



GROWING AREA WH
Spurwink River Area
Scarborough and Cape Elizabeth
ANNUAL REVIEW for 2010

Report Date: 11-14-2011

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APPROVAL

Division Director:

A handwritten signature in blue ink, appearing to read "Kohl Kanwit", written over a light blue rectangular background.

Kohl Kanwit

1/30/2012

Print name

signature

Date:



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Figure 1. Growing Area WH, with Active Sampling Stations

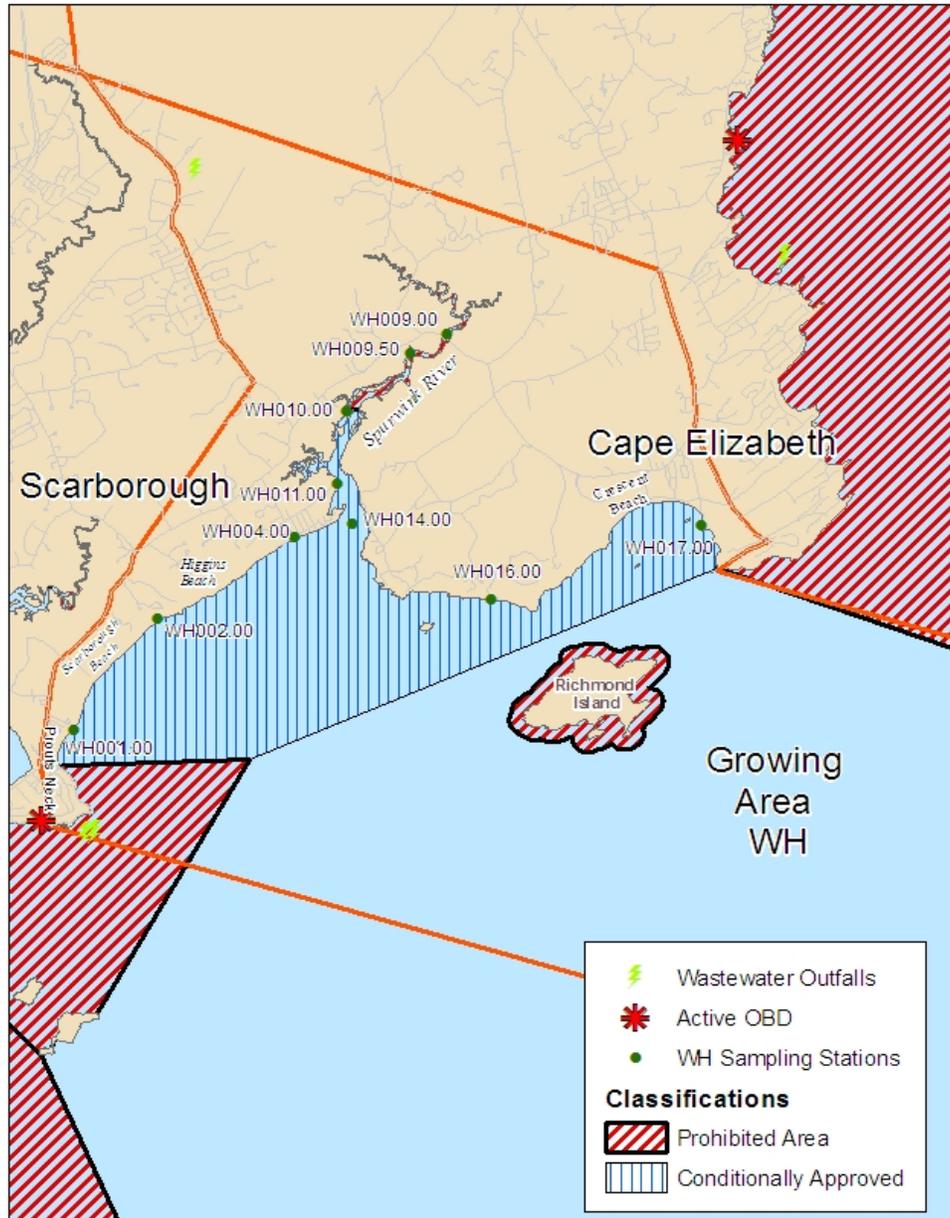


Maine Department of Marine Resources

Growing Area WH, with Active Sampling Stations



7/27/2011





Executive Summary

This is an annual report for growing area WH written in compliance with the requirements of the 2007 Model Ordinance and the National Shellfish Sanitation Program. Growing Area WH includes the shores, flats and waters of the towns of Scarborough and Cape Elizabeth and is located between Prouts Neck, Scarborough and McKenney Point, Cape Elizabeth. Sources of pollution in the area include the Scarborough Sanitary District outfall which is located 800 feet from the southeast end of Prouts Neck, two mooring fields located in Cape Elizabeth between Crescent Beach and Kettle Cove, malfunctioning septic systems, a horse and manure pile in Scarborough and horse trails and horses on the beach on the Cape Elizabeth shore of the Spurwink River and along the beach shore before Crescent Beach.

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

Growing Area Description

Growing Area WH includes the shores, flats and waters of the towns of Scarborough and Cape Elizabeth and is located between Prouts Neck, Scarborough and McKenney Point, Cape Elizabeth (Figure 1). A complete description can be found in the central files. The growing area has long stretches of public sandy beaches, an island preserve (Richmond Island) that is accessible on foot at low tide, and a stretch of tidal river (Spurwink River) which is less than 5 miles long and a border between Scarborough and Cape Elizabeth. The beaches include Scarborough Beach and Higgins Beach in the town of Scarborough, and Crescent Beach in Cape Elizabeth.

