



**GROWING AREA WE
Towns of Kennebunkport and Biddeford**

Triennial Report for 2008-2010

Report Date: 2-17-2012

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APPROVAL

Division Director:

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2/17/12

Print name

signature

Date: _____



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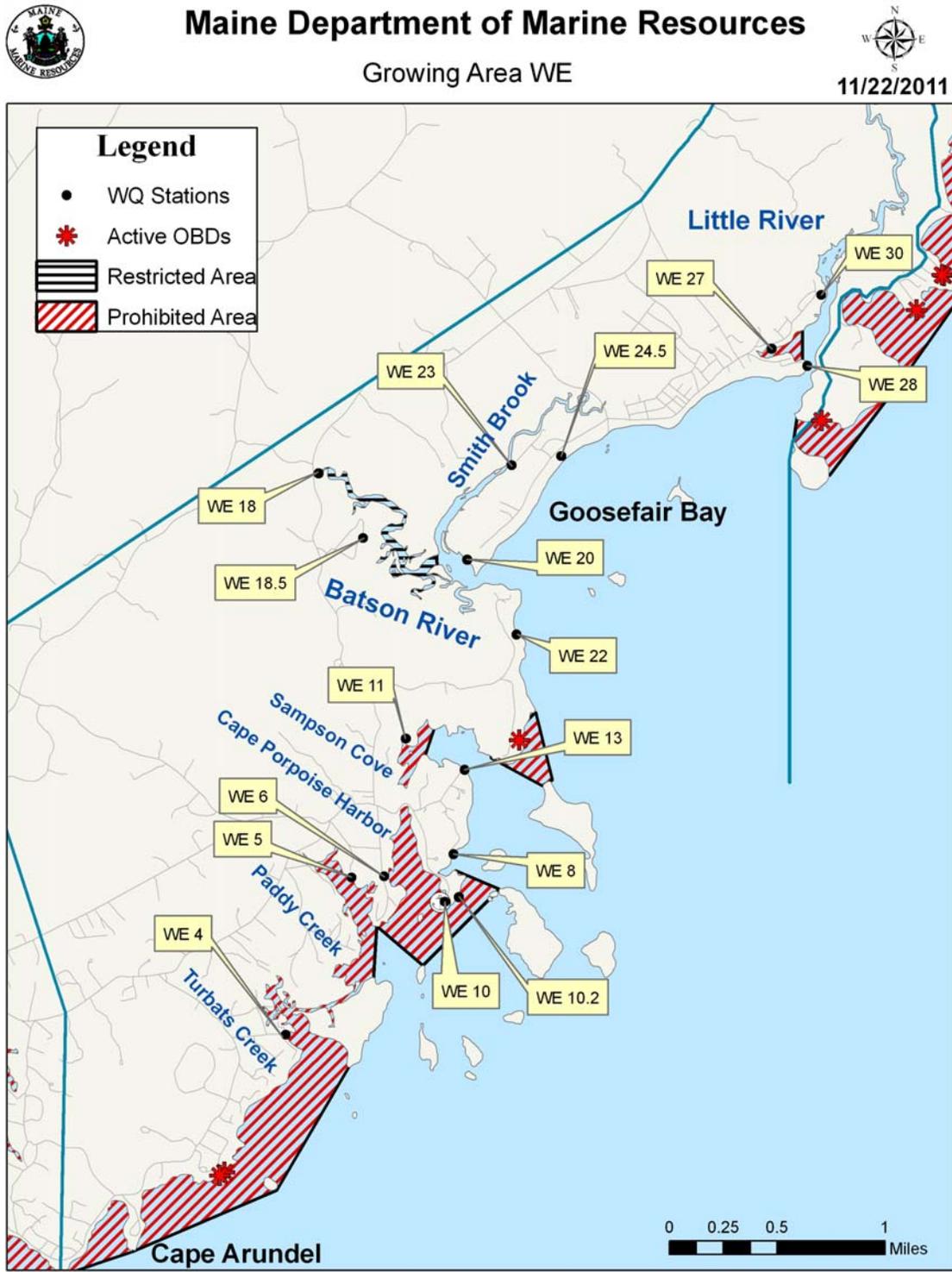
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Figure 2. Growing Area WE, with Active Water Stations





Executive Summary

This is a triennial report for growing area WE written in compliance with the requirements of the 2009 Model Ordinance and the National Shellfish Sanitation Program.

