



# GROWING AREA ER

Point of Maine, Machiasport to Cape Wash, Cutler

Triennial Report for  
(2004 – 2006)

Final Report Date: 10/18/07

Robert Goodwin, Scientist I

## APPROVAL

Division Director:

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## DRAFT REVIEW ROUTING FORM

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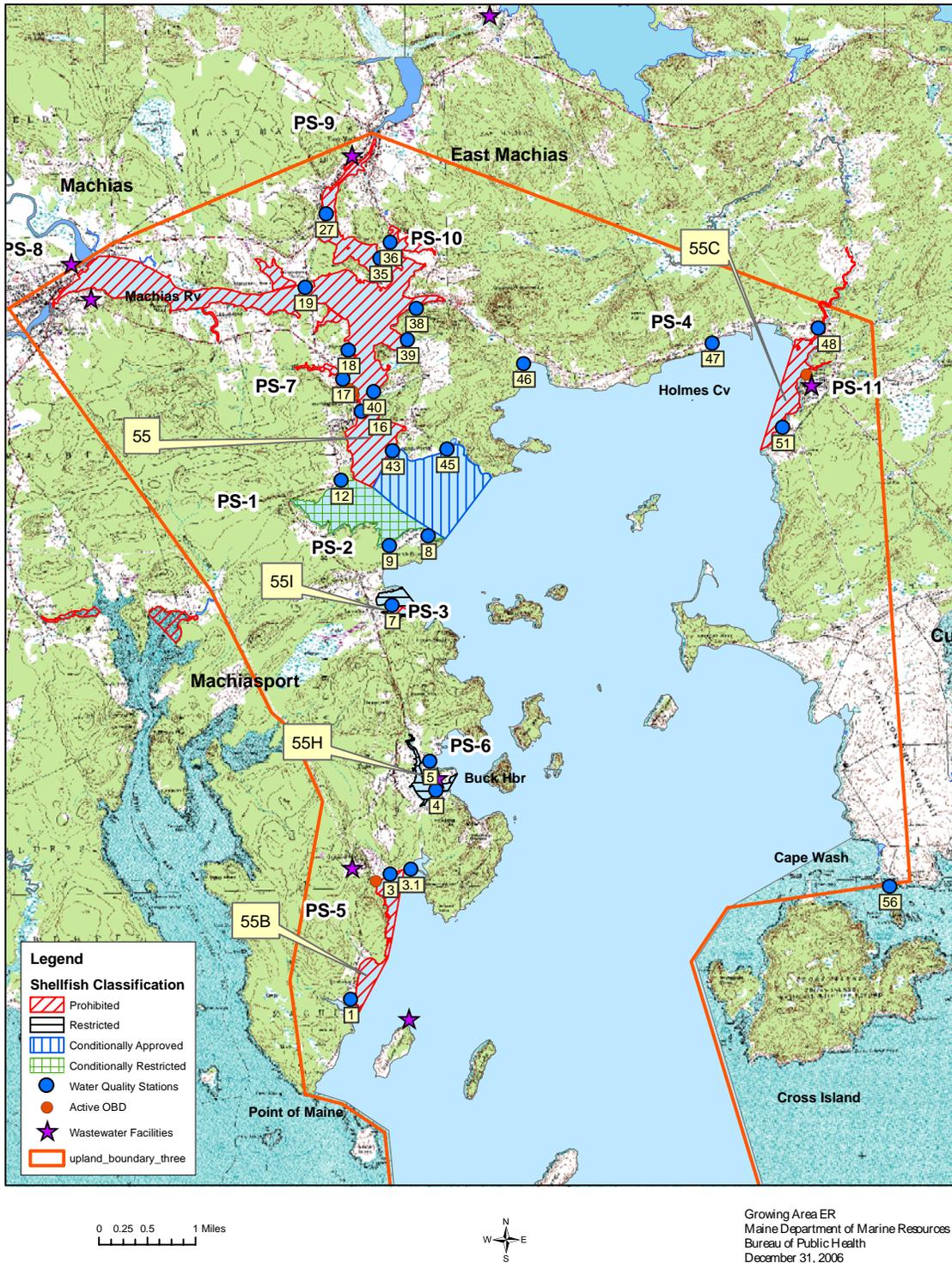
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## Executive Summary

This report is a triennial review of Growing Area ER, required under “Chapter IV, Section .01 Sanitary Survey, C(4) Triennial Evaluation” from the National Shellfish Sanitation Program (NSSP) “Guide for the Control of Molluscan Shellfish” (2003). The report may include, but is not limited to, observations made during sampling or surveying within the area, the inspection of wastewater treatment plants and a review of performance standards of discharges impacting the growing area, hydrodynamic studies, a review of the past year’s sampling results, inspection of any available reports, pollution source sampling results, and a brief documentation and summary of the findings of the triennial reevaluation. Based on the information and data collected during this review period, any necessary changes will be discussed in the summary of this report.

