

Liberty Bay

Annual Shellfish Growing Area Review



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Area: Liberty Bay

Year Ending: December 31, 2022

Classification: Approved, Conditionally Approved, Prohibited

Activities in the Growing Area in 2022

The growing area was sampled five times in accordance with National Shellfish Sanitation Program (NSSP) Systematic Random Sampling criteria. An additional sampling event in February was collected after excessive rainfall and was not included in the regulatory dataset. Four sampling events occurred during the conditionally open period. The Conditionally Approved portion was closed during the boating season (May 1 through September 30). An emergency closure criterion was established due to degraded water quality after heavy rains. All of Liberty Bay may be closed when 3 inches of rain or more falls in 24 hours or less as measured at the Bremerton Airport rain gauge. The closure period is seven days; however, a longer closure may be required depending on the circumstances.

Analytical Results of Water Samples

Table 1 summarizes the results of the last 30 samples collected from the area. This summary shows that all stations pass the NSSP water quality standard except Station 872, which only has 26 samples. Stations 388 and 390 are in Threatened status (both Conditionally Approved). A review of rainfall records associated with the highest results for Station 388 (280 FC/100 ml on December 29) showed rainfall amounts of over one inch on each of the four days prior to the sample event, while the second highest results (240 FC/100 ml) came with a rainfall amount of 1.45 inches on the sample date. Station 391 in the unclassified area bordering the Conditionally Approved portion of the growing area is also in Threatened status. See Table 2 for the last 30 sampling results at Threatened stations.

Change in Actual Pollution Sources that Impact the Growing Area

We currently have no information indicating that the area has new sources of pollution.

Classification Status

- Well within the classification standards
- Meets standards, but some concerns
- Meets standards, but threatened with downgrade in classification
- Fails to meet current classification standards

Remarks and Recommendations

Table 1 shows that all stations meet the NSSP water quality standard for an Approved classification and the area is correctly classified.

Management Plan Evaluation

1. Have all parties involved complied with the conditions of the management plan..... Yes
2. Has reporting been adequate to manage the conditional area..... Yes
3. Does the area consistently meet approved area criteria when it is open for harvest Yes
4. Has a field inspection of critical pollution sources been conducted..... Yes

TABLE 1. Summary of Marine Water Data (SRS) for the Liberty Bay Growing Area

Sampling Event Type: Regulatory

Maximum Number of Samples: 30

Tides Included: All

Station Number	Classification	Date Range	Range (FC/100mL)	Geomean (FC/100mL)	Est. 90 th Percentile (FC/100mL)	Meets Standard
499	Approved	7/31/2017 - 12/29/2022	1.7 - 49.0	2.6	7.7	Y
500	Approved	7/31/2017 - 12/29/2022	1.7 - 33.0	2.4	6.9	Y
501	Approved	7/31/2017 - 12/29/2022	1.7 - 49.0	2.3	5.7	Y
384	Conditionally Approved	7/31/2017 - 12/29/2022	1.7 - 33.0	2.9	9.2	Y
385	Conditionally Approved	7/31/2017 - 12/29/2022	1.7 - 22.0	3.0	8.3	Y
386	Conditionally Approved	7/31/2017 - 12/29/2022	1.7 - 110.0	3.5	16.7	Y
387	Conditionally Approved	7/31/2017 - 12/29/2022	1.7 - 130.0	3.9	14.8	Y
388	Conditionally Approved	7/31/2017 - 12/29/2022	1.7 - 280.0	5.2	34.2	Y
389	Conditionally Approved	5/16/2017 - 12/29/2022	1.7 - 79.0	3.2	12.2	Y
390	Conditionally Approved	7/31/2017 - 12/29/2022	1.7 - 110.0	5.9	28.7	Y
392	Conditionally Approved	7/31/2017 - 12/29/2022	1.7 - 130.0	2.5	8.0	Y
498	Conditionally Approved	7/31/2017 - 12/29/2022	1.7 - 49.0	2.2	5.0	Y
872	Conditionally Approved	4/19/2018 - 12/29/2022	1.7 - 46.0	2.6	7.6	*N/A
380	Unclassified	7/31/2017 - 12/29/2022	1.7 - 23.0	2.4	6.1	Y
381	Unclassified	7/31/2017 - 12/29/2022	1.7 - 110.0	2.5	7.5	Y
382	Unclassified	7/31/2017 - 12/29/2022	1.7 - 49.0	3.4	12.2	Y
383	Unclassified	7/31/2017 - 12/29/2022	1.7 - 14.0	3.0	7.9	Y
391	Unclassified	7/31/2017 - 12/29/2022	1.7 - 350.0	4.5	29.8	Y
393	Unclassified	7/31/2017 - 12/29/2022	1.7 - 110.0	3.0	10.7	Y
394	Unclassified	7/31/2017 - 12/29/2022	1.7 - 110.0	2.9	9.2	Y

