CLEAN WATER
Skagit County

2011 ANNUAL REPORT

Skagit County Public Works Department

A Message from the Commissioners

Ron Wesen
District #1

Ken Dahlstedt, Chairman
District #2

Sharon Dillon
District #3

Clean water is of great importance to Skagit County. We all need clean water to ensure healthy lives and safe recreation, cleaner stormwater, viable habitat for fish and wildlife, and healthy shellfish beds. As your County Commissioners, we are dedicated to ensuring that our waters remain clean and safe.

The purpose of this annual report is to share with you our mission for enhancing water quality for everyone in Skagit County. Inside, you will find the many measures we're taking to implement water quality corrective procedures, educate the public, and develop programs to engage the community. In recognition of the fact that we need to work collectively to resolve water quality problems, the report describes the many organizations Skagit County partners with in our effort to address pollution and enhance water quality.

High fecal coliform levels in the Samish Bay threaten our health, shellfish beds, food production, and quality of life in Skagit County. Through our Clean Water Program, however, we are committed to implementing a locally led effort to resolve the water quality issues facing the Samish. In 2012, the Skagit County Clean Water Fund will contribute $128,890, coupled with $308,213 from an EPA grant, towards cleaning up the Samish River Watershed.

As a community, we need to ensure that all of Skagit County continues to have accessible and reliable clean water. Skagit County has a long and successful history of environmental stewardship. We encourage you 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.

In 2005, Skagit County created the Clean Water Program (CWP) to enhance Skagit County's water quality and address and correct non-point pollution.

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.

Water Quality Monitoring Program

Monitoring Skagit County's Waters

In September 2011, County personnel completed the eighth year of the Skagit County Monitoring Program (SCMP). The SCMP is designed to monitor trends in water quality throughout the county, with a special emphasis on agricultural areas. The information generated is used to assess the effectiveness of County critical areas protections and determine which parts of the county need help in improving water quality.

Monitoring across Skagit County

Established in 2003, the SCMP tests water from 40 different sites throughout the county. The testing is used to establish a water quality baseline and identify trends in watershed health in agricultural areas of the Samish and Skagit River Basins. Streams located outside agricultural areas are also tested for comparison.

By consistently collecting data, it is possible to determine which parts of the Samish and Skagit Basins need the most attention; Skagit County can then take action towards cleaning these areas.

The data collected indicates that many Skagit County streams, both within and outside agricultural areas, do not meet state water quality standards for fecal coliform, temperature, and/or dissolved oxygen. Most substandard areas have been identified in tributaries to the Skagit River and Samish Basin; sampling locations on the Skagit River itself meet most standards on most occasions. In other areas, and especially in the Samish Basin, Skagit County has started closer monitoring in an attempt to identify specific causes of poor water quality in specific areas and determine which areas fail to meet standards due to natural causes rather than human-caused problems. The Trends Analysis indicates that many significant trends in water quality, both good and bad, are detectable in Skagit County watercourses. These trends are being examined on an individual basis for further evidence of where cleanup activities are needed and where they have successfully led to improved water quality. There was no pattern to the trends based on agricultural zoning.

"These state standards are set to protect salmonid populations, recreation, and downstream shellfish resources. Streams not meeting the standards need cleanup plans to fully support these uses."

Continuing the Effort

From 2003 through 2009 the SCMP was funded by a Centennial Clean Water Grant from the Department of Ecology. Clean Water Program funding was used to augment grant funding in 2008. Since January 2009, the SCMP has been fully-funded by the Clean Water Program.

The Clean Samish Initiative & Pollution Identification and Correction Program

Samish Basin fecal coliform pollution issues have attracted regional attention and are now the focus of the Clean Samish Initiative (CSI). The CSI is a multi-agency effort that began in 2009 involving the State Departments of Ecology and Health, Skagit County, the Skagit Conservation District, the Skagit Conservation Education Alliance, the Samish Tribe, the Western Washington Agricultural Association, the Washington State Dairy Federation, U.S. EPA, Taylor Shellfish, and other organizations. The Clean Samish workgroup has established subcommittees to implement detailed monitoring, education and outreach, funding, and other aspects of the effort. The CSI's goal is to achieve both short and long-term pollution reductions in the Samish Basin.

In 2010, Skagit County received a three-year $960,000 grant from EPA to address fecal coliform pollution in the Samish Basin that enabled the CSI partners to initiate a Pollution Identification and Correction (PIC) program in the Samish Basin. The PIC program, adapted from a Kitsap County program, uses concentrated water quality sampling to locate likely sources of pollution. In affected parts of the basin, sampling is followed up with landowner contact to determine if septic tank or manure management problems are leading to the pollution.

Public Works is conducting the water quality sampling with help from Storm Team volunteers, focusing on storm events, when fecal coliform concentrations tend to be highest, to identify the specific locations of the pollution

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sources. Staffs from the Public Health and Planning and Development Services departments then conduct property inspections with willing landowners. If potential sources of fecal coliform pollution are identified, the inspectors refer landowners to appropriate resource agencies with programs designed to eliminate the pollution. These resources include: the Public Health Department for help to address failing septic systems, including issuing low-interest loans for repairs; the Skagit Conservation District, for help developing farm plans and cost-sharing programs for implementation of agricultural best management practices; and, the Skagit County Natural Resources Stewardship Program, which provides grant funding to install livestock exclusion fencing and plant riparian vegetation.

