

## In this Issue:

[SHELLFISH INITIATIVE](#)

[OFFICE LISTSERVS](#)

[LIST OF REGISTERED  
SEWAGE TANKS](#)

[DSP IN WASHINGTON](#)

[STAFF UPDATES:](#)

[NITROGEN REMOVAL  
RESEARCH](#)

[GROWING AREA REME-  
DIAL ACTIONS WORKING](#)

[CHAMBERS CREEK STUDY](#)

[SEWAGE SPILLS AND  
BEACH CLOSURES](#)

[FISHERMEN'S WASTE  
CLOSES QUILCENE](#)

[LOSS PROGRAM  
UPDATES](#)

[NOROVIRUS ILLNESS](#)

[SS-SP LICENSES EXPIRE  
JUNE 30](#)

[VOLUNTARY SUMMER  
OYSTER CLOSURES  
REDUCE VIBRIO CASES](#)

[NEW DOH WEBSITE  
COMING SOON](#)

[OFFICE MOVES NEXT  
DOOR](#)

[HOW TO CONTACT US](#)



SEND COMMENTS TO  
THE EDITOR:

[JAN JACOBS](#)  
360-236-3316

## MESSAGE FROM THE DIRECTOR

### Have you heard of the Washington Shellfish Initiative?

It is a convergence of the National Oceanic and Atmospheric Administration's (NOAA) National Shellfish Initiative and the State's interest in promoting a critical clean water industry. While the initiative supports Governor Gregoire's goal of a "dig-able" Puget Sound by 2020, it also encompasses the extraordinary value of shellfish resources on the coast. As envisioned, the initiative will protect and enhance a resource that is important for jobs, industry, citizens and tribes. A summary of the initiative is provided in this [white paper](#).



### What is DOH's role?

Our primary responsibility is to ensure that harvested shellfish are safe to eat. We are committed to protecting and improving water quality in commercial, recreational, and tribal shellfish growing areas. The initiative mentions our existing EPA Pathogens Grant funding where we are making investments in the 12 Puget Sound counties in the areas of on-site sewage system management plans, pollution identification and correction programs, improving manure management in areas with agricultural runoff, and determining the feasibility to establish a no-discharge zone. These efforts will help us make progress with one of the 20 vital signs for Puget Sound - upgrading 10,800 acres of harvestable shellfish beds by 2020. We will also be involved in a new effort to form the Pollution Control Action Team (PCAT). The purpose of the PCAT is to bring state, federal, tribal, and local governments together to respond quickly when water quality problems are identified that threaten shellfish areas in Puget Sound and on the Coast.

## OSWP Listservs

Get the latest updates via email by joining our office listservs. You must join each list individually, and you can unsubscribe at any time.

[Shellfish](#) – Notifications that impact commercial shellfish operations such as closures, rulemaking activity, vibrio illnesses, newsletters, etc.

[Wastewater](#) – General information such as updates on RS&Gs, proprietary product lists, TAG agendas, newsletters, and other general topics.

[Wastewater-LOSS](#) – LOSS rule development updates.

[Wastewater-Tanks](#) – Tanks issues and updates.

## LIST OF REGISTERED SEWAGE TANKS NOW IN EFFECT

We've completed the transition from the *List of Approved On-site Sewage Tanks* to the new [List of Registered Sewage Tanks](#). The change is more than just the name; the new list complies with Chapter 246-272C WAC, On-site Sewage System Tanks, that became effective in December 2009. This rule outlines requirements for sewage tank design and construction, our design review and approval, and registration of approved prefabricated tanks.

The current *List of Registered Sewage Tanks* has more than 250 tank models from 24 concrete tank manufacturers and more than 35 models from 8 non-concrete tank manufacturers. Another 17 applications are under review. The list is posted online and updated at the first of each month when there are new models to add.

Tank models stay on the list until December 31 of the third year of registration. If the manufacturer submits to us a timely application and affidavit certifying that there have been no significant design changes, the model will remain on the *List of Registered Sewage Tanks* for another three years.

