2019 | Water Quality Report

Protecting public health, preventing pollution

The Kitsap Public Health District's Water Pollution Identification and Correction (PIC) program protects public health and prevents fecal pollution in Kitsap County surface waters.

Health District staff sample dozens of streams and swimming beaches across the county for fecal bacteria, an indicator of fecal pollution caused by human or animal waste. Fecal pollution can carry viruses and harmful bacteria that make people sick.

We use water sampling results to notify the public of potential health risks, and to find and fix fecal pollution problems. This helps keep our streams, swimming beaches and shellfish beds safe and healthy for the public to enjoy.

Our Water Quality Report summarizes water quality monitoring results and highlights from the 2019 water year (Oct. 1, 2018 to Sept. 30, 2019).

IN THIS REPORT

KITSAP PUBLIC HEALTH DISTRICT

Clean Water Kitsap
Partners in Stormwater Solutions

2019 Water PIC Program Highlights

69
Streams monitored for pollution

206
Health advisory days for local lakes

3,475
Water samples collected

236
Acres of shellfish beds upgraded

12,234
Staff hours logged

30
Education events participated in by PIC staff

Burley/Minter Watersheds: A PIC Success Story

A decades-long effort to improve water quality in the Burley and Minter watersheds is showing results.

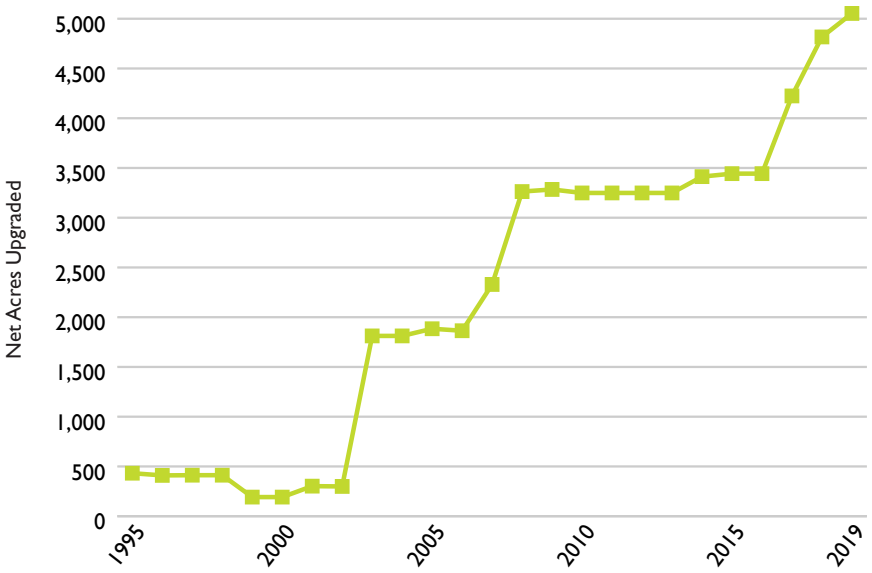
Bacteria levels have declined in many streams across the complex drainage system, which spans Kitsap and Pierce counties. Burley Creek — a stream with historically high bacteria levels — met the state freshwater standard for the first time in 2018, and again in 2019.

More than 50 failing septic systems were repaired within the watersheds between 2014 and 2017, helping to reduce fecal pollution. *See monitoring results on page 9.*

"We've never seen such low bacterial numbers since I started working here in the '90s."

Leslie Banigan
Kitsap Public Health District

Shellfish Harvesting Areas Approved



All creek systems in Kitsap County eventually drain into Puget Sound and many streams empty into shellfish growing areas. Because of this, pollution in surface water frequently contributes to contamination of shellfish beds.

By reducing pollution in surface waters, the Health District's PIC program improves water quality in shellfish growing areas. Since PIC work began about 24 years ago, there has been a net increase of more than 5,000 acres of shellfish beds approved for harvest in Kitsap.

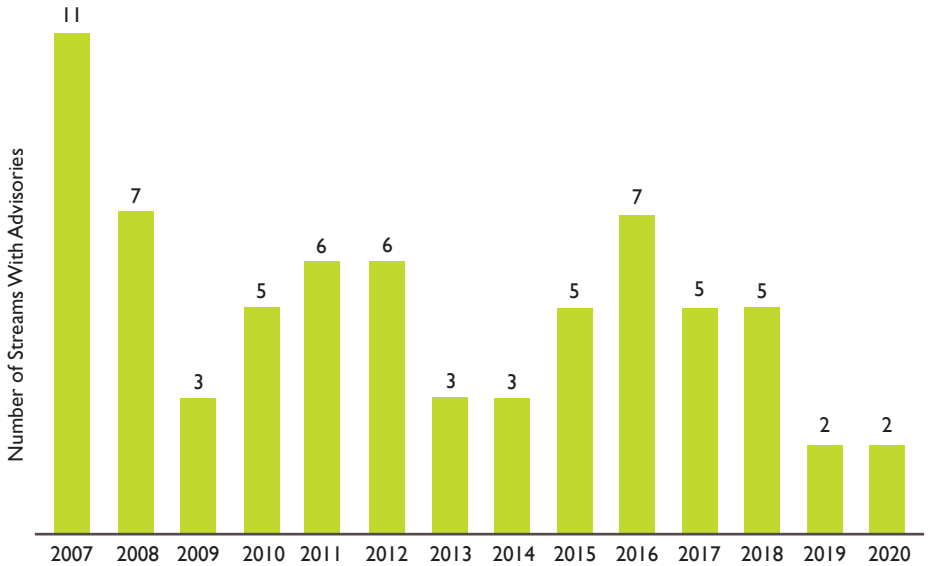
Public Health Stream Advisories

The Health District issues public health advisories for streams that have ongoing problems with high bacteria levels during the summer. Advisories are posted to protect the health of people who might come into contact with stream water — especially children.

