

North Chuckanut Bay Drainage Area

Water Quality Status: Fecal Coliform Bacteria

February 23, 2021

Background: Clean water is a valuable resource; it is essential for human health and for the health of fish, shellfish, wildlife, and livestock. To protect water quality, WA state has criteria for bacteria levels in both fresh and marine waters. To maintain safe shellfish harvest, Washington State has developed standards for fecal bacteria in marine waters. Meeting the fecal coliform benchmarks in freshwater systems leads to satisfying the marine water standards to protect public health.

| |
|---|
| ○ Marine Water Standards |
| <u>Geometric Mean</u> Average sample contains less than: 14 fecal coliform/100mL |
| - and - |
| <u>90th Percentile</u> Estimated 90th Percentile is less than: 43 fecal coliform/100mL |

| |
|---|
| ■ Freshwater Benchmarks |
| <u>Geometric Mean</u> Average sample contains less than: 100 fecal coliform/100mL |
| - and - |
| <u>90th Percentile</u> Less than 10% of samples contain over: 200 fecal coliform/100mL |

What are Fecal Coliform Bacteria?

Fecal coliform bacteria are found in human and animal feces. Detection in a creek is a sign that pathogens from these wastes may be polluting the water. Contact with fecal contaminated waters can result in **gastroenteritis, skin rashes, upper respiratory infections** and other illnesses.

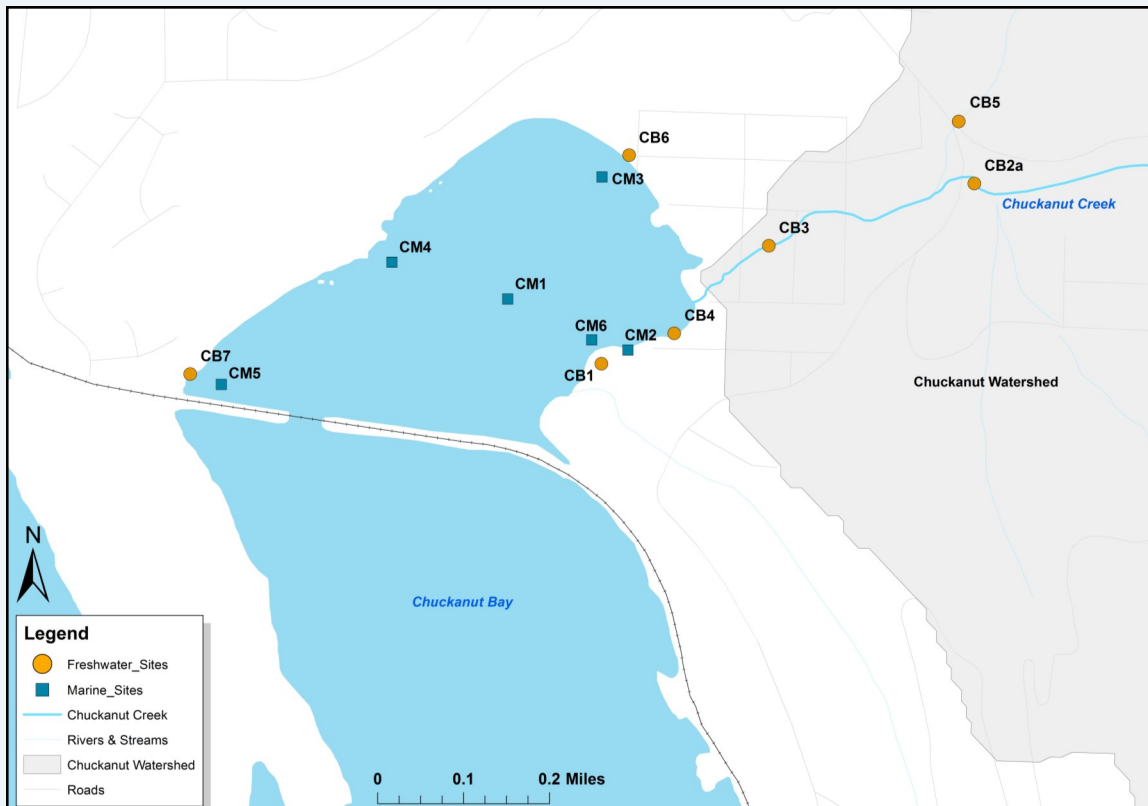
Where Does the Bacteria Come From?

