

# ADDENDUM TO THE 2009 SANITARY SURVEY

OF

BIRCH BAY

July 2018



WASHINGTON STATE DEPARTMENT OF HEALTH  
OFFICE OF ENVIRONMENTAL HEALTH AND SAFETY  
SHELLFISH PROGRAMS

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## **I. Executive Summary**

This report changes the classification of 27 acres near the Birch Bay Village Community Club Marina from Prohibited to unclassified. The change is the result of implementation of a No Discharge Zone for Puget Sound (Chapter 173-228 WAC), and subsequent reduction in the assumed sewage discharge rate for vessels when estimating the size of a marina closure zone.

Marine water condition support this change. All stations meet NSSP criteria for their respective classification.

## **II. Description of Growing Area and changes to classification conditions**

Map 1 shows the classification of the area around the Birch Bay Village Community Club Marina prior to this change. The closure zone radius has been recalculated based on reduced assumed discharge rates described in DOH/OEHS Directive Memorandum #008, developed in light of increased use of Type III MSDs (revealed through recent boater surveys), increased availability and use of pumpout facilities, and adoption of a No Discharge Zone for Puget Sound that includes some enforcement provisions.

With regards to minimum assumed discharge rates, FDA guidance (*Evaluation of Marinas by State Shellfish Sanitation Control Officials*) states: "Even if overboard discharges are prohibited, a closure zone is required and the SSCA should stipulate a minimum loading factor of 10 percent." This minimum assumed discharge rate is applied to vessels in marinas with an available pumpout facility when performing a dilution analysis to size a shellfish closure area around a marina.

## **III. Pollution Source Survey**

The current marina closure zone was established in October 1995, and boat usage does not appear to have changed since that evaluation. The assumed discharge rate at the Birch Bay Boat Basin was 30% in the 1995 evaluation. There is a pumpout station and upland restroom at this marina. In 2017, the Department re-evaluated the marina. The revised assumed discharge rate is 10% using criteria detailed in Directive Memorandum #008. This closure zone evaluation used the following assumptions:

- 198 boats at two people per boat, based on observed occupancy of the marina
- Assumed discharge rate reduced from 30% to 10%
- An average water depth of 11 feet MLLW
- An average water temperature of 14° C
- A receiving water current of 7.7 cm/s
- A complete mix of wastewater discharge in the receiving water
- An assumed discharge of  $2 \times 10^9$  fecal coliforms/person-day

Discharge exiting the boat basin using a zero-dimensional mixed basin model meets the shellfish standard of 14 FC/100 ml. Therefore, the Prohibited area is limited to within the boat basin year-round. Based on the calculation, the Prohibited area outside of the boat basin (approximately 27 acres) is changed to unclassified, as shown on Map 2 on page 5.

## **IV. Water Quality Studies**

Marine Water Station 17 is located within the area discussed in this report and shown on Map 1 on page 4. A summary of the last 30 samples collected at this station is shown in Table 1 on page 7 and indicates that the station meet the Approved marine water quality standard. Individual samples collected from Marine Water Station 17 are shown in Table 2 on page 7.

## **V. Conclusions**

Based on the reevaluation of the closure zone around the Birch Bay Village Community Club Marina, shoreline conditions, and marine water quality, 27 acres are changed from Prohibited to unclassified. Map 2 on page 5 shows the updated classification for the area in question.

Map 3 on page 6 shows the changes in classification and the coordinates for the new sanitary lines.

