



GROWING AREA EE

Swan's Island and Frenchboro

ANNUAL REVIEW for 2010

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APPROVAL

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_____ Date: _____
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Figure 1. Growing Area EE

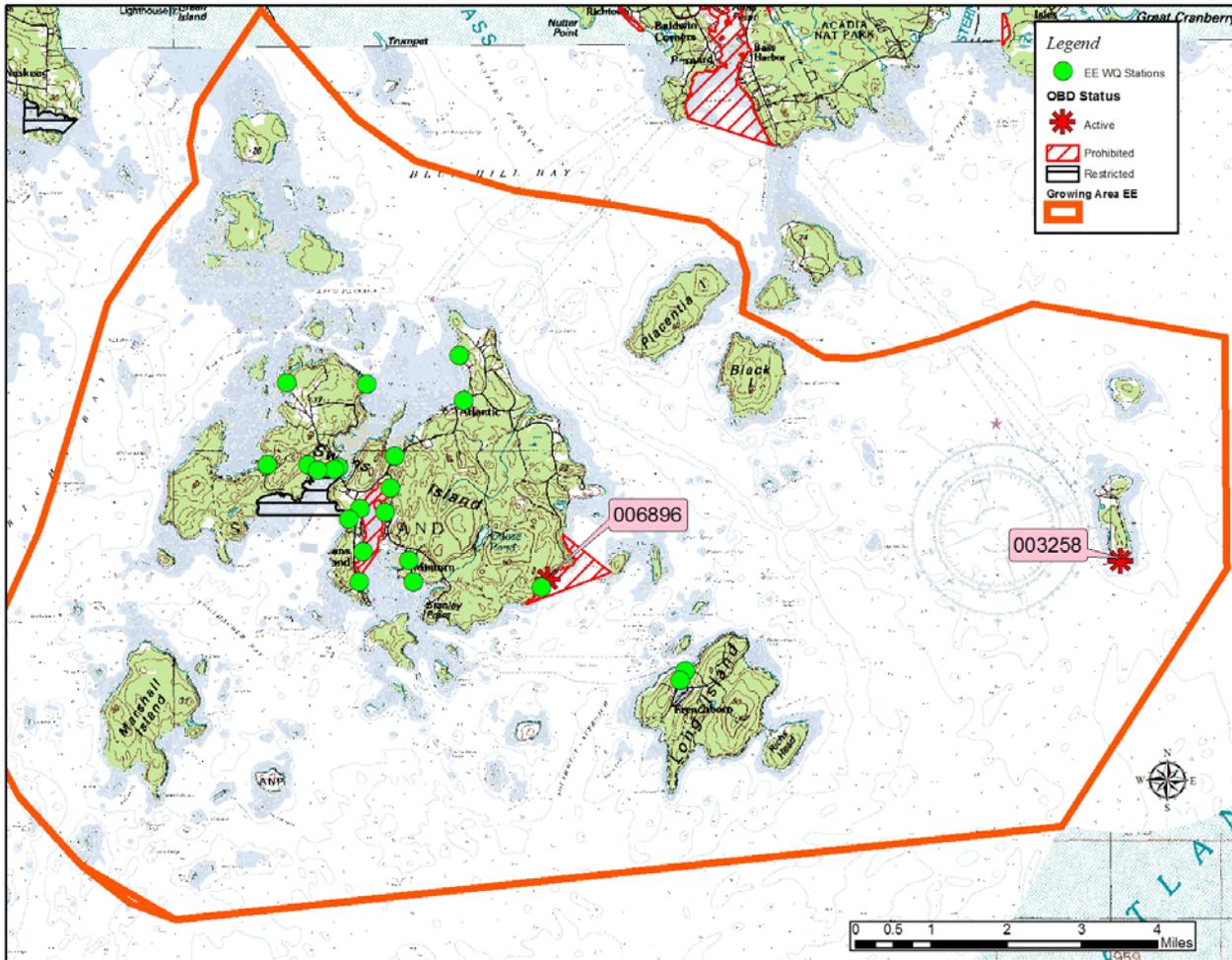
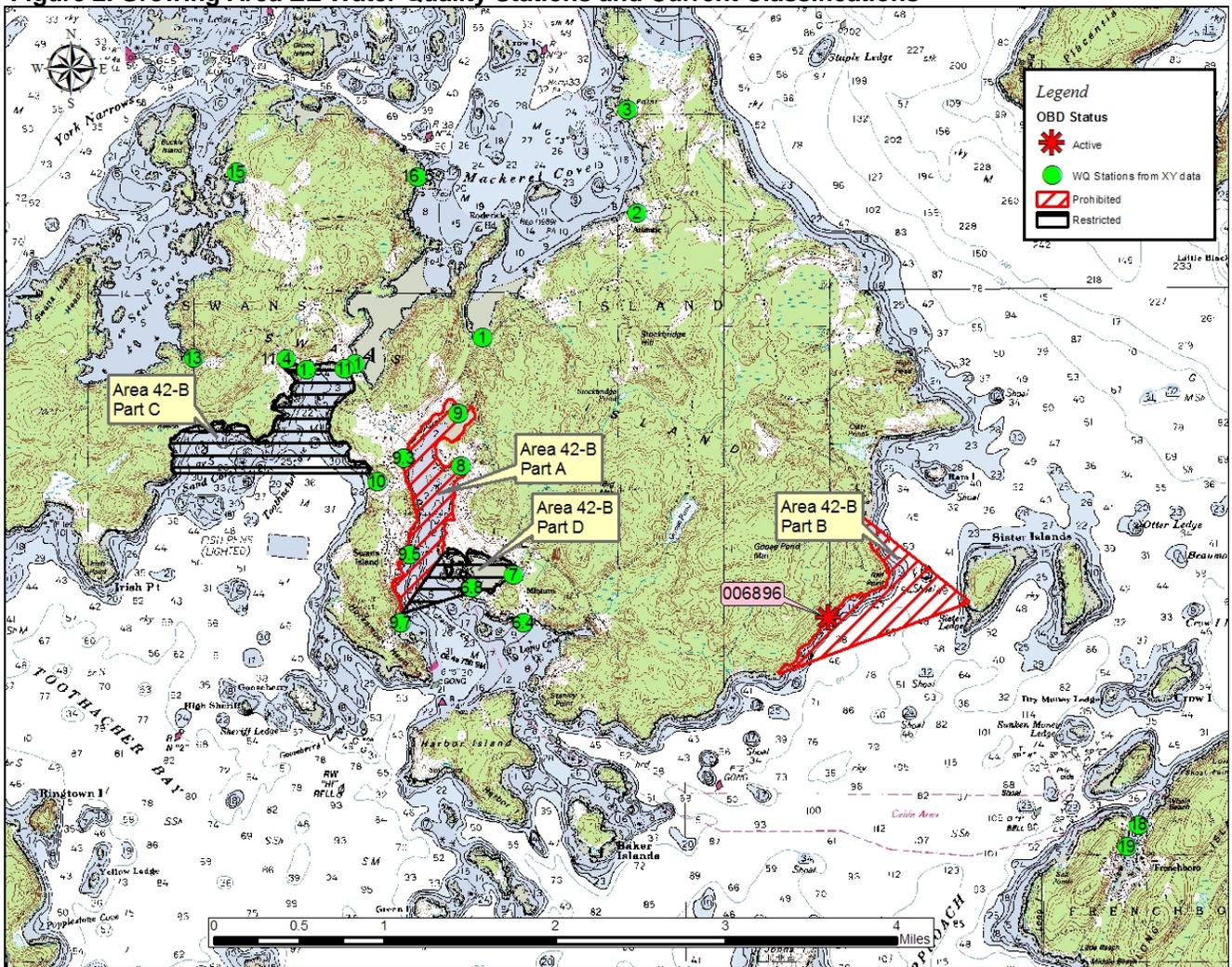




Figure 2. Growing Area EE Water Quality Stations and Current Classifications





Executive Summary

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

Growing area EE is located in Hancock County and consists of numerous islands that are located in the southern end of Blue Hill Bay and just southwest of Mount Desert Island. Water quality at all stations support their current NSSP classifications. No downward reclassifications are required. An upward reclassification of the eastern shore of Burnt Coat Harbor, Swan's Island is proposed in this report.