The standard for approved shellfish growing waters is fecal coliform geometric mean not greater than 14 organisms/ 100 mL with an estimated 90th percentile not greater than 43 organisms/ 100 mL. The above table shows bacteriological results in relation to program standards.

* N/A – SRS criteria require a minimum of 30 samples from each station. *

TABLE 2. Marine Water Quality Summary for Threatened Stations in Liberty Bay

Station: 388

Classification: Conditionally Approved

Method: SRS

Total Samples: 30 Range (FC/100 mL): 1.7-280 GeoMean (FC/100 mL): 5.2				Date Range: 7/31/2017- 12/29/2022 E90th (FC/100 mL): 34.2 Meets Standard: Y		
Sample Date	Event Type	Time	Tide	SWT	Salinity	Fecal Coliform
07/31/2017	Regulatory	12:58	Flood	19	30	6.8
09/14/2017	Regulatory	12:13	Flood	17	30	7.8
11/07/2017	Regulatory	09:58	Ebb	10	29	2.0
02/07/2018	Regulatory	11:04	Ebb	9	22	14.0
04/19/2018	Regulatory	11:28	Flood	12	25	1.7
06/06/2018	Regulatory	12:02	Ebb	18	30	1.7
08/02/2018	Regulatory	09:47	Ebb	19	31	2.0
10/15/2018	Regulatory	11:50	Ebb	14	28	1.8
12/19/2018	Regulatory	10:07	Flood	9	22	17.0
01/30/2019	Regulatory	09:46	Flood	8	22	1.7
02/26/2019	Regulatory	11:54	Ebb	7	25	1.7
05/02/2019	Regulatory	07:39	Ebb	14	29	13.0
07/25/2019	Regulatory	09:40	Flood	19	31	17.0
09/04/2019	Regulatory	09:59	Flood	18	32	13.0
11/06/2019	Regulatory	09:51	Flood	11	30	1.7
02/18/2020	Regulatory	10:07	Flood	8	26	1.8
04/30/2020	Regulatory	09:57	Flood	13	30	1.7
06/23/2020	Regulatory	08:30	Ebb	18	29	1.7
08/25/2020	Regulatory	09:43	Flood	18	31	23.0
10/08/2020	Regulatory	10:15	Flood	15	31	13.0
12/03/2020	Regulatory	09:48	Ebb	8	29	33.0
03/16/2021	Regulatory	11:14	Ebb	9	29	1.7
05/06/2021	Regulatory	12:03	Flood	13	30	1.7
09/13/2021	Regulatory	11:27	Flood	17	31	2.0
11/22/2021	Regulatory	09:22	Ebb	10	27	1.8
04/04/2022	Regulatory	08:41	Ebb	10	27	240.0
06/08/2022	Regulatory	11:15	Flood	15	28	2.0
08/03/2022	Regulatory	08:17	Flood	19	30	7.8
10/05/2022	Regulatory	14:31	Flood	16	30	1.7
12/29/2022	Regulatory	12:10	Ebb	8	15	280.0

TABLE 2 continued.

