



# Aboriginal Aquaculture Association Shellfish Facts Oysters



A traditional First Nations shellfish harvesting basket

## Cultured Oysters

Pacific oyster (*Crassostrea gigas* - Latin name)

The Pacific oyster was first introduced to British Columbia waters from Japan around 1912 on the central coast of Vancouver Island. By 1942 the Pacific oyster had spread, and was successfully breeding in bays and harbours around southern BC.

Native BC oysters, the Olympia oyster (*Ostrea conchaphila*) and the American oyster (*Crassostrea virginica*), are not used in aquaculture at this time.



## What do they look like:

The outside of the mature oyster has a elongated, thick, rough shell that varies in colour between muddy brown to light gray with streaks of purple.

Inside the meat is creamy white with a dark fringe around the edge (or mantle). The colour of the meat and the shell can vary by region and season. While the Pacific oyster can grow to over 30 cm (12 inches), it is normally harvested at 15 cm (6 inches) or less.

## What do oysters feed on:

Like other bivalves (shellfish with two matching shell halves), oysters are filter feeders. They feed on tiny plants called plankton, and other organic material, by drawing water in through an opening called a siphon. The water and nutrients flow in through the incoming siphon. The gills then trap the food inside the shell while allowing the oyster to filter out the water through a second outgoing siphon.

Oysters require a fresh, clean aquatic environment, and protection from predators. This includes protecting their equipment and netting from fouling by organisms and marine life that accumulate on the nets and trays, and compete for food.

### BC Cultured Shellfish Production 2008

	Harvest '000 tonnes	Landed Value \$ millions	Wholesale Value \$ millions
<b>Cultured Oysters</b>	5.3	6.2	13.1
<b>Total Cultured Shellfish</b>	<b>7.2</b>	<b>15.7</b>	<b>27.0</b>

Source: <http://www.env.gov.bc.ca/omfd/fishstats/graphs-tables/farmed-shellfish.html>  
Visit site to view shellfish production statistics from 1999 - 2008

## Where are Pacific oysters farmed:

Vancouver Island and the Sunshine Coast are the main growing areas, in particular:

- Jervis and Sechelt Inlets on the Sunshine Coast
- Barkley Sound on the west coast of Vancouver Island,
- Cortes Island and Quadra Island
- with the largest production of Pacific oysters in Baynes Sound, on the east side of Vancouver Island.





## How are Pacific oysters farmed:

Oyster farming begins with the production of oyster larvae from spat. Most larvae for the BC oyster industry come from spat produced using broodstock in controlled hatcheries.

The larvae are kept in tanks of circulating seawater and fed algae. Within a few weeks the larvae are transformed into tiny seed (juvenile oyster) – a very small version of the adult oyster.

After the hatchery phase, the juveniles are usually transferred to a nursery facility. In British Columbia – before final grow-out, the oyster seed is often placed in a 'Floating UPwelling SYstem' (referred to as a 'FLUPSY'). The FLUPSY is housed on a raft in the ocean. The seed or juveniles are kept in compartments on the FLUPSY, surrounded by the flow of the nutrient rich ocean water. They remain there until they reach a larger size for the final grow-out phase.

### Grow-out Phase:

When the seed is ready for the grow-out phase it is transferred and reared in one of the following ways:

- **Beach or seabed culture:** Individual oysters are 'planted' on the ocean floor, spread out on a beach (intertidal areas) for growout or for hardening, and are covered by netting to protect them from predators.
- **Tube or cultch culture:** With this system the larvae are allowed to set along lengths of plastic tubing or rope. The seed then naturally attaches itself to the surface. The tubing/rope is vertically suspended from a secured flotation device (e.g. raft or buoy) in deep, subtidal water.
- **Longline and raft culture:** Oysters are placed in trays which are suspended from a secure flotation device (e.g. raft or buoy) in deep subtidal water (see diagram at right).

A nursery raft is called a "FLUPSY" - Floating UPweller SYstem



## Optimal growing conditions:

12-18° C clean water of 25 ‰ + salinity. Oysters grown using deep water culture grow three times as fast as intertidal oysters.

## Harvesting the Pacific oyster:

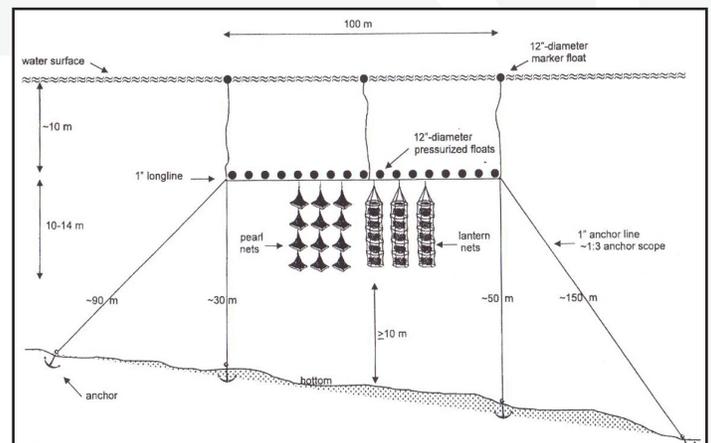
Harvesting techniques range from hand-harvesting to crew-operated harvest vessels - depending on the volume of production and the type of grow-out system used



Oysters hanging on ropes

## Did you know....

- Bivalves are mollusks that have two halves or valves. Bivalves that have not yet matured and set are called **larvae**.
- Oyster larvae will set between 16 - 20 days after fertilization.
- **Remote setting** refers to the process of transporting bivalve larvae from the hatchery to the grow-out site.



Profile view of culture system showing submerged longline, floats, and anchoring systems

**For more information contact:** Aboriginal Aquaculture Association  
 1400B Drake Road, Campbell River, BC  
 Tel: 250-286-9939 • Fax: 250-250-286-9931  
 Email: [info@aboriginalaquaculture.com](mailto:info@aboriginalaquaculture.com)

[www.aboriginalaquaculture.com](http://www.aboriginalaquaculture.com)

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