The Health District issues an advisory when fecal coliform (FC) bacteria in water samples collected over a three-year period exceeds a geometric mean value (GMV) of 270 FC per 100 milliliters. (See page 4 for an explanation of how FC bacteria are quantified.)

The number of public health advisories issued for streams in Kitsap has decreased dramatically since 2007.

Public health stream advisories issued by year



2020 Public Health Stream Advisories

Based on sampling results from 2017-2019, public health advisories remain in effect for two streams:

- **Lofall Creek** *(653 gmv)*
- **Ostrich Bay Creek** *(298 gmv)*

2019 Water Quality Monitoring Results

Explaining the state water quality standard

The Washington State Department of Ecology establishes standards for surface water quality. The freshwater standard is applied to "primary contact" water bodies, where people are likely to become submerged in water or ingest water through recreational activites such as wading and swimming.

The state standard for freshwater is based on the geometric mean value (GMV) of fecal coliform (FC) bacteria identified in 100 milliliter (100 ML) water samples. The geometric mean represents the central tendency of a dataset. Bacterial concentrations can be highly variable, so the geometric mean is useful for assessing trends.

Changes to the state standard

In prior years, some streams were assessed using a more stringent standard for "extraordinary primary contact." In 2019, that requirement was removed. As a result, more streams now meet the state standard.

The Freshwater Standard

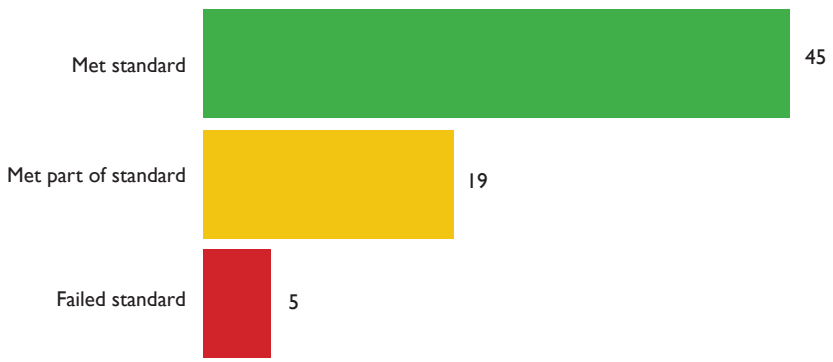
Part 1: Annual GMV <100 FC per 100ML

Part 2: Not more than 10% of all samples collected for calculating geomean > 200 FC/100 ML

This report notes how each stream performed under the state standard based on bacteria levels:

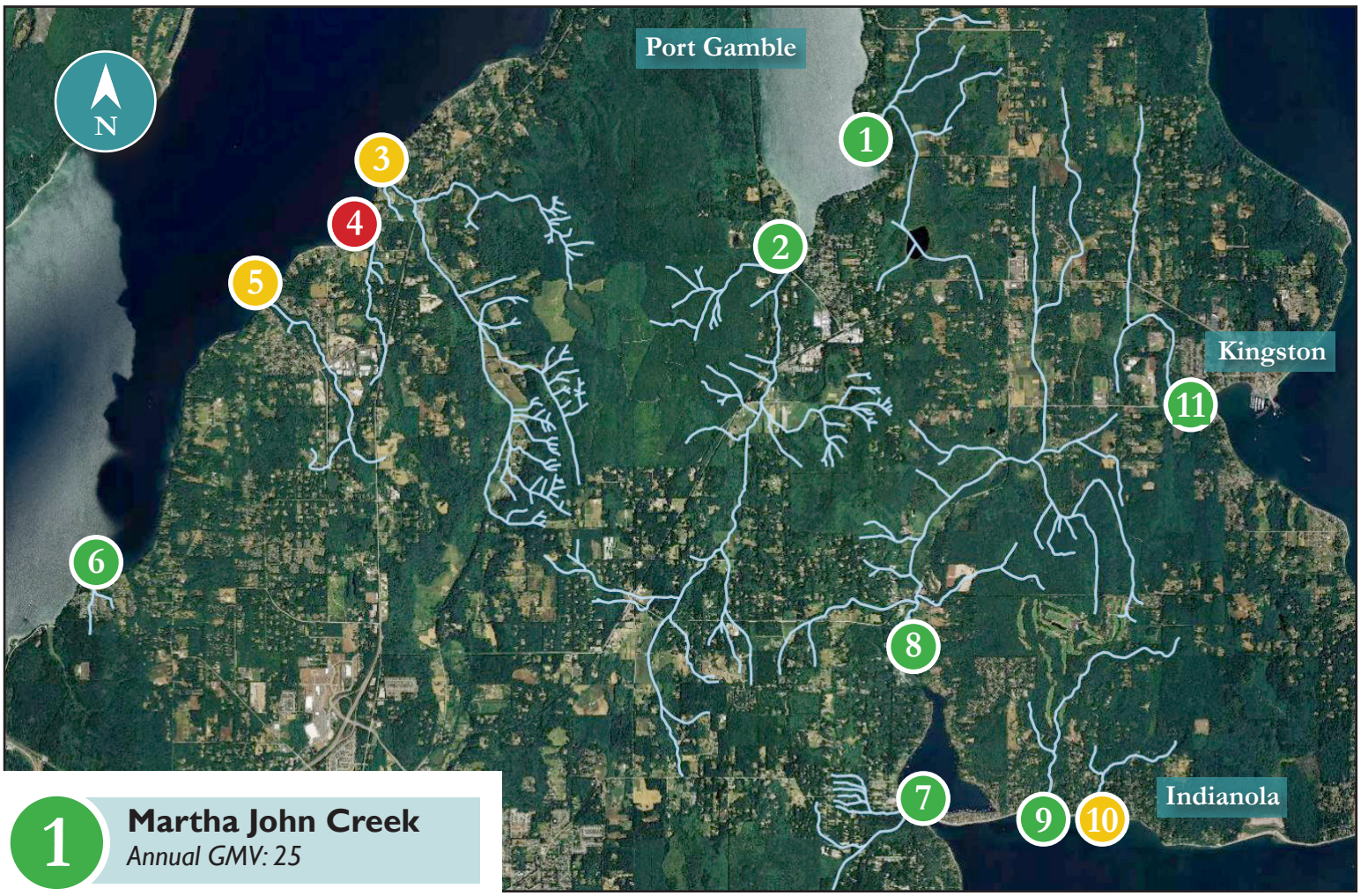
- **Met standard:** The stream had **low bacteria** levels and met both parts of the standard.
- **Met part 1 of standard:** The stream had **periodic high bacteria** levels and failed part 2 of the standard.
- **Failed standard:** The stream had **high bacteria** levels and failed both parts of the standard.

