

**FORMAL RECOMMENDATION BY THE
NATIONAL ORGANIC STANDARDS BOARD (NOSB)
TO THE NATIONAL ORGANIC PROGRAM (NOP)**

Date: 11-05-09

Subject: Molluscan Shellfish (Bivalves)

Chair: Jeff Moyer

Recommendation

The NOSB hereby recommends to the NOP the following:

Rulemaking Action:	X
Guidance Statement:	_____
Other:	_____

Summary Statement of the Recommendation (including Recount of Vote):

This recommendation rounds out all the recommendations from the NOSB in regards to aquaculture. This particular recommendation reflects the Aquaculture Working Group's submission to the NOSB on this aspect of aquaculture to the word.

The NOSB hopes that the NOP will begin official rulemaking to officially incorporate aquaculture into the certified organic community.

NOSB Vote: Motion: Hubert Karreman Second: Tina Ellor

Board vote: Yes - 11 No- 2 Abstain- 0 Absent - 2

Summary Rationale Supporting Recommendation (including consistency with OFPA and NOP):

The following sections of OFPA are pertinent to this Recommendation: 2103(11) – definition of Livestock; 2107(a)(6) – periodic residue testing; 2107(c)(1) – allowance of wild seafood to be certified or labeled as organic, 2107(c)(2)(B) – accommodate the unique characteristics of the industries in the United States that harvest and process wild seafood.

Additionally, the NOSB has already reserved a place holder for Molluscan Shellfish at 205.257

Response by the NOP:

National Organic Standards Board (NOSB)
Livestock Committee

Recommendation on 205.257 Molluscan Shellfish Standards

September 9, 2009

Introduction:

This recommendation strives to address key issues associated with the production of molluscan shellfish (a.k.a. bivalves) in systems compatible with organic agriculture, with special emphasis on strict environmental monitoring of living areas as well as careful harvesting techniques. A table (Appendix A) shows significant differences between current conventional bivalve production and the proposed organic production practices. The intent of this recommendation is to allow the production of organic bivalves as described herein.

Background:

A number of years ago the NOSB Livestock Committee was charged with considering the inclusion of aquatic livestock species in organic agriculture. To that end, the Aquaculture Working Group (AWG) was formed to help assist the Board in any potential recommendations concerning aquatic livestock. The Livestock Committee has already presented three other parts of aquaculture to the entire Board for vote (fin fish in March 2007; fish feed and net pens in November 2008). All passed and were recommended to the Program for inclusion in the regulation. This recommendation will complete the charge originally presented to the Livestock Committee and the AWG.

Discussion:

The recommendation presented is the considered response by the AWG to questions that the Livestock Committee had about organic bivalve production in April 2009. This product is therefore a combined effort between the Committee and the AWG.

Relevant areas in the Rule:

The following sections of OFPA are pertinent to this Recommendation: 2103(11) – definition of Livestock; 2107(a)(6) – periodic residue testing; 2107(c)(1) – allowance of wild seafood to be certified or labeled as organic, 2107(c)(2)(B) – accommodate the unique characteristics of the industries in the United States that harvest and process wild seafood.

The NOSB has already established the regulatory framework for this recommendation at the March 2007 meeting. That document includes:

205.257 Molluscan Shellfish [reserved]

Recommendation: 205.257 Molluscan Shellfish

§ 205.2 TERMS DEFINED

HACCP. Hazard Analysis Critical Control Point, a mandatory program for seafood processors under the U.S. Food and Drug Administration and the National Oceanic and Atmospheric Administration. The program requires the analysis and management of critical processing variables that impact upon the healthiness and safety of seafood products.

NSSP. National Shellfish Sanitation Program operated under jurisdiction of the U.S. Food and Drug Administration and designated state and foreign shellfish control authorities.

Bivalves. The term “bivalve” applies to bivalve molluscs including oysters, clams, mussels, and scallops. Gastropod molluscs, such as abalone and conch, and cephalopods, such as octopus and squid, are not included.

Seed, juvenile or spat. The stage of development after the larval, free-swimming stage, which, having developed an eye spot, foot, and gills, settles onto a suitable substrate (on shell, for example). This life state is also sometimes referred to as “*spat*.”

Seston. Particulate matter suspended in water including plankton, organic detritus, and inorganic material.