For those landowners who are willing to do the right thing, there is plenty of help available and, to date, the majority of Samish Basin landowners have stepped up and made improvements to their properties to reduce water pollution. However, for recalcitrant landowners with identified pollution problems, enforcement actions, conducted by either the State or the County are utilized.

Following implementation of the PIC program in April, 2011, the State Department of Health, Office of Shellfish and Water Protection downgraded much of Samish Bay from "Approved" to "Conditionally Approved." This change was a codification of the existing management strategy and was not based on new conditions, In response to the downgrade, Washington Governor Gregoire directed state agencies to help the CSI move faster towards its goals of a recovered Samish Bay Watershed. In response, the Puget Sound Partnership took the lead in coordinating the state agencies, resulting in increased attention and resources for the Samish Bay Watershed cleanup. Subsequently,

Skagit County and the State Departments of Ecology and Agriculture expanded the number of properties to be evaluated in the watershed and augmented their respective inspection capacities. However, there was only enough funding available to sustain this increased effort through the end of 2011. To continue the increased effort, Skagit County applied for and was awarded an additional grant through the Washington Department of Health that will fund additional inspection capacity in the Samish Basin and also expand the PIC program to Padilla Bay.

In addition to these efforts, Skagit County, using Clean Water Program funds, also conducted two Microbial Source Tracking (MST or "DNA testing") investigations in 2011 in the Samish Basin. Working with Dr. Stephanie Harris at the EPA laboratory in Manchester, WA, and Dr. Kate Field at Oregon State University, the County collected water samples throughout the Samish Basin which were submitted to the respective laboratories for determination of the host organisms for the coliform in the samples. Results indicated a preponderance of ruminant and avian sources, with human sources less common. MST results are not considered to be absolute, but instead are general indicators of possible fecal coliform sources. Skagit County is using the MST results as an additional tool to identify and correct fecal coliform sources.

"For those landowners who are willing to do the right thing, there is plenty of help available."

As we begin 2012, recent water quality data suggest that a corner has been turned and fecal coliform concentrations are declining in the Samish Basin. Much work remains to be done but, it appears that the improvements being made in the basin are beginning to bear fruit. The State Shellfish Office has determined that Samish Bay could be returned to "Approved" status if one or fewer closures occur during the period from March to June 2012, assuming normal weather conditions and evidence of improvements on the ground. One or fewer closures is an ambitious goal which we are striving to achieve. However, even if we do not achieve that goal in 2012, we are confident that we are moving in the right direction and are on the path to a cleaner Samish Bay and fully expect a reclassification in the near future.

For more information on the program, contact Rick Haley at rickh@co.skagit.wa.us.

History of the Skagit County Water Quality Monitoring Program

The SCMP was established as a supplement to the Critical Areas Ordinance which was designed to prevent the deterioration of Skagit's watersheds. The SCMP was originally designed to measure the effectiveness of the agricultural Critical Areas Ordinance.

What do we test for?

Dissolved oxygen, temperature, fecal coliform, pH, turbidity, and nutrients.

What is fecal coliform?

Fecal coliform is a measure of bacteria from digestive tracts of warm blooded animals present in the water. It serves as an indicator of possible disease-causing organisms stemming from fecal contamination. Fecal coliform counts are used to determine if a stream is safe for recreation and if downstream shellfish are safe for consumption.

Clean Samish Initiative Executive Committee directs action in clean-up effort

It takes teamwork, dedication, and communication to take on a task as formidable as the Clean Samish Initiative.

As our partner agencies at the local, state, and federal level initiate the plan on the ground to clean up the Samish, our Executive Committee meets every month to make sure we are meeting our milestones and making the adjustments necessary for success.

The Executive Committee is comprised of the following members:

- **Bill Dewey, Taylor Shellfish Farms**
- **Bob Woolrich, Washington Department of Health, Office of Shellfish and Water Protection**
- **Carolyn Kelly, Skagit Conservation District**
- **Christine Woodward, Samish Indian Nation**
- **Corinne Story, Skagit County Public Health Department**
- **Dan Berentson, Skagit County Public Works Department**
- **Duane Fagergren, Puget Sound Partnership**
- **Gary Christensen, Skagit County Planning and Development Services Department**
- **Jeannie Summerhays, Washington Department of Ecology**
- **Jon-Paul Shannahan, Upper Skagit Indian Tribe**
- **Larry Wasserman, Swinomish Indian Tribal Community**
- **Doug Allen, Washington Department of Ecology**
- **Ron Schultz, Washington State Conservation Commission**
- **Ron Wesen, Skagit County Commissioner**
- **Thomas Eaton, U.S. Environmental Protection Agency**

Community support is strong in our efforts to tackle the serious pollution problem in the Samish River watershed. Clean water is everyone's business. The high fecal coliform levels in Samish Bay are a threat to our health, our shellfish industry, and our quality of life.

The Skagit County Board of Commissioners has made a strong commitment to this effort in a partnership with the Environmental Protection Agency (EPA) and the Washington State Department of Ecology to fund a $456,570 multi-agency effort in the Samish in 2012. Skagit County's Clean Water fund is contributing $128,890 for 2012 with $308,213 from the EPA grant. Over the three years of the project (June 2010 through May 2013), Skagit County will use Clean Water Program dollars as match for EPA grant funds to clean up the Samish River Watershed. EPA's total commitment to the Clean Samish Initiative to date is $961,980. EPA is also working with Skagit County to provide an additional $245,000 in grant funds over the next two years to enhance current efforts.