Potential sources of bacteria include:

- 1) Animal waste from livestock, domestic pets, and wildlife
- 2) Human sewage from failing septic systems, leaking sewer lines or cross-connections between sewer and stormwater systems

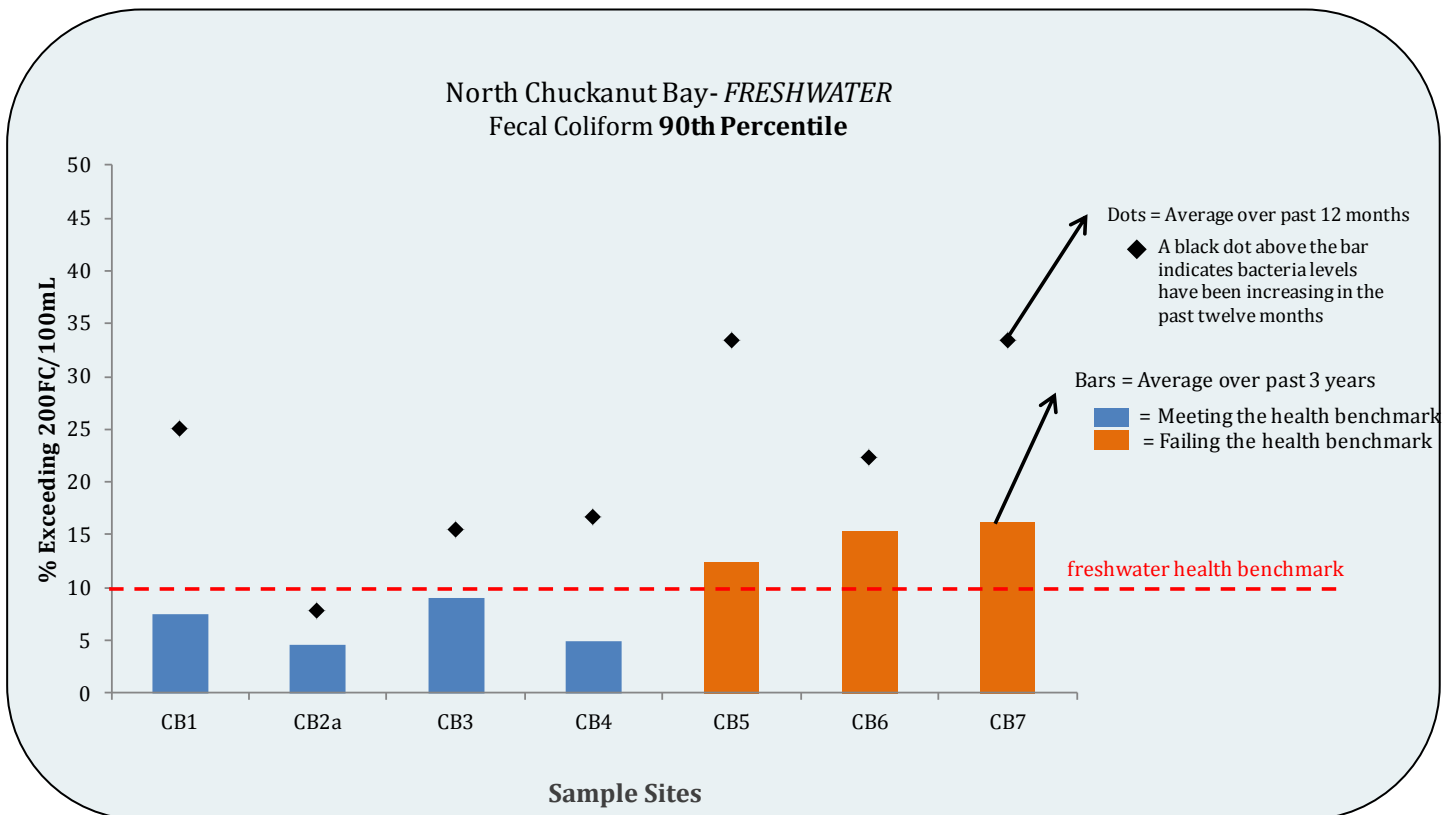
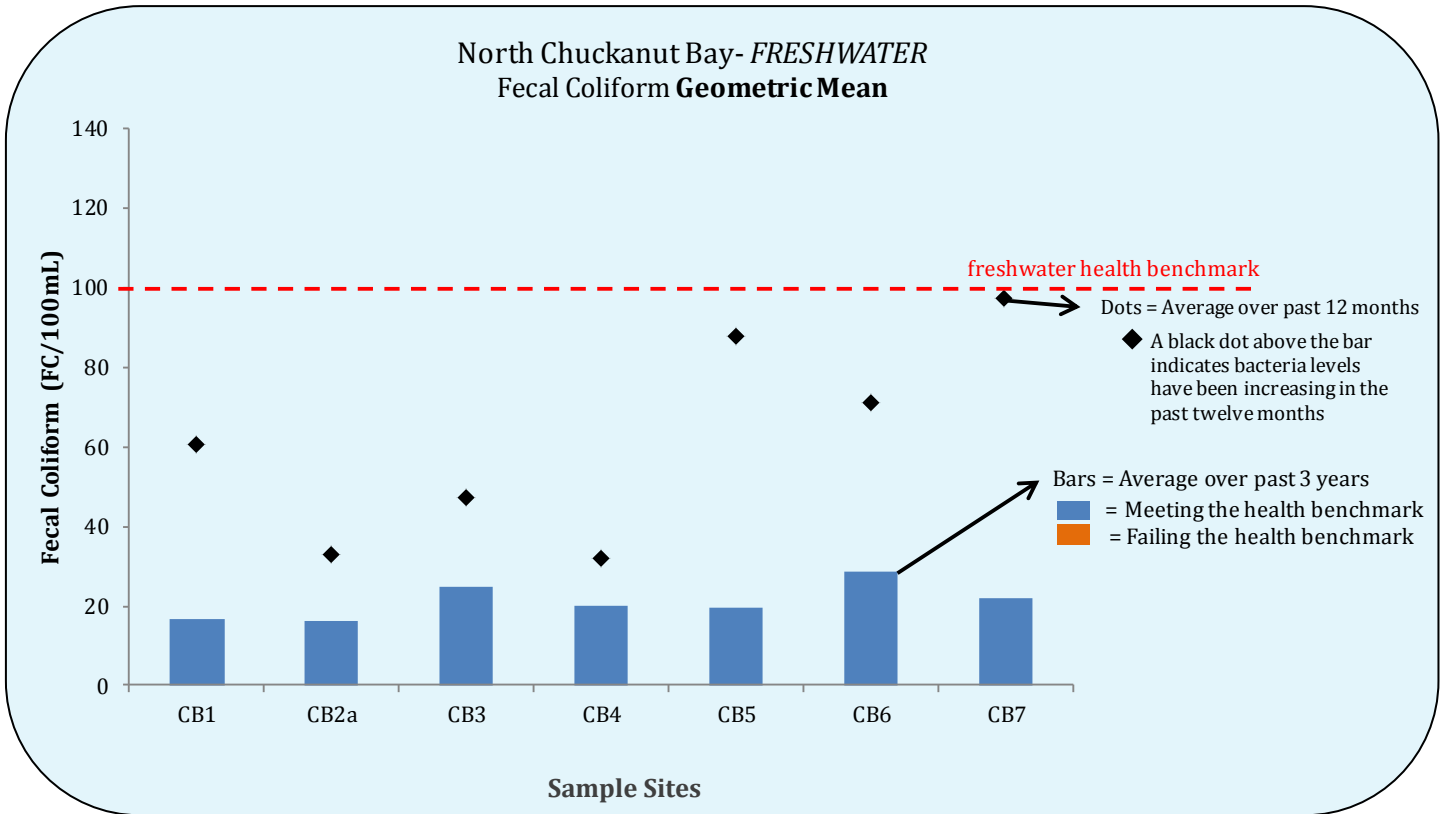
E. coli are a fecal coliform bacteria