On August 4, 2009 the upland boundary between growing areas WE and WF was adjusted so that the eastern boundary line no longer went through the middle of Little River (Kennebunkport, Biddeford). No sample stations or shoreline survey database entries had to be changed as a result of the boundary update.

Annual reports will be written for growing area WE in 2011 and 2012, followed by a triennial report in 2013 and a sanitary survey report in 2014.

Growing Area Description

Growing Area WE is located between Cape Arundel, Kennebunkport and Timber Point, Biddeford (Figure 1). The growing area includes several coves (Turbats Creek, Paddy Creek, and Sampson Cove), Cape Porpoise Harbor, Goosefare Bay, and two small rivers (Batson River and Little River). A complete boundary description can be found in DMR central files.

Major pollution sources in growing area WE include three licensed residential overboard discharges (OBDs) and one farm.

Current Classification(s)

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

Approved

- Cape Porpoise Harbor (2 stations, WE 8 and 13)
- Smith Brook (2 stations, WE 20 and 23)
- Goosefare Bay (2 stations, WE 22 and 24.5)
- Little River (2 stations, WE 28 and 30)

Restricted

- Batson River (2 stations, WE 18 and 18.5) (due to poor water quality and run-off from a farm)

Prohibited

- Turbats Creek (1 station, WE 4) (due to poor water quality)
- Paddy Creek (1 station WE 5) (lack of resource)
- Cape Porpoise Harbor (2 stations, WE 10 and 10.2) (due to poor water quality and station WE 10.2 being a new station)
- Sampson Cove (WE 11, due to lack of shoreline survey)



- Nessler Point (no stations, due to an overboard discharge)
- Little River (WE 27, due to poor water quality)

Please visit the DMR website to view legal notices:

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

Activity during Review Period (2008-2010)

On March 8, 2008 - Closed Area No. 8, reclassified Paddy Creek, Kennebunkport, from conditionally approved to prohibited due to a failing septic system.

On January 12, 2009 - The Town of Kennebunkport applied for a pilot project through the DMR Shellfish Advisory Council to conduct accelerated sampling of sample station WE 10.2 which is a six acre area north of sample station WE 10 and south of WE 8.0 ("High Flats"). The area between the new sample station and sample station WE 8.0 must be surveyed before the area can be considered for upward classification and accelerated sampling at station 10.2. The pilot project submitted was not accepted by the DMR Shellfish Advisory Council. The area was scheduled to be surveyed by the DMR in 2009.

May 27, 2009 – Closed Area No 9 Little River, Goosefare Bay, Smith Brook and Batson River were reclassified to prohibited due to lack of a recent shoreline survey, and the presence of a licensed overboard discharge at Timber Point (Biddeford).

May 27, 2009 – Closed Area No 8 Turbats Creek was reclassified from restricted to prohibited, due to lack of a recent shoreline survey. Goat Island was reclassified to approved due to the removal of a licensed overboard discharge.

On August 4, 2009 -The upland boundary between growing area WE and WF was adjusted so that the eastern boundary line no longer went through the middle of Little River (Kennebunkport, Biddeford). No sample stations or shoreline survey database entries had to be changed as a result of the update.

August 14, 2009 – Closed Area No 9 Little River (Biddeford and Kennebunkport), Goosefair Bay (Kennebunkport) and Smith Brook (Kennebunkport) were reclassified from prohibited to approved, due to a review of the findings of the most recent shoreline survey and water quality meeting the approved standard; this amendment also reclassified Batson River from prohibited to restricted, due to a review of the findings of the most recent shoreline survey and water quality meeting the restricted standard.



Conditionally Managed Area(s)

There are no conditionally managed areas in area WE.

Documentation of Pollution Sources

The following sections include information on pollution sources which do or may impact water quality in growing area WE. Pollution sources that are reviewed in this section include domestic waste (both private, in-ground systems and over board discharges), marinas and mooring fields, non-point source pollution (streams and storm-water runoff), agricultural activities, domestic animals, wildlife areas, and recreational areas.

