

Protocol for translocation into NSW for cultivation in Recirculating Aquaculture Systems (RAS) of finfish fry, fingerlings, and juveniles (up to 6 months of age) of Giant Oystercracker, *Trachinotus anak* from biosecure hatchery production by CSIRO Bribie Island Research Centre, North Street, Bribie Island QLD 4507.

Purpose

The following biosecurity conditions and requirements have been developed to minimise the risk of introduction of diseases and pests from Queensland waters (including Qld waterways and Qld aquaculture facilities) into NSW waters via the translocation of finfish fry, fingerlings and juveniles (up to 6 months of age) of Giant Oystercracker, *Trachinotus anak*, produced by CSIRO Bribie Island Research Centre, North Street, Bribie Island QLD 4507 to NSW land-based aquaculture facilities for further cultivation within Recirculating Aquaculture Systems.

Scope

Fry, fingerlings, and juveniles of Giant Oystercracker, *Trachinotus anak*, produced by CSIRO Bribie Island Research Centre, North Street, Bribie Island QLD 4507 will only be permitted to be placed into Recirculating Aquaculture Systems (RAS) on land-based NSW aquaculture farms within NSW where it can be demonstrated that the fry, fingerlings or juveniles have been produced, translocated and otherwise dealt with throughout their lifecycle in accordance with the following protocol.

Fry, fingerlings and juveniles produced under this protocol may only be translocated into NSW for the purpose of grow out within RAS on land-based NSW aquaculture farms by persons or entities ("the shipper") authorised to farm the species *Trachinotus anak* under Section 144 of the *Fisheries Management Act 1994*. This protocol takes effect as a special or specific permit condition on the shipper's NSW aquaculture permit. Please note that all other relevant legislation also applies.

This protocol does not extend to the translocation of sexually mature fish or to eggs or larvae of fish. This protocol cannot be used for fish that are older than 6 months of age.

Note: the content of this protocol is subject to regular review and at any time can be overridden by a formal legal instrument.

General Biosecurity Duty

On 1 July 2017 the NSW *Biosecurity Act 2015* (the Act) commenced which provides a framework for responsibility for 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 Matter,
- duties relating to 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 and applies to all parties to this protocol, including for any fry, fingerlings or juveniles of *Trachinotus anak* brought into NSW: the source hatchery in Queensland; the shipper; and any other person who deals with the finfish produced and translocated under this protocol.

To ensure compliance with the general biosecurity duty, NSW DPIRD recommends each NSW farm receiving *Trachinotus anak* under this protocol develop a biosecurity plan that aims to minimise biosecurity risk to the farm and surrounding area.

The source hatchery within Queensland is also expected to have a biosecurity plan and to produce this as part of the independent audit process to be eligible to send fry, fingerlings and juveniles of *Trachinotus anak* into NSW for further cultivation under this protocol.

More information on the Act and the general biosecurity duty can be found at: dpi.nsw.gov.au/biosecurity/managing-biosecurity/the-general-biosecurity-duty and in Part 3 of the NSW Biosecurity Act 2015.

Definitions

Business day means Monday to Friday, starting at 9 am and finishing at 5 pm, and excludes public holidays.

Competent Testing Authority means a National Association of Testing Authorities (NATA) accredited veterinary diagnostic laboratory approved by the NSW Chief Veterinary Officer as per the list given in Appendix 1.

Competent Veterinary Authority means a veterinarian who is either: a specialist aquatic veterinarian; or is otherwise able to demonstrate that they have the experience necessary to conduct an independent veterinary inspection of an aquaculture facility. Contact details of the veterinarian and their relevant experience are to be provided to aquatic.imports@dpiird.nsw.gov.au for consideration.

Cultivation unit means a tank or an interconnected tank system (such as one discrete RAS) that utilises the same shared water throughout and for the purposes of this protocol operates as a biosecure system within an enclosed building.

