

Shellfish Hatchery Protocol

Production and translocation of diploid Pacific Oyster (*Crassostrea gigas*) spat to Port Stephens estuary NSW

Purpose

The following protocol has been developed to minimise the risk of the introduction of diseases and pests from interstate waters into Port Stephens estuary via diploid Pacific Oyster (*Crassostrea gigas*; also known as *Magallana gigas*) spat (juvenile seed stock) produced by an approved source hatchery outside NSW.

Scope

Diploid Pacific Oyster spat produced by an approved source hatchery outside NSW will only be permitted to be placed into NSW where it can be demonstrated that the spat have been produced in accordance with the following protocol.

Diploid Pacific Oyster spat produced under this protocol may only be shipped to persons authorised under their NSW Department of Primary Industries (NSW DPI) Aquaculture Permit to cultivate diploid Pacific Oysters in NSW and who are authorised by a special or specific permit condition on their NSW DPI Aquaculture Permit that endorses diploid Pacific Oyster importation.

It is the responsibility of the shipper to ensure that all batches of diploid Pacific Oyster spat shipped from the source hatchery into NSW comply with the record keeping provisions specified in Division 3 Clause 13 of the Fisheries Management (Aquaculture) Regulation 2017.

A NSW DPI Fisheries Officer or Authorised Officer may examine batches of diploid Pacific Oyster spat shipped from the source hatchery at any time once a shipment enters NSW to ensure that the shipment complies with this protocol, the provisions of the NSW *Biosecurity Act 2015*, the Biosecurity Regulation 2017, the *Fisheries Management Act 1994* and Fisheries Management (Aquaculture) Regulation 2017.

Note: At any time a formal legal instrument can take effect that may override the whole or part of the protocol.

General Biosecurity Duty

On 1 July 2017 the NSW *Biosecurity Act 2015* (the Act) commenced which provides a framework for responsibility for the biosecurity risk that is shared among the community, industry and government. The Act establishes a number of 'biosecurity duties' that include:

- a general biosecurity duty
- duties relating to prohibited and notifiable matter, and
- a duty to notify biosecurity events.

The general biosecurity duty supports shared responsibility through its broad scope. Any person who deals with biosecurity matter or a carrier and who knows, or ought reasonably to know, the biosecurity risk posed or likely to be posed by the biosecurity matter, carrier or dealing has a biosecurity duty to ensure that, so far as is reasonably practicable, the biosecurity risk is prevented, eliminated or minimised. The general biosecurity duty can be found in Part 3 of the Act.

To ensure compliance with the general biosecurity duty, NSW DPI recommends that the source hatchery develops and maintains a biosecurity plan that aims to minimise biosecurity risk to the farm and surrounding area. More information on the Act and the general biosecurity duty can be found on the website:

<http://www.dpi.nsw.gov.au/biosecurity/biosecurity-legislation>

Definitions

algal production cycle means the time period from which algae is acquired and cultivated for use in the larval and spat production cycle.

closed hatchery system means an enclosed land based cultivation facility for oyster larvae and spat with biosecurity controls in place, isolated from estuarine production facilities and isolated from facilities that produce stock for any other purpose.

competent authority means a National Association of Testing Authorities (NATA) accredited veterinary diagnostic laboratory (e.g. Elizabeth Macarthur Agricultural Institute; EMAI) approved by the NSW Chief Veterinary Officer.

diploid Pacific Oyster spat means oysters produced within a source hatchery that have two complete sets of chromosomes and not had measures undertaken to alter the number of sets of their chromosomes.

independent certifier means a certifier approved by the NSW Chief Veterinary Officer.

individual batch means a group of oyster spat produced from a single spawning event, and held in an upweller system that uses the same source of water.

larval and spat production cycle means the time period from spawning of oyster broodstock within a Closed hatchery system, to cultivation of larvae, to spat, prior to importation into NSW.

Oyster Shipment Log Book means a log book in a form approved by the Secretary of the Department for purposes of complying with conditions imposed by this protocol and Division 3 of the Fisheries Management (Aquaculture) Regulation 2017.

Port Stephens estuary means the waters and adjacent land area of Port Stephens estuary NSW including its tributaries.

shipper means the aquaculture permit holder whose permit lists the lease(s) on which the diploid Pacific Oyster spat will be placed.

source hatchery means an oyster hatchery facility approved by the NSW Chief Veterinary Officer to produce oysters for importation to NSW in accordance with this protocol.