Evaluation of New Pollution Sources

There was one property located on the Wildes District Road documented to have a malfunctioning septic system during the sanitary survey in 2009. This property was vacant at the time of the survey. The town of Kennebunkport was aware of the malfunction and was in the process of trying to resolve the situation. Due to the fact that the property is located in the middle of two cemeteries the property at that time could not be connected to town sewer or have a new system installed. The town of Kennebunkport eventually changed its city ordinance so that a sewer line could be run down the driveway and connected to the main sewer line. This property was confirmed no longer a malfunction on December 10, 2010.

An additional property located on McKinny Lane was documented to have a possible malfunction. The DMR notified the codes enforcement officer for the town of Kennebunkport. On October 23, 2009 the codes enforcement office notified the DMR that the property had been investigated and it was determined to not be an actual malfunction.

Re-Evaluation of Existing Pollution Sources

The following sections are a review of existing pollution sources in growing area WE. Pollution problems are associated with domestic waste, including OBDs, which were identified prior to the last sanitary survey in 2009.

Domestic Waste (IG Systems and OBDs)

There were no actual pollution sources associated with private in-ground systems documented prior to the last sanitary survey in 2009.

There are three active overboard discharges (OBDs) that release their treated effluent into the gulf of Maine (Figure 2). 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-1970's 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.

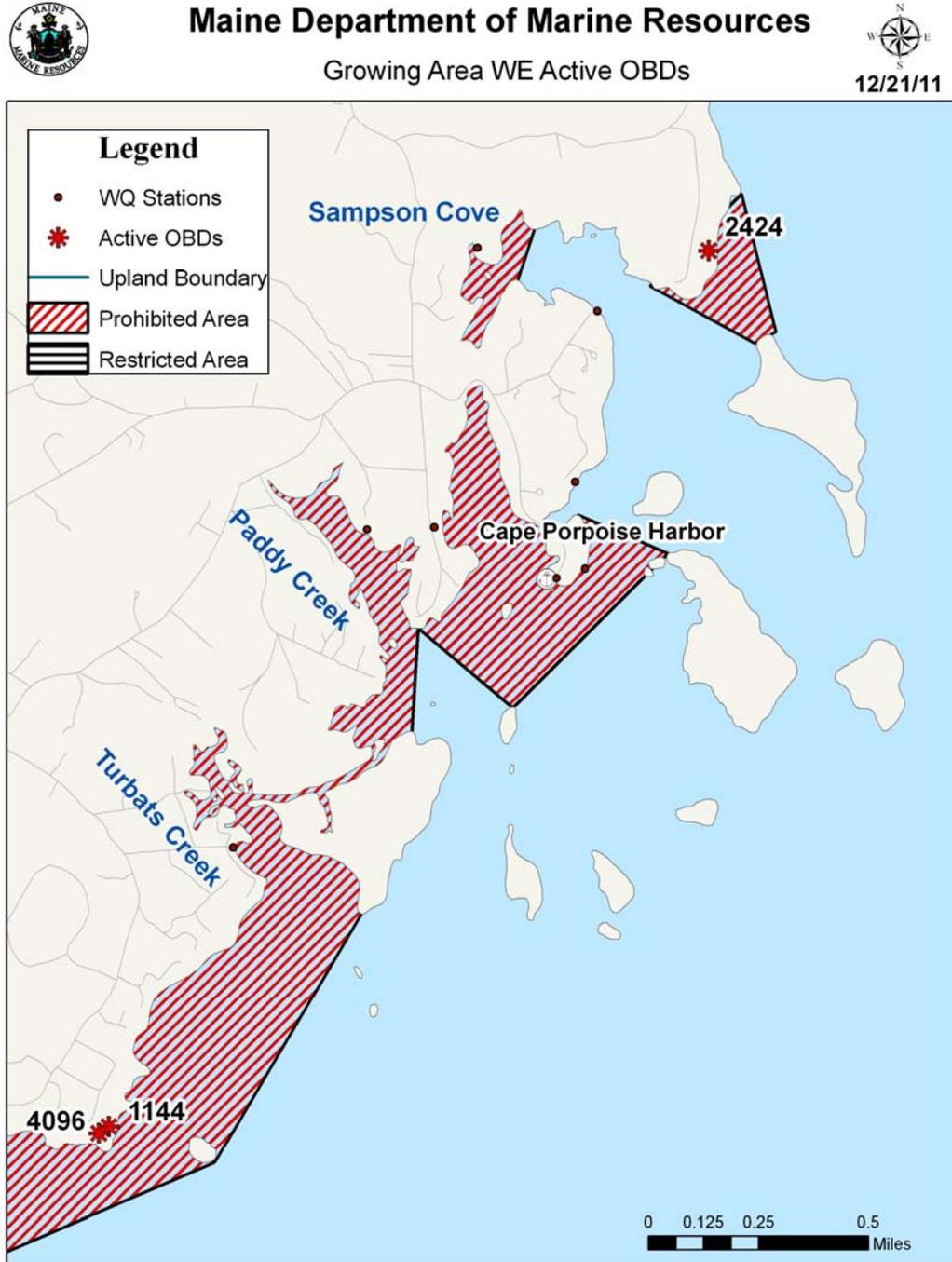
OBDs are licensed and inspected by the Maine Department of Environmental Protection. At each inspection, DEP looks for tags on each treatment unit identifying the service contractor and the last date of service. If an OBD is not properly maintained, or if the OBD malfunctions, it has the potential to directly discharge untreated wastewater to the shore; therefore, preventative closures are implemented surrounding every OBD located in growing area WE (Table 1). The size of each closure is determined based on a dilution, using on the permitted flow rate of the OBD (in gallons per day, GPD), and the depth of the receiving water that each OBD discharges to; the fecal concentration used for this dilution calculation is 1.4×10^5 FC /100 ml. All current closures are of adequate size to protect public health.

