



Water Quality Monitoring with Citizen Scientists since 1999

PIC Open House 2022

Joel Green, Streamkeepers Coordinator



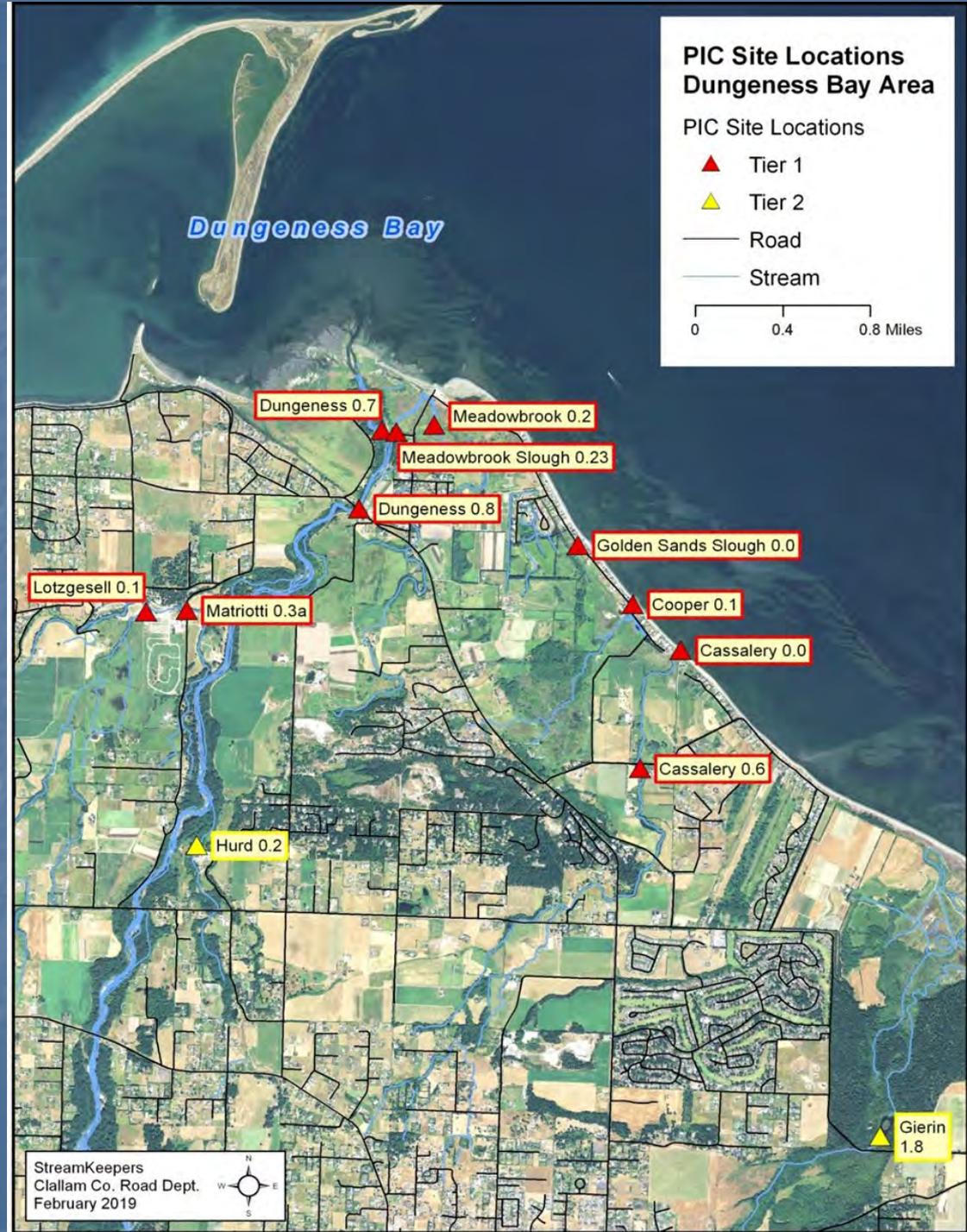
Streamkeepers Current Projects

- **Quarterly Monitoring in 10 area creeks**
- **Dungeness Off-Channel Reservoir Project**
- **Lower Dungeness Flood Plain Restoration Project**
- **Monthly monitoring of Port Angeles creeks**
- **Pollution Investigation and Correction (PIC) Project**

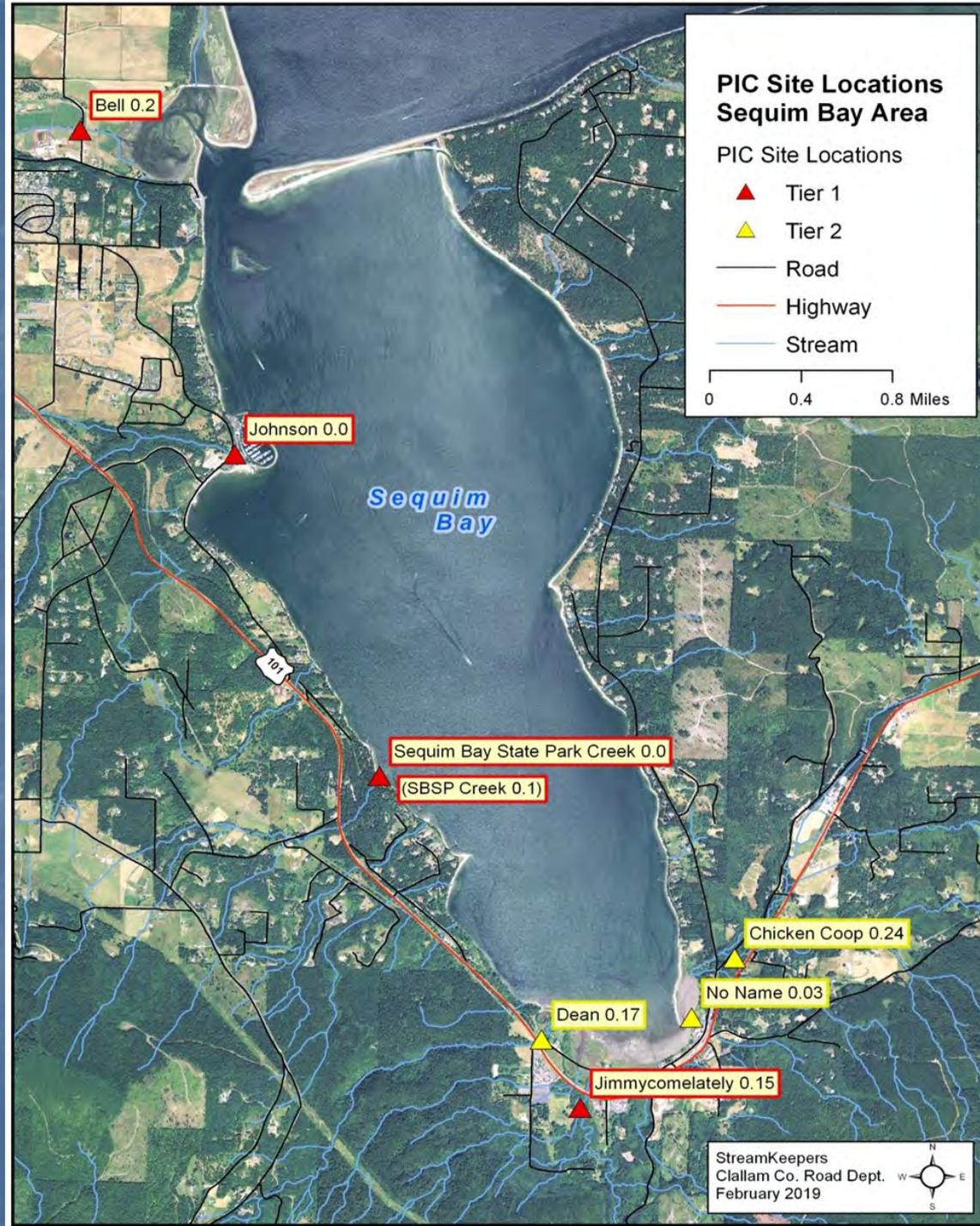
Pollution Investigation and Correction (PIC)