The next triennial report is due in 2012; the next sanitary survey report is due in 2021.

Growing Area Description

This growing area consists of numerous islands that are located in the southern end of Blue Hill Bay and just southwest of Mount Desert Island (Figures 1 and 2). Swan's Island and Frenchboro (Long Island) make up the majority of this growing area, with several surrounding uninhabited islands and ledges. The area is bounded on the west by Marshall Island, on the south by Marshall Island and Frenchboro (Long Island), on the east by The Duck Islands, and on the north by Pond, Placentia, and Black Islands. Since this area is made up of relatively small islands, there is no defined upland boundary. This is a rural area with sparse population and land use is predominantly residential with a few small fishing piers. There are no municipal waste water treatment plants and only two licensed overboard discharges (OBDs). There are two aquaculture lease sites for Atlantic salmon, both located adjacent to uninhabited islands.

Current Classification(s)

At the end of the 2010 review year, shellfish growing area EE had areas classified as:

Approved

- Sample stations; EE 1, 3, 6.4, 9.7, 10, 13, 15, 16.5, 17, 18, & 19.

Restricted

- Area No. 42-B Part C, Toothacher Cove (Swan's Island), Restricted due to non-point pollution. Sample stations associated with classification; EE 11, 11.3, & 11.4.
- Area No. 42-B Part D, Mill Pond (Swan's Island), Restricted due to non-point pollution. Sample stations associated with classification; EE 6.8 and 7.



Prohibited

- Area No. 42-B Part A, Burnt Coat Harbor (Swan’s Island), Prohibited due to a malfunctioning septic systems. Sample stations associated with classification; EE 8, 9, 9.3, & 9.5.
- Area No. 42-B Part B, Red Point (Swan’s Island), Prohibited due to licensed OBD #6896.

Please visit the DMR website to view legal notices:

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

Activity during Review Period

On June 11, 2010, Area No. 42-B was amended to downwardly reclassify the Mill Pond area of Swan’s Island from Approved to Restricted after water quality at station EE 7 no longer met Approved standards.

Water Quality Review and Discussion

Table 1 lists all active approved, restricted, and prohibited stations in growing area EE, with their respective Geomean and P90 calculations for 2010. Please refer to Appendix A 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 versus 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. A more detailed explanation of this transition can be found in central files.

All approved and restricted stations met their NSSP classification standard in 2010.

Stations EE 6.8, 11.3, & 11.4 are new stations with less than 30 data points in their dataset and were not evaluated against any classification standards. EE 6.8 is a boundary station for restricted station EE 7. Stations EE 11.3 and 11.4 were added to Toothacher Cove on the northwestern shore in an effort to decrease the size of the new restricted area by creating new boundary stations. Stations EE 8, 9, 9.3, and 9.5 all meet approved standards, but will remain classified as prohibited due to the presence of malfunctioning septic systems that were identified during the 2009 shoreline survey. Stations EE 8 and 9 may be reclassified to approved as a result of repair and replacement of some of these malfunctioning systems during 2010. That upward reclassification is discussed later in this report.