Area ER includes the Machias and East Machias Rivers, Machias Bay and Holmes Bay. The western margin of the area is at Point of Maine, Machiasport and the eastern margin is at Cape Wash, Cutler. The upland boundary is enclosed by a line starting at Point of Maine; then extending northwest to Machias; then northeast to East Machias; then southeast to the head of Holmes Bay; and then south to Cape Wash. The area has four Prohibited areas, one Conditionally Restricted area, one Conditionally Approved area and one Restricted area. Licensed overboard discharges are in Machiasport and East Machias. There are two wastewater treatment facilities in this area. Four new pollution sources were identified. All random stations were sampled 6 times and conditional stations were sampled a minimum of 6 times while in the OPEN status. Conditional areas met reopening and closing criteria during the review period. Fourteen water sample stations were either added, removed, activated or deactivated during this review period. There are aquaculture or wet storage activities in this growing area. There are classification changes required at this time.



Growing Area ER  
Maine Department of Marine Resources  
Bureau of Public Health  
December 31, 2006

Figure 1: Current Map of Growing Area ER



**Current Classifications**

Approved- All shores and waters of the growing area not specifically described below.

- Prohibited- C55B, Howard Cove-Starboard; (07/13/1999)
- Prohibited- C55C, Northeast Holmes Bay, Whiting; (08/02/1993)
- Prohibited- C55I, Indian Head, Machiasport; (09/24/1990)
- Restricted- C55H, Buck Harbor, Machiasport; (03/28/2006)
- Prohibited- C55, Machias-East Machias Rivers; (12/05/2006)
- Conditionally Restricted- C55, Sanborn Cove, Machiasport; (12/05/2006)
- Conditionally Approved- C55, Randall Flats, Machiasport; (12/05/2006)

**Classification Changes during this Review Period**

2004- There were no changes during this year.

2005- C55, Machias-East Machias Rivers, Sanborn Cove and Randall Flats- the Sanborn Cove section of this closure was re-classified to conditionally restricted while the Randall Flats area remained conditionally approved on July 12, 2005. The upper section of the Machias River to include the East Machias River was discussed in Regulation C55-E. Both conditional areas closed because of legal by-passes of two licensed CSO at the Machias Wastewater Treatment Plant. On December 5, 2006 the upper Machias-East Machias Rivers, Randall Flats and Sanborn Cove consolidated into one closure with the same regulation number (C55).

2006- C55H, Buck Harbor, Machiasport- this closure was re-classified from prohibited to restricted after review of the area supported re-classification.

Stations that have been affected by the above changes and other sample station changes that were enacted during the review period are displayed in Table 1.

**Table 1: Water Quality Station Changes During This Review Period**

Station	Comments	Reason
ER004.00	Reclass P to R 03-28-06	Bucks Harbor classification change to Restricted
ER007.00	Reactivated 12-04	Resource area, ? pollution from Larrabee Stream
ER008.00	Reclass P to CR 7/12/05	Sanborn Cove reclassified
ER009.00	Reclass-CA to CP 1/5/05; Reclass P to CR 7/12/05;	Sanborn Cove reclassified
ER010.00	Inactive; Reclass P to CR 7/12/05	Sanborn Cove reclassified
ER011.00	Inactive; Reclass P to CR 7/12/05	Sanborn Cove reclassified
ER012.00	Reclass CA to CR 7/12/05;	Sanborn Cove reclassified
ER013.00	Inactive; Reclass CA to CR 7/12/05	Sanborn Cove reclassified
ER016.00	Reclass CA to P 7/12/05;	Closure line moved
ER020.00	Inactive 07-28-05	Redundant station
ER024.80	Inactive 07-28-05	Redundant station
ER028.00	Inactive 07-28-05	Redundant station
ER037.00	Inactive 07-28-05	Redundant station
ER040.00	Reclass CA to P 7/12/05;	Closure line moved



### Review of Water Quality

During the 2006 annual period the water testing methodology converted from multiple tube fermentation to membrane filtration. Geomean and p90 calculations are now based on a mix of MPN and MF data. Comparing previous year’s p90 values to present values may be misleading without knowing the “approved standard” is dropping with changes in the MPN/MF ratio. P90 values must be equal to or less then the “APPD STD” or “RESTR STD” to meet Approved or Restricted classification. The geomean limit remains at 14.

The P90 trends for the review period for all sample stations in WR are displayed in Table 4. The majority of the water sampling sites in Area ER have had consistent p90 values during this review period. The stations highlighted in blue in Table 4 are stations that have exhibited an increase in P90. These stations are discussed below.

