Perspectives on the Clean Samish Initiative

A Cooperative Effort to Recover a Watershed

Bill Dewey – Taylor Shellfish Farms
DOE Ag Water Quality Committee
10-24-14
The Samish Watershed
Samish Bay Shellfish Value

• $1.2 million annual payroll
• 50+ full time equivalents directly employed by shellfish farms
• $3 million annual sales oysters and clams
• Retail stores, supplier to local restaurants, part of local heritage
• Tourism, festivals, (Samish Bay Shellfishestival, Oyster Run motor cycle rally)
My farm at low tide
(it is under 8-10 feet of water at high tide)
“tweed” pattern Manila clams
Clamdango!
Harvester and gear on scow
Clam seed
Dabob Bay, WA hatchery

- Larvae culture
- Algae culture (food)
- Oyster larvae
Planting clam seed
Sea lettuce growing on predator exclusion netting
Freshly swept nets
Mechanical clam (tulip bulb/potato) harvester
Night tide harvest
Ellen T bringing in the harvest
Clustered oyster bottom culture

Cultch bags

Oyster larvae

[Images of oyster larvae and cultch bags]
Clustered oyster bottom culture
Samish Bay oyster longlines
Shigoku oyster culture
Oyster harvesting
Hand digging Manila clams
Marine fecal coliform standard = 14 MPN/100 ML

Shellfish public health regulations
Shellfish growing water classifications

- **Approved** – no harvest restrictions
- **Conditionally approved** – rain = temporary closures
- **Restricted** – no harvest for market. Shellfish must be moved to clean bay for set period of time before harvesting for marketing (relay)
- **Prohibited** – no harvest for market. Only seed production allowed
Samish Bay classifications
The April 2008 “event”
The Clean Samish Initiative

• Multi-Agency effort to address fecal coliform pollution in Samish Basin
• Established by Washington State Department of Ecology in 2009
• 20+ Partner organizations
  – Local, state, federal government agencies
  – Tribes
  – Agriculture groups
  – Shellfish growers
#.@%*!!
"EVERYBODY?! REALLY...?! THEN HOW COME THE FISH WERE NOT EVEN MENTIONED...??"
Officials tour Samish watershed, note progress and next steps

By KIMBERLY CAUVEL
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EDISON — Skagit County’s rich soils, expansive pastures and marine shorelines support a variety of agricultural industries, from dairies, beef and shellfish to berries, poutine and corn.

In the Samish Watershed, shellfish harvest in the bay hinges on clean water in the river, which has been contaminated for years by upstream livestock manure and sewage from failing septic systems, particularly during heavy rain.

Although a soggy spring resulted in high levels of fecal coliform in Samish Bay this year, county officials and community members say that does not indicate failure on behalf of the Clean Samish Initiative.

On the contrary, Taylor Shellfish Farms spokesman Bill Dewey said he is pleased with the initiative’s progress.

“It’s been pretty exciting, frankly, that the Clean Samish Initiative is a success story,” he said.

Representatives from county, state and federal agencies involved with the multiagency initiative toured the watershed Wednesday and learned about the initiative’s progress.

One of the stops was at Jim Neff’s beef farm, where he installed one of the first riparian buffer projects in the watershed in 2005. Skagit Conservation District Director Carolyn Kelly said.

With 8,490 feet of fencing and 8,500 trees, Neff transformed 17 acres of stream-side land on his property.

Since the Clean Samish Initiative

See SAMISH Page A6

The background

Skagit County has faced fecal coliform issues since the 1980s, and focused heavily on septic system maintenance and repairs in the 1990s, county water quality specialist Rick Haley said.

But a spike in pollution in 2004 resulted in the state changing shellfish harvest rules for Samish Bay.

According to the state Department of Health, fecal coliform loading levels of more than 4 trillion bacterial colonies per day can make people sick with water contact or shellfish consumption.

Fecal coliform loading in Samish Bay jumped to more than 170 times the standard following a storm in 2008.

The record high marked a turning point for the watershed, and the Clean Samish Initiative was formed in 2009. The multiagency initiative includes 20 partners at the local, state, federal, tribal and nongovernmental levels.

Skagit County is the lead agency, but partners like the Skagit Conservation District; state Departments of Ecology and Health; U.S. Environmental Protection Agency; Samish Indian Nation, and others provide support.
Fecal Coliform

- Intestinal bacteria from warm-blooded animals
- Serve as indicators of possible disease-causing organisms found in feces – bacteria, viruses, protozoa
- State WQ standards designed to protect contact recreation and downstream resources - Shellfish
Fecal coliform sources
Fecal coliform sources
Samish Bay Fecal Coliform Issues

• Ongoing problem for decades
• Septic system fixes in 1990s led to improved conditions
• Rain event in April, 2008 led to shellfish bed closure due to high FC
• Continued storm sampling revealed true scope of the problem
• Freshwaters don’t meet state WQ standards; Shellfish bed closures
Pollution Identification and Correction Program (PIC)