Table 1. Active OBDs

DEP ID	Town	Receiving Water	Depth Receiving Water	Licensed Flow (GPD)	Type*	Required Closure Acres	Acres Closed
2424	Kennebunkport	Gulf of Maine	5	300	S	1.841	21
4096	Kennebunkport	Gulf of Maine	5	360	S	2.209	Entire Shore
1144	Kennebunkport	Gulf of Maine	5	360	S	2.209	



Figure 3. Growing Area WE with Active OBDs





Municipal WWTP

There are no municipal wastewater treatment plants within the boundaries of growing area WE. The Kennebunkport Waste Water Treatment Plant sewer collection system serves most of Cape Porpoise Harbor and extends along Marshall Point and Goosefare Bay. The plant discharges to the Kennebunk River in Growing Area WD. There are pump stations in growing area WE: two near Little River, three on Goosefare Bay, one near Sampson Cove, one near Paddy Creek, two near Turbats Creek, two inland and five on the Kennebunk River in growing area WD. All of the pump stations have dual pumps, alarms and no overflow pipes per the review of the plant on January 14, 2008.

Industrial Pollution

There are no permitted industrial discharges into growing area WE.

Marinas

There are no marinas in the area, however the Cape Porpoise Town Pier which has 76 moorings: 48 for fishing boats and 28 for recreational boats. Only two of the recreational boats have heads and the peak season for usage is Memorial Day to Labor Day.

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.

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.

Although it is a federal program, in the state of Maine, the Phase II Stormwater permit is issued and regulated by the Maine DEP (Chapter 500 and 502). Under the MS4 regulations, each municipality must implement the following six Minimum Control Measures: (1) Public education



and outreach, (2) Public participation, (3) Illicit discharge detection and elimination, (4) Construction site storm water runoff control, (5) Post-construction stormwater management, and (6) Pollution prevention/good housekeeping. The permit required each city or town to develop a draft Stormwater Management Plan by September 3, 2003 that will establish measurable goals for each of the Minimum Control Measures. The Town must document the implementation of the Plan, and provide annual reports to the Maine DEP. Currently the discharge of stormwater from 28 Maine municipalities is regulated under the Phase II permit requirements, however, no municipalities located within the boundaries of growing area WE fall under these regulations. Additionally, the Maine Stormwater Management Law provides stormwater standards for projects located in organized areas that include one acre or more of disturbed area (Maine DEP 2009).

Non-Point Pollution Sources (streams, etc)

There were no stream samples collected during the triennial review period. There are a few streams that empty into approved areas in the Libby River and Smith Brook. These streams should be sampled for the next triennial review.

Agricultural Activities

There is a farm which grazes 20-50 sheep and a pond that has wild and domestic geese on the shore of Batson Brook. This area is classified as restricted.

