GROWING AREA EK

Dyer Neck to Petit Manan Point, including Dyer and Pinkham Bays

Triennial Report for 2009

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APPROVAL

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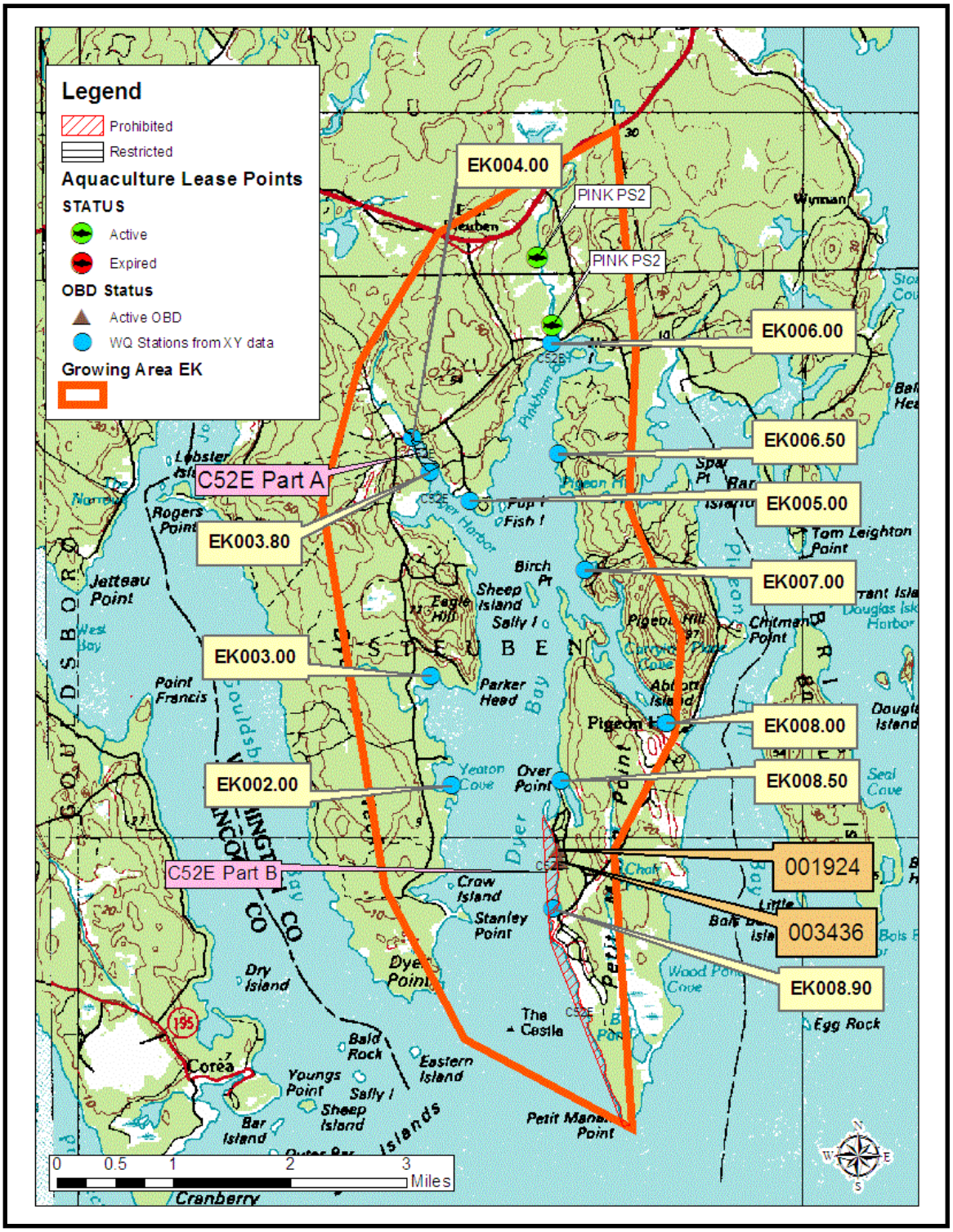
Figure 1. Growing Area EK, with Active Water Stations, OBDs and Aquaculture Leases.



Executive Summary

This is a triennial report for Growing Area EK written in compliance with the requirements of the 2007 Model Ordinance and the National Shellfish Sanitation Program. This report includes a water quality review, as well as an evaluation of all new pollution sources identified between 2007 and 2009, and a re-evaluation of previously identified pollution sources. Pollution sources reviewed in this report include domestic waste, including private in-ground systems and over board discharge (OBDs), marinas, recreational areas, agricultural activities, domestic animal waste and wildlife areas, stormwater, and non-point pollution transported by streams. The next triennial report is due in 2012 and the next sanitary survey report is due in 2018.

Growing area EK is located in the waters of Dyer Bay in the town of Steuben, Washington County Maine. During the review period, the following classification and changes occurred: restricted area No. 52E part B was reclassified to approved and prohibited area No. 52E Part C was renamed to Area No. 52E Part B on March 12, 2009. The growing area has only one current closure that covers two separate areas. There are two licensed overboard discharges, both of which are encompassed by prohibited area. There are no municipal waste water treatment plants (WWTP) in this growing area. Dyer Harbor has undergone two successive upward classifications in this triennium. Pinkam Bay has undergone one upward reclassification in this triennium.