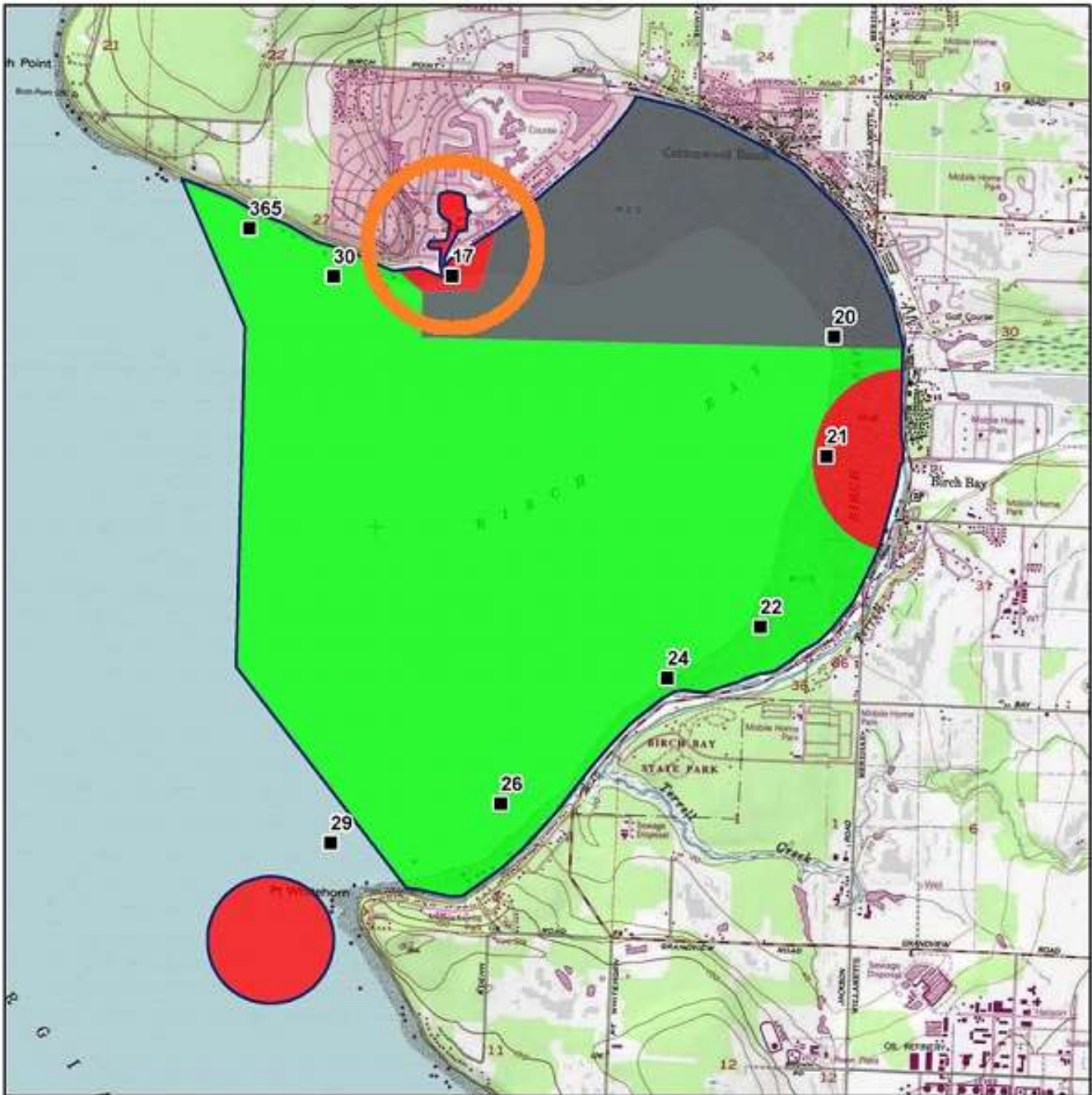
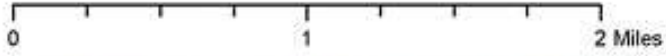
## **VI. Recommendations**

If a harvest request is received, a shoreline survey should be conducted along the unclassified portions of shoreline.