Water quality status for Kitsap streams in 2019



2019 Monitoring Results by Stream

KINGSTON / UPPER HOOD CANAL



Low bacteria Periodic high bacteria High bacteria

1 Martha John Creek
Annual GMV: 25

2 Gamble Creek
Annual GMV: 37

3 Kinman Creek
Annual GMV: 52

4 Lofall Creek
Annual GMV: 563
Health Advisory

5 Jump Off Joe Creek
Annual GMV: 46

6 Vinland Creek
Annual GMV: 35

7 Cowling Creek
Annual GMV: 16

8 Grovers Creek
Annual GMV: 34

9 Kitsap Creek
Annual GMV: 22

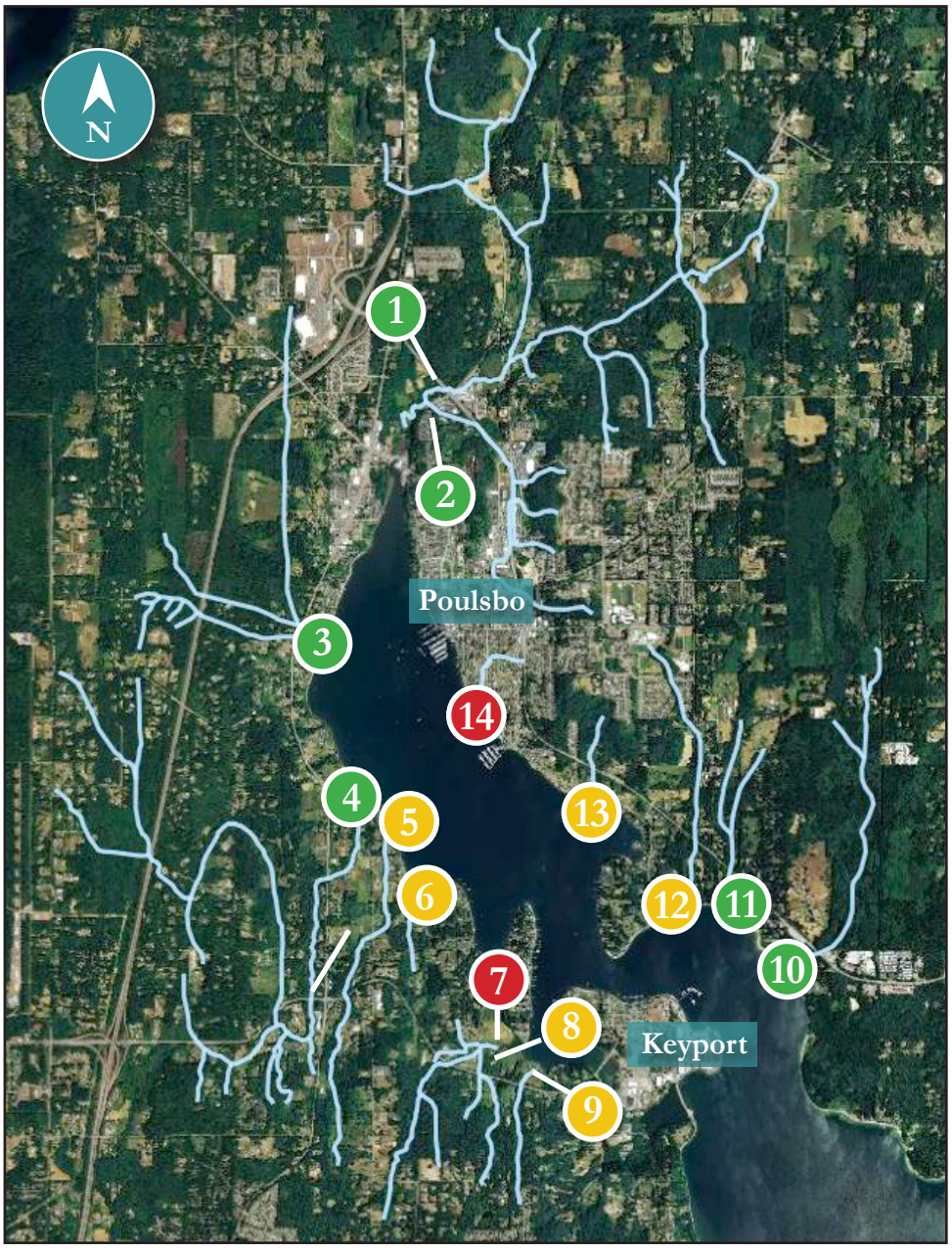
10 Indianola Creek
Annual GMV: 27

11 Carpenter Creek
Annual GMV: 21

Kinman Creek flows into Hood Canal near Lofall.

2019 Monitoring Results by Stream

POULSBO / LIBERTY BAY



Low bacteria Periodic high bacteria High bacteria

Sampling Big Scandia Creek near Keyport, one of 14 streams monitored around Liberty Bay.