Growing Area Description

Growing area EK (Figure 1) encompasses Dyer Bay, Dyer Harbor, and Pinkham Bay in the Town of Steuben, Washington County, Maine; and is primarily a rural area of Maine with low population density and no municipal services such as water or sewer. The Restricted area (Area No. 52E Part A) covers the Northeast portion of Dyer Harbor. The Prohibited area (Area No. 52E Part B) extends from The Southwest tip of Petit Manan to the Western Prominence of Petit Manan Point. A detailed description of the entire boundary of area EK can be found in the central files.

Shoreline survey work was completed in the summer of 2006 with only two point sources of pollution identified; these include two licensed overboard discharges under the licensing and inspection control of the Maine DEP. A more complete description of this growing area's boundary is detailed in the 2006 Sanitary Survey report.

There is one aquaculture lease with two sites for American oysters in the growing area.

Current Classification(s)

At the end of the 2009 review year, shellfish growing area EK had areas classified as:

Approved

- Sample stations associated with approved classification; 2, 3, 3.8, 5, 6, 6.5, 7 & 8.

Restricted

- Area No. 52E Part A, Dyer Harbor (Steuben), restricted due to non-point source pollution; EK 4.

Prohibited

- Area No. 52E Part B, Dyer Bay (Steuben), prohibited due to licensed OBDs #1924 and #3436, and elevated water quality scores in 2005, 2006, 2007 at EK 9.0.

New station 8.9 was established in 2009; this station has less than 30 data points and was not evaluated against a classification standard.

Please visit the DMR website to view legal notices:
http://www.maine.gov/dmr/rm/public_health/closures/closedarea.htm#EK

Activity During Review Period

The following classification changes occurred during the review period.

2007

Pollution Area No. 52E (May 16, 2007) combined and modified closures 52D, 52E, 52J. The portion of Dyer Harbor outside of Station 3.8 was reclassified upward from Prohibited to Approved due to water quality meeting approved standard and inside of Station 3.8 was reclassified upward from Prohibited to Restricted due to water quality meeting restricted standard (Area No. 52E Part A).

2008

No classification changes

2009

Area No. 52E (March 12, 2009) reclassified Area No. 52E Part B (Station EK006.00) from Restricted to Approved due to water quality meeting approved standard and renamed Area No. 52E Part C to Area No. 52E Part B.

Current Management Plan(s) for Conditional Area(s)

There are no conditional areas in Growing Area EK.

Documentation of Pollution Sources

The following sections include information on pollution sources which do or may impact water quality in growing area EK. The section includes information on new pollution sources, identified over the past three review years, as well as updated reviews of existing pollution sources in this growing area. Pollution sources that are reviewed in this section include domestic waste, including both private in-ground systems and over board discharges (OBDs), marinas and mooring fields, stormwater and pollution from non-point sources (streams), farms and other agricultural activities, domestic animals and wildlife areas, and recreational areas.

Evaluation of New Pollution Sources

No new pollutions sources have been identified since the 2006 shoreline survey.

Re-Evaluation of Existing Pollution Sources

The following sections are a review of known existing pollution sources in growing area EK. Pollution problems associated with domestic waste, including OBDs, which were identified prior to the last triennial, are re-evaluated. Other pollution sources, which were present at the time of the last triennial review, are also reviewed.

Domestic Waste

The two overboard discharges in Growing Area EK (OBDs #1924 and #3436) noted in the most recent Sanitary Survey are still active. Both are seasonal dwellings located on the east side of the area near sample stations EK008.90 and EK 009.00 in the town of Steuben.

Table 1. Growing Area EK OBDs

DEP ID	License Expiration	Gallons per day	Depth of receiving water (feet)	Required OBD Dilution zone (acres)	Actual Prohibited area (acres)
3436	8/12/2013	300	7	1.3	46.7
1924	5/11/2015	500	7	2.2	46.7

An overboard discharge (OBD) is the discharge of wastewater from residential, commercial, and publicly owned facilities to Maine's streams, rivers lakes, and the ocean. Commercial and residential discharges of sanitary waste have been regulated since the mid-1970s when most direct discharges of untreated waste were banned. Between 1974 and 1987 most of the "straight pipes" were connected to publicly-owned treatment works or replaced with standard septic systems. Overboard discharge treatment systems were installed for those facilities that were unable to connect to publicly-owned treatment works or unable to install a septic system because of poor soil conditions or small lot sizes.

All overboard discharge systems include a process to clarify the wastewater and disinfect it prior to discharge. There are two general types of treatment systems; mechanical package plants and sand filters. Sand filter systems consist of a septic tank and a sand filter. In such systems, the wastewater is first directed to a holding tank where the wastewater solids are settled out and

undergo partial microbial digestion. The partially treated wastewater then flows from the tank into a sand filter, consisting of distribution pipes, layers of stone and filter sand, and collection pipes within a plastic liner. The wastewater is biologically treated as it filters down through the sand, and is then collected and discharged to a disinfection unit. Mechanical package plants consist of a tank, where waste is mechanically broken up, mixed and aerated; mechanical systems require electric power, and must have an operating alarm on a separate electrical circuit that will activate if the treatment unit malfunctions due to a power failure. The aerated treated wastewater is held in a calm condition for a time, allowing for solids to settle and for the waste to be partially digested by naturally occurring bacteria. The clarified water from the tank is then pumped off the top into a disinfection unit. There are two types of disinfection units, UV and chlorinators (most common). In a chlorinator, the treated water contacts chlorine tablets and remains in a tank for at least 20 minutes where bacteria and other pathogens are killed. The treated and disinfected water is discharged from the disinfection unit to below the low water mark of the receiving waterbody (the ocean, a river, or a stream) via an outfall pipe.