Specific pathogen free. Hatchery bivalve seed must be certified free of reportable shellfish infectious disease agents in accordance with applicable state and/or federal regulations pertaining to the location of origin and use.

Submerged aquatic vegetation (SAV). A collective term that describes rooted macrophytes, including marine angiosperms, such as the true sea grasses, and freshwater macrophytic algae. Submerged aquatic vegetation provides food and shelter for juvenile estuarine and marine organisms and improves water quality by causing the sedimentation of suspended matter and the removal of dissolved nutrients through primary productivity.

§ 205.257 BIVALVE MOLLUSCS

(a) Bivalve molluscs general:

- (1) Except as otherwise provided, all provisions of § 205.250 through § 205.259, Aquaculture, and § 205.600 through § 205.604, National List, in this subsection apply to bivalves.
- (2) An organic bivalve producer must maintain records to preserve the identity of all organically managed bivalves and edible and non-edible products to assure reliable traceability from growing area to market.
- (3) All applicable laws, regulations and procedures of national and local governments, including NSSP, HACCP, and environmental laws and regulations, must be obeyed.
- (4) Bivalves that are removed from a certified operation and subsequently managed on a non-certified operation may not be sold, labeled or represented as organically produced.
- (5) Depuration of bivalve molluscs for the purpose of eliminating or reducing amounts of prohibited substances is prohibited.
- (6) Bivalves grown in onshore ponds, tanks, and other containers may be fed organic aquatic plants produced under § 205.258 Farmed aquatic plants and other organic seston in an integrated organic production system.

- (b) Organic system plan for ocean based bivalve production where feed is natural seston:
- (1) Ocean based bivalve growing areas must be under organic management for at least three years before production can be certified organic.
 - (2) A producer of organic bivalve molluscs must develop an organic system plan in accordance with the provisions of § 205.201.
 - (3) The organic system plan for bivalve production that is fed wild microalgae and other natural seston must include:
 - i. A map of the growing area that indicates the boundaries of organically managed areas, adjacent natural areas, and non-organically managed areas that may influence the operation, and water circulation patterns. The location of all industrial or domestic point sources of contamination must be included on the map. The map also must include locations of beds of eel grass, submerged aquatic vegetation, and other ecologically sensitive flora and fauna.
 - ii. The organic system plan must include an approximate delineation of the hydraulic zone of influence (HZI) for forage production for the shellfish farm. The HZI is the zone of production for forage consumed by the farmed bivalve molluscs.
 - iii. Determination of the HZI may be based on hydraulic models, field observations that measure and define circulation, and/or tracer studies. The organic system plan shall include a map of the HZI with grids representing forage production areas for the farm that contain 10% or less of the surface area of the HZI. In addition, methods for delineating the HZI must be described, as well as locations of any freshwater sources and other factors impacting production of forage for organic bivalve molluscs. The HZI determination may include approaches and methods such as:
 - a. establishing the tidal prism by measuring tidal amplitude.
 - b. determining water circulation patterns by drogoue studies (Lagrangian methods) or comparable drift methods, tracer studies using dye, and current meters.
 - c. locating sources of fresh water inflow.
 - d. establishing Depth/Salinity/Temperature relationships.
 - e. Calculation of the HZI using a mathematical model if sufficient preexisting data is available.

The analysis shall determine estimated average and extreme ranges of circulation, and if vertical mixing occurs. The results of this analysis must include drawings or images of circulation patterns and how prevailing or storm wind conditions effect the HZI.

The HZI must be estimated under a representative range of typical conditions. Identification or quantification of extreme climatic conditions that could affect the HZI must be discussed in the organic system plan.
 - iv. Identification and location of all point and non-point sources of prohibited substances and other potential contaminants, such as heavy metals, from urban, residential, industrial and agricultural sources that may adversely affect the area of natural forage production and the bivalve growing facility. The plan must include a determination of the distance from the bivalve growing site to any point or identified area from which there is a significant risk of contamination;