There is a marine pump-out station in Bucks Harbor. Boats in the area are workboats (<10) and it is the landing area for service boats from finfish aquaculture operations near Libby, Starboard and Cross Islands. It is in a restricted area (C55H) that also abuts a pastureland with <20 sheep and cattle. Water sampling stations ER004.00 and ER005.00 monitor the area. Both stations meet Approved criteria.

Machiasport	Bucks Harbor	Town of Machiasport	Pettigrow Point Road	255-4516
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Sample sites ER027.00, ER036.00 and ER043.00 have improved with significant decreases in their p90 values. No definite cause for this decrease has been identified.

Stations ER007.00, ER009.00, ER012.00, ER016.00, ER038.00, ER040.00, ER045.00, ER047.00 and ER048.00 have had a steady upward climb of their p90 values. Station ER007.00 is at the outlet of a wetland with evidence of beaver; ER009.00 is near a questionable septic system that may be draining via a ditch into the estuary; ER012.00 is east of a stream that had an upland failing septic system near it (the system was replaced in the summer of 2006); ER016.00 is just downstream from licensed overboard discharges; ER038.00 is likely being impacted by a cattle pasture runoff at the mouth of the East Machias River; ER040.00 downstream from the mouth of the East Machias River and may be impacted from the same cattle pasture as ER038.00; ER045.00 is remote and no impact other than the Machias WWTP has been identified. (This is conditional station and meets approved criteria during OPEN periods); ER047.00 is near drainage from a wetland; and ER0048.00 is adjacent to the outfall of the Cutler Naval Base Wastewater Treatment Plant.

The years 2005 and 2006 were both wet years and many stations in Maine showed increases in their p90 value.

Table 2 displays the number of samples that were collected in 2006 for all active WR stations. All Approved stations were collected 6 times and Conditional stations were sampled monthly.



Table 2: Sample Count for 2006

Growing Area WQ Sample Count 2006				
SLS-ID	Class	Status	Count	Comments
ER001.00	A	O	6	
ER003.00	P	C	6	
ER003.10	A	O	6	
ER004.00	CR	O	2	Reclass P to R 03-28-06
ER004.00	P	C	2	Reclass P to R 03-28-06
ER004.00	R	O	4	Reclass P to R 03-28-06
ER005.00	A	O	6	
ER007.00	A	O	6	Reactivated 12-04; Reclass A to R 02-27-07
ER008.00	CA	C	7	Reclass P to CR 7/12/05; Reclass CR to CA 5/4/07
ER008.00	CA	O	6	Reclass P to CR 7/12/05; Reclass CR to CA 5/4/07
ER008.00	CR	O	1	Reclass P to CR 7/12/05; Reclass CR to CA 5/4/07
ER009.00	CR	C	7	Reclass-CA to CP 1/5/05; Reclass P to CR 7/12/05;
ER009.00	CR	O	8	Reclass-CA to CP 1/5/05; Reclass P to CR 7/12/05;
ER010.00	CR	O	1	Inactive; Reclass P to CR 7/12/05; Reclass CR to CA 5/4/07; reactivated 2007
ER011.00	CR	C	5	Inactive; Reclass P to CR 7/12/05
ER011.00	CR	O	3	Inactive; Reclass P to CR 7/12/05
ER012.00	CA	C	4	Reclass P to CR 7/12/05; Reclass CR to CA 5/4/07
ER012.00	CA	O	1	Reclass P to CR 7/12/05; Reclass CR to CA 5/4/07
ER012.00	CR	C	9	Reclass P to CR 7/12/05; Reclass CR to CA 5/4/07
ER012.00	CR	O	7	Reclass P to CR 7/12/05; Reclass CR to CA 5/4/07
ER016.00	CA	C	4	Reclass CA to P 7/12/05; Reclass P to CA 5/4/07
ER016.00	CA	O	1	Reclass CA to P 7/12/05; Reclass P to CA 5/4/07
ER016.00	P	C	15	Reclass CA to P 7/12/05; Reclass P to CA 5/4/07
ER017.00	P	C	7	
ER018.00	P	C	8	
ER019.00	P	C	14	
ER027.00	P	C	6	
ER028.00	P	C	1	Inactive 07-28-05
ER035.00	P	C	8	
ER036.00	P	C	8	
ER037.00	P	C	1	Inactive 07-28-05
ER038.00	P	C	6	
ER039.00	P	C	6	
ER040.00	P	C	9	Reclass CA to P 07-12-05;
ER043.00	CA	C	10	
ER043.00	CA	O	8	
ER045.00	CA	C	7	
ER045.00	CA	O	7	
ER046.00	A	O	6	
ER047.00	A	O	6	Reclass A to P 02-27-07
ER048.00	P	C	6	
ER051.00	A	O	6	
ER056.00	A	O	6	



Table 3 displays the data analysis for the most recent 30 data for the entire year from 2006 back though 2001 including. It includes data for both open and closed periods for conditionally approved and conditionally restricted stations. Not all approved stations meet criteria.

