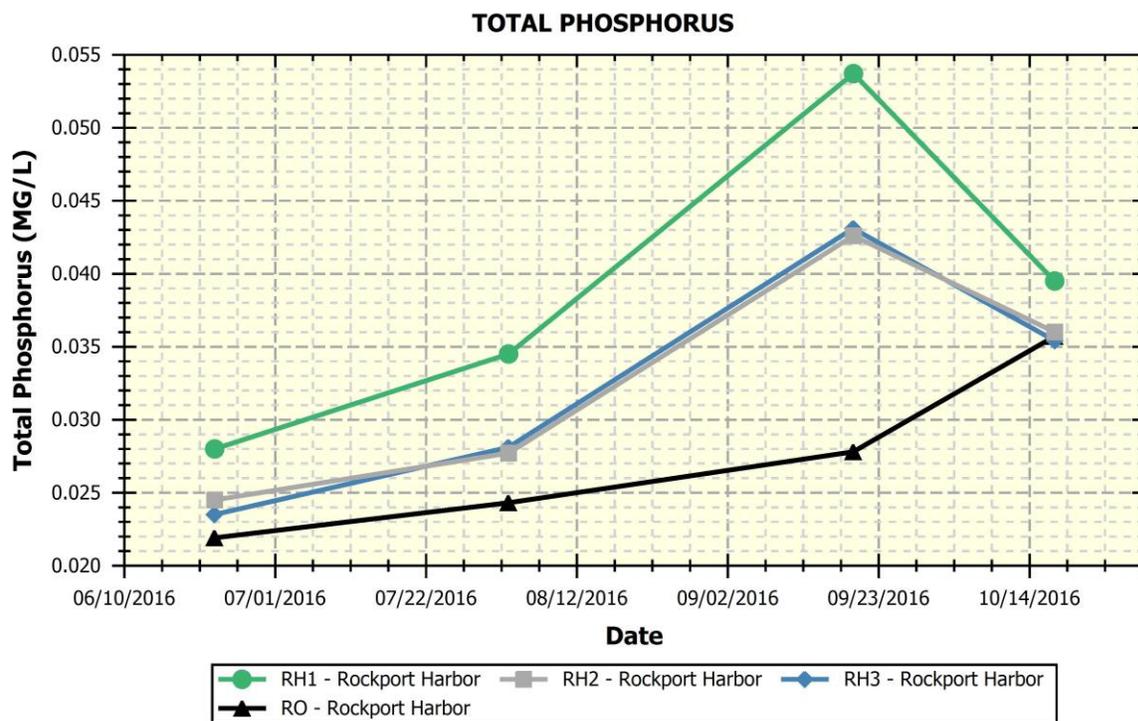


Figure 5-7-12: Graph of Total Nitrogen at harbor sites.

