Washington State University

Shore Stewards

Washington State University Extension

SPOTLIGHT ON… SHELLFISH SAFETY

Shellfish Safety on Your Beach

Whether you are growing shellfish on your beach or just gathering shellfish recreationally, you may wonder whether the shellfish are safe to eat. This issue of the newsletter will explore some of the things you should consider safety-wise when digging shellfish for yourself or to share with dinner guests. There are a number of things to consider, and the newsletter by no means addresses every contingency. You are ultimately responsible for knowing whether your shellfish are safe to eat; we are merely providing you with some of the information on what to consider.

The first person consulted in gathering information for this Spotlight was Ian Jefferds of Penn Cove Shellfish. Penn Cove Shellfish, on Whidbey Island, is a premier supplier to restaurants and wholesalers, and their products include Penn Cove mussels, Mediterranean mussels, Manila clams, and Pacific and Kumamoto oysters. Their website can be seen at http://www.penncoveshellfish.com/ when asked how people might test the shellfish from their own beach for toxins, Ian responded:

"The best way for someone to test the shellfish they are harvesting from their own growing area would be to periodically take the shellfish to a lab for testing for fecal coliforms, to check on water quality which might be affected by human or agricultural wastes and also find out from the State Health Department or the County Health Department if their area is being checked regularly for PSP. When checking with the County, they might inquire whether the County is also regularly checking for fecal coliforms from their area, and thus that might save them the cost of the testing. There is a private lab which we use called Amtest, which will do fecal testing for a reasonable fee."

For those unacquainted with the term "fecal coliforms", we are talking about bacteria found in the intestinal tracts of animals. Their presence in water or on the beach can be an indicator of pollution and possible contamination by pathogens. Fecal coliforms can be deposited by marine mammals, bird droppings, farm animal and pet waste, and failing septic systems. If you or any of your neighbors have a failing septic system, or you do not pick up your dog's waste when walking on the beach, this can be a source of fecal coliform pollution.

Fecal coliform pollution is by no means the only contaminant for shellfish. Kathleen Parvin is an Environmental Health Specialist with the Island County Public Health's Environmental Health Section. Her comments when asked about what advice she might give to those looking to eat shellfish they have dug or grown on their beach begin on the following page.

Good Advice Regarding Shellfish Safety

Kathleen Parvin's comments: "Here's the scoop. Shellfish are very unique critters. Being filter feeders they have the ability to concentrate bacteria or biotoxins (in the case of PSP, or Paralytic Shellfish Poison) in their tissue and also to purge themselves of those bacteria or toxins (with the exception of bioaccumulative toxins - more below). For this reason a test of shellfish tissue for bacteria is only valid for the date they were tested and the accuracy of the testing depends on a great number of variables; water temperature, tide cycle, time of year etc. Testing shellfish tissue for bacteria costs about $300. Due to the limited time the data would be viable, the variability of the data and the cost, we do not recommend testing shellfish tissue for bacteria in order to know if they are safe to eat. It is more important to know about the water quality where the shellfish are growing."

"Testing for Heavy metals (arsenic, copper, cadmium, selenium, mercury, lead, nickel); PCBs (poly-chlorinated biphenyls); PAHs (Polyaromatic hydrocarbons); Dioxins/-furans; Chlorinated pesticides; and TBT (Tributyltin) might be more appropriate depending on the location of the beach, and any past history of land use activities in the area that would produce such contamination. This is also very expensive. I would direct folks with an interest to the Swinomish Tribe's web site. You are looking for the Swinomish Bioacumulative Toxics in Native American Shellfish Project. They have done an extensive study on shellfish beds on the reservation and their Usual and Accustomed (U/A) harvest sites in the area and the risks associated with eating a lot of shellfish from sites that have been contaminated by industrial activities." http://www.swinomish.org/resources/environmental-protection/environmental-research/environmental-health/bioaccumulate-toxics-in-native-american-shellfish.aspx

"So, again the real issue is whether or not the marine water's are clean enough to grow shellfish that are also safe to eat. I am going to excerpt a section from a booklet put out by Washington Sea Grant on clam farming (www.wsg.washington.edu) Look under publications."