**Table 3: Geomean-p90 Calculations**

<b>MAINE DEPARTMENT OF MARINE RESOURCES</b>									
As of: January 23, 2007									
Fecal Coliform Geometric Mean and Percent Variability ; For the Years 2001 Through 2006 - (01/01 - 12/31) ( - )									
Excludes Dates: none ; Status = Open and Closed Stations ; Strategy = Random & Adverse									
Excludes Flood Data ; Excludes Inactive Stations ; Samples Limited to Latest 30 ; Salinity >= 0 ‰									
STATION	CLASS	COUNT	MFCNT	GM	SDV	MAX	P90	APPD_STD	RESTR_STD
ER001.00	A	30	2	3.5	0.27	43	7.6	48	288
ER003.00	P	30	2	4.0	0.50	1100	17.4	48	288
ER003.10	A	30	2	3.5	0.28	64	8.0	48	288
ER004.00	R	30	2	6.0	0.61	460	35.8	48	288
ER005.00	A	30	2	4.0	0.42	240	13.8	48	288
ER007.00	A	16	2	10.0	0.58	144	56.4	46	278
ER008.00	CR	30	4	7.5	0.65	1100	51.1	46	277
ER009.00	CR	30	7	11.3	0.71	1200	91.8	44	260
ER012.00	CR	30	5	12.3	0.64	460	81.7	45	271
ER016.00	P	30	5	8.9	0.52	240	41.5	45	271
ER017.00	P	30	2	9.1	0.52	93	41.6	48	288
ER018.00	P	30	4	7.0	0.52	460	32.4	46	277
ER019.00	P	30	5	11.8	0.43	43	42.3	45	271
ER027.00	P	30	2	9.2	0.48	320	37.6	48	288
ER035.00	P	30	3	8.6	0.50	150	37.8	47	282
ER036.00	P	30	4	14.2	0.66	1200	99.3	46	277
ER038.00	P	30	2	12.4	0.64	240	81.2	48	288
ER039.00	P	30	2	12.3	0.62	460	77.4	48	288
ER040.00	P	30	3	10.7	0.53	93	50.4	47	282
ER043.00	CA	31	4	6.7	0.40	43	21.5	46	277
ER045.00	CA	30	4	7.6	0.58	460	42.5	46	277
ER046.00	A	30	2	5.0	0.49	460	20.8	48	288
ER047.00	A	30	2	7.2	0.65	460	49.4	48	288
ER048.00	P	30	2	17.2	0.68	460	127.0	48	288
ER051.00	A	30	2	4.3	0.43	240	15.0	48	288
ER056.00	A	30	2	2.8	0.05	2.9	3.2	48	288



**Table 4: p90 Trends for Review Period (Includes Both Open and Closed Periods)**

		2004	2005	2006					
ER001.00	A	6.5	7.6	7.6	ER019.00	P	43.0	46.7	42.3
ER003.00	P	16.3	16.7	17.4	ER027.00	P	73.2	55.4	37.6
ER003.10	A	6.7	7.3	8.0	ER035.00	P	31.3	52.2	37.8
ER004.00	R	28.8	39.5	35.8	ER036.00	P	102.9	156.4	99.3
ER005.00	A	6.1	11.3	13.8	ER038.00	P	57.3	84.0	81.2
ER007.00	A		33.8	56.4	ER039.00	P	68.8	81.6	77.4
ER008.00	CA	31.6	46.7	51.1	ER040.00	P	47.9	39.8	50.4
ER009.00	CR	33.5	39.2	91.8	ER043.00	CA	40.6	19.9	21.5
ER012.00	CR	23.9	19.7	81.7	ER045.00	CA	13.7	15.7	42.5
ER016.00	P	47.4	20.8	41.5	ER046.00	A	14.6	17.3	20.8
ER017.00	P	44.6	32.9	41.6	ER047.00	A	19.5	39.2	49.4
ER018.00	P	24.8	36.2	32.4	ER048.00	P	71.9	100.9	127.0
					ER051.00	A	14.2	14.7	15.0
					ER056.00	A	7.9	6.9	3.2

The data analyses for the conditionally approved and conditionally restricted stations in the open status are shown in Table 5. All stations met required standards.

