Pacific County
Department of Community Development

Annual Report

Environmental Health

2015

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Introduction

The following report is a compilation of the Environmental Health Program activities for 2015 and highlights hazards in the community that may impact human health. Our programs fulfill a core public health service in which a variety of environmental health assessments are performed. Much of the work is in prevention and education, ensuring that regulated items are in accordance to current code and standards to keep public and environmental health emergencies at a minimum. Our staff continues to keep public and environmental health safety at the forefront of every task, ultimately creating a safer community.

What is environmental health and why is it important?

Environmental health is a branch of public health that focuses on the relationships between people and their environment, promotes human health and well-being, and fosters a safe and healthy environment. Environmental health is concerned with the ways that our environment can affect our health, from chemicals and microbiological organisms in the food we eat or the water we drink to particles in the air we breathe.

What does this report cover?

This report provides an in-depth examination of selected environmental factors that influence human health in Pacific County. Each section focuses on nationally recognized environmental factors and provides data for several environmental health indicators, along with baseline data from previous years in order to highlight trends. We have examined the quality of our county's air and water, its solid and liquid waste, food-borne illnesses, and other environmental factors, and we have linked these to human health data where it exists.

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Water

The link between drinking water quality and human health has been understood for many years. Public concern over safe drinking water has led to strict federal and state standards, and as a result, drinking water in the U.S. is among the safest in the world. In turn, Americans have come to trust the quality of their drinking water.

Health Effects of Drinking Water

Drinking water is a potential source of many pathogens and chemicals, and can lead to a variety of acute and chronic illnesses. The contaminants can come from natural sources, such as microorganisms and radon, and from human sources, including heavy metals and chemicals. Some, like heavy metals and nitrates, can come from both sources but are primarily caused by human activity.

Long Beach Groundwater Study

The purpose of the Long Beach Groundwater study is to monitor the "health" of the shallow water aquifer found on the Long Beach peninsula. Since 1968, the groundwater has been tested sporadically for chloride, pH, temperature, dissolved oxygen, bacteria, bicarbonate, and alkalinity (*Ground-Water Flow and Water Quality in the Sand Aquifer of Long Beach Peninsula, Washington*, U.S. Geological Survey, 1995). The United State Geological Survey (USGS) performed the initial sampling and produced a report, referenced previously, and the County continued to sample and monitor after the report was completed.

DCD tests a combination of 20 private and public water wells. The original USGS well locations have been lost so the County now has a list of locations located from downtown Long Beach to Stackpole Road. The 2014 survey was performed in the fall, rather than the spring, to compare the results after the dry summer season. For budget reasons, the study will be performed every other year with the next study occurring in 2016.

Six years of data is tabulated below. As can been seen, most parameters have remained relatively constant over the years surveyed. Individual spikes of nitrate were found at some locations in 2008 and 2011 due to over enthusiastic application of fertilizer to the lawn. In these cases, the homeowner was educated on the proper use of chemicals and potential health effects of over-application.

	Standards	2008	2009	2010	2011	2012	2014
Temp (°C)	--	12.00	11.42	11.45	13.74	11.76	14.05
pH	6.0-8.5	6.52	6.20	6.00	6.05	6.74	6.57
DO	--	4.26	4.63	4.90	4.95	3.14	3.63
Cl (mg/L)	250 mg/L	17.53	20.80	23.39	19.09	17.76	18.05
NO_3 (mg/L)	<10 mg/L	1.66	1.18	1.08	1.13	1.39	.86
Survey Date		May 15	May 4	Apr 28	May 4	Apr 25	Oct 29

Figure 1. Results of the Long Beach Groundwater Survey. Results are averaged.