- v. Documentation of environmental conditions in the growing area, including water quality and land use in contiguous watersheds; Documentation shall include affidavits from contiguous agricultural and industrial users that prohibited substances have not been applied during the past three years.
- vi. A description of a water quality monitoring program that indicates parameters measured, frequency of measurement, and location of sampling stations;
- vii. A description of the procedures used for the culture and harvest of bivalve molluscs, including materials used for rafts, nets, or other structures;
- viii. A description of measures that will be implemented to minimize impacts of culture operations on ocean ecosystems and wildlife, including discussions of:
 - a. the impacts of farm structures (if any), growing practices, and harvest methods.
 - b. benthic deposition.
 - c. estimates of nutrient flows, including recycling of nutrients from anthropogenic sources and adequacy of wild forage in the water column.
 - d. predator control methods.
 - e. species that use the habitat, including those designated as threatened or endangered. If threatened or endangered species are present, the plan must indicate how culture and harvest activities are in compliance with applicable laws that protect such species.
- ix. A description of biosecurity practices to prevent to the occurrence and spread of diseases or parasites;
- x. A waste management plan that provides for:
 - a. reuse, recycling and proper disposal of nets, ropes, waste shell, grade-outs and dead-stock.
 - b. composting or recycling of waste biological materials, including shells, to the extent practicable.
 - c. control of offensive odors.
- xi. A schedule for surveillance and methods of removing accidentally released culture materials or equipment from beaches or natural waters adjacent to the culture site;
- xii. A process for the resolution or mitigation of complaints, conflicts, and other multi-stakeholder issues.
- xiii. The Sanitary Survey for the operation as required under NSSP.

(c) Organic system plan for bivalve production integrated with another ocean based organic production facility such as a net pen where the bivalves feed largely upon the metabolic products of that production:

- (1) The producer must develop an organic system plan in accordance with the provisions of § 205.201.
- (2) The organic system plan for bivalve production where the feed is largely metabolic products of that production must include:

- (i) A map of the growing area that indicates the boundaries of organically managed areas, adjacent natural areas, and non-organically managed areas that may influence the operation, and water circulation patterns. The location of all industrial or domestic point sources of contamination must be included on the map. The map also must include locations of beds of eel grass, submerged aquatic vegetation, and other ecologically sensitive flora and fauna.
- (ii) The Sanitary Survey for the operation as required under NSSP.
- (iii) The Sanitary Survey must be reviewed and updated if necessary at least annually by the grower and supplemented with particular attention given to possible contamination by any one or more prohibited substances from any source. It must include the identification and location of all point and non-point sources of prohibited substances and other potential contaminants, such as pesticides, herbicides, and heavy metals. Point and non-point sources can be from urban, residential, industrial and agricultural areas that may pollute the area of natural forage production and the bivalve growing facility. This may include domestic waste (including municipal sewage treatment plants and private septic tanks), agricultural contamination from farms, feedlots, slaughterhouse operations, and crop spraying, and all forms of industrial discharges that could impact the growing waters. The plan must include the distance from the bivalve growing site to any point or identified area from which there is a significant risk of contamination. The required Sanitary Survey shall be further supplemented whenever there is a material change.
- (iv) The Sanitary Survey supplement must include a representative range of meteorological and oceanographic typical conditions that might be expected over a ten year period. Identification or quantification of extreme climatic conditions, such as hurricanes and floods, that could affect the zone of forage production must be considered in the organic system plan with plans for dealing with such events.
- (v) The Organic System Plan must include plans for action for events that trigger any form of pollution contribution to the area of the Sanitary Survey.
- (vi) Documentation of environmental conditions in the zone of forage production, including water quality and land use in contiguous watersheds. Documentation shall include affidavits from contiguous agricultural and industrial users that prohibited substances have not been applied during the past three years.
- (vii) A description of a water quality monitoring program including the parameters measured, frequency of measurement, and location of sampling stations.
- (viii) A description of the procedures used for the culture and harvest of bivalve molluscs, including materials used for rafts, nets, or other structures.
- (ix) A description of measures that will be implemented to minimize impacts of culture operations on ocean ecosystems and wildlife, including discussions of:
 - a. the impacts of farm structures (if any), growing practices, and harvest methods.
 - b. benthic deposition.
 - c. estimates of nutrient flows, including recycling of nutrients from anthropogenic sources and adequacy of wild forage in the water column.
 - d. predator control methods.

