



**GROWING AREA WB
Towns of Kittery and York**

ANNUAL REVIEW for 2006

Final Report Date: 6/10/08

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APPROVAL

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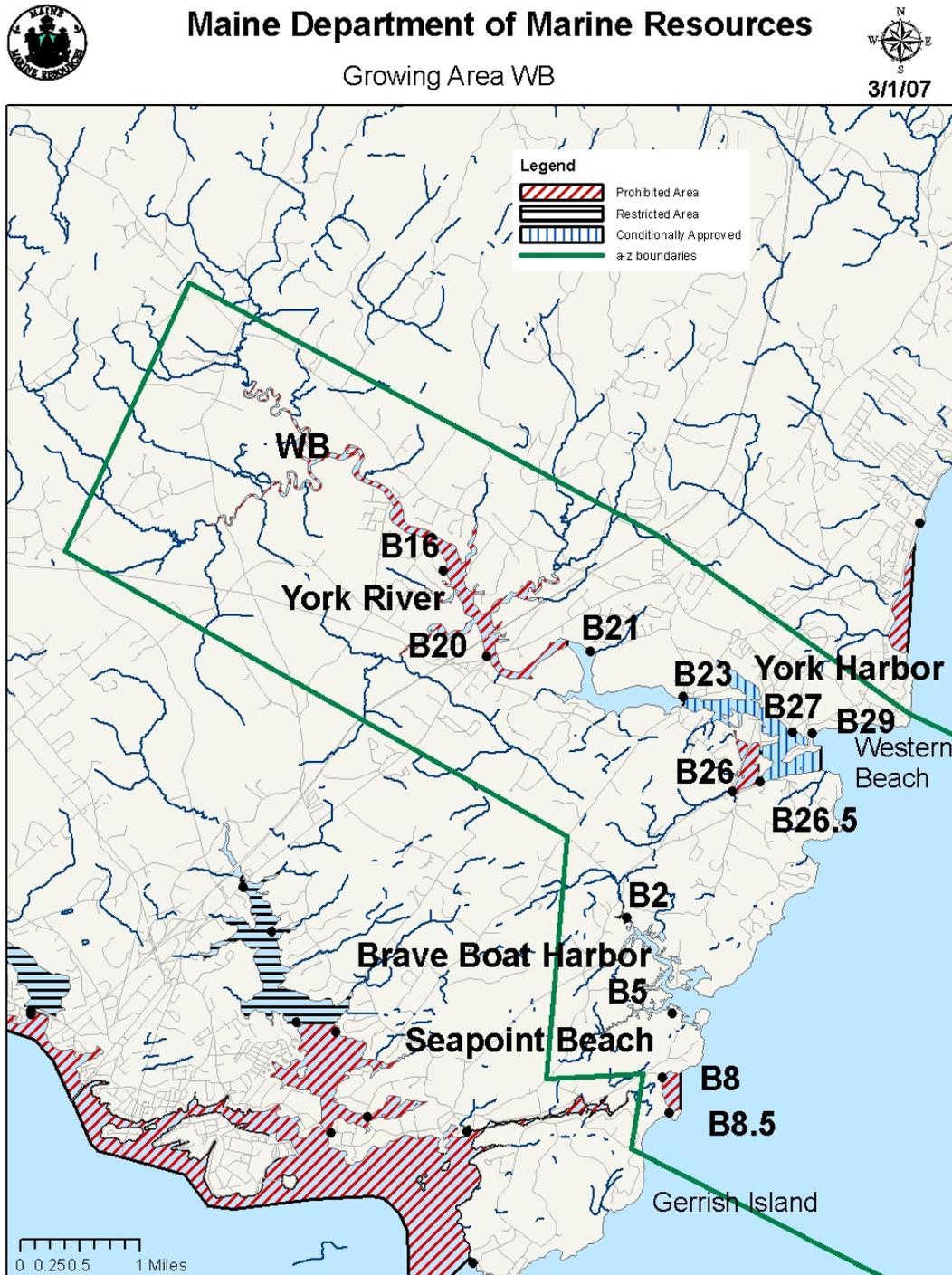
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Figure 1. Growing Area WB





Executive Summary

This is an annual review report for shellfish growing area WB written in compliance with the requirements of the 2005 Model Ordinance of the National Shellfish Sanitation Program (NSSP).