Drinking Water Laboratory

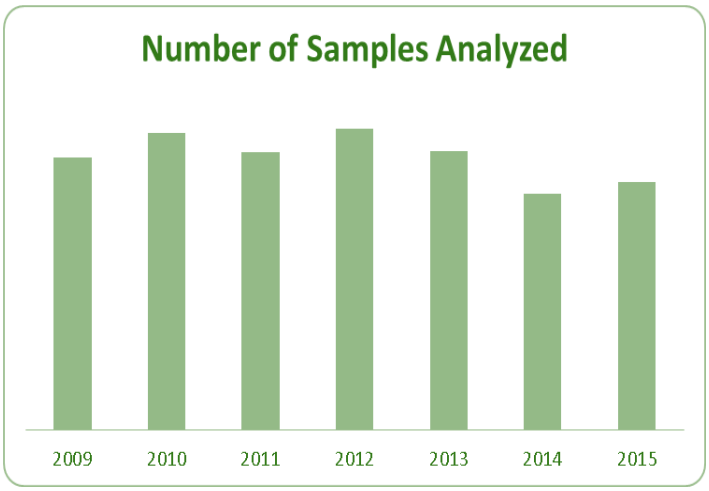


Figure 2. Number of Samples by Year.

The Pacific County water laboratory, located in the Health Department in South Bend, is certified by the Washington State Department of Ecology to analyze both drinking water samples for the presence of coliforms and raw water samples for fecal coliforms. Coliforms are a general group of common bacteria used as an indicator. E. coli is a much smaller subset of this group. A positive coliform sample indicates environmental contamination but not necessarily fecal contamination. If a sample comes back unsatisfactory, it is then analyzed to see if the sample is positive. A sample positive for E.coli indicates that the sample is contaminated with fecal coliform.

Drinking water samples are analyzed using a technique called Presence Absence (PA). Individuals or public water systems with a positive coliform sample are notified immediately by phone of the results and are given recommendations for further testing or technical assistance to remedy the coliform problem. The Washington State Drinking Water Program is also notified in the case of a public water system with a positive coliform sample.

Raw water samples are tested by Membrane Filtration (MF) technique for fecal coliforms. Raw water samples include water entering a public water system, streams, lakes, ditches, etc.

Annual Proficiency Tests (PT) are required for continued accreditation. These are ordered from a third party company, analyzed as routine samples, and the results returned to be compared to the standards. If the results are unsatisfactory, then another PT must be run until results are acceptable. Documentation that the proficiency tests were performed is required when the laboratory accreditation is renewed.

Solid Waste

The Solid Waste Program is funded through grant from the Department of Ecology, as well as Pacific County tipping fees. The Coordinated Prevention Grant (CPG) and the Community Litter Cleanup Program (CLCP) supplies the funding for the household hazardous waste program, code enforcement, and most other programs related to waste reduction and recycling. To use the funding for a program, specific criteria must be met and the program approved by the grant officer at Ecology.

Household Hazardous Waste/Small Quantity Generator Programs

Pacific County's Moderate Risk Waste Facility (MRW) is located in Long Beach and offers businesses and residents an opportunity to dispose of their hazardous waste through two types of programs. Residents can dispose of their waste for free at the MRW facility and small businesses can use the Small Quantity Generator Program (SQG).

If a business generates less than 220 pounds (100kg) of dangerous waste per month (about a 55 gallon drum of waste), or 2.2 pounds (1 kg) or less of extremely hazardous waste per month, the MRW facility would be able to dispose of this waste at cost due to the ability to classify the business as an SQG. State and federal laws require businesses and industries that generate, store, or accumulate hazardous waste to comply with proper treatment, storage, and disposal practices. Even though the Pacific County's MRW facility is not a Treatment Storage or Disposal (TSD) facility, it is permitted to receive this waste due to a contract it has with a state/federally licensed TSD hazardous waste disposal contractor. There were seven businesses that utilized the service in 2015.