# MAP 1

Birch Bay

Washington State Department of Health  
**Health**  
Date Updated: 7/26/2017



### Classification      Sampling Stations

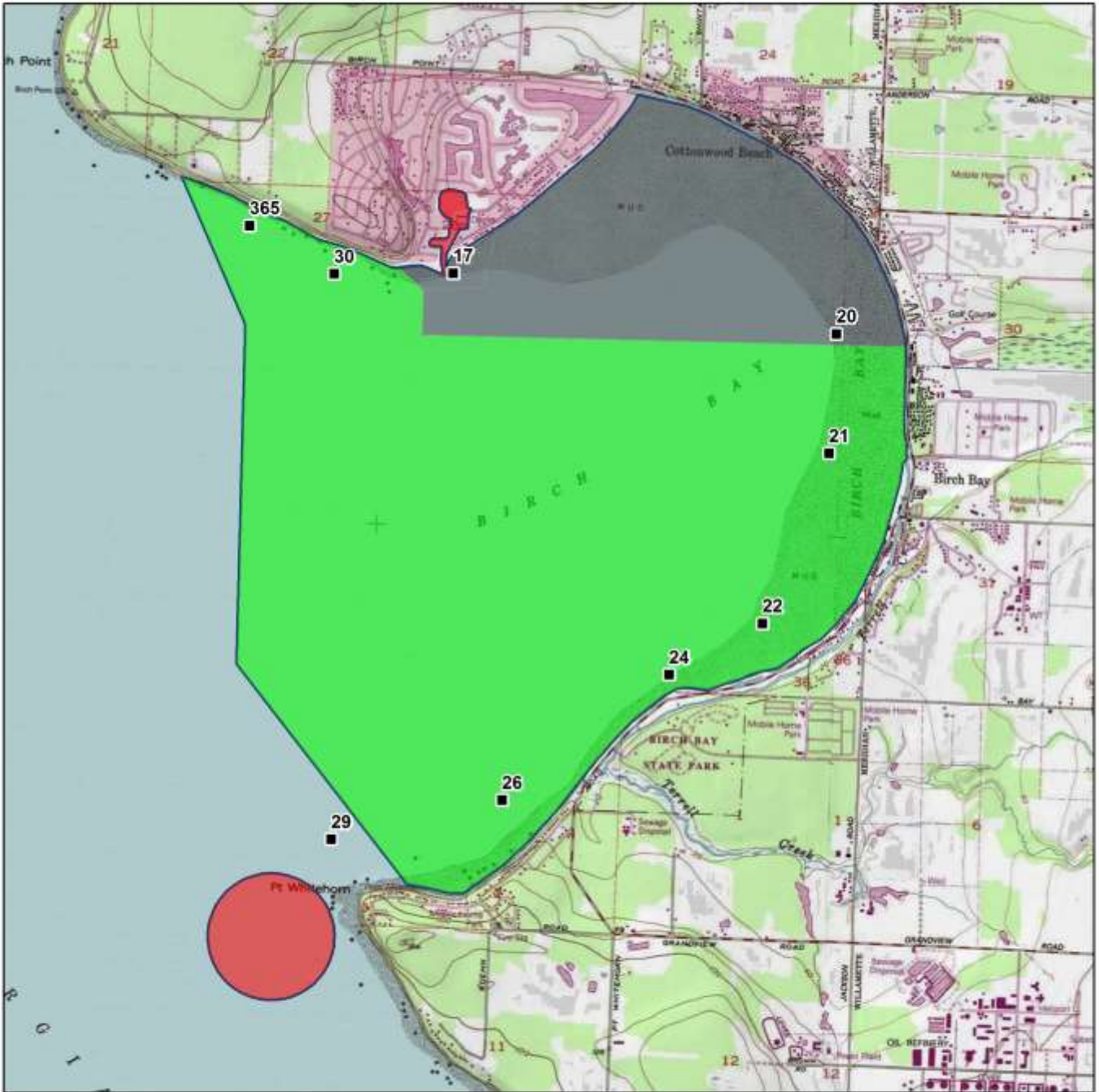
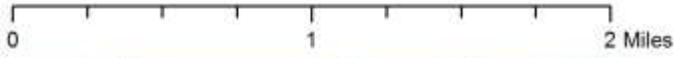
-  Approved
-  Conditional
-  Prohibited
-  Restricted
-  Unclassified