- Collaborative project
 - Streamkeepers volunteers do trends monitoring
 - Clallam County Environmental Health & Jamestown S'Klallam Tribe staff do segmented monitoring
 - Clallam County Environmental Health and Clallam Conservation District do landowner outreach and assistance
 - When necessary, Clallam County does enforcement

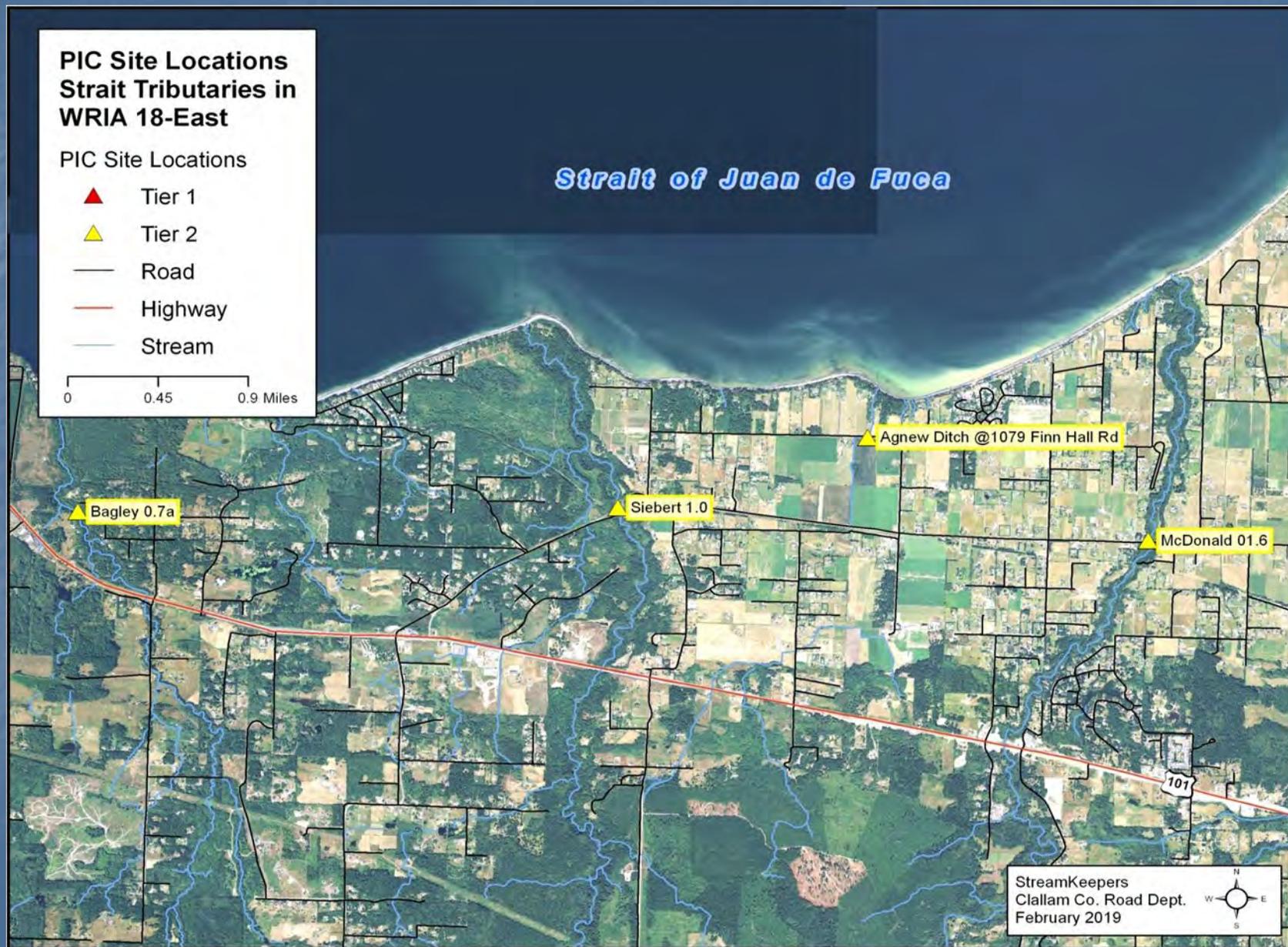
PIC Trends Monitoring Locations in the Dungeness Bay Area



PIC Trends Monitoring Locations in the Sequim Bay Area



PIC Trends Monitoring Sites West of Dungeness Bay





PIC Team members Peggy McClure and Linda Sumner sampling Matriotti Creek



PIC Team member Sarah Miller using the multiparameter meter to measure water quality in Lotzgesel Creek



PIC Team member Linda Sumner filters a sample for nutrient analysis

Pollution Investigation and Correction (PIC)

Sequim-Dungeness Clean Water District Pollution Identification & Correction Plan Trends Monitoring Program 2020-2021 Report

Prepared by:

**Clallam County Health & Human Services, Environmental Health Section
and Clallam County Department of Community Development, Streamkeepers
Program**

November 2022



Pollution Investigation and Correction (PIC)

