

Alaska Marine Biotoxin Monitoring & Contingency Plan

For Bivalve Shellfish Other than Geoducks



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Purpose & Scope

This document outlines Alaska’s plan to mitigate the risks to public health that are present in bivalve shellfish (other than geoducks) as a result of marine biotoxins, particularly Paralytic Shellfish Toxin (PST), that cause Paralytic Shellfish Poisoning (PSP). This document has been developed in accordance with the [National Shellfish Sanitation Plan Model Ordinance \(NSSP-MO\)](#) (adopted by reference at 18 AAC 34 under the authority of AS 17.20.005). Specifically, NSSP MO Sec II, Chapter IV @.04 requires Alaska define procedures and resources necessary to prevent harvest of shellfish affected by marine biotoxins.

This plan is adopted under the NSSP-MO¹ to define the administrative procedures and resources, and actions necessary to:

1. Initiate an emergency shellfish sampling and assay program;
2. Close growing areas and embargo shellfish;
3. Prevent harvesting of contaminated species;
4. Provide for product recall;
5. Disseminate information on occurrences of toxic algal blooms and/or toxicity in shellfish meats to the shellfish industry, and local health agencies or communities; and
6. Coordinate control action taken by the department.

This plan covers commercial harvest of clams, mussels, oysters, and whole scallops harvested from state classified growing waters, regardless of whether harvested from the wild or from a farm, or whether grown sub-tidally or inter-tidally. This plan does not cover geoduck clams, snails, or crustacean shellfish, including crab. The department does not monitor marine toxins in shellfish harvested by individuals for subsistence, sport, recreational, or personal use.

The department may deviate from this uniform shellfish sampling plan and require a different PSP sampling program for a classified area when a review of environmental factors, epidemiology and all PSP toxin data necessitates a change. If the department develops a different plan, it will notify affected growers, harvesters, and shellstock shippers.

Definitions

The definitions provided below are consistent in intent with the *Alaska Marine Biotoxin Monitoring & Contingency Plan for Bivalve Shellfish Other than Geoducks*.

- (1) **“COMMINGLE or COMMINGLING”** means the act of combining different lots of shellfish.
- (2) **“HARVEST AREA”** means an area that contains commercial quantities of shellstock and may include aquaculture sites and facilities.
- (3) **“LOT”** means a single type of bulk shellstock or containers of shellstock of no more than one day's harvest from a single, defined harvest area gathered by one or more harvesters.
- (4) **“MONTH”** means a calendar month.
- (5) **“SUMMER”** means May 1 through October 31.
- (6) **“WINTER”** means November 1 through April 30.

¹ Section II, Chapter IV @.04(A)

Biotoxins of Concern

Historically, the only known biotoxin that is periodically present in Alaska waters and shellfish at levels of concern is the toxin that causes Paralytic Shellfish Poisoning (PSP). This plan describes Alaska's management relative to this particular toxin, Paralytic Shellfish Toxin (PST).

Paralytic Shellfish Toxin (PST) is a naturally occurring marine biotoxin that is produced by some species of microscopic algae. Shellfish are filter-feeders that eat these algae and can retain and accumulate the toxin in their tissue. Illness can occur when shellfish contaminated with PST are consumed. This biotoxin affects the nervous system and paralyzes muscles, thus the term "paralytic" shellfish poison. High levels of PST can cause severe illness and death.

Amnesiac Shellfish Poisoning (ASP) is caused by the toxin Domoic Acid and was detected in razor clams in the mid-1990s at levels well below the regulatory limit of 2 mg domoic acid/100 g (20 ppm). The department conducts surveillance testing of that species to monitor levels.

Diarrhetic Shellfish Poison (DSP) toxins and Neurotoxic Shellfish Poison (NSP) toxins are not known to be found in Alaska, and there is no required monitoring for these toxins at this time under the *Alaska Marine Biotoxin Monitoring & Contingency Plan for Bivalve Shellfish Other than Geoducks*.

Overview

The State of Alaska does not maintain continuous phytoplankton monitoring stations due to the vast and expansive coastline and the remote nature of the majority of classified shellfish growing areas. Monitoring and control of PST is accomplished through lot testing of shellfish meat.

The *Alaska Marine Biotoxin Monitoring & Contingency Plan for Bivalve Shellfish Other than Geoducks* plan, based on historical values, defines PST testing frequencies based on the season during which harvest occurs: "summer months" and "winter months."