1 **Dogfish Creek**
Annual GMV: 35

2 **South Dogfish Creek**
Annual GMV: 17

3 **Johnson Creek**
Annual GMV: 14

4 **Big Scandia Creek**
Annual GMV: 23

5 **Little Scandia Creek**
Annual GMV: 64

6 **Perry Creek**
Annual GMV: 60

7 **Daniels Creek**
Annual GMV: 249

8 **Unnamed Creek 00**
Annual GMV: 63

9 **Unnamed Creek 01**
Annual GMV: 48

10 **Sam Snyder Creek**
Annual GMV: 17

11 **Lemolo Creek**
Annual GMV: 13

12 **Bjorgen Creek**
Annual GMV: 41

13 **Barrantes Creek**
Annual GMV: 26

14 **Poulsbo Creek**
Annual GMV: 141

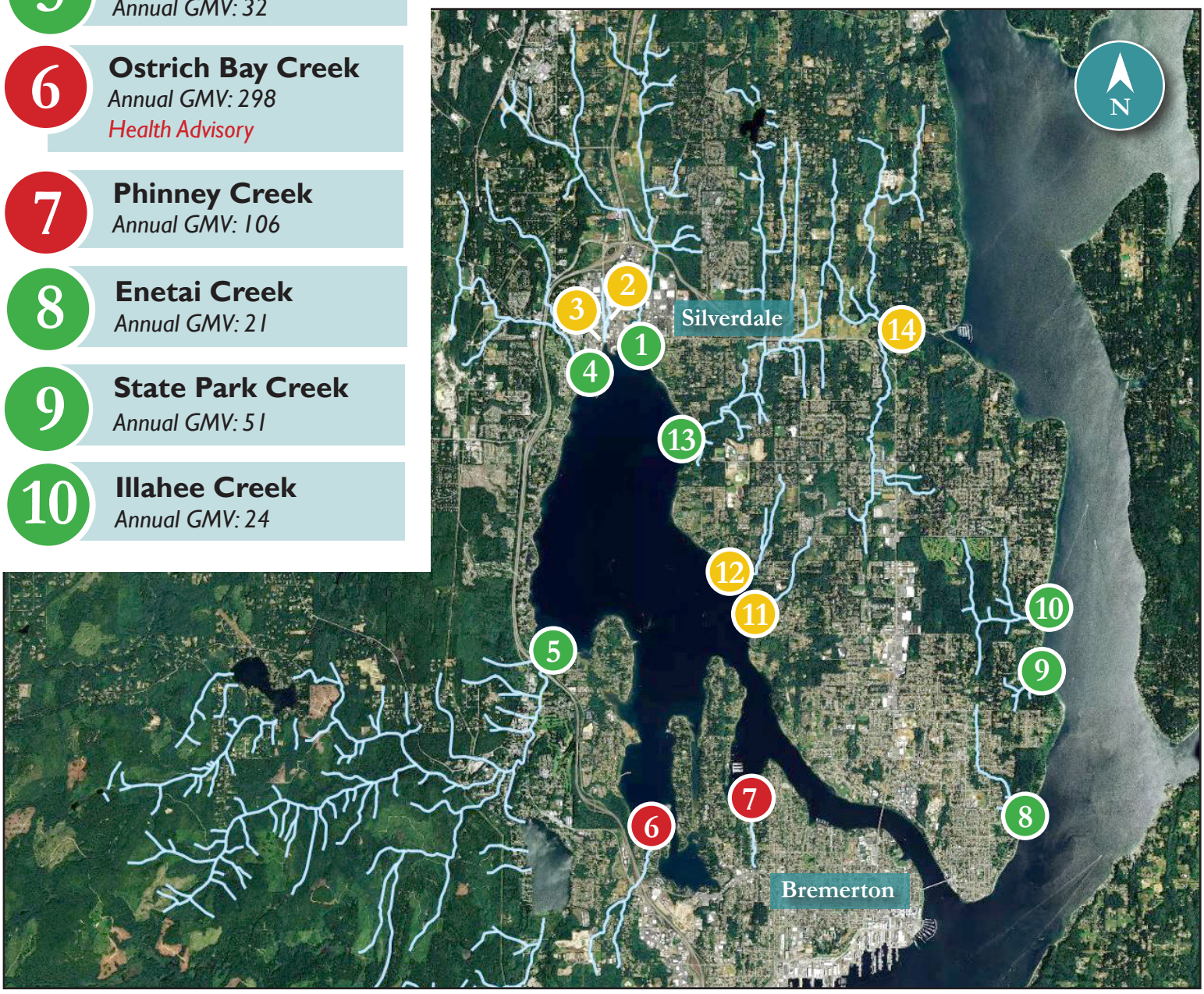
2019 Monitoring Results by Stream

SILVERDALE / BREMERTON

1. **Clear Creek**
