GROWING AREA WS

Medomak River
Waldoboro, Friendship and Bremen

Annual Report

Report Date: January 19, 2011

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APPROVAL

Division Director:

_____ _____ Date: _____
Print name signature

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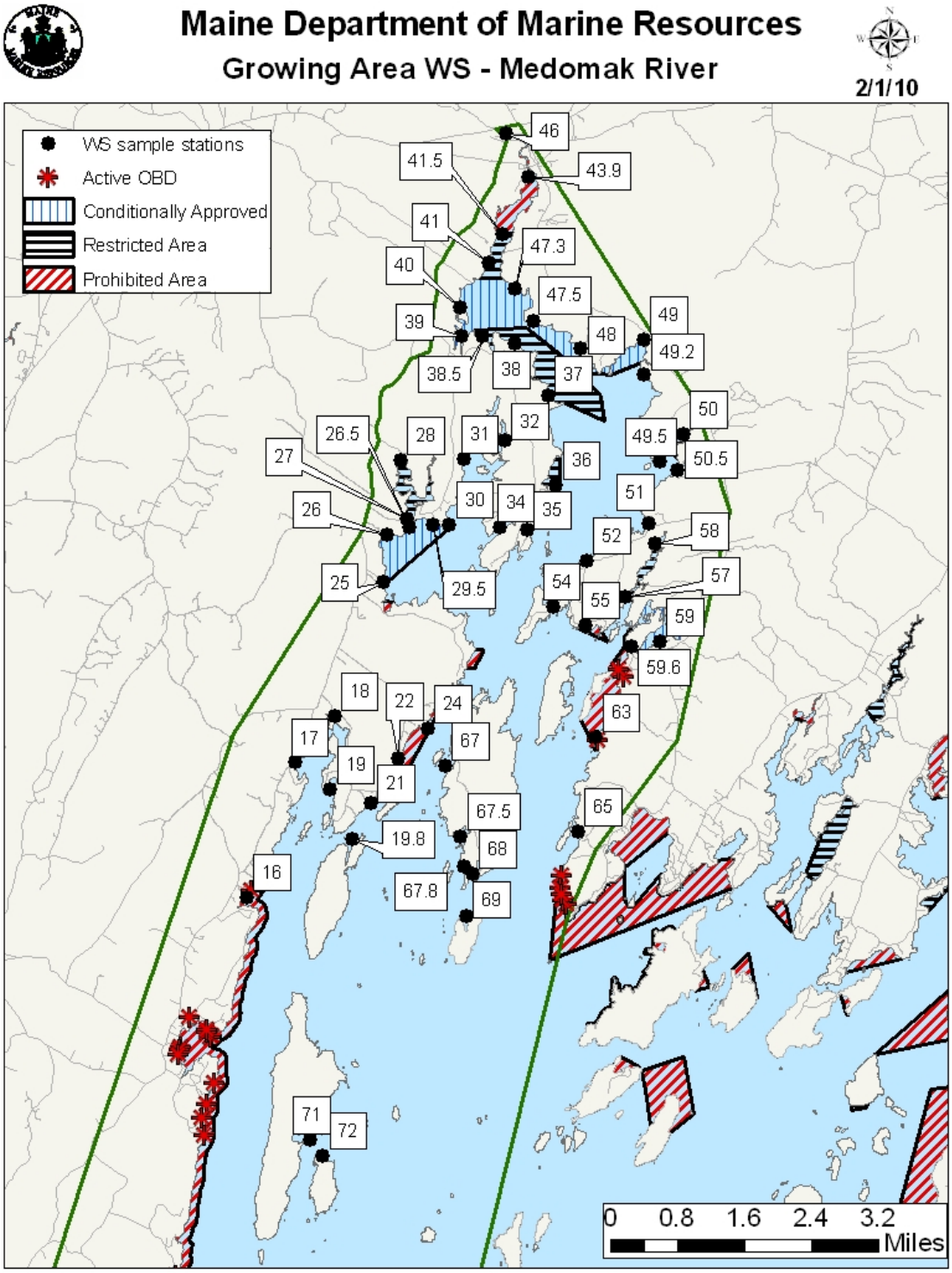


Executive Summary

This is an annual report for growing area WS written in compliance with the requirements of the 2007 Model Ordinance and the National Shellfish Sanitation Program.

Much of the shoreline in the town of Waldoboro was re-surveyed during the 2009 review year; the survey identified two actual pollution sources that required closures surrounding these sources. There were a total of seven rainfall closures in 2009, and the rainfall conditional portion of the river was closed for more than 6 months due to rainfall. During the review year, two stations were re-activated, and no new stations were created; no stations were deactivated in 2009.

There were no classification downgrades that were required as a result of this annual water quality review. Two areas are being proposed for a classification upgrade. The upgrades include a reduction of the restricted area in Long Cove, based on a dilution calculation for Farnsworth Brook, which drains into the head of Long Cove. The second reclassification is an upgrade to approved classification for a portion of Bremen shoreline near Hockomock Channel due to water quality meeting the approved standard, the remediation of two potential pollution sources, and no new actual pollution sources that were identified during the most recent shoreline survey.

Growing Area Description

Growing area WS is located in mid-coast Maine, and lies between Pemaquid Point, Bristol and Martin Point, Friendship (Figure 1). The area is comprised of the Medomak River and Muscongus Bay. The towns that fall within the boundary of this growing area include Waldoboro, Bristol, Bremen, and Friendship. There is one municipal wastewater treatment facility in this growing area, located in the town of Waldoboro. This facility is a lagoon system with no discharge points into the Medomak River. Additional potential pollution sources in area WS include 87 licensed over board discharge systems (OBDs) and numerous private in-ground systems. No OBDs were removed during the 2009 review year. There are also several outhouses, chemical toilets or composting toilets at seasonal properties. Area WS has no marinas; however, there are several piers which provide support to local lobstering and fishing activities. These are predominantly located in the prohibited areas of New Harbor, Round Pond and Muscongus Harbor. A detailed boundary description for growing area WS can be located in DMR central files.

Activity during Review Year

The following classification changes and legal notice amendments were implemented in 2009:

January 5, 2009: Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship)- this amendment reduces the size of the restricted area in Long Cove, Waldoboro, due to water

quality meeting the approved standard at the mouth of the cove; reclassifies part of the western shore of the upper Medomak River Rainfall Conditionally Approved Area to restricted, due to water quality not meeting the approved standard in the open status; and creates a small prohibited area off Heath Road, Bremen, due to the presence of an inadequate waste disposal system.

March 30, 2009: Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship) -this amendment closes the rainfall conditional areas on the Medomak River due to rainfall meeting or exceeding 1" within a 24 hour period.

May 6, 2009: Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship) -this amendment re-opens the rainfall conditional areas in the Medomak River due to water quality returning to approved standards.

June 12, 2009: Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship) -this amendment closes the rainfall conditional areas in the Medomak River due to rain exceeding 1 inch in a 24 hour period.

August 6, 2009: Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship) - Effective as of 5:00 A.M. on Friday, August 7, 2009, this amendment reopens the rainfall conditionally approved areas in the Medomak River, due to water quality returning to the approved standard.

August 14, 2009: Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship) - this amendment re-classifies part of Pitchers Cove (Waldoboro) from "approved" to "prohibited" due to a septic system malfunction.

August 25, 2009: Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship) - this amendment closes the rainfall conditional areas in the Medomak River, due to rainfall exceeding 1 inch in 24 hours.

September 4, 2009: Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship)- this amendment reclassifies a portion of Back River Cove from approved to prohibited due to the presence of a septic tank overflow pipe.

September 12, 2009: Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship) - this amendment re-opens the Medomak River rainfall Conditional areas, due to water quality returning to the approved standard.

September 28, 2009: Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship) – this amendment closes the rainfall conditional areas in the Medomak River, due to rainfall exceeding 1 inch in a 24 hour period.

October 22, 2009: Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship) - this amendment re-opens the rainfall conditional area north of and including Meetinghouse Cove, Waldoboro due to water quality returning to the approved standard. The rainfall conditional area at Boot Neck, Friendship remains closed due to water quality not returning to the approved standard.

October 26, 2009: Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship) - this amendment closes the Medomak River rainfall conditional areas, due to rainfall exceeding 1 inch in 24 hours.

November 5, 2009: Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship) - this amendment reduces the size of the restricted area in Long Cove, based on a dilution calculation for Farnsworth Brook. This classification change was implemented after a completion of a water quality assessment for Long Cove and Farnsworth Brook, and peer review of such assessment by DMR staff.

November 9, 2009: Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship) - this amendment re-opens the rainfall conditional area at Boot Neck (Friendship) due to water quality returning to the approved standard. The rainfall conditional area in the upper Medomak River (Waldoboro) remains closed due to water quality not meeting the approved standard.

November 10, 2009: Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship) - this amendment re-opens the rainfall conditional area in the upper Medomak River due to water quality returning to the approved standard.

November 16, 2009: Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship) - this amendment closes the rainfall conditional areas in the Medomak River, due to rainfall exceeding 1 inch in a 24 hour period.

November 24, 2009: Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship) -this amendment reclassifies Pitchers Cove, Waldoboro, from prohibited to approved due to a “do not occupy” order on a house with an identified septic system malfunction, and the confirmation by the town Codes Enforcement officer that the property is no longer occupied and the water source to the property has been turned off. Water quality in Pitchers Cove currently meets the approved standard; stormwater draining into Pitchers Cove also meets the approved standard.

December 23, 2009: Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship) - this amendment re-opens the Medomak River rainfall conditional areas, due to water quality returning to the approved standard; this amendment is effective as of 5 a.m. on December 24, 2009.

December 28, 2009: Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship) - this amendment closes the rainfall conditional areas due to rainfall exceeding 1” in a twenty-four hour period.

Current Classification(s)

At the end of 2009, shellfish growing area WS currently had areas classified as:

Approved

- 24 stations (WS 17, 18, 19, 19.8, 30, 31, 32, 34, 35, 37, 49.2, 49.5, 50.5, 51, 52, 54, 55, 65, 67, 67.5, 67.8, 68, 69, 71, and 72).

Conditionally Approved

- Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship); Upper Medomak River and Goose River Rainfall Conditional Areas; WS 39, 40, 47.3, 47.5 (new station), 48, 49 and 59.
- Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship) Broad Cove Seasonal Conditional Area; WS 25, 26, 26.5 (new station with less than 30 datapoints), 27, and 29.5 (new station with less than 30 datapoints).

Restricted

- Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship); WS 28, 36, 38, 38.5, 41, 50, 57, and 58; all due to non-point source pollution.

Prohibited

- Area No. 25-C, Western Muscongus Bay (Bristol and Bremen); WS 16, due to proximity to OBDs
- Area No. 26, Medomak River (Waldoboro, Bremen, and Friendship); Hockomock Channel, WS 22, 24, due to identified pollution sources
- Medomak River (Waldoboro, Bremen, and Friendship), Waldoboro Village, WS 41.50, 43.9, and 46, due to non-point source pollution
- Medomak River (Waldoboro, Bremen, and Friendship), Friendship, WS 59.6 and 63, due to proximity to OBDs

Please visit the DMR website to view legal notices:

http://www.maine.gov/dmr/rm/public_health/closures/closedarea.htm#S

Current Management Plan(s) for Conditional Areas

There are three conditional areas in Growing Area WS; two areas are managed under the same plan.

1) Upper Medomak Rainfall Conditionally Approved Area: area is conditional on ≥ 1” of rainfall within 24 hours; monitored by 7 conditionally approved stations and 1 boundary station (WS 39, 40, 41 (boundary), 47, 47.3, 47.5, 48, 49).

2) Goose River Rainfall Conditionally Approved Area: Goose River and is monitored by 1 station. Both areas are conditional on ≥ 1" of rainfall within 24 hours; monitored by station WS 59.

3) Seasonal Conditionally Approved area in Broad Cove, Waldoboro/Bremen: Seasonally Open from October 1 through April 30; monitored by stations WS 25, 26, 26.5, 27, and 29.5.

The complete management plans for conditional areas can be found in central files.

Current Annual Review of Conditional Area Management Plan

Rainfall Conditional Areas

In 2009, the Upper Medomak River Conditional area met the condition of its management plan. During the 2009 review year, there were 7 rainfall closures. Per management plan, Maine DMR was notified that rainfall exceeded 1" inch and the appropriate closures were made. Shellfish areas remained closed for a minimum of 2 weeks (14 days), and reopened following satisfactory water samples results. At the end of 2009, all rainfall conditional stations met their NSSP standard in the open status.

Seasonal Conditional Area

In 2009, the Broad Cove Seasonal Conditional area met the condition of its management plan. All stations were sampled six times in the open status. Prior to its seasonal reopening date of October 1st, a data check was completed to ensure that it was meeting the approved standard in the open status. At the end of 2009, all conditional stations met their NSSP standard in the open status.

Please refer to Appendices A and B for complete reviews of these conditional area management plans.

Water Quality Review

Table 1 lists all active approved, restricted and prohibited stations in Growing Area WS, with their respective Geomean and P90 calculations for 2009. Please refer to Appendix C for a key to interpreting the headers on the columns of Table 1. The approved and restricted standards for each station are also displayed in Table 1. These standards will fluctuate yearly as a result of the DMR transition from a most probable number (MPN) fecal coliform test method to a membrane filtration (MF) method and are dependent on the number of sample analyzed by MPN verses MF. The total number of data points used in the calculations is displayed in the Count column and includes both MPN and MF values. The number of data points analyzed by

MF is displayed in the MFCNT column. This fluctuating standard will cease when all 30 data points have been analyzed by the MF method.