OBDs are licensed and inspected by the Maine Department of Environmental Protection. If an OBD is not properly maintained, or if the OBD malfunctions, it has the potential to directly discharge untreated wastewater to the shore, therefore, preventative closures are implemented surrounding every OBD. The size of each closure is based on a dilution calculation, based on the permitted flow rate of the OBD, and the depth of the receiving water; the fecal concentration used for this dilution calculation is $1.4X10^5$ fc/100 ml.

The dilution zones for these OBDs were calculated and are shown in Table 1. The prohibited area around each OBD are adequate to protect public health.

Municipal Waste Water Treatment Plans

There are no municipal waste water treatment facilities located in growing area EK.

Industrial Pollution

There are no industrial discharges into growing area EK.

Dredging Activity

There have been no dredging activities in area EK since the last triennial review was completed.

Marinas

Yeaton Cove and an unnamed cove half a mile north of Yeaton Cove each serve as a mooring area for 6 to 12 day-use lobster fishing boats. These fishing boats are generally unoccupied while anchored. Sample stations EK002.00 and EK003.00 are located within 300 to 500 meters of the moorings. There are no boats with heads or overnight boats and so a conditional area based on marina presence is not necessary.

Stormwater

Stormwater runoff is generated when precipitation from rain and snowmelt events flows over land or impervious surfaces and does not percolate into the ground. As the runoff flows over the land or impervious surfaces (paved streets, parking lots, and building rooftops), it accumulates debris, chemicals, sediment or other pollutants that could adversely affect water quality if the runoff is discharged untreated (US EPA 2009). Thus, stormwater pollution is caused by the daily activities of people within the watershed. Currently, polluted stormwater is the largest source of water quality problems in the United States (Stormwater Protection in Maine, 2009).

The primary method to control stormwater discharges is the use of best management practices (BMPs). In addition, most major stormwater discharges are considered point sources and require coverage under an NPDES permit. In 1990, under authority of the Clean Water Act, the U.S. EPA promulgated Phase I of its stormwater management program, requiring permitting through the National Pollution Discharge Elimination System (NPDES). The Phase I program covered three categories of discharges: (1) “medium” and “large” Municipal Separate Storm Sewer Systems (MS4s) generally serving populations over 100,000, (2) construction activity disturbing 5 acres of land or greater and (3) ten categories of industrial activity. In 1999, US EPA issued Phase II of the stormwater management program, expanding the Phase I program to include all urbanized areas and smaller construction sites. Currently, no towns within the boundary of growing area EK fall under Phase I or II of EPA’s stormwater management program.

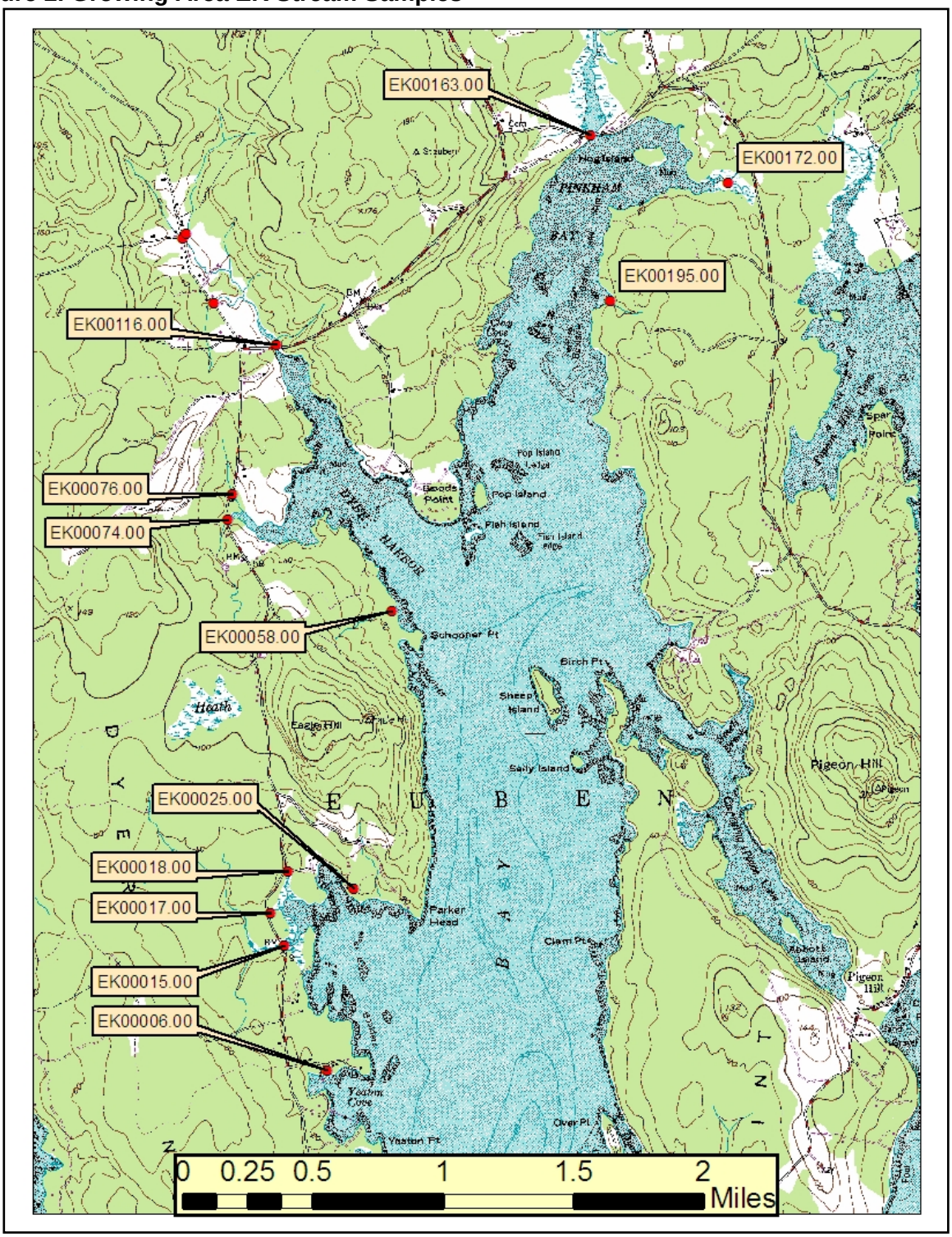
There are no municipal stormwater collection systems in area EK. The only roads crossing tidal waters are the Pinkham Bay Bridge Road and Dyers Bay Road. Bacterial pollution associated with stormwater drainage in areas where no structural facilities exist is monitored by growing area EK water quality monitoring stations.