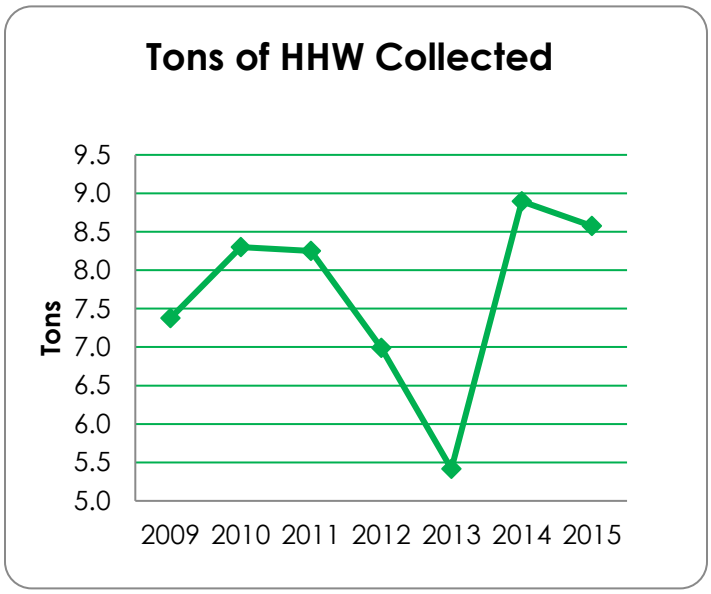


Figure 3. Collection rate, in tons.

A decline had been seen over the last couple of years as property turnover has slowed. Although the participant numbers are low, larger quantities of waste are being brought in. In addition, collection rates tend to cycle as people dispose of their stockpiled materials and then start collecting again.

For the homeowner, the MRW facility collects hazardous waste at both the fixed facility in Long Beach and satellite collection events with our mobile "Hazo Wagon" in the northern part of the County. Mobile events are held in Raymond, Naselle, Menlo, and Bay Center. The MRW facility was open May through September. Between the MRW facility and the mobile events, waste was collected from 145 participants. These collection events netted 17,150 pounds of hazardous waste.

Solid Waste/Recycling

The "typical" household in Washington State in 2013 generated about 13.5 pounds of solid waste per person per day: 6.3 pounds of recyclable material and 7.2 pounds of solid waste. Pacific County's solid waste generation rate was 3.94 pounds per capita in 2015, excluding the pounds diverted to the recycling stream or taken to the Moderate Risk Waste Facility.

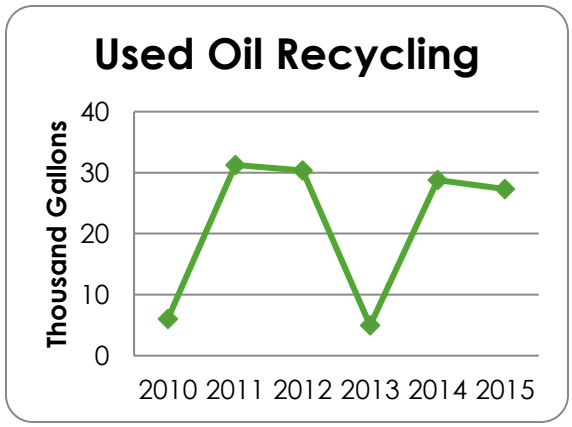


Figure 4. Oil Recycling rate in thousand gallons.

There are six oil recycling bins located throughout the county with an additional bin located at the Household Hazardous Waste Facility in Long Beach. The six oil recycling bins located in Bay Center, Long Beach, Naselle, South Bend, Raymond, and Klipsan Beach are open to the public 24 hours a day, 7 days a week.

The bins are checked weekly by staff who empty the garbage, clean the debris up and wipe the bin down. The used oil is pumped out by Emerald Recycling and trucked to their facilities for further processing and refining. Due to the lower price of oil, Pacific County has to pay a fee for disposal of this product. The number of available bins and better tracking helps account for the drastic increase in the amount of oil collected at the locations.

Although every effort is made to keep the bins accessible to the public during all hours, it is occasionally necessary to close the bin temporarily. Bins have been closed due to contamination that renders the contents unusable for recycling purposes. The contents then have to be handled under hazardous waste regulations. Locations have also been closed because the container was full and leaving it open would results in a spill from overflow.