   Annual GMV: 27
2. **Kitsap Mall Creek**
   Annual GMV: 31
3. **Kitsap Mall Creek W.**
   Annual GMV: 27
4. **Strawberry Creek**
   Annual GMV: 23
5. **Chico Creek**
   Annual GMV: 32
6. **Ostrich Bay Creek**
   Annual GMV: 298
   Health Advisory
7. **Phinney Creek**
   Annual GMV: 106
8. **Enetai Creek**
   Annual GMV: 21
9. **State Park Creek**
   Annual GMV: 51
10. **Illahee Creek**
    Annual GMV: 24
11. **Mosher Creek**
    Annual GMV: 40
12. **Pahrmann Creek**
    Annual GMV: 29
13. **Barker Creek**
    Annual GMV: 23
14. **Steele Creek**
    Annual GMV: 54

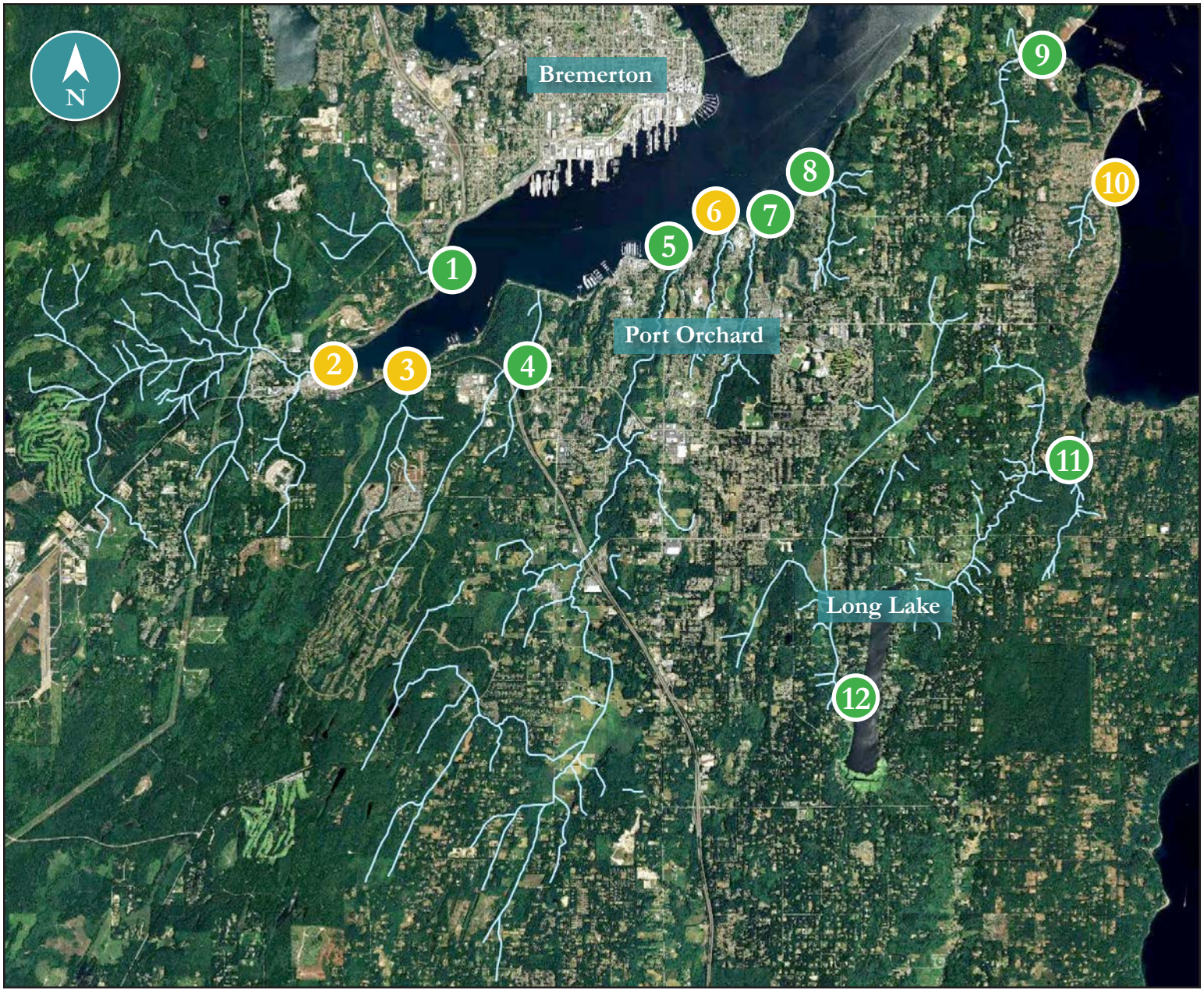
The Chico Creek estuary provides rich habitat.