Non-Point Pollution from Streams

Streams are a source of fresh water to growing area EK, and carry stormwater, snowmelt and groundwater into the coastal estuaries. Waste, including that containing fecal matter, which is deposited on land, may be carried by streams to shellfish growing areas, contributing to elevated fecal counts in waters that are filtered by shellfish.

In 2009, twelve streams were sampled (Figure 2, Table 2). Stream EK00006.00 is located in Northwest Yeaton Cove and does not show on topographic maps, nautical chart or MEGIS layers. Station EK002.00 monitors Yeaton Cove. The stream was sampled once in 2007 and twice in 2009. Stream EK00015.00 is located in the West side of a cove south of Parker Head. It is an annual stream with a 700 meter tidal channel. The stream was sampled twice in 2009 and once in 2007. Station EK003.00 monitors this cove.

Figure 2. Growing Area EK Stream Samples



Stream EK00017.00 is a tidal channel 200 meters north of EK00015.00 and drains into the same cove as EK00015.00 to a confluence about 300 meters downstream of the Mogador Road crossing. The channel was sampled twice in 2009. Station EK003.00 monitors this cove.

Stream EK00018.00 is a tidal channel 200 meters northwest of EK00017.00 and drains to a confluence with EK00017.00 approximately 250 meters below the Colson Lane road crossing. The channel was sampled once in 2007 and twice in 2009. Station EK003.00 monitors this cove.

Stream EK00025.00 is a stream that drains into the side of the same cove as EK00015.00 on the North side of the cove. The stream was sampled once in 2007 and twice in 2009. Station EK003.00 monitors this cove.

Stream EK00058.00 is a stream that drains into the mouth of Dyer Harbor 250 meters north of Schooner Point seaward of the Pollution Area No. 52E-A restricted area. The stream was sampled once in 2007 and twice in 2009. Station EK005.00 about 1 kilometer North is the nearest random monitoring station

Stream EK00074.00 is a stream that drains into the southwest branch of Dyer Harbor seaward of the Pollution Area No. 52E-A restricted area. The stream was sampled once in 2007 and twice in 2009. Stations EK003.8 and EK005.00 bracket the confluence of EK00074.00.

Stream EK00076.00 is a stream that drains into the southwest branch of Dyer Harbor seaward of the Pollution Area No. 52E-A restricted area. It has a confluence with EK00074.00 about 100 meters east of the Mogador Road crossing. The stream was sampled once in 2007 and twice in 2009. EK003.8 and EK005.00 bracket the area.

Stream EK00116.00 is located in the northwest branch of Dyer Harbor. It is an annual stream with a 600 meter tidal channel above the Dyers Bay Road. At low tide the channel continues abut 1 kilometer below the Dyers Bay Road crossing to a confluence with EK00074.00 and EK00076.00. The stream was sampled once in 2007 and twice in 2009. Stations EK004.00 and EK003.8 monitors this area.

Stream EK00163.00 is located at the North of Pinkham Bay. It is an annual stream with a 1.8 km tidal channel above Pinkham Bay Bridge Road. At low tide it continues another 900 meters to the low water mark and has a confluence with the tidal channel of EK00172.00 about 400 meters below the Pinkham Bay Bridge. The stream was sampled once in 2007 and twice in 2009. Stations EK006.00, EK006.50 and EL005.50 monitors Pinkham Bay.