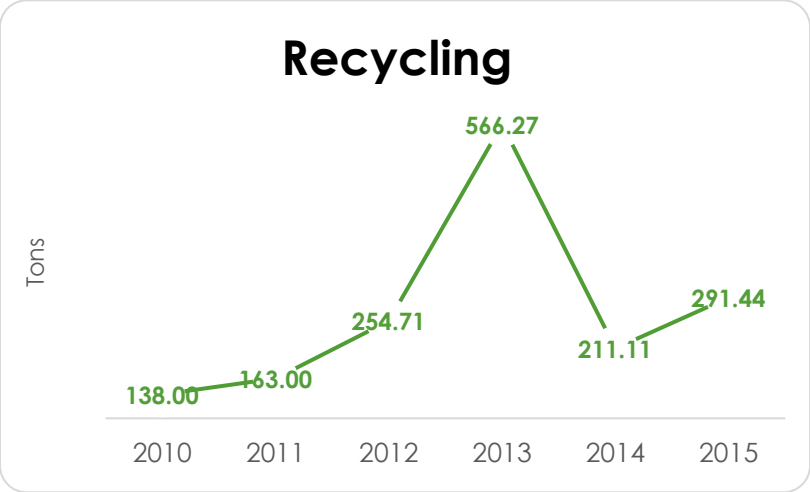


Figure 5. Recycling at County sponsored recycling bins in tons.

Recycling continues to be a popular service to residents in the County. The recycling bins are located at Bay Center, Chinook, Ilwaco, Long Beach, Menlo, Naselle, South Bend, Raymond, and Ocean Park. The nine County supported recycling locations accept aluminum, newspaper, glass, plastic, and magazines, with most also accepting cardboard. When possible, the blue recycling bins are located with the used oil recycling stations to minimize the inconvenience to residents.

Code Enforcement

The CPG grant also allows the County to fund a code enforcement officer to investigate and resolve solid waste violations, such as illegal dump sites, vehicle abatement, animal, garbage or noise complaints. The program is complaint-based and relies on the public to report such nuisances. Many of the complaints can be resolved quickly without further action. A few, however, do require follow-up and can result in court action and fines if the problem is not resolved in a timely manner.

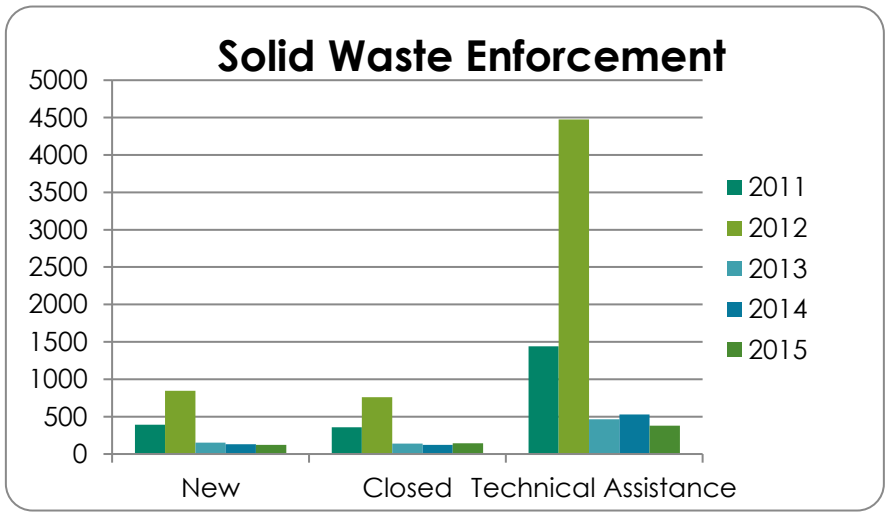


Figure 6. Number of New and Closed solid waste code enforcement cases and the number of inspections performed. Inspections are performed to determine the validity of complaints prior to an activity being created. (Technical Assistance numbers for the 2nd half of 2015 were unavailable due to a change in reporting)

The complaints often involve personal property on private land which makes the owners sensitive to what they perceive as overregulation and infringement on their rights. What they do not understand are the possible public and environmental health hazards related to an illegal garbage dump that could contaminate nearby water sources, or the piles of cars that are home to vermin that may carry disease.