Station: 390

Classification: Approved

Method: SRS

Total Samples: 30 Range (FC/100 mL): 1.7 - 110.0 GeoMean (FC/100 mL): 5.9				Date Range: 07/31/2017 - 12/29/2022 E90th (FC/100 mL): 28.7 Meets Standard: Y		
Sample Date	Event Type	Time	Tide	SWT	Salinity	Fecal Coliform
07/31/2017	Regulatory	13:03	Flood	19	30	1.7
09/14/2017	Regulatory	12:18	Flood	17	30	7.8
11/07/2017	Regulatory	09:54	Ebb	10	29	6.8
02/07/2018	Regulatory	11:08	Ebb	9	22	6.8
04/19/2018	Regulatory	11:30	Flood	12	24	4.5
06/06/2018	Regulatory	11:58	Ebb	17	30	1.7
08/02/2018	Regulatory	09:51	Ebb	19	31	4.5
10/15/2018	Regulatory	11:53	Ebb	14	28	4.5
12/19/2018	Regulatory	10:19	Flood	9	22	46.0
01/30/2019	Regulatory	09:51	Flood	7	24	6.8
02/26/2019	Regulatory	11:52	Ebb	7	25	1.7
05/02/2019	Regulatory	07:43	Ebb	14	30	1.7
07/25/2019	Regulatory	09:43	Flood	18	31	1.7
09/04/2019	Regulatory	10:03	Flood	18	32	7.8
11/06/2019	Regulatory	09:55	Flood	11	30	79.0
02/18/2020	Regulatory	10:10	Flood	8	26	2.0
04/30/2020	Regulatory	10:00	Flood	13	30	4.5
06/23/2020	Regulatory	08:34	Ebb	18	29	7.8
08/25/2020	Regulatory	09:49	Flood	18	31	6.8
10/08/2020	Regulatory	10:18	Flood	15	31	7.8
12/03/2020	Regulatory	09:51	Ebb	8	31	49.0
03/16/2021	Regulatory	11:17	Ebb	9	29	1.7
05/06/2021	Regulatory	11:58	Flood	12	30	1.7
09/13/2021	Regulatory	11:31	Flood	17	31	22.0
11/22/2021	Regulatory	09:30	Ebb	10	27	7.8
04/04/2022	Regulatory	08:46	Ebb	10	27	23.0
06/08/2022	Regulatory	11:19	Flood	17	28	1.8
08/03/2022	Regulatory	08:23	Flood	19	30	2.0
10/05/2022	Regulatory	14:35	Flood	16	29	1.8
12/29/2022	Regulatory	12:16	Ebb	8	8	110.0

TABLE 2 continued.

Station: 391

Classification: Unclassified

Method: SRS

Total Samples: 30 Range (FC/100 mL): 1.7 - 350.0 GeoMean (FC/100 mL): 4.5				Date Range: 07/31/2017 - 12/29/2022 E90th (FC/100 mL): 29.8 Meets Standard: Y		
Sample Date	Event Type	Time	Tide	SWT	Salinity	Fecal Coliform
07/31/2017	Regulatory	13:05	Flood	18	29	2.0
09/14/2017	Regulatory	12:20	Flood	17	30	2.0
11/07/2017	Regulatory	09:52	Ebb	10	29	1.7
02/07/2018	Regulatory	11:16	Ebb	9	23	1.7
04/19/2018	Regulatory	11:32	Flood	12	24	2.0
06/06/2018	Regulatory	11:55	Ebb	17	30	1.7
08/02/2018	Regulatory	09:54	Ebb	19	31	23.0
10/15/2018	Regulatory	11:55	Ebb	14	28	1.7
12/19/2018	Regulatory	10:21	Flood	8	16	49.0
01/30/2019	Regulatory	09:53	Flood	7	24	1.7
02/26/2019	Regulatory	11:49	Ebb	7	26	1.7
05/02/2019	Regulatory	07:45	Ebb	14	30	1.7
07/25/2019	Regulatory	09:47	Flood	18	32	4.5
09/04/2019	Regulatory	10:05	Flood	18	32	4.5
11/06/2019	Regulatory	09:57	Flood	11	30	1.7
02/18/2020	Regulatory	10:13	Flood	8	26	2.0
04/30/2020	Regulatory	10:03	Flood	13	30	1.7
06/23/2020	Regulatory	08:37	Ebb	18	30	1.7
08/25/2020	Regulatory	09:51	Flood	18	31	2.0
10/08/2020	Regulatory	10:21	Flood	15	30	13.0
12/03/2020	Regulatory	09:53	Ebb	8	31	7.8
03/16/2021	Regulatory	11:20	Ebb	9	29	4.5
05/06/2021	Regulatory	11:56	Flood	12	30	1.7
09/13/2021	Regulatory	11:34	Flood	17	31	2.0
11/22/2021	Regulatory	09:32	Ebb	10	27	11.0
04/04/2022	Regulatory	08:48	Ebb	10	10	240.0
06/08/2022	Regulatory	11:20	Flood	17	28	23.0
08/03/2022	Regulatory	08:25	Flood	19	30	4.5
10/05/2022	Regulatory	14:37	Flood	17	28	2.0
12/29/2022	Regulatory	12:19	Ebb	8	10	350.0

