

# CLEAN WATER

## Skagit County

2 0 1 3      A N N U A L      R E P O R T

Skagit County Public Works Department



***“Water is the most critical resource issue of our lifetime and our children’s lifetime. The health of our water is the principle measure of how we live on the land.”***

*– Luna Leopold, Leading US geomorphologist and hydrologist*



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## A Message from the Commissioners



Ron Wesen, Chairman  
District #1



Ken Dahlstedt  
District #2



Sharon Dillon  
District #3

Clean water is everyone's business. We all need clean water to ensure healthy lives and safe recreation, cleaner stormwater, viable habitat for fish, shellfish and wildlife. As your Commissioners representing you, we are dedicated to ensuring our waters remain clean and safe.

The purpose of this report is to share with you our mission for enhancing water quality for everyone. In these pages you will find the many measures we are taking to implement water quality corrective actions, educate the public and develop programs to involve our community. In addition, the Clean Water Program (CWP) is dedicated to protecting and restoring fish and fish habitat. The CWP annually provides up to \$250,000 on fish habitat focused projects including habitat monitoring, culvert replacements, stream restoration, riparian re-vegetation, and off-channel habitat connection projects.

We are engaged with our community to improve water quality as we work with tribes, state and local governments, our Skagit Conservation District and numerous conservation organizations to make steady progress.

Our Pollution Identification and Correction Program is producing positive results in the Samish. Our staff and volunteers are dedicated to working with home and property owners to help them be good stewards of this beautiful basin. We encourage you to take part in the ongoing clean water efforts to improve the health of our watersheds and communities.

Sincerely,  
Skagit County Board of Commissioners

## HISTORY OF THE CLEAN WATER PROGRAM



***Fecal coliform indicates the presence of organisms that can cause diseases such as typhoid fever, viral and bacterial gastroenteritis, and hepatitis A.***

The CWP was an expansion of the Clean Water (Shellfish Protection) District (CWD) created in 1995, which was originally designed to reduce bacterial pollution in Samish Bay and improve the quality of local shellfish beds by cleaning up failing septic systems in Edison and Blanchard.

From 1999 – 2005, as part of the CWD, Skagit County monitored water quality through the Baseline and Samish Bay Watershed Monitoring Projects. This monitoring revealed continuing fecal coliform pollution in the Samish Basin. Fecal coliform indicates the presence of organisms that can cause diseases such as typhoid fever, viral and bacterial gastroenteritis, and hepatitis A. As a result of the continued bacterial pollution, Skagit County created the Clean Water Program to strengthen fecal coliform bacteria pollution reduction measures, educate the public, control stormwater pollution, and develop a more thorough water-monitoring program.

All of the programs listed within this publication are wholly or partially funded by the CWP and are dedicated towards improving Skagit County's water quality.

# SKAGIT COUNTY MARINE RESOURCES COMMITTEE

**T**he Skagit County Marine Resources Committee (SMRC) was established in 1999 under the congressionally authorized Northwest Straits Marine Conservation Initiative (NWSI), as part of a grassroots effort to protect, enhance, and restore our local marine resources. The SMRC relies heavily on partnerships and a large volunteer base to accomplish projects and achieve long-term success. SMRC has been primarily supported by federal grant funding through the NWSI, and partly by the Clean Water Program (CWP) and other grant funding administered through the Northwest Straits Foundation, a non-profit organization established to support the Initiative. Below are some of the 2013 highlights:

- **Community Beach Seining:** SMRC partnered with the Shannon Point Marine Center to facilitate two community beach seining events which took place at Ship Harbor in the summer of 2013. Over 40 volunteers and community members participated. The data collected was added to the Skagit River System Cooperative's fish database to study the status and trends and to use for future research.
- **Fidalgo Bay Day:** Over 200 visitors attended the tenth annual Fidalgo Bay Day held at the Samish Indian Nation's Fidalgo Bay RV Park on September 14, 2013. This year's event was combined with the Friends of Skagit Beaches National Estuaries Day celebration which included interpretive walks and educational activities along the Tommy Thompson trail. Other highlights included a beach seining demonstration, the Shannon Point Marine Center touch tanks, Samish Indian Nation guided canoe rides, a forage fish survey demonstration, educational booths, a magic show, arts and crafts, and free samples of shellfish. Thanks to the 31 partner organizations and the 53 volunteers, this educational event was a huge success.
- **Olympia Oyster Restoration:** Native oyster restoration in Fidalgo Bay began in 2002 as part of a collaborative effort. Since then, there have been indications that the Olympia oyster population in Fidalgo



Bay is becoming self-sustaining. The small, dense population of native oysters is thriving and reproducing successfully. In 2013, 250 cubic yards of Pacific oyster shell were distributed in Fidalgo Bay to enhance native oyster habitat. Scientists, with the help of students and volunteers, collected larval samples and surveyed population distribution. The regional goal is to enhance 100 acres of native oyster habitat in Puget Sound by 2020.

- **Fidalgo Bay Monitoring Program:** The Skagit MRC partnered with the Northwest Straits Foundation to develop and implement a long-term monitoring program in Fidalgo Bay. It will be designed to assess long-term status and trends in the marine environment and the effectiveness of habitat restoration projects in Fidalgo Bay. SMRC hosted a workshop in 2013 to identify current monitoring and restoration work and determine what remaining questions can be answered with future monitoring. The monitoring plan will be completed and implemented in 2014.



Photo: Michele Pappo



# Clean Samish Initiative

The Clean Samish Initiative (CSI) was established in 2009 by the Washington Department of Ecology in response to poor water quality in the 123-square mile Samish River Watershed and concerns over fecal coliform pollution. Skagit County became the CSI lead and was awarded grant funds from the USEPA in 2010 to implement a Pollution Identification and Correction (PIC) program in the Samish Basin.