Diseases of significance includes diseases listed on Australia's National List of Reportable Diseases of Aquatic Animals that can infect finfish (e.g. Viral encephalopathy and retinopathy (VER, betanodavirus), diseases with a requirement to notify in either Queensland or NSW under their respective biosecurity legislation (e.g. listed as either prohibited matter under Schedule 2 of the NSW *Biosecurity Act 2015*, or as notifiable matter under Schedule 1 of the Biosecurity Regulation 2017), and other diseases associated with finfish that can either cause significant mortalities in finfish or result in human health impacts.

First use water means water that following the relevant water disinfection requirements of this protocol, has not passed through any other cultivation unit or been used for any other purpose prior to use in any cultivation unit used for the *Trachinotus anak* production cycle.

Trachinotus anak production cycle means the time period from spawning of broodstock of *Trachinotus anak* within a closed hatchery system, to rearing of larvae and resultant fry, fingerlings and juvenile fish of this species prior to importation into NSW.

Individual batch means a group of fry, fingerlings or juveniles produced from a single spawning event and held in a single tank or interconnected tank system (such as a single RAS) that uses the same source of water.

Live feed production cycle means the time period from which live feed is acquired and cultivated for use in the *Trachinotus anak* production cycle.

NSW means New South Wales.

NSW CVO means the New South Wales Chief Veterinary Officer.

NSW DPIRD (otherwise abbreviated as the department) means the New South Wales Department of Primary Industries and Regional Development

RAS means a Recirculating Aquaculture System that is enclosed inside a building that excludes entry to airborne water droplets, non-target animals (e.g., birds, vermin, and wild fish) and unauthorised persons, with appropriate water treatment and other biosecurity controls in place.

Receiving facility means the initial land-based RAS facility that the fry, fingerlings and juveniles of *Trachinotus anak* are translocated to in NSW for further cultivation.

Shipper means the person who holds an aquaculture permit under section 144 of the *Fisheries Management Act 1994*, whose permit authorises the placement of translocated fry, fingerlings or juveniles of *Trachinotus anak* produced by CSIRO Bribie Island Research Centre on Bribie Island into RAS on the land-based aquaculture facility in NSW associated with their NSW aquaculture permit.

Source hatchery means an enclosed biosecure hatchery facility approved by the NSW Chief Veterinary Officer to produce fry, fingerlings and juveniles of *Trachinotus anak* for importation to NSW in accordance with this protocol, and for the purposes of this protocol refers to CSIRO Bribie Island Research Centre, North Street, Bribie Island QLD 4507.

Unusual mortality events means that any of the following has occurred:

- i. a greater number of moribund or dead finfish than reasonably expected from the farm's performance history for the size of finfish of that species or closely related species and days of culture, which are caused by or suspected to be caused by an identified infectious organism,
- ii. Finfish displaying clinical signs or behaviour of that may be attributable to a recognized syndrome, or
- iii. moribund or dead finfish for which there is no clear environmental or anthropological cause, or
- iv. any of the above for a species of finfish within the same facility or, for references to catchment in the same catchment, as the finfish *Trachinotus anak* that has the potential to lead to clinical or subclinical infection of the finfish *Trachinotus anak*.

Conditions of protocol

Part A - Conditions relating to the source hatchery

1. Fry, fingerlings and juveniles of *Trachinotus anak* entering into NSW under this protocol must only originate from a source hatchery that meets all of the following requirements:

Facility health certification and veterinary inspection requirements

- A veterinary inspection, and facility health certification, of the source hatchery in Queensland must be carried out by a competent veterinary authority, prior to shipment of any fry, fingerlings or juveniles of *Trachinotus anak*. This is to ensure that the source hatchery engages in best hatchery practice, including but not limited to appropriate biosecurity, quarantine and health investigation measures, and is able to comply with this protocol. The veterinary inspection and health certification report will be valid for 24 months from the date of issue by the competent veterinary authority conditional upon maintenance of existing facility procedures and infrastructures. The source hatchery may also be inspected at any time to ensure continued adherence to best practice and compliance with this protocol.
- a) The report for the veterinary inspection and health certification *must* include:
 - i. whether the biosecurity plan was sighted and is consistent with the requirements of the protocol, and
 - ii. whether there is evidence that the biosecurity plan and standard operating procedures (SOPs) regarding biosecurity are being followed (e.g., foot baths and hand wash and quarantine signage in place, staff aware of biosecurity requirements), and
 - iii. evidence of recording keeping relating to water quality, disease events and unusual mortality events, and
 - indication of when the last occurrences of betanodavirus (Viral encephalopathy and retinopathy, VER) and any other diseases, health challenges or unusual mortality events occurred in the source hatchery in which the fry, fingerlings or juveniles of *Trachinotus anak* originated and in the catchment in which this facility is located, and
 - Provide results of any previous testing for betanodavirus and results of investigations into any other diseases or health challenges, along with when the last general health screening via histology was undertaken, by a competent testing authority.
- b) The finalised report for the veterinary inspection and health certification must include a declaration from the competent veterinary authority on whether the source hatchery is a biosecure facility and that it complies with all of the requirements of this protocol and is to have a copy of this protocol attached to the declaration. The finalised report and declaration are to be submitted to NSW DPIRD at aquatic.imports@dpiird.nsw.gov.au for consideration by the NSW Chief Veterinary Officer (NSW CVO).

Note: as per section 2) a) No shipments of fry, fingerlings or juveniles are to take place into NSW for the purpose of further cultivation in NSW, prior to the written approval of the NSW CVO for the source hatchery to supply fry, fingerlings or juveniles of *Trachinotus anak* for further cultivation in NSW.

Hygiene and quarantine requirements at source hatchery

- d) The hatchery must be enclosed by materials that prevent the entry of airborne water droplets.
- e) The hatchery must be secure, with access to the hatchery restricted to authorised staff.
- f) Any non-target species (e.g., vermin, birds, and wild fish) must be excluded from the hatchery.
- g) All seawater used in the *Trachinotus anak* production cycle and live feed production cycle must be subject to nominal filtration of less than or equal to 10 microns, followed by:
 - i. ultraviolet radiation at a dose rate of at least 30 mJ/cm² OR
 - ii. ozone at a dose rate of 1mg/L for 1 minute OR
 - iii. ozone measured as an Oxidation Reduction Potential to be at a rate of not less than 650 mV at all times OR
 - iv. sodium hypochlorite at a dose rate of 200ppm for a minimum of 2 hours, with subsequent effective dechlorination.
- h) In all cases, prior to disinfection, water must be suitably free of organic matter to ensure efficacy of the disinfection process.
- i) Each tank/cultivation unit used in the *Trachinotus anak* production cycle must:
 - i. have its own set of non-transferable equipment, or in the case of harvesting nets, they must be disinfected prior to use, and
 - ii. only receive 'first use water', not 'tail water' from another section of the hatchery facility.
- j) Fry, fingerlings and juveniles to be translocated under this protocol must be kept isolated from all other species of fish on the premises and are to remain in biosecure conditions.

Batch record keeping and pre-dispatch testing of fish

- k) A daily log must be kept by the source hatchery for each rearing tank or cultivation unit throughout the *Trachinotus anak* production cycle. The daily log will include details of:
 - i. the number and species of larvae/fry/fingerlings/juveniles, and
 - ii. feeding regimes, and
 - iii. water quality parameters, and
 - iv. any mortality, and

- v. any other relevant information such as abnormal appearance, behaviour, and cessation of feeding.
- l) This daily log will be retained by the hatchery for at least three years and the daily log or copies of the daily log are to be provided to an authorised officer or other representative of the department, on request.
- m) A summary of the daily log entries for the batch, recording details of water and fish samples, and other relevant information will be signed by the owner/manager. The summary of the log must show that:
 - i. fry, fingerlings or juveniles remained clinically normal to time of dispatch (noting 42 days as minimum age of pre-entry testing); and
 - ii. there were no unusual mortality events in the batch of fry, fingerlings or juveniles of *Trachinotus anak*.

