



Executive Summary

Taylor Shellfish Farms prepared this **Environmental Code of Practice (ECOP)** to ensure company operations are conducted in a manner that minimizes negative environmental impacts, maximizes positive impacts and demonstrates this organization's commitment to being good stewards of the tidelands. We believe this can only be accomplished through a comprehensive evaluation of the environmental impacts associated with the farming and processing of shellfish products in light of current trends in community and shoreline development, increased demand for limited resources, water quality degradation, changes in social/political attitudes, and increased regulatory scrutiny.

This document reviews practices conducted by Taylor Shellfish Farms and presents performance objectives that strive to minimize and/or mitigate current and potential environmental impacts. Strategies are identified to achieve each objective. Performance measures are listed as a means of monitoring compliance and effectiveness of these strategies.

The company has developed many of its aquacultural practices as a result of innovative thinking and experimentation; and as such, continues to improve on many practices. Our goal is to establish a policy framework, through this document, that will help guide us in reviewing and minimizing the potential environmental impacts of our practices while not stifling innovation and the success of our operations.

For the most part, farming activities, as well as much of the company's other culture operations, take place on tidelands located in Washington State. Therefore this document focuses on issues relative to Washington State standards. This document does however provide an overview of the company's other national and international operations and their specific environmental initiatives.

This is a living document to be evaluated and updated periodically by the Environmental Code Task Force (ECTF) and Taylor Shellfish Farms management.

Company Overview

Taylor Shellfish Farms is the composite name for the five companies under Taylor United, Inc., the parent company. Taylor United, Inc. is a family held corporation established in 1969.

These companies include Taylor Shellfish Company, Taylor Timberlands, Inc., Taylor Restaurants, Inc., and Taylor Finefoods, Ltd. Because of an increase in marketing and a demand for fresh seafood, a number of expansion efforts are underway and these companies have seen significant growth.

Currently, Taylor Shellfish Farms manages approximately 8500 acres of tidelands for shellfish culture in Washington State located in Samish Bay, Hood Canal, South Puget Sound, and Willapa Bay, a hatchery/nursery in Quilcene, and a hatchery/nursery in Kailua-Kona, Hawaii. See Appendix A for site maps.

A variety of shellfish species are currently cultured including:

Pacific oysters, *Crassostrea gigas*

Eastern oyster, *Crassostrea virginica*

Kumamoto oyster, *Crassostrea gigas*

Olympia oyster, *Ostrea conchiformis*

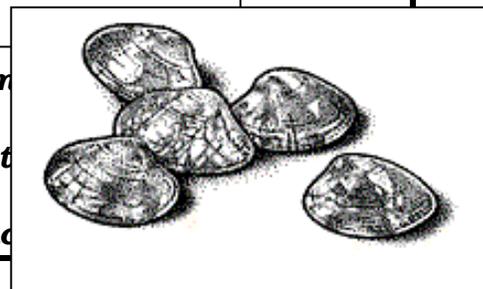
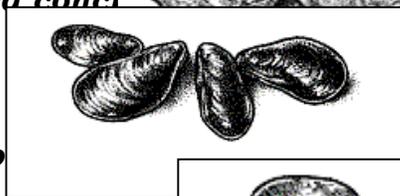
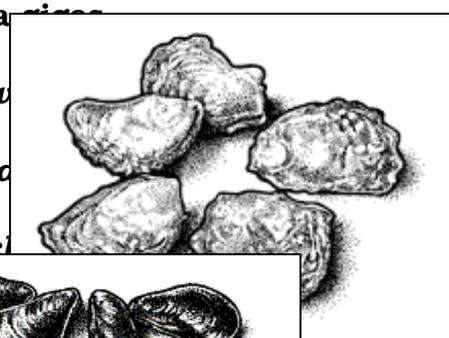
European flat oyster, *Ostrea edulis*

Manila clam, *Tapes philippinarum*

Littleneck clam, *Protothaca staminea*

Geoduck clam, *Panope abruptus*

Blue mussel, *Mytilus galloprovincialis*



Diversification efforts, through research and development, continue to provide expanding market opportunities and will continue to be a focus for the company.

Management and Administration

Some practices are general and are required for all farms and facilities. This also includes administration and management activities that help build the foundation for accomplishing more specific environmental objectives. It is the policy of this company to dedicate the necessary resources to achieve the directives of this document.

Environmental Objective. Ensure all operations meet or exceed regulatory and environmental standards.