Growing Area WB is located between Gerrish Island, Kittery and the northeast end of Western Beach, just outside the York River. Major pollution sources in growing area WB include the York Harbor Marina and York Sewage Treatment Plant; there are no overboard discharges in growing area WB. During the 2006 review period, no sampling stations were created or deactivated. Based on this review, one classification change is recommended in Brave Boat Harbor.

The next triennial review is due in 2007; the next sanitary survey is due in 2008.

Boundary Description

Growing area WB lies inside a line from the intersection of Tower Road and Goodwin Road, York, extending due east along the shellfish management zone line offshore, and also, extending north to the intersection of Thaxter Lane and Seapoint Road, then west to the intersection of Brave Boat Harbor Road and Cutts Island Lane, then north to the intersection of Bartlett Road and Payne Road, then west to the intersection of Goodwin Road and Frost Hill Road, then north to the intersection of Cider Hill Road and Brixham Road, then east to the intersection of Spur Road and I-95, then east to the end of Seafarer Way and then southeast along the shellfish management zone line offshore.

Current Classification(s)

Shellfish growing area WB currently has areas classified as:

Approved

- Crescent Beach (1 Station)
- Brave Boat Harbor (2 Stations)
- York River (2 Stations)
- Western Beach (1 Station)

Conditionally Approved

- York Harbor; seasonal marina; (2 Stations)

Prohibited

- Seapoint Beach (1 Station)
- York River (3 Stations)



Visit the DMR website to view Legal Notices for growing area WB:

DMR Regulation 95.10H, Closed Area No. 1-B, Jaffrey Point, NH to Brave Boat Harbor, York.
DMR Regulation 95.10L, Closed area No. 2, York River, York.
DMR Regulation 95.10P, Closed Area No. 2-A, York Harbor, York.

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

Current Management Plan(s)

There is one management plan for the one conditionally approved area in growing area WB. York Harbor seasonal marina conditionally approved area is closed to harvesting May 1 through November 14, due to the presence of boats in the harbor marina, per the management plan. A copy of the management plan can be found in the central files.

Current Annual Review of Management Plan(s)

Per the management plan, the York Harbor seasonal marina area was visited on 4/19/06 to observe that boats had not yet gone into the water and were not being used. The marina was also visited on 10/30/06 and 11/7/06 to confirm that the boats were out of the water and would not impact water quality when the area opened on 11/15/06. The complete annual review can be found in Appendix A.

Review of Water Quality

Transitioning to Membrane Filtration for Seawater and Pollution Source Samples

The Maine Department of Marine Resources has chosen to switch to a fecal coliform method that was approved for use in the National Shellfish Sanitation Program (NSSP) at the Interstate Shellfish Sanitation Conference in 2003. This method is the Membrane Filtration (MF) for Fecal Coliforms using mTEC agar with a two hour resuscitation step. The geometric mean and the 90th percentile are calculated on 30 data points extending over a five year period.

During the transition from MPN to MF, we will be accumulating MF data points. The statistical calculations will be a combination of MPN and MF data points. The FDA has determined that the best way to handle the data is to perform the calculations as always for the data set, but to compare the data set to a hybrid weighted 90th percentile. This hybrid standard is calculated by weighting the relative contributions of each method to the database. This will mean that as the number of MPN data points reduce and the number of MF data points increase the 90th percentile standard that the sample site is compared to will change over time.



Once all 30 data points are analyzed using MF, the 90th percentile for approved classification will be 31 and for restricted (for depuration) will be 163. The geomean approved standard of 14 fecal coliforms per 100 ml and geomean restricted standard of 88 fecal coliforms per 100 ml will remain the same for both methods.

Reports that display 90th percentiles will show the number of data points derived from MF analysis and will show the appropriate 90th percentile standard for that MPN/MF combination for approved and restricted classifications. It must be remembered that this weighted standard is only used for data sets encompassing data from the two different test methods, MF and MPN (3 tube/3 dilution). If decisions are to be made on a single test result analyzed by the MF method or a multiple number of test results all exclusively analyzed by the MF method, the 90th percentile standard is 31 fecal coliforms per 100 ml.