Low bacteria Periodic high bacteria High bacteria



2019 Monitoring Results by Stream

PORT ORCHARD / SINCLAIR INLET



Low bacteria Periodic high bacteria High bacteria

1 Wright Creek
Annual GMV: 12

2 Gorst Creek
Annual GMV: 50

3 Anderson Creek
Annual GMV: 22

4 Ross Creek
Annual GMV: 27

5 Blackjack Creek
Annual GMV: 39

6 Annapolis Creek
Annual GMV: 78

7 Karcher Creek
Annual GMV: 15

8 Sacco Creek
Annual GMV: 27

9 Beaver Creek
Annual GMV: 26

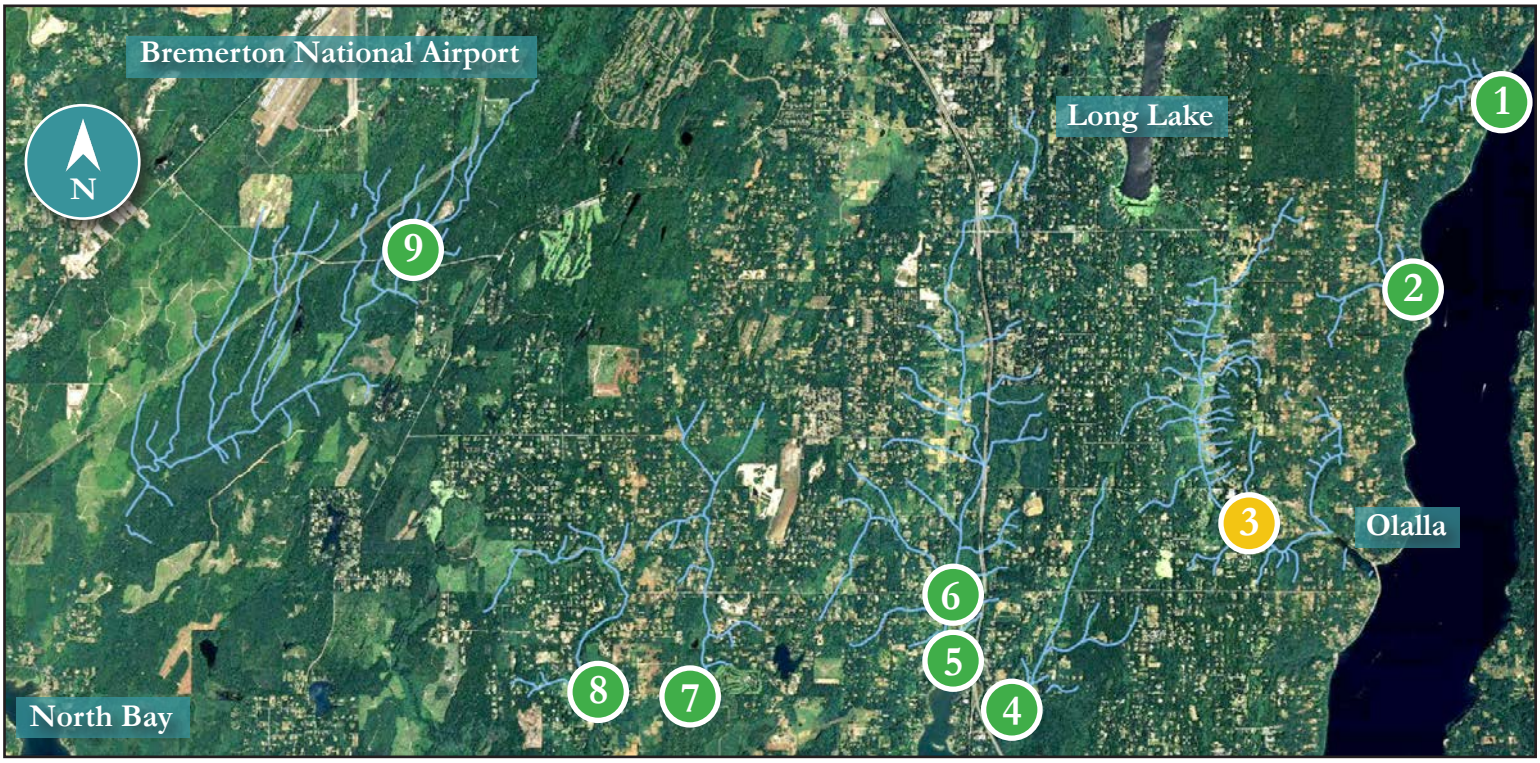
10 Duncan Creek
Annual GMV: 36

11 Curley Creek
Annual GMV: 26

12 Salmonberry Creek
Annual GMV: 17

2019 Monitoring Results by Stream

BURLEY / OLALLA



Low bacteria Periodic high bacteria High bacteria

1 Wilson Creek
Annual GMV: 25

2 Fragaria Creek
Annual GMV: 10

3 Olalla Creek
Annual GMV: 61

4 Purdy Creek
Annual GMV: 13

5 Burley Creek
Annual GMV: 32

6 Bear Creek
Annual GMV: 30

7 Minter Creek
Annual GMV: 17

8 Huge Creek
Annual GMV: 15

9 Coulter Creek
Annual GMV: 8

2019 Monitoring Results by Stream

SEABECK / HOOD CANAL

Low bacteria Periodic high bacteria High bacteria

1 Little Anderson Creek
Annual GMV: 4

2 Big Beef Creek
Annual GMV: 7

3 Seabeck Creek
Annual GMV: 9

4 Stavis Creek
Annual GMV: 6

5 Boyce Creek
Annual GMV: 15

6 Big Anderson Creek
Annual GMV: 6

7 Dewatto River
Annual GMV: 5

8 Tahuya River
Annual GMV: 8

9 Union River
Annual GMV: 56

Explore water quality online using our interactive stream map portal.
Go to KitsapPublicHealth.org