Strategies for achieving Environmental Objectives

- Review all statutes and agency rules against activities to ensure compliance.
- Periodically meet with farm managers to identify opportunities for conservation and protection of natural areas, functions and values on beaches they manage.
- Participate through company or industry representation on State and local policy panels, watershed groups, and other forums that promote environmental protection, especially water quality.
- Propose or support legislation that promotes environmental protection, especially water quality and aquaculture in general.

Environmental Objective. Promote company's environmental policies within the company.

Strategies for achieving Environmental Objectives

- Incorporate environmental policies into employee training and orientation.
- Provide incentives to employees for achieving environmental standards.
- Hold company managers accountable for non-compliance with environmental standards and policies. Incorporate environmental performance in annual job reviews.
- Make it a priority in the company budget to ensure adequate funding for implementing environmental policies.
- Provide environmental training in areas such as contaminated spill cleanup, bilge water disposal, and sewage disposal from boats.

Environmental Objective. Promote environmental policies outside the company.

Strategies for achieving Environmental Objectives

- Distribute this ECOP with promotional materials, at public forums and to resource agencies.
- Participate in fairs and festivals and other community activities that promote environmental protection or have an environmental theme.
- Educate consumers of the beneficial environmental aspects of purchasing farmed products. Provide tours of facilities. Provide educational materials at retail outlets.
- Taylor Resources managers conduct on-going communications with adjacent property owners to provide education and information of operations.
 - Maintain company facilities orderly and litter-free.

Environmental Objective. Promote and support innovative practices and techniques that help protect the environment.

Strategies for achieving Environmental Objectives

- Reward employees for creating environmentally safe methods and techniques for operating equipment in the water. The use of vegetable oil as an alternative to other kinds of toxic or carbon-based hydraulic fluids is an example.
- Reward employees for implementing practices that will both improve environmental performance and profitability of the company. (e.g. finding a recyclable packaging that is cheaper, re-usable container for setting cultch, herring net clam bags to replace *Vexar*, 4-cylinder outboard engines)

Performance Measures for Management and Administration

- ▶ Record of consultations with regulatory agency representatives
 - ▶ Employee training records
 - ▶ Budget allowance for environmental compliance
- ▶ Record of regulatory enforcement or compliance actions
 - ▶ Record of fairs and festival participation
 - ▶ Record of number of tours through processing plant
 - ▶ Record of periodic and regular site inspections
- ▶ Record of complaints and communications from adjacent property owners
 - ▶ Annual environmental performance review

Mussel Culture

Introduction. Taylor Resources began mussel production 1992. The species of mussel currently being farmed is *Mytilus galloprovincialis* or “Gallos.” This mussel is large, hardy and easily cultivated. Cultivation is done suspended from rafts that are visible all daylight hours, unlike intertidal culture of other species which are only visible on daylight (summer) low tides. As a consequence, an extra effort is made to continually maintain the mussel farms in a neat and orderly fashion to minimize aesthetic impacts.

Seeding. Hatchery seed is transported to the farms on 2 X 8-foot reusable screens framed with 1/2" PVC pipe and placed in an aluminum and net cage which is suspended into the water. The seed is scraped from the seed frames when it is 6-12mm long (usually taking several months in winter and several weeks in summer) and socked in a knitted polyethylene mesh sock with a strand of coir (coconut fiber) in the center of the sock as a filler. A concrete weight with a stainless steel wire hook is hung on the end of the mussel sock for tension. The sock is attached to the raft by Treelock (black polypropylene 1/4" lashing).

Growout. Growout of mussels occurs in the subtidal zone on floating rafts. The rafts are 30 X 34 feet and constructed of untreated lumber, galvanized steel, and plywood. The floatation is generally reused 55 gallon food barrels or coated polystyrene or vinyl-wrapped polystyrene. The rafts are anchored in place with concrete wedge anchors attached with nylon and polypropylene and/or warps. The rafts are enclosed with netting to exclude predators.

When the mussels are 1" in length, the weights are removed and put into bulk bags for pick up and are reused immediately or stored for later use. If there is excessive fouling on the nets, the nets may be removed and shell drop-off or other debris is cleaned out.

Harvesting. When the mussels are approximately 3" in length the raft is removed from the raft unit and floated over a harvest platform where the strings of grown mussels are dropped onto a submerged platform. The emptied raft is replaced back into the raft unit and the submerged platform is raised. The mussels are stripped from the socks and bulk-bagged for transport to shore and trucked to the processing plant. Concrete weights are retrieved for re-use and used socking is disposed of at an upland facility.

Environmental Objective: Minimize impacts to the benthos.