Table 1. Geomean and P90 Scores, Growing Area EE, 2005-2010

Station	Class	Count	MFCOUNT	GeoMean	SDV	MAX	P90	Appd_Std	Restr_Std
EE001.00	A	30	27	2.5	0.42	200	8.9	32	173
EE002.00	A	30	28	3.4	0.51	142	15.7	31	169



Station	Class	Count	MFCOUNT	GeoMean	SDV	MAX	P90	Appd_Std	Restr_Std
EE003.00	A	30	26	2.3	0.28	56	5.5	32	176
EE006.40	A	30	26	2.8	0.26	16	6.2	32	176
EE006.80	new	6	6	3.5	0.64	74	24.8	31	163
EE007.00	R	30	27	5.3	0.72	520	45.1	32	173
EE008.00	P	30	27	2.9	0.44	62	10.7	32	173
EE009.00	P	30	28	3.5	0.56	280	18.6	31	169
EE009.30	P	30	28	3.2	0.41	48	11.1	31	169
EE009.50	P	30	26	2.4	0.2	14	4.4	32	176
EE009.70	A	30	26	2.4	0.19	9.1	4.2	32	176
EE010.00	A	30	26	2.5	0.22	12	4.8	32	176
EE011.00	R	30	27	5.1	0.71	1280	42.9	32	173
EE011.30	new	18	18	4.7	0.55	62	24.7	31	163
EE011.40	new	12	12	4.3	0.42	32	15.3	31	163
EE013.00	A	30	26	2.7	0.27	26	6.2	32	176
EE015.00	A	30	26	3.5	0.57	480	19.2	32	176
EE016.50	A	30	26	2.8	0.34	42	7.8	32	176
EE017.00	A	30	26	2.7	0.33	31	7.3	32	176
EE018.00	A	30	28	2	0.09	4	2.7	31	169
EE019.00	A	30	28	2.2	0.25	24	4.8	31	169

All approved and prohibited stations that were active at the beginning of 2010 were sampled at least 6 times following the systematic random sampling (SRS) schedule (Table 2). Stations EE 6.8, 11.3, & 11.4 had extra samples collected in order to expedite the minimum of 30 samples required for classification.

Table 2. EE Samples Collected in 2010

Station	Class	Extra		Random		Total	Comments
		Closed	Open	Closed	Open		
EE001.00	A				6	6	
EE002.00	A				6	6	
EE003.00	A				6	6	
EE006.40	A				6	6	
EE006.80	R		2		5	7	Created 6-13-10, first sample 6-14-10
EE007.00	A				2	6	Reclass-A to R 6/11/10
	R				4		
EE008.00	P			6		6	
EE009.00	P	1		6		7	
EE009.30	P	1		6		7	
EE009.50	P			6		6	
EE009.70	A				6	6	
EE010.00	A				6	6	
EE011.00	R		1		6	7	
EE011.30	R		6		6	12	
EE011.40	R		6		6	12	



Station	Class	Extra		Random		Total	Comments
		Closed	Open	Closed	Open		
EE013.00	A				6	6	
EE015.00	A				6	6	
EE016.50	A				6	6	
EE017.00	A				6	6	
EE018.00	A		1		6	7	
EE019.00	A		1		6	7	

Upward Classification Changes

On August 26, 2009, Area No. 42-B, was amended to enlarge the prohibited area (Part A) of the regulation. This was done to encompass a malfunctioning septic system on the western shore of Burnt Coat Harbor, reported to DMR by local officials on August 26, 2009. On this date, a shoreline survey of Growing Area EE was underway, but had not reached this part of the growing area. The prohibited area was expanded to a size large enough to encompass any impact from the newly malfunctioning system until further evaluation of the problem could prove that a smaller closure would suffice. Upon the completion of the shoreline survey, four additional septic problems were identified, also in the vicinity of the western shore of Burnt Coat Harbor. Figure 3 shows the current classification lines along with the locations of the problems identified in the 2009 survey. The identified problems, along with descriptions of current status are detailed in the Shoreline Survey Activity section of this report.