Any change to a tank design invalidates the approval of the tank. Manufacturers must submit the new design for review and approval before marketing the tank.

If we receive no information at the three year mark about a tank model, we'll remove it from the registered list and the manufacturer must submit a new application and fee to reinstate it.

Contact:  
[Mamdouh El-Aarag](#)  
509-329-2148

## NEW BIOTOXIN IN WASHINGTON

Three members of a family of four became ill on June 24 and 25, 2011 after eating blue mussels they gathered from Sequim Bay State Park. They contacted King County Public Health, who conducted a foodborne illness investigation.

The symptoms reported were consistent with Diarrhetic Shellfish Poisoning (DSP). DSP has been a concern in European countries and Japan for years, but this was the first documented case of DSP in the United States.

The DOH public health laboratory (PHL) did not have the equipment needed to test for this new biotoxin, so we sent the shellfish samples to the FDA's laboratory at Dauphin Island, Alabama. We received test results on August 8, 2011. Numerous samples of blue mussels were over the regulatory limit of 16 micrograms/100 grams of shellfish tissue. The highest was ten times the regulatory limit at 160 micrograms. Consequently, the state epidemiologist concluded that the illness was caused by DSP. We closed Sequim Bay to commercial shellfish harvest on August 8, 2011.

Contact:

[Jerry Borchert](#)  
360-236-3328

We are regularly collecting samples for DSP, and for now continue to send them to the Dauphin Island facility for testing.

The PHL recently purchased and installed equipment that will give them DSP testing capability. Lab staff are being trained on its use and the PHL will soon have the ability to analyze DSP samples. This will greatly reduce the time it takes to get sample results and allow us to respond quickly to unsafe levels of DSP.

### **What Is Diarrhetic Shellfish Poisoning?**

*DSP is an illness characterized by nausea, vomiting, abdominal pain, and diarrhea, with diarrhea the most commonly reported symptom. It is caused by a biotoxin called okadaic acid, which is produced by a naturally occurring microscopic algae. The algae that produces okadaic acid, Dinophysis, has been detected in Washington's marine waters for some time, but has not previously been known to produce toxin. We have been working with the Northwest Fisheries Science Center's Marine Chemistry group and the US FDA to implement analytical methods for DSP toxins. The SoundToxins partnership, a collaboration of the Northwest Fisheries Science Center, shellfish growers, tribes, environmental learning centers, and private citizens, routinely monitors environmental factors in Puget Sound and lets us know when high numbers of Dinophysis are detected. When this happens we concentrate sampling efforts in those areas.*

## STAFF UPDATES

### Rob Banes

Rob Banes filled the inspector position vacated by Susie Paul, who recently accepted an assignment with another DOH division.

Rob transferred from DOH's Office of Environmental Health, Safety, and Toxicology and has a broad and varied environmental health background. He received his bachelor's degree in Environmental Studies/Science from the University of Washington, and has field work experience in fisheries, oceanography, and forestry in Washington and Oregon. Since 2004, Rob has worked in mercury reduction, fish advisories, site assessments, and pesticides and provided education and outreach for various programs.



### Clara Hard

Clara Hard is a Hershman Marine Policy Fellow that selected our office for her fellowship work. She started last fall working with our Biotoxin Program staff and continues the good work that our previous 2010 Hershman



Fellow (Jess Silver) started in biotoxin research and tracking, with emphasis on diarrhetic shellfish poison toxins. Clara received a bachelor's degree in biology from Williams College in Williamstown, Mass., and a master's degree from the School of Marine and Environmental Affairs at the University of Washington.

While in college and graduate school, Hard worked on tall ships in both the Atlantic and Pacific oceans. Her master's thesis examined the level of community involvement and awareness in the process to establish marine protected areas in Puget Sound—work that furthered her interest in how outreach and education occurs in the region.