All approved and restricted stations met the appropriate NSSP classification standards. Restricted station WS 57 met the approved standard; this station serves as a boundary station between a restricted and an approved area and does not need to be reclassified. Stations WS 22 and 24 are meeting the approved standard, but are classified as prohibited (highlighted in purple). The area in the vicinity of these stations has been re-surveyed and is being proposed for an upgrade in classification. Multiple other prohibited stations are also meeting the approved standard; these stations (WS 16, 59.6, 63) are located in the vicinity of OBDs and will remain classified as prohibited. All restricted stations met the restricted standard.

Table 1. Geomean and P90 Scores, Growing Area WS, 2003-2009

Station	Class	Count	MFCount	GM	SDV	MAX	P90	Appd_Std	Restr_Std	Min_Date
WS016.00	P	30	21	2.8	0.35	93	8.1	35	195	4/19/2005
WS017.00	A	30	21	4.1	0.61	1200	25.3	35	195	4/19/2005
WS018.00	A	30	21	3.7	0.56	1100	20	35	195	4/19/2005
WS019.00	A	30	22	2.3	0.23	35	4.7	35	191	4/19/2005
WS019.80	A	30	21	2.1	0.09	3.6	2.9	35	195	10/27/2004
WS021.00	A	30	21	4	0.46	43	15.7	35	195	4/19/2005
WS022.00	P	30	21	3.9	0.55	460	20.3	35	195	5/26/2005
WS024.00	P	30	21	3.3	0.49	460	14.4	35	195	5/26/2005
WS025.00	CA (boundary)	30	27	4	0.56	460	21.6	32	173	2/27/2006
WS028.00	R	30	23	6.8	0.66	460	49.5	34	187	7/26/2005
WS030.00	A	30	27	3.5	0.46	88	13.9	32	173	2/27/2006
WS031.00	A	30	21	2.7	0.27	23	6.2	35	195	4/19/2005
WS032.00	A	30	21	2.9	0.44	240	10.9	35	195	5/16/2005
WS034.00	A	30	21	3.7	0.48	93	15.7	35	195	5/16/2005
WS035.00	A	30	21	5.1	0.57	156	28.2	35	195	5/16/2005
WS036.00	R	30	21	5.9	0.58	300	33.6	35	195	5/16/2005
WS037.00	A	30	21	5.1	0.53	124	24.8	35	195	5/16/2005
WS038.00	R	30	30	5.4	0.57	134	29.9	31	163	9/19/2006
WS038.50	R	30	7	6.9	0.56	110	36.3	44	260	6/17/2003
WS041.00	R	30	30	10.5	0.68	400	80	31	163	8/29/2006
WS041.50	P-boundary	30	25	14	0.71	620	115.4	33	180	11/14/2005
WS043.90	P	30	22	39.3	0.67	1100	285	35	191	12/14/2004
WS046.00	P	30	22	45.6	0.63	1000	297.6	35	191	10/12/2004
WS049.20	A	30	30	2.8	0.33	22	7.6	31	163	8/29/2006
WS049.50	A	30	14	2.8	0.22	22	5.6	39	225	4/23/2003
WS050.00	R	30	23	7.2	0.62	260	45.4	34	187	10/12/2004
WS050.50	A	30	13	2.9	0.22	15	5.7	40	230	7/16/2003
WS051.00	A	30	21	3.9	0.44	66	14.5	35	195	5/16/2005
WS052.00	A	30	21	3.4	0.46	240	13.6	35	195	5/16/2005

Station	Class	Count	MFCount	GM	SDV	MAX	P90	Appd_Std	Restr_Std	Min_Date
WS054.00	A	30	21	4.7	0.54	160	23.6	35	195	5/16/2005
WS055.00	A	30	21	3.5	0.51	800	16	35	195	5/16/2005
WS057.00	R-boundary	30	21	3.8	0.43	70	13.6	35	195	5/16/2005
WS058.00	R	30	21	5.8	0.58	460	33.3	35	195	5/16/2005
WS059.60	P	30	21	3.5	0.45	104	13.6	35	195	7/11/2005
WS063.00	P	30	21	2.6	0.22	9.1	5	35	195	5/16/2005
WS065.00	A	30	21	2.7	0.36	70	8.2	35	195	5/16/2005
WS067.00	A	30	21	2.3	0.15	7.3	3.7	35	195	10/27/2004
WS067.50	A	30	20	2.3	0.11	4	3.2	36	199	9/2/2004
WS067.80	A	30	21	2.4	0.22	15	4.8	35	195	10/27/2004
WS068.00	A	30	21	2.2	0.14	9.1	3.5	35	195	10/27/2004
WS069.00	A	30	21	2.2	0.09	3.6	2.9	35	195	10/27/2004
WS071.00	A	30	21	2.2	0.1	3.6	2.9	35	195	10/27/2004
WS072.00	A	30	21	2.2	0.14	9.1	3.4	35	195	10/27/2004

In 2009, the Medomak River rainfall conditional areas had multiple prolonged closures; the river was closed for 195 and 198 days for the Upper Medomak and Goose River conditional areas, respectively. Furthermore, the upper river was frozen over in January and February, precluding sample collection. Due to the prolonged closures and ice over on the upper river, only 3 samples were collected during the open status for the Upper River portion, and only 2 samples in the open status were collected for the Goose River conditional area (WS 59). As allowed by the model ordinance, for the 2009 geometric mean and P90 score calculations, two closed status data points were added to the dataset to meet the minimum sample requirement; these data points served as re-opening samples for the river, and were collected within 5 days of the river re-opening. For 2009, the August 4th and November 8th closed status data points were used for stations WS 39, 40, 47.3, 48, 49, and 59. Using this data set, all rainfall conditionally approved stations in the Medomak River met the approved classification standard (Table 2).

Table 2. Geomean and P90 Calculations for Rainfall Conditional Stations, Open Status, 2004-2009

Station	Class	Count	MFCount	GM	SDV	MAX	P90	Appd_Std	Min_Date
WS039.00	CA	30	19	4.6	0.46	93	17.7	37	7/19/2004
WS040.00	CA	30	20	4.4	0.41	23	14.9	36	10/12/2004
WS047.30	CA	30	20	3.9	0.38	48	11.9	36	6/24/2004
WS047.50	New	13	2	3.9	0.20	9.1	7.1		3/29/2004
WS048.00	CA	30	19	3.7	0.44	64	13.5	37	5/10/2004
WS049.00	CA	30	20	5.3	0.49	132	22.7	36	6/24/2004
WS059.00	CA	30	19	6.0	0.54	92	29.2	37	5/10/2004

Table 3 shows the geometric means and P90 scores for Broad Cove seasonal conditionally approved stations; data reflects only the seasonal open status. All stations met the approved standard when in the open status. Station WS 25 and 30 serve as boundary stations between the conditional area and the approved areas; both stations meet the approved standard year

round. Stations WS 26.5 and 29.5 are new stations and have less than 30 datapoints in their datasets; therefore they are not being evaluated against the approved classification standard.

Table 3. Geomean and P90 Calculations for Broad Cove Seasonal Conditional Stations, Open Status, 10/1 to 4/30, 2001 to 2009

Station	Class	Count	MFCount	GM	SDV	MAX	P90	Appd_Std	Restr_Std	Min_Date
WS025.00	CA-boundary with A	30	18	3.5	0.39	43	11.4	37	208	4/16/2002
WS026.00	CA	30	17	2.9	0.27	27	6.5	37	212	10/23/2001
WS026.50	CA-New	14	14	2.1	0.11	4	3	31	163	10/30/2007
WS027.00	CA	30	17	2.9	0.3	64	7.3	37	212	4/10/2001
WS029.50	CA- New	14	14	3.5	0.54	136	18.3	31	163	10/30/2007
WS030.00	A-boundary with CA	30	18	3	0.29	32	7.2	37	208	4/16/2002

The sampling effort for 2009 is presented in Table 4. All approved, restricted and prohibited stations that were active at the start of 2009 were sampled at least six times, following the systematic random sampling scheduled (SRS). Approved stations WS 30 and 49.2, and restricted stations WS 41 and 38 are located on or near conditional area boundaries, and were sampled on the same schedule as the conditional areas, resulting in an increased sampling effort. Station WS 34 and 37 serves as flood closure re-opening samples. All seasonal conditionally approved stations were sampled 6 times in the open status. Rainfall conditionally approved stations were sampled either 3 times (Upper River, WS 39, 40, 47.3, 48 and 49) or two times (Goose River, WS 59) in the open status. This was due to multiple prolonged rainfall closures resulting in the river being closed for more than 6 months of the year. Furthermore, the upper river was frozen over in January and February, precluding sample collection. As allowed by the model ordinance, for the 2009 geometric mean and P90 score calculations, two closed status data points were added to the dataset to meet the minimum sample requirement; these data points served as re-opening samples for the river, and were collected within 5 days of the river re-opening.

Table 4. WS Sampling Effort for 2009

Station	Class	Adverse		Extra		Random		Total	Comments
		Closed	Open	Closed	Open	Closed	Open		
WS016.00	P					6		6	
WS017.00	A						6	6	
WS018.00	A						6	6	
WS019.00	A						6	6	
WS019.80	A						6	6	
WS021.00	A						6	6	
WS022.00	P					6		6	
WS024.00	P					6		6	
WS025.00	CA				2	3	6	11	Seasonal CA
WS026.00	CA				2	3	6	11	Seasonal CA

Station	Class	Adverse		Extra		Random		Total	Comments
		Closed	Open	Closed	Open	Closed	Open		
WS026.50	CA				2	3	6	11	Seasonal CA
WS027.00	CA				2	3	6	11	Seasonal CA
WS028.00	R				1		6	7	
WS029.50	CA				2	3	6	11	Seasonal CA
WS030.00	A				2		9	11	Boundary with CA
WS031.00	A						6	6	
WS032.00	A						6	6	
WS034.00	A	28					6	34	Flood Station
WS035.00	A						6	6	
WS036.00	R						6	6	
WS037.00	A	32					6	38	Flood Station
WS038.00	R	2	8				6	16	
WS038.50	R		2				7	9	
WS039.00	CA	10				3	3	16	Rainfall Cond.
WS040.00	CA	10				3	3	16	Rainfall Cond.
WS041.00	R		10				6	16	Boundary with CA
WS041.50	P					6		6	
WS043.90	P					6		6	
WS046.00	P					6		6	
WS047.30	CA	10				3	3	16	Rainfall Cond.
WS047.50	CA	4		1		2	1	8	New station
WS048.00	CA	10				2	3	15	Rainfall Cond.
WS049.00	CA	10				3	3	16	Rainfall Cond.
WS049.20	A	1	9				6	16	Boundary with CA
WS049.50	A					1	6	6	Reclass. from R to A in Nov
	R					5			
WS050.00	R		1				6	7	
WS050.50	A					1	6	6	Reclass. from R to A in Nov
	R					5			
WS051.00	A						4	7	Reclass. from A to P due to pollution source
	P	1				2			
WS052.00	A						6	6	
WS054.00	A						6	6	
WS055.00	A						6	6	
WS057.00	R						6	6	
WS058.00	R						6	6	

Station	Class	Adverse		Extra		Random		Total	Comments
		Closed	Open	Closed	Open	Closed	Open		
WS059.00	CA	10				3	2	15	Rainfall Cond.
WS059.60	P					6		6	
WS063.00	P					6		6	
WS065.00	A						6	6	
WS067.00	A						6	6	
WS067.50	A						6	6	
WS067.80	A						6	6	
WS068.00	A						6	6	
WS069.00	A						6	6	
WS071.00	A						6	6	
WS072.00	A						6	6	

Figure 2 shows the P90 scores, expressed as a percent of the approved standard, for all approved stations and boundary stations in growing area WS over the past three review years. During the transition from MPN to MF analysis method, the approved standard will decrease every year, until all samples have been analyzed by the MF method. In order to show the trend of the P90 value over the years, the calculated P90 scores are expressed as a percentage of the standard; any station showing the 2009 column on or above 100 percent does not meet its classification standard. Station WS 49.2, WS 49.5 and WS 50.5 are newer stations and only show 2 years of data in Figure 3. At the end of 2009, most approved stations showed little variation in water quality among the three review years. Several stations showed upward P90 trends (WS 17, 35, 54), indicating a decline in water quality, while multiple other stations have shown an improvement in water quality (downward trends) (WS 18, 19, 51). Upward trends are likely attributed to the above average rainfall that occurred during the 2009 review year, which increased runoff conditions, and ultimately may have increased pollution flushing to coastal waters. Station WS 30 showed an increase in scores in 2008, and then a significant decline in scores in 2009. These areas were surveyed in 2008 and 2009, and no pollution sources were identified in the vicinity of the station; the cause of this significant variation in water quality is unknown.