Water Quality in Kitsap Lakes

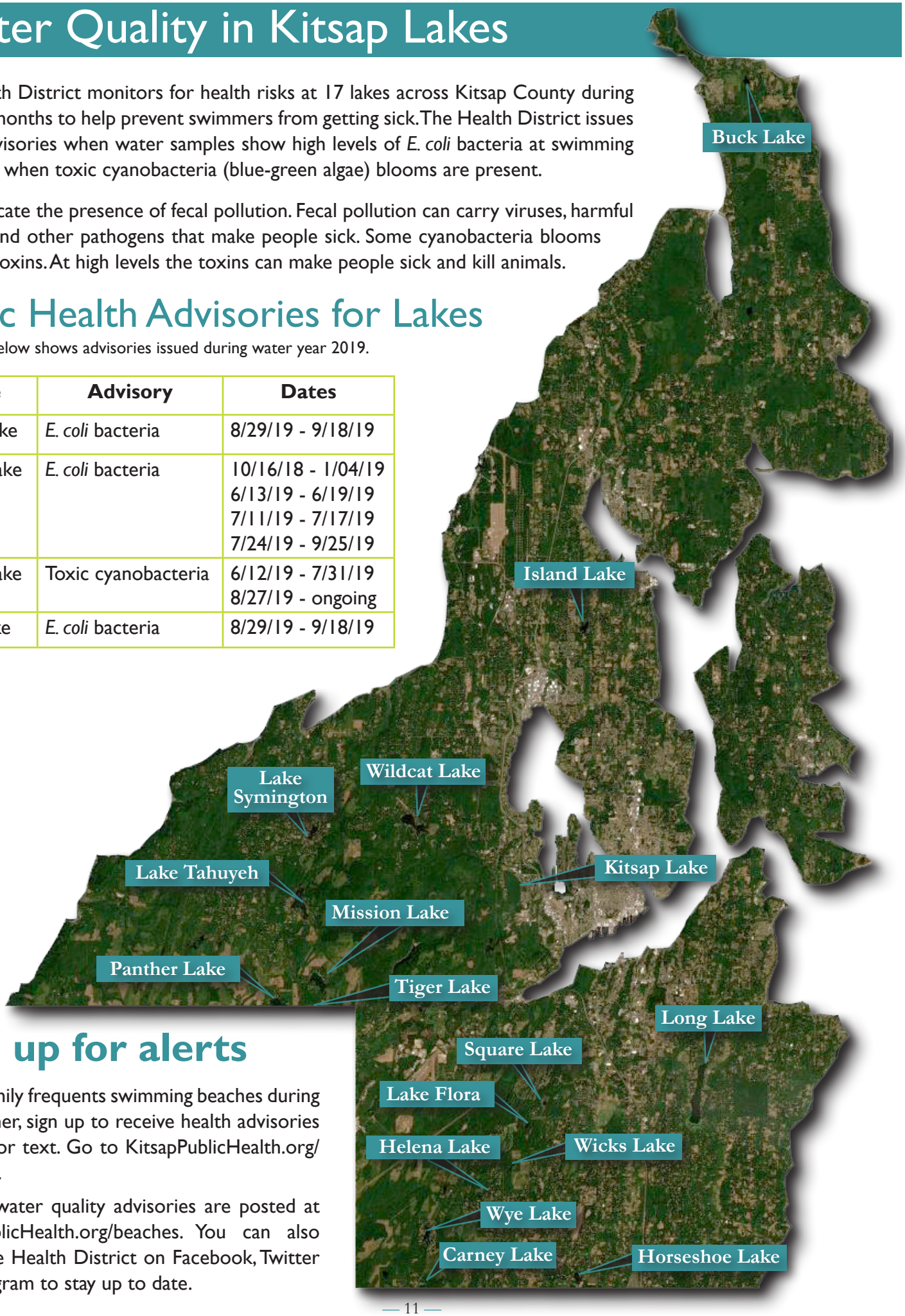
The Health District monitors for health risks at 17 lakes across Kitsap County during summer months to help prevent swimmers from getting sick. The Health District issues health advisories when water samples show high levels of *E. coli* bacteria at swimming areas, and when toxic cyanobacteria (blue-green algae) blooms are present.

E. coli indicate the presence of fecal pollution. Fecal pollution can carry viruses, harmful bacteria and other pathogens that make people sick. Some cyanobacteria blooms produce toxins. At high levels the toxins can make people sick and kill animals.

Public Health Advisories for Lakes

The table below shows advisories issued during water year 2019.

Lake	Advisory	Dates
Island Lake	*E. coli* bacteria	8/29/19 - 9/18/19
Kitsap Lake	*E. coli* bacteria	10/16/18 - 1/04/19 6/13/19 - 6/19/19 7/11/19 - 7/17/19 7/24/19 - 9/25/19
Kitsap Lake	Toxic cyanobacteria	6/12/19 - 7/31/19 8/27/19 - ongoing
Long Lake	*E. coli* bacteria	8/29/19 - 9/18/19



Sign up for alerts

If your family frequents swimming beaches during the summer, sign up to receive health advisories by email or text. Go to KitsapPublicHealth.org/subscribe.

Current water quality advisories are posted at KitsapPublicHealth.org/beaches. You can also follow the Health District on Facebook, Twitter and Instagram to stay up to date.