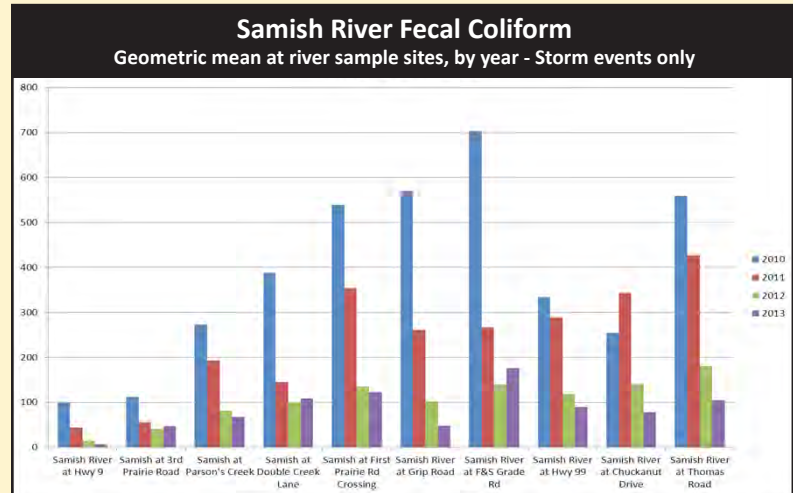
Goals of the Clean Samish Initiative include developing a program to comprehensively address, reduce and eliminate pollution sources; enhancing community awareness of, and participation in, water quality issues; and developing a process that can be used to address pollution issues in other watersheds. Several years into the program, the majority of properties have been assessed for fecal coliform pollution contributions including both an evaluation of livestock management practices and on-site sewage status. Dozens of properties have been referred to the Skagit Conservation District for technical assistance, while others have enrolled in the County's Natural Resources Stewardship Program or come into compliance through their own voluntary measures. Enforcement is only used when attempts at voluntary compliance have been unsuccessful. Thus far, only a handful of property owners did not take voluntary measures to follow County and State laws that prohibit anyone from contributing contaminants into a watercourse and required enforcement action.

Another goal of the CSI is to upgrade Samish Bay from the current status of "conditionally approved" to "approved". The procedures under the "conditionally approved" classification require a precautionary closure of shellfish harvesting when flow in the Samish River rises above certain criteria and raises the potential for polluted runoff to enter the bay. The closure is considered "confirmed" if subsequent laboratory analysis of river water show that fecal coliform concentrations are above safe levels. The bay remains closed until laboratory analysis indicates that pollution has dropped to safe levels. While the total number of confirmed closures increased in 2012 from 2011, the percent of confirmed closures decreased. In 2011, nine of eleven closures were confirmed (82%); in 2012, fourteen out of 31 were confirmed (45%); in 2013, 14 out of 26 were confirmed (54%). The Washington Department of Health has identified a critical period from March through June during which there can be no more than one closure in order for Samish Bay to be upgraded. In 2011 there were six closures during this time period, as compared to nine closures during the same period in 2012. Seven closures occurred in 2013. Spring rainfall has been above average each of those years, as recorded at the WSU Extension office in West Mount Vernon.

Average bacteria loading (bacteria colonies per day in the Samish River, calculated from the flow and the fecal coliform count) for pollution closure events has declined markedly in

the last several years. In 2008, the average pollution closure event loading was over 50 trillion colonies per day. In 2013, the average was 10 trillion colonies per day.

Another indicator of progress in the Samish Basin is the average fecal coliform counts during storms at Samish River sampling stations, as shown in Figure 1. Average counts at each station are substantially lower than at the beginning of the Clean Samish Initiative in 2008.



Skagit County personnel, with vital assistance from Storm Team Volunteers, continue to collect samples during every storm event to better characterize water quality throughout the basin. In addition to working with landowners who have already identified necessary best management practices, Skagit County continues to make progress on efforts to evaluate every parcel in the watershed. Using grant funds from the Washington Department of Health, the County was able to temporarily bring a Water Quality Inspector on board to identify new areas that need to implement corrective measures.

Watershed scale changes do not happen overnight, or even over the course of a couple of years, as we are seeing in the Samish Watershed. In the Samish, these changes require not only identifying where bacterial sources are, but also a shift in how people think about their connection to the landscape and how their actions affect water quality. With thousands of septic systems and hundreds of livestock operations and hobby farms, change requires the collective will of many individuals who make it a priority to have a properly working septic system, a well-managed pasture, and livestock fences appropriately set back from watercourses. It's important for us all to consider changes we can make to improve water quality in our own backyard. Significant progress has been made in the Samish Basin, but the work continues to bring the streams into compliance with state water quality standards and to upgrade the shellfish growing area.



Confinement section of a heavy use area.



Confinement area for winter months



Waste storage structure

# Pollution Identification and Correction (PIC) Program

The initial seed funding that established the Samish PIC program expired in 2013; Skagit County used these funds and another grant from the Puget Sound Pathogen Prevention, Reduction, and Control Program to carry out essential PIC activities. Skagit County finished the systematic evaluation of all non-timbered parcels in the Samish Watershed for sources of fecal coliform bacteria using water quality data to further narrow down pollution sources. Many of the properties inspected have been referred to the Skagit Conservation District for technical assistance and farm conservation plans, others have enrolled in the County's Natural Resource Stewardship Program, and many landowners have taken efforts on their own to fence livestock back from waterways, store manure in covered areas, and keep animals off of pastures long enough to allow vegetative re-growth.

Alongside site inspections, the County used PIC grant funding to continue offering financial help for implementation of agricultural best management practices (BMPs). These funds are designed specifically for smaller landowners. Landowners may receive up to 75% of costs for qualifying projects.

Project Description	Available Funding
<b>Fencing for off stream watering facilities</b> (requires 35 ft. minimum setback from waterway)	\$6,000-\$30,000, or 75%, whichever is less, per landowner. Based on miles of fence installed.
<b>Livestock feeding facilities</b>	
Heavy use area protection	Maximum \$7,500 per landowner
Waste storage facilities	Maximum \$12,500 per landowner
Windbreaks	Maximum \$1,000 per landowner

See details at: [www.ecy.wa.gov/puget\\_sound/docs/NEP\\_Ag\\_BMP\\_Funds\\_Guidance\\_2012.pdf](http://www.ecy.wa.gov/puget_sound/docs/NEP_Ag_BMP_Funds_Guidance_2012.pdf)

Agricultural BMPs approved for funding in 2013 included a riparian planting and three fencing projects, a livestock crossing, one roof runoff management project, and two manure storage structures.