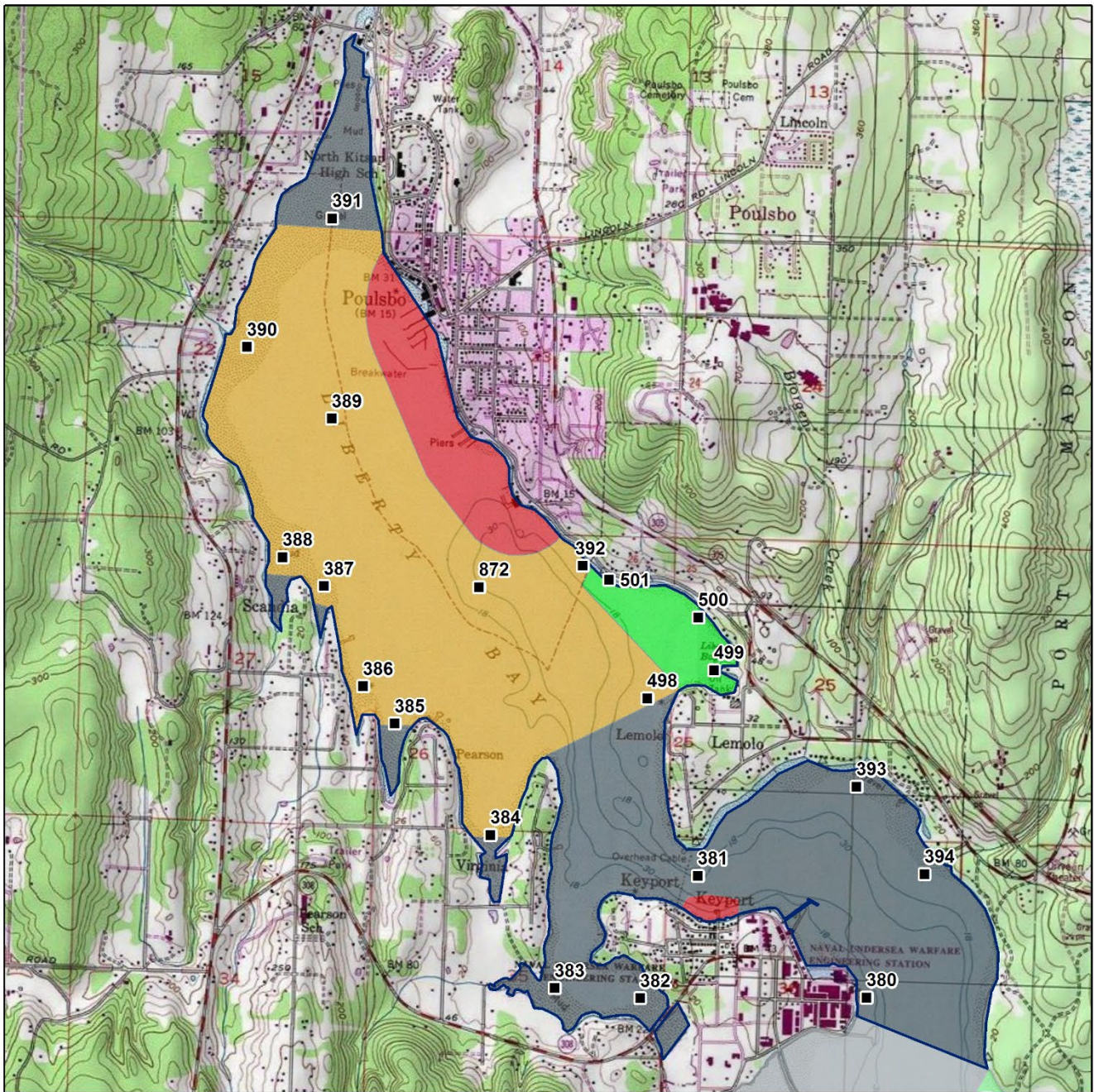
MAP 1. Liberty Bay Growing Area



 Liberty Bay

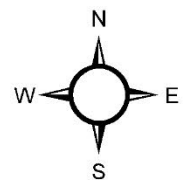


Date Updated: 8/27/2018

0 0.75 1.5 Miles



Classification	Sampling Stations
 Approved	
 Conditional	
 Prohibited	
 Restricted	
 Unclassified	



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