Sampling protocol

- n) Sampling of fry, fingerlings or juveniles is to be conducted as follows:
 - i. From fish that are at least 42 days of age; and
 - ii. Sourced randomly unless abnormal or diseased individuals are present, in which case they will be selectively sampled.
- o) Sampling from each individual batch is to be submitted to a competent testing authority promptly after being taken and will comprise of:
 - i. 30 individual fish for examination by histology; to be preserved in 10% seawater formalin (100ml laboratory grade formalin and 900ml seawater) or otherwise prepared or preserved as advised by the competent testing authority.
- p) If fish for the consignment are from two separate tanks/cultivation units, each tank/cultivation unit constitutes a separate batch.
- q) Further samples must be supplied from specified rearing tanks/cultivation units in a specified manner, if directed by the department for further laboratory testing
- r) Batches of fry, fingerlings, or juveniles of *Trachinotus anak* may only be translocated to NSW if:
 - i. They have no signs of clinical disease and
 - ii. Histology results from the competent testing authority showing no pathology.
- s) Test results for histology of each batch will be taken to be valid for the duration of time from sampling to shipment as long as the source hatchery is maintained as a biosecure environment and there are no suspected disease or unusual mortality events during that time.

Part B - Conditions of transportation into NSW

2. Fish of the species *Trachinotus anak* cannot be transported into NSW for further cultivation within NSW unless all the provisions of Part A have been satisfied for the source hatchery and the following translocation requirements are met:
 - a) No shipments of fry, fingerlings or juveniles of the species *Trachinotus anak* are to take place into NSW for the purpose of further cultivation in NSW, prior to the written approval of the NSW CVO for:
 - i. the source hatchery to supply fry, fingerlings or juveniles of the species *Trachinotus anak* for further cultivation in NSW, and
 - ii. the receiving facility within NSW to receive the translocated fry fingerlings or juveniles of the species *Trachinotus anak* from the source hatchery for the purpose of further cultivation in NSW.
 - b) To allow time for any mortality caused by the virus to be expressed from betanodavirus, and to obtain the results of the certification testing required by the protocol, NSW DPIRD has determined that, unless otherwise approved by NSW DPIRD, no larvae, or any fry of less than 42 days (6 weeks) of age, will be permitted to enter NSW for further cultivation within NSW.
 - c) Any fry, fingerlings or juveniles entering NSW under this protocol must be transported directly to the RAS of an NSW aquaculture permit holder authorised to culture that species of fish of the species *Trachinotus anak* and with this protocol listed as a special or specific permit condition on their aquaculture permit.

Shipment documents for the source hatchery to provide to the shipper

- d) The source hatchery must provide the shipper with the following information not less than 2 full business days prior to the shipment to NSW:
 - i. details of the fish being shipped including the species of fish, their size or size range and number to be shipped, and
 - ii. the expected date of the shipment, and
 - iii. all laboratory results from the required histology testing as set out in section 1) of this protocol
 - iv. a copy of the summary of the daily log as required in section 1) of this protocol, and
 - v. a declaration from the owner/manager of the source hatchery stating that the requirements of the protocol have been met.

Note: this is also the minimum time period for the shipper to notify NSW DPIRD of the shipment.

Shipment notification from the shipper to NSW DPIRD

- e) No less than 2 full business days and no more than 2 weeks prior to translocation to the NSW land-based farm, the shipper must notify NSW DPIRD via email to aquatic.imports@dpird.nsw.gov.au of the intent to ship fry, fingerlings, or juveniles from the species *Trachinotus anak* under this protocol. The following details are required for each shipment:
- i. details of the fish being shipped including the species of fish, their size or size range and number to be shipped, and
 - ii. the expected date of the shipment, and
 - iii. all laboratory results for the histology as required in section 1) of this protocol, and
 - iv. a copy of the summary of the daily log as required in section 1) of this protocol, and
 - v. a declaration from the owner/manager of the source hatchery stating that the requirements of the protocol have been met.