Stream EK00172.00 is located at the Northeast of Pinkham Bay. It is an annual stream above the Pigeon Hill Road. At low tide it continues about 900 meters to a confluence with EK00116.00 then another 400 meters to the mean low water mark. The stream was sampled once in 2007 and twice in 2009. Stations EK006.00, EK006.50 and EL005.50 monitors Pinkham Bay.

Stream EK00195.00 is located on the east side of Pinkham Bay about 600 meters North of Station EK006.50. The stream was sampled twice in 2009. Station EK006.50 is near this stream.

None of the stream sample mTEC fecal coliform counts (FC/100 ml) exceeded the Maine standards defined by Maine law under the Classification of Maine waters 38 M.R.S.A. §465. (3), http://www.mainelegislature.org/legis/statutes/38/title38sec465.html for *Escherichia coli* for class B waters (Maine DEP 2005). Six streams (EK6, 25, 76, 116, 163, 173) had scores exceeding 14 FC/100 ml. These samples were further analyzed for geomean and estimated dilution (Table 3). Streams EK116 and EK163 warranted dilution zones of 10 and 17 acres respectively, in order to dilute pollution from the stream to the approved standard. Stream EK116 discharges into a restricted area; therefore a dilution zone to meet the approved standard is not required. Water quality scores at sample station EK6, located at the mouth of stream EK 163, meet the "Approved" classification standard, with a P90 score of 14; therefore no closure is recommended at this time.

Table 2. Growing Area EK Stream Samples

Stream ID	Stream Name	Nearest Station	Area Class	Date	FC/100ml	Flow gpm	Runoff Condition	Salinity
EK00006.00	Yeaton Cove, unnamed stream	EK002.00	A	6/20/2007	34	15	Low	0
				6/15/2009	2	156	Medium	0
				12/8/2009	<2	136	Medium	0
EK00015.00	Unnamed stream	EK003.00	A	6/20/2007	2	42	Low	18
				6/15/2009	6	1922	Medium	0
				12/8/2009	<2	1820	Medium	0
EK00017.00	Unnamed stream	EK003.00	A	6/15/2009	10	21	Medium	0
				12/8/2009	<2	70	Medium	0
EK00018.00	Unnamed stream	EK003.00	A	6/20/2007	<2	4	Low	0
				6/15/2009	6	566	Medium	0
				12/8/2009	<2	157	Medium	0
EK00025.00	Unnamed stream	EK003.00	A	6/20/2007	<2	29	Low	0
				6/15/2009	25	135	Medium	0
				12/8/2009	<2	257	Medium	0
EK00058.00	Schooner Point, unnamed stream	EK005.00	A	6/20/2007	<2	31	Low	0
				6/15/2009	5.4	404	Medium	0
				12/8/2009	6	905	Medium	0
EK00074.00	West Dyer Cove unnamed stream	EK003.80	A	6/20/2007	10	81	Low	0
				6/15/2009	10	3555	Medium	0
				12/8/2009	4	885	Medium	0
EK00076.00	West Dyer Cove	EK003.80	A	6/20/2007	70	39	Low	0
				6/15/2009	28	356	Medium	0

Stream ID	Stream Name	Nearest Station	Area Class	Date	FC/100ml	Flow gpm	Runoff Condition	Salinity
	unnamed stream			12/8/2009	<2	211	Medium	0
EK00116.00	North Dyer Cove unnamed stream	EK004.00	R	6/20/2007	24	539	Low	18
				6/15/2009	92	2693	Medium	0
				12/8/2009	<2	8640	Medium	0
EK00163.00	Pinkham Bay, North, unnamed stream	EK006.00	A	6/20/2007	2	8079	Low	28
				6/15/2009	46	10772	Medium	6
				12/8/2009	<2	29892	Medium	2
EK00172.00	Pinkham Bay, East, unnamed stream	EK006.00	A	6/20/2007	<2	63	Low	24
				6/15/2009	50	539	Medium	4
				12/8/2009	2	495	Medium	4
EK00195.00	Pinkham Bay, Southeast, unnamed stream	EK006.50	A	6/15/2009	<2	157	Medium	0
				12/8/2009	<2	58	Medium	5

Table 3. Selected Stream Dilution Zones

Stream ID	Stream Name	Nearest Station	Area Class	Mean FC/100ml	Mean Flow gpm	Dilution Acreage
EK00006.00	Yeaton Cove, unnamed stream	EK002.00	A	12.63	102.33	0.08
EK00025.00	Unnamed stream	EK003.00	A	9.60	140.33	0.09
EK00076.00	West Dyer Cove unnamed stream	EK003.80	A	33.30	202.00	0.42
EK00116.00	North Dyer Cove unnamed stream	EK004.00	R	39.30	3957.33	9.82
EK00163.00	Pinkham Bay, North, unnamed stream	EK006.00	A	16.63	16247.67	17.06
EK00172.00	Pinkham Bay, East, unnamed stream	EK006.00	A	17.97	365.67	0.41

Agricultural Activities

There are no large scale agricultural facilities on or near the shoreline of growing area EK.