Figure 2. Area WS P90 Scores for Approved Stations (expressed as the percent of the approved standard)

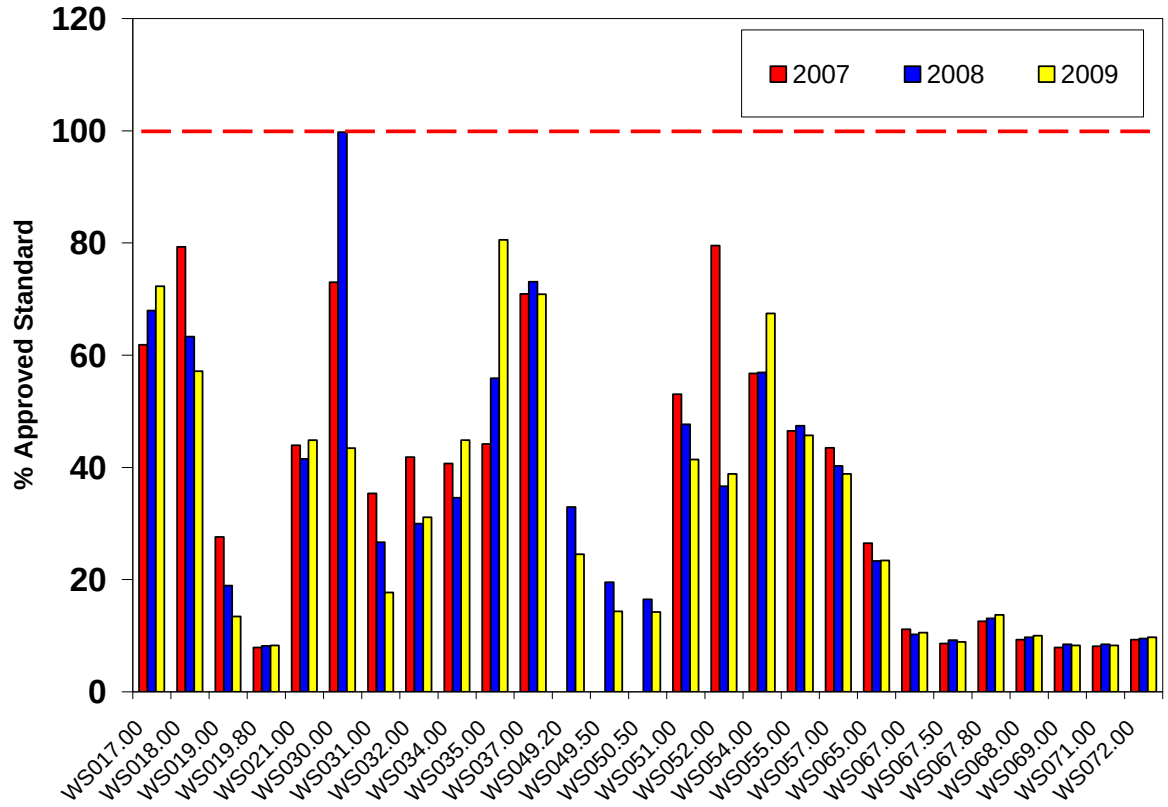


Figure 3 shows the P90 scores, expressed as a percent of the approved standard, for all conditionally approved stations in growing area WS, plus any boundary stations. Data reflect the open status only. Most of the rainfall conditional stations (WS 39 through 59) did not show any notable trends over the past three years. Station WS 59 showed a slight upward trend over the past three years; the area was surveyed in 2009 and no actual pollution sources were observed. The cause of this slight upward trend is unknown. Broad Cove seasonal conditional stations (WS 25 through WS 30) are part of a new conditional area, and only show 2 seasons worth of data; additionally, station WS 26.5 and 29.5 are new stations, and only show scores for the past review year. Seasonal conditional stations have not shown any notable water quality trends over the past two review years.

Figure 3. Area WS P90 Scores for Conditionally Approved Stations (expressed as the percent of the approved standard), Open Status Data

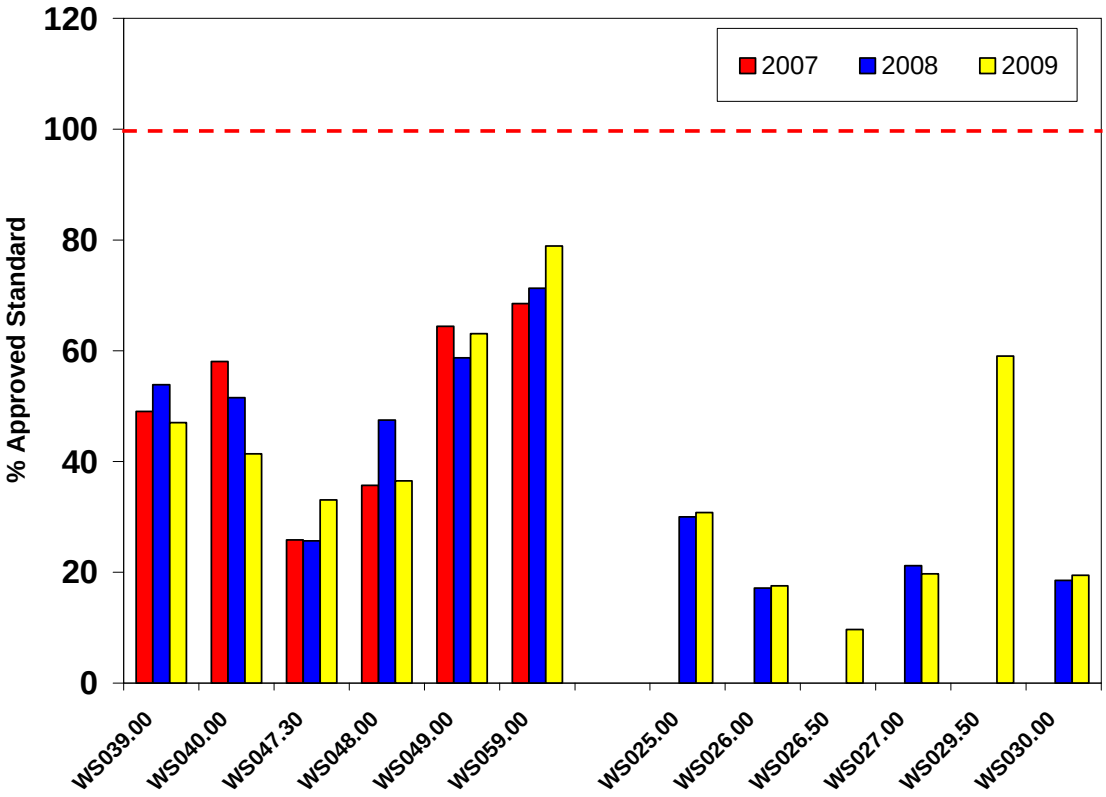
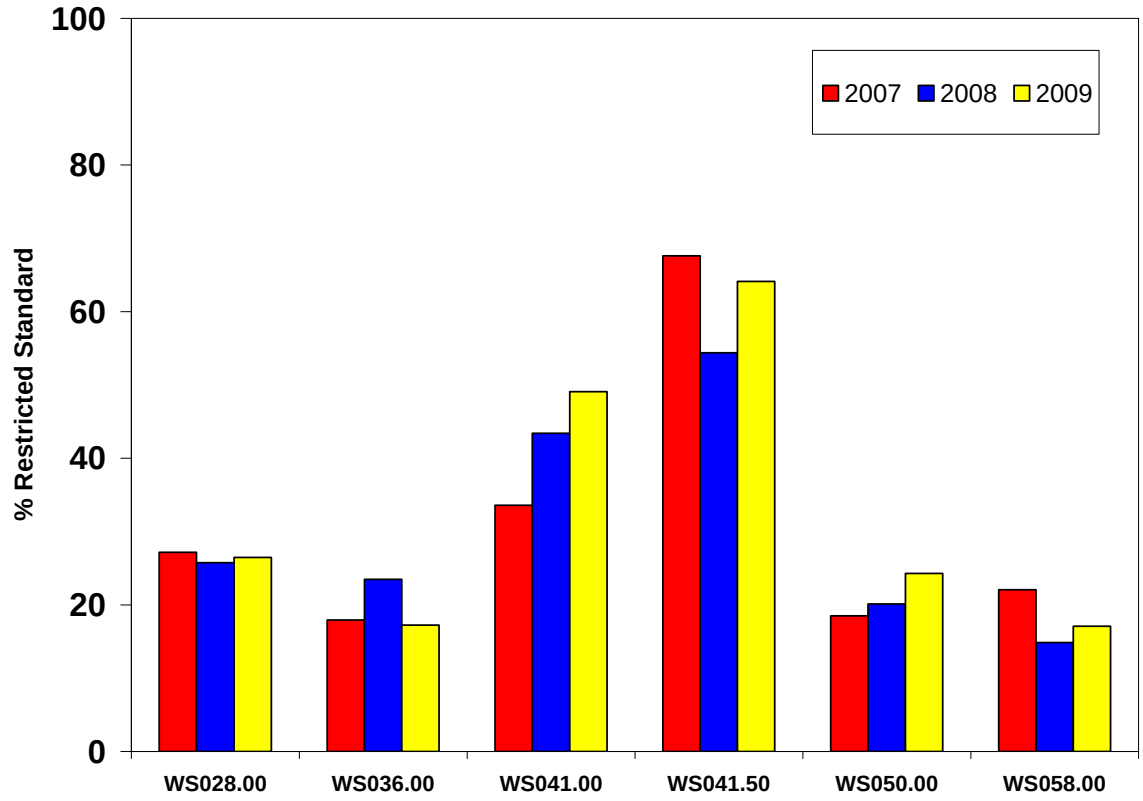


Figure 4 shows the P90 scores, expressed as a percent of the restricted standard, for all restricted stations in growing area WS. Station WS 41 has shown a slight increasing trend over the past three review years; this may be attributed to the increased overall precipitation amounts over the course of the 2008 and 2009 review years. The remainder of the restricted stations did not show any notable trends over the past three years.

Figure 4. Area WS P90 Scores for Restricted Stations (expressed as the percent of the restricted standard)



Classification Upgrades

Long Cove (Waldoboro)

(This classification change proposal was written and reviewed in November 4, 2009; the legal notice was implemented on November 5, 2009)

Long Cove is classified as restricted; the size of this restricted area is being proposed for a modification based on a dilution calculation. Long Cove was classified as approved through 2007, when water quality at its monitoring station WS 50, located at the head of the cove, failed to meet the approved standard; the cove was downgraded to a restricted classification in February 2008. In June 2008, two monitoring stations, WS 49.5 and WS 50.5, located near the mouth of the cove, which were deactivated in 2005 and 2006, respectively, were reactivated, in order to better monitor water quality in Long Cove. At the end of the 2008 field season, station WS 50 was still not meeting the approved standard, while stations WS 49.5 and 50.5 were meeting the approved standard (Table 5). At the end of October 2009, the scores looked similar

to those at the end of 2008, with station WS 50 not meeting the approved standard, while the remaining two stations met the standard (Table 6). Individual scores for each station, from data collected since 2002 are presented in Table 7; rainfall (cumulative amount of day of sample and three preceding days) associated with each sample collection date is also noted in this table. Scores exceeding the approved standard are highlighted in yellow.

Table 5. Long Cove Stations, Geometric mean and P90 Scores through 2008

Station	Class	Count	MFCount	GM	SDV	MAX	P90	Appd_Std	Restr_Std	Min_Date
WS049.50	R	30	8	3.4	0.3	23	8.4	43	254	4/18/2002
WS050.00	R	30	17	7	0.61	260	42.5	37	212	11/18/2003
WS050.50	R	30	8	3.2	0.26	23	7.1	43	254	9/26/2002

Table 6. Long Cove Stations, Geometric mean and P90 Scores through October 2009

Station	Class	Count	MFCount	GM	SDV	MAX	P90	Appd_Std	Restr_Std	Min_Date
WS049.50	R	30	13	3	0.27	23	6.9	40	230	11/5/2002
WS050.00	R	30	23	7.2	0.62	260	45.4	34	187	10/12/2004
WS050.50	R	30	13	2.9	0.22	15	5.7	40	230	7/16/2003

Table 7. Individual Fecal Coliform Scores (fc/100 ml), SRS and Extra Samples

Data	WS 50	WS 49.5	WS 50.5	Rainfall
18-Apr-02	3.6	<3	<3	1.02
14-May-02	3.6	3.6	9.1	2.95
03-Jun-02		<3	9.1	0.52
06-Jun-02	93			0.26
22-Jul-02	<3	<3	3.6	0.1
26-Sep-02	<3	23	3.6	1.5
05-Nov-02	15	23	23	0.25
23-Apr-03	<3	<3	<3	0.36
21-May-03	9.1	<3	<3	0
17-Jun-03	<3	<3	<3	0.99
16-Jul-03	<3	<3	<3	0.41
23-Sep-03	3.6	<3	<3	0.94
18-Nov-03	<3	<3	<3	0
10-May-04	<3	<3	<3	0
24-Jun-04	3.6	<3	<3	0.33
19-Jul-04	<3	<3	<3	0.23
31-Aug-04	9.1	9.1	15	1.1
22-Sep-04	<3	<3	<3	0.85
12-Oct-04	43	<3	9.1	0.11
13-Apr-05	<3	<3	<3	0
23-May-05	<3	3.6	<3	0.87
25-Jul-05	<3	<3	<3	0.04
08-Nov-05	9.1	<3	<3	0.38
05-Dec-05	23		3	0.13
27-Feb-06			<3	

Data	WS 50	WS 49.5	WS 50.5	Rainfall
01-Mar-06			<3	
16-May-06	43		3.6	1.6
29-Aug-06	4			0.73
20-Sep-06	260			0.56
14-Nov-06	74			1.61
27-Nov-06	4			0.13
05-Dec-06	10			0.91
23-Jan-07	1.9			0.03
14-May-07	2			0.31
05-Jun-07	200			2.91
11-Jul-07	4			0.2
28-Aug-07	8			0
29-Oct-07	29			1.72
22-Jan-08	<2			0.5
10-Mar-08	<2			2.15
07-May-08	<2			0.81
07-Jul-08	<2	<2	2	0
28-Jul-08		<2	<2	0
20-Aug-08	4	2	<2	1.85
03-Sep-08	<2	<2	<2	0
15-Oct-08	10	2	<2	0.08
17-Nov-08		22	10	1.19
01-Dec-08		<2	<2	1.08
15-Dec-08		2	2	2.39
30-Mar-09	12	<2	<2	0.95
18-May-09	15	6	<2	1.02
03-Jun-09	4			0
15-Jul-09	2			0.91
19-Jul-09		6	6	
09-Sep-09		<2	<2	0
23-Sep-09	<2			0
13-Oct-09	2	<2	2	-

The majority of the land surrounding the cove is forested and undeveloped; the only properties which have dwellings and septic systems are located at the head of the cove, and along a stream (Farnsworth Brook), which drains into the cove. In 2008, DMR and the town of Waldoboro Shellfish Warden completed a survey of the properties located immediately adjacent to the area which drains into the cove. No actual pollution sources were identified at the time of the survey. In July and August 2009, DMR and DEP conducted an additional survey of all the properties located in the vicinity of the cove, as well as the properties located in the vicinity of a stream that drains into the cove. No potential or actual problems were noted at the time of the 2009 survey. As a result of these surveys, it was determined that the pollution source that is affecting station WS 50 is non-point pollution associated with Farnsworth Brook.