- e. species that use the habitat, including those designated as threatened or endangered. If threatened or endangered species are present, the plan must indicate how culture and harvest activities are in compliance with applicable laws that protect such species.
 - (x) A description of biosecurity practices to prevent to the occurrence and spread of diseases or parasites.
 - (xi) A waste management plan that provides for:
 - a. reuse, recycling and proper disposal of nets, ropes, waste shell, grade-outs and dead-stock.
 - b. composting or recycling of waste biological materials, including shells, to the extent practicable.
 - c. control of offensive odors.
 - (xii) A schedule for surveillance and methods of removing accidentally released culture materials or equipment from beaches or natural waters adjacent to the culture site;
 - (xiii) A process for the resolution or mitigation of complaints, conflicts, and other multi-stakeholder issues.
- (d) Origin of bivalves molluscs:
- (1) The use of hatchery produced seed is required.
 - (i) However, where commercially available seed is not available in the same geographic region, or where the use of hatchery seed would preclude commercial production of market sized animals, the collection of larvae or natural set seed from the ocean is allowed for a period of seven years from the date these regulations are adopted, under the following conditions:
 - a. wild seed only can be collected from wild animals that are actively managed by the appropriate government resource management agency to ensure sustainable wild populations. The organic system plan must include provisions that consider and control the impacts of wild seed collection activities and methods to monitor those impacts.
 - b. wild seed collection methods must not compromise the ecological integrity of the aquatic ecosystem in which they are being used.
 - c. the organic system plan must include provisions to minimize overset of wild seed.

Prior to the expiration of this exemption period, a reevaluation shall be made of whether to extend this exemption for specific species where the use of hatchery seed would preclude commercial production of market sized animals.
 - (2) Production of triploid bivalves is prohibited by § 205.251 Origin of aquaculture animals, paragraph (e).
- (e) Bivalve mollusc forage production in ocean based production systems:

- (1) Bivalves may forage on wild microalgae and other seston at locations classified by appropriate government authorities under the NSSP as “remote,” “approved,” or “conditionally approved” subject to specific provisions of these standards. Bivalves grown at locations that are not classified, or classified as ,” “restricted,” “conditionally restricted,” or “prohibited” may not be sold, labeled or represented as organically produced.
 - (2) In the event of an emergency closure ordered by a state shellfish control authority for environmental reasons, the waters under organic production must remain closed for an additional seven days after these waters are reopened by that authority and testing by the grower after reopening determines that requirements under (f) Contamination indicators are satisfied. In the event of a closure due to major pollution impacts, including sewage or chemical spills, closure shall extend until at least 14 days after the waters are reopened by the shellfish control authority and testing by the grower determines that requirements under (e) are satisfied.
- (f) Contamination indicators for all ocean based production:
- (1) Measuring fecal coliforms as an indicator for contamination by prohibited substances is required.
 - (2) In addition to monitoring by government agencies for indicator organisms required under NSSP, the organic system plan must include monitoring by the producer for microbial indicators of possible contamination by prohibited substances for each site with periodic testing of seawater. Monitoring must be site specific with specifications determined by the initial site analysis in the Sanitary Survey and ongoing evaluation of potential contamination. The organic system plan must consider historical information and must be updated annually.
 - (3) The annual review of the organic system plan shall consider incorporating new technologies for monitoring contamination when new technologies become available and can be used with reliable and consistent interpretation.
 - (4) Locations for sample stations must be identified in the organic system plan and indicated on the site map. There must be at least two sampling stations for each farm site. At least one station must be located near the boundary of the farm closest to any potential source of contamination. Additional sample stations must be utilized where potential sources of contamination exist near other boundaries of the farm site.
 - (5) Periodic sampling and testing for fecal coliform indicators must occur at least twice each month at approximately two week intervals with records maintained for at least five years. All stations must be sampled within the same 12 hour period, or within the same tidal cycle, whichever is shorter. Sampling and testing should be conducted using standard industry protocols and may include multiple samples per station. At least twice each year a third party independent FDA certified laboratory must verify at least one set of samples.
 - (6) Harvesting of bivalves is allowed from the farm site when fecal coliform water sample testing results for each sampling event indicate a geometric mean or median for all stations that does not exceed 14 bacteria cells per 100 ml. This determination can be made by most probable number (MPN) or membrane filter methods. When the geometric mean or median exceed 14 bacteria cells per 100 ml of seawater, bivalves may not be harvested for organic sale until sample results are 14 bacteria cells per 100 ml or less. Should two consecutive sampling dates indicate an geometric mean or median of greater

than 14 bacteria cells per 100 ml then harvesting for organic sale must be suspended until two consecutive sample dates, separated by at least 24 hours, yield consecutive acceptable (≤ 14 bacteria cells per 100ml) results.