"Summer months" (May 1 – October 31) require testing of the first lot harvested each week of each shellfish species harvested shellfish from a defined harvest area. Harvested shellfish must be held out of water and under temperature control until PST results determine if the harvested lot are acceptable to enter commerce for consumption.

"Winter months" (November 1 – April 30) require testing of the first lot of each species harvested in a calendar month from a defined harvest area. During winter months, dealers have the option to hold the shellfish out of water and under temperature control until PST results are available, or they may elect to ship shellfish before the PST results are available. If shellfish are shipped before PST results are available and the PST results are over the regulatory limit of 80 µg per 100 g of edible portion of raw shellfish, the dealer will be required to initiate a recall of all shipped product.

Sample Submission

Shellfish submitted to the Environmental Health Laboratory (EHL) for analysis must be prepared, handled, and submitted in accordance with the EHL Sample Submission Manual. A copy of this manual may be accessed at the following link: <http://dec.alaska.gov/eh/lab/index.htm>

The EHL provides assistance with timing of sample collections, completion of submission forms, packaging and temperature requirements, shipping, and sample tracking. Additionally, the EHL requires that, prior to sampling, individuals contact the EHL regarding sampling, planned sampling activities, and shipping notifications:

- Phone: 907-375-8231
- Email: DEC.EH-Lab-ShippingReceiving@alaska.gov

Sample Size

Each sample must contain at least 150 grams of shucked, drained weight (equivalent to approximately 8 ounces) and must contain a minimum of 12 animals.

Harvesting & Holding

The entire lot from which a sample is taken must be harvested. That lot must be held out of water under refrigeration, protected from contamination at the facility, and handled in accordance with applicable requirements of the NSSP-MO. The lot may not be placed back into the water pending distribution and may not be commingled with other lots.

Toxin Action Level

The regulatory limit for PSP in shellfish is 80µg per 100g of edible portion of raw shellfish. Preliminary results from the EHL may be provided to assist the department and the operators in determining whether action must be taken on the harvested lot of sampled shellfish and growing area.

Rejected Lot Procedures

When the concentration of PSP toxin equals or exceeds the regulatory limit, the following actions must be taken:

1. The department will update the status of the harvest area to “Closed” to harvest for all species;
2. If product has been placed into commerce before the PST test results were available and the PST levels are above the regulatory limit of 80µg per 100g of edible portion of raw shellfish, the shellfish dealer must initiate a recall and take actions necessary to remove all product from the affected lot from commerce in accordance with the dealer’s recall plan and the requirements of the NSSP-MO²; and
3. All shellfish that has not been placed in commerce from the affected lot must either be destroyed or returned to the approved growing area. If the lot is returned to the growing area, the harvester must segregate that lot and maintain the lot’s identity for subsequent testing prior to marketing. Detailed guidance may be found in the NSSP-MO³.

Reopening Criteria

If a growing area is closed to harvest, the department will only reopen the area after at least three (3) consecutive samples, taken not less than four (4) days apart, over a minimum of a 14- day period show results below the toxin action level. The process will be repeated if the area is closed again due to an unacceptable level of PST.

For further information or questions, please contact the ADEC – FSS Program

by calling (907) 269-7501 or emailing dec.shellfish.processing@alaska.gov.

² NSSP-MO Chapter X.03.B(1) and (2)

³ NSSP-MO Section IV, Ch. V (Illness Outbreaks and Recall Guidance)

Reference Tables for Required PST Testing Frequency

Table 1. PST Testing Frequency for SUMMER MONTHS (May 1 – October 31)			
Harvest Area	Sampling Frequency	Number of Samples	Hold Pending Lab Results
Individual defined harvest area	First lot harvested each week	1 per species	Yes

Table 2. PST Testing Frequency for WINTER MONTHS (November 1 – April 30)			
Harvest Area	Sampling Frequency	Number of Samples	Hold Pending Lab Results
Individual defined harvest area	First harvested lot of each month	1 per species	No

Summary of Plan Changes

Effective Plan Year	Summary of Changes
2020	<p>Previous plans had levels of testing (1-4), and levels were assigned to harvesters to determine PST testing frequency. The 2020 plan has removed the levels to simplify the plan, and PST testing frequency is based on months of harvest: summer months and winter months.</p> <p>The intent of the simplified plan is to provide clear and easy to comprehend testing requirements, and improved implementation and management of biotoxins in bivalve shellfish other than geoducks.</p>