In addition to completing the shoreline survey of the area, DMR staff members have been collecting stream samples at Farnsworth Brook; data is presented in Table 9. The stream was sampled in two locations: samples from S1 WS 50 were collected at the culvert located on Friendship Rd; samples from S1A WS 50 were collected at the mouth of the stream. There are no houses, or feeder tributaries located between stream stations S1WS 50 and S1A WS 50. There is a pond located upstream of station S1 WS 50; this pond used to have a beaver population which has been removed, and it is possible that the elevated fecal scores associated with Farnsworth Brook are of wildlife origin. Run-off conditions were noted at the time of each sample collection as low, medium or high (noted in Table 9); results from any samples that were collected at station WS 50 on the same day as the stream samples are also noted in the table. The scores from samples ranged from <2 to 1220 FC/100 ML, with the highest score collected while the area was closed under a coastal flood closure. The highest score obtained from a sample collected while the area was in open status was 220 FC/100 ML. The mean fecal score of all samples (excluding those collected during flood closure) was 55.5 FC/100 ML; the mean fecal score collected during high flow events was 65 FC/100 ML, while the mean scores collected during low and medium flow events was 53 FC/100 ML.

On October 27, 2009, stream flow at stream sampling stations S1 WS 50 was measured using a Gurley Flow meter, under high run-off conditions (following 1.85 inches of rain over 3 days preceding sample collection). Using an average velocity of 2.48 ft/s, and a cross sectional area of 1.89 ft^2, the flow rate of Farnsworth Brook under high run-off conditions was calculated as 4.7 ft^3/s, or 405,688 ft^3/day (or 37.1 gallon/s and 3,034,757 gallon/day).

Stream flow and fecal concentration data were used to complete a dilution calculation in order to determine the size of the area of Long Cove that is affected by the non-point source pollution associated with the stream. Based on a flow of 3.035 MGD, a fecal concentration of 65 FC/100 ML, and a depth of 4 ft (mean mid tide), 10.8 acres are needed to dilute the fecal pollution associated with Farnsworth Brook to a concentration of 14 FC/100 ml (approved standard). The current restricted area in Long Cove is 45 acres. Based on this information, it is recommended that the size of the current restricted area is reduced to 11 acres, based on the dilution calculation.

Table 8. Farnsworth Brook Samples, 2008-2009

Sample Date	S1 WS 50 (fc/100 ml)	S1A WS 50 (fc/100 ml)	Station WS 50
2/19/2008	13 (high)		
6/30/2008	220 (high)		
8/20/2008	76 (high)		4
9/8/2008	1220 (very high, flood closure)		
10/15/2008	16 (low)		10
11/19/2008	<2 (medium)		
12/2/2008	2 (high)		
6/3/2009	24 (medium)		4
7/16/2009	27 (medium -high)		
8/26/2009	88 (medium)		
9/1/2009	48 (very high, flood closure)		
9/15/2009	102 (low)		

Sample Date	S1 WS 50 (fc/100 ml)	S1A WS 50 (fc/100 ml)	Station WS 50
9/30/2009	84 (medium)	52 (medium)	29
10/27/2009	12 (high)	8 (high)	

Hockomock Channel, Bremen

Station WS 22 and 24 are currently classified as prohibited, but meet the approved standard. These stations were reclassified from approved to prohibited in 1990; the reason behind this closure is unknown. Both of the stations have shown water quality that has met the approved standard for the past 5 years (Figure 6). In 2009, two holding tanks located within the boundary of this closure were replaced with inground septic systems. The entire prohibited area was surveyed in 2008 and in 2010, and no actual pollution sources were noted. While no obvious pollution sources were noted at this property, the septic system for Broad Cove Marine services building (station WS 22) could not be located; neither the town nor the business had any septic system records or site plans available. Water quality at this station has met the approved standards for at least the past five review years. At present time, this property is not considered an actual problem. However, periodic checks of the property are recommended in the future.

Tables 9 and 10 show all data collected at stations WS 22 and 24 between 2000 and 2009; cumulative rainfall (within 3 days and within 4 days of collection) are noted in each table, with the data sorted by ascending rainfall amounts. All scores exceeding the variability method (49 for A1 method and 31 for MF method) are highlighted in yellow. Data collected through September 2010 was also reviewed as part of this assessment; all samples collected in 2010 have shown clean results (Table 11). Samples that were collected on May 15, 2002 and May 26, 2005 were collected after more than 2 inches of rainfall had occurred within a 24 hours period; under the current DMR flood protocol, these samples would have been collected under a flood closure. Overall, no rainfall or seasonal effect on water quality was noted at these stations. Using the most recent 30 data points through 2009, the P90 scores of two stations were 20.3 and 14.4, for stations WS 22 and 24, respectively; the approved standard for both stations was 35 (Table 12). In order to confirm that these two stations are not impacted by rainfall at a level that would cause the scores to exceed the approved standard, the geomean and P90 scores were recalculated using data collected under adverse rainfall conditions (greater than 0.5 inches of cumulative rainfall, within 4 days of collection); the two samples collected after more than 2 inches of rainfall in 24 hours were omitted from this calculation. Using this dataset, both stations showed P90 scores that were under the approved standard limit (Table 13).

Based on the following assessment and the lack of pollution sources that were identified during the recent shoreline survey, the prohibited area surrounding stations WS 22 and 24 is recommended for an upgrade to approved classification.

Figure 5. Hockomock Channel Stations, P90 scores 2005-2009 (as percent of approved standard)

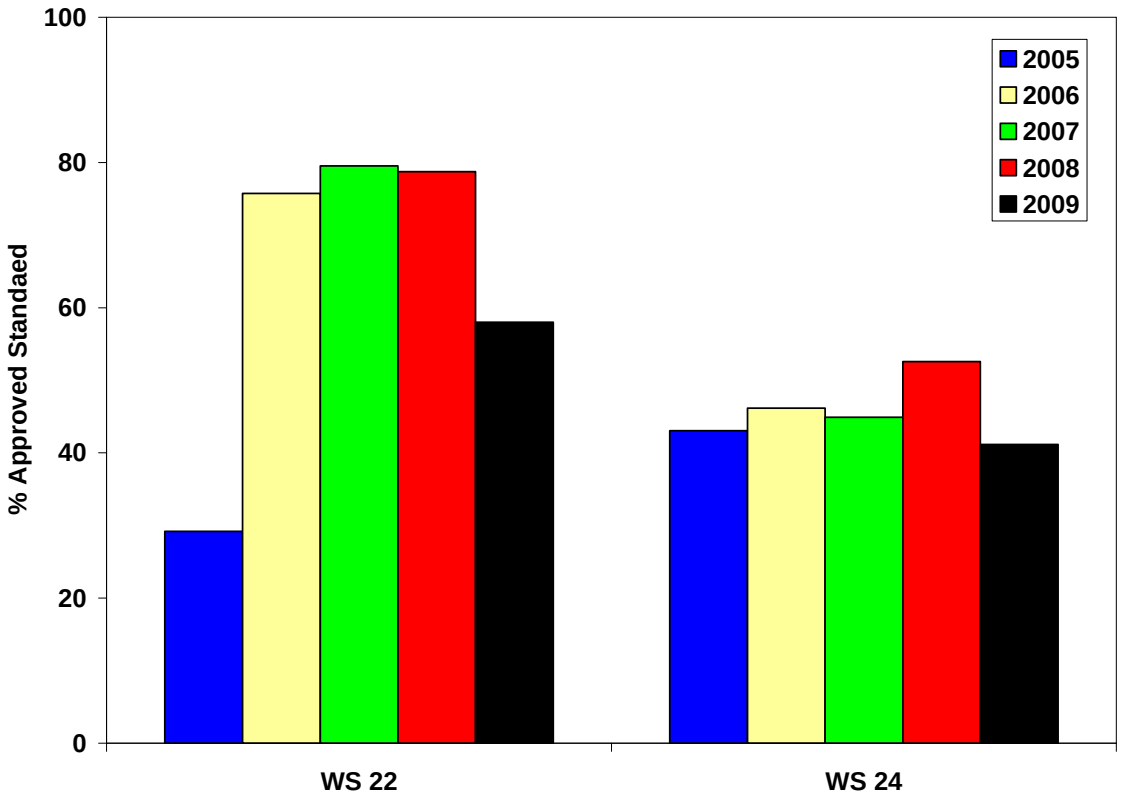


Table 9. WS 22, Seasonal and Rainfall Assessment, 2000-2009

Rain Sum 3 Day	Rain Sum 4 Day	Date	Tide	Adv	Sal	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
NR	NR	17-Sep-01	E	B	32									3.6			
0	0	26-Oct-00	E	BW	30										3.6		
0	0	23-Oct-01	F	B	31										<3		
0	0	20-Mar-03	H	TN	30			<3									
0	0	19-May-03	HF	B	30					<3							
0	0	25-Mar-04	F	X	31			<3									
0	0	20-Oct-04	F	B	32										<3		
0	0	19-Apr-05	LE	X	30				<3								
0	0	02-Nov-05	HE	X	30											3.6	
0	0	01-Mar-06	F	X	32			<3									
0	0	27-Aug-07	E	X	30								<2				
0	0	14-Oct-08	H	X	32										<2		
0	0	17-Mar-09	F	X	28			<2									
0	0	23-Sep-09	F	X	30									<2			
0	0.04	26-Jul-05	F	B	30							<3					
0	0.13	27-Nov-06	F	X	30											<2	
0	0.34	13-Oct-09	E	P	32										<2		
0	0.56	03-Oct-05	HE	X	31										9.1		
0.01	0.01	08-Sep-05	HF	X	30									<3			
0.01	0.01	09-May-07	LE	X	30					2							
0.02	0.02	16-Jun-00	HE	B	30						43						
0.02	0.02	25-Jul-01	H	B	30							<3					
0.02	0.03	23-Jan-07	F	X	32	<2											
0.03	0.03	13-Jun-05	L	B	30						15						
0.04	0.91	15-Jul-09	F	X	28							2					
0.07	0.07	07-Jul-03	L	B	32							3.6					
0.1	0.1	04-May-01	E	WB	30					<3							
0.13	0.13	06-Aug-03	LE	B	30								23				

Rain Sum 3 Day	Rain Sum 4 Day	Date	Tide	Adv	Sal	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.15	0.15	14-Sep-00	HF	B	31									<3			
0.16	1.86	19-Jul-00	F	B	30							<3					
0.18	0.19	24-Sep-03	E	X	31									43			
0.2	0.2	19-Aug-04	F	B	30								9.1				
0.21	0.21	10-Apr-01	HF	TB	31				<3								
0.29	0.29	04-Apr-07	F	X	30				<2								
0.32	0.42	10-Aug-00	LE	B	30								3.6				
0.34	0.34	08-May-00	HF	B	30					<3							
0.35	0.49	19-Aug-08	F	P	31								14				
0.44	0.44	18-Jul-02	E	X	30							9.1					
0.47	0.47	12-Jun-01	F	PBW	31						<3						
0.71	0.71	19-May-09	HE	X	30					<2							
0.72	0.72	16-Jan-08	LE	X	30	5.5											
0.73	0.73	29-Aug-06	F	P	30								<2				
0.81	0.81	09-Jul-07	L	X	32							<2					
0.81	0.81	06-May-08	F	X	26					<2							
0.98	1.6	16-May-06	F	PB	21					460							
1	1	05-Mar-08	H	P	30			4									
1.01	1.01	28-Jun-04	E	B	30						43						
1.08	1.08	28-Oct-02	F	B	30										<3		
1.09	1.09	17-Jun-02	F	PB	30						<3						
1.19	1.19	30-Jun-08	E	X	30						48						
1.28	1.32	24-May-04	F	PB	22					43							
1.4	1.72	30-Oct-07	F	X	32										<2		
1.42	1.42	16-Apr-02	F	PBN	30				<3								
1.52	1.52	24-Sep-02	F	PB	30									3.6			
1.61	1.61	14-Nov-06	LF	P	28											<2	
1.65	1.65	20-Sep-04	F	PB	31									<3			
1.78	2.36	16-Oct-03	F	PB	32										23		

Rain Sum 3 Day	Rain Sum 4 Day	Date	Tide	Adv	Sal	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.83	1.83	31-Mar-09	F	P	28			<2									
2.55	2.55	06-Feb-06	LE	P	30		<3										
2.79	2.99	15-May-02	H	PB	30					<3							
3.8	4	26-May-05	LF	P	30					43							