Documentation to accompany shipment

- f) Each shipment of fry, fingerlings or juveniles of the species *Trachinotus anak* into NSW under this protocol must be accompanied by a copy of the results of the histology and PCR testing required under Part A of the protocol and produced to an authorised officer or other representative of the department, on request.

Transport Hygiene requirements

- g) All seawater used in the transportation of fry, fingerlings and juveniles of the species *Trachinotus anak* to NSW under this protocol must be subject to nominal filtration of less than or equal to 10 microns, followed by:
- i. ultraviolet radiation at a dose rate of at least 30 mJ/cm² OR
 - ii. ozone at a dose rate of 1mg/L for 1 minute OR
 - iii. ozone measured at a rate of not less than 650 mV OR
 - iv. sodium hypochlorite at a dose rate of 200ppm for a minimum of 2 hours, with subsequent effective dechlorination.
- h) In all cases, prior to disinfection, water to be used in transportation must be suitably free of organic matter to ensure efficacy of the disinfection process.
- i) Equipment used in the transportation of fry, fingerlings, or juveniles from the species *Trachinotus anak* must be either new or have been disinfected prior to subsequent use by immersion in a solution containing a minimum of 200 ppm active chlorine for a minimum of 15 minutes, or other equivalent means of disinfection.

Notification from the source hatchery of unusual mortality events or diseases of significance post shipment

- j) If any usual mortality event or diagnosis of a disease of significance occurs within the source hatchery within 6 weeks after the shipment of the batch into NSW, the owner/manager of the source hatchery is to notify NSW DPIRD as soon as possible and in one business day by calling the 24-hour Emergency Animal Disease Hotline 1800 675 888. In the case of diagnosis of prohibited matter under Schedule 2 of the NSW Biosecurity Act 2015, the report is to be made immediately on suspicion of the prohibited matter disease.

Part C - Conditions for receiving farms within NSW

- 3. Fish from the species *Trachinotus anak* translocated under this protocol can only be cultivated or moved within NSW if all conditions of both Parts A and B of this protocol and the following conditions have been met:

Inspection of aquaculture facilities within NSW required

- a) Prior to the approval of a facility within NSW to receive fish from the species *Trachinotus anak* translocated under this permit, an inspection of that facility is required to be conducted by competent veterinary authority and a report provided to the NSW CVO for their consideration.
- b) The veterinary inspection and associated report is valid for a period of 12 months.
- c) The inspection report for this inspection by the competent veterinary authority is to clearly outline the facilities ability to meet the protocol and their adherence to biosecurity best practice and *should* include:
 - i. whether the biosecurity plan was sighted and is consistent with the requirements of this protocol, and
 - ii. whether there is evidence that the biosecurity plan and standard operating procedures (SOPs) regarding biosecurity are being followed (e.g. foot baths and hand wash and quarantine signage in place, staff aware of biosecurity arrangements), and
 - iii. evidence of record keeping relating to water quality, disease events and unusual mortality events, and testing for diseases of relevance, and
 - iv. details of the RAS set up, and
 - v. details of both influent and effluent water treatment, and
 - vi. confirmation of the ability to hold all wastewater on site if needed, and
 - vii. and the general biosecurity arrangements for the facility.
- d) The finalised report for the veterinary inspection of the NSW facility must include a

declaration from the competent veterinary authority on whether this facility is a biosecure Recirculating Aquaculture System facility and that it meets all of the requirements of this protocol and is to have a copy of this protocol attached to the declaration. The finalised report and declaration is to be submitted to NSW DPIRD at aquatic.imports@dpiird.nsw.gov.au for consideration by the NSW Chief Veterinary Officer (NSW CVO).