Domestic Animals and Wildlife Activity

When domestic animal waste is improperly disposed of it can have an adverse impact on water quality. There are no records indicating potential pollution from companion animals in area EK.

In addition to domestic animals, wildlife can also have an adverse impact on water quality. Thousands of migrating waterfowl rest at the refuge (US FWS MCINWR 2010) during the fall migration. The majority of the refuges freshwater flowage drains into the adjacent growing area (EL).

Conservation/Recreation Areas

Potential impact from the Petit Manan Point section of Petit Manan Point National Wildlife refuge (now called Maine Coastal Islands National Wildlife Refuge) is expected to limited to a small number of visitors and pets. The refuge is open during daylight hours only and dogs are required to be on leashes no longer than 10 feet (US FWS MCINWR 2010). Sample stations EK007.00, EK008.50, and EK008.90 are along the refuge and have P90 scores that meet approved standards.

Water Quality Review and Discussion

Table 3 lists all active approved, restricted, and prohibited stations in Growing Area EK, with their respective Geomean and P90 calculations for 2009. Please refer to Appendix A for a key to interpreting the headers on the columns of Table 3. The approved and restricted standards for each station are also displayed in Table 3. 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 samples 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 stabilize when all 30 data points have been analyzed by the MF method. All active approved and restricted stations met their standards in 2009.

Table 4. Geomean and P90 Scores, Growing Area EK, 2005-2009

Station	Class	Count	MFCount	GM	SDV	MAX	P90	Approved_Std	Restricted_Std
EK002.00	A	30	20	2.5	0.21	18	4.7	36	199
EK003.00	A	30	20	3.3	0.39	80	11	36	199
EK003.80	A	30	20	4.1	0.47	93	17	36	199
EK004.00	R	30	20	8.7	0.71	1100	71	36	199
EK005.00	A	30	20	3.5	0.45	93	13	36	199
EK006.00	A	30	20	4.1	0.41	43	14	36	199
EK006.50	A	24	24	1.9	0	2	1.9	31	163
EK007.00	A	30	20	2.6	0.26	24	5.7	36	199
EK008.00	A	30	20	2.5	0.2	12	4.7	36	199
EK008.50	A	30	20	2.7	0.33	93	7.1	36	199
EK008.90	A	7	7	1.9	0.01	2	1.9	31	163

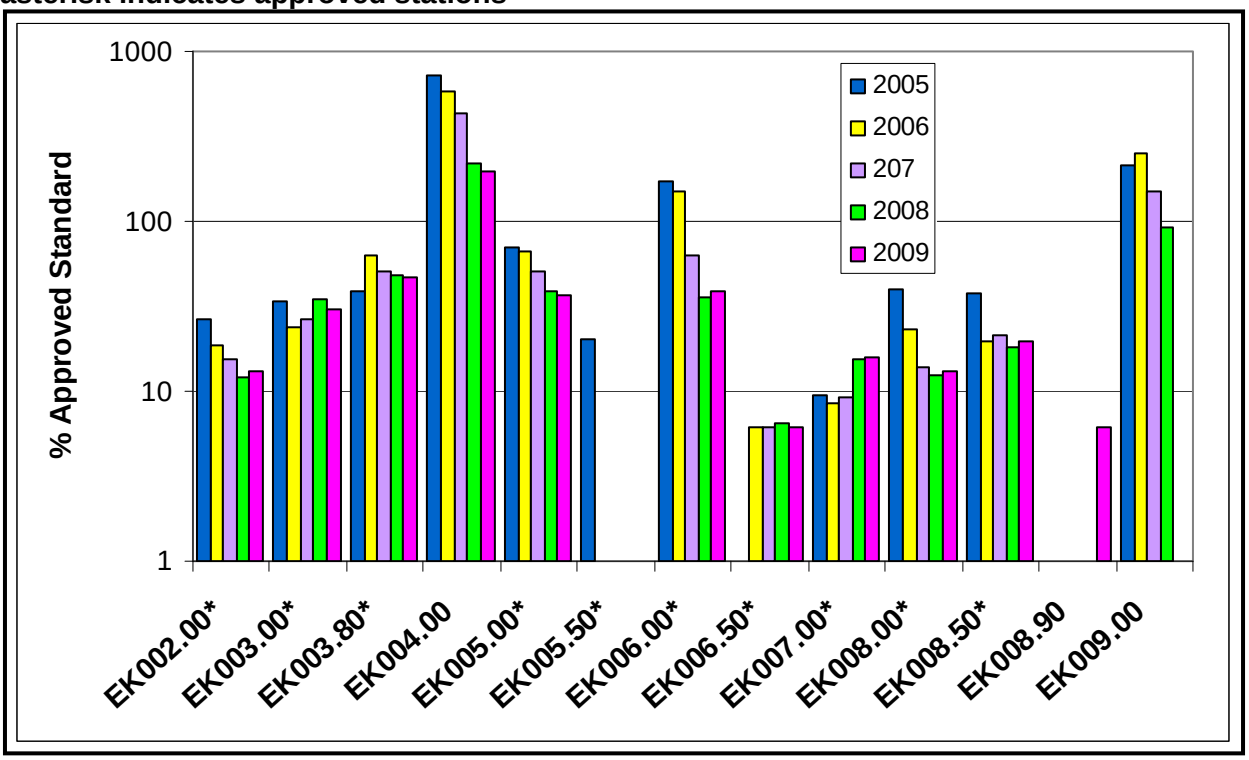
All approved and prohibited stations that were active at the beginning of 2009 were sampled at least 6 times following the systematic random sampling (SRS) schedule (Table 4). Stations EK 2 and EK 5 had additional samples collected under adverse conditions; these stations serve as reopening stations for emergency flood closures.