Skagit County has taken the lead in the effort and distributes Clean Water Fund and EPA dollars to the Skagit Conservation District, Skagit Conservation Education Alliance, Skagit Fisheries Enhancement Group, Western Washington Agriculture Association, Samish Indian Nation and Washington State University Extension to perform a myriad of tasks including public education and outreach, and working with farmers and landowners to reduce pollution through the implementation of farm plans.

Skagit Fisheries Enhancement Group

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 for future generations, ensuring our local rivers and streams have clean, plentiful water is essential. Funding from Skagit County's Clean Water Program enables us to reach out to new landowners and work with them to develop new watershed restoration projects such as fish passage improvement, knotweed removal, and riparian revegetation. It allows us to leverage small amounts of Clean Water funds into larger dollars for implementing large-scale restoration projects. Funds also allow us to train volunteers to monitor habitat restoration sites once projects are implemented to ensure restoration goals are met.

Volunteer Kurt Buchanan with "FIN" the giant salmon.

Enabling SFEG to offer high quality education programs to students of all ages throughout our watershed is one of the most important facets of Skagit County's Clean Water Program.

Allen Elementary students planting trees at Whatcom Land Trust's Samish River Preserve.

SFEG's education programs are designed to engage students beyond their usual classroom setting to learn about their natural environment. This year, SFEG continued to offer **Junior Stream Stewards** to nearly 600 middle school students, 120 of whom attend school within the Samish Watershed. Through watershed tours and classroom activities middle school students from Allen, Edison, Concrete, and Cascade schools have learned about watersheds, salmon biology, and what makes streams healthy for animals and people. Students even dissected oysters as staff from Taylor Shellfish Farms taught them how poor water quality impacts our local shellfish industry and human health. This program focuses on involving students in a service project somewhere in their watershed near the end of the school year. Typically this involves riparian (streamside) planting, but can also incorporate sign design and posting or stormdrain marking.

Other student education offerings included **Salmon in the Classroom** and **Kids in Creeks**. **Salmon in the Classroom** was offered to elementary students at Madison and Lincoln Schools in Mount Vernon. Students had the opportunity to raise salmon from eggs (which they received from the Marblemount hatchery) to fry (young salmon) in aquariums at their schools. In the spring, they released the young salmon into local creeks in their neighborhood wishing them a safe journey and all hoping that some of the adult salmon return to spawn in the future. This is an excellent way for students to learn the life cycle of salmon and promote stewardship of their local neighborhood stream. Teachers and students alike were anxiously awaiting the arrival of new eggs to raise in their aquariums in 2012.

Clean Water Funds also help SFEG ensure adults and families have ample opportunities to learn and explore our watersheds. In October we hosted the Samish River Family Fest with multiple Clean Samish Initiative partners at Donovan County Park in Alger. Community members from all over the Samish watershed came to learn about the critters that call Friday Creek home, and how poor water quality impacts both critters and humans. Visitors tested their knowledge and skill at the Poop Toss Game, deciding the best way to dispose of pretend pet waste. They spun the Wheel O' Water, learning about different clean water habits, and climbed inside Fin the Giant Salmon, learning about healthy salmon habitat. Visitors spotted migrating Chinook salmon in Friday Creek, and learned from experts what makes a stream healthy for salmon. Visitors learned how to measure water quality of our local waterways, and to keep septic systems working properly.

In addition to these main activities, SFEG has involved volunteers of all ages planting trees, counting salmon and collecting valuable monitoring data throughout our watersheds. For more information about how you can help keep water clean for future generations, please visit **www.skagitfisheries.org** or call **360-336-0172**.

The Skagit Conservation Education Alliance

Skagit Conservation Education Alliance is a community based non-profit organization that works to protect the watersheds in Skagit County.

Its mission is to bring people together in the spirit of cooperation to protect, conserve, and enhance the natural ecosystems in the Skagit Watersheds.

They share outreach materials and displays, including the popular Bi-valve Water Cleaning Demonstration at science fairs, WSU Beach Watcher programs, shoreline workshops and water-oriented festivals throughout the Skagit region. In 2011, the last *Bivalve Bash,* dedicated to clean water education and cleaning up Samish Bay, featuring the low tide Mud Run was held. Letting go of this event stimulated several new and improved "bashes" celebrating the Bivalve's water cleaning power, including new and tasty ways to celebrate the mud and its special qualities. The first Samish *Sip'n Slurp* was enjoyed at low tide on March 3, 2012. On June 15, the *Samish Sunset Cruise and Shellfish Soiree* is scheduled, and another opportunity to experience a low tide oyster and wine tasting in the Fall will be scheduled. Check out **www.skagitcleanwater.org** for information about upcoming events.

SCEA's Watershed Letterboxing program that was popular with "watershed treasure hunters" of all ages will be returning in 2012. Many of the programs that support watershed and estuarine learning such as Storming the Sound North and the Puget Sound Environmental Summit, conferences for environmental educators continue, while SCEA helps with Puget Sound Partners local outreach by coordinating the Skagit ECO Network, that represents a broad base of organizations working toward clean water and habitat restoration in Skagit County and around the Puget Sound.

SCEA continues to partner in the Clean Samish Initiative, providing information in an effort to educate the public about the ways they can be a part of the solution. Improperly disposed of human waste adds to fecal coliform pollution and ruins local shellfish beds. To alleviate this form of local pollution, SCEA supports the placement of portable toilets in popular recreational areas that do not have accessible bathroom facilities. SCEA hopes to expand the program, connecting with local events producers to identify their human waste management needs and help secure affordable contracts with local service providers.

For more information and a list of current and upcoming activities visit:
www.skagitcleanwater.org
or contact Richelle Potter at
richelle@skagitcleanwater.org.