Skagit County has recently expanded the PIC program into Padilla Bay, where water quality has been documented as exceeding standards for fecal coliform bacteria. Skagit County is currently working on supplementing water quality data collected by the Stream Team volunteers in 2011 with another round of storm sampling this winter and spring. As is the case in the Samish watershed, assessing pollution from livestock operations will only be part of the approach in Padilla Bay; Skagit County Public Health will also be conducting a comprehensive on-site sewage program in the Padilla Bay watershed.

Skagit County is working on a long-term maintenance plan to retain the broader PIC program work plan and has put forward different funding proposals to help move the program to other impaired watersheds within Skagit County, beyond the Samish and Padilla watersheds. The County is developing prioritization tools to help score and rank other watersheds and guide its future PIC efforts.

For more information about the PIC program, contact Pascale Warren: [pascalew@co.skagit.wa.us](mailto:pascalew@co.skagit.wa.us)



**Skagit County has recently expanded the PIC program into Padilla Bay, where water quality has been documented as exceeding standards for fecal coliform bacteria.**



**Kids in Creeks. Students from Immaculate Conception Regional School planting native vegetation.**

# Water Quality Monitoring Program



Skagit County Public Works personnel completed the tenth year of monitoring in the Skagit County Water Quality Monitoring Program (SCMP) in September 2013. The SCMP was established in 2003 in conjunction with the County's Critical Areas for Ongoing Agriculture program to track trends in water quality within the county's agricultural areas. The information generated is used to assess the effectiveness of the county's critical areas protections and determine which areas of the county need improvement in water quality.

The SCMP monitors 40 sites throughout Skagit County's agricultural areas, including some reference sites outside of the agricultural zones for comparison. The testing is used to determine each watercourse's status and track temporal trends in water quality. Each sample site is visited every two weeks to measure temperature, dissolved oxygen, fecal coliform and other parameters to develop a comprehensive view of the status and trends in water quality at each site. Nutrient analysis is conducted on a quarterly basis.

The data collected indicates that many streams, both within and outside of the agricultural areas, do not meet state water quality standards for dissolved oxygen, temperature, and/or fecal coliform. Streams in the Samish River basin and small tributaries to the Skagit River have the most water quality

**Each sample site is visited every two weeks to measure temperature, dissolved oxygen, fecal coliform and other parameters to develop a comprehensive view of the status and trends in water quality at each site.**

problems; the mainstem Skagit River meets the state standards on most occasions.

Trends Analysis statistics show a mixture of improving and declining trends on individual streams. There is not a clear pattern in the trends associated with agricultural activities.

Each year, the water quality monitoring data is compiled into an annual report.

The report for 2013 is in preparation.

Previous reports are available online at

[www.skagitcounty.net/scmp](http://www.skagitcounty.net/scmp). Questions about

the report and the monitoring program can be directed to Rick Haley at [rickh@co.skagit.wa.us](mailto:rickh@co.skagit.wa.us) or 360-336-9400.

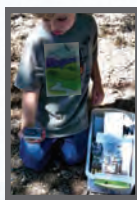
Skagit County has built on this information to locate areas with particular water quality problems, especially in the Samish Basin. Other articles in this report will focus on the county's efforts to reduce fecal coliform pollution through the Clean Samish Initiative. As the county moves forward in the Samish Basin, we are identifying other parts of the county that also need improvements in water quality.

From 2003-2009, the SCMP was largely funded by a Centennial Clean Water Grant from the Washington State Department of Ecology. Skagit County Clean Water Program money was used to augment the grant starting in 2008, and the CWP now fully funds the SCMP.

**Skagit Conservation Education Alliance:** Bringing people together in the spirit of cooperation — to protect, conserve and enhance the natural ecosystems of the Skagit Watersheds. SCEA continues to appreciate its partnerships with the Padilla Bay Foundation, Padilla Bay National Estuarine Research Reserve and Skagit County Clean Water Program, and many other partners and volunteers who supported clean water and watershed education in 2013. By continuing to reach out to our community partners we grew our alliances, offered new and expanding learning programs. The second annual **Art for Learning Watershed Science at Padilla Bay** attracted dozens of participants. Elementary school-age children made stamps to use on the **Skagit Watershed Letterbox Trail**. 33 teachers participated in **Watershed Words**, a day-long workshop for teachers and educators held on June 26. Art for Learning Watershed Science week was celebrated with the **Skagit Watershed Letterbox Trail Kickoff**, and an organic strawberry ice cream social on June 30. The Trail Kickoff also featured the first **Concert for the Coast** at Padilla Bay National Estuarine Research Reserve. The concert was funded by the Padilla Bay Foundation and their partners: Shell Puget Sound Refinery and the National Environmental Education Foundation. We thank Taylor Shellfish Farms, Washington Foundation for the Environment, Skagit PUD, Snohomish County Surface Water, and numerous local businesses, organizations and volunteers that made 2013 possible.

**Skagit Watershed Letterbox Trail** had 16 letterboxes planted throughout the Skagit watershed, as far east as the Marblemount Fish Hatchery and as far west as Washington Park in Anacortes. Watershed educational materials were offered in each letterbox. Judging by the stamps in the letterboxes' journals boxes were visited by local and out-of-town guests throughout the summer. The **End of the Trail** celebration topped off 2013 for SCEA by featuring luminary art and a jellyfish procession. The jellyfish bodies were created during Art for Learning Watershed Science Fall Workshops and their tentacles were created by hundreds of children at SCEA's booth at local events, like the Anacortes Arts Festival, Skagit River Salmon Festival and Fidalgo Bay Day.

In 2013, SCEA continued to coordinate the **Skagit ECO Network** with assistance from the Puget Sound Partnership. The network is an education, communication and outreach alliance representing 54 local and regional professionals and 38 organizations working to improve water and habitat health of the Skagit Watersheds, the Salish Sea and the Puget Sound. **Clean Samish Initiative**, helping in the efforts to reduce fecal coliform pollution in the Samish Basin by providing portable toilets in recreational areas was an ongoing project for SCEA, while we continued to share outreach materials and displays, including the popular **Bi-valve Water Cleaning Demonstration** hosted by Taylor Shellfish Farms.