Whatcom County Public Works North Chuckanut Bay Water Quality Monitoring Stations



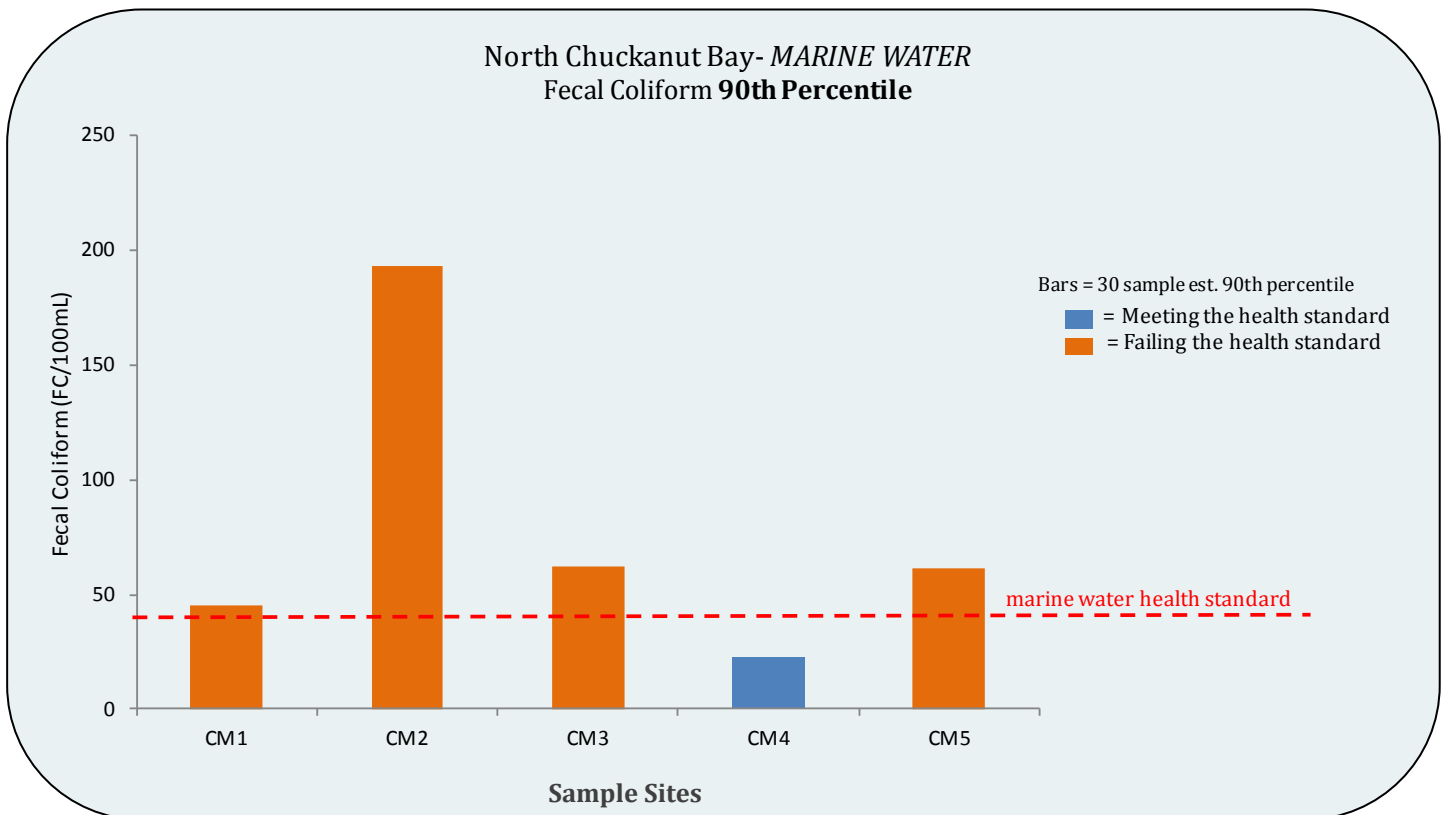
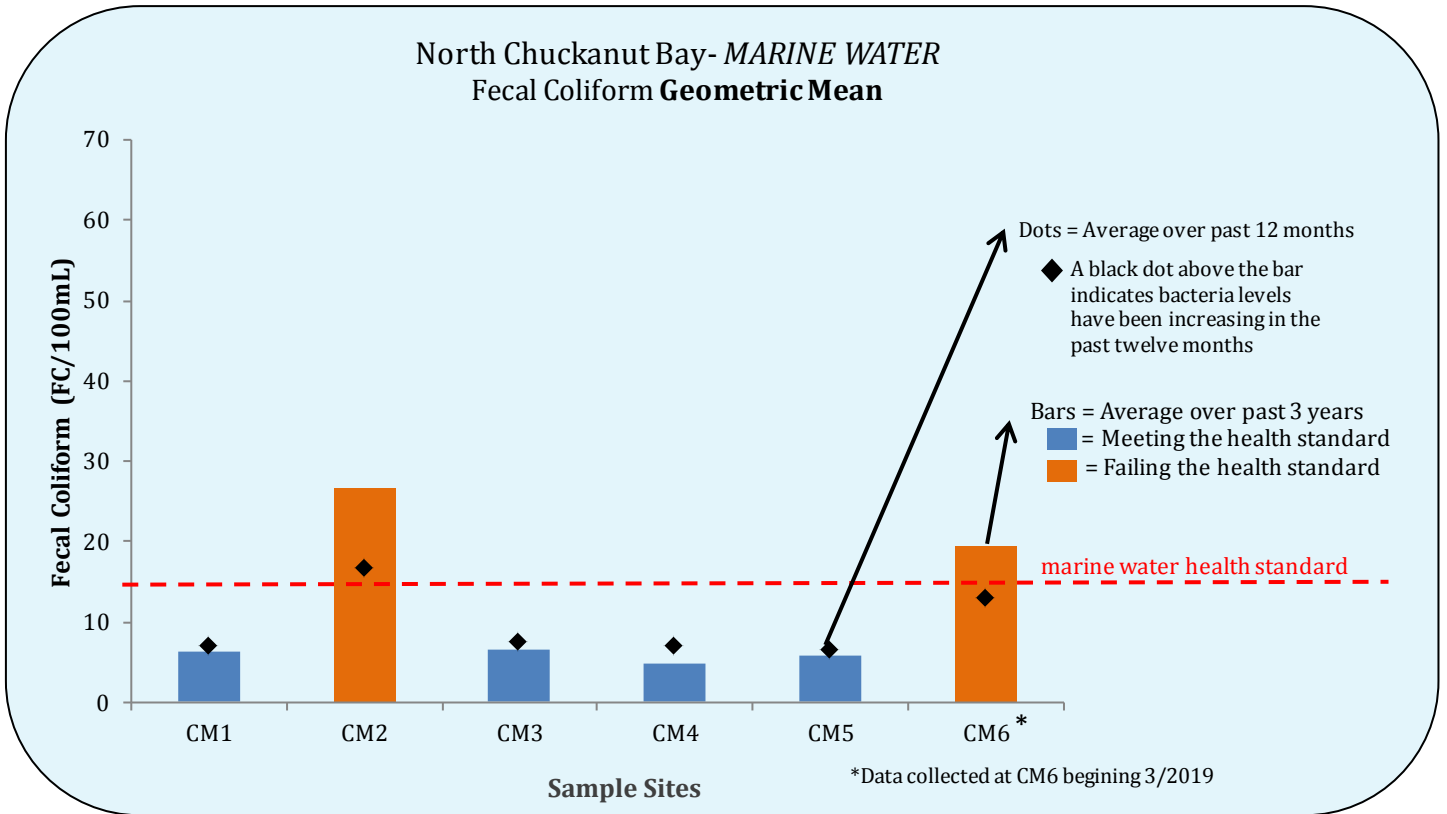
North Chuckanut Bay *Freshwater* Comparison of Bacteria Levels to Health Benchmarks

Refer to the map on page 1 for site locations.