Figure 3. Burnt Coat Harbor, Current Classifications

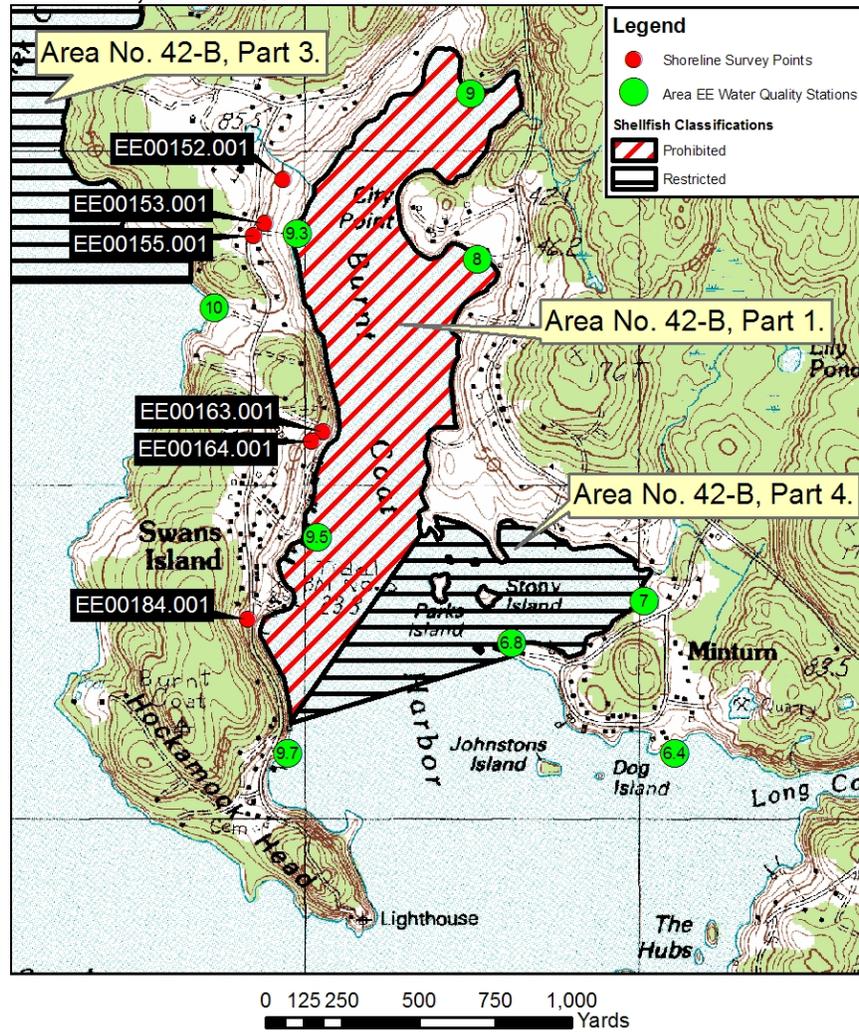
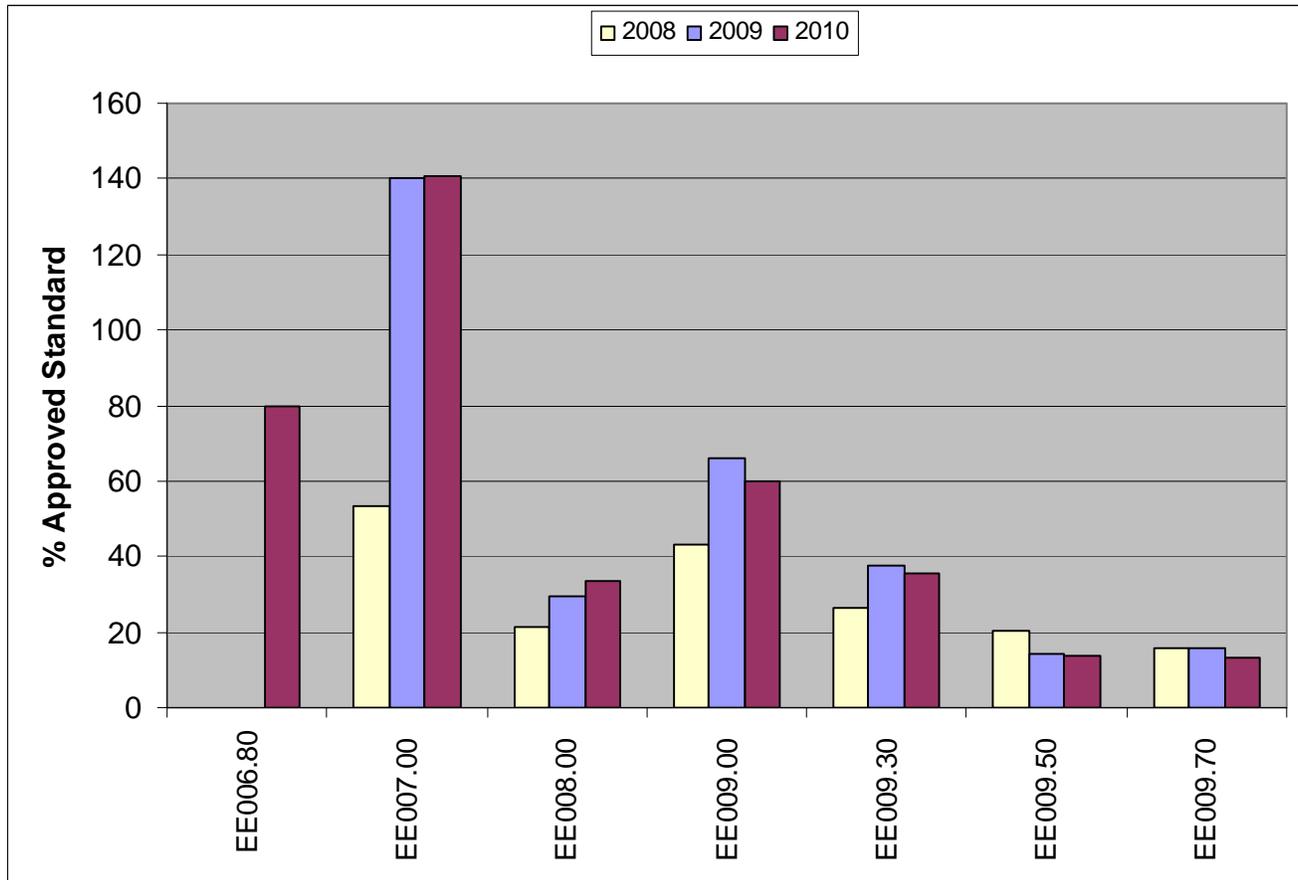