The Scarborough Sanitary District outfall is located 800 feet from the southeast end of Prouts Neck. Non-point pollution comes from the increase in shore usage during the summer months and from wildlife in the tidal marshland at the head of the Spurwink River. The Spurwink River has no significant fresh water source and is sandy and shallow. The Scarborough Sanitary District outfall which is located 800 feet from the southeast end of Prouts Neck. There are two mooring fields located in Cape Elizabeth between Crescent Beach and Kettle Cove. The east side of the Spurwink River lies within Cape Elizabeth's Town Farm District. This area is intended to recognize and protect the historic, cultural, scenic, natural, and open space qualities of the Spurwink River. The Rachel Carson National Wildlife Refuge includes 393 acres of scenic wildlife refuge near the Spurwink River (Ziepniewski, 1996). There is no aquaculture or wet storage activities in the area.

Current Classification(s)

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

Conditionally Approved:



- Area no. 12, Spurwink River, Prouts Neck, Cape Elizabeth (Old Orchard Beach, Scarborough, Cape Elizabeth), seasonal conditional area, sample stations: WH 1, 2, 4, 10, 11, 14, 16 and 17 due to seasonal variation in water quality

Prohibited:

- Area no. 12, Spurwink River, Prouts Neck, Cape Elizabeth (Old Orchard Beach, Scarborough, Cape Elizabeth), Higgins Beach and Richmond Island, sample stations: WH 9 and 9.5 due to water quality exceeding the approved standard

Please visit the DMR website to view legal notices:

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

Activity during Review Period

There were no classification changes during the review period.

Current Management Plan for Conditional Area

There is one management plan for the conditional area in WH. The conditional area is closed to harvesting between May 1st and December 1st per the management plan. Prior to each year’s reopening, a review of data must be completed to ensure that water quality meets the approved standard in the open status. A copy of the management plan can be found in the central files.

Current Annual Review of Management Plan

Per the management plan, a review of the seasonal data was completed in November 2010 to confirm that all conditional stations (WH 1, 2, 4, 10, 11, 14, 16 and 17) continued to meet the approved standards for the open status. A complete management plan review can be found in Appendix A.