*The Marc Hershman Marine Policy Fellowship is a program that matches outstanding, highly motivated graduate students with state agency "hosts" for a one-year paid fellowship. Washington Sea Grant created the Hershman Fellowship in 2008 to introduce students to ocean and coastal policy and enable state agencies to benefit from the students' knowledge and experience on those subjects.*

### Joan Hardy

A recent program realignment within the agency's Environmental Health Division transferred Dr. Joan Hardy, formerly with the Office of Environmental Health, Safety, and Toxicology, to our office. Joan has a lot of experience working on freshwater and marine water issues that impact Puget Sound and is now working with our Biotoxin team. Moving Joan to our office puts all work related to harmful algal blooms in one place and enhances our capacity to address emerging issues.

Joan has been a toxicologist with DOH since 1990. She graduated from Whitman College and received her MS and Ph.D. from the University of Washington, School of Aquatic and Fishery Sciences, Seattle. Her work focuses on research, education, and tracking of human and animal illnesses associated with freshwater algal blooms. Joan also works on other issues associated with human health and aquatic toxicology, including persistent bioaccumulative toxins in freshwater and marine fish.



## STAFF UPDATES *(cont)*

### **Katie Reeves**

Katie recently filled our long-vacant administrative assistant position in Licensing and Certification. She provides administrative support for the program manager, inspectors, and biotoxin staff, and fills the gap when other support staff in the office need help. She came to us with six years' experience in customer service and human resources gained while working for the Department of Labor and Industries. Katie's experience, administrative skills, and upbeat personality make her an excellent fit for this fast-paced, multi-tasking position that serves as the central point of contact for the Licensing and Certification section.



### **Jule Schultz**

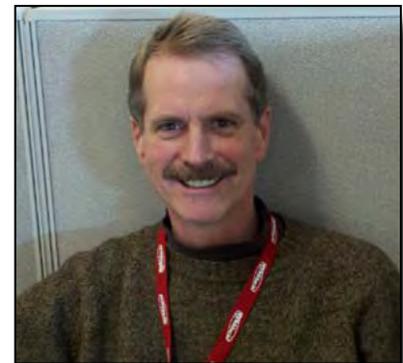


We are pleased to announce that our very own Jule Schultz has been selected to lead our Growing Area Restoration Program. He replaces Lawrence Sullivan, who accepted a position with the Northwest Indian Fisheries Commission.

Jule has worked in our program for the last five years, collecting marine water samples and writing various technical reports. Prior to his work in our office, Jule worked on the coast and lakes of Olympic National Park in Port Angeles and spent time working and studying marine biology in Coos Bay, Oregon. Jule is very familiar with our program and Washington's shellfish growing areas and will continue to be an asset to our office and the Restoration Program.

### **Eric Schlorff**

Eric Schlorff filled the marine water sampling and technical report writing position vacated when Jule Schultz moved to the Restoration Program. Eric has 25 years experience working in water quality. He started in our Shellfish Program in 1986 where he did marine sampling and shoreline surveys. Since that time, he has worked for the Department of Ecology and again for Health in both the Drinking Water and Radiation Protection Programs. We welcome Eric and his expertise back to the Shellfish Program.



## RESEARCHING NITROGEN-REMOVAL TECHNOLOGIES

Our Wastewater Management Section is partnering with the University of Washington's Department of Civil and Environmental Engineering to evaluate three promising on-site sewage (septic) technologies to determine their denitrification (nitrogen removal) potential in Washington. These technologies have been successfully used in other parts of the United States.

Contact:  
[Lynn Schneider](#)  
 360-236-3379

Using the EPA Environmental Technology Verification (ETV) protocol for nutrient reduction, the three systems that will be tested are:

- A vegetated recirculating gravel filter system that is comparable to a recirculating vertical flow constructed wetland.
- A passive two stage denitrification system that includes a recirculating gravel filter followed by a vegetated denitrifying woodchip bed.
- An enhanced recirculating gravel filter that is designed to maximize nitrogen removal efficiencies.

These technologies will be tested and evaluated over a one year period. An advisory committee has been formed to help in the evaluation process. If the ETV results show the technologies are effective and reliable, DOH will develop standards and guidance for their use in Washington.