Site	Tier	2015		2016		2017		2018		2019		2020		2021	
		Geo Mean > 50	Geo Mean > 100	Geo Mean > 50	Geo Mean > 100	Geo Mean > 50	Geo Mean > 100	Geo Mean > 50	Geo Mean > 100	Geo Mean > 50	Geo Mean > 100	Geo Mean > 50	Geo Mean > 100	Geo Mean > 50	Geo Mean > 100
Agnew	2			X						X		X	X		
Bagley	2														
Bell	1											X	X	X	X
Cassalery	1									X		X			
Chicken Coop	2													X	
Cooper	2														
Dean	2														
Dungeness	1														
Gierin	2													X	
Golden Sands	1	X		X						X					
Hurd	2														
Jimmycomelately	1														
Johnson	1														
Lotzgesell	1									X		X		X	
Matriotti	1	X		X		X		X		X	X	X	X	X	X
McDonald	2											X		X	
Meadowbrook	1											X		X	
Meadowbr. Slough	1							X	X	X	X	X	X		
No Name	2														
Sequim Bay SP Cr	1														
Siebert	2														

Trends in bacterial pollution in monitored streams, 2015-2021.

Get Involved!



We welcome your participation

- www.clallam.net/SK
- (360) 417-2281
- Streamkeepers Coordinator Joel Green's cell #:
 - (360) 325-3979
- streamkeepers@clallamcountywa.gov

SEPTIC SYSTEMS IN DUNGGENESS WATERSHED



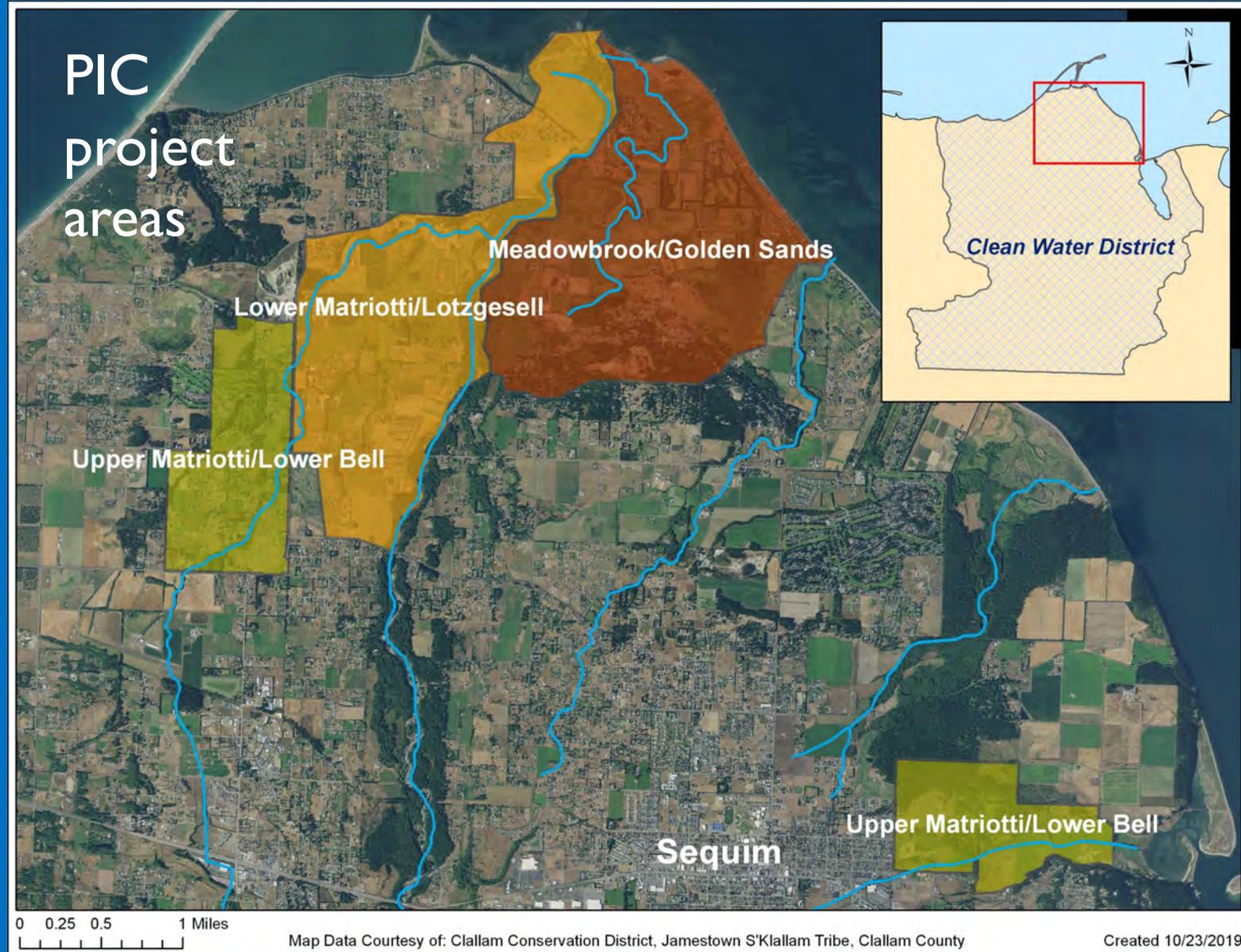
Clallam County Environmental Health (EH) Onsite Program