This was the first year the water quality program documented in the database the inability to collect a sample based on the following parameters: if the tide stage was too low to collect the sample, there was a safety issue with collecting the sample, the location was inaccessible and "other" which usually was accompanied by a comment on the data sheet. Stations that were unable to be sampled due to any of these parameters show 999 in the salinity column and have no data recorded in any of the columns but the time is recorded so the actual tide stage can be computed. Stations that were missed due to the above parameters were required to be made up to assure that each station would receive the required six samples during the sampling season.

Water Quality Data Review

Table 1 displays the geomeans and P90 scores for all the active stations in growing area WB. The data represents the evaluation of the 30 most recent data points collected between 2001 and 2006 throughout the year. In 2006, all active sample stations that were classified as approved and restricted were sampled six times, using a systematic random sampling schedule. Stations not meeting their classification standards are highlighted in yellow. A key to the water quality table headers can be found in appendix A. All approved stations met their classification standard, except at Station WB 2, which should be reclassified from approved to restricted.

Table 1. Geomean and P90 Scores for Growing Area WB, 2001-2006

STATION	CLASS	CNT	MFCNT	GM	SDV	MAX	P90	APPD_STD	RESTR_STD
WB002.00	A	30	2	13.0	0.61	240	77.8	48	288
WB005.00	A	30	2	4.4	0.30	43	10.6	48	288
WB008.00	P	30	2	10.9	0.63	460	69.0	48	288
WB008.50	A	30	2	5.1	0.37	41	15.2	48	288
WB016.00	P	26	2	9.2	0.57	150	50.0	47	286
WB020.00	P	30	2	10.9	0.47	93	42.8	48	288
WB021.00	A	30	2	5.6	0.45	240	21.1	48	288
WB023.00	A	30	3	4.8	0.36	102	13.9	47	282
WB026.00	P	30	2	8.0	0.65	460	54.8	48	288
WB029.00	A	30	2	5.0	0.39	43	15.8	48	288



Stations WB26.5 and WB27 which monitor water quality in the conditionally approved area, are new stations and do not have the 30 data points necessary for determining station classification (Table 2). As of 2006, station WB26.5 had P90 scores above the approved standard, however this calculation was based on only 9 data points. This station will continue to be monitored in 2007, and DMR staff will pay close attention to any data trends indicating a presence of point or non-point source pollutants affecting this station.

Table 2. York Harbor Conditional Area Geomean and P90, Open Status Data

STATION	CLASS	CNT	MFCNT	GM	SDV	MAX	P90	APPD_STD	RESTR_STD
WB026.50	new	9	2	7.8	0.66	93	57.3	44	262
WB027.00	new	25	2	4.2	0.45	240	15.9	47	286

Shoreline Survey Activity

Brave Boat Harbor, Seapoint Beach and Crescent Beach were surveyed in 1998 and the York River was surveyed in 1997 and 1999. Drive through surveys of growing area WB were done during random sampling runs. The only change in pollution sources that was observed during the 2006 review year was an installation of a new septic system and the construction of a new house near station WB 26; this new house and septic system replaced an older house and an older in-ground septic system.

Aquaculture/Wet Storage Activity

There currently are no active aquaculture/wet storage sites in shellfish growing area WB.

Classification Changes Required

Station WB2, located on the prohibited/approved boundary at the head of Brave Boat Harbor no longer meets approved standards. The boundary line should be moved south to the next approved station, WB5 and the area north of the new boundary line should be reclassified as restricted. Water quality at station WB2 meets restricted standards and there are no known point sources of pollution.

Discussion & Summary

In 2006, all approved stations in growing area WB, with the exception of station WB2, met their current NSSP classification. Station WB2 showed declining water quality scores, and on 4/12/07, the station was reclassified as restricted. In future review years, this area should be evaluated for non-point source pollution, in order to better understand the cause for this water quality decline. Part of this pollution assessment should include survey work, as well as stream sampling.



Station WB 26.5, located in the York harbor conditionally approved area, had one high score during the 2006 sampling season, occurring on 11/29/06. The water sampled that yielded this high score had a low salinity, suggesting the impact of a fresh water source, such as a stream, on this site. In the coming year, nearby streams should be sampled under varying conditions (high rainfall, moderate rainfall and no rainfall), in order to better evaluate the effect of non-point source pollution on water quality at site WB26.5.



