

## Shellfish Health and Harvest

Draft 9-8-2011

**B5. Improve shellfish water quality and increase harvestable, upgraded shellfish acres in commercial production and use. Coordinate, expand and promote financial incentives and programs for working aquatic lands that are protective of ecosystem health to provide abundant shellfish for commercial, subsistence, and recreational harvest consistent with ecosystem protection.**

Pacific Northwest tribes have lived and harvested shellfish in Puget Sound for about 12,000 years, and archeologists have uncovered shell middens dating back as far as 5,000 years. Shellfish provide sustenance and figure prominently in tribal spiritual beliefs. In the 1850s tribal governments signed treaties with the US government relinquishing land but reserving rights to fish and harvest shellfish in usual and accustomed areas except for staked or cultivated shellfish beds. Commercial shellfish harvesting began during the California Gold Rush era and continues today providing a significant source of jobs and economic activity in Puget Sound. In both Mason and Pacific counties, the commercial shellfish industry is the second largest private-sector employer, supporting more than 1,200 jobs and an estimated total annual payroll that exceeds \$27 million. Washington is the leading producer of farmed bivalve shellfish in the United States, generating an estimated \$77 million in sales and accounting for 86 percent of the West Coast's production in 2000.

**Comment [EDM1]:** We are looking for updated and Puget Sound only numbers

The Department of Health monitors shellfish harvesting areas and classifies them as safe or unsafe for harvest. As of the end of 2009, the Department of Health managed the classification of 356,253 commercial shellfish harvesting acres. (Not all of these acres are in Puget Sound.) There were 287,741 acres with Approved classifications, 6,208 acres with Conditionally Approved classifications, 981 acres with restricted classifications, and 61,323 acres with Prohibited classifications.

**Comment [EDM2]:** More recent numbers will be substituted throughout if available.

In 2009, Health downgraded the classification of 70 acres in 3 commercial shellfish areas. Over the same time, 14,855 acres in 6 growing areas were upgraded in classification due to improved pollution control. (Nearly 14,300 acres were upgraded in the Grays Harbor shellfish growing area, from Conditionally Approved to Approved, due to the elimination of one point pollution source and improvements in the neighboring wastewater collection systems and treatment plants.)

Over the past 28 years, Health has downgraded the classification of about 51,000 acres and upgraded the classification of about 42,000 acres. Most of the downgrades took place between 1981 and 1995, when 45,000 acres were downgraded and 7,000 acres were upgraded. Since 1995, we have downgraded only 6,000 acres while upgrading 35,000 acres. The Department of Health lists shellfish beds that are threatened with downgrade each year. In 2009 eight areas were listed as threatened in Puget Sound: Mystery Bay, Port Townsend, Burley Lagoon, Dyes Inlet, Samish Bay, South Skagit Bay, and Drayton Harbor.

**Comment [EDM3]:** Will add a sidebar about the recent Samish closure and the intense work to fix the problems.

In addition to the cultural, recreational, and economic contributions shellfish make in Puget Sound, they also play a significant role in improving the ecological health of the Sound. Shellfish filtering improves water clarity so sunlight can get through which improves eelgrass and macroalgae growth. Shellfish assimilate some of what they take in and pass on the rest as digested and undigested material that

settles to the bottom sediments. These filtering and recycling processes can contribute significantly to regulating the health of nearshore ecosystems and take on more importance as human activities and related pollution increase in shoreline areas. They also provide structure to the nearshore and refuge and forage opportunities. Perhaps most importantly, shellfish help remove nitrogen from the water.

Strategies in this area focus on supporting working aquatic lands and on improving water quality focused on protecting and restoring shellfish beds. Strategies and actions that will contribute to the health and recovery of shellfish also are addressed in Sections on wastewater, stormwater, and toxics.

### **Relationship to Recovery Targets**

Shellfish bed restoration is addressed directly with a specific recovery target of a net increase of 10,800 harvestable shellfish acres from 2007 to 2020, including at least 7,000 acres where harvest is currently prohibited. In addition, progress towards the recovery targets for management of on-site sewage systems and freshwater quality will improve conditions for shellfish. Shellfish can both improve marine water quality (through filtering and nitrogen removal) and benefit from improved marine water quality.

### **Sub Strategies and Near Term Actions**

#### **B5.1 Shellfish Bed Protection: Protect and prevent downgrade of important current commercial areas.**

Protection and preservation of existing commercial shellfish areas will be critical to meeting the recovery target for shellfish beds for Puget Sound.

In recent years, through efforts of state and local government, Tribes, private landowners, and shellfish growers, we have seen a slight net increase in the number of acres of shellfish growing areas open for harvest. Strategies and actions in this area are focused on capitalizing on the lessons learned from these experiences and increasing this trend.