Methods for determination of fecal coliform indicator organisms are described in the U.S. Food and Drug Administration Guide for the Control of Molluscan Shellfish, 2005 (or subsequent editions), IV. GUIDANCE DOCUMENTS, II-Growing Areas, .10 Approved National Shellfish Sanitation Program Laboratory Tests. [<http://www.cfsan.fda.gov/~ear/nss3-42j.html>].

- (7) The Organic system plan must include monitoring of sentinel animals by tissue sampling of bivalve molluscs for prohibited and other substances, at least quarterly and approximately 90 days apart, of the bivalve molluscs being grown, or if cultured animals are not available of an appropriate size, wild bivalve molluscs of the same species utilized in that region by the Mussel Watch Program of the US National Oceanic and Atmospheric Administration [<http://ccma.nos.noaa.gov/about/coast/nsandt/musselwatch.html>], that are collected within the establish site boundaries under sampling and analytical protocols established by the Mussel Watch program for all analytes evaluated by that program. Should the value of any analyte in the sentinel animals exceed those values listed in Table 1, Action Levels, Tolerances and Guidance Levels for Poisonous or Deleterious Substances in Seafood found in US Food and Drug Administration National Shellfish Sanitation Program, Guide for the Control of Molluscan Shellfish, 2007, [<http://www.cfsan.fda.gov/~ear/nss4-42d.html>], the bivalve product cannot be labeled organic until two subsequent samples of sentinel animals are found to be below the action levels, tolerances and guidance levels for all analytes listed. These subsequent samples must be spaced at least two months apart.

During the three year conversion period to organic production, should two successive samples of sentinel animals that are taken within 90 days exceed these action levels, tolerances and guidance levels, the site cannot be certified for the organic production of bivalves for a period of at least three years.

Copies of all results shall be saved for at least five years.

(g) Animal health care practices:

- (1) Hatchery seed must be certified to be free of reportable shellfish infectious disease agents according to applicable State and Federal regulations.
- (2) Handling and growing area management practices must minimize the occurrence and spread of diseases and parasites.
- (3) Biosecurity measures must protect against entry of new pathogens, parasites or pests, or their spread. Such biosecurity measures must be specified a specific biosecurity or health section of the organic system plan.
- (4) Saline and freshwater dipping, rinsing or spraying may be employed to destroy shell parasites, predators or bacteria.

(h) Living conditions:

- (1) Bivalves must be under continuous organic management from the time seed is placed in a growing area. All product labeled organic must achieve at least 95 percent of its biomass while under organic management.
 - (2) Ocean based sites must provide appropriate rates of water exchange with sufficient tidal currents to assure a good supply of food for bivalve crops while maintaining a healthy environment for other marine organisms.
 - (3) Bivalves shall be stocked at densities and total numbers that:
 - i. optimize the health and growth of the bivalves.
 - ii. do not result in changes to the benthos except in the farm site.
 - iii. do not remove quantities of plankton or microorganisms from the water sufficient to cause damage in ecosystems on or adjacent to the farm.
 - (4) With ocean based production systems, the producer must assure adequate protection of bivalves from predators with a pest management plan for each location. Where possible, the plan should provide for pest removal without using lethal means of predator control. The use of quicklime (CaO), biocides, pesticides, herbicides, and other chemical toxins are prohibited to control or eliminate predators and other nuisance organisms unless allowed under § 205.601 or § 205.603.
 - (5) With ocean based production systems removal of biofouling, pests, or predators using benign means including hand removal and hose washing of bivalves in a manner that minimizes environmental impacts from the discharge of fouling organisms and sediment is allowed.
- (i) Ocean based bivalve growing facilities:
- (1) Bivalves may be grown in integrated production systems with other organically raised aquatic animals, such as finfish.
 - (2) Bivalve growing areas must be geographically defined. The farm must have exclusive rights to manage and harvest bivalves in each defined area. Bivalves grown on public grounds that are not leased for private use cannot be certified organic.
 - (3) Bivalves may be grown on the substrate, or in off-bottom containers, including bags on racks, lantern nets, trays, or on long-lines, poles or other bags or containers which employ off-bottom methods. Rafts and other floating structures for suspending bivalves in the water column may be employed.
 - (4) Structures used for raising bivalves may not contain lumber treated with arsenate or other synthetic anti-foulants or preservatives, or any non-synthetic substances prohibited under 205.604, except as provided in 205.603.
 - (5) Burrowing bivalves such as clams may be grown in the substrate.
 - (6) Farms that grow bivalves must include in their organic system plan specific and measurable steps that will be taken to minimize environmental impacts of farm practices. Such steps may include but are not limited to:
 - i. minimize disturbance of the benthic sediments during seeding and harvest of subtidal leases by using only shallow draft vessels during high tide.