Table 10. WS 24, Seasonal and Rainfall Assessment, 2000-2009

Rain Sum 3 Day	Rain Sum 4 Day	Date	Tide	Adv	Sal	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
NR	NR	17-Sep-01	E	X	32									75			
0	0	26-Oct-00	E	X	30										93		
0	0	23-Oct-01	F	X	31										<3		
0	0	20-Mar-03	H	T	31			9.1									
0	0	19-May-03	HF	X	30					<3							
0	0	25-Mar-04	F	X	30			<3									
0	0	20-Oct-04	F	X	32										<3		
0	0	19-Apr-05	LE	X	30				<3								
0	0	02-Nov-05	HE	X	30											9.1	
0	0	01-Mar-06	F	X	32			<3									
0	0	27-Aug-07	E	X	32								<2				
0	0	14-Oct-08	H	X	30										2		
0	0	17-Mar-09	F	X	29			<2									
0	0	23-Sep-09	F	X	30									<2			
0	0.04	26-Jul-05	F	X	30							3.6					
0	0.13	27-Nov-06	F	X	30											2	
0	0.34	13-Oct-09	E	P	32										<2		
0	0.56	03-Oct-05	HE	X	32										<3		
0.01	0.01	08-Sep-05	H	X	30									<3			
0.01	0.01	09-May-07	LE	X	25					<2							
0.02	0.02	16-Jun-00	HE	X	30						<3						

Rain Sum 3 Day	Rain Sum 4 Day	Date	Tide	Adv	Sal	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.02	0.02	25-Jul-01	H	X	30							<3					
0.02	0.03	23-Jan-07	F	X	32	<2											
0.03	0.03	13-Jun-05	L	X	29						<3						
0.04	0.91	15-Jul-09	F	X	28							<2					
0.07	0.07	07-Jul-03	L	X	32							<3					
0.1	0.1	04-May-01	E	X	31					<3							
0.13	0.13	06-Aug-03	E	X	31								3.6				
0.15	0.15	14-Sep-00	HF	X	31									<3			
0.16	1.86	19-Jul-00	F	X	30							<3					
0.18	0.19	24-Sep-03	E	X	30									<3			
0.2	0.2	19-Aug-04	HF	X	30								3.6				
0.21	0.21	10-Apr-01	H	T	31				<3								
0.29	0.29	04-Apr-07	F	X	30				2								
0.32	0.42	10-Aug-00	E	X	30								<3				
0.34	0.34	08-May-00	HF	X	30					<3							
0.35	0.49	19-Aug-08	HF	P	30								7.3				
0.44	0.44	18-Jul-02	E	X	31							9.1					
0.47	0.47	12-Jun-01	F	P	31						9.1						
0.71	0.71	19-May-09	HE	X	30					<2							
0.72	0.72	16-Jan-08	L	X	29	<2											
0.73	0.73	29-Aug-06	F	P	30								<2				
0.81	0.81	09-Jul-07	LE	X	31							<2					
0.81	0.81	06-May-08	F	X	26					<2							
0.98	1.6	16-May-06	F	P	22					460							
1	1	05-Mar-08	H	P	31			2									
1.01	1.01	28-Jun-04	E	X	30						<3						
1.08	1.08	28-Oct-02	F	X	31										3.6		
1.09	1.09	17-Jun-02	F	P	30						<3						
1.19	1.19	30-Jun-08	E	X	30						10						

Rain Sum 3 Day	Rain Sum 4 Day	Date	Tide	Adv	Sal	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.28	1.32	24-May-04	F	P	25					93							
1.4	1.72	30-Oct-07	F	X	31										2		
1.42	1.42	16-Apr-02	F	P	30				<3								
1.52	1.52	24-Sep-02	HF	P	30									3.6			
1.61	1.61	14-Nov-06	LF	P	28											22	
1.65	1.65	20-Sep-04	F	P	30									<3			
1.78	2.36	16-Oct-03	F	P	15										<3		
1.83	1.83	31-Mar-09	F	P	28			<2									
2.55	2.55	06-Feb-06	LE	P	31		3.6										
2.79	2.99	15-May-02	H	P	30					<3							
3.8	4	26-May-05	LF	P	30					9.1							

Table 11. WS 22 and WS 24, 2010 Data

Station	Date	Tide	Temp	Adv	Sal	Col Score FC/100 ML	Rain Sum 3 Day	Rain Sum 4 Day
WS022.00	10-Mar-10	E	8	X	32	<2	0	0
WS022.00	28-Apr-10	F	8	X	30	<2	0.49	0.49
WS022.00	21-Jun-10	E	16	X	31	2	0.03	0.44
WS022.00	04-Aug-10	H	18	X	31	2	0	0
WS022.00	21-Sep-10	HF	15	X	30	4	NR	NR
WS024.00	10-Mar-10	E	8	X	32	<2	0	0
WS024.00	28-Apr-10	F	7	X	30	2	0.49	0.49
WS024.00	21-Jun-10	E	18	X	31	<2	0.03	0.44
WS024.00	04-Aug-10	H	16	X	32	2	0	0
WS024.00	21-Sep-10	HF	15	X	30	<2	NR	NR

Table 12. Station WS 22 and 24, SRS data 2005-2009

Station	Class	Count	MFCount	GM	SDV	MAX	P90	Appd_Std	Restr_Std	Min_Date
WS022.00	P	30	21	3.9	0.55	460	20.3	35	195	5/26/2005
WS024.00	P	30	21	3.3	0.49	460	14.4	35	195	5/26/2005

Table 13. Station WS 22 and 24, SRS data collected after 0.5 inches of cumulative rainfall, 2000-2009

Station	Class	Count	MFCount	GM	SDV	MAX	P90	Appd_Std	Restr_Std	Min_Date
WS022.00	P	23	11	5.4	0.63	460	35.4	39	224	7/19/2000
WS024.00	P	23	11	4.2	0.59	460	25	39	224	7/19/2000

Aquaculture/Wet Storage Activity

There are no active aquaculture leases or wet storage activity in growing area WS.

Shoreline Survey Activity in 2009

The following shoreline survey activity was completed in 2009:

July 15, 2009: DMR and DEP surveyed 46 properties in Waldoboro ME, Dutch Neck Road Area (maps R1 and R2). One potential pollution source was identified; no closure was recommended at time of survey.

July 20, 2009: DMR and DEP surveyed 14 properties on the upper Medomak, and re-visited properties throughout the watershed which were previously (in 2004) identified as problems by DEP. Some of these properties have undergone remediation, and are no longer of concern for water quality. Two potential pollution sources were identified.

July 30, 2009: DMR, DHHS and DEP surveyed 38 properties located on Deaver Rd, Waldoboro (Tax Map R9). Three potential pollution sources were identified.

July 31, 2009: DMR and DEP surveyed 19 properties in Back Cove Area (Map R9). One potential pollution source was noted.

August 12, 2009: DMR and DEP surveyed 53 properties in Waldoboro (maps R9, R8, and R7). One actual pollution source and one potential pollution source were noted. A closure was made surrounding the actual pollution source.

August 13, 2009: DMR and DEP surveyed 22 properties, on eastern shore of Medomak (Map R7) and Back River (Map R9). One actual pollution source was noted and a closure surrounding this property was made.

August 27, 2009: DMR and DEP surveyed 17 properties in Back River area, Waldoboro (Map R9). The following problems were noted. One actual and two potential pollution sources were noted.

September 15, 2009: DMR and DEP surveyed 36 properties, on the upper Medomak River and Back River areas (Maps R2, R5 and R9). Three potential pollution source and one actual pollution source were noted. The property identified as an actual pollution source is currently not occupied.

September 18, 2009: DMR and DEP surveyed 6 properties in Waldoboro (Back and Goose River Area, Map R10) and 11 properties in Friendship (Goose River area, Map211). No actual or potential pollution sources were observed.

All actual and potential pollution sources were reported to the town codes enforcement office for follow up and remediation.

Classification Changes Required

No downgrades in classification are required at this time.

Conclusion

All stations in growing area WS continued to maintain water quality that support their current classification, and no downgrades in classification are required as a result of this report. One area that is currently classified as prohibited, but is meeting the approved standards is being proposed for an upgrade in classification. Additionally, the size of a restricted area in Long Cove is recommended to be decreased, with the size of the restricted area reflecting the water quality impact from a stream.

The majority of the shoreline in growing area WS was extensively surveyed in 2008 and 2009. A small portion of the shore, as well as several islands, will be surveyed in 2010 review year. All data collected during this recent survey has been entered into the DMR database, and information on all identified problems has been submitted to the town Codes Enforcement Officer for corrective action.

Recommendation for Future Work

Over the course of the 2010 review year, the following work is recommended:

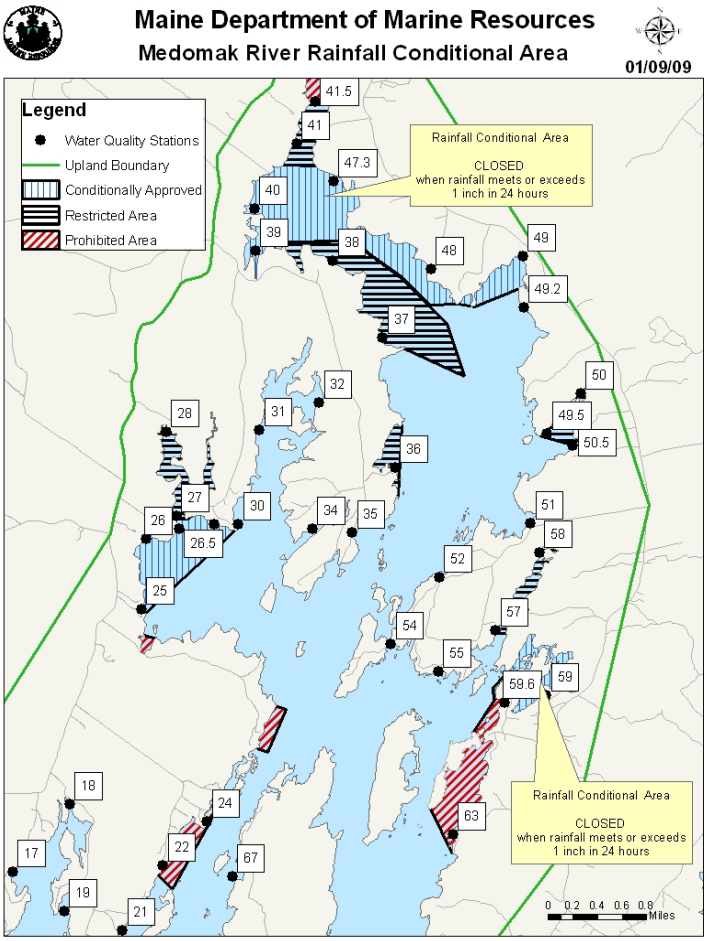
1) Continue stream sampling in established sampling locations, with results to be presented in Sanitary Survey report, to be written the end of the 2010 review year
2) Collect adverse weather samples for Back River, Waldoboro (WS 57 and 58)

3) Shoreline survey of Muscongus Bay islands

Appendix A. Upper Medomak River, Annual Review of Conditional Area Management Plan, 2009

Scope

Two portions of Growing Area WS are conditionally approved, based on rainfall. These areas shall be closed when rainfall meets or exceeds 1 inch in a 24 hour period. Water quality in the upper Medomak rainfall conditional area is monitored by stations WS 39, 40, 47.3, and 48, 49 and WS 49.2 (classified approved); station WS 41, located in the restricted portion of the upper river serves as a boundary station for the conditionally approved/restricted boundary line. Water quality in the Goose River rainfall conditional area is monitored by station WS 59. All conditionally approved stations must be sampled 6 times per year, in the open status. If the annual cumulative time in the open-status is 5 months or less, the areas are required to be sampled 5 times (monthly).



Compliance with management plan

In 2009, there were 7 rainfall closures for this conditional area (Table 1). The 2009 daily rainfall records were reviewed to ensure that all closures were implemented as required by the management plan. All closures were made in compliance with the protocols set by the conditional area management plan. Rainfall closures lasted for a minimum of 14 days from the day the closure is initiated. In instances where the rainfall closure trigger is re-set during an existing rainfall closure, the 14 day minimum closure is also re-set. Prior to re-opening for shellfish harvesting, water samples are collected at stations WS 39, 40, 41, 47.3, 48, 49, 49.2 and 59; water quality at these stations must meet the reopening criteria prior to the area re-opening for harvest. In the event that water quality exceeds the re-opening criteria, the area does not re-open and all stations are re-sampled.

Table 1. 2009 Rainfall Closures

Date Closed	Date Re-Opened	# Days Closed	Total Days Closed	Total Days Open
Closed in 2008	1/5/09	4	198 Goose River	167 Goose River
3/30/09 4/7/09 (reset) 4/22/09 (reset)	5/6/09	37	195 Upper River	170 Upper River
6/12/09 6/20/09 (reset) 6/29/09 (reset) 7/3/09 (reset) 7/5/09 (reset) 7/9/09 (reset) 7/25/09 (reset)	8/6/09	55		
8/25/09 8/30/09 (reset)	9/12/09	18		
9/28/09 10/4/09 (reset)	10/22/09 (Upper River only)	24 (Upper River) 28 (Goose River)		
10/26/09	11/9/09 (Goose River)	14		
	11/10/09 (upper River)	15		
11/16/09 11/26/09 (reset) 12/3/09 (reset) 12/10/09 (reset)	12/24/09	38		
12/28/09	Opened in 2010	4 (in 2009)		

Adequacy of reporting and cooperation of involved persons

In the event that a conditional area closure must be implemented due to rainfall, the management plan for this conditional area requires reporting by Bill Bragg of Waldoboro Police

Department. In 2009, the cooperation between all involved parties was adequate and all necessary notifications were received at appropriate times.

Compliance with approved growing area criteria

The annual review of the water quality for all active stations in this conditional area met approved standards in the open status (Table 2).