- Common-sense approach to locate pollution sources
- Use water quality data to locate areas with consistent pollution increases
- Work with landowners in area to find and fix problems
- Designed to be cooperative
- Uses many agencies with different expertise
Local Agency Roles

• Skagit County
  – Project Lead
  – Pollution Identification and Correction Program (PIC)
    • WQ Monitoring, Property Inspection/Referral, Education/Outreach

• Skagit Conservation District
  – Farm Plan development
  – Education/Outreach
  – Liaison with Washington State Conservation Commission
State/Federal/Tribal Roles

- Samish Indian Nation
  - Thomas Creek WQ and restoration
- Washington State Department of Ecology
  - Landowner Inspection/Referral
  - Enforcement
- Washington State Department of Health
  - Shellfish growing area regulation
- Puget Sound Partnership
  - State Agency Coordination/Shellfish Initiative
- USEPA
  - Funding, technical support
- Many other state, tribal, NGO entities involved
Samish River Fecal Coliform Concentrations 2010
Upstream to Downstream
Storm Events Only

Sample Station

Fecal Coliform (Geometric Mean MPN)

Samish River at Hwy 9
Samish at 3rd Prairie Road
Samish at Parson’s Creek
Samish at Double Creek Lane
Samish at First Prairie Rd Crossing
Samish at Grip Road
Samish River at F&S Grade Rd
Samish River at Hwy 99
Samish River at Chuckanut Drive
Samish River at Thomas Road
Ecology Inspections

• 350 initial and follow-up inspections
• 67 warning letters
• 1 Notice of Violation
• 10 Administrative Orders
• 5 Notices of Penalty
Typical Case - Livestock

• Monitoring shows high FC in tributary
• Windshield survey shows livestock with sub-standard conditions
• County and/or Ecology inspector visits and asks landowner to fix the problems, if any
• Landowner works with Conservation District to design project and obtain cost-shares
• Everybody goes home happy!
• Or, landowner refuses and enforcement ensues
Pollution Correction- Livestock

- Technical assistance to 76 landowners
- 51 farm plans
  - Structural practices to contain sources
  - Management recommendations to protect properties
    - Nutrient management
    - Prescribed grazing
    - Pasture planting
    - Access control and use exclusion
    - Filter strips and buffers
Pollution Correction Projects

- 12 Gutter and outlet projects
- 5 Subsurface drain projects
- 8 Solar-powered pumps
- 10 Manure storage facilities
- 17 Fencing projects
- 22 Use exclusion projects
- 14 Heavy use area protections (HUAPs)
- 1 Waste transfer project
Restoration Activities
Pollution Correction - NRSP

Funded through Department of Ecology Centennial grant and the County’s Clean Water Program (CWP). Since 2009, provided financial assistance to 20 projects in the Samish

- 22,905 linear feet of streamside
- 35 acres protected
- 15,472 native plantings installed in the riparian buffer
- 8,497 linear feet of livestock exclusion fencing
- 2 livestock crossings
- 2 manure storage facilities
- 1 roof runoff management project
Typical Case – Septic System

• Property owner is behind on inspections
• Skagit County Public Health sends letter asking owner to get inspection
• Owner gets inspection from private contractor, finds minor problem
• Septic system gets fixed before pollution occurs
• Or, owner ignores letters, septic system fails and causes pollution, Health starts enforcement
On-site Sewage (septic) Systems in the Samish Watershed

- 3,686 septic systems
- 1,979 (53%) up-to-date operations & maintenance inspections
  - Every 3 years for gravity
  - Annually for all other types of systems
- Failure rate
  - 1% high priority failures
  - 5% non-high priority (corrections needed)
### SAMISH WATERSHED SEPTIC REPAIR STATUS

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New Tools

• Microbial Source Tracking/DNA Testing
• Sewage-sniffing dogs
• Detect human sewage only
• Several locations in Samish
• Septic system tests/fixes
Current Status

• Over 100 agricultural BMP projects have been completed
• About 110 septic system repairs
• Peak fecal coliform loadings (number of bacteria delivered to Samish Bay) during storms down 5-10 x since 2009
• Freshwaters still don’t meet WQ standards
• Shellfish bed closures still occurring
Samish River Fecal Coliform Concentrations
Storm Events Only
2010-2014 Water Years (Oct-Sep)

Updated through 9/30/14
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Challenges

• Consistent messaging
• Gaining trust
• Finding dispersed coliform sources
• Communicating science to general audience
• Coordinating 20+ organizations
Work Plan Going Forward

- CSI Partners remain engaged
- Funding through County Clean Water Program
- Additional grants sought as appropriate
- Continued WQ monitoring, property inspections, technical assistance, cost shares for restoration activities
- New program to use chemical tracers
Final Thought

• Everything that’s been done to clean up the watershed has been accomplished by the citizens of Skagit County