Protocol

1) Hatchery

- (a) Diploid Pacific Oyster (*Crassostrea gigas*; also known as *Magallana gigas*) spat (juvenile oysters) are to be produced in a closed hatchery system and are at no time to be placed in, or exposed to, unfiltered state or territory waters.
- (b) All seawater used in the hatchery system must be subject to nominal filtration 1.0 micron or less followed by ultraviolet irradiation at a dose of at least 30 mJ/cm² for the duration of the larval and spat production cycle. The hatchery must also certify that all seawater used in the larval, spat and algal production cycle has been subject to nominal filtration to 1.0 micron or less followed by ultraviolet irradiation at a dose of at least 30 mJ/cm².
- (c) All tanks, valves and culture equipment used in the larval and spat production cycle must be cleaned with chlorine (made to a minimum solution of 200ppm

active effective chlorine) and washed with fresh water prior to commencing the larval and spat production cycle.

- (d) For a sample of each batch that is to be imported to NSW, which includes those spat to be sampled for pre-dispatch testing as outlined in Clause 2), The hatchery water operating temperature must be held at a minimum of 21 degrees Celsius for no less than four weeks prior to the intended importation date. A diurnal temperature record must be kept for the four week period demonstrating a minimum 21 degree Celsius per day. The remainder of the batch that is not subjected to temperature increase must only be reared under the same biosecure conditions under which the heat-challenged spat are reared.
- (e) Prior to the first diploid Pacific Oyster spat batch being imported to NSW for cultivation in Port Stephens estuary, and thereafter every 12 months, the independent certifier is to certify that the source hatchery meets clause 1)(a) and has the capacity to meet 1)(b)-(d).

2) Pre-dispatch Testing

The following requirements must be met after completion of clause 1)(d) and no more than 30 days but not less than two working days prior to importation into Port Stephens estuary:

- (a) Two random samples of at least 300 spat from each individual batch (with each lot of 300 comprised of an equal number collected from each individual upweller within that batch) of diploid Pacific Oyster spat are to be forwarded for testing and examination to a competent authority for the following:
 - (i) 300 individual spat are to be tested by polymerase chain reaction for the presence of Ostreid herpesvirus- μ variant—OsHV-1 μ var (OSHV1), the virus that causes Pacific Oyster Mortality Syndrome (POMS) (Laboratory advice – for viral disease testing, oysters are to be tested in pool no greater than 5 individual oysters); and
 - (ii) 300 individual spat are to be examined for a general health screen by histopathology for the presence of any prohibited matter as prescribed in Schedule 2, Part 1 of the NSW *Biosecurity Act 2015*, and any notifiable diseases as prescribed in Schedule 1, Part 2 of the *Biosecurity Regulation 2017*.
- (b) A laboratory report, a statement of general health and a certificate of disease status must be provided by the competent authority.
- (c) A batch of diploid Pacific Oyster spat produced at the source hatchery may only be placed into NSW where that batch of spat has been certified free of evidence of disease agents by the competent authority.

3) Shipment Documentation

Prior to dispatch of each batch of diploid Pacific Oyster spat from the source hatchery to Port Stephens estuary, NSW:

- (a) The shipper must:
 - (i) complete a copy of the Oyster Shipment Log Book; and
 - (ii) provide a completed copy of the Oyster Shipment Log Book to the source hatchery.
- (b) The source hatchery must prepare a declaration stating:
 - (i) the species of oyster shipped; and
 - (ii) that the oysters in question are all diploid Pacific Oysters; and
 - (iii) that the requirements of (1) and (2) of this protocol have been met.

- (c) Copies of the:
- (i) laboratory report, statement of general health and certificate of disease status required by clause 2)(b); and
 - (ii) Oyster Shipment Log Book required by clause 3)(a)(i); and
 - (iii) the source hatchery declaration required by clause 3)(b)
- must accompany the diploid Pacific Oyster batch throughout shipment from the source hatchery into Port Stephens estuary and must be held for a period of 12 months after the arrival of the shipment in Port Stephens estuary NSW by the shipper and any other person who receives the diploid Pacific Oyster batch or any part of that batch.
- (d) Copies of the:
- (i) Laboratory report, statement of general health and certificate of disease status required by clause 2)(b); and
 - (ii) Oyster Shipment Log Book required by clause 3)(a)(i); and
 - (iii) the source hatchery declaration required by clause 3)(b)
- must be emailed to NSW DPI to the address: oyster.import@dpi.nsw.gov.au