Domestic Animals and Wildlife Activity

Most of the shore around Sampson Cove, Smith Brook, Batson River and Little River is part of the Rachel Carson Preserve marshland. The preserve is home to deer, fox, raccoons and various waterfowl. There are also beaver in Beaver Pond, and the drainage from the pond has the potential to impact water quality at Station WE 27. This area is classified prohibited.

Conservation/Recreational Areas

The Rachel Carson Preserve includes most of the shore around Sampson Cove, Smith Brook, Batson River and Little River.

Water Quality Review and Discussion

Table 2 lists all active approved stations in Growing Area WE, with their respective Geomean and P90 calculations for 2010. Please refer to Appendix A for a key to interpreting the field names of Table 2. The approved standards for each station are also displayed in Table 2. 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 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 the DMR central files.



All stations except station WE 18 met the appropriate NSSP classification standard in 2010.

Table 2. Geomean and P90 Scores, Growing Area WE, 2005-2010

Station	Class	Count	MFCCount	GM	SDV	MAX	P90	Appd_Std	Restr_Std
WE004.00	P	30	30	6.9	0.62	500	43.5	31	163
WE005.00	P	30	30	5	0.53	132	24.4	31	163
WE006.00	P	30	20	4.8	0.41	93	16.4	36	199
WE008.00	A	30	27	4.1	0.53	152	20.2	32	173
WE010.00	P	30	23	10.4	0.81	740	113.7	34	187
WE010.20	P	21	21	2.9	0.32	22	7.8	31	163
WE011.00	P	30	27	3.8	0.56	144	20.3	32	173
WE013.00	A	30	27	3	0.4	78	10.1	32	173
WE018.00	R	30	28	41.8	0.53	460	199.7	31	169
WE018.50	R	30	27	4.6	0.54	129	23	32	173
WE020.00	A	30	30	2.8	0.39	82	8.9	31	163
WE022.00	A	30	26	2.7	0.34	72	7.5	32	176
WE023.00	A	30	27	3.3	0.41	68	11.5	32	173
WE024.50	A	30	30	2.5	0.36	48	7.3	31	163
WE027.00	P	30	30	10.5	0.59	340	60.7	31	163
WE028.00	A	30	30	2.6	0.31	42	6.8	31	163
WE030.00	A	30	30	3	0.35	52	8.7	31	163

All approved stations that were active at the beginning of 2010 were sampled 6 times following the systematic random sampling (SRS) schedule (Table 3).

Table 3. WE Samples Collected in 2010

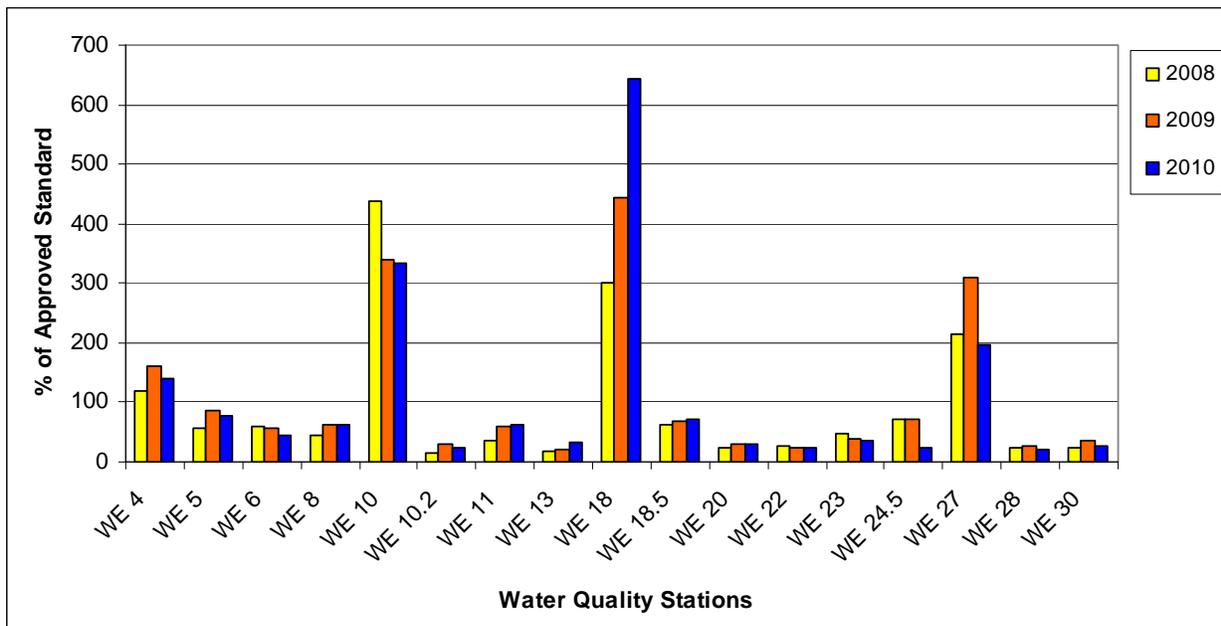
Station	Class	Adverse	Random		Total	Comments
		Closed	Closed	Open		
WE004.00	P		6		6	
WE005.00	P		6		6	
WE006.00	P		6		6	
WE008.00	A			6	6	
WE010.00	P		6		6	
WE010.20	P		6		6	
WE011.00	P		6		6	
WE013.00	A	17		6	23	
WE018.00	R			6	6	
WE018.50	R			6	6	
WE020.00	A			6	6	
WE022.00	A			6	6	
WE023.00	A			6	6	
WE024.50	A	16		6	22	
WE027.00	P		6		6	