North Chuckanut Bay *Marine Water* Comparison of Bacteria Levels to Health Standards

Refer to the map on page 1 for site locations.



North Chuckanut Bay Drainage Area 13-Month Historical Fecal Coliform Bacteria Data

This table provides the individual results at each station for the past thirteen months. For the *freshwater samples*, results in light orange exceed 100 FC/100mL, results in dark orange exceed 1000 FC/100mL. For the *marine samples*, results in light orange exceed 14 FC/100mL, results in dark orange exceed 100 FC/100mL.

| Date | Stations | | Freshwater Samples | | | | | | | Marine Samples | | | | | |
|----------|----------|-------|--------------------|-------|-------|-----|-------|-----|-------|----------------|-----|-----|-----|-----|-------|
| | Rainfall | | CB1 | CB2a | CB3 | CB4 | CB5 | CB6 | CB7 | CM1 | CM2 | CM3 | CM4 | CM5 | CM6 |
| | 24-Hr | 72-Hr | | | | | | | | | | | | | |
| 2/27/20 | 0.06 | 0.25 | 76 | 7 | 25 | 7 | 3 | 7 | 2 | 1.7 | 18 | 1.7 | 13 | 23 | 4.5 |
| 3/26/20 | 0.00 | 0.30 | 10 | 5 | 20 | 11 | 3 | 2 | 8 | 1.7 | 11 | 1.7 | 1.7 | 1.8 | 7.8 |
| 6/11/20 | 0.01 | 0.67 | 210 | 116 | 74 | 54 | NA | 182 | 25 | 140 | 106 | 49 | 7.8 | 17 | 70 |
| 7/9/20 | 0.17 | 0.00 | 1,700 | 1,200 | 1,000 | 490 | 6,000 | 800 | 2,800 | 94 | 360 | 540 | 79 | 110 | 350 |
| 8/10/20 | 0.00 | 0.48 | D | 39 | 44 | 34 | NA | ST | 490 | 1.7 | 7.8 | 2.0 | 1.7 | 1.7 | 1.7 |
| 8/25/20 | 0.02 | 0.60 | D | 155 | 220 | 60 | NA | D | LF | 1.7 | 2.0 | 1.7 | 1.7 | 1.7 | 2.0 |
| 9/8/20 | 0.00 | 0.00 | D | 23 | 62 | 21 | NA | D | D | 1.7 | 3.0 | 1.7 | 1.7 | 1.7 | 1.7 |
| 9/21/20 | 0.00 | 0.00 | D | 5 | 21 | 3 | NA | D | D | 2 | 5 | 2 | 2 | 2 | 2 |
| 10/6/20 | 0.00 | 0.00 | D | 72 | 42 | 10 | NA | 50 | LF | 1.7 | 10 | 1.7 | 7.8 | 1.7 | 7.8 |
| 10/21/20 | 0.01 | 0.67 | 28 | 7 | 29 | HT | D | 88 | 25 | 1.7 | 10 | 1.7 | 1.7 | 1.7 | 4.5 |
| 11/16/20 | 0.25 | 0.82 | 42 | 20 | 76 | 220 | 44 | 78 | 34 | 46 | 74 | 4.5 | 23 | 2.0 | 7.8 |
| 12/14/20 | 0.33 | 0.2 | 8 | 13 | 8 | 38 | 500 | 800 | 3,100 | 1.7 | 21 | 7.8 | 23 | 23 | 23 |
| 2/23/21 | 0.00 | 0.51 | 88 | 23 | 8 | 10 | 13 | 8 | 11 | 240 | 31 | 540 | 210 | 920 | 1,600 |

D- Dry, ST- Stagnant, LF- Low Flow, HT- High Tide, NP- No Personnel, ND- Non-Detect, SC- Small Craft Advisory, TI- Tidal Issue ,
NA- No Access, SD- Sample Discrepancy

Gray box indicated an event where no sample was collected for varying reasons.

Rainfall measured in inches.