Table 5. Area EK Samples Collected in 2009

Station	Class at time of Collection	Adverse	Extra		Random		Total	Comments
		Closed	Closed	Open	Closed	Open		
EK002.00	A	7				6	13	Flood station
EK003.00	A					6	6	
EK003.80	A					6	6	
EK004.00	R					6	6	
EK005.00	A	10				6	16	Flood station
EK006.00	A					6	6	
EK006.50	A					6	6	
EK007.00	A					6	6	
EK008.00	A					6	6	
EK008.50	A					6	6	
EK008.90	A			1		6	7	New station

Figure 3 shows a trend graph of all stations in the growing area. Station P90 scores are expressed as percents of the approved standard. Approved sample stations that have met or exceeded 90% of the approved standard are at risk of being reclassified to a more restrictive classification. Station EK 6 showed enough improvement to prompt a reclassification at this station and allowed the Pinkham Bay restricted area to be reclassified upward to Approved on March 12, 2009, due to water quality meeting approved standard. The dissipation of a heavy wrack line coincided with the improvement of water quality. In Figure 3, the P90 trend shows improvement in 5 of the 11 active stations in this growing area. Of the remaining six, four remained steady, one showed only slight percent increases and one stayed the same. Station EK 9 was discontinued at the end of 2008 after erosion made shore access too dangerous. New station EK 8.9 was activated to replace station 9 and is located about 400’ away to the north. A heavy wrack line exists near stations EK 8.9 and EK 9 and may be contributing to the elevated P90 score at EK 9.

Figure 3. Growing Area EK P90 Trends 2005-2009 (as percent of approved standard). An asterisk indicates approved stations



Recommendations for Upward Classification

There are no recommendations for upward classification at this time.

Shoreline Survey Activity

DMR shoreline survey activity was mostly drive through observations during random water sampling runs (Table 5). A complete shoreline survey required for the 12-year sanitary survey report was completed in 2006. A review of the DEP RESCOM (RESidential and COMmercial) OBD database shows no change in status of the two remaining OBDs.

Table 6. Drive Through Assessments, 2007-2009.

Grow Area	Number of Visits	Year	Side of Growing Area
EK	30	2007	East
EK	30	2008	East
EK	31	2009	East
EK	36	2007	West
EK	36	2008	West
EK	36	2009	West

Aquaculture/Wet Storage Activity

The PINK PS2 aquaculture sites are in the same locations with a new expiration date of December 3, 2017. There was no change in primary species (Figure 1). The DYER BP aquaculture site license (Expiration date August 21, 2010) was terminated (Maine DMR Aquaculture 2010).

Table 7. Aquaculture Leases in the growing Area

Site ID	Name	Primary Species	Expiration Date
PINK PS2	Petit Manan Seafood	American Oysters	12/03/2017

Classification Changes

As a result of this review, no classification changes are required or recommended.

Summary

There are no records of overboard discharges being removed in the 2007-2009 Triennium (MeDEP ResCom).

A Sanitary Survey was conducted in 2006 (Fendl 2007). No new pollution sources were identified during this triennial review period (Fendl 2008, 2009).

Because of improved water quality Area No. 52E Part B (Pinkham Bay, Steuben) was re-classified upward to approved (12 March 2009). The former Area No. 52E Part C, was renamed to Area No. 52 Part B during this reclassification. All other stations in Growing Area EK meet their present classification standards

The former PINK PS aquaculture lease sites were relicensed as PINK PS2 in the same locations with a new expiration date of December 3, 2017. The DYER BP aquaculture lease was terminated. (Maine DMR Aquaculture 2010).

Station EK009.00 was discontinued for safety reasons and replaced with station EK008.90. Stations EK009.00 and EK008.90 in Prohibited area Area No. 52E Part B show water quality scores which are approvable but the area cannot be reclassified because of nearby OBDs (Tables 1, 3 &5, Figures 1 & 3).

Future Work Plans

Future work planned for this area will be NSSP routine testing of samples stations and streams. Additionally, stream samples will be collected at stream EK163 with paired adverse samples at WQ station EK6 to better qualify the relationship between stream and growing area water quality in northern Pinkham bay.

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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.