[Statistics on number of beds opened/closed in recent years and number of threatened/of concern areas.]

### ***Performance Objectives of Ongoing Programs***

The Department of Health is responsible for evaluating shellfish growing areas to ensure they are safe and DOH, WDFW, and local health departments work together to take actions to prevent shellfish harvest (e.g., temporarily close or even eventually downgrade an area) when water quality conditions indicate that conditions are not safe. Based on these evaluations, DOH also identifies specific water quality sampling locations within shellfish growing areas where water quality is "threatened" or "of concern". "Threatened" areas could soon be downgraded in classification because water quality is close to failing the standard, or because existing pollution sources may impact public health. Areas "of concern" still meet the standard for their current classification, but the water quality is declining. These areas deserve special attention to prevent downgrade.

[Placeholder for map of threatened shellfish growing areas  
<http://www.doh.wa.gov/ehp/sf/Pubs/gareports/threatareas.pdf>]

Local governments also plan a significant role in protecting shellfish areas. Pollution Identification and Correction Programs (PIC programs) are locally driven processes to determine the causes and sources of bacteria and other water pollution in a specific geographic area. PIC programs focus on a complete survey of all individual properties and potential point and non-point pollution sources and use outreach, education, incentives and technical assistance to encourage pollution reduction and control. They are widely believed to be one of the single best approach to protecting and restoring shellfish beds and have been successful in promoting the restoration of shellfish growing areas in Henderson Inlet and in several areas of Kitsap County. These programs are resource intensive, both for the initial survey and outreach work and to maintain the level of education and commitment to pollution control over time; but they produce positive results. Current funding for PIC programs [where does it come from, state/local sources]; stable long-term funding and support for local governments are needed so these programs can continue to create locally-driven understanding of and solutions to pollution problems.

Counties are required to form shellfish protection districts where areas are downgraded, and local governments also can create voluntary shellfish protection districts. A district proves a mechanism to generate local funds for water quality services to control sources of pollution. They also can serve as education resources, calling attention to the pollution sources that threaten shellfish growing areas. Shellfish protection districts can be used in concert with (or to create funding for) PIC programs.

**B5.1 NTA1:** Assist counties in establishing and funding sustainable PIC programs to identify and fix nonpoint pollution problems with an emphasis on bacterial and viral control from for example, septic systems, agricultural runoff, pet waste, and boater discharges. These programs should routinely monitor water bodies, reach out to their communities to educate and inform them, and take actions to address problems, including enforcement.

*Performance metric: number of PIC assessments completed; need a target number of assessments; % of shellfish growing areas covered by a PIC program[should there be a geographic target to this action, e.g. emphasizing threatened areas and/or MRC w/out pic programs in place?]*

B5.1 NTA 2: Provide start-up and planning funding for Shellfish Protection Districts, including voluntary SPDs.

*Performance metric: amount of funding provided; number of new SPDs established.*

B5.1 NTA 3: Replicate model programs, such as those in Henderson Inlet and Oakland Bay, that create coordinated, locally-driven efforts to protect and improve shellfish growing areas to create a best practices library or menu highlighting successful strategies so that jurisdictions do not have to reinvent the wheel.

**Comment [EDM4]:** We have NTAs related to PIC programs in a bunch of different sections of draft content, so they likely will be consolidated here or in the wastewater section and cross-referenced somewhere else.

We need to decide if we want to include the idea of a state or state/fed team to help counties with pollution source identification, to avoid reinventing the wheel in every county.

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*Performance metric: best practices library complete or not; number of replicate efforts/programs.*

**B5.1 NTA: 4** [Something about acting more quickly or in a more concerted way when growing areas show up on the threatened list? Lessons learned from Samish beyond that we need sustainable non-point programs in every county?]

**Comment [EDM5]:** Work is ongoing right now on the Samish and this is a placeholder to incorporate NTAs as needed from that effort.

*Performance metric: reduction in the number of growing areas on the annual threatened inventory.*

## **B5.2 Encourage environmentally responsible shellfish culture, gardening, restoration and enhancement based on the best available science.**

[Placeholder for background text]

### **Performance Objectives of Ongoing Programs**

[Placeholder]

### **Near Term Actions**

**B5.2 NTA 1:** The Puget Sound Restoration Fund, in collaboration with individual tideland owners, Tribes, Marine Resource Committees of the NWSC, WDFW and other state and local partners, will accelerate restoration of the Olympia oyster by restoring 100 acres of beds by 2020.