As mentioned above, the number of inspections is much higher than the number of new cases initialized. Many of the complaints are civil issues but require staff time to confirm that the problem is as reported and will not require further action. Many are either from rentals, where garbage service is not included in the rent, or where residents have had their garbage service discontinued due to lack of funds.

Special Events

Part of the CPG grant that funds the solid waste program is dedicated to the collection and recycling of items that are hard to recycle through regular means.

The Appliance Recycling Day event is organized by the County and both transfer stations contract to provide the collection and recycling of the items. Residents are allowed to bring "white goods" for free disposal to each transfer station at a dedicated time and date. Accepted items include washers, dryers, hot water heaters, microwaves, dishwashers, etc.

Due to lack of participation, no event was held in 2015; however, an event is scheduled to occur in 2016.

Litter

To keep Pacific County looking clean, DCD has applied for and received funding from the Department of Ecology for a youth litter crew and litter pick-up days organized by local volunteers. Some changes were made to the program, in an attempt to mimic the program implemented by Department of Ecology.

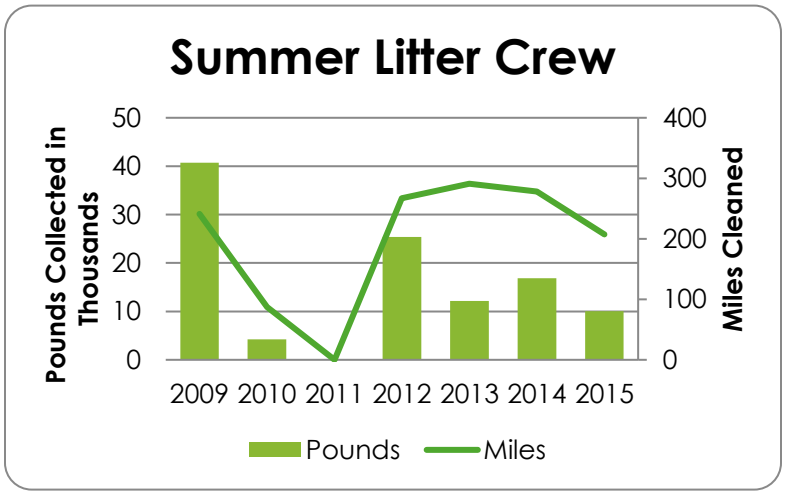


Figure 7. Overview of collection rates and miles cleaned. Fewer miles but higher pounds collected generally indicates an increase in illegal dumps found and cleaned.

The organization for 2015 was a crew supervisor, a college aged crew lead and two (5 member) youth crews to work the summer. The youth crews each worked 5 weeks while the supervisor and crew lead worked the full 10 weeks. As an incentive to collect recyclables, the crew was able to collect the money received from sorting and recycling the materials they turned in to go towards a pizza party at the end of the year.