Water Quality Review and Discussion

Table 1. Geomean and P90 Scores for Growing Area WH Conditionally Approved Stations, Open Status, and Prohibited Stations, 2006-2010

| Station | Class | Count | MFCCount | GM | SDV | MAX | P90 | Appd_Std | Min_Date |
|----------|-------|-------|----------|-----|------|-----|-----|----------|------------|
| WH001.00 | CA | 30 | 30 | 2.6 | 0.36 | 48 | 7.7 | 31 | 12/19/2007 |
| WH002.00 | CA | 30 | 30 | 2.8 | 0.36 | 48 | 8.2 | 31 | 12/19/2007 |
| WH004.00 | CA | 30 | 30 | 3.5 | 0.42 | 96 | 12 | 31 | 12/19/2007 |
| WH009.00 | P | 30 | 27 | 7.4 | 0.59 | 120 | 43 | 32 | 3/22/2006 |
| WH009.50 | P | 30 | 27 | 9.1 | 0.57 | 200 | 49 | 32 | 3/22/2006 |
| WH010.00 | CA | 30 | 30 | 3.1 | 0.39 | 70 | 10 | 31 | 12/19/2007 |
| WH011.00 | CA | 30 | 30 | 3 | 0.42 | 80 | 11 | 31 | 12/19/2007 |
| WH014.00 | CA | 30 | 30 | 2.9 | 0.38 | 80 | 9.3 | 31 | 12/19/2007 |



| Station | Class | Count | MFCCount | GM | SDV | MAX | P90 | Appd_Std | Min_Date |
|----------|-------|-------|----------|-----|------|-----|-----|----------|------------|
| WH016.00 | CA | 30 | 30 | 2.7 | 0.39 | 88 | 8.8 | 31 | 5/22/2007 |
| WH017.00 | CA | 30 | 30 | 2.9 | 0.39 | 58 | 9.4 | 31 | 12/19/2007 |

All conditionally approved sampling stations were sampled randomly at least five times in the open status, in accordance with NSSP guidelines. Both prohibited stations were sampled six times. Additional samples were collected during adverse conditions at WH 4, 10, and 11.

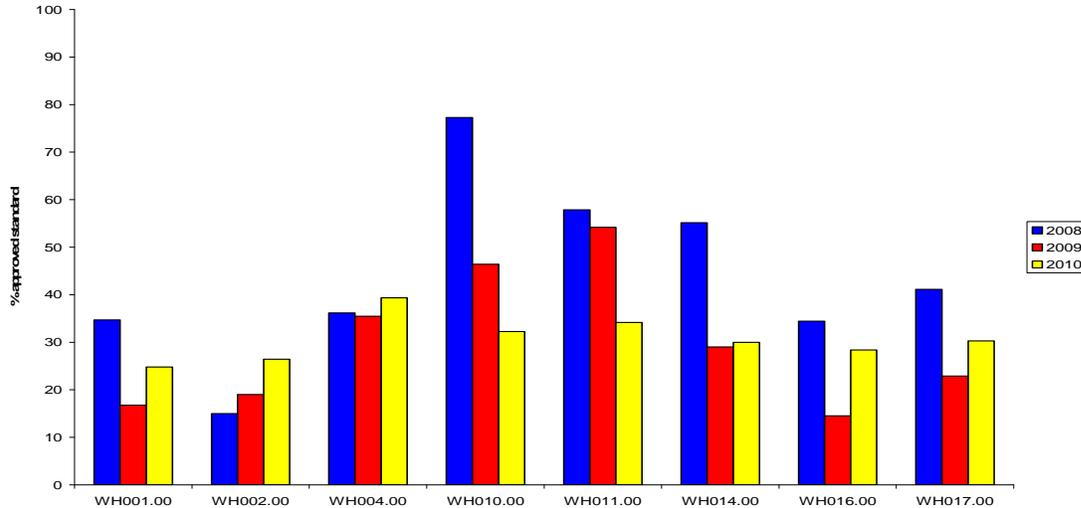
Table 2. 2010 Sampling Effort, Growing Area WH

| Station | Class | A | R | | Total |
|----------|-------|--------|--------|------|-------|
| | | Closed | Closed | Open | |
| WH001.00 | CA | | 4 | 5 | 9 |
| WH002.00 | CA | | 4 | 5 | 9 |
| WH004.00 | CA | 9 | 4 | 5 | 18 |
| WH009.00 | P | | 6 | | 6 |
| WH009.50 | P | | 6 | | 6 |
| WH010.00 | CA | 9 | 4 | 5 | 18 |
| WH011.00 | CA | 9 | 4 | 5 | 18 |
| WH014.00 | CA | | 4 | 5 | 9 |
| WH016.00 | CA | | 4 | 5 | 9 |
| WH017.00 | CA | | 4 | 5 | 9 |

Figure 2 displays a three-year trend of individual fecal coliform scores (open status) for the stations located within the conditionally approved area in WH. Stations WH 10 and 11 show a decline in P90 scores, while the rest of the stations increased slightly over previous years (Figure 2). WH 2 is the only station that shows an increasing trend; the other stations fluctuate within the three year time frame. Water quality remains good in the seasonal conditional area during the open status.