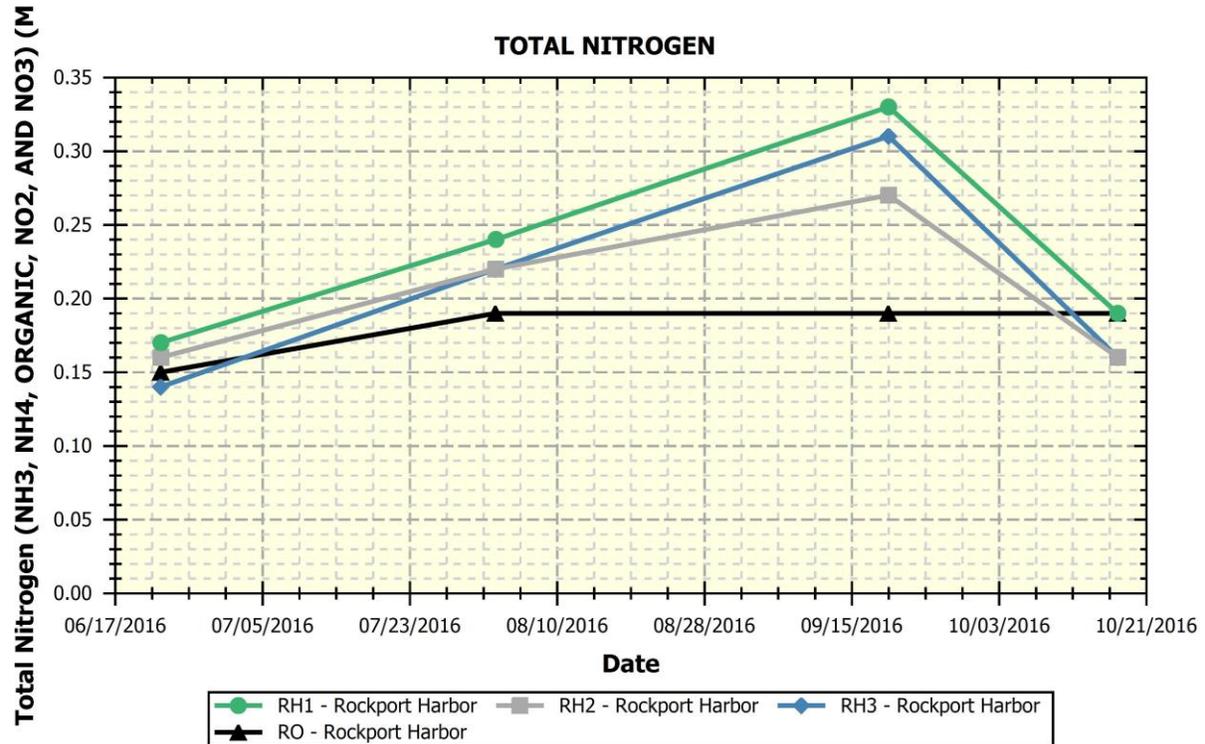
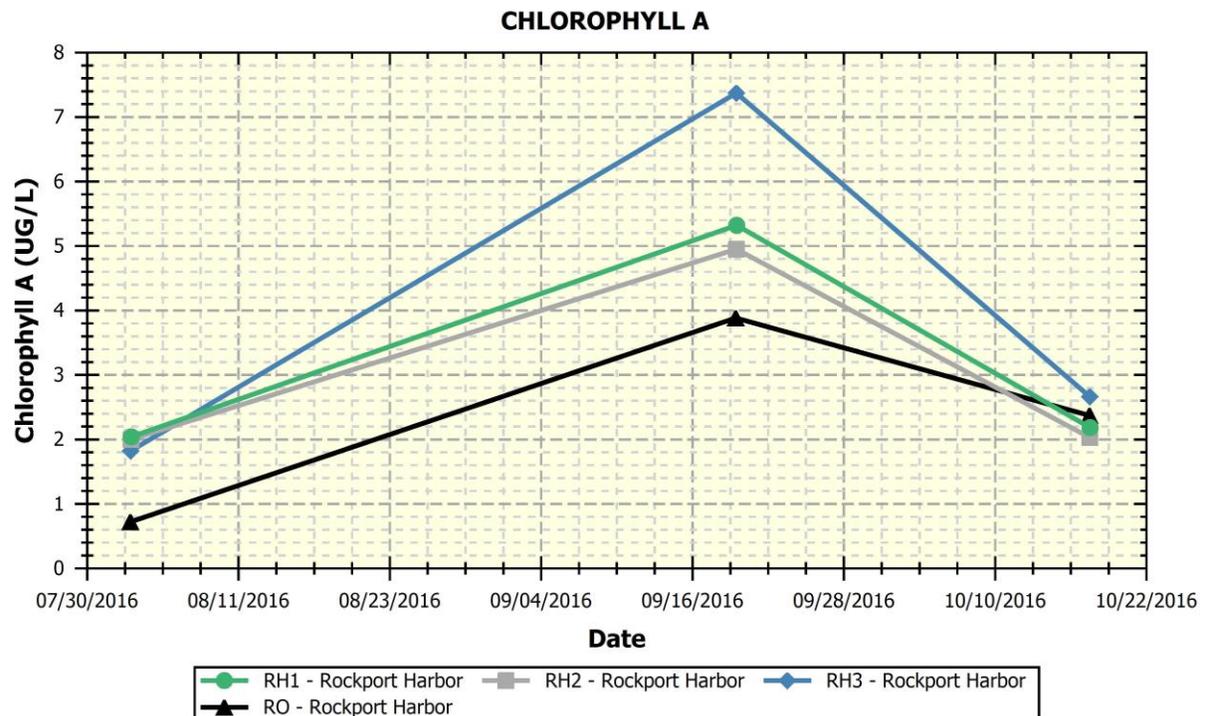