Table 2. Geomean and P90 Calculations for Rainfall Conditional Stations, Open Status, 2004-2009

Station	Class	Count	MFCount	GM	SDV	MAX	P90	Appd_Std	Min_Date
WS039.00	CA	30	19	4.6	0.46	93	17.7	37	7/19/2004
WS040.00	CA	30	20	4.4	0.41	23	14.9	36	10/12/2004
WS047.30	CA	30	20	3.9	0.38	48	11.9	36	6/24/2004
WS047.50	CA-New	13	2	3.9	0.20	9.1	7.1		3/29/2004
WS048.00	CA	30	19	3.7	0.44	64	13.5	37	5/10/2004
WS049.00	CA	30	20	5.3	0.49	132	22.7	36	6/24/2004
WS059.00	CA	30	19	6.0	0.54	92	29.2	37	5/10/2004

Water sampling compliance history

In 2009, the Medomak River rainfall conditional areas had multiple prolonged closures; the river was closed for 195 and 198 days for the Upper Medomak and Goose River conditional areas, respectively. Furthermore, the upper river was frozen over in January and February, precluding sample collection. Due to the prolonged closures and ice over on the upper river, only 3 samples were collected during the open status for the Upper River portion, and only 2 samples in the open status were collected for the Goose River conditional area (WS 59).

As allowed by the model ordinance, for the 2009 geometric mean and P90 score calculations, two closed status data points were added to the dataset to meet the minimum sample requirement. The 2009 sampling results for this conditional area are presented in Table 3; samples highlighted in yellow are randomly collected samples, falling within the open status; samples highlighted in teal are closed status data points that were used to meet the minimum samples requirements. These 'closed; status samples served as re-opening samples for the river, and were collected within 5 days of the river re-opening. These specific dates (August 4th and November 9th) were selected based on the duration of the open period after the reopening samples were collected; these samples were also selected to represent the months when no "Open" status SRS samples were collected. Specifically, the months when the river was open for harvesting for at least 5 days, and when sample stations were not frozen over included March, May, June, August, September, and November. SRS samples were collected in May, June, and September. No re-opening samples were collected in March, and the scheduled SRS samples that were collected during the month of March fell into the closed period. Following the collection of the August re-opening samples, the river was open from for a total of 19 days; following the collection of the November 8th re-opening samples, the river was open for 6 days.

Therefore, these two closed dates were selected for inclusion into the water quality geometric mean and P90 calculations for 2009.

Table 3. Sampling Effort and Sample Results for Rainfall Conditional Areas, SRS and re-opening (Adverse) samples, 2009

Station	Date	Collector	Strat	Adv	Status	Col Score
WS039.00	31-Mar-09	FP	R	PW	C	<2
WS039.00	04-May-09	WRB	A	X	C	<2
WS039.00	19-May-09	FP	R	X	O	2
WS039.00	03-Jun-09	MLP	R	X	O	2
WS039.00	15-Jul-09	EXT	R	X	C	3.6
WS039.00	19-Jul-09	WRB	A	X	C	58
WS039.00	22-Jul-09	WRB	A	X	C	27
WS039.00	04-Aug-09	WRB	A	X	C	6
WS039.00	09-Sep-09	WRB	A	X	C	<2
WS039.00	23-Sep-09	FP	R	X	O	<2
WS039.00	13-Oct-09	EXT	R	P	C	4
WS039.00	20-Oct-09	EXT	A	X	C	2
WS039.00	04-Nov-09	EXT	A	X	C	96
WS039.00	08-Nov-09	FP	A	X	C	2
WS039.00	23-Nov-09	AB	A	X	C	13
WS039.00	21-Dec-09	EXT	A	X	C	2
WS040.00	30-Mar-09	EXT	R	PT	C	40
WS040.00	04-May-09	WRB	A	X	C	<2
WS040.00	18-May-09	EXT	R	X	O	14
WS040.00	03-Jun-09	MLP	R	X	O	<2
WS040.00	15-Jul-09	MLP	R	X	C	<2
WS040.00	19-Jul-09	WRB	A	X	C	18
WS040.00	22-Jul-09	WRB	A	X	C	25
WS040.00	04-Aug-09	WRB	A	X	C	7.3
WS040.00	09-Sep-09	WRB	A	X	C	<2
WS040.00	23-Sep-09	EXT	R	X	O	<2
WS040.00	13-Oct-09	LSM	R	P	C	3
WS040.00	20-Oct-09	EXT	A	X	C	<2
WS040.00	04-Nov-09	EXT	A	X	C	150
WS040.00	08-Nov-09	FP	A	X	C	6
WS040.00	23-Nov-09	AB	A	X	C	10
WS040.00	21-Dec-09	EXT	A	X	C	2
WS047.30	30-Mar-09	EXT	R	PT	C	14
WS047.30	04-May-09	WRB	A	X	C	<2
WS047.30	18-May-09	EXT	R	X	O	<2
WS047.30	03-Jun-09	MLP	R	X	O	<2
WS047.30	15-Jul-09	MLP	R	X	C	9.1

Station	Date	Collector	Strat	Adv	Status	Col Score
WS047.30	19-Jul-09	WRB	A	X	C	36
WS047.30	22-Jul-09	WRB	A	X	C	35
WS047.30	04-Aug-09	WRB	A	X	C	11
WS047.30	09-Sep-09	WRB	A	X	C	<2
WS047.30	23-Sep-09	EXT	R	X	O	<2
WS047.30	13-Oct-09	LSM	R	P	C	40
WS047.30	20-Oct-09	EXT	A	X	C	8
WS047.30	04-Nov-09	EXT	A	X	C	280
WS047.30	08-Nov-09	FP	A	X	C	18
WS047.30	23-Nov-09	AB	A	X	C	36
WS047.30	21-Dec-09	EXT	A	X	C	5.5
WS048.00	04-May-09	WRB	A	X	C	<2
WS048.00	18-May-09	EXT	R	X	O	<2
WS048.00	03-Jun-09	MLP	R	X	O	<2
WS048.00	15-Jul-09	MLP	R	X	C	<2
WS048.00	19-Jul-09	WRB	A	X	C	11
WS048.00	22-Jul-09	WRB	A	X	C	25
WS048.00	04-Aug-09	WRB	A	X	C	8
WS048.00	09-Sep-09	WRB	A	X	C	<2
WS048.00	23-Sep-09	EXT	R	X	O	<2
WS048.00	13-Oct-09	LSM	R	P	C	<2
WS048.00	20-Oct-09	EXT	A	X	C	<2
WS048.00	04-Nov-09	EXT	A	X	C	220
WS048.00	08-Nov-09	FP	A	X	C	8
WS048.00	23-Nov-09	AB	A	X	C	6
WS048.00	21-Dec-09	EXT	A	X	C	4
WS049.00	30-Mar-09	EXT	R	PT	C	6
WS049.00	04-May-09	WRB	A	X	C	<2
WS049.00	18-May-09	EXT	R	X	O	14
WS049.00	03-Jun-09	MLP	R	X	O	2
WS049.00	15-Jul-09	MLP	R	X	C	10
WS049.00	19-Jul-09	WRB	A	X	C	40
WS049.00	22-Jul-09	WRB	A	X	C	54
WS049.00	04-Aug-09	WRB	A	X	C	4
WS049.00	09-Sep-09	WRB	A	X	C	<2
WS049.00	23-Sep-09	EXT	R	X	O	14
WS049.00	13-Oct-09	LSM	R	P	C	11
WS049.00	20-Oct-09	EXT	A	X	C	2
WS049.00	04-Nov-09	EXT	A	X	C	60
WS049.00	08-Nov-09	FP	A	X	C	<2
WS049.00	23-Nov-09	AB	A	X	C	<2

Station	Date	Collector	Strat	Adv	Status	Col Score
WS049.00	21-Dec-09	EXT	A	X	C	6
WS059.00	30-Mar-09	EXT	R	PT	C	180
WS059.00	04-May-09	WRB	A	X	C	<2
WS059.00	03-Jun-09	MLP	R	X	O	2
WS059.00	15-Jul-09	MLP	R	X	C	22
WS059.00	19-Jul-09	WRB	A	X	C	27
WS059.00	22-Jul-09	WRB	A	X	C	64
WS059.00	04-Aug-09	WRB	A	X	C	<2
WS059.00	09-Sep-09	WRB	A	X	C	<2
WS059.00	23-Sep-09	EXT	R	X	O	92
WS059.00	13-Oct-09	LSM	R	PW	C	16
WS059.00	20-Oct-09	EXT	A	X	C	48
WS059.00	04-Nov-09	EXT	A	X	C	2
WS059.00	08-Nov-09	FP	A	X	C	7.3
WS059.00	23-Nov-09	AB	A	X	C	<2
WS059.00	21-Dec-09	EXT	A	X	C	2.8

Analysis-Recommendations

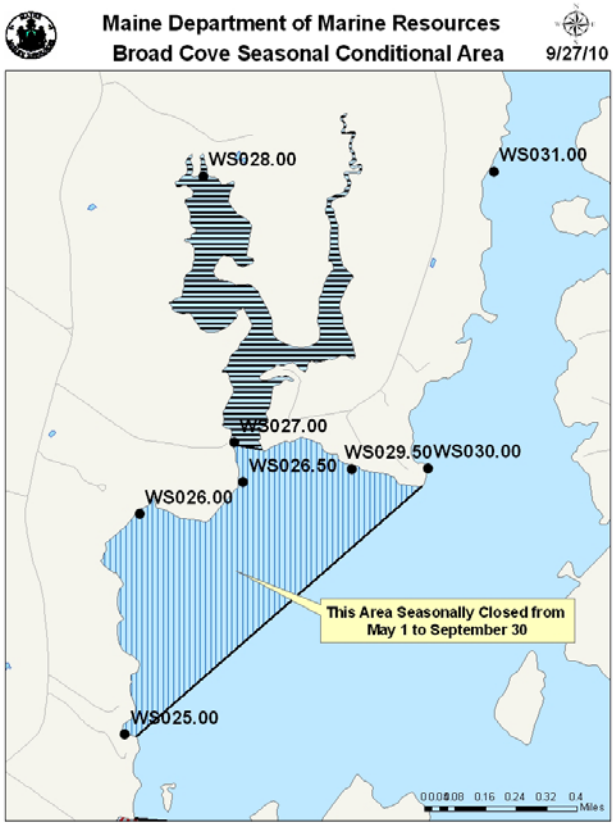
No recommendations for changes to the current management plan or conditional area classification status are needed at this time. An assessment of water quality at station WS 38, which was reclassified from conditionally approved based on rainfall to restricted at the end of 2008 due to water quality not meeting at approved standards while in the open status, is recommended at the end of the 2010 review year. If water quality meets the approved standard during the Open Status based on rainfall at the end of 2010, this station should be evaluated for a conditionally approved classification. This recommendation is based on a lack of pollution sources that were identified during the shoreline survey in 2009.

Appendix B. Broad Cove, Annual Review of Conditional Area Management Plan, 2009

Broad Cove Seasonal Conditional Area, C 26, Growing Area WS

Scope

Broad Cove is located in Bremen and Waldoboro, in the Medomak River Growing Area. The area was reclassified as conditionally approved based on season on September 26, 2008; previously to the reclassification, the area was classified as restricted. Water quality in the area is monitored by stations WS 25, 26, 26.5, 27, and 29.5. Station WS 25 serves as boundary stations with approved area, and must meet the approved standard year-round.



Compliance with management plan

In 2009, the area opened as scheduled on October 1st. Prior to opening, a seasonal data check was completed to ensure that all stations were meeting the approved standard in the open status. This data check was completed on September 28, 2009.

Adequacy of reporting and cooperation of involved persons

The management plan for this conditional area does not require reporting by non-DMR personnel.

Compliance with approved growing area criteria

The annual review of the water quality for all active stations in this conditional area met approved standards in the open status (Table 1).

Table 1. Geomean and P90 Calculations for Conditional Stations, Open status

Station	Class	Count	MFCount	GM	SDV	MAX	P90	Appd_Std	Restr_Std	Min_Date
WS025.00	CA-boundary	30	18	3.5	0.39	43	11.4	37	208	4/16/2002
WS026.00	CA	30	17	<3	0.27	27	6.5	37	212	10/23/2001
WS026.50	New	14	14	2.1	0.11	4	3			10/30/2007
WS027.00	CA	30	17	<3	0.3	64	7.3	37	212	4/10/2001
WS029.50	New	14	14	3.5	0.54	136	18.3			10/30/2007
WS030.00	A-boundary	30	18	3	0.29	32	7.2	37	208	4/16/2002

Water sampling compliance history

All conditionally approved stations were sampled 6 times in the open status in 2009.

Analysis-Recommendations

No recommendations for changes to the current management plan or conditional area classification status are needed at this time.

Appendix C. Key to Water Quality Table Headers

Station = water quality monitoring station

Class = classification assigned to the station; prohibited (P), restricted (R), conditionally restricted (CR), conditionally approved (CA) and approved (A).

Count = the number of samples evaluated for classification, must be a minimum of 30.

MFCNT = the number of samples evaluated with the MTec method (included in the total Count column)

Geo_Mean = means the antilog (base 10) of the arithmetic mean of the sample result logarithm (base 10).

SDV = standard deviation
Max = maximum score of the 30 data points in the count column

P90 = 90th percentile

APPD_STD = the 90th percentile, at or below which the station would meet approved criteria in the absence of pollution sources or poisonous and deleterious substances.

RESTR_STD = the 90th percentile, at or below which the station would meet restricted criteria.