Started Septic System Operation and Maintenance (O&M)
Program in 2000

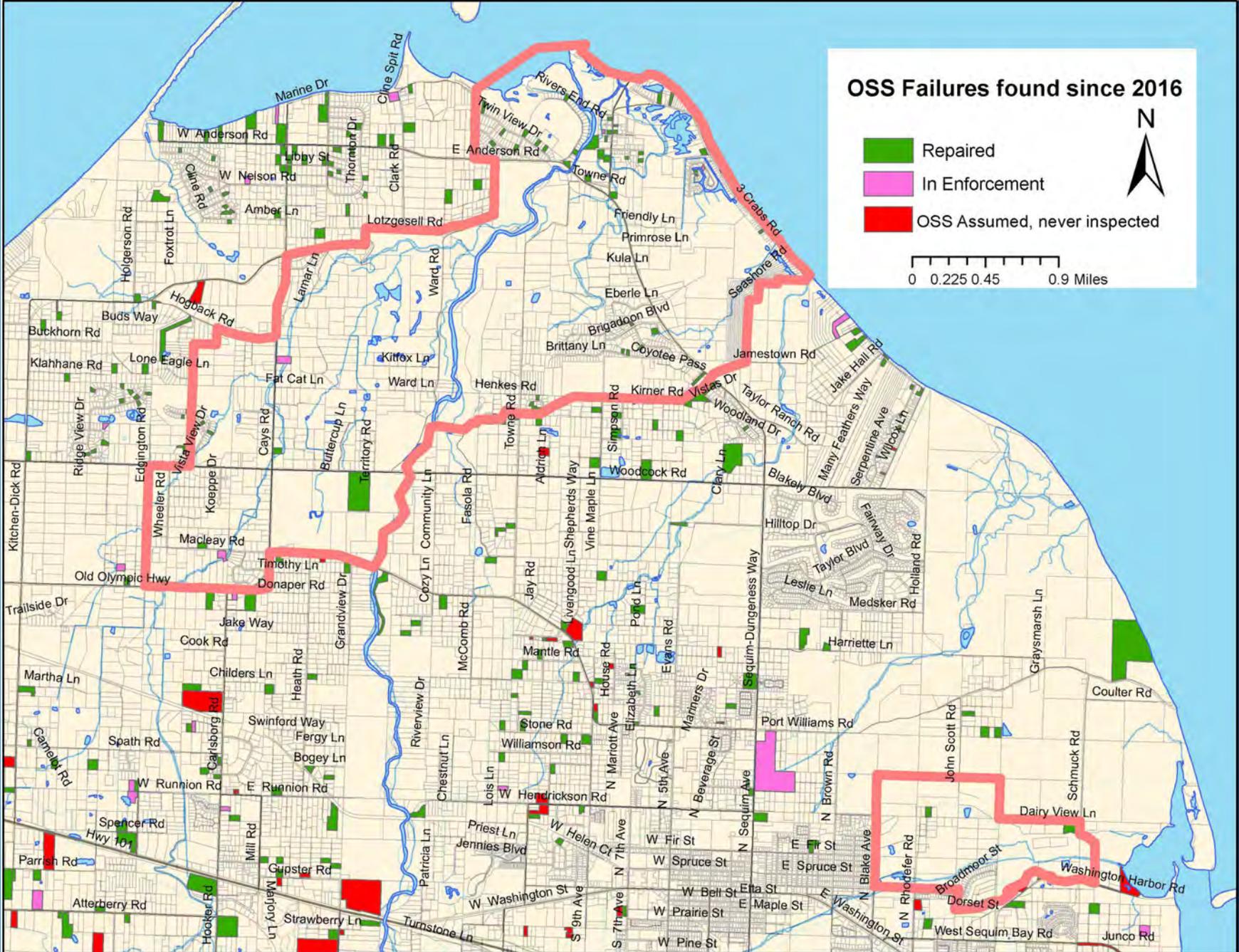


Developed training programs for Septic system
owners beginning in 2001

Began work with Partners in Clean Water District to begin addressing septic system failures contributing to Sequim Dungeness Shellfish Downgrades in 2004



EH has helped identify Septic system failures in the Dungeness Watershed and assisted property owners with repairs



In 2013 EH did a feasibility study of options for wastewater treatment in the lower Dungeness Watershed



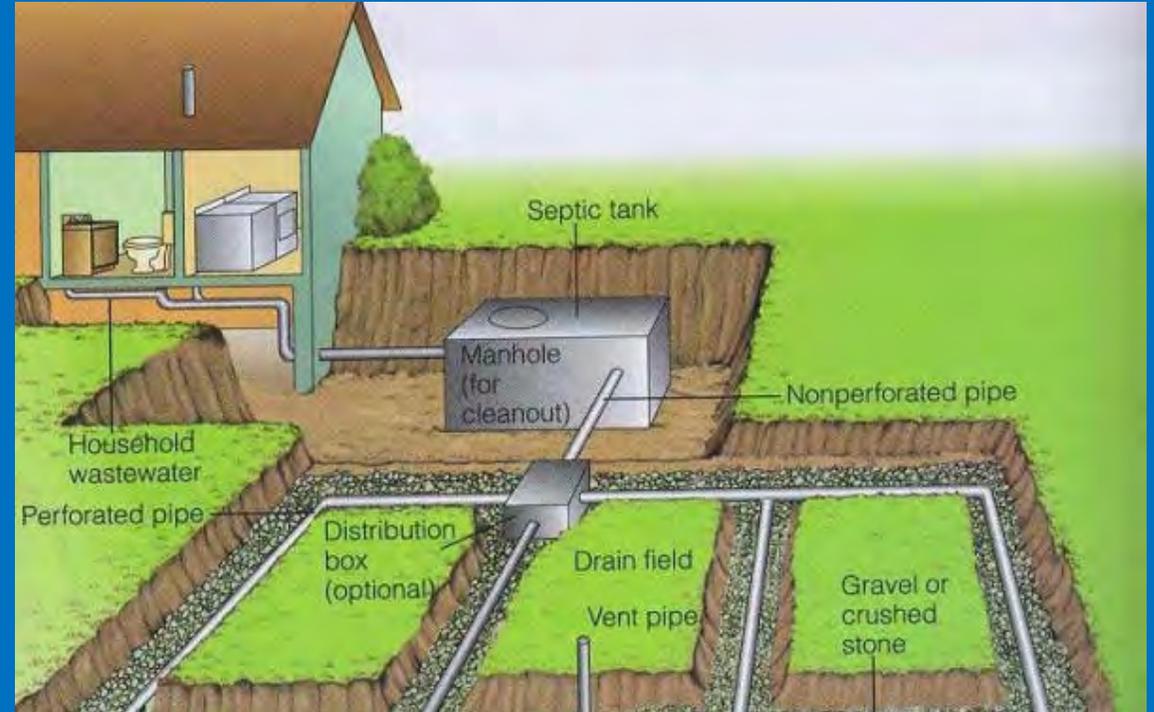
Options included:

➤ Design and installation of a community septic system

➤ Connection to the city sewer via Sequim Dungeness Way

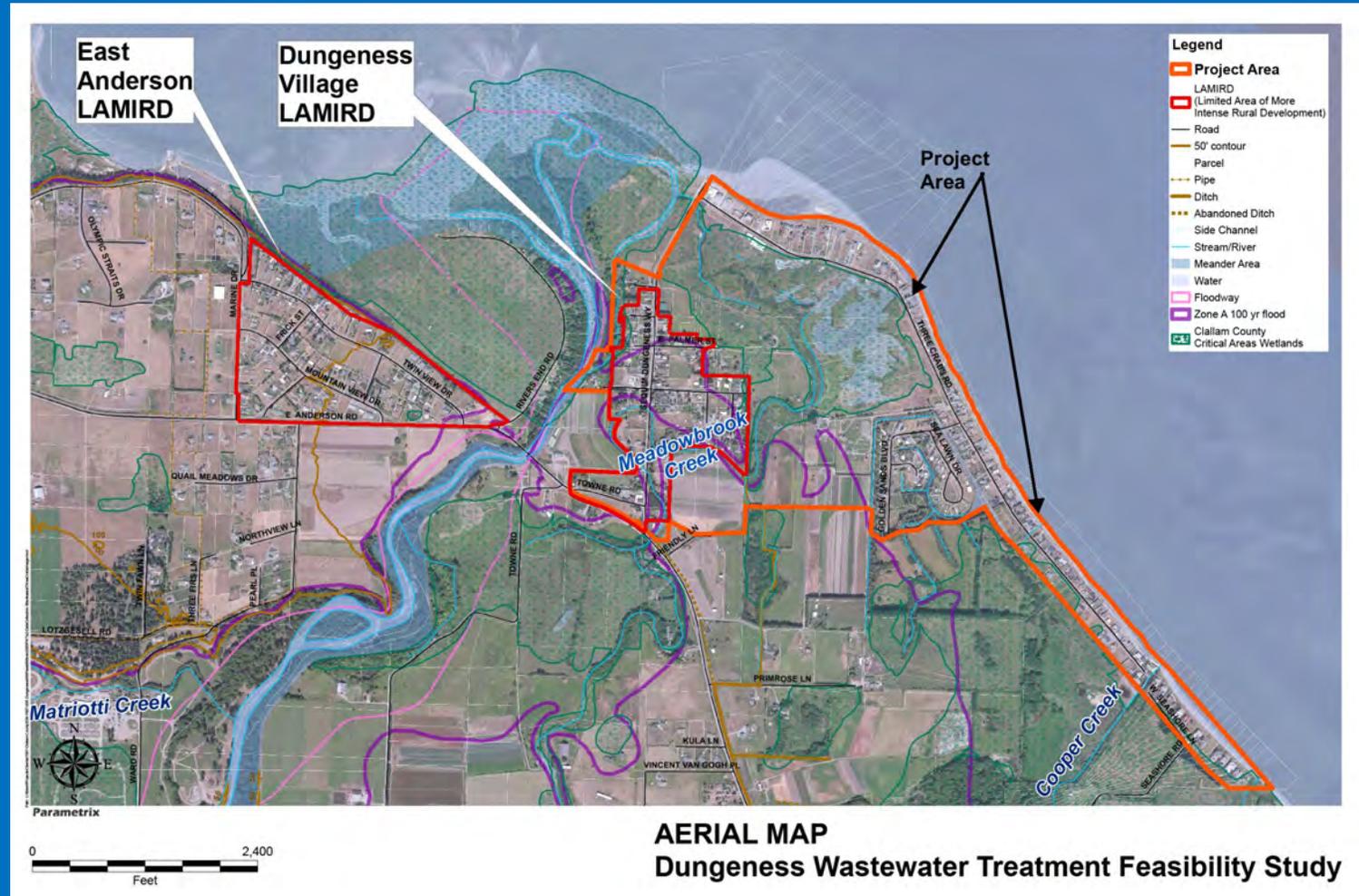
Or

➤ Enforce Clallam County codes requiring septic system inspections



The local community participated in meetings

Property owners chose option 3-
Clallam County
Environmental Health
should enforce
current onsite
regulations



Onsite Septic (OSS) Regulations

2007 State Code

WAC 246-272A-0270



- Requires that homeowners properly maintain and inspect their OSS.
 - Gravity OSS must be inspected at least once every 3 years.
 - Alternative systems (i.e., those with pumps) must be inspected every year.

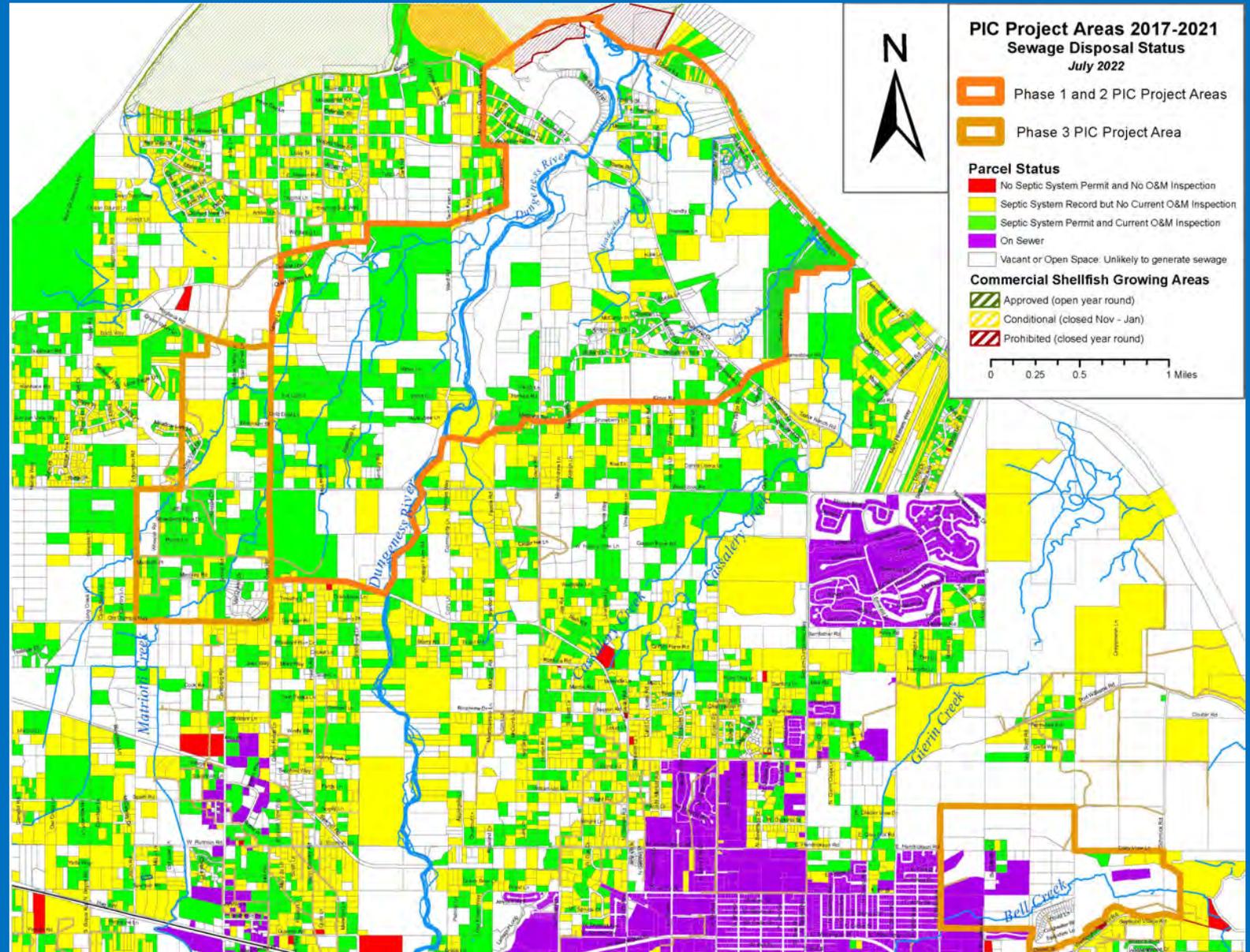
Inspection requirements took effect July 1, 2007.