Figure 5-7-13: Graph of Chlorophyll a at harbor sites.



Transparency

Transparency is a measure of the water clarity. Transparency is reduced by suspended materials in the water—primarily algae but may also include suspended sediments that are delivered to a water body during a storm event or stirred up from the bottom. It is measured by lowering a black and white disk called a Secchi disk into the water. The point at which the disk is no longer visible is recorded as the transparency or Secchi depth.

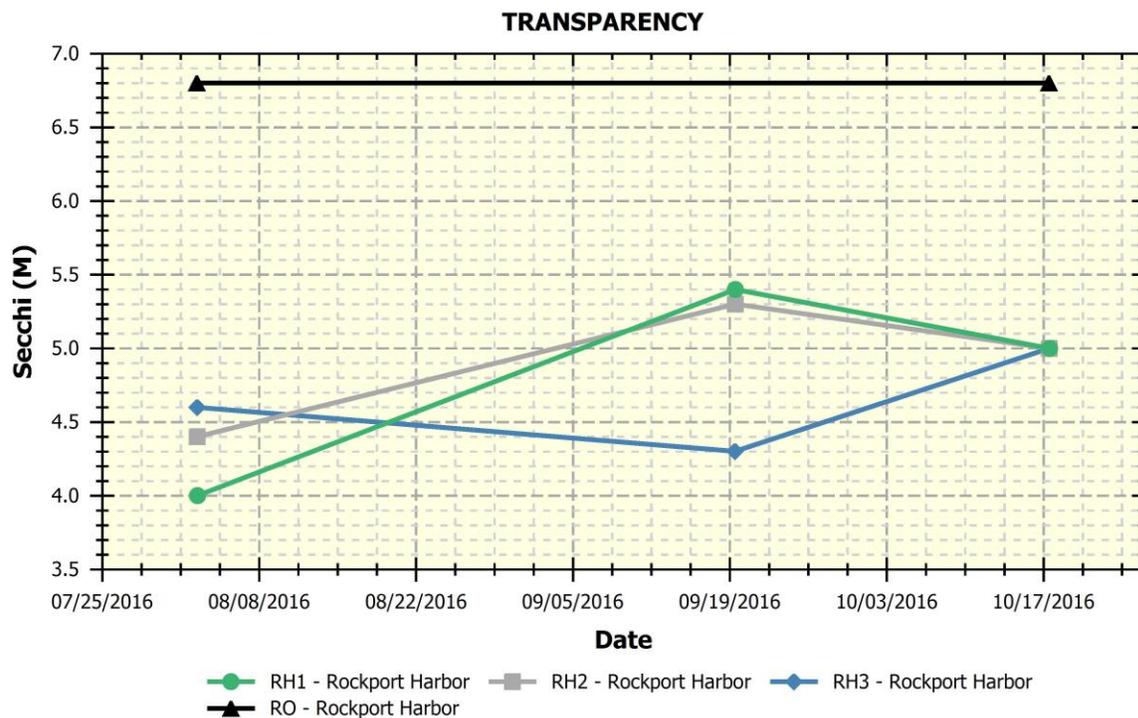
2016 Results

Mean transparency at the four harbor sites ranged from 4.0-6.8 meters. Sites RH1, RH2 and RH3 were similar. Site RO was sampled two times and was much higher than the other sites.

Table 5-7-7: A summary of minimum, maximum, and mean transparency at Rockport Conservation Commission monitoring sites.

Site	Class	# Sample Points	Mean	Minimum	Maximum	Criterion	# Not Meeting Criterion							
RH1	SB	3	4.8	4.0	5.4	n/a	n/a							
RH2	SB	3	4.9	4.4	5.3	n/a	n/a							
RH3	SB	3	4.6	4.3	5.0	n/a </tr <tr> <td>RO</td> <td>SB</td> <td>2</td> <td>6.8</td> <td>6.8</td> <td>6.8</td> <td>n/a</td> <td>n/a</td> </tr>	RO	SB	2	6.8	6.8	6.8	n/a	n/a
RO	SB	2	6.8	6.8	6.8	n/a	n/a							

Figure 5-7-15: Graph of Transparency (meters) at harbor sites.



Discussion and Recommendations

There are numerous sources of pollution and other stresses to Rockport Harbor and tributaries monitored by the Rockport Conservation Commission that could potentially have a collective impact on water quality. Some of those sources of pollution and stress may include:

- Non-point source pollution (e.g., septic systems, eroded soil, fertilizers, pesticides, heavy metals, petroleum residues, road salt, wildlife and pet feces) and polluted stormwater originating from urban impervious surfaces (e.g., streets, parking lots, driveways, rooftops) (even though urban development and roads are fairly sparse in the watershed), agriculture, and forestry.
- 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:

- **Bacteria samples should be collected at least six times over the sampling season (May 15-September 30) and include both baseflow and storm event samples.**
- **Continue monitoring at all stations to develop a long-term trend database.**

Appendix A-1

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

** "NA" = normal environmental sample ; "D" = field duplicate; "D.O." = dissolved oxygen; "Spec. Cond" = specific conductance; "TSS" = total suspended solids

Organization Site Code	VRMP Site ID	Date	Time	** Sample Type Qualifier	* Sample Depth	Depth Unit	Water Temp (DEG C)	** D.O. 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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Rockport Harbor- Rockport Conservation Commission: Approved Sites

GR-2	GOOSE RIVER - NGR01 - VRMP	9/19/2016	11:20 AM	NA			18.4	89.5	8.4	430						178
GR-2	GOOSE RIVER - NGR01 - VRMP	10/17/2016	10:40 AM	NA			11.8	94.5	10.3	430					6	10
RH-1	ROCKPORT HARBOR-RH1-VRMP	6/22/2016	2:22 PM	NA	0	M	14.6	120.2	10.1		29.92					
RH-1	ROCKPORT HARBOR-RH1-VRMP	6/22/2016	2:22 PM	NA	1.2	M	14.6	120.2	10.1		29.98					
RH-1	ROCKPORT HARBOR-RH1-VRMP	6/22/2016	2:22 PM	NA	2	M	14.4	120.9	10.2		30.02					
RH-1	ROCKPORT HARBOR-RH1-VRMP	6/22/2016	2:22 PM	NA	3.1	M	13.7	120.8	10.3		30.1					
RH-1	ROCKPORT HARBOR-RH1-VRMP	6/22/2016	2:22 PM	NA	4.1	M	13.2	120.4	10.4		30.22					
RH-1	ROCKPORT HARBOR-RH1-VRMP	6/22/2016	2:22 PM	NA	5.2	M	12.9	121.6	10.5		30.34					
RH-1	ROCKPORT HARBOR-RH1-VRMP	6/22/2016	2:22 PM	NA	6.2	M	12.9	128.9	11.2		30.4					
RH-1	ROCKPORT HARBOR-RH1-VRMP	8/2/2016	12:07 PM	NA												49
RH-1	ROCKPORT HARBOR-RH1-VRMP	8/2/2016	12:07 PM	NA	0.3	M	20.9	109.3	8.1		29.994					
RH-1	ROCKPORT HARBOR-RH1-VRMP	8/2/2016	12:07 PM	NA	1	M	20.3	114.3	8.5		30.093					
RH-1	ROCKPORT HARBOR-RH1-VRMP	8/2/2016	12:07 PM	NA	2	M	15.8	109.1	8.8		30.721					
RH-1	ROCKPORT HARBOR-RH1-VRMP	8/2/2016	12:07 PM	NA	3	M	15	109.6	9		30.824					
RH-1	ROCKPORT HARBOR-RH1-VRMP	8/2/2016	12:07 PM	NA	4	M	14.7	109.0	9.0		30.878					
RH-1	ROCKPORT HARBOR-RH1-VRMP	8/2/2016	12:07 PM	NA	5	M	14.2	107.4	9		30.962					
RH-1	ROCKPORT HARBOR-RH1-VRMP	8/2/2016	12:07 PM	NA	5.4	M	14.0	105.7	8.9		30.962					
RH-1	ROCKPORT HARBOR-RH1-VRMP	8/2/2016	12:07 PM	D												50
RH-1	ROCKPORT HARBOR-RH1-VRMP	9/19/2016	12:06 PM	NA												65
RH-1	ROCKPORT HARBOR-RH1-VRMP	9/19/2016	12:06 PM	NA	0.3	M	16.3	97.5	8.0		31.14					
RH-1	ROCKPORT HARBOR-RH1-VRMP	9/19/2016	12:06 PM	NA	1	M	15.8	95.4	7.9		31.34					
RH-1	ROCKPORT HARBOR-RH1-VRMP	9/19/2016	12:06 PM	NA	2	M	14.8	94.6	7.9		31.74					
RH-1	ROCKPORT HARBOR-RH1-VRMP	9/19/2016	12:06 PM	NA	3.1	M	14.6	93.7	7.9		31.72					
RH-1	ROCKPORT HARBOR-RH1-VRMP	9/19/2016	12:06 PM	NA	4.1	M	14.6	92.4	7.8		31.74					
RH-1	ROCKPORT HARBOR-RH1-VRMP	9/19/2016	12:06 PM	NA	5	M	14.6	91.2	7.7		31.79					
RH-1	ROCKPORT HARBOR-RH1-VRMP	9/19/2016	12:06 PM	NA	6.1	M	14.5	90.6	7.6		31.8					
RH-1	ROCKPORT HARBOR-RH1-VRMP	9/19/2016	12:06 PM	NA	7.1	M	14.5	89.9	7.6		31.85					
RH-1	ROCKPORT HARBOR-RH1-VRMP	9/19/2016	12:06 PM	D												194
RH-1	ROCKPORT HARBOR-RH1-VRMP	9/19/2016	12:06 PM	D	4.1	M	14.6	89.4	7.5		31.73					
RH-1	ROCKPORT HARBOR-RH1-VRMP	10/17/2016	12:47 PM	NA												27
RH-1	ROCKPORT HARBOR-RH1-VRMP	10/17/2016	12:47 PM	NA	0.3	M	13.9	98	8.4		31.74					
RH-1	ROCKPORT HARBOR-RH1-VRMP	10/17/2016	12:47 PM	NA	1	M	13.8	100.8	8.6		31.94					
RH-1	ROCKPORT HARBOR-RH1-VRMP	10/17/2016	12:47 PM	NA	2	M	13.6	101.2	8.7		31.91					

