



*Nashalee Ramos, Rachel Romero, Dawn Jennings and her daughter Taylor explore the touch tank at The Maritime Aquarium, where they get a close look at local shellfish. Hour photo / ERIK TRAUTMANN*

## What's Going On Down There?

By RINDY HIGGINS  
Special to The Hour

An astonishing abundance of clams and oysters are growing in local shellfish beds, according to a recent survey by Norm Bloom, owner of Norm Bloom and Son, one of Connecticut's largest oyster companies.

"This is really good news for Westport recreational shellfishing," Bloom said as he reflected on the array of clams and oysters found in Westport's garden of the sea.'

So what's going on down there? How do we tell one from the other? And why is biology so important here? Shellfish play particular roles in nature, and they are excellent water purifiers, as we shall see.

With a permit and some minimal equipment, the public can venture into Westport's recreational shellfish beds to harvest steamers, oysters, and blue mussels and Quahogs (pronounced co-hogs) or hard clams. Though these shellfish have shells, they are not fish. They are really members of a larger group called Mollusks. These critters have over 100,000 freshwater, marine and terrestrial relatives, including squid, octopus and snails.

The most noticeable and common characteristic of this shellfish group, the bivalves, is that they each have two shells attached with a hinge. Inside these two hinged shells is soft tissue which is made up of sensory organs (but no brain) as well as organs for circulation, digestion, excretion, respiration, reproduction.

These shells are external skeletons, providing protection from predators and environmental challenges and a hard surface for the internal attachment of muscles. These muscles open and close the shells. Each shellfish has a thin inner tissue that produces crisscrossing layers of calcium carbonate, organic chemicals and proteins that harden into a shell that grows as the creature grows for the rest of its life.

Variations in shell shape, texture and color make one species recognizable from the other. Known for their somewhat chalky white color and their bumpy texture, oyster shells are oval, though with irregular edges and a hinge at one end. Blue mussels are named after their blue-black shells. Steamer clams have smooth oval shells that are hinged in the middle of one long side. Quahogs are distinguishable for their more round hard shells that vary in color from light gray to dark gray. Quahogs are divided into several types depending on their sizes: Littlenecks, Topnecks, Cherrystones or Chowder clams.

Shellfish vary in their growth rates. Growth layers, particularly noticeable on bumpy and irregularly -shaped oysters, or concentric growth rings visible on hard clams, indicate the age of the critter. Hard clams are slow growing and take five to six years, or even longer in cold climates, to reach harvestable size. With the potential for a long life span, it is even possible to find 30 year old clams. Oysters may take three to four years. To assure that they grow, mature and reproduce with sustainable numbers, the Connecticut Department of Agriculture/Bureau of Aquaculture and the towns regulate the size of harvestable shellfish. For regulations on harvestable sizes of various shellfish, see the particular town's website or check with the local Shellfish Commission,

Clams can be either male or female, but oysters perform a remarkable trick: they can change sexes throughout their lives. Prolific egg-spawners, the average female clam will release 7 million eggs, and the average oyster may release 60 million. In warm mid-summer waters, they are fertilized by sperm broadcast by male clams.

As they grow, they sink to the bottom, develop a shell and maintain their different lifestyles.

Some shellfish remain in one place for the rest of their lives. Oysters secrete a 'cement' that adheres permanently to a solid foundation, often to each other. Clams can change their location by digging. Hard clams have a strong muscular foot with which to dig into sand or mud where they usually stay put, only moving up and down to avoid predators.

Blue mussels can move using their muscular foot, but only after jettisoning the threads that they create (popularly known as 'beards').

Here's the good news: bivalves are really good for our waters and can contribute to improved water quality, removing nitrogen and enhancing water clarity. These shellfish are filter feeders, bringing in water, straining algae as their food. The amount of water that one bivalve can filter is quite amazing. Scientists estimate that a hard clam can filter 10 gallons of water per day, an oyster can filter 100 gallons per day, and a blue mussel an astonishing 288 gallons per day. Scientists consider bivalves to be an 'indicator species', indicating the quality of the immediate water. Principal sources of pollution are often from failing septic tanks, storm-water runoff, domestic animals, and inadequate treatment at waste water treatment plants especially during high flow periods. Water quality is monitored regularly by the Westport Health Department.

That's why awareness of the present status of shellfish beds is important before going out on a harvesting expedition. Even the runoff from one and a half inches of rainfall results in automatic closure of the recreational shellfish beds.

Recreational shellfishers should call the phone number on their permit and also check the several status signs located at Canal Beach and Compo Beach. Harvesting healthy and abundant shellfish means humans must keep cultivating a healthy environment and be thoughtful stewards of the 'gardens of the sea.'

Norm Bloom agrees: "We have to be good farmers and managers so that this sustainable resource can thrive."

**Watch for the next article in the Raking It In series: The Shellfishermen.**

*Rindy Higgins, a commissioner of a local shellfish commission and trustee of a conservation association in Massachusetts, was a marine educator for more than 20 years at The Maritime Aquarium. Her "Raking It In" series discusses the benefits and challenges, techniques, ecology, and cultural heritage of shellfishing in Westport's waters.*