Figure 2 Area WQ P90 Trends for Conditionally Approved Stations, Open Status, (expressed as the percent of the approved standard), 2008-2010



Upward Classification Changes

There were no upward classifications during the review period.

Shoreline Survey Activity

Shoreline survey activity was restricted to drive through surveys, completed in conjunction with sampling dates. The entire area was driven through by DMR staff in October, 2010. No problems were reported.

Aquaculture/Wet Storage Activity

There is no aquaculture/wet storage activity in growing area WH.

Recommendation for Future Work

The main pollution sources for growing area WH are generally seasonal in nature and animal waste (increased presence of dogs on the beach, horseriders, etc.). Continuing efforts will be to made to note occurrences of animal waste.



Appendix A. Annual Review of WH Conditional Area Management Plan

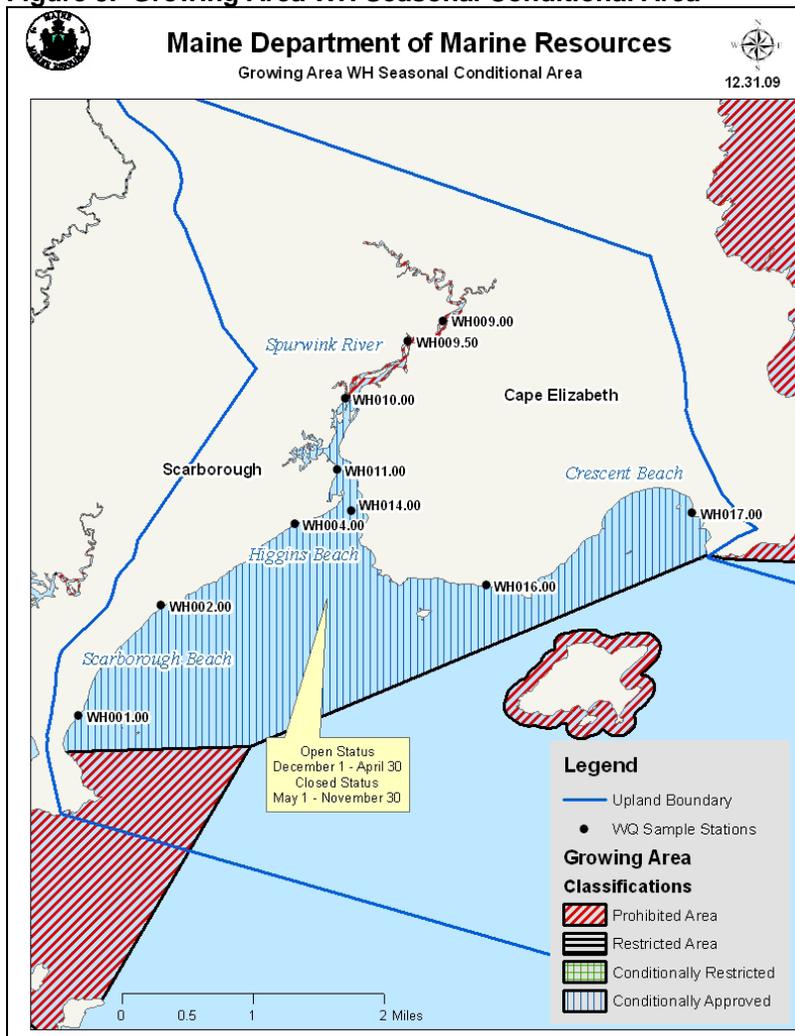
Scope

A portion of Growing Area WH is conditionally approved due to seasonal variability of water quality, possibly due to an increase in shore usage during the summer months. The Spurwink River, monitored by stations WH 10.0, 11.0, and 14.0, was classified conditionally approved based on seasonal variation in water quality in 1998. DMR evaluated the Spurwink River data in December 1998, and made the assessment that there is greater variation in water quality during the summer months. Many of the homes along this shore are occupied year round, as well as nearby seasonal rental cottages. There are designated parking areas for summer residents, and there is an increase in shore usage during June, July and August. The area has met approved standards during open status from December 1st to May 31st.

The size of the conditionally approved area increased substantially in August 2006. The area monitored by stations WH 1.0, 2.0, 4.0, 16.0 and 17.0, located along the beaches in Scarborough and Cape Elizabeth was classified approved prior to August 10, 2006. The area was reclassified to conditionally approved due to lack of fecal coliform data from May 1st to November 30th. The entire area was conditionally approved based on an open season of December 1 to April 30, and is being sampled year-round, during both the open and closed status.



Figure 3. Growing Area WH Seasonal Conditional Area



Compliance with management plan

In 2010, the conditional area closed on May 1 and reopened on December 1. The conditional area data was reviewed in November 2010 prior to the reopening date and all of the conditional stations continued to meet approved standards during the open season.

Adequacy of reporting and cooperation of involved persons

This management plan does not require reporting. The seasonal closure is enforced the DMR Marine Patrol and the local Shellfish Warden. Cooperation between the involved parties has been excellent.



Compliance with approved (or restricted) growing area criteria

The annual review of the water quality for all active stations, performed on September 27, 2010, met approved standards during the open status.

Table 3. Geomean and P90 Scores, Growing Area WH Seasonal Conditional Area, Open Status, 2005-2010

| Rain_P90 | | | | | | | | | | |
|----------|-------|-------|----------|-----|------|-----|-----|----------|-----------|-----------|
| Station | Class | Count | MFCCount | GM | SDV | MAX | P90 | Appd_Std | Restr_Std | Min_Date |
| WH001.00 | CA | 30 | 21 | 2.2 | 0.13 | 8 | 3.4 | 35 | 195 | 1/25/2005 |
| WH002.00 | CA | 30 | 21 | 3.3 | 0.34 | 48 | 9.3 | 35 | 195 | 1/25/2005 |
| WH004.00 | CA | 30 | 21 | 3.2 | 0.37 | 96 | 9.7 | 35 | 195 | 1/25/2005 |
| WH010.00 | CA | 30 | 21 | 3.4 | 0.34 | 43 | 9.7 | 35 | 195 | 1/25/2005 |
| WH011.00 | CA | 30 | 21 | 2.7 | 0.28 | 23 | 6.5 | 35 | 195 | 1/25/2005 |
| WH014.00 | CA | 30 | 21 | 2.7 | 0.27 | 21 | 6.1 | 35 | 195 | 1/25/2005 |
| WH016.00 | CA | 30 | 18 | 2.5 | 0.21 | 23 | 4.8 | 37 | 208 | 3/10/2004 |
| WH017.00 | CA | 30 | 21 | 2.7 | 0.25 | 23 | 5.7 | 35 | 195 | 1/25/2005 |

Water sampling compliance history

All conditionally approved stations were collected 5 times when in the open status in 2010, according to NSSP protocol

Table 4. 2010 Growing Area WH Sampling Effort, Open Status

| Station | Class | A | R | | Total |
|----------|-------|--------|--------|------|-------|
| | | Closed | Closed | Open | |
| WH001.00 | CA | | 4 | 5 | 9 |
| WH002.00 | CA | | 4 | 5 | 9 |
| WH004.00 | CA | 9 | 4 | 5 | 18 |
| WH010.00 | CA | 9 | 4 | 5 | 18 |
| WH011.00 | CA | 9 | 4 | 5 | 18 |
| WH014.00 | CA | | 4 | 5 | 9 |
| WH016.00 | CA | | 4 | 5 | 9 |
| WH017.00 | CA | | 4 | 5 | 9 |

Analysis-Recommendations

The current seasonal closure is adequate to protect public health. Data will continue to be collected to assess if the seasonal closure can be altered.



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.