Rockport Harbor and Tributaries- Rockport Conservation Commission

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)
RH-1	ROCKPORT HARBOR-RH1-VRMP	10/17/2016	12:47 PM	NA	3	M	13.5	101.1	8.7		31.95					
RH-1	ROCKPORT HARBOR-RH1-VRMP	10/17/2016	12:47 PM	NA	4.1	M	13.5	100.7	8.7		31.94					
RH-1	ROCKPORT HARBOR-RH1-VRMP	10/17/2016	12:47 PM	NA	6	M	13.5	98.9	8.5		31.92					
RH-1	ROCKPORT HARBOR-RH1-VRMP	10/17/2016	12:47 PM	NA	7.6	M	13.5	98.4	8.5		31.98					
RH-1	ROCKPORT HARBOR-RH1-VRMP	10/17/2016	12:47 PM	D												35
RH-2	ROCKPORT HARBOR-RH2-VRMP	6/22/2016	2:03 PM	NA	0.3	M	15.2	118.1	9.8		29.87					
RH-2	ROCKPORT HARBOR-RH2-VRMP	6/22/2016	2:03 PM	NA	1.2	M	14.5	119.4	10.1		29.97					
RH-2	ROCKPORT HARBOR-RH2-VRMP	6/22/2016	2:03 PM	NA	2	M	13.7	121.9	10.4		30.07					
RH-2	ROCKPORT HARBOR-RH2-VRMP	6/22/2016	2:03 PM	NA	3.1	M	13.6	123.9	10.6		30.09					
RH-2	ROCKPORT HARBOR-RH2-VRMP	6/22/2016	2:03 PM	NA	3.9	M	12.9	123.5	10.7		30.17					
RH-2	ROCKPORT HARBOR-RH2-VRMP	6/22/2016	2:03 PM	NA	5.2	M	12.7	123.9	10.8		30.21					
RH-2	ROCKPORT HARBOR-RH2-VRMP	6/22/2016	2:03 PM	NA	10.1	M	11.2	124.3	11.1		30.99					
RH-2	ROCKPORT HARBOR-RH2-VRMP	6/22/2016	2:03 PM	NA	14.2	M	10.4	117.1	10.7		31.06					
RH-2	ROCKPORT HARBOR-RH2-VRMP	8/2/2016	11:41 AM	NA	0.4	M	21.1	113.0	8.3		30.027					
RH-2	ROCKPORT HARBOR-RH2-VRMP	8/2/2016	11:41 AM	NA	1	M	19.5	115.2	8.7		30.288					
RH-2	ROCKPORT HARBOR-RH2-VRMP	8/2/2016	11:41 AM	NA	2	M	16.7	113.8	9.1		30.598					
RH-2	ROCKPORT HARBOR-RH2-VRMP	8/2/2016	11:41 AM	NA	3	M	15.7	113.5	9.2		30.666					
RH-2	ROCKPORT HARBOR-RH2-VRMP	8/2/2016	11:41 AM	NA	4	M	14.7	111.3	9.2		30.932					
RH-2	ROCKPORT HARBOR-RH2-VRMP	8/2/2016	11:41 AM	NA	5	M	14.1	109.9	9.2		31.044					
RH-2	ROCKPORT HARBOR-RH2-VRMP	8/2/2016	11:41 AM	NA	6	M	13.6	107.1	9.0		31.062					
RH-2	ROCKPORT HARBOR-RH2-VRMP	8/2/2016	11:41 AM	NA	7	M	13.4	104.1	8.8		31.085					
RH-2	ROCKPORT HARBOR-RH2-VRMP	8/2/2016	11:41 AM	NA	8	M	13.1	101.8	8.7		31.12					
RH-2	ROCKPORT HARBOR-RH2-VRMP	8/2/2016	11:41 AM	NA	9	M	13	98.9	8.5		31.144					
RH-2	ROCKPORT HARBOR-RH2-VRMP	8/2/2016	11:41 AM	NA	10	M	12.8	97.3	8.3		31.218					
RH-2	ROCKPORT HARBOR-RH2-VRMP	8/2/2016	11:41 AM	NA	11	M	12.5	95.8	8.3		31.224					
RH-2	ROCKPORT HARBOR-RH2-VRMP	8/2/2016	11:41 AM	NA	11	M	12.5	95.9	8.3		31.195					
RH-2	ROCKPORT HARBOR-RH2-VRMP	8/2/2016	11:41 AM	NA	12	M	12.5	95.1	8.2		31.253					
RH-2	ROCKPORT HARBOR-RH2-VRMP	8/2/2016	11:41 AM	NA	14.1	M	12.4	94.2	8.1		31.258					
RH-2	ROCKPORT HARBOR-RH2-VRMP	8/2/2016	11:41 AM	NA	14.5	M	12.4	93.4	8.1		31.23					
RH-2	ROCKPORT HARBOR-RH2-VRMP	9/19/2016	11:58 AM	NA												93
RH-2	ROCKPORT HARBOR-RH2-VRMP	9/19/2016	11:58 AM	NA	0.3	M	17.2	100.5	8.1		30.96					
RH-2	ROCKPORT HARBOR-RH2-VRMP	9/19/2016	11:58 AM	NA	1	M	15.4	100.2	8.3		31.71					
RH-2	ROCKPORT HARBOR-RH2-VRMP	9/19/2016	11:58 AM	NA	2.1	M	14.9	100.4	8.4		31.77					
RH-2	ROCKPORT HARBOR-RH2-VRMP	9/19/2016	11:58 AM	NA	2.1	M	14.9	100	8.4		31.72					
RH-2	ROCKPORT HARBOR-RH2-VRMP	9/19/2016	11:58 AM	NA	3.0	M	14.8	102.5	8.6		31.72					
RH-2	ROCKPORT HARBOR-RH2-VRMP	9/19/2016	11:58 AM	NA	4.1	M	14.8	103.4	8.7		31.68					
RH-2	ROCKPORT HARBOR-RH2-VRMP	9/19/2016	11:58 AM	NA	5.0	M	14.7	103.3	8.7		31.77					
RH-2	ROCKPORT HARBOR-RH2-VRMP	9/19/2016	11:58 AM	NA	6.1	M	14.6	103.2	8.7		31.77					
RH-2	ROCKPORT HARBOR-RH2-VRMP	9/19/2016	11:58 AM	NA	7.0	M	14.6	103.1	8.7		31.77					
RH-2	ROCKPORT HARBOR-RH2-VRMP	9/19/2016	11:58 AM	NA	8.0	M	14.6	103.1	8.7		31.76					
RH-2	ROCKPORT HARBOR-RH2-VRMP	9/19/2016	11:58 AM	NA	9.1	M	14.6	103	8.7		31.82					

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)	Salinity (PPTH)	Turbidity (NTU)	Total Diss. Solids (MG/L)	** TSS (MG/L)	E. coli Bacteria (MPN/100ML)	Enterococci (MPN/100ML)
RH-2	ROCKPORT HARBOR-RH2-VRMP	9/19/2016	11:58 AM	NA	10.2	M	14.5	102.8	8.7		31.81					
RH-2	ROCKPORT HARBOR-RH2-VRMP	9/19/2016	11:58 AM	NA	12.0	M	14.5	102.8	8.7		31.88					
RH-2	ROCKPORT HARBOR-RH2-VRMP	9/19/2016	11:58 AM	NA	14.0	M	14.4	102.6	8.7		31.75					
RH-2	ROCKPORT HARBOR-RH2-VRMP	9/19/2016	11:58 AM	NA	14.9	M	14.4	101.5	8.6		31.83					
RH-2	ROCKPORT HARBOR-RH2-VRMP	10/17/2016	12:33 PM	NA												23
RH-2	ROCKPORT HARBOR-RH2-VRMP	10/17/2016	12:33 PM	NA	.2	M	13.8	100.8	8.6		31.82					
RH-2	ROCKPORT HARBOR-RH2-VRMP	10/17/2016	12:33 PM	NA	1.0	M	13.8	103	8.8		31.8					
RH-2	ROCKPORT HARBOR-RH2-VRMP	10/17/2016	12:33 PM	NA	2.0	M	13.7	103.3	8.9		31.85					
RH-2	ROCKPORT HARBOR-RH2-VRMP	10/17/2016	12:33 PM	NA	3.0	M	13.6	103.7	8.9		31.82					
RH-2	ROCKPORT HARBOR-RH2-VRMP	10/17/2016	12:33 PM	NA	4.0	M	13.5	104	9		31.81					
RH-2	ROCKPORT HARBOR-RH2-VRMP	10/17/2016	12:33 PM	NA	6.0	M	13.4	103.9	9		31.91					
RH-2	ROCKPORT HARBOR-RH2-VRMP	10/17/2016	12:33 PM	NA	7.9	M	13.4	103.1	8.9		31.93					
RH-2	ROCKPORT HARBOR-RH2-VRMP	10/17/2016	12:33 PM	NA	10.0	M	13.4	101.5	8.8		31.88					
RH-2	ROCKPORT HARBOR-RH2-VRMP	10/17/2016	12:33 PM	NA	12.1	M	13.4	101.3	8.7		31.98					
RH-2	ROCKPORT HARBOR-RH2-VRMP	10/17/2016	12:33 PM	NA	14.0	M	13.4	100.6	8.7		32.01					
RH-2	ROCKPORT HARBOR-RH2-VRMP	10/17/2016	12:33 PM	NA	16.0	M	13.4	97.1	8.4		32.06					
RH-2	ROCKPORT HARBOR-RH2-VRMP	10/17/2016	12:33 PM	NA	16.1	M	13.4	93.9	8.1		32.04					
RH-3	ROCKPORT HARBOR-RH3-VRMP	6/22/2016	1:36 PM	NA	.1	M	14.7	117.8	9.9		29.63					
RH-3	ROCKPORT HARBOR-RH3-VRMP	6/22/2016	1:36 PM	NA	1.0	M	14.1	119.2	10.1		29.72					
RH-3	ROCKPORT HARBOR-RH3-VRMP	6/22/2016	1:36 PM	NA	1.9	M	13.4	120.1	10.3		29.9					
RH-3	ROCKPORT HARBOR-RH3-VRMP	6/22/2016	1:36 PM	NA	3.0	M	12.5	120	10.5		30.22					
RH-3	ROCKPORT HARBOR-RH3-VRMP	6/22/2016	1:36 PM	NA	4.0	M	12.5	121.9	10.7		30.32					
RH-3	ROCKPORT HARBOR-RH3-VRMP	6/22/2016	1:36 PM	NA	5.0	M	12.4	122.4	10.7		30.27					
RH-3	ROCKPORT HARBOR-RH3-VRMP	6/22/2016	1:36 PM	NA	10.0	M	12	123	10.9		30.63					
RH-3	ROCKPORT HARBOR-RH3-VRMP	6/22/2016	1:36 PM	NA	14.9	M	10.8	119	10.8		31.05					
RH-3	ROCKPORT HARBOR-RH3-VRMP	6/22/2016	1:36 PM	NA	19.1	M	9.3	105.2	9.8		31.17					
RH-3	ROCKPORT HARBOR-RH3-VRMP	8/2/2016	11:11 AM	NA												37
RH-3	ROCKPORT HARBOR-RH3-VRMP	8/2/2016	11:11 AM	NA	.3	M	21.4	107.4	7.9		30.067					
RH-3	ROCKPORT HARBOR-RH3-VRMP	8/2/2016	11:11 AM	NA	1.0	M	19.9	112.9	8.5		30.087					
RH-3	ROCKPORT HARBOR-RH3-VRMP	8/2/2016	11:11 AM	NA	2.1	M	18.6	115.4	8.9		30.275					
RH-3	ROCKPORT HARBOR-RH3-VRMP	8/2/2016	11:11 AM	NA	3.1	M	17.7	120.7	9.4		30.441					
RH-3	ROCKPORT HARBOR-RH3-VRMP	8/2/2016	11:11 AM	NA	4.0	M	17	124.1	9.8		30.536					
RH-3	ROCKPORT HARBOR-RH3-VRMP	8/2/2016	11:11 AM	NA	5.0	M	15	124.8	10.3		30.854					
RH-3	ROCKPORT HARBOR-RH3-VRMP	8/2/2016	11:11 AM	NA	6.0	M	14.4	122.8	10.2		30.896					
RH-3	ROCKPORT HARBOR-RH3-VRMP	8/2/2016	11:11 AM	NA	7.0	M	14.1	121.7	10.2		30.962					
RH-3	ROCKPORT HARBOR-RH3-VRMP	8/2/2016	11:11 AM	NA	8.0	M	13.4	120.4	10.2		31.115					
RH-3	ROCKPORT HARBOR-RH3-VRMP	8/2/2016	11:11 AM	NA	9.9	M	12.9	117.6	10.1		31.178					
RH-3	ROCKPORT HARBOR-RH3-VRMP	8/2/2016	11:11 AM	NA	12.1	M	12.5	114	9.8		31.213					
RH-3	ROCKPORT HARBOR-RH3-VRMP	8/2/2016	11:11 AM	NA	14.0	M	12.2	108.9	9.5		31.287					
RH-3	ROCKPORT HARBOR-RH3-VRMP	8/2/2016	11:11 AM	NA	16.0	M	12.1	104.9	9.1		31.309					
RH-3	ROCKPORT HARBOR-RH3-VRMP	8/2/2016	11:11 AM	NA	17.9	M	12.1	102.3	8.9		31.258					
RH-3	ROCKPORT HARBOR-RH3-VRMP	8/2/2016	11:11 AM	NA	19.1	M	12.1	100.7	8.8		31.298					
RH-3	ROCKPORT HARBOR-RH3-VRMP	9/19/2016	11:29 AM	NA												36
RH-3	ROCKPORT HARBOR-RH3-VRMP	9/19/2016	11:29 AM	NA	0.3	M	17	102.6	8.3		31.09					
RH-3	ROCKPORT HARBOR-RH3-VRMP	9/19/2016	11:29 AM	NA	0.9	M	16.1	103.5	8.5		31.36					
RH-3	ROCKPORT HARBOR-RH3-VRMP	9/19/2016	11:29 AM	NA	2	M	15.3	102.6	8.5		31.6					
RH-3	ROCKPORT HARBOR-RH3-VRMP	9/19/2016	11:29 AM	NA	3	M	15.2	102.2	8.5		31.66					

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)
RH-3	ROCKPORT HARBOR-RH3-VRMP	9/19/2016	11:29 AM	NA	4.0	M	15	102	8.5		31.78					
RH-3	ROCKPORT HARBOR-RH3-VRMP	9/19/2016	11:29 AM	NA	5.0	M	14.9	101.2	8.5		31.78					
RH-3	ROCKPORT HARBOR-RH3-VRMP	9/19/2016	11:29 AM	NA	6.0	M	14.8	99.3	8.3		31.75					
RH-3	ROCKPORT HARBOR-RH3-VRMP	9/19/2016	11:29 AM	NA	7.0	M	14.8	97.4	8.2		31.76					
RH-3	ROCKPORT HARBOR-RH3-VRMP	9/19/2016	11:29 AM	NA	7.9	M	14.8	96.4	8.1		31.78					
RH-3	ROCKPORT HARBOR-RH3-VRMP	9/19/2016	11:29 AM	NA	9.0	M	14.7	95.4	8		31.77					
RH-3	ROCKPORT HARBOR-RH3-VRMP	9/19/2016	11:29 AM	NA	10.0	M	14.6	94.2	7.9		31.84					
RH-3	ROCKPORT HARBOR-RH3-VRMP	9/19/2016	11:29 AM	NA	12.0	M	14.6	93.2	7.9		31.8					
RH-3	ROCKPORT HARBOR-RH3-VRMP	9/19/2016	11:29 AM	NA	14.3	M	14.3	88.7	7.5		31.74					
RH-3	ROCKPORT HARBOR-RH3-VRMP	9/19/2016	11:29 AM	NA	16.1	M	14.3	84.5	7.2		31.89					
RH-3	ROCKPORT HARBOR-RH3-VRMP	9/19/2016	11:29 AM	NA	18.1	M	14.2	81.5	6.9		31.9					
RH-3	ROCKPORT HARBOR-RH3-VRMP	9/19/2016	11:29 AM	NA	19.0	M	14	78.3	6.7		31.92					
RH-3	ROCKPORT HARBOR-RH3-VRMP	10/17/2016	12:16 PM	NA												39
RH-3	ROCKPORT HARBOR-RH3-VRMP	10/17/2016	12:16 PM	NA	.3	M	13.7	101.5	8.7		31.79					
RH-3	ROCKPORT HARBOR-RH3-VRMP	10/17/2016	12:16 PM	NA	2.0	M	13.7	104.1	8.9		31.88					
RH-3	ROCKPORT HARBOR-RH3-VRMP	10/17/2016	12:16 PM	NA	4.0	M	13.6	104.3	9		31.86					
RH-3	ROCKPORT HARBOR-RH3-VRMP	10/17/2016	12:16 PM	NA	5.9	M	13.4	103.6	8.9		31.93					
RH-3	ROCKPORT HARBOR-RH3-VRMP	10/17/2016	12:16 PM	NA	8.1	M	13.4	100.4	8.7		31.96					
RH-3	ROCKPORT HARBOR-RH3-VRMP	10/17/2016	12:16 PM	NA	9.9	M	13.5	98.3	8.5		31.98					
RH-3	ROCKPORT HARBOR-RH3-VRMP	10/17/2016	12:16 PM	NA	12.0	M	13.5	96.8	8.3		31.93					
RH-3	ROCKPORT HARBOR-RH3-VRMP	10/17/2016	12:16 PM	NA	14.1	M	13.5	96.4	8.3		31.92					
RH-3	ROCKPORT HARBOR-RH3-VRMP	10/17/2016	12:16 PM	NA	16.0	M	13.4	96	8.3		31.92					
RH-3	ROCKPORT HARBOR-RH3-VRMP	10/17/2016	12:16 PM	NA	18.0	M	13.4	92.7	8		32.01					
RH-3	ROCKPORT HARBOR-RH3-VRMP	10/17/2016	12:16 PM	NA	19.5	M	13.4	89.7	7.7		31.99					
RO	ROCKPORT HARBOR-RO-VRMP	6/22/2016	12:59 PM	NA	.2	M	15	119.7	10.1		28.38					
RO	ROCKPORT HARBOR-RO-VRMP	6/22/2016	12:59 PM	NA	1.0	M	14	119.1	10.2		28.47					
RO	ROCKPORT HARBOR-RO-VRMP	6/22/2016	12:59 PM	NA	2.0	M	13.6	119.2	10.3		28.72					
RO	ROCKPORT HARBOR-RO-VRMP	6/22/2016	12:59 PM	NA	3.0	M	12.8	120	10.5		29.4					
RO	ROCKPORT HARBOR-RO-VRMP	6/22/2016	12:59 PM	NA	3.9	M	12.7	120.4	10.5		29.69					
RO	ROCKPORT HARBOR-RO-VRMP	6/22/2016	12:59 PM	NA	5.0	M	12.3	120.1	10.6		29.88					
RO	ROCKPORT HARBOR-RO-VRMP	6/22/2016	12:59 PM	NA	9.7	M	11.4	116.6	10.4		30.5					
RO	ROCKPORT HARBOR-RO-VRMP	6/22/2016	12:59 PM	NA	14.9	M	9.6	107.3	9.9		31.12					
RO	ROCKPORT HARBOR-RO-VRMP	6/22/2016	12:59 PM	NA	20.1	M	9.4	106.3	9.9		31.11					
RO	ROCKPORT HARBOR-RO-VRMP	6/22/2016	12:59 PM	NA	25.3	M	9.1	102.5	9.6		31.23					
RO	ROCKPORT HARBOR-RO-VRMP	6/22/2016	12:59 PM	NA	25.7	M	9.1	102.2	9.6		31.13					
RO	ROCKPORT HARBOR-RO-VRMP	8/2/2016	10:34 AM	NA												9
RO	ROCKPORT HARBOR-RO-VRMP	8/2/2016	10:34 AM	NA	0.4	M	19.7	118.1	8.9		30.047					
RO	ROCKPORT HARBOR-RO-VRMP	8/2/2016	10:34 AM	NA	2.1	M	19.5	122.2	9.2		29.988					
RO	ROCKPORT HARBOR-RO-VRMP	8/2/2016	10:34 AM	NA	4.0	M	19.4	122.8	9.3		30.041					
RO	ROCKPORT HARBOR-RO-VRMP	8/2/2016	10:34 AM	NA	6.0	M	18.9	123.8	9.5		30.204					
RO	ROCKPORT HARBOR-RO-VRMP	8/2/2016	10:34 AM	NA	7.1	M	18.6	124.1	9.6		30.139					
RO	ROCKPORT HARBOR-RO-VRMP	8/2/2016	10:34 AM	NA	8.1	M	15.8	121.2	9.8		30.86					
RO	ROCKPORT HARBOR-RO-VRMP	8/2/2016	10:34 AM	NA	9.1	M	14.8	117.9	9.7		31.044					
RO	ROCKPORT HARBOR-RO-VRMP	8/2/2016	10:34 AM	NA	10.0	M	14.6	116.6	9.7		31.056					
RO	ROCKPORT HARBOR-RO-VRMP	8/2/2016	10:34 AM	NA	11.1	M	13.8	108.9	9.2		31.103					
RO	ROCKPORT HARBOR-RO-VRMP	8/2/2016	10:34 AM	NA	12.0	M	13.4	106.6	9.1		31.021					
RO	ROCKPORT HARBOR-RO-VRMP	8/2/2016	10:34 AM	NA	13.0	M	12.5	99.9	8.6		31.201					