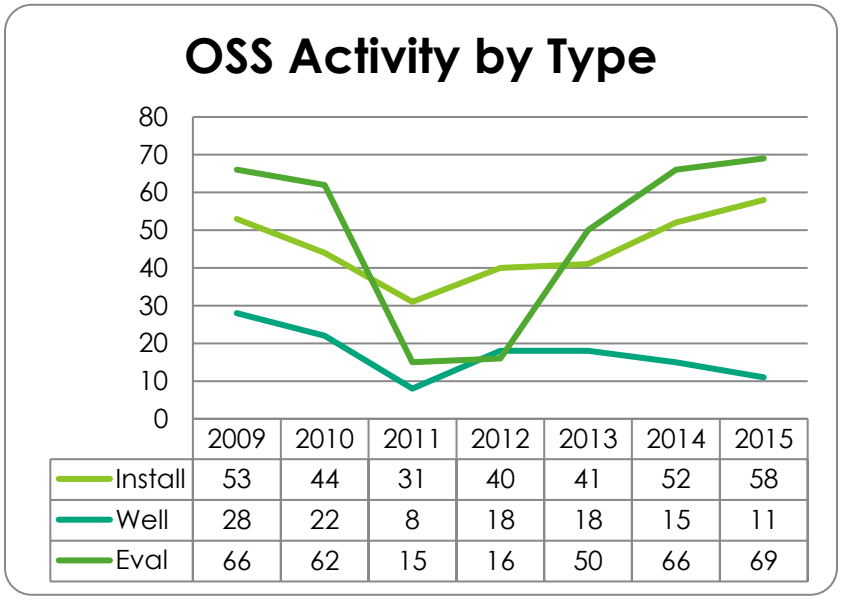
Time was spent in North County and South County. While heavily traveled roads are usually picked a couple times a season, due to the time constraints, they were only visited once.

On-site Septic Program

Onsite wastewater treatment systems (OWTSs) have evolved from the pit privies used widely throughout history to installations capable of producing a disinfected effluent that is fit for human consumption. Although achieving such a level of effluent quality is seldom necessary, the ability of onsite systems to remove settleable solids, floatable grease and scum, nutrients, and pathogens from wastewater discharges defines their importance in protecting human health and environmental resources. In the modern era, the typical on-site system has consisted primarily of a septic

tank and a soil absorption field, also known as a subsurface wastewater infiltration system, such systems are referred to as conventional systems.

Septic tanks remove most settleable and floatable material and function as an anaerobic bioreactor that promotes partial digestion of retained organic matter. Septic tank effluent, which contains significant concentrations of pathogens and nutrients, has traditionally been discharged to soil, sand, or other media absorption fields or further treatment through biological processes, adsorption, filtration, and infiltration into underlying soils. Conventional systems work well if they are installed in areas with appropriate soils and hydraulic capacities. When these conditions are met, conventional systems can treat the incoming waste load to meet public health, ground water, and surface water performance standards. It is very important that these systems are installed properly; and maintained to ensure long-term performance.



	2009	2010	2011	2012	2013	2014	2015
Install	53	44	31	40	41	52	58
Well	28	22	8	18	18	15	11
Eval	66	62	15	16	50	66	69

Figure 8. On-Site Septic System permit activity by type.

Figure 8 demonstrates the on-site septic system and well activity in Pacific County for the last seven years. There was a slight increase in the number of septic evaluations performed, although still significantly below the activity levels from a few years ago.

O&M (Operations and Maintenance) OSS Inspections

As per Pacific County Board of Health Ordinance 3E, a septic system is required to be inspected prior to a home sale, and annually for non-residential systems that participate in the Operational Permit program. The time-of-sale inspections are meant to help extend the useful life span of drainfields by identifying maintenance needs and/or minor repairs, or to identify and begin the repair process of failing systems. When the system is identified as a failure, the buyer and seller can negotiate the price of the home to reflect the OSS repair. Money is typically left in escrow to cover the expense of the system replacement.

Non-residential system inspections are also meant to extend the life of a septic system, especially since many non-residential systems have a heavier use load than residential systems and may not have been originally designed for that use. Restaurants were required to have their systems inspected in 2008 to obtain their food permit. The program expanded in 2009 to include schools and vacation rentals. A review of the program was performed and after taking into consideration the financial responsibility and requests of businesses, it was altered to require an inspection every three years, provided the system wasn't a Table VI repair or any other system that is required to have yearly monitoring performed.

There were 634 inspections reported to the County in 2015 which was a significant increase from 2014. Each report is reviewed by staff and if the information in the report meets the failure criteria, staff track the system to ensure that

the proper repair is performed to reduce the health risks. The tracking occurs through a series of processes. First, the owners of the property with the failed septic are sent a letter explaining that the system had failed and they need to begin the repair permit process. If there is no communication or action within the deadlines given, tickets are issued and the matter goes to court. The County attempts to work with individuals to encourage compliance before a citation is issued.

Craft3 – Clean Water Revolving Loan Fund

In 2014, the County received funds from the Washington State Department of Ecology to provide affordable loans to qualified Pacific County property owners through a program called the Clean Water Revolving Loan Fund. The County partnered with Craft3 to provide these inclusive loans to qualified property owners for repair and/or replacement of on-site septic systems or for connection to sewer.

A Regional Program for the marine counties (Puget Sound plus Pacific and Grays Harbor) was initiated in 2015 through a partnership with Department of Ecology, Department of Health, and those counties opting into the program. Tacoma-Pierce County Health Department took the lead and submitted a joint application for loan funds through the Clean Water Fund. The application was approved and the process was started to find a financial partner for the program. At the end of 2015, it was anticipated that the program would be active summer 2016.

Food

Although the food supply in the United States is one of the safest in the world, preventing foodborne illness and death continues to be a major public health challenge. The CDC estimates that 76 million people get sick, more than 300,000 are hospitalized, and 5,000 Americans die on an annual basis from foodborne illness. Health inspectors make sure that hot foods are hot, cold foods are cold, hand washing facilities are available and used, and raw meats are not mixed with vegetables. These practices, if improperly performed, can lead to foodborne illness. Although foodborne illnesses are reported to the local health department, surveillance of exposure and illness is complicated. Foodborne illnesses can be severe or even fatal, yet milder cases are often not detected because individuals do not seek medical care. Further, many diseases that are transmitted through food are also spread through water or from person to person. Thus, the cause of the disease may be difficult to trace.

In order to prevent foodborne illness outbreaks, local health departments inspect food service facilities to insure they comply with food safety regulations. In 2015, there were approximately 195 year-round food service facilities (including espresso stands, restaurants, and school cafeterias). In accordance with Pacific County Ordinance 6A, every effort is made to inspect establishments every six months.

The temporary food season is primarily from May through September, which coincides with the tourist season at the peninsula. The largest events include the Rod Run, Kite Festival, Garlic Festival, and Pacific County fair. Other smaller events such as the Ilwaco Saturday Market and school concessions are ongoing throughout the year or section of the year. A vendor is required to have an event or annual permit or if they serve samples of foods that would not normally require a license. This license is separate from annual food establishment permits.

Each restaurant on a septic system is required to have the system inspected every three years. The annual Food Establishment License is not issued if the inspection has not been performed. If the system was reported as a failure, a temporary food establishment license was issued on the condition that the system is repaired within six months, per regular septic regulations.

Food handlers' certification training is required for all food service workers. Pacific County contracts with Tacoma Pierce County to offer an online food worker card class that available at all hours. This option allows residents and workers to obtain a card at a time that is convenient for them. The cost to the worker is still $10, per WAC, and payment can be submitted online or in person. Pacific County receives $7 per card issued through the online class. In deference to those who prefer an in-person class, a class is held once a month in each office – the first Tuesday in Long Beach and the third Thursday in South Bend. However, class size has decreased significantly once the online option became available. Overall satisfaction with this option is high.

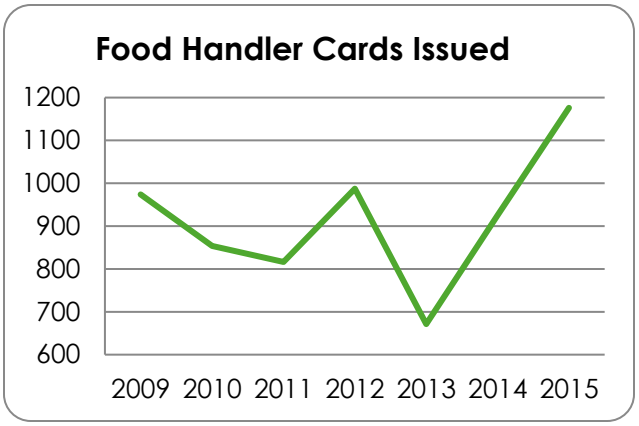


Figure 9. Number of Food Handler Cards issued by year.