Red to Green inspection map July 2022

Red=no permit or unknown septic system

Yellow=known system, reports not current

Green=known system, reports current



The case for inspections and maintenance



Septic system maintenance (and inspections) saves money, protects public health and can prevent costly repairs in the future.

Regular inspections can catch minor problems before it can cause a failure and become a serious health hazard

When you realize your dog wasn't playing in mud this whole time



What do you mean, "septic tank"?



An inspection can identify hazardous conditions before someone gets hurt



ONLY ON 11ALIVE

3-YEAR-OLD BOY FALLS INTO MANHOLE

87°



6:00

MURDER ARREST

PIPELINE FIX SOON

GWINNETT HOME INVASION

Septic owners who regularly inspect their septic systems can make sure the lids are intact and secure, protecting their children and their property.



Catch major issues before your system fails

Tanks too full due to lack of pumping

Degraded tanks



Minor corrections can prevent failure

Like fixing leaky risers or leaking fixtures....



Before the drainfield gets flooded



Find issues with too many chemicals or
dead tanks before damage is done to the
drainfield

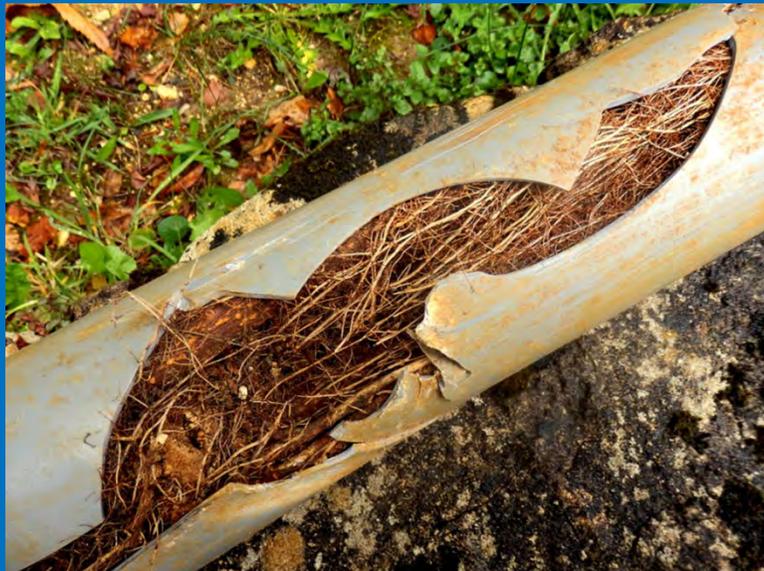
Finding and replacing tipped or corroded distribution boxes



Remove roots before it's too late



Trees heart sewage



Cost comparisons Inspection vs Pumping

Save money with an inspection
BEFORE pumping



- Average inspection costs= varies from \$150-\$250



- Pumping costs=45 cents per gallon-1000 gallons pumped is \$450

Cost comparisons Maintenance vs Inspection

Maintenance is Cheaper than Failure

- Inspections over 10 years
- 10 inspections @ \$250: \$2,500 * *



- *Doesn't include repairs, pumping, or installation of risers, which may or may not be required
- *If pumping every 5 years then add in another \$1000 in overall cost

Repair costs after 10 years of no
maintenance
\$15,000 to \$40,000



Be pro-active in taking care of your septic system

Have your septic system inspected

Watch the Septic 101 and 201 videos or attend a free in person class (returning in 2023)



Onsite Septic System Repair Financial Assistance

- **Program began in 2014**
- **Funded by Washington State
Conservation Commission
Shellfish funding**
- **19 projects completed to date**
- **2 projects currently in progress**



Program Details

Program Reimburses:

- 100% of design costs
- 100% of permit costs
- Up to 75% of installation costs
 - Craft3, Rural Development can also help
 - Policy allows for up to 50% for non-shellfish water quality impacts (e.g., groundwater)



Program Eligibility

- Live in PIC project area.
- Must be owner-occupied (rental properties are not eligible).
- Failing OSS must impact water quality and shellfish harvest
- Referred to CCD by Clallam County Environmental Health



OSS COST-SHARE STEPS

1. Homeowner referred to CCD by CCEH.
2. Homeowner submits cost-share application.
3. CCD applies for funding from WSCC.
4. CCD board approves/rejects application (applicant encouraged to attend board meeting).
5. Homeowner hires a licensed designer.
6. Homeowner obtains 3 bids from licensed installers.
7. Funding award based low bid, however homeowner can hire whichever contractor they choose.
8. System is installed/repaired, homeowner reimbursed (typically 75%) upon CCEH approval.
9. Homeowner reimbursed for design and permit costs.
10. O&M plan required for each system.



Streamside Landowners

- Free technical assistance & site visit
- Conservation Reserve Enhancement Program (CREP)
- Buffers for Salmon (new program)



What is a Riparian Buffer?