Appendix D. Growing Area WS 2009 Data

Station	Date	Collector	Tide	Wind	Temp	Salin	Strat	Adv	Status	Class	MFCOL
WS016.00	3/17/2009	MLP	F	SE	3	20	R		C	P	<2
	3/31/2009	FP	F	CL	4	14	R	P	C	P	<2
	5/19/2009	FP	H	CL	7	26	R		C	P	<2
	7/15/2009	EXT	LF	CL	19	29	R		C	P	2
	9/23/2009	FP	F	SW	15	20	R		C	P	2
	10/13/2009	EXT	HE	CL	14	32	R	P	C	P	<2
WS017.00	3/17/2009	MLP	F	SE	9	30	R		O	A	<2
	3/31/2009	FP	F	NE	5	30	R	PW	O	A	<2
	5/19/2009	FP	H	CL	9	30	R		O	A	<2
	7/15/2009	EXT	H	CL	22	28	R		O	A	<2
	9/23/2009	FP	F	SW	18	31	R		O	A	<2
	10/13/2009	EXT	HE	CL	13	31	R	P	O	A	2
WS018.00	3/31/2009	FP	F	CL	8	28	R	P	O	A	<2
	4/15/2009	MLP	F	SW	12	30	R		O	A	<2
	5/19/2009	FP	H	CL	9	30	R		O	A	<2
	7/15/2009	EXT	HF	CL	24	28	R		O	A	<2
	9/23/2009	FP	F	SW	19	30	R		O	A	<2
	10/13/2009	EXT	HE	CL	12	30	R	P	O	A	<2
WS019.00	3/17/2009	MLP	F	SW	4	30	R		O	A	<2
	3/31/2009	FP	F	NE	4	31	R	P	O	A	<2
	5/19/2009	FP	H	CL	8	30	R	W	O	A	<2
	7/15/2009	EXT	H	CL	21	28	R		O	A	2
	9/23/2009	FP	F	SW	15	30	R		O	A	<2
	10/13/2009	EXT	HE	CL	13	31	R	P	O	A	<2
WS019.80	5/4/2009	FP	E	S	9	30	R		O	A	<2
	6/2/2009	FP	LE	CL	8	30	R		O	A	<2
	8/10/2009	FP	HF	S	14	30	R		O	A	<2
	9/21/2009	AB	HF	CL		32	R		O	A	<2
	10/5/2009	FP	H	W	14	31	R		O	A	<2
	10/26/2009	FP	LF	NW	9	32	R	P	O	A	<2
WS021.00	3/17/2009	MLP	F	CL	3	30	R		O	A	<2
	3/31/2009	FP	F	CL	4	30	R	P	O	A	<2
	5/19/2009	FP	H	CL	7	30	R		O	A	<2
	7/15/2009	EXT	F	CL	19	29	R		O	A	<2
	9/23/2009	FP	F	SW	18	32	R		O	A	<2
	10/13/2009	EXT	HE	CL	12	31	R	P	O	A	2
WS022.00	3/17/2009	MLP	F	SE	5	28	R		C	P	<2
	3/31/2009	FP	F	CL	6	28	R	P	C	P	<2
	5/19/2009	FP	HE	CL	8	30	R		C	P	<2
	7/15/2009	EXT	F	CL	18	28	R		C	P	2

Station	Date	Collector	Tide	Wind	Temp	Salin	Strat	Adv	Status	Class	MFCOL
	9/23/2009	FP	F	SW	15	30	R		C	P	<2
	10/13/2009	EXT	E	CL	13	32	R	P	C	P	<2
WS024.00	3/17/2009	MLP	F	CL	3	29	R		C	P	<2
	3/31/2009	FP	F	NE	5	28	R	P	C	P	<2
	5/19/2009	FP	HE	CL	8	30	R		C	P	<2
	7/15/2009	EXT	F	CL	19	28	R		C	P	<2
	9/23/2009	FP	F	S	15	30	R		C	P	<2
	10/13/2009	EXT	E	CL	12	32	R	P	C	P	<2
WS025.00	1/13/2009	EXT	HE	CL	-1	30	R		O	CA	<2
	3/17/2009	MLP	F	CL	5	26	R		O	CA	<2
	3/31/2009	FP	HF	N	6	20	R	P	O	CA	<2
	4/15/2009	MLP	F	CL	15	29	R		O	CA	2
	5/19/2009	FP	HE	CL	8	25	R		C	CA	2
	7/15/2009	EXT	HF	CL	23	28	R		C	CA	<2
	9/23/2009	FP	HF	CL	15	30	R		C	CA	<2
	10/13/2009	EXT	E	CL	13	30	R	P	O	CA	<2
	10/27/2009	FP	HE	CL	7	28	E	P	O	CA	4
	12/1/2009	EXT	F	CL	6	28	R		O	CA	<2
	12/15/2009	EXT	HF	CL	6	27	E		O	CA	2
WS026.00	1/13/2009	EXT	HE	SW	-1	26	R		O	CA	<2
	3/17/2009	MLP	F	SE	11	12	R		O	CA	2
	3/31/2009	FP	HF	CL	6	28	R	P	O	CA	<2
	4/15/2009	MLP	F	S	14	27	R		O	CA	<2
	5/19/2009	FP	HE	CL	10	28	R	W	C	CA	<2
	7/15/2009	EXT	HF	NW	20	28	R		C	CA	2
	9/23/2009	FP	HF	S	15	30	R		C	CA	8
	10/13/2009	EXT	E	CL	12	30	R	P	O	CA	<2
	10/27/2009	FP	HE	CL	7	28	E	P	O	CA	2
	12/1/2009	EXT	HF	CL	7	28	R		O	CA	<2
	12/15/2009	EXT	HF	CL	6	28	E		O	CA	<2
WS026.50	1/13/2009	EXT	HE	CL	0	32	R		O	CA	<2
	3/17/2009	MLP	F	SE	3	28	R		O	CA	<2
	3/31/2009	FP	HF	N	5	28	R	P	O	CA	<2
	4/15/2009	MLP	F	S	8	29	R		O	CA	<2
	5/19/2009	FP	HE	CL	9	28	R		C	CA	<2
	7/15/2009	EXT	F	N	21	28	R		C	CA	<2
	9/23/2009	FP	HF	S	15	30	R		C	CA	<2
	10/13/2009	EXT	E	CL	13	30	R	P	O	CA	2
	10/27/2009	FP	E	CL	9	28	E	P	O	CA	4
	12/1/2009	EXT	HF	CL	7	30	R		O	CA	2
	12/15/2009	EXT	H	CL	6	28	E		O	CA	<2
WS027.00	1/13/2009	EXT	HE	CL	0	32	R		O	CA	<2

Station	Date	Collector	Tide	Wind	Temp	Salin	Strat	Adv	Status	Class	MFCOL
	3/17/2009	MLP	F	SE	3	28	R		O	CA	<2
	3/31/2009	FP	HF	N	5	28	R	P	O	CA	2
	4/15/2009	MLP	F	S	7	28	R		O	CA	<2
	5/19/2009	FP	HE	CL	9	28	R		C	CA	<2
	7/15/2009	EXT	F	CL	20	28	R		C	CA	<2
	9/23/2009	FP	HF	S	15	32	R		C	CA	2
	10/13/2009	EXT	E	CL	13	30	R	P	O	CA	<2
	10/27/2009	FP	HE	CL	9	28	E	P	O	CA	6
	12/1/2009	EXT	HF	CL	7	30	R		O	CA	<2
	12/15/2009	EXT	H	CL	6	28	E		O	CA	<2
WS028.00	3/31/2009	FP	H	CL	5	25	R	P	O	R	<2
	4/15/2009	MLP	HF	S	16	15	R		O	R	<2
	5/19/2009	FP	E	CL	7	25	R		O	R	2
	7/15/2009	EXT	HF	CL	24	26	R		O	R	2
	9/23/2009	FP	HF	CL	21	30	R		O	R	<2
	10/13/2009	EXT	E	CL	13	26	R	P	O	R	7.3
	10/27/2009	FP	E	CL	8	22	E	P	O	R	6
WS029.50	1/13/2009	EXT	E	SW	-2	32	R		O	CA	2
	3/17/2009	MLP	HF	S		28	R		O	CA	22
	3/31/2009	FP	H	CL	5	28	R	P	O	CA	<2
	4/15/2009	MLP	HF	S	15	30	R		O	CA	<2
	5/19/2009	FP	E	CL	10	28	R		C	CA	<2
	7/15/2009	EXT	F	NW	22	26	R		C	CA	<2
	9/23/2009	FP	H	SW	18	30	R		C	CA	<2
	10/13/2009	EXT	E	CL	12	30	R	P	O	CA	<2
	10/27/2009	FP	E	CL	7	28	E	P	O	CA	4
	12/1/2009	EXT	HF	CL	8	30	R		O	CA	<2
	12/15/2009	EXT	H	CL	6	28	E		O	CA	2
WS030.00	1/13/2009	EXT	E	CL	-2	32	R		O	CA	<2
	3/17/2009	MLP	HF	S		28	R	W	O	CA	<2
	3/31/2009	FP	H	NE	5	28	R	P	O	CA	<2
	4/15/2009	MLP	HF	S	11	29	R	W	O	CA	<2
	5/19/2009	FP	E	CL	9	28	R		C	CA	<2
	7/15/2009	EXT	F	NW	21	28	R		C	CA	<2
	9/23/2009	FP	H	CL	15	30	R		C	CA	<2
	10/13/2009	EXT	E	CL	12	30	R	P	O	CA	<2
	10/27/2009	FP	E	CL	8	30	E	P	O	CA	4
	12/1/2009	EXT	HF	CL	8	29	R		O	CA	2
	12/15/2009	EXT	H	CL	5	28	E		O	CA	2
WS031.00	3/17/2009	MLP	HF	S		26	R	T	O	A	<2
	3/31/2009	FP	H	CL	5	30	R	P	O	A	<2
	5/19/2009	FP	E	CL	10	28	R		O	A	<2

Station	Date	Collector	Tide	Wind	Temp	Salin	Strat	Adv	Status	Class	MFCOL
	7/15/2009	EXT	F	CL	21	28	R		O	A	<2
	9/23/2009	FP	H	S	15	30	R		O	A	<2
	10/13/2009	EXT	E	CL	12	30	R	P	O	A	2
WS032.00	3/31/2009	FP	HE	N	5	28	R	P	O	A	<2
	4/15/2009	MLP	HF	CL	15	28	R		O	A	<2
	5/19/2009	FP	E	CL	10	30	R		O	A	<2
	7/15/2009	EXT	F	CL	21	27	R		O	A	<2
	9/23/2009	FP	H	SW	20	32	R		O	A	<2
	10/13/2009	EXT	E	CL	13	28	R	P	O	A	2
WS034.00	3/17/2009	MLP	H	S		28	R		O	A	<2
	3/31/2009	FP	HE	E	5	28	R	P	O	A	<2
	5/19/2009	FP	E	CL	10	28	R		O	A	<2
	7/15/2009	EXT	F	NW	21	28	R		O	A	4
	9/23/2009	FP	H	CL	16	31	R		O	A	<2
	10/13/2009	EXT	E	CL	12	30	R	P	O	A	34
WS035.00	3/17/2009	MLP	H	CL		25	R		O	A	<2
	3/31/2009	FP	HE	CL	5	26	R	P	O	A	<2
	5/19/2009	FP	E	S	10	28	R		O	A	<2
	7/15/2009	EXT	F	CL	20	27	R		O	A	2
	9/23/2009	FP	HE	CL	16	32	R		O	A	88
	10/13/2009	EXT	E	CL	14	30	R	P	O	A	7.3
WS036.00	3/17/2009	MLP	H	CL		28	R		O	R	<2
	3/31/2009	FP	HE	N	6	24	R	P	O	R	2
	5/19/2009	FP	E	S	10	26	R		O	R	4
	7/15/2009	EXT	F	NW	20	27	R		O	R	2
	9/23/2009	FP	HE	S	17	31	R		O	R	10
	10/13/2009	EXT	E	N	13	30	R	P	O	R	<2
WS037.00	3/17/2009	MLP	HE	CL		10	R	T	O	A	4
	3/31/2009	FP	E	NE	6	18	R	P	O	A	<2
	5/19/2009	FP	E	SE	10	24	R		O	A	2
	7/15/2009	EXT	F	CL	23	25	R		O	A	3.6
	9/23/2009	FP	HE	S	17	30	R		O	A	4
	10/20/2009	EXT	HF	CL	9	29	R		O	A	<2
WS038.00	3/17/2009	MLP	HE	CL		0	R		O	R	<2
	3/31/2009	FP	E	N	6	18	R	P	O	R	<2
	5/19/2009	FP	E	SE	12	20	R		O	R	6
	7/15/2009	EXT	F	CL	24	24	R		O	R	6
	9/9/2009	WRB	F	W	14	30	E		O	R	<2
	9/23/2009	FP	HE	S	17	30	R		O	R	2
WS038.50	3/30/2009	WRB	HF		5	26	E	P	O	R	<2
	5/18/2009	WRB	H	CL	12	30	R		O	R	<2
	6/3/2009	MLP	H	CL	11	26	R		O	R	<2