Appendix B. Growing Area EK Data for 2009

STATION	DATE	COLLECTOR	TIDE	WIND	TEMP	SALIN	STRAT	ADV	STATUS	CLASS	MFCOL
EK002.00	04-Mar-09	JF	F	NW	0	31	R	X	O	A	<2
	15-Apr-09	JF	HF	SW	7	31	R	T	O	A	<2
	09-Jun-09	JF	E	SW	9	30	R	X	O	A	2
	20-Jul-09	MC	L	SW		31	R	O	O	A	4
	16-Sep-09	JF	E	NE	11	32	R	O	O	A	<2
	23-Nov-09	ERS	F	NE	6	31	R	O	O	A	<2
EK003.00	15-Apr-09	JF	HF	SE	8	30	R	T	O	A	<2
	18-May-09	ERS	E	N	11	30	R	P	O	A	2
	09-Jun-09	JF	E	S	11	30	R	X	O	A	<2
	28-Jul-09	RG	F	SW	18	28	R	P	O	A	<2
	16-Sep-09	JF	E	NE	11	32	R	O	O	A	22
	23-Nov-09	ERS	F	NE	6	30	R	O	O	A	<2
EK003.80	01-Apr-09	RG	HE	W		24	R	T	O	A	<2
	15-Apr-09	JF	HF	SE	8	29	R	T	O	A	<2
	09-Jun-09	JF	E	S	10	30	R	X	O	A	<2
	28-Jul-09	RG	F	SW	16	28	R	P	O	A	<2
	16-Sep-09	JF	E	CL	11	32	R	O	O	A	2
	23-Nov-09	ERS	F	NE	7	28	R	O	O	A	2
EK004.00	01-Apr-09	RG	HE	W	4	2	R	T	O	R	<2
	15-Apr-09	JF	HF	SE	8	30	R	T	O	R	<2
	09-Jun-09	JF	E	S	12	22	R	X	O	R	12
	28-Jul-09	RG	F	SW	20	22	R	P	O	R	6
	16-Sep-09	JF	E	CL	11	30	R	O	O	R	22
	23-Nov-09	ERS	F	NE	5	2	R	O	O	R	40
EK005.00	04-Mar-09	JF	F	NW	-1	30	R	X	O	A	<2
	15-Apr-09	JF	HF	S	8	30	R	T	O	A	<2
	09-Jun-09	JF	E	SW	9	30	R	X	O	A	<2
	28-Jul-09	RG	F	SW	16	30	R	P	O	A	<2
	16-Sep-09	JF	E	E	11	32	R	O	O	A	4
	23-Nov-09	ERS	F	NE	6	29	R	O	O	A	<2
EK006.00	01-Apr-09	RG	HE	W	3	16	R	T	O	A	<2
	15-Apr-09	JF	HF	S	7	30	R	T	O	A	<2
	09-Jun-09	JF	E	SW	9	30	R	X	O	A	<2
	28-Jul-09	RG	F	SW	17	26	R	P	O	A	8
	21-Sep-09	ERS	HE	NW	14	32	R	O	O	A	<2
	23-Nov-09	ERS	F	NE	6	25	R	O	O	A	<2
EK006.50	14-Apr-09	JF	F	NW	4	28	R	T	O	A	<2
	11-May-09	ERS	F	CL	8	28	R	P	O	A	<2
	09-Jun-09	DRH	HF	SE	9	30	R	X	O	A	<2

STATION	DATE	COLLECTOR	TIDE	WIND	TEMP	SALIN	STRAT	ADV	STATUS	CLASS	MFCOL
	20-Jul-09	DRH	H	CL	16	30	R	O	O	A	<2
	16-Sep-09	ERS	E	NW	14	31	R	P	O	A	<2
	21-Oct-09	JF	F	NW	4	30	R	O	O	A	<2
EK007.00	01-Apr-09	RG	HE	W	3	30	R	T	O	A	<2
	14-Apr-09	JF	F	NW	4	30	R	T	O	A	<2
	09-Jun-09	DRH	HF	SE	11	31	R	X	O	A	<2
	20-Jul-09	DRH	H	S	13	30	R	O	O	A	2
	16-Sep-09	ERS	E	NW	14	32	R	P	O	A	2
	21-Oct-09	JF	F	NW	4	30	R	O	O	A	<2
EK008.00	01-Apr-09	RG	H	W	4	28	R	T	O	A	<2
	14-Apr-09	JF	F	NW	8	28	R	T	O	A	<2
	09-Jun-09	DRH	HF	SE	14	30	R	X	O	A	<2
	20-Jul-09	DRH	HE	S	16	30	R	O	O	A	<2
	16-Sep-09	ERS	E	NW	15	32	R	P	O	A	4
	21-Oct-09	JF	F	NW	4	30	R	O	O	A	<2
EK008.50	14-Apr-09	JF	F	NW	5	30	R	T	O	A	<2
	11-May-09	ERS	F	CL	8	30	R	P	O	A	<2
	09-Jun-09	DRH	HF	SE	11	31	R	X	O	A	<2
	20-Jul-09	DRH	HE	S	15	30	R	O	O	A	5.5
	16-Sep-09	ERS	E	NW	15	32	R	P	O	A	10
	21-Oct-09	JF	F	NW	5	32	R	O	O	A	<2
EK008.90	11-May-09	ERS	F	CL	8	30	R	P	O	A	<2
	03-Jun-09	ERS	E	CL	11	29	R	X	O	A	<2
	09-Jun-09	DRH	H	SE	11	31	R	X	O	A	<2
	15-Jun-09	JF	F	SW		30	E	P	O	A	<2
	20-Jul-09	DRH	HE	S	14	30	R	O	O	A	2
	16-Sep-09	ERS	E	NW	14	32	R	P	O	A	2
	21-Oct-09	JF	F	NW	5	31	R	O	O	A	<2