Riparian buffers are vegetated zones adjacent to streams and wetlands



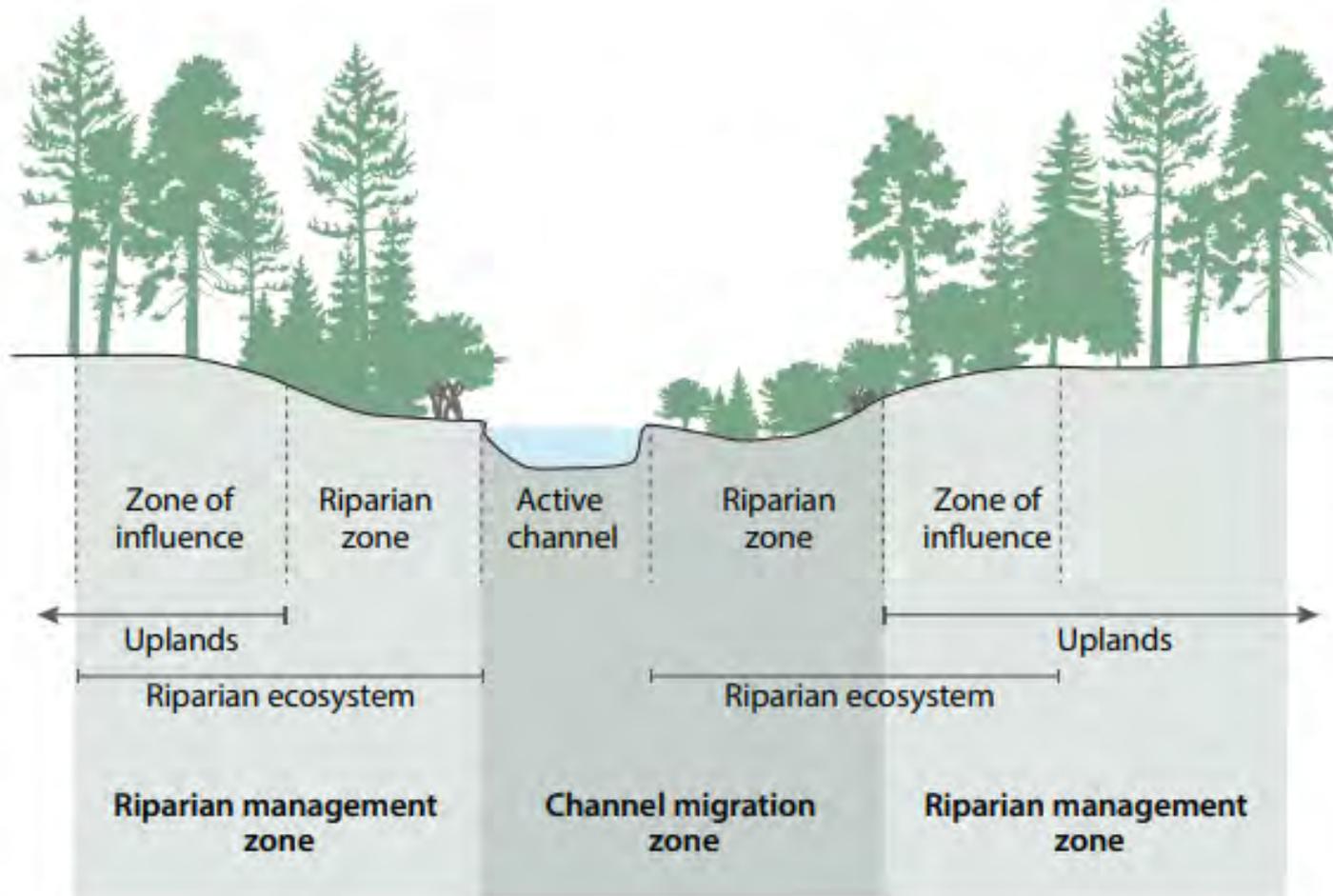
Forested
Buffer



Farmland



Riparian Zone



Benefits of Riparian Buffers

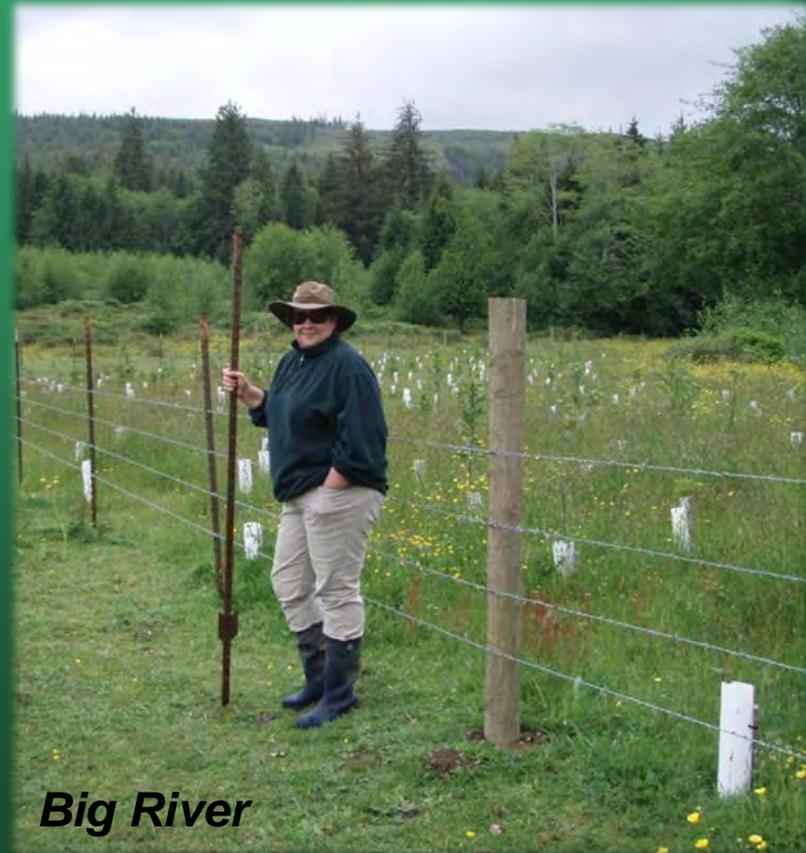
- **Vegetation can stabilize the bank and reduce the risk of erosion**
- **Can reduce impact of flooding**
- **Attract pollinator species**
- **Riparian buffers can filter for sediment and pollution**
- **Shade can cool down stream**
- **Fallen trees provide habitat for fish and macroinvertebrates**





RIPARIAN FOREST BUFFERS

- “CREP-eligible” streams
 - Stream where riparian habitat is a significant limiting factor for salmon and steelhead.
- 50 to 180 feet wide
 - 70% of buffer length over 50 ft, 30% narrower than 50ft
- Typically 500 stems per acre