Figure 4 shows the P90 calculation history over the last three years of the Burnt Coat Harbor water quality samples. Station EE7 showed a sharp increase in 2009 and was reclassified from Approved to Restricted. This station is located in the Mill Pond area of Swan's Island. Station 6.8 is a new station established at the mouth of Mill Pond in order to evaluate the possibility of a new boundary at the mouth of the cove. Station 8 shows a steady increase but still remains at only 33% of the Approved standard. Stations EE 9, 9.3, 9.5, and 9.7 all have met approved area standards for the past three years and have improved from 2009 to 2010.



Figure 4. P90 Calculations for Burnt Coat Harbor Stations 2008-2010



In order to investigate how water quality is impacted by rainfall events which do not necessitate an emergency flood closure, a rainfall assessment for the Burnt Coat Harbor stations was completed. For this assessment, the geometric mean and P90 scores were recalculated using only data points which were collected after 0.50 or more inches of cumulative rainfall were recorded up to 72 hours prior to sample collection (Table 3). Only stations in the area of proposed reclassification are included in this table, and all random data collected from 2003 through 2010 were included. The results of this calculation show that all stations meet approved criteria under rainfall conditions.

Table 3. Geomean and P90 Calculations, Rainfall Data

Station	Class	Count	MFCCount	GeoMean	SDV	MAX	P90	Appd_Std	Restr_Std
EE008.00	P	20	12	4.2	0.55	62	22.3	37	208
EE009.00	P	18	11	4.8	0.59	280	28	37	206
EE009.30	P	19	12	4.4	0.46	48	17.9	36	204
EE009.50	P	18	11	2.9	0.25	14	6.3	37	206
EE009.70	A	18	11	3.2	0.26	21	7.1	37	206

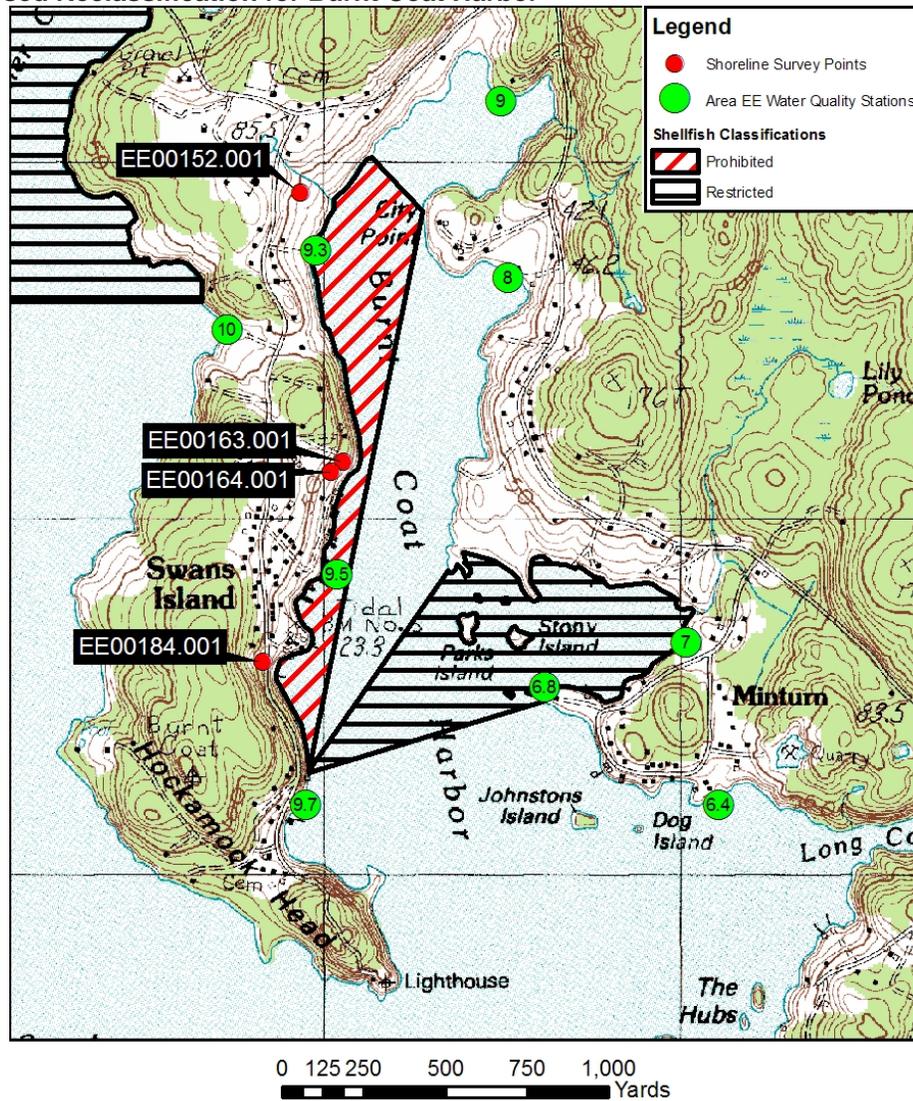
Figure 5 shows the proposed classification lines for an upward reclassification of the eastern portion of Burnt Coat Harbor, along with the locations of the remaining pollution problems from the most



recent survey. The reevaluation of Burnt Coat Harbor shows that all water quality stations in the harbor meet approved standards. Station EE 7, located in the Mill Pond, must remain classified as restricted. The proposed remaining Prohibited area is based on the locations of malfunctioning septic systems. Water quality scores at nearby sample stations indicate that these systems are not impacting the waters beyond the proposed reclassification lines.