Common Sources of Fecal Pollution

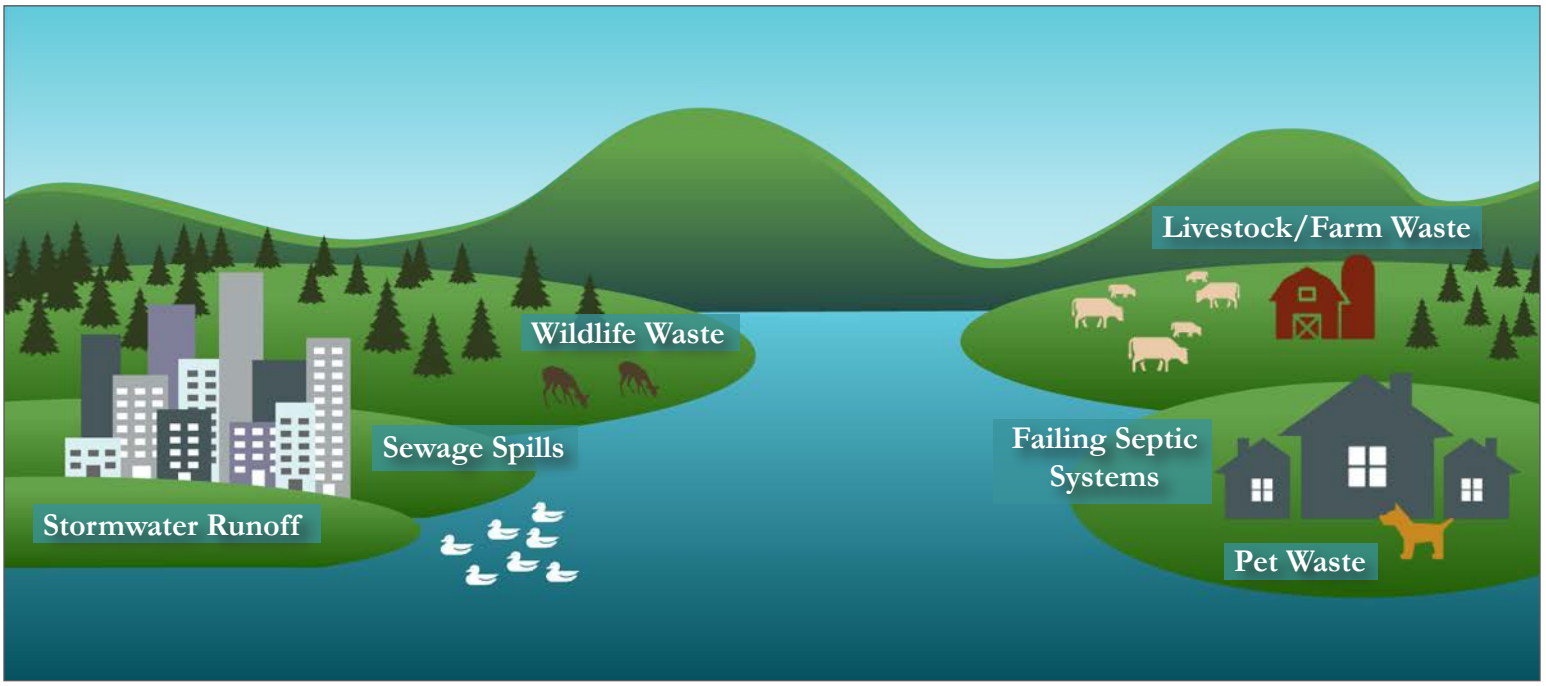


Illustration by Angie Berger

There are many sources of fecal pollution in surface water. Some sources, such as waste from wildlife, are difficult to prevent. Other sources, including sewage leaks and pet waste, can be prevented by people and organizations.

Simple steps to prevent water pollution

If your home has a septic system, be sure it's properly maintained.

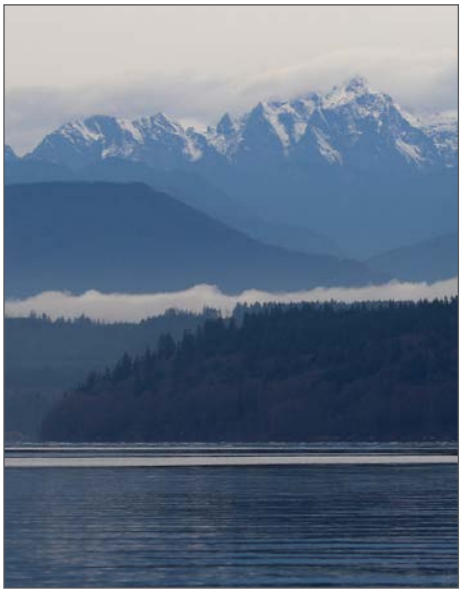
Properly dispose of medications. Go to MED-Project.org to find free disposal sites.

Manage waste from your farm, garden or livestock.

Pick up after your pets at home and in public.

Use natural lawn care products.

Find more great ideas at CleanWaterKitsap.org.



Clean Water Kitsap
Partners in Stormwater Solutions

The Kitsap Public Health District's water quality work is made possible by Clean Water Kitsap, a multi-agency partnership that receives funding from county stormwater fees.

Clean Water Kitsap protects people, property and natural resources by reducing flooding and stormwater runoff, and preventing stormwater pollution. Learn more at CleanWaterKitsap.org.

KITSAP PUBLIC HEALTH DISTRICT

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