SKAGIT COUNTY ONSITE SEWAGE PROGRAM

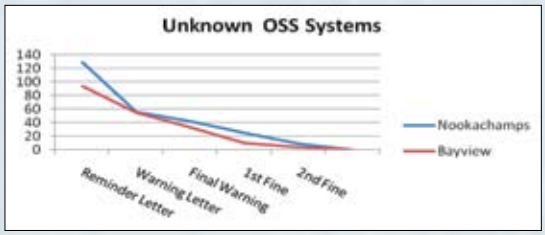
Marine Recovery Area Project

The Marine Recovery Area Project was established by the state Legislature in 2007 and requires local health departments to identify areas where on-site sewage (septic or OSS) systems have the greatest impact on marine waters. Under this program, Skagit County Public Health designated ten Marine Recovery Areas (MRAs) -- Samish Island, Guemes Island, Bayview, Upper Samish, Colony Creek, Lower Samish, Similk Beach, Yokeko Point, Quiet Cove and Dewey Beach (YDQ). The legislation also establishes "Sensitive Areas" (SA) which include areas that may not be right next to marine waters, but have an impact on waters because there are a large number of OSSs. Skagit County established two SAs – Thomas Creek and Nookachamps Creek watersheds.

The focus of the County's OSS Program is to first identify all of the OSSs in that area and then to require regular inspections to ensure that they are working properly. OSS inspections are performed by private inspectors that are certified by Skagit County Public Health.* Following the inspection, the private inspector files the report on your system with the Health Department. Inspections allow us to identify failing systems and get the necessary repairs done. However, in addition to identifying failures, inspections often find small problems that are not currently causing a failure, but can lead to a failure in the future if not addressed. These small problems can usually be fixed for a fraction of the cost to repair a failing system.

State law requires inspections of all OSSs, regardless of whether they are in a MRA or SA or not, every three years for conventional gravity systems, and every year for all other systems. However, when a property is located in a MRA or SA, the Health Department proactively contacts homeowners to remind them of the need for an inspection. Homeowners are given several months to get the required inspection. The majority of property owners contacted make sure their septic inspection is up-to-date once they receive the first or second letters from the Health Department. However, for a very small percentage, we have to issue fines in order to get compliance. The fine is established in county code at $75 per day. Prior to taking this final step we make every attempt to work with people to solve their septic system problems. Our goal is to ensure that all systems are in working order and not causing pollution - not to generate revenue from fines.

Skagit County Public Health made a great deal of progress in the Marine Recovery Area Program in 2011 in that all previously unknown OSSs in the Bayview MRA and the Nookachamps SA were identified. The response to various letters and fines in these areas are shown in the graph below.



In addition to the identification of previously unknown systems, 2011 OSS inspections in the MRAs and SAs revealed 18 failing systems and 41 systems with minor repairs needed. All of the failing systems have either been repaired or are in the process of being repaired. Details on activity within MRAs/SAs and county-wide is provided below.

	Total OSS Systems	Total Inspections	Corrections Needed	Failures	Repair Permits Issued
Countywide	23,400 (est.)	3379	131	36	112
MRA/SA Totals	4,514	1054	41	18	27

To find out more about the Marine Recovery Area Project, visit **www.skagitcounty.net/healthenvironmental** and click on the On-Site Sewage Program link.

* Homeowners can also be trained to conduct their own inspections in the County's Septics 101 and 201 Program.

Entire Samish Watershed a Marine Recovery Area

Item number one on the Puget Sound Partnership's Samish Ten-Point Targeted Action agenda is to declare the entire Samish Watershed a Marine Recovery Area to assure all septic systems in this Watershed are working properly.

Skagit County Public Health has been contacting septic system owners in the existing Samish MRAs since 2008. Current Samish Watershed MRA's have 2,512 septic systems. There are 1,000 to 1,200 Samish Watershed septic systems in the non-MRA designated area.

Left: Direct discharge of a home septic tank effluent into a ditch east of Sedro-Woolley

Some areas were not included in the MRA designation in 2008 because population density was not high enough. With the Clean Samish Initiative (CSI) effort to clean up the entire Watershed, it seemed a natural progression to make this designation.

Several attendees at the public hearing held December 13, 2011 had different opinions. The County Commissioners held off on their decision. If the Commissioners choose to designate the entire watershed an MRA, then the Public Health Department will notify septic system owners that they need to have their septic systems inspected (*See MRA Project Article).* State law requiring septic system inspections is the same for any property, whether or not it is in an MRA.

The proposal will be revised and the matter will be brought before the Commissioners again at a date yet to be determined.

Septic System Inspection $100 Rebates

Septics 101 and Septics 201 classes held by Skagit County Public Health have become very popular. That may be because there have been hundreds of letters sent to Samish Watershed residents. OR it might have something to do with eligibility for a $100 rebate on a septic system inspection.

Skagit County Public Health received a $499,999 grant from the State Department of Health in 2011 to offer residents a $100 rebate when they have their septic system professionally inspected. An additional $100 rebate is available when an OSS system owner purchases and installs septic tank risers and lids. Risers and lids make it easier to inspect systems in the future.

To be eligible for the rebate, the inspection must have taken place after October 1, 2011, has to be for an owner-occupied home, and the property owner must attend a Septics 101 class. Just over $8,000 in rebates have been issued to County residents since October 1, 2011. Don't delay!

Skagit County Public Health used our $175,000 from the Clean Water Fund to help us receive additional funding.