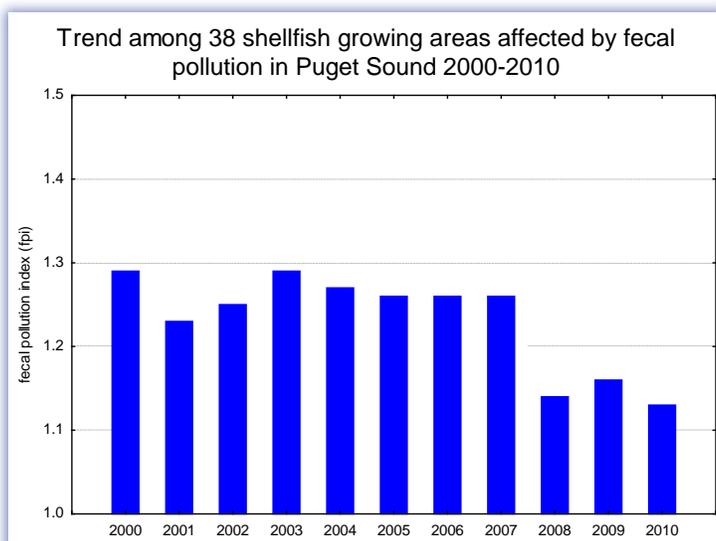
The project is funded by the EPA Pathogens grant.

### Why the emphasis on nitrogen?

*Nitrogen loading (increased levels of nitrate in ground and surface water) is an increasing environmental concern in Washington. Nitrogen loading can have negative effects in areas such as Hood Canal and south Puget Sound. Excess nitrogen fuels the growth of algae, which, as the algal cells die and decay, consume oxygen. This process can lower oxygen levels in the water and harm marine life. Nitrogen can also be a public health concern in groundwater. Excess nitrogen can be harmful, especially to infants. One confirmed source of excess nitrogen is wastewater. Most on-site sewage systems are not designed to reduce wastewater nitrogen levels.*

## ANALYSES SUGGEST GROWING AREA REMEDIAL ACTION IS WORKING

We placed two new reports on our website. The first is an updated trend analysis report, [Status and Trends in Fecal Coliform Pollution in Puget Sound: Year 2010](#). The report suggests there is evidence that fecal pollution in Puget Sound has gone down in recent years. To fine-tune the trend analysis, we did an informal follow-up study



using only results from 38 growing areas significantly affected by fecal pollution over the last decade (these areas represent roughly a third of all growing areas in Puget Sound). The results depicted in the graph support the outcome of the initial trend study.

The second report, [Reduced Fecal Pollution in Henderson Inlet: Remediation or Reduced Rainfall](#), analyzes the interaction between remedial action and rainfall patterns in the apparent reduction in fecal pollution in Henderson Inlet over the past decade.

Contact:  
[Tim Determan](#)  
 360-236-3311

The evidence points to remedial action as the major factor in the reduction.

## EPA GRANT: CHAMBERS CREEK STUDY

### Background

Portions of Pierce County's shoreline have historically been closed to shellfish harvest due to numerous pollution sources along its shores. Because of this, little has been done to assess shellfish resources or the status of pollution in the area. However, in recent years many sewage and industrial flows were rerouted to other locations, and other sources ceased operations. Our office was recently awarded an EPA grant that will allow us to assess shellfish resources and review pollution sources in the Chambers Creek area to determine if some beaches might be reopened to harvest.

### Overview

The study area begins just north of Chambers Creek and continues south to Sequelitchew Creek. There are two major wastewater facilities located in this area: Joint Base Lewis-McChord (JBLM) and Chambers Creek Regional wastewater treatment plants. Historical sources of pollution include the former Asarco plant, the Abitibi (formerly Boise Cascade) pulp mill, an armament factory in Dupont, Fort Lewis activities, and the Steilacoom Marina. Contaminants of concern include heavy metals, dioxin, and other persistent organics such as PCBs.

The study will answer these questions:

- What are the shellfish resources in the area?
- What are the potential human health impacts of legacy pollutants if shellfish from the area are eaten?
- What is the shellfish closure zone associated with each of the existing wastewater treatment facilities?
- How could shellfish closure zones be reduced if specific changes were made to the treatment process or outfall configuration? Both JBLM and Chambers Creek wastewater treatment facilities are currently in the process of upgrading their facilities. Answers to this question will help inform the decision process on the upgrades.

So far, initial wastewater plant evaluations, shellfish resource surveys, and shellfish tissue sampling have been conducted and results are promising.

The project is managed by the Department of Health in collaboration with the Nisqually Tribe and the Washington Department of Ecology, and in consultation with JBLM, Pierce County, and other stakeholders.



Contact:  
[Mark Toy](#)  
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## SEWAGE SPILLS AND BEACH CLOSURES

Several times each year we have to close shellfish beds or swimming beaches due to sewage spills. Causes for these spills can include breaks in sewer mains, mechanical and electrical failures (causing lift station overflows), and combined sewer overflows that occur when heavy rains and resulting runoff exceed a treatment plant's capacity to handle stormwater. Ecology's Emergency Response Tracking System (ERTS), Ecology's Spill Response Unit, and wastewater treatment plant operators notify our office immediately when they discover problems. Prompt notification is needed to prevent public health problems. One of our staff is always carrying a pager for these alerts.

*Contact:*  
Mark Toy  
360-236-3321

When we are notified of a sewage spill, we quickly determine if shellfish beds or swimming beaches may be impacted. If they are we close the area and notify the affected parties. Fortunately, only a small fraction of reported spills result in closures. These types of closures normally last for one week, but can be longer if the sewage is raw or if significant amounts of sewage are discharged. Here are three examples of closures in the recent past.

**In August** we closed part of the Harstine East shellfish growing area because of two significant sewage discharges from a wastewater treatment plant - a 7,000 gallon discharge the first day and a 12,000 gallon discharge the next. Five commercial companies stopped harvesting as a result. About 1,600 pounds of geoduck had been harvested and had to be returned to the marine water. Our BEACH Program worked with Mason County and the Harstine Pointe Homeowners Association to notify residents of the spills.

**In October** we closed about 90 acres of the North Bay shellfish growing area due to a sewage spill. Between 7,000 and 14,000 gallons of sewage was discharged from the collection system to the surrounding area. Two commercial harvesters and one popular recreational shellfish beach were closed by this spill. The area reopened the next week.

**In December**, approximately 90,000 gallons of raw sewage was discharged from a combined sewer outfall near Hollywood Beach in Port Angeles Harbor. The Clallam County Health Department issued an advisory for recreational activities at Hollywood Beach after notification of the spill.

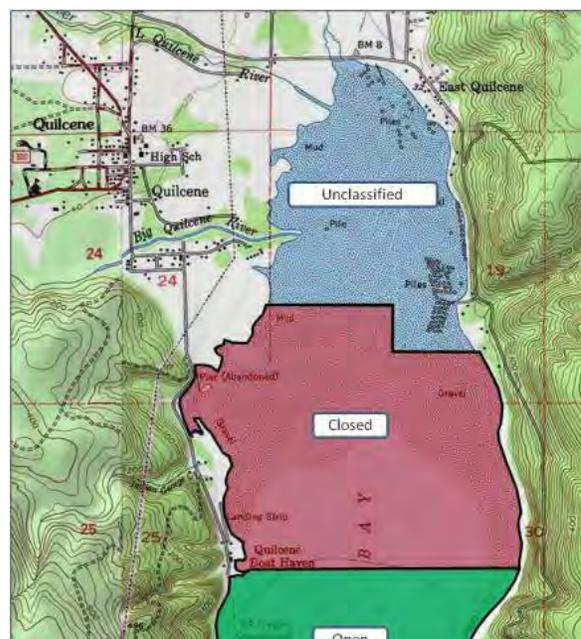
## FISHERMEN'S WASTE CLOSES QUILCENE BAY SHELLFISH AREA

Between September 27 and October 7, we closed 560 acres of the Quilcene Bay shellfish growing area because human waste and garbage had accumulated along the banks of the Big Quilcene River during the salmon fishery. The closure affected eight commercial shellfish companies and a recreational shellfish beach.