Appendix A. Annual Review of Management Plan-York Harbor

2006 Annual Review York Harbor Conditional Area Growing Area WB

Scope

York Harbor is a conditionally approved area due to the seasonal presence of boats at the York Harbor docks. York Harbor, monitored by stations WB 26.5 and WB 27, was classified conditionally approved based on information from observations of the harbor and an interview with the harbormaster regarding the presence or absence of 10 or more boats with heads. It was determined that there were fewer than 10 boats with heads being used in the conditional area from November 1 through April 30. This area is conditionally open for shellfish harvesting from November 15 through April 30.

Compliance with management plan

In 2006, the conditional area closed on May 1 and did not reopen until November 15. Per the management plan, the harbor was visited on 4/19/06 to observe that boats had not yet gone into the water and were not being used. Also, the area was visited on 11/7/06, prior to the area's reopening, to confirm there were fewer than 10 boats with heads remaining in the water.

Adequacy of reporting and cooperation of involved persons

DMR staff reported on boat activity prior to both the closing of this conditional area in April and the opening of this conditional area in November.

Compliance with approved growing area criteria

The annual review of seasonal data shows that both of the conditionally approved stations in York Harbor have less than 30 data points in the open status; therefore they do not have enough data to be classified under the standards set by the NSSP (Table 1). These stations will continue to be monitored in 2007.

Table 1. York Harbor Conditional Area Geomean and P90-Open Status

STATION	CLASS	CNT	MFCNT	GM	SDV	MAX	P90	APPD_STD	RESTR_STD
WB026.50	new	9	2	7.8	0.66	93	57.3	44	262
WB027.00	new	25	2	4.2	0.45	240	15.9	47	286

Field inspection of critical pollution sources

The potential for pollution in York Harbor comes from ten or more boats with heads in the harbor that may discharge wastewater overboard. Visual observations are made throughout the year



during the course of random sampling and shoreline surveying. A complete marine evaluation will be completed in 2008.

Water sampling compliance history

All conditional stations were collected 6 times when in the open status in 2006.

Analysis-Recommendations

It is MDMR policy to visit a marina conditional area two weeks before the reopening to ensure compliance with approved standards. York Harbor will be visited at the end of October 2007, prior to the area opening, and will be visited again in April, prior to the seasonal closing of this conditional area.



Appendix B. 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 C. Water quality data for growing area WB, 2006

Station	Date	Collect	Tide	Temp	Strat	ADV	Stat	CL	A1COL	MFCOL
WB002.00	01/30/06	LL	H	2	R	-	O	A	3.6	-
	02/13/06	FP	HF	2	R	-	O	A	<3.0	-
	04/19/06	LL	HF	12	R	-	O	A	<3.0	-
	08/08/06	LL	H	17	R	-	O	A	23	-
	09/19/06	JXK	H	19	R	-	O	A	-	27
	12/12/06	JB	F	5	R	-	O	A	-	<2.0
WB005.00	01/30/06	LL	H	1	R	-	O	A	3.6	-
	02/13/06	FP	H	2	R	-	O	A	<3.0	-
	04/19/06	LL	F	10	R	-	O	A	7.3	-
	08/08/06	LL	H	17	R	-	O	A	9.1	-
	09/19/06	JXK	H	18	R	-	O	A	-	<2.0
	12/18/06	LL	E	6	R	-	O	A	-	<2.0
WB008.00	01/10/06	LL	E	1	R	-	C	P	<3.0	-
	02/13/06	JB	E	2	R	-	C	P	7.3	-
	04/19/06	KSC	LE		R	-	C	P	<3.0	-
	07/05/06	JB	F	15	R	-	C	P	<3.0	-
	09/19/06	KSC	HF	13	R	-	C	P	-	78
	12/11/06	FP	LF	5	R	P	C	P	-	<2.0
WB008.50	01/10/06	LL	E	1	R	-	O	A	<3.0	-
	02/13/06	JB	E	2	R	-	O	A	<3.0	-
	04/19/06	KSC	E		R	-	O	A	<3.0	-
	07/05/06	JB	F	15	R	-	O	A	<3.0	-
	09/19/06	KSC	HF	14	R	-	O	A	-	<2.0
	12/11/06	FP	LF	5	R	P	O	A	-	6
WB016.00	01/10/06	JB	E	-3	R	-	C	P	21	-
	02/13/06	FP	F	2	R	-	C	P	<3.0	-
	04/19/06	FP	LE	11	R	-	C	P	<3.0	-
	07/05/06	SXR	E	21	R	-	C	P	3.6	-
	09/19/06	JXK	HF	21	R	-	C	P	-	8
	12/12/06	JB	HF	3	R	W	C	P	-	2
WB020.00	01/10/06	JB	E	-3	R	-	C	P	15	-
	02/13/06	FP	F	2	R	-	C	P	<3.0	-
	04/19/06	FP	E	10	R	-	C	P	<3.0	-
	07/05/06	SXR	E	20	R	-	C	P	<3.0	-
	09/19/06	JXK	HF	21	R	-	C	P	-	16
	12/12/06	JB	L	1	R	-	C	P	-	13
WB021.00	01/10/06	JB	E	-2	R	-	O	A	<3.0	-
	02/13/06	FP	HF	2	R	-	O	A	3.6	-
	04/19/06	FP	LE	12	R	-	O	A	3.6	-
	07/05/06	SXR	E	18	R	-	O	A	43	-
	09/19/06	JXK	HF	20	R	-	O	A	-	6
	12/12/06	JB	F	3	R	-	O	A	-	4



