



CARE & GROWING INFORMATION

Single Oysters:

- Grow oysters in a sheltered area or enclosed container (for example, an oyster grow bag)
- Grow bags or Aquapurses – stock with 100 oysters per unit
- Tidal depth - +4 to -1 feet Mean Lower Low Water (MLLW)
- Time to harvest - If you are looking for small oysters for eating raw anticipate 12-18 months and closer two years or longer for a 4-6 inch oyster. Southern Puget Sound generally has faster growth rates than Hood Canal or Northern Puget Sound. Suspended Aquapurses generally will grow oysters faster than grow bags secured on the ground.

Manila Clams:

- Make sure to start with firm stable substrate. Ideal areas would be gravel or firm sand. If the sand has current or wave ripples it is not likely stable enough.
- Assess what predators may be present and if control is possible. Typical predators are crabs (Dungeness, red rock, graceful crabs etc.), diving ducks (scoters), fish (shiner perch). Do not underestimate the ability of a predator. Some predators may only be a problem seasonally.
- “Car cover” is the most common means of excluding predators. Make sure to bury all edges and stake down securely to the beach. A combination of burying edges and staking is best to assure the net is not dislodged in a storm. Attach a tag with your name and address to facilitate return should it be dislodged and drift away. If your beach does not have existing clams, plant 100 per square foot. If clams are present and you are enhancing the existing population consider planting 40-60 per square foot depending on the density of existing clams.
- Tidal depth – Southern Puget Sound +5 to +1 feet MLLW. Hood Canal and Northern Puget Sound +3 to +1 feet MLLW
- Grow bag method is possible if sand substrate exists. Grow bags need to be “set or dug” in sand approximately 2-3” deep. After bags are set in place sprinkle seed evenly on top of bag and tap on bag to allow seed to drop. This is best done as the tide returns and there is water over the bag. Plant approximately 250 clams per bag.

Geoduck Clams:

- Keep seed cool and ideally in aerated seawater. If no aeration is available, change the water frequently if possible. Plant the same day you receive the seed. Geoduck seed is very fragile.
- Choose sandy substrate if possible for best results.
- Tidal depth - +1 to -3 feet MLLW
- Plant in 9” long 6” diameter PVC pipes stomped into the sand until only 2-3 inches remain exposed. Tubes can be stomped in the beach approximately 1.5 feet apart.

- Distribute 3-4 seed per tube, cover with plastic predator net and secure the net with a rubber band. Ideally you should plant the seed on the incoming tide and there should be water in the tube. The seed are very prone to drying out and will be killed if exposed long to the air particularly on hot sunny days. The tube creates a miniature tide pool to keep the seed moist on subsequent low tides until it can grow large enough and burrow to depths at which the substrate stays moist when the tide is out.
- Remove the predator net after a year and the tube after two years. While the net is on, clean seed weed and fouling which can suffocate the clams. If silt builds up in the tube, clear it out. If cockles or other clams set and grow in the tube remove them. They can suffocate the geoducks. Time to maturity varies by area and tidal elevation. Average time to a 2 pound clam is 5-6 years.

Mussels:

- The grow bag method works for culturing mussels intertidally or suspended from your dock.
- Tidal elevation for intertidal cultivation -1 to +2 feet MLLW
- Stock each bag with approximately 500 mussels by securing the seeded net (mussel sock) with a plastic cable tie centrally in the grow bag. The mussels will distribute themselves as they grow
- It is best but not essential if possible to secure the bag a few inches off the bottom on pvc or rebar racks. The mussels will grow better, be cleaner and there will be less problems with fouling.
- Time to harvest will be approximately 2 years depending on location and tidal elevation

Shellfish Health and Pest Concerns – Washington Department of Fish and Wildlife (WDFW) guidelines and requirements for the import and transfer of shellfish, including oysters, clams and other aquatic invertebrates in Washington State.

To prevent the spread of disease and unwanted pests Washington Department of Fish and Wildlife regulates the movement of live shellfish which is going to be placed back into the water in a different bay than it originated from. One of the main concerns is the transfer of the Japanese oyster drill, a pest inadvertently introduced by the shellfish industry eighty some years ago when Pacific oysters were first imported from Japan for culture. The European green crab is another pest present in Willapa Bay in southwest Washington which we don't want introduced accidentally to Puget Sound.

Taylor Shellfish seed comes from disease and pest free areas and as such is unrestricted for outplanting in all areas of the state. To be in compliance with state law when transporting seed you must have a copy of *WDFW guidelines and requirements for the import and transfer of shellfish, including oysters, clams and other aquatic invertebrates in Washington State* and be familiar with the contents. Copies are available from Taylor Shellfish. Please note if you are purchasing oyster seed for planting in Hood Canal, WDFW does not allow European Flat oysters in Hood Canal.