Three commercial shellfish operators - Julian Owen, Dennis Meade, and Reed Gunstone - voluntarily picked up the waste and hauled it away to a Jefferson County landfill. (Big Thank You!) When Jefferson County officials found out about it, they waived the landfill fees.

*Contact:*  
Scott Berbells  
360-236-3324

Jefferson County will be organizing a meeting with all the affected parties before the next fishing season to discuss how to prevent this from happening again.



## LARGE ON-SITE SEWAGE PROGRAM UPDATES

### Locating LOSS

We've been busy locating large on-site sewage systems (LOSS) that weren't previously permitted, either because they weren't required to have a permit or because they just never obtained one. We're currently looking in the 12 Puget Sound counties, in the Spokane aquifer area, and in the Yakima area. When we discover a system that might be a LOSS we send a letter to the owner asking basic questions, such as: Does the system still exist? If so, is it connected to sewer? Is it a small on-site sewage treatment system (flow below 3,500 gallons/day)? If the answers indicate that it may be a LOSS, we send an application to the owner and work toward issuing a LOSS operating permit.

So far we've added 102 Puget Sound area LOSS to our permit list since July 1, 2011, the date the revised rule became effective.

Contact:  
Denise Lahmann  
360-236-3348

### New process for operating permit renewal:

The revised LOSS rule implements changes that affect the renewal process for LOSS operating permits. We now must have certain items sent to us *in advance* of the permit expiration date.

Here's how the new renewal process works:

We send a permit renewal packet 75 days before the permit expires. It contains:

- A renewal application with information about the LOSS;
- The permit invoice based on approved design flow;
- A list of other documentation required for that LOSS permit;
- A new annual O&M reporting form; and
- Instructions and a due date for returning items to us (at least 30 days before the permit expires).

*Our LOSS permits are more detailed now, since we must ensure that LOSS continue to protect the health of people and the environment.*

The LOSS owner:

- Completes the forms and signs them.
- Includes the annual report on operating and maintenance (O&M) activities, including flow measurements (recorded average daily flow in gpd each month) and problems encountered and fixed throughout the year.
- Includes all other items required for the expiring permit (see inset).
- Prepares a check for the fee and includes the bottom portion of the invoice (to ensure proper credit for payment).
- Makes copies of the completed forms and other documents to keep for system records.
- Returns all items to the department by the due date – 30 days before the existing permit expires.

When we receive the documentation we review it for accuracy and completeness. If everything is in order we issue the renewed permit before the existing permit expires.

LOSS owners may also be required to prepare and send us one or more of the following:

- A current operating and maintenance manual;
- A Site Risk Survey (a short environmental assessment form);
- An engineering inspection documenting their existing facilities;
- An engineering evaluation, with recommendations for changes to the system (if any) and suggested timeline for improvement to ensure the LOSS is operating correctly;
- The results of any required monitoring, such as for nitrates or oil and grease.

*Remember: we can't renew a LOSS permit on time if we don't receive everything 30 days prior to the permit expiration date.*

## NOROVIRUS ILLNESS

Oysters harvested from multiple sources were the cause of a laboratory-confirmed norovirus illness last December. There also was a non-confirmed single source case of norovirus illness from the Grays Harbor growing area. Both illnesses were caused by shucked oyster meats that were consumed raw. The oysters were sold at retail Costco stores in Washington and Oregon. Local health jurisdictions reported in December three other non-confirmed cases of gastroenteritis that occurred after shellfish harvested in other areas of Puget Sound were consumed raw.

Contact:  
Richard Lillie  
360-236-3313

When a person becomes infected with norovirus, the virus begins to multiply within the small intestine. Illness symptoms usually appear in one or two days and last for 24–60 hours. Common symptoms include nausea, forceful vomiting, watery diarrhea, and abdominal pain, and in some cases, loss of taste. General lethargy, weakness, muscle aches, headache, coughs, and low-grade fever may occur.

Shellfish and salad ingredients are the foods most often implicated in norovirus outbreaks. Eating shellfish that have not been sufficiently heated poses a high risk for norovirus infection. Shellfish should be heated to 145°F for 15 seconds, and precautions should be taken to make sure cooked oysters do not come into contact with seawater or any raw seafood.