This classification change was implemented on March 10, 2011.

Figure 5. Proposed Reclassification for Burnt Coat Harbor





Shoreline Survey Activity

The following systems were identified as problems during a 2009 shoreline survey, and were the reason for the 2009 expansion of the Prohibited area in Burnt Coat Harbor. Each known problem was revisited in 2010 to monitor abatement of the pollution source. Current status and action taken to correct problems are listed below.

Malfunctioning system EE00152.00, visited with Local Plumbing Inspector(LPI) in 2010. This system has a septic breakout only when there is excessive use of domestic water. On such occurrences there is a wet spot on the lawn behind the house and approximately 275 feet from the high water line. This is highly unlikely to impact the shellfish beds due to the low volume of discharge and the distance across porous ground before reaching the shellfish beds. The homeowner said he has a local contractor coming to add fill to the top of the leach bed as soon as time permits.

Malfunctioning system EE00153.00, this malfunctioning system was completely replaced in May of 2010 and is no longer considered a problem.

Malfunctioning system EE00155.00, this malfunctioning system was repaired in May of 2010 and is no longer considered a problem.

Malfunctioning system EE00163.00, this open cesspool remains a problem and has been brought to the attention of the LPI for notification of the homeowner for advisement of action required. This system is still considered a problem and requires the continued protection of Area No. 42-B, Part A, to maintain public health.

Malfunctioning system EE00164.00, this septic overflow pipe remains a problem and has been brought to the attention of the LPI for notification of the homeowner for advisement of action required. This system is still considered a problem and requires the continued protection of Area No. 42-B, Part A, to maintain public health.

Malfunctioning system EE00184.00, this septic overflow pipe remains a problem and has been brought to the attention of the LPI for notification of the homeowner for advisement of action required. This system is still considered a problem and requires the continued protection of Area No. 42-B, Part A, to maintain public health.

With the abatement of systems EE00153.00 and 155, the impact of the remaining problems has been reevaluated and determined that Pollution Area No. 42-B, Part A may be reduced in size to encompass the western shore of Burnt Coat Harbor where these systems are located. Water quality scores for all stations in Burnt Coat Harbor meet approved area standards and are discussed in detail in the Water Quality Review section of this report.

Drive through surveys of growing area EE were completed on the same dates as random water sampling runs in 2010.



Aquaculture/Wet Storage Activity

There are two aquaculture sites in shellfish growing area EE. These sites both raise Atlantic Salmon and are located in approved areas. Information on these lease sites is shown below. This information is also available at the DMR aquaculture website at:

<http://www.maine.gov/dmr/aquaculture/leaseinventory/index.htm>

Site ID	Name	Primary Species	Expiration Date
SWAN HS	Island Aquaculture Corp.	Atlantic Salmon	6/14/2014
SWAN BI	Island Aquaculture Corp.	Atlantic Salmon	3/14/2019

Recommendation for Future Work

Continue to monitor the abatement process lead by the LPI, of the remaining problem systems on the western shore of Burnt Coat Harbor. As these systems get repaired or replaced, this section of the harbor may be reevaluated for upward reclassification.

Continue to monitor new stations EE 6.8, 11.3 and 11.4; when the dataset reaches the required 30 samples, this section of the restricted area may be reevaluated for upward reclassification. These stations are located on Swan's Island and require boat transportation to gain access. Ferry boat runs to the island in addition to the scheduled random sample runs, as well as stops enroute to Isle Au Haut during a boat sampling run may provide some extra samples.



Appendix 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 = 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.