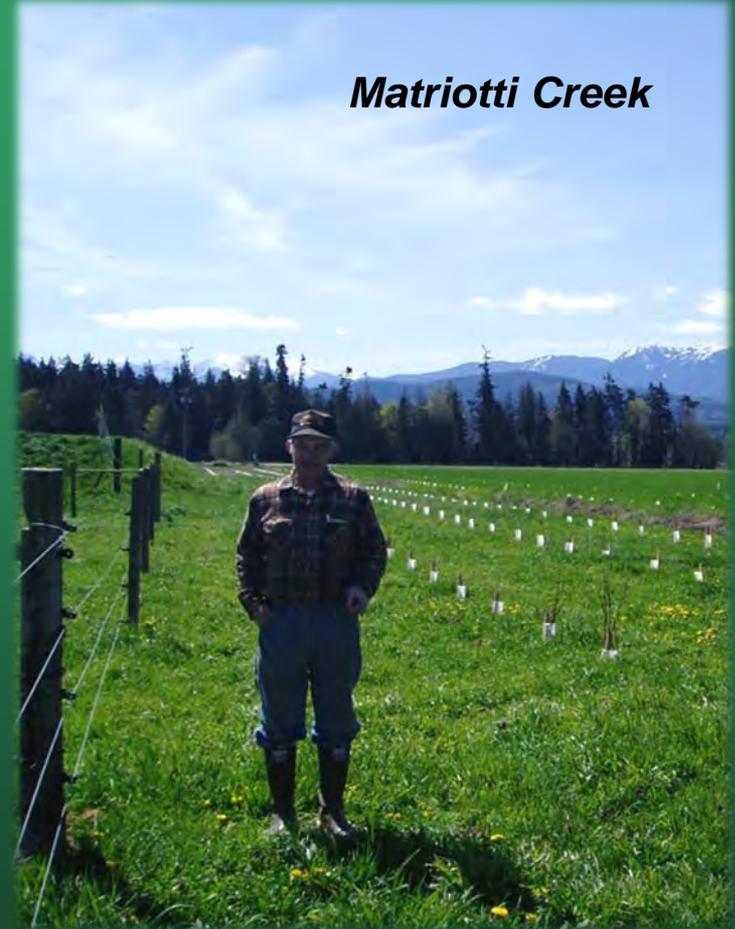
Big River





HEDGEROWS

- Waterways less than 15 feet in width
 - Must be within 10 miles of CREP-eligible stream
- 15-35 foot buffer in width
- Maximum stocking rate of 1,162 stems/acre



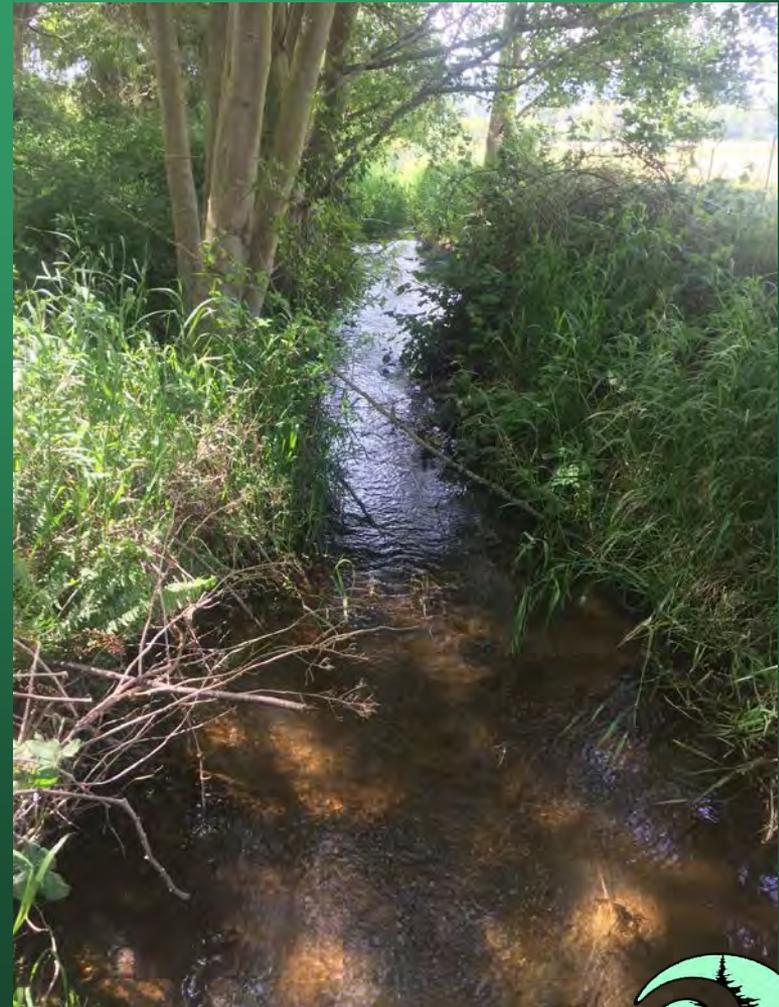
Matriotti Creek





CREP ELIGIBILITY

- Land must either be, or have been:
 - Cropland
 - Pastureland
- Less than 30% conifer cover in proposed buffer



CREP ELIGIBILITY

- A minimum of 1 acre of buffer is required for enrollment, no maximum
- Land must have been owned for 12 months
- Lands with conservation easements are eligible if the easement allows for agriculture



Cassalery Creek



CREP ENROLLMENT

- **Contact the Conservation District**
 - Planner will determine eligibility
- **FSA contract paperwork**
- **Riparian buffer planting plan development**
- **Site preparation and planting**



CREP TIMELINE

- **Planning and paperwork – 6 to 12 months**
- **Site preparation and planting – 1 to 6 months**
- **Maintenance – for 5 years after planting**
- **Annual rental payments – Receive for 10 to 15 years**



New Program: Buffers for Salmon

- Program to focus on restoration of areas critical to salmon habitat
- This program helps private landowners to install riparian buffers along streams/rivers

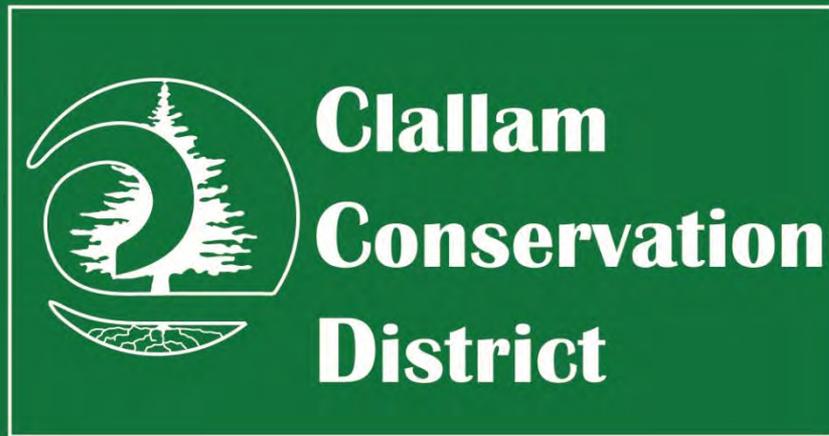


Buffers for Salmon Benefits

- We provide the planning and technical assistance
- Will cover all the cost of buffer installment
 - Initial weed treatment
 - Purchasing of plants
 - Planting
 - Riparian fencing (if needed)
- Short-term installments, no long contracts and no minimum acre requirement



Thank You!



Visit us on the web at www.clallamcd.org

Contact Emails

Jennifer Bond: jennifer.bond@clallamcd.org

Kevin Merrigan: kevin.merrigan@clallamcd.org