## ATTENTION COMMERCIAL SHELLFISH SS AND SP COMPANIES

*Remember, all Shellstock Shipper and Shucker-Packer licenses now expire on June 30 of each year.*

*We will send your renewal notice to you in mid-April. You will no longer receive a second notice as we are trying to reduce printing and postage costs.*

*When you receive your renewal paperwork, please complete and return it to us as soon as possible, but no later than June 30, to make sure your license does not lapse. Once renewed, your license will be effective July 1, 2012 through June 30, 2013.*

## GROWERS HALT SUMMER OYSTER HARVEST; VIBRIO CASES DECREASE

Last year we reviewed illness data to see if we could identify growing areas that might pose the greatest risk for causing vibrio illnesses. We looked at the last four years of data and determined that one of the high risk growing areas was Hood Canal 6. We then asked growers in that area to voluntarily discontinue harvesting oysters intended for raw consumption during high-risk months. Growers agreed and moved to other growing areas from July 3 through August 18. As a result, vibrio illnesses from this area decreased dramatically. One vibrio illness that was tied directly back to Hood Canal 6 occurred after a shellfish grower in the area harvested in mid August due to economic hardship.

Contact:  
Cari Franz-West  
360-236-3326

Another voluntary action of the industry last summer halted oyster harvest from Oakland Bay between July 10 and September 15. As a result, no single source illnesses were associated with this growing area, compared with 4 single source cases the previous year.

The successes of these voluntary actions are encouraging. We will be working with growers in the coming months to determine what, if any, voluntary closures might be warranted for the 2012 vibrio season.

## DEPARTMENT OF HEALTH WEBSITE REDESIGN



*All new urls:  
The only web address that won't change is the DOH home page: [www.doh.wa.gov](http://www.doh.wa.gov).  
All other urls will change when the new site is launched. Be sure you update your bookmarks!*

**A new, streamlined website is scheduled to launch in early May, 2012. Exact date of launch will be broadcast through our [office listservs](#).**

DOH is improving its website to better serve the public and our partners. Based on user feedback, the redesigned site will be organized by topic instead of organizational structure and will incorporate new, user-friendly navigation features.

We are currently moving all of our web pages, graphics, and documents to our new site. As part of this process, we have to rename all of our web pages, which will change all our web addresses (except the agency home page - [www.doh.wa.gov](http://www.doh.wa.gov)).

This means users will have to update any DOH bookmarks or links after the new website launches. We realize this is an inconvenience, but we believe users will think the changes were worthwhile and will find the new site easier to use.

We want to hear your feedback when the new site launches. With so many things to move and so many navigational changes, we know there will be glitches. The initial launch will contain fewer graphics, but the functionality should be much improved. "Window dressing" will be added after the new site is in place. In the meantime, [let us hear from you](#). We welcome your feedback!

Contact:

[Jan Jacobs](#)

360-236-3316

### **Did you know?**

All DOH staff email addresses follow this format:  
firstname.lastname@doh.wa.gov



## **WE'VE MOVED – AGAIN!!**

### **But we're right next door**

The Department of Health (DOH) has been looking at any and all options for saving money in these hard economic times. One way the agency found to reduce costs was to use its existing office space more efficiently. With this in mind, DOH looked at unused space and empty cubicles, sharpened their drafting pencils, and consolidated offices and staff. The end result was blocks of empty areas that could be rented by other tenants, reducing our facility costs.

Our office was one that was moved to help accomplish this. Tumwater staff are now located in Town Center 3 (right next door to our old building) on the second floor. Our new physical address is 243 Israel Road SE in Tumwater. Our mailing address and most phone numbers did not change.



**Staff Contacts**

**Main Office:**

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- Tribal Liaison  
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- Vibrio  
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**Website**

[www.doh.wa.gov/ehp/sf/default-sf.htm](http://www.doh.wa.gov/ehp/sf/default-sf.htm)

**Jerrod Davis, Office Director**

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