Water Recreation

Each year hundreds of Pacific County residents swim in public swimming pools and spas at parks, hotels, and camps. If not properly operated and maintained, these pools and spas may create public health hazards. Pacific County promotes recreational water safety within the community by:

- Educating pool and spa operators about health and safety issues;
- Conducting routine inspections; and
- Investigating reports of illness and potential safety hazards.

There are 16 licensed pools and spas with one-half operating year round. Generally, the facilities are adequately operated. The most common violation is too low level of disinfectant from high use of the facility, although with automatic feed machines, this can be corrected quickly.

School Inspections

All public schools (K-12) in Pacific County are inspected periodically for health and safety issues in accordance with Chapter 246-366 WAC. Inspections address subjects such as lighting, ventilation, and general health and safety hazards. Elementary school inspections also concentrate on playgrounds, and arts and crafts. Secondary school inspections focus on areas such as science labs and career/technical education. School inspection frequency depends on staff availability with the goal of inspecting each school district every 4 years.

Upcoming Inspection Schedule:	2016	Raymond School District
		Ocean Beach School District
	2017	Naselle School District
		Willapa Valley School District
	2018	South Bend School District
		North River School District

Shellfish

Washington State is a national leader in the production of commercial oysters and clams. Hundreds of thousands of people also harvest these shellfish recreationally from public beaches throughout Washington State. If pathogenic bacteria, viruses, or man-made or natural toxins are in the growing waters, they can accumulate in shellfish tissue and cause illness in people. The Department of Health regulates the harvest of shellfish from commercial growing areas and works with Pacific County to inform the public about the safety of harvesting shellfish from public beaches. When pathogenic microorganisms such as *Vibrio parahaemolyticus*, paralytic shellfish poisoning (PSP), or domoic acid reach a level to cause illness, Pacific County Environmental Health Specialists post the public beaches with DOH warning signs against shellfish harvesting as the need arises. This occurred one time in May of 2015 due to high levels of domoic acid.
Mussels generally register PSP levels sooner than other types of shellfish, so they are used as "sentinels" to determine if PSP is on the rise in a given area. Mussels are placed in cages and set in strategic growing areas. Samples are then collected either biweekly or monthly, shipped to the Department of Health and tested for levels of PSP. Rising PSP levels in these mussels trigger more specific and frequent sampling regimens in other shellfish species in the affected area.

The Department of Health Shellfish and Water Protection monitored 78 collection sites in 2015. Pacific County has a collection site in Bay Center and collection generally occurs biweekly. Results are faxed to each jurisdiction the following week. The action level for PSP is 80 µg/100g of sample. None of Pacific County's samples were near the action level, with most ND (none detected).

Diarrhetic Shellfish Poison (DSP), caused by algae that produces okadaic acid, is a recent addition to the biotoxins monitored in the Sentinel Mussel Program. The algae that produces the toxin has been detected in Washington waters for some time but the toxin was not being produced until recently. Although the toxin is considered non-lethal to humans, it can cause nausea, vomiting, abdominal pain, and diarrhea. The toxin cannot be destroyed by cooking, freezing, or processing.

Vectors and Zoonotic Disease

A vector (or carrier) is any organism capable of transmitting disease. Some examples of vectors are mosquitoes, rodents, fleas, and ticks. Vectors are able to spread disease to humans by biting, burrowing or contaminating living spaces. West Nile virus was first identified in the eastern U.S. in 1999, and has moved across the U.S.

Staff received very few calls regarding birds. None met the qualifications for testing, although locations and dates were tracked. The State offers an online reporting form that notifies the responsible jurisdiction of potential birds for testing and records the locations and types of birds found.

Additional Duties

- Air Quality questions (mold, lead base paint, asbestos, radon)
- Assembly Permits
- RV Inspections – approximately 50 RV Parks are inspected once per year.