



Pollution Identification & Correction Program

2016 Annual Report

Skagit County's Pollution Identification and Correction (PIC) Program is a partnership between state and local agencies, tribes, local non-governmental organizations, shellfish growers, and private citizens. Skagit County is the lead agency for the program. We are dedicated to protecting the public from waterborne illness by reducing the levels of fecal bacteria in the rivers and creeks of Skagit County. The PIC Program has been operating since 2010, and has successfully reduced bacterial pollution in several watersheds in Skagit County.

Water quality monitoring is the core of any PIC Program. Traditionally, sampling sites are identified near the confluence of streams and are monitored on a regular basis. Where high levels of fecal bacteria are found, source identification sampling (sometimes referred to as "bracket sampling") occurs upstream to identify where the pollution is coming from. Staff then follow up with site visits to property owners to identify the source of pollution, and work with property owners to correct any problems that are found. Common sources include pets, leaking septic systems, livestock such as horses, cows, and pigs, and wildlife.

Thanks to our partnerships with other organizations, we are able to offer resources to property owners who may have problems on their property that need to be solved. With the help of partners like Skagit Conservation District, the Skagit County Public Health Department, and Skagit Fisheries Enhancement Group, we can offer low interest loans and grants for septic system repairs or replacements, free and confidential farm assessments by trained farm planners, assistance with farm management, and financial assistance for fencing, invasive plant removal, native plantings, and other projects.

A graphic representation of all aspects of the PIC Program is presented in Figure 2.

Areas of focus

The Samish Bay watershed has been the major focus of the PIC Program since its inception (Figure 3). Over 4,000 acres of commercial shellfish beds are located in Samish Bay. Shellfish are filter feeders and can accumulate fecal bacteria and other pollutants that can make people sick.



Figure 1. A plume of pollution discovered by our staff during a 2016 storm.

Skagit County Pollution Identification & Correction Program

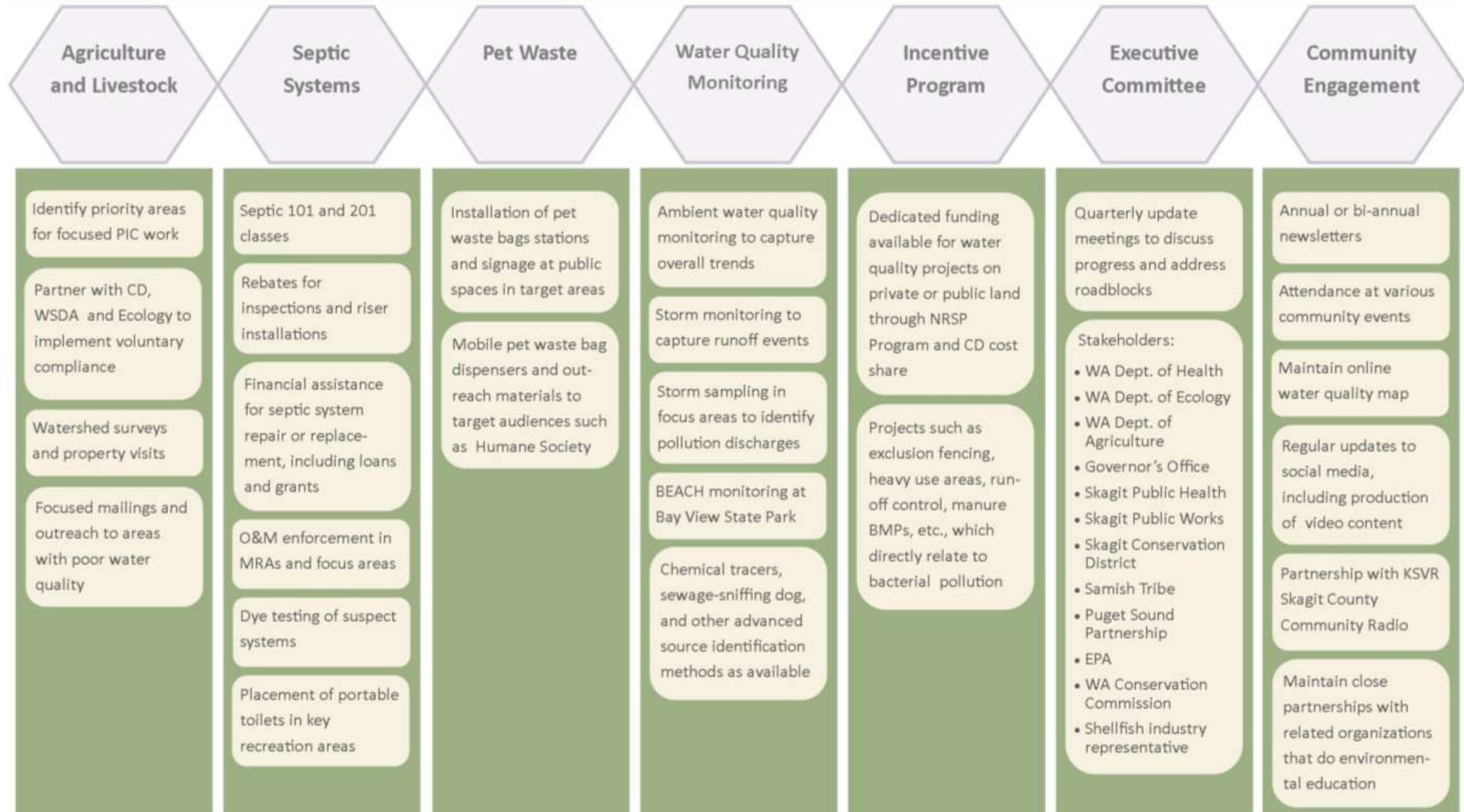


Figure 2. Skagit County's PIC Program



Figure 3. The Samish Bay watershed to the north, and the Padilla Bay watershed to the south.

In the fall of 2009, the Washington State Department of Ecology (Ecology) completed a study on fecal coliform pollution in Samish Bay, along with a plan for reducing the level of bacteria. The PIC Program has been working to implement that plan since 2010. The Samish River and its tributaries continue to be a major focus of the program.

In 2015, the program expanded to include the Padilla Bay watershed. The Padilla watershed includes 151 acres of commercial shellfish beds, along with a popular beach at Bay View State Park that was regularly closing every summer due to water polluted by fecal bacteria.

The PIC Program also responds to reports of problems throughout Skagit County as time and resources allow.

Progress in 2016

We are constantly looking for ways to improve our efficiency, and 2016 brought many improvements to the PIC Program. One of the most significant improvements was the creation of a database to store all information on the various properties and activities. The core PIC Program partners all have access to the database, which has vastly improved our efficiency in tracking and reporting our activities.

Skagit County and its partners identified potential livestock problems on 76 properties in Skagit County (see Table 1). The most common problems found in all watersheds are livestock being kept on saturated pastures, poor pasture conditions that lead to runoff, the need for better manure collection and storage, and the need for heavy use areas.

Table 1. Summary of properties identified in 2016 and their progress towards a fix

Watershed	Number of new properties identified	Number of properties fixed or cleared	Number of properties working with Conservation District
Samish Bay	41	12	12
Padilla Bay	23	2	3
Nookachamps Creek	3	3	1
Skagit River	9	2	1
Total	76	19	17

In addition to the new properties identified in 2016, a significant amount of time was spent on following up on properties identified in previous years. It can take several years to solve the problems on large properties or properties with many problems, even when the property owner or livestock operator is responsive.

Skagit County’s Onsite Septic Program spent the last year reevaluating their procedures and refocusing their efforts. In 2016, the Septic Program refined their procedures to assure that failures are corrected in a timely manner. They have also increased their efforts to make sure that residents in Marine Recovery Areas (areas especially sensitive to failing septic systems) are up to date on septic system inspections. Due to their efforts, 32 septic systems were repaired or replaced in Skagit County during 2016 (Table 2). Note that these numbers are only for repairs requiring permits. Many more small repairs were completed in 2016 that did not require permits. In Samish Bay, 17 total permitted and other smaller repairs were reported for 2016.



Figure 4. Crush, the sewage sniffing dog, visited in March 2016.

Table 2. Onsite septic system permitted repairs or replacements in 2016

Area of interest	Number of repairs
Samish Bay	3
Padilla Bay	1
Skagit River	24
Guemes Island	1
Yokeko/Dewey/Quiet Cove	1
Anacortes	2

When PIC Program partners suspect high levels of bacteria are caused by a septic source, we refer suspect properties to the Septic Program for further evaluation. In 2016, staff from the Septic Program performed 18 dye tests as part of their evaluations (Table 3). Several of the dye tests were a direct result of our visit with Crush, the sewage sniffing dog, in March (Figure 4). Dye testing confirmed three failures in the Samish watershed, all of which are either fixed or somewhere in the process of being fixed.

Table 3. Dye tests performed in 2016 by Skagit County's Onsite Septic Program

Watershed	Number of dye tests
Samish Bay	10
Padilla Bay	5
Skagit River	3

During the summer of 2016, we began a mapping project to identify reaches of creeks in the Samish watershed where water quality got significantly worse with no explanation. We identified eight reaches in Friday, Thomas, Bob Smith, Swede, Skarrup, Wear, and Wildes Creeks, with 405 parcels contributing runoff to those reaches. During the late summer and fall, Skagit County's septic program began to enforce septic system inspection regulations in these areas. By the end of 2016, the vast majority of septic systems had been inspected, but no surfacing failures were found, and the majority of systems appeared to be in good working condition. In December, Skagit County surveyed all eight areas looking for properties with livestock and poor pasture conditions. Though pasture management could be improved, no immediate problems were identified. In 2017, letters about the issue will be sent to property owners with livestock.

Chemical Tracers Project

Over the past several years, the University of Washington has worked with Kitsap County to develop a list of chemical tracers (such as sucralose, ibuprofen, and caffeine) that can help in identifying whether fecal bacteria pollution is from a human source. As part of a grant-funded project, Skagit County partnered with the University of Washington in 2015 to develop a list of chemical tracers that can help identify livestock sources, in addition to using the previously developed human tracers. Eighteen chemicals were identified as possible chemical tracers for livestock, and sampling for these tracers was used as a screening tool for waterbodies rather than a tool to identify specific pollution sources. Skagit County has asked for and received another grant to continue working with the University of Washington to develop the tool over the next two years.



Figure 5. Alex Gripe from the UW samples water at Ershig Rd.

Education & Outreach

Education and outreach is a major part of our PIC Program. Aside from our regular PIC Program partners, we also work with other organizations such as Skagit Fisheries Enhancement Group, Coastal Volunteer Partnership, Skagit Conservation Education Alliance, Washington State University Extension, and Taylor Shellfish to ensure that our messages get out in as many ways as possible.

During 2016, the PIC Program attended eight events such as the Taylor Shellfishtival and the Skagit River Salmon Festival. Newsletters were mailed to approximately 6,300 residents in the Samish and Padilla watersheds, and we placed ads in the Skagit Valley Herald promoting good practices. We also increased our presence on social media in order to share updates, local news, and outreach materials on a more timely basis. Our following increased 36% to over 300 followers in 2016. We produced three short videos about septic systems for our Skagit County Clean Water Facebook page. All videos were very well received, and viewed by over 3,700 people.

Skagit County also continues to stock pet waste bags at 10 pet waste stations around the Samish watershed.