**Table 5: Conditional Areas C55 Geomean-p90 During OPEN Period**

<b>MAINE DEPARTMENT OF MARINE RESOURCES</b>									
As of: January 23, 2007									
Fecal Coliform Geometric Mean and Percent Variability ; For the Years 2001 Through 2006 - (01/01 - 12/31) ( - )									
Excludes Dates: none ; Status = Open Stations Only ; Strategy = Random & Adverse ; Excludes Flood Data									
Excludes Inactive Stations ; Samples Limited to Latest 30 ; Salinity >= 0 ‰									
STATION	CLASS	COUNT	MFCNT	GM	SDV	MAX	P90	APPD_STD	RESTR_STD
ER008.00	CR	30	4	5.8	0.60	1100	33.5	46	277
ER009.00	CR	30	6	6.6	0.55	240	33.4	45	266
ER012.00	CR	30	4	6.0	0.48	280	24.8	46	277
ER043.00	CA	30	4	4.6	0.31	43	11.5	46	277
ER045.00	CA	30	4	3.8	0.27	31	8.3	46	277

**Documentation of New Pollution Sources**

PS-1 A failing in ground septic system was identified by the Machiasport plumbing inspector at the corner of Port Road (Route 92) and the Kennebec Road. The system was repaired under the DEP Small Community Grant Program in the summer of 2006 (Confirmed MeDEP payment sign-off form 10/24/2006).

PS-2 On the Birch Point Road, Machiasport there is a persistent problem adjacent to water sampling station ER009.00. A small stream draining behind a house and trailer on the property tests positive for fecal coliform bacteria. The stream uphill from the house tests negative. The house had its septic field repaired +10 years ago under the Small Community Grant Program. The owners claim the system is not failing. There are two (2)



dogs living at the house and have been observed outside. The Machiasport LPI is investigating the issue (December 2006).

PS-3 Larrabee Cove, Machiasport- Pollution is may be non-point from wildlife (beaver) in wetland drainage near the water quality sampling site. There is a camp on the cove, but the OH is far from shore. No other potential pollution sources have been identified. The present closure will be enlarged and the size will be based on a dilution calculation of Larrabee Stream and the fecal loading at ER007.00.

- (1) The bacterial dilution zone = 10,321 m<sup>2</sup>
- (2) The proposed Restricted zone = 215,408 m<sup>2</sup>

PS-4 Holmes Bay, Whiting- Failing water testing scores has caused ER047.00 to exceed Approved criteria. The area is remote, but a stream drains the upland near the sample site. No specific source of the pollution has been identified. The new closure size will be based on a dilution calculation of the un-named stream and the fecal loading at ER047.00.

- (1) The bacterial dilution zone = 32,970.8 m<sup>2</sup>
- (2) The proposed Prohibited zone = 110,505 m<sup>2</sup>

#### Reevaluation of All Pollution Sources

PS-5 The Maine Downeast Correctional Facility (Maine Dept of Corrections) in Bucks Harbor, Machiasport- has a small wastewater secondary treatment plant that discharges into Howard Cove. It is a year-round mechanical system with year-round chlorination (Lic. # 3242). The licensed discharge volume is 40,000 gpd. There are no CSO points. Sample station ER003.00 is approximately 1300 feet north of the discharge. It has had a consistently low p90 during this triennial review period therefore supporting the dilution adequacy of the Prohibited area around the outfall. There are currently plans to extend the outfall pipe from a shore discharge to a deep water discharge. The discharge is into a Prohibited area (C55B).

Based on a 0.04 MGD flow, 100,000 FC/100ml in effluent before chlorination and an average depth of 20 feet of receiving water;

- (1) The bacterial dilution zone = 177,408 m<sup>2</sup>
- (2) The 1000:1 viral dilution zone = 24,837 m<sup>2</sup>
- (3) The current Prohibited zone = 259,354 m<sup>2</sup>

PS-6 Bucks Harbor, Machiasport- Atlantic Salmon of Maine discharges process water into Bucks Harbor (Lic. #7951 and 7756) licensed under a "food handling or packaging" classification. Total volume of wastewater is 0.033 MGD. This facility is presently inactive. The discharge is into a Restricted area (C55H).

PS-7 Machiasport Village- There are several residential licensed overboard discharges in the Machiasport Village area. The active systems are listed below. The systems discharge into a Prohibited area (C55). Two systems were replaced with an in-ground system and a holding tank respectively in 2005 (Kaye Duckworth, #6309 and The Machiasport Historical Society, #5111; confirmed DEP-OBID Inspection Checklist 7/15/2005).