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)
RO	ROCKPORT HARBOR-RO-VRMP	8/2/2016	10:34 AM	NA	14.1	M	12.3	96.2	8.3		31.258					
RO	ROCKPORT HARBOR-RO-VRMP	8/2/2016	10:34 AM	NA	15.0	M	11.8	93.9	8.2		31.332					
RO	ROCKPORT HARBOR-RO-VRMP	8/2/2016	10:34 AM	NA	16.2	M	11.8	93.5	8.2		31.383					
RO	ROCKPORT HARBOR-RO-VRMP	8/2/2016	10:34 AM	NA	18.1	M	11.7	93.1	8.2		31.427					
RO	ROCKPORT HARBOR-RO-VRMP	8/2/2016	10:34 AM	NA	20.0	M	11.6	92.3	8.1		31.388					
RO	ROCKPORT HARBOR-RO-VRMP	8/2/2016	10:34 AM	NA	21.9	M	11.6	92.3	8.1		31.371					
RO	ROCKPORT HARBOR-RO-VRMP	8/2/2016	10:34 AM	NA	24.0	M	11.5	92.2	8.1		31.377					
RO	ROCKPORT HARBOR-RO-VRMP	8/2/2016	10:34 AM	NA	25.6	M	11.5	92	8.1		31.427					
RO	ROCKPORT HARBOR-RO-VRMP	8/2/2016	10:34 AM	D	0.5	M	19.8	115.5	8.7		29.954					
RO	ROCKPORT HARBOR-RO-VRMP	9/19/2016	10:36 AM	NA												34
RO	ROCKPORT HARBOR-RO-VRMP	9/19/2016	10:36 AM	NA	0.4	M	15.6	109.3	9.1		31.39					
RO	ROCKPORT HARBOR-RO-VRMP	9/19/2016	10:36 AM	NA	1.0	M	15.5	109.3	9.1		31.54					
RO	ROCKPORT HARBOR-RO-VRMP	9/19/2016	10:36 AM	NA	1.9	M	15.3	109	9.1		31.56					
RO	ROCKPORT HARBOR-RO-VRMP	9/19/2016	10:36 AM	NA	3.1	M	15.2	105.2	8.8		31.67					
RO	ROCKPORT HARBOR-RO-VRMP	9/19/2016	10:36 AM	NA	4.0	M	15.1	102.9	8.6		31.59					
RO	ROCKPORT HARBOR-RO-VRMP	9/19/2016	10:36 AM	NA	5.0	M	14.9	100.8	8.5		31.61					
RO	ROCKPORT HARBOR-RO-VRMP	9/19/2016	10:36 AM	NA	7.2	M	14.9	98.1	8.2		31.62					
RO	ROCKPORT HARBOR-RO-VRMP	9/19/2016	10:36 AM	NA	7.9	M	14.8	97.2	8.2		31.66					
RO	ROCKPORT HARBOR-RO-VRMP	9/19/2016	10:36 AM	NA	8.9	M	14.7	96.5	8.1		31.65					
RO	ROCKPORT HARBOR-RO-VRMP	9/19/2016	10:36 AM	NA	10.0	M	14.5	94.7	8		31.74					
RO	ROCKPORT HARBOR-RO-VRMP	9/19/2016	10:36 AM	NA	12.0	M	14.5	92.3	7.8		31.69					
RO	ROCKPORT HARBOR-RO-VRMP	9/19/2016	10:36 AM	NA	14.0	M	14.4	90.2	7.6		31.73					
RO	ROCKPORT HARBOR-RO-VRMP	9/19/2016	10:36 AM	NA	16.1	M	14.4	88.8	7.5		31.8					
RO	ROCKPORT HARBOR-RO-VRMP	9/19/2016	10:36 AM	NA	17.9	M	14.5	88.4	7.5		31.82					
RO	ROCKPORT HARBOR-RO-VRMP	9/19/2016	10:36 AM	NA	19.9	M	14.4	88.3	7.5		31.8					
RO	ROCKPORT HARBOR-RO-VRMP	9/19/2016	10:36 AM	NA	22.1	M	14.4	88.2	7.5		31.85					
RO	ROCKPORT HARBOR-RO-VRMP	9/19/2016	10:36 AM	NA	24.1	M	14.4	88.2	7.5		31.91					
RO	ROCKPORT HARBOR-RO-VRMP	9/19/2016	10:36 AM	NA	26.7	M	14.4	88	7.5		31.83					
RO	ROCKPORT HARBOR-RO-VRMP	10/17/2016	11:35 AM	NA												10
RO	ROCKPORT HARBOR-RO-VRMP	10/17/2016	11:35 AM	NA	0.4	M	13.8	93.7	8		31.77					
RO	ROCKPORT HARBOR-RO-VRMP	10/17/2016	11:35 AM	NA	1.1	M	13.7	101.3	8.7		31.93					
RO	ROCKPORT HARBOR-RO-VRMP	10/17/2016	11:35 AM	NA	2.1	M	13.5	101.9	8.8		31.83					
RO	ROCKPORT HARBOR-RO-VRMP	10/17/2016	11:35 AM	NA	3.0	M	13.5	102.1	8.8		31.87					
RO	ROCKPORT HARBOR-RO-VRMP	10/17/2016	11:35 AM	NA	4.0	M	13.5	102.3	8.8		31.87					
RO	ROCKPORT HARBOR-RO-VRMP	10/17/2016	11:35 AM	NA	5.0	M	13.5	102.1	8.8		31.91					
RO	ROCKPORT HARBOR-RO-VRMP	10/17/2016	11:35 AM	NA	6.1	M	13.5	102	8.8		31.92					
RO	ROCKPORT HARBOR-RO-VRMP	10/17/2016	11:35 AM	NA	10.1	M	13.5	99.8	8.6		31.9					
RO	ROCKPORT HARBOR-RO-VRMP	10/17/2016	11:35 AM	NA	14.1	M	13.5	98.7	8.5		31.88					
RO	ROCKPORT HARBOR-RO-VRMP	10/17/2016	11:35 AM	NA	15.9	M	13.5	98.5	8.5		31.73					
RO	ROCKPORT HARBOR-RO-VRMP	10/17/2016	11:35 AM	NA	19.9	M	13.5	98.4	8.5		31.88					
RO	ROCKPORT HARBOR-RO-VRMP	10/17/2016	11:35 AM	NA	21.9	M	13.5	98.2	8.5		31.93					
RO	ROCKPORT HARBOR-RO-VRMP	10/17/2016	11:35 AM	NA	24.0	M	13.4	98.1	8.5		31.98					
RO	ROCKPORT HARBOR-RO-VRMP	10/17/2016	11:35 AM	NA	25.8	M	13.4	97.6	8.4		31.95					
RO	ROCKPORT HARBOR-RO-VRMP	10/17/2016	11:35 AM	NA	26.9	M	13.4	97.4	8.4		32.01					