# MAP 2

Birch Bay

Washington State Department of Health  
**Health**  
 Date Updated: 4/2/2018



**Classification**

- Approved
- Conditional
- Prohibited
- Restricted
- Unclassified

**Sampling Stations**



\* Some sampling stations are highlighted with grey box for ease of reading.

# MAP 3



**TABLE 1**  
**Summary of Marine Water Data (SRS)**  
**Growing Area: Birch Bay**

Tides Included: ALL

Sampling Event Type: Regulatory

Maximum Number of Samples: 30

Station Number	Classification	Date Range	Range (FC/100 mL)	GeoMean (FC/100 mL)	E90th (FC/100 mL)	Meets Standard
17	Prohibited	2/21/2013 - 12/13/2017	1.7 - 540.0	3.8	21.6	Yes

**TABLE 2**  
**Data Summary of Threatened Marine Water Station 17 (SRS)**

Station: 17

Classification: Prohibited

Method: SRS

Total Samples: 30

Date Range: 02/21/2013– 12/13/2017

Range (FC/100 mL): 1.7 - 540.0

E90th (FC/100 mL): 21.6

GeoMean (FC/100 mL): 3.8

Meets Standard: Yes

Sample Date	Event Type	Time	Tide	SWT	Salinity	Fecal Coliform
02/21/2013	Regulatory	15:09	Ebb	7	30	1.7
04/04/2013	Regulatory	13:04	Ebb	11	30	1.7
06/18/2013	Regulatory	10:20	Flood	18	25	1.7
08/14/2013	Regulatory	11:16	Flood	19	25	1.7
10/15/2013	Regulatory	11:34	Flood	12	30	1.7
12/10/2013	Regulatory	14:13	Ebb	6	30	2.0
01/22/2014	Regulatory	13:34	Ebb	8	30	4.5
03/11/2014	Regulatory	12:25	Flood	9	25	1.7
05/06/2014	Regulatory	10:41	Ebb	12	28	49.0
09/03/2014	Regulatory	10:41	Flood	17	26	21.0
09/17/2014	Regulatory	11:24	Flood	15	30	1.7
11/19/2014	Regulatory	14:01	Flood	10	25	2.0
02/03/2015	Regulatory	11:48	Ebb	9	25	23.0
03/31/2015	Regulatory	13:46	Flood	11	25	540.0
06/09/2015	Regulatory	10:42	Flood	17	22	1.7
08/24/2015	Regulatory	14:13	Flood	19	25	2.0
10/20/2015	Regulatory	13:22	Ebb	13	30	2.0
12/01/2015	Regulatory	12:27	Ebb	8	30	14.0
01/20/2016	Regulatory	10:02	Flood	8	28	13.0
03/29/2016	Regulatory	11:47	Ebb	11	30	1.7
05/03/2016	Regulatory	09:58	Ebb	15	25	1.7
07/28/2016	Regulatory	15:29	Ebb	21	20	7.8
09/14/2016	Regulatory	11:03	Flood	16	26	1.7
11/09/2016	Regulatory	11:29	Flood	12	27	4.0
02/08/2017	Regulatory	14:28	Ebb	5	28	7.8
04/05/2017	Regulatory	10:30	Flood	9	25	2.0
06/21/2017	Regulatory	15:16	Flood	16	23	2.0
08/30/2017	Regulatory	15:14	Flood	19	24	1.7
10/25/2017	Regulatory	14:59	Ebb	11	31	1.8
12/13/2017	Regulatory	13:49	Flood	9	32	1.7