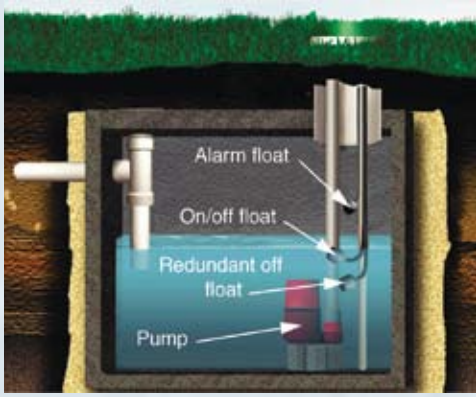
- $90,000 through June 2013 for Marine Recovery Area Project – Washington State Department of Health (DOH).
- $499,999 through October 2013 for the Septic Rebate Program – DOH and EPA
- $36,000 for Septics Education through 2014 – Washington State Deptartment of Ecology
- $230,271 in low-interest loans to 11 homeowners for OSS repairs – Washington State Department of Ecology

Septics Education

Septics 101 and Septics 201 classes are continuing. The 201 classes have a maximum capacity of 30 people due to the logistics of viewing the demonstration drain field. The March Septics 201 classes have been filled, but you can call 360-336-9380 and ask to be put on a waiting list. Future Septics 101 classes are listed:

Septics 101 Schedule

Date	Time	Location Name	Location Address
April 24, 2012	9:00 - 10:30 am	Padilla Bay Center	10441 Bayview-Edison Rd, Mount Vernon 98273 sign up for the class through the WSU Beach Watchers as part of their "Samish Homeowners Workshop" by calling Nancy Olsen at 428-4270 ext 223
May 22, 2012	6:00 – 8:00 pm	Alger Community Hall	18735 Parkview Lane, Burlington, 98233 (in Alger)
June 13, 2012	2:00 – 4:00 pm	Sedro-Woolley City Hall	325 Metcalf Street, Sedro-Woolley, 98284
Anytime	Anytime	On line class (34 minutes long)	Accesses at: www.skagitcounty.net/septics101online



Skagit County Septics 101 Class available on line

SKAGIT COUNTY — Skagit County Public Health has announced that their free Septics 101 presentation is now available on line at the following link: **http://www.skagitcounty.net/septics101online**.

Septic 101 class topics include:

- How septic systems are designed to treat sewage
- How septic systems need to be used so that they can treat sewage effectively
- Why septic systems need to be maintained
- What the public health and environmental benefits from function septic systems are
- How to save thousands of dollars in unnecessary septic system costs
- What financial resources a homeowner should know about if their septic system needs repairs or replacement (rebate, grant, and loan programs)

The on line class is very similar to the in person class. The video is 34 minutes of audio and slides, followed by an on line test and completion certificate, which is recorded with Skagit County Public Health.

Homeowner benefits of taking September 101 (in person or on line) are: 1.) Save money on operational costs and reducing the likelihood of having to replace a failed septic system, 2.) Improve the chance that their septic systems are working properly so that they do not contaminate groundwater and surface water, and 3.) help our community improve surface water quality in streams, rivers and the Puget Sound for shellfish and other living things that need good water quality to live. Taking either the in person or on line Septics 101 class meets the class attendance requirements to apply for a $100 rebate for professional inspections and riser installations as well as to sign up for the Septics 201 homeowner septic system inspection class.

For further information, contact either Wade Bessett or Corinne Story in the Skagit County Health Department, Telephone **360-336-9380**.

Septic tank inspection in progress

Septic tank baffle screen inspection in progress

Fish Habitat Monitoring and Restoration Program


Samish Chinook

The Fish Habitat Monitoring and 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, revegetation of riparian areas, feasibility studies for major habitat projects, and off-channel habitat reconnection projects.

Projects designed to improve fish habitat also typically improve water quality. 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 flood-plain function decreases flooding, which in turn reduces erosion and pollutant loads to bays during flood events.

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 Skagit Watershed. Twenty annual sites are surveyed every year and 60 sites are monitored 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 2011, the County completed surveying of the annual 15 sites.

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. Some culverts under Skagit County 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. When this happens, water rushes through the culvert and pours out with such force that fish cannot swim against the stream thereby preventing their spawning migration. Perched culverts also prevent fish from jumping and entering the culvert. To remedy these problems, Skagit County Public Works often replaces small, inefficient culverts with larger culverts. Large culverts allow water to flow through at a more natural

An old culvert at Gravel Creek: This culvert acts as a barrier for fish migrating upstream as the fish as forced to jump up and into the culvert to pass through.

A new culvert at Gravel Creek: This culvert allows fish to swim upstream easily. It is also able to manage the flow of water that may come with rising water levels.

rate providing a more stable stream environment for fish; this also reduces flooding problems. Natural Resource staff identifies potential projects and works with Engineering for design and construction, which is often paid for with County Road funds. Skagit County currently has 807 miles of county road and hundreds of culverts.

Hansen Creek Watershed Management Plan

The Hansen Creek/Red Creek project is an ongoing project focused on habitat restoration and flood management in and around Hansen Creek. Working in coordination with local Tribes, the state, and conservation groups, the project consists of enhancing riparian areas and improving fish habitat by planting trees, placing wood in creek channels, and managing sediment.

Due to past problems associated with flooding and sediment accumulation in Hansen Creek, a large alluvial fan was constructed in the summer of 2009. As creeks flow, sediment is carried downstream. If large amounts of sediment are deposited in the wrong area, creeks can rise above banks and flood the surrounding land. The area downstream of State Route 20 is an area where sediment tends to accumulate causing localized flooding. The Hansen Creek alluvial fan project, lead by the Upper Skagit Indian Tribe, provides a wider area in Hansen Creek where sediment can safely be deposited, and will also capture sediment and prevent it from flowing downstream. Skagit County is continuing to look at additional projects downstream from the alluvial fan to reduce flooding.

Middle Skagit

The Middle Skagit Initiative is designed to bring community and technical expertise together to coordinate and develop projects in the Middle Skagit River with the goal of restoring Chinook populations. The Skagit Watershed Council, in partnership with Skagit County, resource agencies, Tribes, local utilities, private conservation organizations, and others, is currently undertaking the development of a strategy for implementing feasible salmon restoration projects in the middle Skagit River. The Middle Skagit Initiative has identified and prioritized potential river restoration projects along the Skagit River between Sedro-Woolley and the confluence of the Sauk River.

NATURAL RESOURCE STEWARDSHIP PROGRAM

*Grant funding to enhance **YOUR** watershed*

Cleaning up and enhancing streamside land is difficult and can be expensive, but the Skagit County Natural Resource Stewardship Program (NRSP) is making an effort to help. By applying to the program, landowners can receive grant funding up to $35,000 to enhance their property, ***all at no cost to the landowner****!*

This program, started in 2009, works with individual landowners or community groups who live on, or own property next to a stream and want help in protecting or enhancing their land to improve the habitat and water quality of their watershed. Projects include removal of invasive vegetation, streamside native plantings, fish habitat restoration, and fence construction to keep livestock out of the stream.

Restoring Riparian Areas

The NRSP helps remove streamside invasive plants such as Himalayan blackberry, Japanese knotweed, Reed Canary Grass and English Ivy in order to re-establish native vegetation such as Red Alder, twinberry, vine maple, and Western Red Cedar. These native plantings provide shade to help keep the water cool while providing a food source for juvenile salmonids. Effective riparian areas also filter out harmful pollutants such as soil runoff, fertilizers, and herbicides. NRSP works with landowners to create a plan that meets the landowner's needs while still benefiting the water quality of the stream.

(Continued on next page)

NATURAL RESOURCE STEWARDSHIP PROGRAM

(Continued from previous page)

A NRSP project completed on a small Cranberry Lake tributary. Horses had unrestricted access to the streambed which resulted in an increase in fecal coliform, sedimentation, increased turbidity, and muddy pastures. The NRSP restoration project included the installation of a culvert, a livestock crossing, 1,258 feet of stream fencing, and the planting of 311 native plants to help improve water quality and bank stability, enhance fish and wildlife habitat, and protect animal health.

Keeping Livestock out of Streams

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
- Increased runoff
- Increased erosion resulting in poor salmon spawning gravel
- Manure-contaminated runoff resulting in high fecal coliform counts downstream

The NRSD can install fences and/or off-channel watering areas to prevent or reduce these problems from happening.

Restoring Fish Habitats and Stream Banks

Many streams in our area have failing and eroding banks. This increases the amount of fine sediment in the system which is bad for water quality and salmon. The NRSP can install wood in an effort to reduce bank erosion while enhancing the natural habitat and providing much needed refuge for juvenile salmonids.

Completed Projects

Since 2009, NRSP has worked with thirteen landowners in three watersheds and has completed eight projects with seven more in progress. NRSP has successfully restored or enhanced over 12 acres in Carpenter Creek, Bulson Creek, and the Samish watershed. This work has included the installation of over 4,900 feet of livestock exclusion fencing, more than 6,400 native plantings, 46 large woody debris structures and one livestock crossing.

For more information, or to see if you are eligible to partake in the program, visit
www.skagitcounty.net/NRSP
or contact Emily Derenne at
emilyjd@co.skagit.wa.us

Skagit Marine Resources Committee

Local volunteers demonstrate how to use a beach seine at Fidalgo Bay Day to collect fish and other sea creatures for children to view.

There are over 275 miles of marine shoreline in Skagit County that help support a diverse community of plants, fish, and wildlife. Unfortunately, the health of the Puget Sound is in serious decline. In 1999, the Skagit County Marine Resources Committee (SMRC) was established as part of a grassroots effort to restore, enhance, and protect our local marine resources. SMRC members represent diverse interest groups and are appointed by the Board of County Commissioners. Through multiple partnerships and a large volunteer base, the SMRC is able to keep project costs low and achieve long-term success. SMRC is primarily supported by federal grant funding administered through the Northwest Straits Commission, and partly by the Clean Water Program. In 2011 SMRC volunteers contributed a combined total of 3,262 hours.

Outreach and education

Public education and community involvement is integral to SMRC's work. The committee relies heavily on the support of well-trained volunteers. The majority of the SMRC volunteers are trained through the Washington State University's Beach Watcher program. In 2011, 75 Beach Watcher volunteers contributed over 723 hours towards SMRC projects. One notable event, the Fidalgo Bay Day, is an annual educational event supported and organized by the SMRC. The event includes educational displays, children's activities, a beach seining demonstration, and samples of local seafood. Thanks to the 48 dedicated volunteers and the 25 participating organizations, Fidalgo Bay Day continues to be a huge success year after year.

Local volunteers survey the shoreline for invasive Spartina.

Invasive species removal

In 2011, 29 trained volunteer kayakers contributed a total of 201 hours surveying over 54 miles of Skagit County shoreline for the invasive saltwater weed, Spartina. Approximately 59 square meters of Spartina was identified.