Strategies for achieving Environmental Objective

- Ensure anchor lines are properly set to prevent dragging and anchors are of sufficient size to secure rafts.
- Periodically remove all unnatural and non-biodegradable materials that accidentally fall from rafts and work areas onto the seafloor.
- Conduct periodic benthic surveys to inspect the benthic environment for impacts.

Environmental Objective. Maintain safe navigation around farms.

Strategies for achieving Environmental Objective

- Lights are installed according to US Coast Guard requirements.
- All portions of the farm are kept within lease boundaries.

Environmental Objective. Minimize impacts to other aquatic life.

Strategies for achieving Environmental Objective

- Use exclusion methods to control predation such as netting.
- Keep farm maintained to ensure netting, lumber, tools, do not leave farm area.
- Monitor adjacent marine populations for changes and potential impacts.
- Periodically conduct benthic sampling under mussel farms to determine potential impacts to the benthic flora and fauna.
- Conduct periodic vertical profiles of the water column adjacent to mussel farms to measure potential changes in dissolved oxygen concentrations.
- Ensure compliance with Washington State Department of Fish and Wildlife transfer rules for the prevention of spreading disease and pests. (WAC 220-72)

Environmental Objective. Encourage public access for educational purposes.

Strategies for achieving Environmental Objective

- Provide, when possible, tours of the mussels farms and explain mussel growing operation.
- Donate product to conservation groups and water quality advocacy organizations.
- Continue experiments and development of alternative methods and conditions of culture.

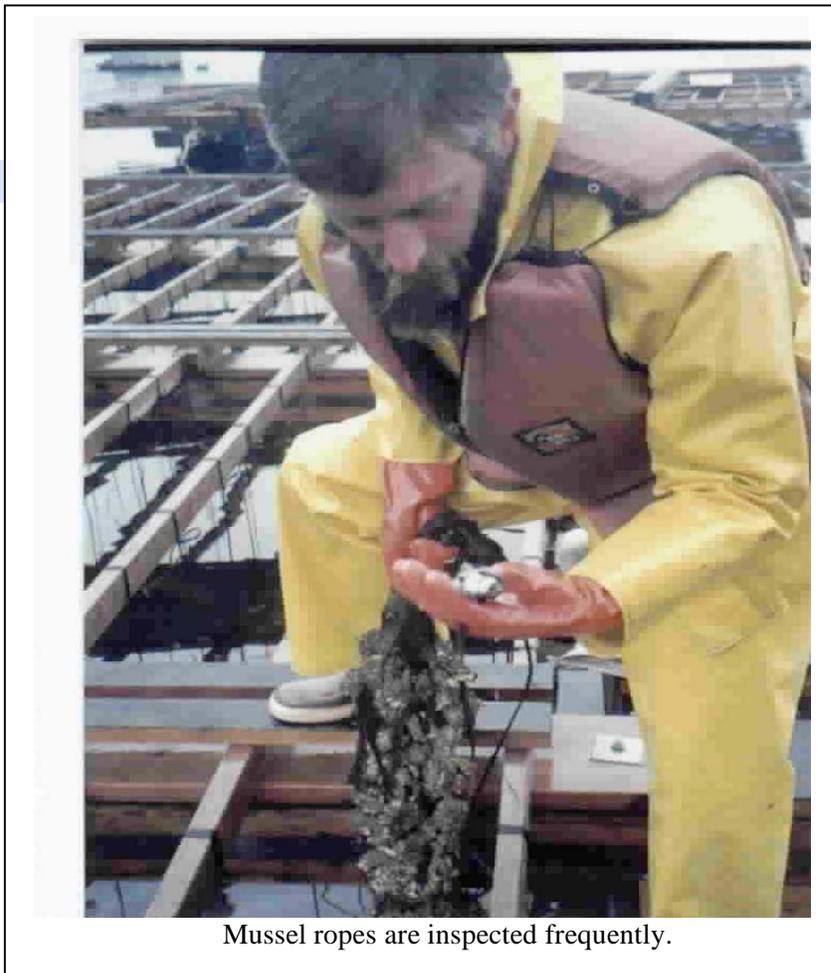
Environmental Objective. Minimize impacts to surrounding property owners.

Strategies for achieving Environmental Objective

- Keep farms orderly and litter-free.
- Ensure equipment is in good working order to keep noise levels to minimums.
- Be respectful to adjacent property owners by keeping them updated on farm changes.

Performance Measures for Mussel Culture

- ▶ Record of complaints from adjacent property owners.
- ▶ Measures taken as a result of complaints from adjacent property owners
 - ▶ Record of results of benthic surveys
- ▶ Record of results of vertical profiles of the water column
 - ▶ Annual environmental performance review



Mussel ropes are inspected frequently.