- e) The facility may also be inspected at any time to ensure continued adherence to best practice and compliance with this protocol.

Movement and cultivation of translocated fish from the species *Trachinotus anak*

- f) No species of fish from the species *Trachinotus anak* are to be translocated to NSW for further cultivation unless it is to an aquaculture facility (the receiving facility) which is:
 - i. under the control of an NSW aquaculture permit holder whose NSW aquaculture permit allows for the cultivation of the species *Trachinotus anak* and has this protocol attached to their aquaculture permit as a special or specific permit condition, and
 - ii. has the written approval of the NSW CVO as a facility able to receive fry, fingerlings or juveniles of the species *Trachinotus anak* translocated under this protocol.
- g) All cultivation of the fish from the species *Trachinotus anak* within NSW under this protocol is to be in a RAS, with the fish not to be placed in any pond or other waters outside of RAS at any time.
- h) Fish from the species *Trachinotus anak* must not be moved from the receiving facility in NSW to a second or subsequent facilities in NSW for further cultivation unless under the written approval of the NSW CVO to sell, receive or otherwise move the fish for further cultivation in NSW, including any conditions that the NSW CVO puts in place for that approval.

Wastewater storage requirements for NSW facility

- i) Any NSW aquaculture facility holding species of fish from the species *Trachinotus anak* that have been translocated into NSW under this protocol needs to have the capacity to hold all the effluent water on the site, should it be necessary to do so. This in addition to any other legal requirements for wastewater, such as a licence granted under Section 55 of the *Protection of the Environment Operations Act 1997* to allow for discharge of water into the environment.
- j) In the case of suspected disease outbreaks and unusual mortality events:

- i. no additional effluent water may be added to effluent ponds unless they are capable of holding all effluent water on site (e.g. they are not at risk of overflow or leakage to the environment), and
- ii. no discharge is permitted from the effluent ponds on site to the environment.

Monitoring of stock on NSW farms

- k) All fish cultivated with RAS on farm must be subject to thorough and regular visual inspection for any signs of disease. Any signs of unusual mortality or morbidity detected in more than one tank at a time or at different times must be recorded and this information provided immediately to DPIRD on the 24-hour Emergency Animal Disease Hotline 1800 675 888 and water exchange must immediately be ceased.

NSW Farm Record keeping

- l) All records received from the source hatchery required under for the translocation of the as a condition of this protocol are to be kept by the NSW farm receiving the fish from the species *Trachinotus anak*.
- m) Records from the receiving farm within NSW must also be made and kept for the following activities under this protocol:
 - i. samples collected for laboratory testing (including date, numbers, tank number, type of sample, size or age of fish, etc.) and copies of the results, and
 - ii. a daily log as per the requirements for the source hatchery given in Part A, including mortality in fry, fingerlings or juveniles from the species *Trachinotus anak* (with species, dates, numbers, etc.) throughout the remainder of their lifecycle, and
 - iii. details of all water released from the site to the open environment, noting that this activity requires a licence under **Section 55 of the *Protection of the Environment Operations Act 1997* to allow for discharge of water into the environment.**
- n) Copies of all records required to be given to the receiving farm by the source hatchery and those required to be made and kept by the receiving farm in NSW must be retained by the receiving farm in NSW farm for 3 years and made available for NSW DPIRD if requested. This information will remain confidential.

Appendix 1: Laboratories approved for testing by the NSW CVO

1. Elizabeth Macarthur Agricultural Institute (Approved for PCR and Histology)

Woodbridge Road, Menangle NSW 2568

Ph: 1800 675 623

Email: laboratory.services@dpird.nsw.gov.au

2. Biosecurity Sciences Laboratory (Approved for PCR and Histology)

Specimen Receipt (Loading Dock 12), Health and Food Science Precinct

39 Kessels Road, Coopers Plains QLD 4108

Ph: (07) 3708 8762 (submission enquiries)

Email: bslclo@daf.qld.gov.au