Human Health Concerns: Washington Sea Grant

The following was excerpted from the Washington Sea Grant booklet by Kathleen Parvin:

Shellfish are filter feeders, straining phytoplankton from the water column. Some species are capable of filtering up to 65 gallons of seawater per day. Besides taking in plankton, they have the potential to concentrate harmful bacteria, viruses or marine biotoxins associated with some of the plankton species. This can render the shellfish unfit for human consumption. The Washington State Department of Health (DOH) certifies the growing waters of commercial aquaculture operations to assure their products are safe and uncontaminated by pollution sources. They also test commercially produced shellfish to assure they are free of any marine biotoxins. Some recreational beaches are also certified by DOH. The DOH Office of Food Safety and Shellfish Programs http://www.doh.wa.gov/CommunityandEnvironment/Shellfish or the local/county environmental health specialist should be contacted for information concerning water quality in a particular area. Regulations are in place to protect against contamination from sewage outfalls, marinas and other so-called point sources of pollution and from failing septic tanks and other non-point sources. If a prospective farming site is not already part of a certified shellfish-growing area, DOH must collect at least 30 water samples and conduct a shoreline survey to classify the beach. DOH currently classifies growing areas as "Approved," "Conditionally Approved," "Restricted" and "Prohibited."

"Approved" growing areas are those where clams may be directly harvested for commercial purposes.

"Conditionally Approved" areas meet the state public health standard but require closures when affectedly predictable levels of pollution (rainfall closures, seasonal mooring areas, etc.).

"Restricted" areas are those where limited amounts of fecal coliform bacteria are present, indicating contamination that would make the shellfish unsafe to eat. Shellfish from these areas could be moved to an "Approved" area for a period of time sufficient to cleanse the bacteria.

"Prohibited" areas are those where pollution conditions prohibit the harvest of shellfish for commercial consumption. To register your tidelands for clam farming, you will need to apply for an Aquatic Farm license from the Washington State Department of Fish and Wildlife (DFW). For commercial enterprises, an annual Shellfish Operating License from the DOH's Office of Food Safety and Shellfish Programs is also required. There are fees associated with this second license, including those for paralytic shellfish poisoning testing. There are three categories of licensing to consider: Shellstock shippers are people who grow, harvest, buy or sell shellstock but are not authorized to shuck shellfish or repack shucked shellfish. Shucker packers are shippers who shuck and package shellfish and may also act as shellstock dealers. Harvesters are commercial shellfishers whose activities are limited to harvesting and selling shellstock to licensed dealers in Washington.

What You Can Do

Again, excerpted from the Washington Sea Grant booklet by Kathleen Parvin:

As a shellfish farmer, one must be aware of the health risks associated with contaminated shellfish. If you are growing the shellfish for personal consumption, the beach you are using may not have the same level of oversight and monitoring that commercial beds have. If the beach is not in an area certified by DOH, you should only consume the shellfish if they are thoroughly cooked. Although cooking will destroy harmful bacteria and viruses associated with pollution sources, it will not destroy biotoxins. If you are not already, you may consider getting involved in efforts to keep the marine waters of the state clean and safe for shellfish culture. Get involved in local shoreline and growth management planning, maintain your septic system in good working order, collect and dispose of pet waste in areas where it can not wash into surface waters, fence your horses or cows out of streams, recycle used motor oil and dispose of household hazardous wastes at appropriate facilities, not in your yard or septic system.

Other Sources Regarding Shellfish Health

There are a number of websites that offer information on topics regarding shellfish safety and health. Some of those websites (and phone numbers) are listed on the following page.

Washington State Department of Health (DOH) Biotoxin Program:
http://www.doh.wa.gov/AboutUs/ProgramsandServices/EnvironmentalPublicHealth/ShellfishandWaterProtection/ShellfishProgram/Biotoxins

Emergency Closures Due to Biotoxins and Vibrio:
http://ww4.doh.wa.gov/gis/mogifs/biotoxin.htm

Clickable Maps of recreational beaches closed due to pollution or biotoxins:
http://ww4.doh.wa.gov/scripts/esrimap.dll?name=bioview&Cmd=Map&Step=1

24-hour PSP Hotline, 1-800-562-5632

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