Human Health Concerns Associated With Growing Your Own Shellfish:

Shellfish are filter feeders, eating the microscopic plants (phytoplankton) that are floating in the water column. Some species are capable of filtering up to 65 gallons of sea water per day. Besides taking in the plankton, they have the potential to concentrate harmful bacteria or marine biotoxins associated with some of the plankton species [Paralytic shellfish Poisoning (red tide), fecal coliform or vibrio]. This can make the shellfish unfit for human consumption.

The Washington State Department of Health certifies the growing waters of commercial culture operations to assure they are safe and uncontaminated by pollution sources. They also test commercially produced shellfish to assure it is free of any marine biotoxins. Some recreational beaches are also certified by the Washington State Department of Health.

You should be aware of these health risks and that the beach you are planting with this seed may not have the same level of protection that commercial beds have. If the beach is not in an area certified by the State Department of Health, we urge you to only consume the shellfish if they are thoroughly cooked. Cooking will destroy harmful bacteria associated with pollution sources but it will not destroy biotoxins. For this reason it is important to call the PSP Hotline at (800) 562-5632 before harvesting to assure your beach is not under a red tide closure.

As a fellow shellfish farmer, we ask that you consider getting involved (if you are not already) to support 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.

For further information contact the Washington Department of Health, Shellfish Program at (360) 236-3330 or visit their website at <http://www.doh.wa.gov/ehp/sf/default.htm>

Native American Treaty Rights:

In 1989 eighteen Puget Sound Native American filed suit in Federal district Court to clarify their treaty rights to off-reservation shellfish. The treaties said that the tribes have a right to fish in common with citizens of the territory provided however they shall not take shellfish from beds staked or cultivated by the citizens. In 1994 Judge Edward Rafeedie found the tribes were entitled to 50% of the shellfish in Puget Sound. Because of the “staked or cultivated” clause the court treated commercial shellfish beds differently than private, non-commercial tidelands. On commercial shellfish beds the tribes are entitled to 50% of natural beds, but not the fruits of the grower’s labor. Natural beds are defined as those with sufficient sustainable production to support a commercial livelihood. This

ambiguous definition has proven difficult to implement and as a consequence is still in the courts.

Prior to the tribes harvesting shellfish from a private non-commercial beach they must perform a survey to establish the sustainable yield of shellfish and enter into a harvest agreement with the tideland owner. Prior to surveying the shellfish resources on the beach the tribes must notify the property owner. Notification via legal notice in the newspaper of record is sufficient unless the tideland owner has specifically requested written notice.

The court order is silent regarding private tideland owners seeding their own beaches for personal (non-commercial) harvest. If you are concerned about potential tribal harvest our recommendation is to avoid seeding areas where there are substantial quantities of existing shellfish which might be of interest to the tribes. Oysters or mussels in bags are clearly cultivated and as such would not be available for tribal harvest. Cultched Pacific oysters outside of the Hood Canal are considered to be artificial by the Tribes. Manila clams seeded on the beach under carcover netting, or geoducks planted in tubes could be difficult to distinguish for natural clams present in the beach prior to seeding. For Manila clams or geoducks we recommend clearly marking the area you are planting and documenting the best you can what is present for shellfish resources prior to planting. If you are concerned about potential tribal access in the future you may want to contact the appropriate tribe(s) prior to seeding the beach. To find out which tribes share your beach as a “usual and accustomed harvest area” call the Northwest Indian Fisheries Commission at (360) 438-1181.

Thinking about selling your shellfish?

There is a fair amount involved in transitioning from a hobby shellfish gardener to a commercial shellfish farm. You must get an aquatic farm registration from WDFW and report production on a quarterly basis. You must get a State Department of Health Certification. There are a variety of certification categories depending on who you want to sell to and whether you just want to sell live shellfish or if you want to process the shellfish. If your beach is not currently a certified commercial growing area, it will require the State Department of Health collecting a minimum of 30 monthly water samples to establish the water in the area is clean enough to certify for commercial shellfish harvest. You must submit weekly samples to the State Department of Health Laboratory in Seattle for PSP testing. There is no cost currently for the WDFW Aquatic Farm Registration. Department of Health Certification cost varies with the type of certification and there is a PSP testing surcharge added to the annual fee.

As a commercial farmer to create a new artificial bed requires notification of the effected tribes, surveying for natural beds and the need to provide tribes the opportunity to inspect the proposed new bed area.

Thank you for your business. We appreciate hearing about your successes and the excitement many of you have for your aquaculture hobby! Good luck and have fun!!