Shoreline Restoration

700 cubic yards of rock groin was removed at the NE March's Point boat ramp to restore the sediment transport processes and forage fish spawning habitat. In addition, native vegetation was planted, maintained, and monitored along about 400 feet of shoreline to enhance riparian habitat. 14 trained volunteers contributed 152 hours collecting post-construction monitoring data at the boat launch to assess project impacts on sediment transport and forage fish habitat.

Native oyster restoration

Since 2002, the SMRC has planted over 1,365,000 Olympia oyster seeds at the Fidalgo Bay trestle and has added over 30 bags of Pacific oyster shell as substrate for new oyster settlement. Monitoring occurs annually to evaluate the success of this program. Evidence to date strongly suggests that the native Olympia oysters at the Fidalgo Bay restoration site have been successfully reproducing and have become a small, thriving, self-sustaining population. In 2011, volunteers contributed over 250 hours towards the native oyster restoration effort.

What to watch for in 2012

Some of the special events proposed for 2012 include an educational community beach seining event at Ship Harbor in June and August and Fidalgo Bay Day at the Fidalgo Bay RV Park in September. If you are interested in becoming a WSU Beach Watcher volunteer, training will occur in May of 2012. The native Olympia oyster restoration program will be expanded to four new locations: north Fidalgo Bay, Padilla Bay, and two locations in Skagit Bay. Additional Pacific oyster shell will also be distributed in Fidalgo Bay to enhance native oyster habitat.

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Skagit Conservation District

The Skagit Conservation District (SCD) promotes voluntary stewardship among private landowners in Skagit County and has been helping local residents protect water quality, improve fish and wildlife habitat, conserve resources, and maintain a vital agricultural community since 1942.

The SCD is a non-regulatory division of state government governed by a board of five supervisors, who are all local landowners. All programs provided by the SCD are voluntary and free of charge. The SCD has a wealth of information concerning water quality issues, forest stewardship, management of small and large farming operations, and implementation of best management practices (BMPs). The District publishes newsletters, hosts educational workshops and tours, and offers numerous opportunities for volunteers to get involved.

Dick and Elaine Lease have been participating in the Skagit Stream Team program for over 8 years. In 2011, 73 local residents participated in the Skagit Conservation District's Skagit Stream Team and Storm Team progams.

Resource Conservation Planning and Technical Assistance for Large and Small Farms

Soil, water, air, plants and animals can all be adversely affected by varied land uses. Poorly managed agricultural operations can be a major contributor to non-point source pollution. The SCD provides free technical assistance to farmers and landowners who seek out ways to minimize the impacts of livestock operations on soil and water resources. Conservation planning provides landowners with useful guidance on pasture rotation, fencing design, gutters and downspouts, waste storage designs, alternative watering facilities, stream protection projects, manure management and much more.

Over the last year, the Skagit Conservation District provided technical assistance to 11 Skagit County dairy operations, 5 non-dairy commercial operations, and 31 small farm landowners; one new dairy nutrient management plan was completed, 2 dairy nutrient management plans were updated and 2 dairy nutrient plans were certified as implemented; conservation plans were implemented for 7 small farm landowners and 4 non-dairy commercial livestock producers. Projects included the design and implementation of 5 fencing projects, 3 manure storage structure projects, 2 underground outlet projects, and 2 solar powered water pumps.

Education and Community Involvement

Education is the first step in effective conservation. The Skagit Conservation District proudly supports many important education and public involvement programs that provide opportunities to inform landowners, residents, teachers and students, about local conservation issues and empower them to take ownership and make a difference in our community. Over the last year, the SCD worked closely with many partners to promote conservation education in our local area through a variety of programs such as:

Storm Water Education Program: The SCD works in partnership with Skagit County and the Cities of Mount Vernon, Burlington, Sedro-Woolley, and Anacortes to

Samish watershed families had an opportunity to explore Friday Creek, learn about water quality, native plants, and wildlife habitat during a 'Family Night at Pomona Grange' event hosted by the Skagit Conservation District and the new Friday Creek Habitat Stewards.

Participants of the Skagit Conservation District's Backyard Conservation Stewardship Class had the opportunity to see storm water in action during a rainy field tour of the Skagit County demonstration rain garden on Continental Place in Mount Vernon.

raise awareness of the impacts of storm water pollution and to promote environmentally friendly business and residential practices that minimize storm water impacts. Over the last year, a variety of outreach efforts were conducted to engage local support, including a workshop and field tour on storm water detention pond maintenance, a workshop on Low Impact Development (LID) and Rain Gardens, designing a LID fact sheet and providing 8 LID presentations to over 200 people, designing fact sheets for mobile businesses (power washing & carpet cleaning), engaging scout groups and other volunteers to mark over 2,200 storm drains and distribute 500 educational door hangers, providing storm water presentations with the watershed EnviroScape model to 37 classrooms (over 800 students), hosting educational displays at local events, distributing pet waste educational posters, promoting the "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 over 150 local residents participated in the District's Watershed Masters, Skagit Stream Team and Storm Team, Marine Biotoxin Monitoring, Backyard Conservation and Community Wildlife Habitat programs, contributing over 4,500 (reported) volunteer hours.

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 6th Grade Conservation Tour (800+ students), Annual Soil & Water Stewardship Week poster contest (158 entries this year) and support the Annual Regional, State, and National Envirothon competitions for high school students.

Clean Samish Initiative

As a local Clean Water Partner, over the last year, SCD served on the Clean Samish Initiative Executive and Education Committees, provided technical assistance and cost-share funding for Samish residents, coordinated numerous education events and activities, and worked one-on-one with community volunteers and neighbors to help improve water quality in the Samish basin. Key accomplishments included:

- Provided farm planning and technical assistance to 47 landowners and completed farm plans for 12 landowners in the watershed.
- Planned and designed 12 structural best management practices (BMP's)
- Provided assistance in the implementation of 13 structural BMP's.
- Provided cost-share in the amount of $39,470.27 for the implementation of the 13 structural BMP's.
- Published and distributed 3 Samish newsletters reaching over 6,072 watershed residents.
- Hosted 8 educational workshops for a variety of audiences – 198 attendees.
- Hosted educational displays at 8 educational events.
- Provided one-on-one support to numerous community residents, including the new Friday Creek Habitat Stewards group.

Participants of SCD's Fall 2011 Watershed Masters class had the opportunity to learn about the values of estuaries during a class field day at Bay View State Park.

For information about Skagit Conservation District's programs, phone (360) 428-4313.

SKAGIT COUNTY CLEAN WATER BUDGET SUMMARY

	2011			2012		
	Actual Expenses and Revenue			Budgeted Expenses and Revenue		
	Expenses	Revenues		Expenses	Revenues	
Programs	Expenditures	Grants	Assessment Distribution	Expenditures	Grants	Assessment Distribution
Clean Samish Initiative						
Skagit Conservation District	$ 225,078	$ 136,948	$ 88,130	$ 130,800	$ 87,200	$ 43,600
Samish Nation	$ 6,240	$ 3,797	$ 2,443	$ 11,500	$ 11,500	
Skagit Conservation Education Alliance	$ 23,004	$ 13,997	$ 9,007	$ 12,280	$ 8,187	$ 4,093
Skagit Fisheries Enhancement Group	$ 16,541	$ 10,064	$ 6,477	$ 6,830	$ 4,553	$ 2,277
Western Washington Agricultural Association	$ 17,300	$ 10,526	$ 6,774	$ 7,500	$ 5,000	$ 2,500
WSU-Cooperative Extension	$ -	$ -	$ -	$ 8,700	$ 5,800	$ 2,900
Skagit County Planning & Development Services Department	$ 25,727	$ 15,654	$ 10,073	$ 45,134	$ 30,089	$ 15,045
Skagit County Public Health Department	$ 112,270	$ 68,310	$ 43,960	$ 82,343	$ 54,895	$ 27,448
Skagit County Public Works Department	$ 54,188	$ 32,971	$ 21,217	$ 93,083	$ 62,055	$ 31,028
Laboratory Charges & Other Expenses	$ 55,449	$ 35,160	$ 20,289	$ 58,400	$ 38,933	$ 19,467
Critical Areas Ordinance						
Adaptive Management	$ 29,732		$ 29,732	$ 15,783	$ 15,953	
Fish Habitat Monitoring	$ 14,612		$ 14,612	$ 47,290	$ 47,290	
Surface Water Quality Monitoring	$ 110,951		$ 110,951	$ 154,075		$ 154,075
Fish Habitat and Restoration						
Habitat and Restoration	$ 197,334	$ 84,663	$ 112,671	$ 167,083	$ 107,798	$ 59,285
Natural Resources Stewardship Program	$ 75,286	$ 56,465	$ 18,821	$ 200,000	$ 150,000	$ 50,000
Marine Resources						
Marine Resources Committee and Action Items	$ 122,996	$ 93,261	$ 29,735	$ 115,914	$ 55,000	$ 60,914
Lake Management						
District and Non District Lakes	$ 12,395		$ 12,395	$ 53,395		$ 53,395
Clean Water Program Partner Agencies/Organizations						
Skagit Conservation District	$ 154,388		$ 154,388	$ 199,400		$ 199,400
Skagit Conservation Education Alliance	$ 8,852		$ 8,852	$ 12,000		$ 12,000
Skagit Fisheries Enhancement Group	$ 18,608		$ 18,608	$ 30,000		$ 30,000
Skagit Watershed Council	$ 30,000		$ 30,000	$ 30,000		$ 30,000
Western Washington Agricultural Association	$ 14,750		$ 14,750	$ 20,000		$ 20,000
Skagit County Public Health Department	$ 156,662		$ 156,662	$ 178,899	$ 20,000	$ 158,899
Administration						
General Administration	$ 207,020		$ 207,020	$ 234,333		$ 234,333
Central Services (est.)	$ 5,000		$ 5,000	$ 5,000		$ 5,000
Information Services	$ 26,770		$ 26,770	$ 34,300		$ 34,300
Geographic Information Services	$ 12,443		$ 12,443	$ 18,000		$ 18,000
Training	$ 16,363		$ 16,363	$ 35,906		$ 35,906
Reserves			$ 44,180			$ 32,494
Total	$ 1,749,959	$ 561,815	$ 1,232,324	$ 2,007,948	$ 704,254	$ 1,336,358

2011 Grant/Supplemental Funding Sources

Clean Samish Initiative: Pollution Identification and Correction: US Environmental Protection Agency
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

A Message from the Skagit County Public Works Director

Clean Water is important to all of us. This year we've made great progress working with our local, state, and federal partners in cleaning up fecal coliform pollution in the Samish basin. We appreciate everyone's input, but the real heroes in this effort are the many residents who have maintained their septic systems, fenced their livestock, and helped us educate everyone on how to be good stewards.

Our staff and our partners are working very hard to keep our waters clean and our environment healthy.

Sincerely, Henry Hash
Skagit County Public Works