**Table 6: Active Licensed Overboard Discharge in the Machiasport Village Area**

License No.	System-Flow gpd	Relicense Date
5110	Sand Filter-260	6/29/2009
6321	Sand Filter-300	11/20/1994
6322	Sand Filter-300	2/20/2007

PS-8 Machias Wastewater Treatment Facility, Machias- During this review period, the plant has and continues to have a history of CSO events with heavy rainfall or >1.5” of rain with snowmelt (> 2 MGD influent flow rate). This impacts the shellfish areas downstream at Randall Flats and Sanborn Cove. The renewed NPDES permit dated September 6, 2005 required the facility to (1) implement a Wet Weather Management and a Comprehensive Operation-Maintenance Plan on or before 3/2006; (2) A CSO Abatement Master Plan has been in effect since 12/2005. This CSO Plan will be updated in 2009; (3) efforts to reduce copper toxicity; (4) to achieve a 30 day average of 85% removal for BOD and TSS; (5) increased frequency for testing of settleable solids and fecal coliform bacteria; (6) allow the daily limit of septage disposal to increase from 1500 gallons to 2000 gallons after the up-grade of the aeration system.; and the average daily flow rate license has been increased from 0.30 MGD to 0.37 MGD. The plant has met the management plan criteria during this review period.

Based on a 0.37 MGD flow, 100,000 FC/100ml in effluent before chlorination and an average depth of 10 feet of receiving water;

- (1) The bacterial dilution zone = 3,282,039 m<sup>2</sup>
- (2) The 1000:1 viral dilution zone = 459,485 m<sup>2</sup>
- (3) The current Prohibited zone = 5,348,063 m<sup>2</sup>
- (4) The current Conditional zone = 2,874,966 m<sup>2</sup>

PS-9 Wastewater Cluster System (#6521), East Machias- The section of the East Machias Village that borders the East Machias River and US Route 1 has several licensed discharges that are part of a “cluster system” that disinfects with chlorine and UV radiation. Disinfection is year-round. There is a total of 19 independent sand filters (10 individual, 9 cluster) licensed for 25,585 gpd. Outfalls are in Meadow Brook and in an un-named brook off the Cutler Road. The systems discharge into a Prohibited area (C55).

Based on a 0.0255 MGD flow, 100,000 FC/100ml in effluent before chlorination and an average depth of 10 feet of receiving water;

- (1) The bacterial dilution zone = 226,949 m<sup>2</sup>
- (2) The 1000:1 viral dilution zone = 31,773 m<sup>2</sup>
- (3) The current Prohibited zone (East Machias River only) = 542,519 m<sup>2</sup>

PS-10 Guptill Farm, East Machias River, East Machias- The Guptill Farm has a large pastureland on the edge of the river near Simpson Island. There are approximately 50 cows in the herd. The pasture is hilly and rocky. The fencing is within 30 feet of the water’s edge and areas of the vegetative barrier are sparse. On the east margin of the



pasture, there is a low pond-like area that the cows wade in. A roadway forms a “dam” between the pond and the estuary, however a seep has been identified and a nearby water sample station fails (ER036.00). The farm is drains into a Prohibited area (C55).

PS-11 Beachwood Bay Estates (formally the US Navy Communication Facility housing), Holmes Cove, Cutler- This facility historically has been the base-housing for the naval staff and their families. Much of the base has been de-commissioned and the housing is being sold as civilian condominiums. The wastewater plant was licensed (#3293) to discharge 25,000 gpd of secondary treated septage into Holmes Bay. The system discharged into a Prohibited area (C55C)

Based on a 0.025 MGD flow, 100,000 FC/100ml in effluent before chlorination and an average depth of 10 feet of receiving water;

- (1) The bacterial dilution zone = 221,759 m<sup>2</sup>
- (2) The 1000:1 viral dilution zone = 31,046 m<sup>2</sup>
- (3) The current Prohibited zone = 581,740 m<sup>2</sup>

This OBD has been removed and replaced with an inground disposal field that has been in operation since 11-18-2006 (Chris Johnson, MeDEP). Sample station ER048.00 is failing p90 criteria at the end of 2006. Review of the tabulated data shows consistently high testing scores until the end of 2006. The high scores in the past may not have been from the facility discharge, but from another source. Future testing may show improved water or a secondary source of fecal pollution.

### Extra Sampling

Growing area streams were not sampled in this review period. The results of previous pollution source samplings are listed below in Table 7.