## Skagit Watershed Letterbox Trail

Kickoff June 29 - Summer Trail July 3 - September TBD

SCEA in 2014 will be at Mount Vernon Science Night, Bivalve Seed Sales at Taylor Samish Farm Concrete Youth Activities Day, Shellfish-tival at Taylors, Skagit River Salmon Festival, Fidalgo Bay Day Festival of Family Farms and other celebrations for Clean Water.

[www.skagitleanwater.org](http://www.skagitleanwater.org)  
[info@skagitleanwater.org](mailto:info@skagitleanwater.org)  
 360 428 1054





*Volunteers participating at a community planting party for Robinson Road County Park.*



***The Skagit Fisheries Enhancement Group (SFEg) is a proud partner of Skagit County's Clean Water Program.***

As a nonprofit organization dedicated to restoring wild salmon populations for future generations, ensuring our local rivers and streams have clean, cool and consistent water is essential. Funding from Skagit County's Clean Water program expands our ability to offer free educational programs to area students and take them out of the classroom to apply what they have learned in a field setting. Clean water funds also help engage local landowners in developing new salmon habitat restoration projects such as fish passage improvement, knotweed removal, and riparian revegetation. Funds are also utilized for training community members to become volunteer scientists and monitor habitat restoration sites once projects are implemented to ensure restoration goals are met.

**Riparian Habitat Restoration:**

Volunteers and staff worked with many partners to plant over 30,000 native trees and shrubs along Skagit County's rivers, streams, and shorelines. Riparian restoration occurred at 53 sites assisting 42 different landowners in 2013 to remove invasive species and/or plant native species. These projects restore critical riparian habitat for salmon, improve water quality in our watersheds, as well as help over 130 other species of wildlife that depend on healthy riparian areas for survival.



*Left: Junior Stream Steward students from Conway Elementary school plant native trees at Fisher Slough.*



*Skagit River Salmon Festival. FIN the giant migrating salmon.*



*Kids in Creeks. MVHS student building a wood duck box to place at a habitat restoration site*



*Below: Volunteers help clear weeds and mulch around newly planted trees.*



*Kids of all ages having fun making salmon buttons at the Taylor Shellfishival.*



## Fish Passage Improvement:

Four Fish Passage Improvement projects were completed over the summer re-establishing access to over 5.5 miles of high quality habitat for salmon and steelhead in Skagit County. These projects were funded by grants from the **Family Forest Fish Passage Program** and brought over \$550,000 to the local economy to employ local people, purchase products from local vendors and contract with heavy equipment operators. Three of these projects are located in the Samish watershed on Silver Creek and its tributaries, with the fourth project occurring at Summer Creek near Big Lake.

*Silver Creek Fish Passage Improvement Project. After two small culverts were replaced with this large 50 foot bridge, Chinook and Coho salmon were immediately observed using the newly accessible habitat.*



*Samish Immaculate Conception School students investigating Friday Creek.*



*Below: Salmon in the Classroom. Lincoln Elementary student releasing young salmon into local creek.*



*Students from Emerson High School examine salmon eggs during tour of Marblemount Fish Hatchery.*

- Continuing to assist with the **Clean Samish Initiative** by educating Samish community members via outreach events, as well as securing additional grant funding and providing assistance to implement restoration efforts that restore riparian areas, remove invasive knotweed plants, and monitor water quality improvements in partnership with Skagit County, the Samish Indian Nation and the Department of Ecology.

## Education and Outreach:

Education is the key to ensuring that our next generations of community members are enthusiastic and passionate about protecting and conserving our watersheds. Education and outreach programs are designed to engage the general public and students in activities that inspire the future stewardship of salmon resources. Some examples from 2013 include:

- Training volunteers to **lead public tours of the Marblemount Fish Hatchery** during eagle season. Over 1,100 visitors learned about the salmon life cycle and their habitat needs through volunteer led tours during this two month season.
- Helping to coordinate the 2<sup>nd</sup> annual **Skagit River Salmon Festival** which drew nearly 5,000 people to Edgewater Park to learn, engage and celebrate the amazing Skagit River and its resources.
- Engaging over 1,800 youths in free hands-on learning experiences through three key school programs. **Junior Stream Stewards**, a unique year long learning opportunity for middle school students to have in-depth, hands-on experiential learning about watersheds and salmon habitat restoration. **Salmon in the Classroom**, where students from local elementary schools learn about the amazing journey of salmon by raising salmon eggs from a local hatchery and releasing them into the school's neighborhood stream. And **Kids in Creeks**, which provides teachers with an opportunity to receive a custom-designed program that gets students of any age outside and making a difference in their communities through completion of a service-learning project.

## Monitoring:

Training volunteer citizens to be scientists for our watersheds allows changes in habitat conditions and fish use to be monitored for years after restoration projects are implemented. During 2013, volunteers donated over 1,500 hours collecting valuable data related to vegetation establishment and adult salmon usage at habitat restoration sites throughout the Skagit and Samish watersheds.

Encouraging community involvement is major priority for the on going stewardship of Skagit County's watersheds. Providing diverse and fun ways to involve volunteers and students in learning and participating in habitat restoration activities is one way SFEG hopes to ensure healthy watersheds for future generations.



*Students from Bay-view Elementary School measure water quality at Friday Creek as part of the Kids in Creeks program*



**For an up to date list of volunteer opportunities and more information about how you or your group can help restore salmon habitat and keep our waterways clean and healthy, please visit [www.skagitfisheries.org](http://www.skagitfisheries.org) or call 360-336-0172.**

# On-site Sewage (Septic) Systems Inspections and Marine Recovery Areas

Skagit County Public Health and Community Services assures that on-site sewage (septic) systems are designed, installed and maintained so that the effluent discharged to the ground does not contaminate ground water. The Clean Water Program money goes to the operations and maintenance (O/M) program. Like a car, septic systems need to have a regular check-up and maintenance to make sure they work as designed. Maintenance specialists certified by our Department check all the parts of a septic system like tanks, pumps and drain fields.

**Inspections and Repairs** – Septic systems are required to have an inspection by a Skagit County Public Health certified operations and maintenance specialist. Conventional gravity systems need an inspection every three years and all other types of systems need annual inspections.

Most inspections happen in Marine Recovery Areas (MRAs) because we focus our efforts here. Septic systems on shorelines pose a greater threat of contamination.

	Number of inspections	High-priority	Low-priority
County-wide	2,770	11 (1%)	200 (7%)
MRA	1,545	110 (7%)	

*MRA septic system problems are not broken out into high or low-priorities.*

Septic system owners whose property is not on a shoreline and whose systems are a conventional gravity system may be eligible to do their own inspections. 159 homeowners did their own inspections in 2013.

97 septic system repair permits were issued in 2013. Of those, 79 have been completed and the remainder are in progress.

**Quality Assurance** – Public Health started a quality assurance program for our certified O/M specialists. We inspected a sampling of septic systems after receiving reports from an O/M specialist. In comparing the two inspections, we found 99% of inspections were factual and complete. For those we had concerns about, we met with the O/M specialist and got things straightened out. We are integrating quality assurance of the inspections to make sure you get what you pay for. If you have any concerns about an inspection, please let us know!

**Septics Education** – In-person Septic 101 classes are available as well as Septic 101 training on-line.

See <a href="http://www.skagitcounty.net/septics101online">www.skagitcounty.net/septics101online</a> to view the on-line class.	Number of classes	Participants
Septics 101	7	55
Septics 201	10	212
On-line Septics 101	--	250



**Data Management** – A new data management tool was brought online in 2013. OnlineRME allows O/M specialists to enter their reports electronically. The reports are then reviewed by Health for any follow-up to failures or repairs needed. OnlineRME is free to Skagit County and O/M specialists pay a small fee to the company for every report entered. Designed to help O/M specialists with their business needs as well, it has proven to be a win-win situation.

**Rebates** – Skagit County Public Health received additional funding from the Federal and State governments. By showing Skagit County's commitment to clean water through the Clean Water Program, we received funding to extend the \$100 rebates on inspections and \$100 rebates for installations of septic tank risers. Hurry, though! The rebates will be gone after September 30, 2014.

Issued in 2013	
Inspection	82
Riser Rebates	13

**Financial Help** – If you have a good credit record and a failing septic system, you may be eligible for a low-interest loan covering the entire cost of the repair. Loans can be spread out over many years to reduce the monthly cost. In addition, you may be eligible for \$1,000 or more taken off the principal of the loan. Contact Clyde Williams at Skagit County Treasurer's office 336-9357 or Alison Mohns at 336-9410, Skagit County Planning & Development Services, for more information.

Check [www.skagitcounty.net](http://www.skagitcounty.net) and find your property on the Assessor's web-page where you will find a link to your septic system information.

Any questions, just contact Skagit County Environmental Public Health at 360-336-9474 or send an e-mail to [EH@co.skagit.wa.us](mailto:EH@co.skagit.wa.us).

- By having your onsite sewage system inspected by a certified specialist, you may catch a small problem that could become a BIG problem later. This could actually save you money in the long run!
- Septics education means you will know how to care for your system. This could save you both money and headaches.
- An inspection is not a tank pumping and a pumping is not an inspection. In fact, an inspection may reveal that you do NOT need your tank pumped. That would be nice to know.

# Fish Habitat Restoration Program



The Fish Habitat Restoration Program is an ongoing County program dedicated to protecting and restoring fish and fish habitat. The program encompasses a myriad of activities, programs, and projects including habitat monitoring, culvert replacements, stream restoration, re-vegetation of riparian areas, and off-channel habitat reconnection projects. Projects designed to improve fish habitat also typically have other benefits. Riparian vegetation acts as a filter by removing pollutants before they reach streams while at the same time providing distance between pollutant sources and streams and stabilizing banks. Riparian habitat restoration therefore results in improved stream temperatures and reduced pollution levels. Reconnection of streams to their floodplains and restoration of floodplain function decreases flooding, which in turn reduces erosion and pollutant loads to bays during flood events.

## Habitat Improvement Plan

The Fish Habitat Restoration Program is guided by the Habitat Improvement Plan (HIP). The mission of the HIP is to create and advance restoration strategies that support Skagit County goals for promoting the health of our watershed, improved water quality and enhanced habitat for salmon. The HIP provides a road map for restoring salmonid habitat by identifying short, medium, and long-term project goals. The goals of the HIP are to: (1) restore streamside riparian land, (2) enhance fish passage under County roads, (3) coordinate drainage and flood damage reduction with restoration efforts, and (4) participate as an active member in Puget Sound clean-up and restoration efforts. As well as identifying projects, the HIP also identifies project partners and funding sources. The HIP will be updated annually to stay current with ever-evolving restoration goals and strategies. To read the current HIP, visit: [www.skagitcounty.net/HIP](http://www.skagitcounty.net/HIP).

## Salmon Habitat Monitoring

In 2004 Skagit County initiated the Salmon Habitat Monitoring Program to verify that County land use codes are adequately protecting critical areas near agricultural lands. The program is designed to detect whether salmon habitat is improving, deteriorating, or remaining the same as a result of the County's Critical Area Ordinance. A County monitoring team surveys, records, and documents channel and in-stream habitat conditions at randomly selected sites throughout the county. Between 15 and 20 sites are surveyed annually and 60 sites are surveyed every five years. The monitoring team looks at sediment quality, pool frequency, quality of riparian areas around streams, presence of woody debris, and other parameters. Monitoring takes place every year from June to October. The nature of habitat change in the stream

environments is such that it is too early in the study to make any meaningful determination of whether significant changes have occurred since the study began. In 2012, Skagit County surveyed 15 annual monitoring sites.

In 2011, Skagit County joined 28 other Washington counties and enrolled in the state's Voluntary Stewardship Program (VSP). The VSP is a new approach for counties to participate in a watershed-based, collaborative stewardship planning process that uses incentives to promote agricultural and environmental stewardship in lieu of the more traditional process outlined in the state's Growth Management Act. Implementation of the VSP is contingent on appropriation of funds from the state. In 2013, the legislature did not appropriate funding to implement the VSP program in Skagit County. Skagit County plans to integrate the existing salmon habitat monitoring program with the VSP. Additional information on this process will be forthcoming as the VSP unfolds.

## Fish Passage

In order to complete their spawning migration, salmon must be able to swim upstream to riffles where they can lay eggs before dying. Older culverts under roads however, act as barriers for fish attempting to make the upstream migration. Small culverts oftentimes present a velocity barrier for fish attempting to migrate through them and perched culverts prevent fish from jumping and entering the culvert. Conversely, large culverts and bridges allow water to flow through at a more natural rate providing a more stable stream environment for fish that also reduces flooding problems. Skagit County has over 800 miles of roads with hundreds of culverts. In the past two decades, the

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# FISH HABITAT RESTORATION

*(Continued from previous page)*

County has replaced many small, inefficient culverts with larger culverts or other fish-friendly crossings. In 2013, Skagit County completed a study which provided 30% design for nine high priority culverts. Six of the nine culverts are considered “large projects” that require additional engineering, the County plans on completing similar projects in 2014.

## Hansen Creek – Reach 5

In 2003, Skagit County completed the Hansen Creek Management Plan to help address localized flooding and improve fish habitat in the lower Hansen Creek watershed. Hansen Creek originates on Lyman Hill and flows south crossing under State Route 20 just east of Sedro-Woolley. Since then, most of the projects listed in the plan have now been completed. The last remaining project, Reach 5, is located between State Route 20 and Minkler Road. Historic channel modifications in this reach have resulted in a straightened and simplified channel, devoid of much habitat.



**Volunteer counting returning adult salmon during spawner surveys.**

Numerous meetings have been held with the local community to resolve localized flooding issues while restoring habitat. The idea of moving the Hansen Creek channel to the west was suggested by the local residents. Subsequent hydraulic modeling of this area supports this idea. Based on this analysis, Skagit County completed a conceptual plan for Reach 5 that involves moving Hansen Creek from its currently occupied straightened channel location to a more meandering channel to the west. Conceptual channel designs include a 40-foot wide channel with an 80-foot wide floodplain. The design of the new channel includes the installation of numerous woody structures as planting native vegetation along the floodplain. This new channel will provide excellent freshwater habitat for Hansen Creek Chinook, Coho, Pink, Steelhead and Chum salmon as well as Cutthroat and Bull Trout.

The Skagit River System Cooperative (SRSC) has already acquired almost 90 acres of land adjacent to Hansen Creek using funding from the state Salmon Recovery Funding Board (SRFB). With funding from Puget Sound Energy, SRSC is in the process of securing the remaining 46 acres necessary to construct the project. In early 2013 Skagit County applied for and received funding from the State Salmon Recovery Board to complete the 100% project design. Once the final design is complete and the land has been secured the County and their project partners will then be ready to seek grant funding to permit and construct the project.

## Fish Passage Project at Concrete– Sauk Valley Road MP 12.5

The Milepost 12.5 culvert is located approximately nine miles southeast of Concrete and carries an unnamed tributary to the Sauk River under Concrete-Sauk Valley Road. The existing structure consists of a 90-foot long, 48-inch corrugated metal pipe. The outlet of the culvert is perched approximately three feet above the downstream pool creating a barrier to fish passage. In 2013, Skagit County prepared conceptual designs that meet requirements for fish passage and County road standards. The design selected involves moving the route of the creek 90 feet to the east and into a 10’ by 14’ box culvert. In 2013 the County moved ahead with final design, permitting and partial construction. In the summer of 2014, during the 2014 “fish window,” the stream will be permanently diverted through the new culvert. Once completed, this project will allow unrestricted fish passage to almost half a mile of upstream habitat.

## Ann Wolford Park Rock Removal and Riparian Restoration Project

In 2011 Skagit County received grant funding from the Salmon Recovery Funding Board to remove a section of “orphaned rock” along a side channel of the Skagit River. This old bank hardening was along the path of the long abandoned Robinson Road. After completing a geomorphic risk analysis the rock was removed in 2013. This will allow for the restoration of natural processes and the creation of important rearing habitat for threatened Skagit Chinook along Middle Skagit River Floodplain. In addition to the rock removal the project also included a large scale revegetation effort in the park. This included the removal of blackberry and other invasive species, the planting of native species on the old home site and the underplanting of the deciduous forest with coniferous species.

## Feasibility and Design Projects

In 2013, Skagit County applied for and was awarded three grants through the WA Recreation and Conservation Office - Salmon Recovery Funding Board. Two of these grants will fund studies to determine the feasibility for restoring habitat and completing preliminary design for the benefit of threatened Puget Sound Chinook. These projects will look at restoring delta floodplain habitat in lower Skagit River. The third grant will be for completing final design for the Reach 5 project on Hansen Creek listed above.



# Skagit Conservation District

*Promoting Clean Streams, Stable Soils, Healthy Forests, Productive Farms and Sustainable Communities throughout Skagit County*

For more than 70 years, the Skagit Conservation District (SCD) has been caring for the people and places that make our region among the most beautiful in the world. As the needs of our community continue to increase, so does our responsibility to protect and steward those things we hold most dear. To this end, the SCD works tirelessly to keep our local farms and forests sustainable, our rivers and streams healthy, our fish and wildlife abundant, and our children and grandchildren outdoors. The SCD is a county-wide, non-regulatory division of state government that is governed by a board of five unpaid, elected supervisors, who are all local landowners. All programs provided by SCD are voluntary and free of charge.

## **Resource Conservation Planning and Technical Assistance for Commercial and Small Livestock Operations**

The Skagit Conservation District's roots run deep in agriculture. Since the dust-bowl era of the 1930's, conservation districts throughout the nation have been working hand in hand with local farmers to protect our shared natural resources and foster a truly sustainable local agricultural community. The SCD provides free technical and resource assistance to local farmers and landowners who seek out ways to maximize land stewardship options and minimize the impacts of livestock operations on soil and water resources.

Overall, in 2013 funding leveraged through Skagit County's Clean Water Program supported SCD in providing technical assistance to 60 local commercial and small farm landowners; completing 13 farm plans; and implementing 13 structural best management practices (BMP's). Projects implemented included the following:

- 2 waste storage facilities
- 1 solar powered water pump system
- 4 fence projects
- 5 heavy use area protection projects
- 1 underground outlet project

## **Engaging the Community**

As individuals, we can all take steps to protect the creeks, rivers and lakes that are near us. We can take specific actions to reduce pollution and harm such as keeping litter and debris out of the water, avoiding over-fertilizing our lawns, picking up after pets, being responsible for septic system maintenance and repair, planting or preserving native trees, fencing livestock away from streams, and taking many other common-sense actions daily. Conservation education helps people of all ages understand and appreciate our county's natural resources – and to learn how to conserve those resources for future generations. Throughout the year, Skagit Conservation District offered structured educational experiences and activities



targeted to varying age groups and populations to engage local residents and inspire local stewardship.

**Storm Water Education Program:** A major contributor of toxic pollutants entering Puget Sound is the storm water that runs off our highways, roads, driveways, roofs, parking lots, disturbed soils, and other developed surfaces. The SCD works in partnership with Skagit County and the Cities of Mount Vernon, Burlington, Sedro-Woolley, and Anacortes to raise awareness of the impacts of storm water pollution and to promote environmentally friendly business and residential practices that minimize storm water impacts. In 2013, a variety of outreach efforts were conducted to engage local support:

- A Rain Garden Walking Tour was held in downtown Burlington.
- 5 yard care educational fact sheets for homeowners were published.
- 300 storm markers installed on storm drain inlets & 300 educational doorknob hangars posted by volunteers.
- 44 storm water education presentations provided to over 1,050 Skagit County elementary school students.
- 7 Low Impact Development presentations provided to over 125 residents.
- Hosted "Puget Sound Starts Here" display and hands on educational activity at 8 community events (overall attendance over 8,500).
- Promoted "Clean and Green" car wash kits and more.



**Volunteer Programs:** Citizen Involvement is crucial to water resource protection in Skagit County and SCD values the opportunity to engage and work with our community residents. Over the last year more than 145 local residents participated in the District's Watershed Masters, Skagit Stream Team and Storm Team, Marine Biotxin Monitoring, Backyard Conservation and Community Wildlife Habitat programs, contributing over 4,500 reported volunteer hours.

*(Continued on next page)*



*6th Grade Conservation Education*

Youth Education: Connecting our youth with the natural world, giving them a time and place to freely interact with nature, and introducing them to good environmental habits at a young age, are important key factors in our journey to a more sustainable community. In addition to providing storm water presentations in the classroom, the SCD continues to host the Annual 6<sup>th</sup> Grade Conservation Tour (750+ students), Annual Soil & Water Stewardship Week poster contest (75 entries this year) and support the Annual Regional, State, and National Envirothon competitions for high school students.



*Blossom at the Festival of Farms*



*Annual Plant Sale*

For information about Skagit Conservation District's programs, phone (360) 428-4313 or visit our website: [www.skagitcd.org](http://www.skagitcd.org).

### Clean Samish Initiative

As a local Clean Water Program partner, SCD serves on the Clean Samish Initiative Executive and Education Committees, providing technical assistance and cost-share funding for Samish residents, coordinating numerous education events and activities, and working one-on-one with community volunteers and neighbors to help improve water quality in the Samish Basin. Key accomplishments in 2013 included:

- Providing farm planning and technical assistance to 34 landowners and completing farm plans for 7 landowners in the watershed.
- Providing assistance in the implementation of 7 structural BMP's.
- Providing cost-share in the amount of \$7,626.26 for the implementation of the 7 structural BMP's.
- Publishing and distributing 2 editions of the Clean Samish News to over 6,000 watershed residents.
- Hosting 7 educational workshops for a variety of audiences – 286 attendees.
- Hosting educational displays at 9 educational events.
- Supporting the Silver Creek stream enhancement project and the community native plant demonstration garden at the Alger Hall.
- Providing one-on-one support to the Friday Creek Habitat Stewards and other community groups and residents.

**SAMISH RIVER**

YOURS  
TO PROTECT



*Firewise Community Project*



*The SCD works tirelessly to keep our local farms and forests sustainable, our rivers and streams healthy, our fish and wildlife abundant, and our children and grandchildren outdoors.*



*Stream Team Monitor*

# Natural Resource Stewardship Program

*Grant funding to enhance YOUR watershed*

**By applying to the Skagit County Natural Resource Stewardship Program (NRSP) landowners can receive up to \$35,000 in grant funding to enhance their property, at no cost to the landowner!**

This program, started in 2009, has worked with over 28 individual landowners or community groups who own property next to a stream and wanted help protecting their property from bank erosion or invasive vegetation or wanted to enhance their property for the improvement of water quality or fish habitat. Projects have included removing invasive plants and planting native vegetation, installation of livestock exclusion fencing and livestock crossings for safe passage, and the installation of logs to provide bank stabilization while benefiting fish habitat and water quality.

Funding was received from the Department of Ecology (DOE) and matched with County Clean Water funds. The County has recently received an additional DOE grant allowing the continuation of this program in the Samish Watershed and at a reduced level in the remaining County.

## Restoring Riparian Areas

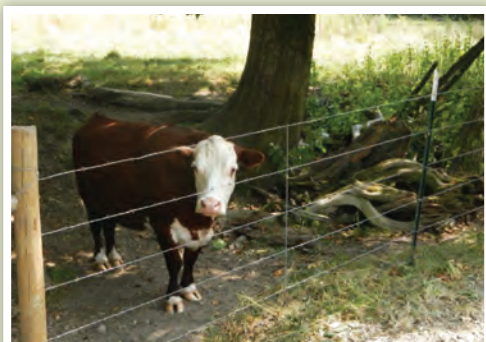
Re-establishment of native vegetation by removing streamside invasive plants, such as Himalayan blackberry, Japanese knotweed, Reed Canary Grass and English Ivy, and then planting native plants, such as Red Alder, twinberry, vine maple, and Western Red Cedar can help stabilize banks, shade the stream, provide food sources for invertebrates in the stream that are eaten by juvenile salmonids, and beautify one's property. Effective riparian areas also filter out harmful pollutants such as soil runoff, fertilizers, and herbicides. By working closely with landowners NRSP is able to create a plan that meets the landowner's needs while still benefiting the water quality of the stream.

## Livestock Exclusion

Livestock can have many negative impacts on streams when their access to waterways is unrestricted. These impacts include:

- Reduced vegetation along stream banks
- Compacted soil and increased runoff
- Increased erosion resulting in poor salmon spawning gravel
- Manure-contaminated runoff resulting in high fecal coliform counts downstream

Landowners can install exclusion fences and/or off-channel watering areas to prevent and/or reduce these negative impacts, and NRSP can provide labor and materials all at **no charge** to the landowner.



**Completed Livestock Exclusion Project**



**Completed Riparian Restoration Planting**

## Bank Stabilizing and Restoring Fish Habitats

Many streams in our area have failing and eroding banks. This can be caused by natural stream migration or upstream changes which increase erosion along the bank. Often landowners have limited bank vegetation which allows unrestricted erosion. Unrestricted bank erosion increases fine sediment in the system which is bad for water quality and salmon, not to mention losing property! The Natural Resource Stewardship Program can install wood in an effort to reduce bank erosion while enhancing the natural habitat and providing much needed habitat for juvenile salmonids.

## Completed Projects

Since 2009, NRSP has completed 27 projects. County residents have restored over 55 acres of land including planting 24,985 native plants along nearly seven miles! Additionally NRSP has installed three livestock crossings, 2.4 miles of fencing, and 135 pieces of large woody debris used for bank stability and improved salmon habitat within the County. Projects have ranged from 0.1 acres to over eight acres so no project is too small or too large for NRSP!

**For more information, to see maps and information on completed projects, or to determine eligibility, visit <http://www.skagitcounty.net/Departments/PublicWorksNaturalResourcesManagement/stewardship.htm> or contact Emily Derenne at [emilyjd@co.skagit.wa.us](mailto:emilyjd@co.skagit.wa.us) or (360)336-9400.**



**Completed Riparian Restoration Planting**



# CLEAN WATER

## 2013 ANNUAL REPORT

### Skagit County Clean Water Budget Summary

Programs	2013			2014		
	Actual Expenses and Revenue			Budgeted Expenses and Revenue		
	Expenses	Revenues		Expenses	Revenues	
	Expenditures	Grants	Assessment Distribution	Expenditures	Grants	Assessment Distribution
<b>Pollution Identification &amp; Correction Program</b>						
Skagit Conservation District	\$ 99,209		\$ 99,209			
Samish Nation	\$ 4,357	\$ 4,357				
Skagit Conservation Education Alliance	\$ 20,152	\$ 16,178	\$ 3,974			
Skagit Fisheries Enhancement Group	\$ 9,511	\$ 8,051	\$ 1,461			
Western Washington Agricultural Association	\$ 2,750	\$ 2,200	\$ 550			
WSU-Cooperative Extension	\$ 2,655	\$ 2,655				
Skagit County Planning & Development Services Department	\$ 3,033	\$ 2,479	\$ 554			
Skagit County Public Health Department	\$ 139,085	\$ 91,202	\$ 47,884			
Skagit County Public Works Department	\$ 372,278	\$ 277,647	\$ 94,631	\$ 289,417	\$ 153,009	\$ 136,408
Laboratory Charges & Other Expenses	\$ 39,976		\$ 39,976	\$ 51,500	\$ 49,000	\$ 2,500
<b>Critical Areas Ordinance</b>						
Adaptive Management	\$ 179,100		\$ 179,100	\$ 16,419		\$ 16,419
Fish Habitat Monitoring	\$ 9,538		\$ 9,538	\$ 57,727		\$ 57,727
Surface Water Quality Monitoring	\$ 100,101		\$ 100,101	\$ 108,728		\$ 108,728
<b>Fish Habitat and Restoration</b>						
Habitat and Restoration	\$ 196,905	\$ 111,306	\$ 85,600	\$ 418,794	\$ 291,400	\$ 127,394
Natural Resources Stewardship Program	\$ 216,240	\$ 114,798	\$ 101,443	\$ 143,000	\$ 140,625	\$ 2,375
<b>Marine Resources</b>						
Marine Resources Committee and Action Items	\$ 70,643	\$ 54,082	\$ 16,561	\$ 106,809	\$ 54,900	\$ 51,909
<b>Lake Management</b>						
District and Non District Lakes	\$ 12,026		\$ 12,026	\$ 37,552		\$ 37,552
<b>Hydrogeology/Instream Flow</b>			(1)			(1)
Instream Flow Implementation	\$ 24,012		\$ 24,012	\$ 27,900		\$ 27,900
Hydrogeology	\$ 17,273		\$ 17,273	\$ 10,868		\$ 10,868
<b>Clean Water Program Partner Agencies/Organizations</b>						
Skagit Conservation District	\$ 136,994		\$ 136,994	\$ 243,000		\$ 243,000
Skagit Conservation Education Alliance	\$ 18,225		\$ 18,225	\$ 29,100		\$ 29,100
Skagit Fisheries Enhancement Group	\$ 19,864		\$ 19,864	\$ 30,000		\$ 30,000
Skagit Watershed Council	\$ 30,000		\$ 30,000	\$ 30,000		\$ 30,000
Western Washington Agricultural Association	\$ 17,700		\$ 17,700	\$ 20,000		\$ 20,000
Skagit County Public Health Department	\$ 51,650		\$ 51,650	\$ 175,000		\$ 175,000
<b>Administration</b>			(2)			
General Administration	\$ 162,470		\$ 162,470	\$ 240,389		\$ 240,389
Central Services	\$ 36,549		\$ 36,549	\$ 36,549		\$ 36,549
Information Services	\$ 24,393		\$ 24,393	\$ 24,393		\$ 24,393
Geographic Information Services	\$ 816		\$ 816	\$ 12,000		\$ 12,000
Training	\$ 9,711		\$ 9,711	\$ 24,258		\$ 24,258
Reserves	\$ 4,285		\$ 4,285			
<b>Total</b>	\$ 2,031,499	\$ 684,953	\$ 1,346,546	\$ 2,133,403	\$ 688,934	\$ 1,444,469

### 2012 Grant/ Supplemental Funding Sources

(1) Instream flow implementation costs paid by General Fund; Hydrogeology costs paid by Skagit County Public Health Department Drinking Water Program (2) Revenue consists of interest

Clean Samish Initiative:  
Pollution Identification and Correction: US Environmental Protection Agency, Washington Department of Health  
Habitat and Restoration:  
Salmon Recovery Funding Board, US Department of Agriculture: Conservation Reserve Enhancement Program payments  
Natural Resources Stewardship Program:  
Washington Department of Ecology  
Marine Resources Committee: Northwest Straits Commission