- ii. subtidal leases with fine bottom sediments must be harvested with the least disruptive mechanical or manual harvesting method that are practicable and must comply with (j) Harvesting ocean based bivalve shellfish.
- (7) The seafloor of non-private growing areas cannot be altered with dikes, or leveling.
- (j) Harvesting ocean based bivalve shellfish:
- (1) Harvest methods must cause minimal impact to the substrate, benthos, and to organisms that live on the ocean bottom and in bottom sediments. Impacts must be minimal to assure sustainability of habitat. Where possible, mitigation measures must be employed.
 - (2) For all methods of harvest the organic system plan must include an assessment of the potential for incidental kill of non-farmed species that occupy the farming habitat and a plan to minimize the occurrence of such incidental kill.
 - (3) Manual harvest of bivalves by divers using self contained breathing apparatus (SCUBA) or surface supplied air is permitted. Diving activities within the United States must comply with either State or Federal regulations, whichever is applicable. Diving activities in foreign jurisdictions must comply with pertinent diving regulations established by the United States Occupational Safety and Health Administration.
 - (4) Dredges or other mechanical methods employed to harvest bivalves must scrape farmed animals from the benthic surface and minimize penetration into the substrate to no more than the depth of the market sized bivalves being harvested. Sediment penetration must only be by a harvesting bar, blade or tooth, with the body of the dredge held off the bottom by sled runners or by other means to ensure that the dredge does not penetrate the substrate.
 - (5) Suction devices and hydraulic escalator harvesters are prohibited for harvesting burrowing molluscs.
 - (6) Harvesting of molluscs is not allowed within 100 feet of beds of submerged aquatic vegetation or other light-sensitive aquatic ecosystems, known spawning areas of fish, or ecologically sensitive habitats. These areas must be shown on the site map.
 - (7) Equipment for harvesting non-burrowing seafloor surface dwelling bivalves that creates a negative water pressure above the substrate to sweep the animals into the dredge without the dredge penetrating the substrate is allowed. With this dredge design, the equipment must be held off the bottom by sled runners or other means to assure that the apparatus does not penetrate the substrate.
 - (8) The organic system plan must include a description of the design of dredges and other harvest equipment employed including drawings or photographs.
 - (9) Clams and other burrowing molluscs that grow in the substrate in intertidal areas may be hand dug for a depth of not greater than 8 inches with particular care to minimize disruption of the seabed. Harvest must occur during periods of beach exposure at low tide to minimize the distribution of marine sediments.
 - (10) Intertidal harvest of clams or other substrate dwelling shellfish may be accomplished with tractor driven or self-propelled harvesting machines with a maximum depth of harvest of 8-inches. Mechanical harvesting equipment must be designed and operated to minimize disturbance of the substrate through the use of low weight equipment with low pressure tires that are designed to minimize loading on the substrate. This equipment

must have a total weight of less than 3,000 pounds including the weight of operators. In no case shall substrate loadings exceed 10 pounds per square inch for any tire. This calculation shall be made in the field by dividing the weight of the harvester carried by each tire by the horizontal contact area of the tire on the substrate determined by multiplying the contact width by the contact length of the tire impression in the substrate. Tracked crawler equipment meeting these specifications also may be employed.

(11) Hand raking of clams is allowed to a depth of 8-inches.