**Table 7: Streams and Pollution Source Samples**

Location	Date	Fecal	Remarks	Flow gpm	Runoff
ER00175.50	7/20/2004	21	Larrabee Stream, beaver dams	500	Low
ER00175.50	8/4/2004	2.9	Larrabee Stream, beaver dams	500	Low
ER00197.00	11/28/2006	5.5	? PS upstream from road drainage	5	Medium
ER00198.00	7/20/2004	240	? MS seep into cove, very low flow, need to resample after rainfall, Berry property	10	Low
ER00198.00	8/4/2004	93	? MS seep into cove, very low flow, need to resample after rainfall, Berry property	10	Low
ER00198.00	9/7/2004	1200	? MS seep into cove, very low flow, some recent steady rainfall, Berry property	10	Medium
ER00198.00	11/20/2006	1700	? MS seep into cove, very low flow, some recent steady rainfall, Berry property	12	Medium
ER00198.00	11/28/2006	124	? MS seep into cove, very low flow, some recent steady rainfall, Berry property	10	Medium
ER00198.00	12/11/2006	76	? MS seep into cove, very low flow, some recent steady rainfall, Berry property	10	Low
ER00198.00	12/21/2006	33	Berry ditch.		Low
ER00199.00	11/28/2006	16	New road ditch, at culvert, PS upstream	10	Medium
ER00199.00	12/11/2006	2	New road ditch, at culvert, PS upstream	10	Low
ER00199.00	12/21/2006	2	New road ditch, at culvert, PS upstream	10	Low
ER00199.00	12/21/2006	2	New road ditch, at culvert, PS upstream	10	Low
ER00219.00	11/28/2006	320	Culvert under Rt 92, drains wetland	50	Medium
ER00219.00	12/11/2006	12	Culvert under Rt 92, drains wetland	50	Low



ER00219.00	12/11/2006	10	Culvert on corner of Port Rd and Campbell Dr	50	Low
ER00219.00	12/11/2006	7.2	From ditch N of culvert, recent ditching by road department	50	Low
ER00219.00	12/21/2006	8	Culvert under Rt 92, drains wetland		Low

**Data Analysis**

Review of the survey and water sampling data supports the present classifications within the growing area with the exception of Indian Head Point, Machiasport (PS3) and Holmes Bay, Whiting (PS4). Fecal coliform negative testing results of the Larrabee Stream adjacent to ER007.00 in 2004 and rapid increase of the p90 in 2006 suggests a recent problem. The P90 value at Holmes Bay is marginally failing and elevated scores are mostly during precipitation or runoff events.

Pollution sampling shows a definite problem at the Berry property (PS2). The likely source is Berry's based on the fecal coliform negative testing results at the new road culvert (ER00199.00) and the negative impact on water quality station ER009.00 downstream from Berry's. The sharp increase of the p90 value in Table 3 also supports a recent problem.

Fecal coliform sampling at ER00219.00 has been consistently low. This would suggest that there is no residual impact from the repaired in-ground system (PS1).

Sample stations GM/p90s in the Machias River, East Machias River and Holmes Bay have had upward spikes during 2005-2006. Both years have had significant rainfall resulting in many CSO bypasses at the Machias WWTP.

The marine pump-out facility in Bucks Harbor does not appear to impact the water quality in the area.

Conditional and conditionally restricted stations on Randall Flats and Sandborn Cove meet their classification status during their OPEN periods. Conditional area monitoring stations were sampled monthly or to reopen the areas.

**Table 8: Conditional Area Sampling For Review Period**

Station	Status	Count
ER008.00	C	18
ER008.00	O	17
ER009.00	C	16
ER009.00	O	12
ER010.00	O	1
ER011.00	C	10
ER011.00	O	4

Station	Status	Count
ER012.00	C	38
ER012.00	O	21
ER016.00	C	47
ER016.00	O	10
ER019.00	C	35
ER035.00	C	24
ER036.00	C	22

Station	Status	Count
ER040.00	C	23
ER040.00	O	8
ER043.00	C	30
ER043.00	O	19
ER045.00	C	18
ER045.00	O	17

**Changes in classification required/requested at this time**

Because of failing GM/p90 values at ER007.00 and ER047.00, the sizes of C55I and C55C will need to be enlarged. The proposed repeal/promulgate closure language and maps are listed below. These changes will become part of the combined Regulation C55.

**TEXT OF RULE: DMR Regulation 95.09 ?? Area No. 00, Larrabee Cove, Machiasport**

Effective immediately..... from the shores, flats and waters of Larrabee Cove, Machiasport, west of a line beginning at the east tip of L Point and then running 1925 feet southeast to a red-



Painted marker on the northern tip of an un-named point on the northern side of Low Cove, Indian Point. This area is classified restricted and harvesting requires a special MDMR permit.