Station	Date	Collect	Tide	Temp	Strat	ADV	Stat	CL	A1COL	MFCOL
WB023.00	01/10/06	JB	E	-1	R	-	O	A	<3.0	-
	02/13/06	FP	HF	3	R	W	O	A	9.1	-
	03/07/06	KEM	F	3	R	-	O	A	<3.0	-
	04/19/06	FP	LE	10	R	-	O	A	3.6	-
	07/05/06	SXR	LE	15	R	-	O	A	23	-
	09/19/06	JXK	HF	20	R	-	O	A	-	102
	11/29/06	LL	LF	7	R	-	O	A	-	8
	12/12/06	JB	LF	3	R	-	O	A	-	<2.0
WB026.00	01/10/06	JB	E	-1	R	-	C	P	<3.0	-
	02/13/06	FP	HF	2	R	-	C	P	<3.0	-
	03/07/06	KEM	F	4	R	N	C	P	3.6	-
	04/19/06	LL	HF	12	R	-	C	P	43	-
	08/08/06	LL	H	17	R	-	C	P	9.1	-
	09/19/06	JXK	HF	19	R	-	C	P	-	<2.0
	12/12/06	JB	F	5	R	N	C	P	-	<2.0
WB026.50	01/10/06	JB	E	-1	R	-	O	CA	<3.0	-
	02/13/06	FP	HF	2	R	-	O	CA	3	-
	03/07/06	KEM	F	5	R	N	O	CA	3.6	-
	04/19/06	LL	F	12	R	-	O	CA	43	-
	07/05/06	SXR	LE	15	R	-	C	CA	3.6	-
	09/19/06	JXK	H	18	R	-	C	CA	-	2
	10/30/06	LL	LF	8	R	P	C	CA	-	112
	11/07/06	LL	HE	8	R	-	C	CA	-	<2.0
	11/29/06	LL	LF	7	R	-	O	CA	-	48
	12/12/06	JB	LF	3	R	-	O	CA	-	2
WB027.00	01/10/06	JB	E	0	R	-	O	CA	<3.0	-
	02/13/06	FP	HE	2	R	-	O	CA	<3.0	-
	03/07/06	KEM	LF	4	R	-	O	CA	<3.0	-
	04/19/06	FP	L	10	R	-	O	CA	<3.0	-
	07/05/06	SXR	LE	15	R	-	C	CA	15	-
	09/19/06	JXK	HE	15	R	-	C	CA	-	<2.0
	10/30/06	LL	F	9	R	P	C	CA	-	200
	11/07/06	LL	HE	8	R	-	C	CA	-	2
	11/29/06	LL	LF	7	R	-	O	CA	-	<2.0
	12/12/06	JB	F	5	R	-	O	CA	-	6
WB029.00	01/10/06	JB	E	-1	R	-	O	A	<3.0	-
	02/13/06	FP	HE	2	R	-	O	A	<3.0	-
	04/19/06	FP	L	11	R	-	O	A	<3.0	-
	07/05/06	SXR	LE	15	R	-	O	A	<3.0	-
	09/19/06	JXK	HE	17	R	-	O	A	-	<2.0
	12/12/06	JB	F	5	R	-	O	A	-	<2.0