WE028.00	A			6	6	
WE030.00	A			6	6	

Figure 3 shows the P90 trends over the past three years, for all active stations in growing area WE. 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 approved standard; any station showing the 2010 column on or above 100 percent does not meet the standard for its classification. Stations WE 10, 18, and 27 continue to remain well about the approved standard. All other stations except WE 4 currently meet the approved

Figure 3. Area WE P90 Scores for Active Stations (expressed as the percent of the approved standard), 2008-2010



Recommendations for Upward Classification

There are no areas in WE that are being proposed for an upward classification.

Shoreline Survey Activity

The town of Kennebunkport requested that DMR update the shoreline survey for the Cape Porpoise area. On October 15, 2009 a sanitary survey for Kennebunkport was completed by



DMR. A total of 95 properties were surveyed around Cape Porpoise Harbor starting at the end of Fishers Lane (east of harbor) and ending on Wood Road off of Langsford Road (west of harbor). All of Pier Rd, Bickford Island, Langsford Rd, and Wood Rd are on town sewer with the exception of 6 properties that were surveyed and systems were documented. None of the properties at the end of Fishers Lane down to the end of Agamenticus Ave are on town sewer. There were no issues found.

On October 16, 2009 a sanitary survey for Kennebunkport was completed by DMR. A total of 95 properties were surveyed around the Paddy Creek and Turbats Creek area. All of Ward Road, Wildes District Rd, Rose Leith Lane, Turbats Creek Rd, and Nehoc Lane are on town sewer with the exception of a few properties. None of the properties down Lands End Road, McKenney Lane, Bufflehead Lane, or Fieldpoint Rd are on town sewer. Prior to conducting the survey the codes enforcement officer, Brian Shaw, brought to our attention a known malfunction located Wildes District Road. This property has been vacant for 4-5 months. There is an issue with fixing the system and or tying into the sewer line that runs down Wildes District Rd due to the fact that the property is bordered on both sides by cemeteries and there are ordinance conflicts. A possible malfunction located at McKenny Lane was documented. The field is located SW of the house and runs down towards a stream that empties into Turbats Creek. Water was oozing out of the field and the home owner had dug a gully to the stream to drain the wet area. The home owner stated that this is from the cellar drain, however it had a sewer smell. This property was reported to Brian Shaw. Also noted were sheep (7) located at a property on Wildes District Road. The sheep were fenced behind the house in a low wet area that runs along Bufflehead Lane. The fencing crosses over the stream along the culvert that runs under Bufflehead Lane.

Aquaculture/Wet Storage Activity

There are no aquaculture or wet storage activities in growing area WF.

Recommendation for Future Work

The following work is recommended to be completed prior to the next sanitary survey evaluation:

1. Conduct a sanitary shoreline survey of growing area WE in 2013.
2. Sample streams that have the potential to impact approved areas.



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.