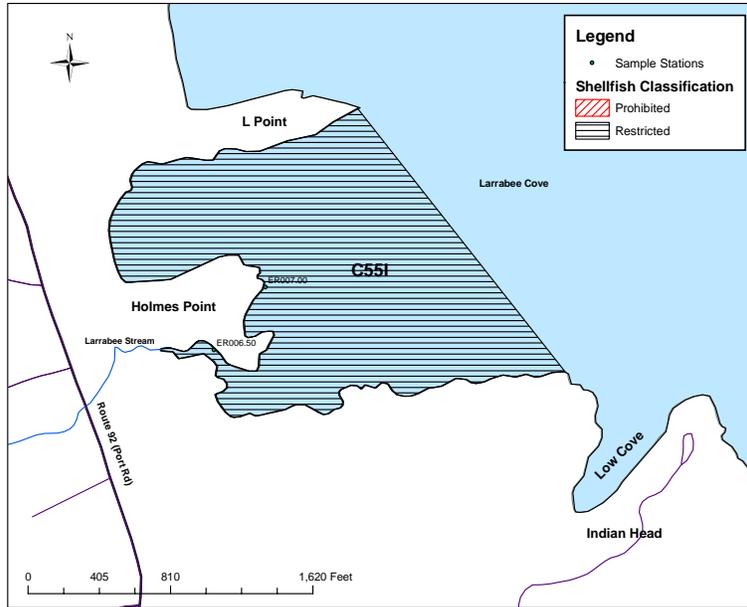


Figure 2: Larrabee Cove, Machiasport

**TEXT OF RULE: DMR Regulation 95.09 ?? Area No. 00, Northwest Holmes Cove, Whiting**

Effective immediately..... from the shores, flats and waters of Holmes Bay, Whiting north of a line beginning at the southern tip of an un-named point across RT 191 from Looks Cemetery and then running 3120 feet southwest to a red-painted marker, at the high tide mark, 1200 feet east of the Machiasport-Whiting town line.

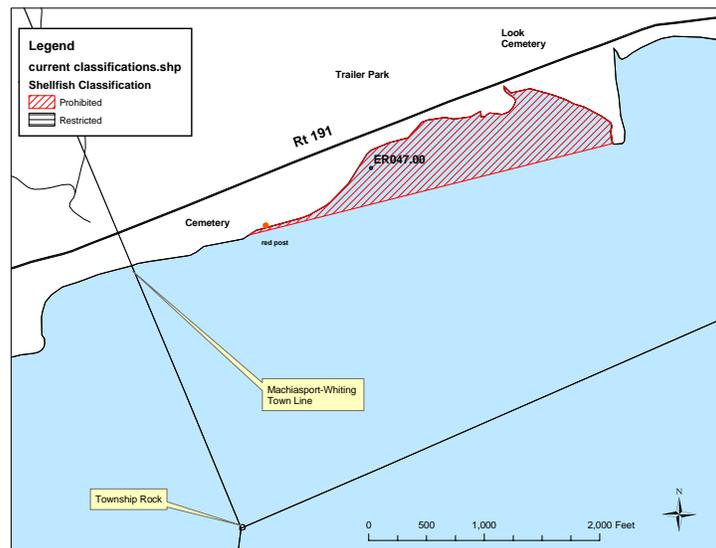


Figure 3: Holmes Bay, Whiting



## Conclusions and Recommendations

All water quality sample sites are in Systematic Random Sampling Run 16 and were sampled the minimum number of times (6) during all of the review years.

When sampled during this review period, Larrabee Stream had no negative impact to the harvesting waters, however ER007.00 is presently failing Approved criteria and the present closure will need to be enlarged.

Station ER047.00 is failing Approved criteria and it is necessary to promulgate a new closure.

ER009.00 is impacted by suspect runoff from the Berry property and is still a pollution risk to Sanborn Cove. DMR staff members are working with the town government, clam committee and Maine DEP to correct the problem.

The newly repaired septic field on the corner of The Port Road and Kennebec Road has eliminated a pollution risk to Sanborn Cove.

The wastewater treatment plants and licensed overboard discharges in Howards Cove, Machiasport Village, East Machias and Holmes Bay have no impact on the growing area outside of their Prohibited areas. The conclusion is based on dilution calculations and adjacent water quality sampling stations. The Machias Wastewater Treatment Plant impacts the Sanborn Cove-Randall Flats Conditional Areas when there is a CSO by-pass event. Machias has met the management plan criteria during this period.

There will be no change in the management of the Restricted and Conditional areas (Sanborn Cove and Randall Flats) until new boundary stations support classification changes.



## BIBLIOGRAPHY

Maine Department of Environmental Protection  
Maine Office of GIS  
Maine DMR "Marvin" Water Quality and Shoreline Survey Database  
Town of Machiasport  
Town of Machias  
Town of East Machias  
Town of Whiting



## APPENDIX

### Attachment A. 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 = 90<sup>th</sup> percentile

APPD\_STD = the 90<sup>th</sup> 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 90<sup>th</sup> percentile, at or below which the station would meet restricted criteria.