To date, this collaborative effort has resulted in over 30 acres of enhanced native oyster habitat with over 100 partners. Current strategies target areas with limited settlement structure, like rocks and shell, but where there is still larval production from nearby remnant populations, such as in Liberty Bay, Dogfish Bay, Henderson Inlet, Little Clam Bay, Discovery Bay, Fidalgo Bay and Raab's Lagoon. Distributing a base layer of shell in these areas allows native oysters to re-occupy historic habitat while also preserving the genetic integrity of local populations.

*Performance metric: done or not; acres restored; number of participating homeowners/individual sites; increased native oyster seed settlement and recruitment in historic Olympia Oyster areas.*

**NTA B5.2 NTA 2:** Replicate projects using mussel culture or other suspended or beach culture to mitigate nitrogen pollution in sensitive areas, such as the project in Quartermaster Harbor. This aquaculture application serves to encourage public-private opportunities to reduce nitrogen impacts that are both efficient and cost effective and provide an alternative to advanced wastewater treatment technology.

*Performance metric: number of replicate projects?*

B5.2 NTA 3: [Are more NTAs needed? Something on shellfish gardening? Other restoration efforts? On use/application of the recently developed BMPs for shellfish restoration?]

**B5.3 Resolve conflicts between aquaculture and upland uses.**

[Placeholder for background text focused on the problem/challenge this sub-strategy addresses]

**Comment [EDM6]:** We will add a sidebar near here covering recent progress since the 2008 AA, since a lot has been done. In fact, do we still need this? Should it focus instead on implementation of the new geoduck rules?

***Performance Objectives of Ongoing Programs***

Effective March , 2011, the Department of Ecology recently published rules requiring that local Shoreline Master Programs better address geoduck aquaculture by requiring a better review of water quality, contaminated sediment and other shell-fish related data during program updates, underscoring existing requirements to address aquaculture in shoreline master program policies, regulations and standards, require conditional use permits for new commercial geoduck aquaculture and guide permit content and administration, frame permit review and require avoidance or mitigation of environmental impacts, and ensure notification of the public and tribal nations of proposed geoduck aquaculture projects. The rules were developed with extensive input from tribes and shellfish growers to develop the rules, with a view towards taking steps to resolve potential conflicts between aquaculture and upland uses.

Implementation activities will focus on training regional planners through monthly shoreline staff meetings, briefing local governments, with an initial emphasis on briefings for Pierce and Thurston counties who expect to submit their updated shoreline master programs to Ecology in 2011, and updating shoreline program guidelines and the handbook to reflect the new rules.

In addition, in March 2010 the Washington State Legislature passed and the governor enacted a law on marine spatial planning in Puget Sound and along the Washington Coast requiring an interagency assessment and report on information related to marine spatial planning and recommendations. This report was completed in January 2011 and contains 21 recommendations related to implementing marine spatial planning in Washington, including Puget Sound. Implementation of marine spatial planning will give shellfish growers and upland owners greater certainty about where aquaculture will be permitted and further reduce the likelihood of conflicts related to aquaculture.

***Near Term Actions***

None. Near-term work in this area is focused on implementation of ongoing programs especially marine spatial planning and the Department of Ecology’s final Shoreline Management Act rule amendment to include geoduck aquaculture under county Shoreline Master Program updates.

**B5.4 Implement NOAA’s Sustainable Aquaculture Policy [reference] and the proposed National Shellfish Initiative Policy [reference].**

On June 9, 2011, NOAA announced the release of final national aquaculture policies issued by the Department of Commerce and NOAA. These policies establish a framework to allow sustainable domestic aquaculture to contribute to the U.S. seafood supply, support coastal communities and

important commercial and recreational fisheries, and help to restore species and habitat. NOAA sees aquaculture as a critical component to meeting increasing global demand for seafood and maintaining healthy ecosystems.

Priorities in the NOAA policy include:

- Making timely management decisions based on the best scientific information available;
- Advancing sustainable aquaculture science;
- Ensuring aquaculture decisions protect wild species and healthy coastal and ocean ecosystems;
- Developing sustainable aquaculture in locations compatible with other uses;
- Working with partners domestically and internationally; and,
- Promoting a level playing field for U.S. aquaculture businesses engaged in international trade.

NOAA will support the emphasis on sustainable marine aquaculture through two immediate initiatives that will be fleshed out in the near future an initiative related to the Gulf of Mexico fisheries and a National Shellfish Initiative to increase shellfish farming and restoration.

#### ***Performance Objectives of Ongoing Programs***

[Placeholder]

#### ***Near Term Actions***

B5.4 NTA 1 [Discussions are ongoing about implementation of these policies/initiatives relative to Puget Sound shellfish and near term actions will be added as they are identified. Some issues that may be addressed are: the efficiency and effectiveness of permitting for shellfish aquaculture and restoration; ecosystem services provided by shellfish (e.g., filtering, nitrogen removal); and science needs.