Station	Date	Collector	Tide	Wind	Temp	Salin	Strat	Adv	Status	Class	MFCOL
	7/19/2009	WRB	H	N	18	17	R		O	R	31
	9/9/2009	WRB	F	W	15	30	E		O	R	<2
	9/23/2009	EXT	HF	CL	20	31	R		O	R	2
	10/13/2009	WRB	HE		10	28	R	P	O	R	110
WS039.00	3/31/2009	FP	E	N	10	1	R	PW	C	CA	<2
	5/19/2009	FP	E	CL	9	22	R		O	CA	2
	6/3/2009	MLP	H	CL	12	24	R		O	CA	2
	7/15/2009	EXT	HF	CL	23	22	R		C	CA	3.6
	9/23/2009	FP	HE	CL	16	30	R		O	CA	<2
	10/13/2009	EXT	E	CL	12	24	R	P	C	CA	4
WS040.00	3/30/2009	EXT	E	CL	2	10	R	PT	C	CA	40
	5/18/2009	EXT	HE	NW	12	20	R		O	CA	14
	6/3/2009	MLP	H	CL	12	24	R		O	CA	<2
	7/15/2009	MLP	HE	CL	21	24	R		C	CA	<2
	9/23/2009	EXT	HF	CL	21	29	R		O	CA	<2
	10/13/2009	LSM	H	CL	13	28	R	P	C	CA	3
WS041.00	3/30/2009	EXT	HE	CL	2	8	R	PT	O	R	400
	5/18/2009	EXT	E	CL	14	17	R		O	R	30
	6/3/2009	MLP	H	CL	14	13	R		O	R	24
	7/15/2009	MLP	H	CL	19	20	R		O	R	12
	9/23/2009	EXT	H	S	21	32	R		O	R	<2
	10/13/2009	LSM	H	CL	14	28	R	P	O	R	<2
WS041.50	3/30/2009	EXT	HE	CL	2	4	R	PT	C	P	50
	5/19/2009	FP	E	S	14	8	R		C	P	20
	6/3/2009	MLP	HE	CL	15	12	R		C	P	8
	7/15/2009	MLP	H	CL	20	20	R		C	P	16
	9/23/2009	EXT	H	S	17	31	R		C	P	<2
	10/13/2009	LSM	HE	CL	13	20	R	P	C	P	7.3
WS043.90	3/30/2009	EXT	HE	CL	1	10	R	PT	C	P	40
	5/18/2009	EXT	E	CL	15	10	R		C	P	31
	6/3/2009	MLP	HE	CL	15	10	R		C	P	8
	7/15/2009	MLP	F	CL	21	2	R		C	P	80
	9/23/2009	EXT	H	S	21	13	R		C	P	24
	10/13/2009	LSM	HE	CL	13	23	R	P	C	P	8
WS046.00	3/30/2009	EXT	HE	CL	1	0	R	PT	C	P	86
	5/18/2009	EXT	HE	CL	16	0	R		C	P	86
	6/3/2009	MLP	HE	CL	15	0	R		C	P	35
	7/15/2009	MLP	F	CL	20	0	R		C	P	29
	9/23/2009	EXT	H	CL	18	1	R		C	P	30
	10/13/2009	LSM	HE	CL	12	0	R	P	C	P	56
WS047.30	3/30/2009	EXT	HE	CL	4	18	R	PT	C	CA	14
	5/18/2009	EXT	E	CL	14	18	R		O	CA	<2

Station	Date	Collector	Tide	Wind	Temp	Salin	Strat	Adv	Status	Class	MFCOL
	6/3/2009	MLP	HE	CL	12	25	R		O	CA	<2
	7/15/2009	MLP	H	NW	23	24	R		C	CA	9.1
	9/23/2009	EXT	H	S	22	31	R		O	CA	<2
	10/13/2009	LSM	HE	CL	11	16	R	P	C	CA	40
WS047.50	3/30/2009	WRB	HF		5	27	E	P	C	CA	<2
	5/18/2009	WRB	H	CL	12	30	R		O	CA	<2
	7/19/2009	WRB	HE	N	18	26	R		C	CA	8
	10/13/2009	WRB	HE		10	30	R	P	C	CA	8
WS048.00	5/18/2009	EXT	E	CL	14	26	R		O	CA	<2
	6/3/2009	MLP	E	N	12	27	R		O	CA	<2
	7/15/2009	MLP	H	NW	22	25	R		C	CA	<2
	9/23/2009	EXT	HE	CL	18	31	R		O	CA	<2
	10/13/2009	LSM	HE	CL	12	27	R	P	C	CA	<2
WS049.00	3/30/2009	EXT	H	N	2	8	R	PT	C	CA	6
	5/18/2009	EXT	E	CL	13	24	R		O	CA	14
	6/3/2009	MLP	E	CL	15	26	R		O	CA	2
	7/15/2009	MLP	HF	NW	21	25	R		C	CA	10
	9/23/2009	EXT	HE	SW	21	26	R		O	CA	14
	10/13/2009	LSM	E	CL	11	20	R	P	C	CA	11
WS049.20	3/30/2009	EXT	H	CL	3	25	R	PT	O	A	8
	5/18/2009	EXT	E	CL	14	28	R		O	A	<2
	6/3/2009	MLP	E	N	12	29	R		O	A	<2
	7/15/2009	MLP	HF	NW	21	24	R		O	A	2
	9/23/2009	EXT	HE	SW	17	32	R		O	A	<2
	10/13/2009	LSM	E	CL	12	28	R	P	O	A	2
WS049.50	3/30/2009	WRB	H		6	26	E	P	O	R	<2
	5/18/2009	WRB	HE	CL	12	30	R		O	R	<2
	7/19/2009	WRB	H	CL	19	26	R		O	R	6
	9/9/2009	WRB	H	W	15	30	R		O	R	<2
	10/13/2009	WRB	E		11	30	R	P	O	R	<2
	12/29/2009	WRB	E	NE	0	30	R	P	O	A	4
WS050.00	3/30/2009	EXT	H	CL	2	6	R	PT	O	R	12
	5/18/2009	EXT	E	CL	14	20	R		O	R	15
	6/3/2009	MLP	E	N	12	26	R		O	R	4
	7/15/2009	MLP	HF	CL	24	20	R		O	R	2
	9/23/2009	EXT	HE	SW	20	32	R		O	R	<2
	10/13/2009	LSM	E	CL	12	30	R	P	O	R	2
WS050.50	3/30/2009	WRB	H		5	26	E	P	O	R	<2
	5/18/2009	WRB	HE	CL	13	30	R		O	R	<2
	7/19/2009	WRB	H	CL	19	24	R		O	R	6
	9/9/2009	WRB	H	W	15	30	R		O	R	<2
	10/13/2009	WRB	E		10	30	R	P	O	R	2

Station	Date	Collector	Tide	Wind	Temp	Salin	Strat	Adv	Status	Class	MFCOL
	12/29/2009	WRB	E	NE	0	30	R	P	O	A	3.6
WS051.00	3/30/2009	EXT	F	N	2	22	R	PT	O	A	<2
	5/18/2009	EXT	E	NW	13	24	R		O	A	3.6
	6/3/2009	MLP	E	N	15	28	R		O	A	<2
	7/15/2009	MLP	F	NW	23	26	R		O	A	16
	9/23/2009	EXT	HE	CL	18	32	R		C	P	<2
	10/13/2009	LSM	E	CL	13	28	R	P	C	P	<2
WS052.00	3/30/2009	EXT	F	N	2	28	R	PT	O	A	<2
	5/18/2009	EXT	E	NW	13	28	R		O	A	2
	6/3/2009	MLP	E	N	15	30	R		O	A	2
	7/15/2009	MLP	F	NW	19	26	R		O	A	<2
	9/23/2009	EXT	HE	CL	17	32	R		O	A	<2
	10/13/2009	LSM	E	CL	13	30	R	P	O	A	<2
WS054.00	2/10/2009	AB	H	CL	-2	32	R		O	A	<2
	3/30/2009	EXT	HF	N	3	30	R	PT	O	A	<2
	5/18/2009	EXT	E	NW	12	30	R		O	A	<2
	7/15/2009	MLP	F	NW	12	29	R		O	A	<2
	9/23/2009	EXT	HE	S	20	32	R		O	A	24
	10/13/2009	LSM	E	CL	14	31	R	P	O	A	4
WS055.00	2/10/2009	AB	H	CL	-2	32	R		O	A	<2
	3/30/2009	EXT	HF	CL	3	28	R	PT	O	A	<2
	5/18/2009	EXT	E	CL	13	30	R		O	A	4
	7/15/2009	MLP	F	NW	18	30	R		O	A	<2
	9/23/2009	EXT	E	SW	17	32	R		O	A	4
	10/13/2009	LSM	E	CL	14	30	R	P	O	A	2
WS057.00	2/10/2009	AB	H	CL	-2	31	R		O	R	<2
	3/30/2009	EXT	HF	CL	3	30	R	PT	O	R	<2
	5/18/2009	EXT	E	CL	13	28	R		O	R	2
	7/15/2009	MLP	F	NW	17	29	R		O	R	2
	9/23/2009	EXT	E	CL	16	32	R		O	R	5.5
	10/13/2009	LSM	E	CL	13	30	R	P	O	R	12
WS058.00	2/10/2009	AB	H	CL	-2	30	R		O	R	<2
	3/30/2009	EXT	HF	CL	2	6	R	PT	O	R	3.6
	5/18/2009	EXT	E	NW	14	26	R		O	R	18
	7/15/2009	MLP	F	CL	21	28	R		O	R	2
	9/23/2009	EXT	E	CL	18	32	R		O	R	2
	10/13/2009	LSM	E	CL	13	26	R	P	O	R	10
WS059.00	3/30/2009	EXT	F	CL	2	2	R	PT	C	CA	180
	6/3/2009	MLP	E	N	15	24	R		O	CA	2
	7/15/2009	MLP	F	CL	23	12	R		C	CA	22
	9/23/2009	EXT	E	CL	18	32	R		O	CA	92
	10/13/2009	LSM	E	CL	13	16	R	PW	C	CA	16

Station	Date	Collector	Tide	Wind	Temp	Salin	Strat	Adv	Status	Class	MFCOL
WS063.00	2/10/2009	AB	HE	CL	-1	31	R		C	P	<2
	3/30/2009	EXT	F	N	3	30	R	PT	C	P	2
	5/18/2009	EXT	E	NW	12	30	R		C	P	<2
	7/15/2009	MLP	F	NW	12	29	R		C	P	<2
	9/23/2009	EXT	E	SW	16	32	R		C	P	2
	10/13/2009	LSM	E	CL	12	30	R	P	C	P	<2
WS065.00	2/10/2009	AB	HE	CL	-3	32	R		O	A	<2
	3/30/2009	EXT	F	CL	3	30	R	PT	O	A	<2
	5/18/2009	EXT	E	CL	12	30	R		O	A	<2
	7/15/2009	MLP	F	N	17	29	R		O	A	<2
	9/23/2009	EXT	E	SW	16	32	R		O	A	<2
	10/13/2009	LSM	E	CL	12	30	R	P	O	A	4
WS067.00	5/4/2009	FP	E	S	9	30	R		O	A	<2
	6/2/2009	FP	LE	N	7	30	R		O	A	<2
	8/10/2009	FP	HF	S	12	30	R		O	A	<2
	9/21/2009	AB	HF	CL		32	R		O	A	<2
	10/5/2009	FP	H	W	15	31	R		O	A	<2
	10/26/2009	FP	LF	NW	8	31	R	P	O	A	<2
WS067.50	5/4/2009	FP	E	CL	10	30	R		O	A	<2
	8/10/2009	FP	HF	S	15	30	R		O	A	<2
	9/21/2009	AB	HF	CL		32	R		O	A	<2
	10/5/2009	FP	H	W	15	31	R		O	A	<2
	10/26/2009	FP	L	NW	9	32	R	P	O	A	<2
WS067.80	5/4/2009	FP	E	CL	10	30	R		O	A	<2
	6/2/2009	FP	E	CL	8	30	R		O	A	<2
	8/10/2009	FP	F	S	14	30	R		O	A	<2
	9/21/2009	AB	HF	CL		32	R		O	A	<2
	10/5/2009	FP	H	W	15	31	R		O	A	<2
	10/26/2009	FP	L	NW	9	32	R	P	O	A	2
WS068.00	5/4/2009	FP	E	S	9	30	R		O	A	2
	6/2/2009	FP	E	CL	8	30	R		O	A	<2
	8/10/2009	FP	F	S	13	30	R		O	A	<2
	9/21/2009	AB	F	CL		32	R		O	A	<2
	10/5/2009	FP	H	E	13	31	R		O	A	<2
	10/26/2009	FP	L	CL	9	32	R	P	O	A	<2
WS069.00	5/4/2009	FP	E	S	8	30	R		O	A	<2
	6/2/2009	FP	E	CL	7	30	R		O	A	<2
	8/10/2009	FP	F	S	12	30	R		O	A	<2
	9/21/2009	AB	F	CL		32	R		O	A	<2
	10/5/2009	FP	HF	W	14	31	R		O	A	<2
	10/26/2009	FP	L	NW	9	31	R	P	O	A	2
WS071.00	5/4/2009	FP	E	S	8	30	R		O	A	<2

Station	Date	Collector	Tide	Wind	Temp	Salin	Strat	Adv	Status	Class	MFCOL
	6/2/2009	FP	E	CL	6	32	R		O	A	<2
	8/10/2009	FP	F	S	12	31	R		O	A	<2
	9/21/2009	AB	F	CL		32	R		O	A	<2
	10/5/2009	FP	HF	W	14	31	R		O	A	<2
	10/26/2009	FP	LE	NW	9	31	R	P	O	A	<2
WS072.00	5/4/2009	FP	E	CL	9	30	R		O	A	<2
	6/2/2009	FP	E	CL	6	30	R		O	A	<2
	8/10/2009	FP	F	S	12	30	R		O	A	<2
	9/21/2009	AB	F	CL		32	R		O	A	<2
	10/5/2009	FP	HF	W	14	31	R		O	A	<2
	10/26/2009	FP	LE	NW	9	32	R	P	O	A	<2