(k) Handling and transport of bivalve molluscs:

- (1) All national and local regulations controlling the disposal of processing wastewater must be obeyed.
- (2) After shucking and during packing exposure to fresh water shall not exceed 20 minutes.
- (3) Packing materials and controls must conform to NSSP requirements throughout shipping, and distribution.
- (4) Packing date must be clearly marked on the retail sales container as well as estimated shelf-life or “sell by” and the product must conform to local, state or federal standards pertinent to shelf-life and quality.
- (5) Placing bivalves in waters of lower salinity after harvest for purposes of increasing weight or volume (“soaking”) is prohibited. Placing bivalves in waters of greater salinity for purposes of improving taste (“salting”) is allowed with the provision that the lease or facility used for this practice has been under continuous organic management.

APPENDIX A: Comparison of conventional & proposed organic bivalve production

Management Method	Conventional Aquaculture	Proposed Organic Standard
Conversion Period	None	Organic management for 3 yrs.
Map	NSSP for sewage discharge points	Sewage and industrial points of discharge.
Organic control points	None	Establishment of hydraulic zone of influence using hydraulic modeling and field studies.
	None	Initial site survey to determine if any contaminants are present.
	None	Identification of all point and non-point sources of prohibited substances plus other potential contaminants.
	None	Documentation of adjacent land uses including affidavits from contiguous land users that prohibited substances have not been applied during the past three years.
	None	Establishment of a water quality monitoring program conducted by grower.
	None	Ongoing contaminant monitoring of a wide range of substances both using sentinel bivalves.
Measures to minimize impacts to surrounding ecosystems and wildlife	None	Waste management plan with schedule for recycling, reuse, and surveillance and clean up of farm originated waste in surrounding ecosystem.
	None	Sensitive flora and fauna mapping and avoidance.
	None	Ecosystem impact minimization program as part of organic system plan.
	Optional	Biosecurity program.

	<p>Allowed</p> <p>Not required</p> <p>None</p> <p>Allowed</p> <p>Allowed</p> <p>Allowed with permit</p> <p>Allowed</p> <p>Optional</p> <p>None</p>	<p>Altering seafloor with dikes and leveling prohibited</p> <p>Impact on ocean bottom and on non-farmed species must be mitigated and minimized</p> <p>Harvest dredges with specified sediment penetration limits</p> <p>Suction and hydraulic escalator harvesters prohibited</p> <p>Harvesting within 100 feet of submerged beds of vegetation, fish spawning areas and ecologically sensitive habitats prohibited</p> <p>Use of quicklime, biocides, pesticides, herbicides and other chemical toxins for predator control prohibited.</p> <p>Use of antifoulants and treated lumber prohibited</p> <p>Multitrophic production methods required</p> <p>Densities and animal numbers designed to prevent changes to surrounding benthos and avoid impacting primary productivity in surrounding ecosystems.</p>
Responsible community relations	None	Plan for resolution of multi-stakeholder issues.
Animal health and welfare	<p>Hatchery seed free of reportable shellfish infections</p> <p>Optional</p>	<p>Hatchery seed free of reportable shellfish infections</p> <p>Handling, growing area management and biosecurity practices designed to minimize stress and exposure to pathogens</p>

	None	Densities designed to optimize animal health and welfare
	None	Predator and pest control plan required
Origin of mollusks	None	Hatchery seed required (with exception) with wild seed prohibited. Triploidy prohibited.
NSSP designation	Harvesting from areas classified as remote, approved, conditionally approved, restricted and conditionally restricted allowed under certain conditions.	Only remote , approved, or conditionally approved allowed.
	Emergency closures determined by state authorities.	Closure for an additional seven days after reopening and grower testing for contamination indicators.
	Closure for major pollution impacts determined by state authorities.	Closure for at least an additional fourteen days and grower testing for contamination indicators.
Contamination monitoring	By state authorities using <i>E. coli</i> as indicator.	Same as NSSP (state authorities) additional monitoring by grower using direct monitoring within the hydraulic Zone of Influence
Contamination indicator technology updates	None	Annual review with inclusion in Organic System Plan where reliable.
		.
Testing of seston for persistent organic compounds and heavy metals.	Not required.	Required to be below F DA action levels, or closure.

Committee Vote: Motion: Jennifer Hall Second: Rigo Delgado

Yes: 4

No: 3

Abstain:

Absent: