WILD HARVEST OF SHELLFISH

FOOD SAFETY PROGRAM

Department of Primary Industries
Food Authority

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AUGUST 15

Contents

Commitment to food safety

All personnel involved in the production, harvesting and treatment of shellfish by

*(Business name)*_____

are committed to:

1. producing shellfish in accordance with the NSW Shellfish Program, and
2. maintaining a food safety program that

    a) complies with requirements of the

    Food Act 2003 (NSW)

    Food Regulation 2015

    Food Standards Code

    NSW Shellfish Industry Manual, and

    b) enables the end product to be of the highest possible standard.

Each page of this food safety program has been reviewed and current activities are accurately reflected.

Signed _____

Date _____

Name _____

Position_____

Food safety program team

The team responsible for maintaining the food safety program, analysing and improving procedures and implementing effective controls to manage food safety risks is:

Team leader: _____ Position: _____

Team member: _____ Position: _____

Team member: _____ Position: _____

Team member: _____ Position: _____

Scope

This food safety program covers all activities, procedures and hygiene controls used in the harvesting, dry storage, packaging, transport and delivery of wild harvest shellfish.

This program also covers the process of depuration of shellfish carried out by my business, outlined in appendix 1.

Signed:_____

This program also covers the process of wet storage and de-sanding of shellfish carried out by my business, outlined in appendix 2.

Signed:_____

The program has been prepared in accordance with the principles and guidelines in the Food Standards Code and the Food Regulation 2015.

Purpose

The purpose of this food safety program is to ensure that all shellfish harvesters/ in this food business are aware of the legal requirements they must meet when operating their business.

Procedures outlined in this food safety program have been developed to certify that all shellfish sold are safe for consumption by customers.

Product descriptions and intended use

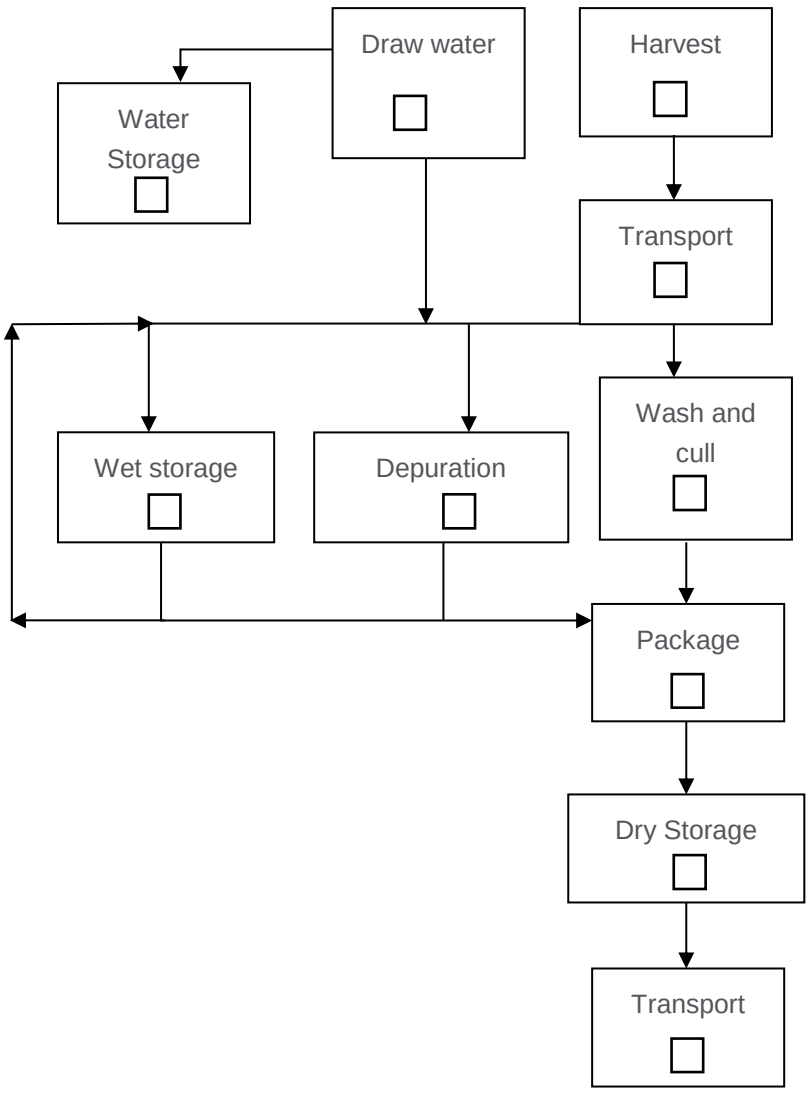
Common products

Product name	Pipi (Donax deltoids) ☐ Surf Clam (Dosinia caeulea) ☐ Blue Mussel (Mytilus edulis) ☐ Sydney cockle (Anadara trapezius) ☐ Blood cockle (Anadara granosa) ☐ Tick the types of shellfish your business harvests and sells
Form	Unopened live product
Packaging	Clean waxed cardboard boxes ☐ Clean fish boxes ☐ Food grade bags ☐
Labelling	In accordance with the NSW Shellfish Program
Storage and transport	All wild harvested shellfish After depuration/de-sanding/wet storage/ harvest are placed at less than 10°C within 24 hours
Intended use	To be eaten raw or lightly cooked
Consumer	General consumption

Other products *(complete or delete as required)*

Product name
Form
Packaging
Labelling
Storage and transport
Intended use
Consumer

Flow diagram: Wild shellfish harvest



Tick the box for the steps you carry out.

* If you ticked depuration, wet storage or de-sand, you must have that section in your program to comply with requirements and pass audits.

Depuration of product is required when harvesting from conditionally restricted harvest areas

Hazard audit tables

Process step	Hazard(s)	Control measure	CCPs	Critical limits	Monitoring procedures	Corrective actions	Records
Harvest	Microbial contamination from environment Biotoxin contamination from environment	Harvest only when area is open for harvest Member of estuary local shellfish program ☐ Member of beach biotoxin management plan PLUS Monthly testing ☐	Yes Yes Yes	Area open. Advice via the Local Coordinator or NSW Program Manager Monthly test. Area open. Advice via the Local Coordinator or NSW Program Manager	Area Open What: Area status &. How: Contact Local Coordinator or NSW Program Manager. When: Prior to harvest Who: (insert name above) Testing What: Test shellfish. How: Collect sample and send to lab. When: Once a calendar month Who: (insert name above)	No harvest when area is closed. If area is closed during harvest or retrospectively closed, harvest will cease and shellfish returned to water Close area when positive test returned from lab. Recall affected product.	Product Record Book – Harvest section (A) Lab report for test

Process step	Hazard(s)	Control measure	CCPs	Critical limits	Monitoring procedures	Corrective actions	Records
Draw water	Microbial contamination from environment Biotoxin contamination from environment	CONTINOUS FLOW THROUGH SYSTEM Draw water from APPROVED area when area is in OPEN status ☐ OR RECIRCULATED SYSTEM WITH DISINFECTION Draw water from APPROVED OR CONDITIONALLY RESTRICTED area when area is in OPEN status ☐ OR RECIRCULATED SYSTEM WITH DISINFECTION Draw water from a non-classified area (eg. beach) ☐	Yes Yes Yes	Area open. Advice via the Local Coordinator or NSW Program Manager Area open. Advice via the Local Coordinator or NSW Program Manager Water test result must be less than 70 cfu/g.	What: Time and date water drawn How: Write in Product Record Book When: At time water drawn Who: (insert name above) What: Time and date water drawn How: Write in Product Record Book When: At time water drawn Who: (insert name above) What: Test report, plus time and date water drawn How: Write in Product Record Book When: At time water drawn	Release water if area retrospectively closed Release water if area retrospectively closed Release water and test next batch of water collected.	Product Record Book – Water storage section (B) Product Record Book – Water storage section

Process step	Hazard(s)	Control measure	CCPs	Critical limits	Monitoring procedures	Corrective actions	Records
					Who: (insert name above)		(B) Lab test report
Depuration process	Ineffective depuration resulting in the presence of microorganisms in excessive numbers after depuration	Comply with NSW Shellfish Industry Manual	Yes	Disinfection system on and operating Product must be depurated for 36 hours. Comply with NSW Shellfish Industry Manual	What: Time of depuration How: Write temperature, salinity, and correct depuration time When: Start and end of process and otherwise as required Who: (insert name)	Shellfish must be returned to water	Product Record Book – Depuration section (B)
Wet storage/ De-sand	Microbial contamination by contaminated water	Disinfection of water Correct de-sanding/wet storage process	Yes	Time de-sanding/wet storing, no mix of species or lots	What: Time of de-sanding/wet storing How: Write de-sanding/wet storing time When: Start and end of process and otherwise as required Who:	Discontinue de-sanding/ wet storing and return stock to water	Product Record Book – Depuration section (B)

Process step	Hazard(s)	Control measure	CCPs	Critical limits	Monitoring procedures	Corrective actions	Records
			Yes	Disinfection system on and operating	(insert name)		
Dry Storage	Growth of microorganisms	Temperature control	Yes	Storage after harvest All wild shellfish placed at <10°C within 24 hours	What: Time and temperature How: Thermometer and clock When: Twice daily if stored for more than 12 hours Who: (insert name)	Cool product immediately	Temperature Log Sheet

1. Maintenance program

It is our responsibility to ensure that all premises and equipment used to produce shellfish comply with the requirements outlined in the Food Standards Code, Section 3.2.2.

To ensure that the premises comply, we complete the following activities:

- Conduct regular inspections of the premises and all equipment
- Identify when equipment and facility doesn't comply with the standard
- Document issues found on pre-operational checklist and schedule repairs

Any issues that directly affect food safety are repaired or rectified as soon as possible.

2. Hygiene and sanitation program

All equipment that is used in connection with shellfish harvesting storage and transport activities is cleaned and maintained in an acceptable condition at all times.

The pre-operational checklist will be filled in every day of harvest, with any issues identified and corrected before harvest.

All buildings and sheds are maintained in a tidy and clean condition at all times. All waste and other materials no longer required are removed from these areas.

Areas of high importance that are cleaned regularly include:

- **Shellfish baskets/Fish boxes**
  Cleaned every time they are used.
- **Transport vehicles**
  Cleaned every time they are used and maintained in a satisfactory manner.

Cleaning is sufficient that it ensures there is no contamination between different batches of shellfish and the outside environment.

Chemicals used to clean are fit for use in a food environment (supported by documentation or product label).

No chemicals are permitted to be used in depuration plant rooms or where they can come into contact with product.

Chemical name	Used on (dilution rate)
eg. Sodium Hypochloride	Fish boxes (1:10 dilution with tap water) Vehicle surfaces (neat)

3. Process control

3.1 Shellfish harvesting

Harvesting of shellfish is strictly controlled to ensure that a number of food safety requirements are complied with. Requirements include:

BEACH HARVEST

- **Shellfish test carried out on harvested product once every calendar month (see testing)** – A sample of shellfish harvested is taken and sent to the laboratory for testing. Rest of the batch can be sold. Failure of this test may result in a product recall/retrieval (see section 12 &13).
- **Harvest area must be open** – All shellfish that are harvested come from a harvest area that is in the 'OPEN' status. Information concerning the status of each harvest area is obtained from the Area Coordinator or the NSW Shellfish Program.
- **Shellfish must not be co-mingled** – A batch of shellfish harvested for sale is harvested from ONE identified harvest area on the same date. Shellfish harvested from different harvest areas or on different dates are recorded as separate batches to ensure that traceability is maintained.
- **Shellfish are washed prior to depuration, de-sanding, wet storage or sale** – This washing is to remove excessive traces of dirt, mud and other matter and completed during the harvest process. If this is not possible, shellfish are washed at the depot. This prevents contaminants entering the depuration process and later at processing premises.

ESTUARY HARVEST

- **Harvest area must be open** – All shellfish that are harvested come from a harvest area that is in the 'OPEN' status. Information concerning the status of each harvest area is obtained from the Biotoxin Management Plan Coordinator, local shellfish program Coordinator or the NSW Shellfish Program.
- **Shellfish must not be co-mingled** – A batch of shellfish harvested for sale are harvested from ONE identified harvest area on the same date. Shellfish harvested from different harvest areas or on different dates are recorded as separate batches to ensure that traceability is maintained.
- **Shellfish is washed prior to depuration, de-sanding, wet storage or sale** – This washing is to remove excessive traces of dirt, mud and other matter and completed during the harvest process. If this is not possible, shellfish are washed at the depot. This prevents contaminants entering the depuration process and later at processing premises.

3.2 Records

Records are kept for every harvest, and are written into the Product Record Book (or alternative method approved by the Food Authority). Harvest information recorded is:

- Harvest date and time
- Harvest area (beach name or estuary and Shellfish Quality Assurance Program (SQAP) Zone name)
- Species harvested

- Estimated quantity

3.3 Dry storage

All shellfish after harvest are stored off the floor in a clean dry area and protected from contamination and direct sunlight.

All shellfish stored for more than 12 hours must be temperature checked every 12 hours (ie. at 12, 24, 36, 48, etc. hours after harvest/depuration/wet storage/de-sanding).

All wild harvest shellfish are stored below 10˚C within 24 hours of harvest.

3.4 Washing of shellfish

Shellfish are washed vigorously with potable water ensuring maximum removal of sediments and other debris.

3.5 Packaging

Clean packaging or fish boxes are used. All packaging is free from contamination and fit for use.

Packaging materials are stored in a clean dry tidy area, free form dust or other contamination. All packaging material is examined for cleanliness prior to use.

List of packaging material used

Type of packaging	Supplier

3.6 Temperature monitoring

- All shellfish stored for more than 12 hours must be temperature checked every 12 hours. The temperature of shellfish are recorded on *Dry Storage Temperature Log (form 2)*.
- Prior to taking the temperature, the probe is:
  - Checked to ensure it is clean. If not, it is cleaned with warm water and a mild detergent and dried with a clean cloth
  - When clean, sanitised using an alcohol swab or hot water at >77°C
  - Allowed to air dry without touching anything
- The temperature of the shellfish is taken by placing the thermometer within a batch of shellfish and allowing it to stabilise for one minute before reading the temperature.
- After each temperature measurement the probe is cleaned and re-sanitise as above.
- After use the probe is cleaned and stored in a safe and clean area

4. Product and water testing

The Food Authority has implemented a testing program for shellfish to confirm that all product being sold in NSW is safe for human consumption.

These testing requirements are always completed by all licensed shellfish harvesters in order for a licence to be issued. These requirements are:

BEACH HARVEST

- Pipis harvested from ocean beaches must be tested for *E.coli* at least monthly. One *E.coli* test should be submitted for each beach harvested in each calendar month.

ESTUARY HARVEST

- Wild shellfish collected from an estuary must be tested as per the local Harvest Area Management Plan, refer to the local shellfish program Coordinator or the NSW Shellfish Program for details.

DEPURATION, WET STORAGE AND DE-SANDING

- Shellfish that have been through depuration must be tested. Refer to Appendix 1.
- Water used for wet storage or de-sanding may need to be tested. Refer to appendix 2.

4.1 Sample requirements

All shellfish sent for analysis are shellfish that are ready for sale. The purpose of product testing is to ensure that the harvesting areas produce shellfish that are safe for human consumption.

This business ensures that the samples they send meet the laboratory's minimum sample size requirements. To determine how many shellfish must be sent for analysis, a team member contacts the laboratory responsible for analysing the shellfish sample.

4.2 Testing failures

In the event that the first test conducted on a batch of shellfish returns a positive result of more than 7cfu/grams of *E.coli*, the shellfish are always retrieved immediately.

In the event that a product test returns a positive result for *E.coli* above 2.3cfu/gram (but below 7cfu/gram), another four samples may be taken from the same batch of shellfish that returned the elevated result. These additional four samples must be tested immediately:

- If the results for these four samples are less than 2.3cfu/gram *E.coli*, the product does not need to be retrieved, or
- If one, or more, of the four samples returns a result over 2.3cfu/grams of *E.coli*, the shellfish must be retrieved.

If no further product tests are conducted by the business, all affected product must always be retrieved.

4.3 Notification of failures

When a failed test result is received from the laboratory, the Food Authority must be notified by the business within 24 hours. This notification is given to staff at the NSW Shellfish Program. NSW Shellfish Program staff will then advise you on what actions can be taken, either through further testing or recalling product.

5. Labelling

All shellfish sold must always comply with labelling requirements set out in the *NSW Shellfish Industry Manual*. These requirements are in place to ensure all product can be effectively identified and traced in the event of a recall being required.

Labelling information must include the following:

- The name and address of the seafood business,
- Country of origin,
- A unique identifier of the batch of seafood (eg. Product Record number),
- The name of the harvest area from which the shellfish were harvested,
- The date of harvest,
- The species and quantity of shellfish, and
- A statement indicating the conditions under which the shellfish should be stored (eg. product to be stored below 10°C).

Information is always clearly marked or attached to the shellfish bags/boxes and is always legible.

All wholesale customers are recorded in the *Product Record Book – Product Destination Record* (section C) to ensure that traceability for all wholesale shellfish is possible. This recording always states the business name and the quantity of shellfish they received.

6. Transport and storage

All shellfish transported or stored for sale comply with the following temperature requirements:

- All wild harvested shellfish are always stored at less than 10˚C within 24 hours of harvest, depuration, de-sanding or wet storage.
- When mechanical refrigeration units are used, the units will be equipped with automatic controls and capable of maintaining the ambient air temperature in the storage area at temperatures of 10°C or less.
- Shellfish will be transported in adequately refrigerated vehicles when the shellfish have been previously refrigerated, or at times when ambient air temperature and time of travel are such that unacceptable bacterial growth or deterioration may occur.
- All shellfish are always transported or stored in a sealed, clean container to limit the risk of contamination.
- Cats, dogs and other animals will not be allowed on or in any part of a vehicle where shellfish are stored or transported.
- Any ice used to cool shellfish during transport will meet potable water standards.

7. Calibration

All equipment used at the premises is calibrated and maintained in working order.

7.1 Thermometer calibration

Hand-held thermometers are always calibrated every 12 months by:

- Ensuring thermometer is at ambient room temperature,
- Fill a small container with crushed ice made from potable water (eg. tap water) and adding a small amount of water to ice. Tip off any excess water,
- Place thermometer in the centre of the container ensuring probe is in contact with ice,
- Allow thermometer to reach a stable reading (approx. 10 min), and
    - If the thermometer is accurate it should read 0^{o}C, or
    - If the temperature is more or less than 0^{o}C (eg. +1^{o}C or -1^{o}C, etc.), the difference is noted in the temperature reading and any such difference when reading a temperature for monitoring purposes is allowed for. It is recommended that thermometers with a deviation of more than 1^{o}C should be discarded or
- **If the thermometer temperature is more than +/-1 degree Celsius outside the temperature of the reference, a new thermometer is purchased.**

7.2 Chiller/Freezer gauges

Once the handheld thermometer is calibrated it can also be used to check the accuracy of any temperature gauges on equipment such as cool rooms and freezer. This should be done at least 12 monthly and can be done by:

- Placing the thermometer in the cool room/freezer for at least 5 minutes (making sure not to open the door during this period).
- After this period, read the temperature on the thermometer (taking into account any difference noted during the calibration of the handheld thermometer).
- Read the temperature on the gauge and determine any difference between the handheld thermometer reading and the gauge, as above.

8. Staff training

All staff are trained to enable them to perform their job safely and competently. Training is conducted internally or by an external organisation**.**

All staff are trained in:

- personal hygiene,
- food handling procedures, and
- cleaning and sanitation for applicable staff.

Staff training is recorded in the staff training matrix in the records diary.

Personal hygiene practices

All staff are given information on good personal hygiene practice and know how to wash their hands properly.

Food handling procedures

All staff are given training and shown good food handling practices relevant to their job.

Demonstrate to any new staff how they should perform their duties to ensure good food handling procedures are followed.

Cleaning and sanitation procedures

All staff are given training on how to clean and sanitise the equipment they use. This includes:

- correct storage and handling of chemicals,
- correct make up of the chemicals, and
- procedures for cleaning.

All staff will be trained and will sign the staff training record (Form 1).

9. Approved suppliers

All equipment used during the process harvesting and selling shellfish is only purchased from reputable suppliers. We ensure that all equipment and products used by the business are suitable for the operations being conducted and do not cause any contamination or spoilage of the shellfish.

Once reputable suppliers have been sourced, they are used at all times to ensure products purchased are acceptable. Suppliers provide documentation showing their compliance with food safety requirements.

The approved suppliers for this business are outlined below, along with product and contact details.

Approved supplier	Product supplied	Contact details
	eg. Packaging, cleaning chemicals, equipment, etc.	

10. Pest control

Animals and pests including insects and rodents are always excluded from the premises. Any evidence of pests is recorded and action taken immediately to treat the premises.

All premises have a system of baits surrounding buildings and sheds at all times to ensure that there is some protection from pests.

The location of all rodent and insect bait stations located within the premises is identified on a floor plan. The frequency at which these baits are inspected and replaced is also recorded on this floor plan.

In the space below, the outline of the premises is provided with marks where bait stations are located.

All chemicals used for pest control are suitable for use in food premises and are stored away from food handling areas.

Pest control treatments carried out, and chemicals used, are documented below.

Chemical used	Date placed	Location	Signature	Comments

11. Internal audit

An internal audit of this manual is conducted every 12 months. This is to ensure that procedures and practices used at the business are being controlled adequately according to what is documented in this manual and in the records associated with this manual.

Any corrective actions or non-conformities are brought to the attention of staff in charge of recording or performing these actions.

12. Product retrieval

Product retrievals are carried out by the business that voluntarily retrieves any sold product from a customer.

This process may be carried out for a number of reasons:

- Product test results do not comply with Food Authority requirements (result exceeds the 2.3cfu/gram *E.coli*). Further testing may be conducted on this product to validate that it meets food safety requirements but many farmers choose to retrieve any affected product to avoid a product recall,
- Product does not comply with farmers or buyers specifications, or
- Product may not have been processed correctly.

The business only initiates retrieval if the product has not yet reached the public markets. Normally product is retrieved through transporters, processors or other businesses who further process or sell directly to the public.

Once the product reaches the public markets, a recall maybe ordered by the Food Authority and FSANZ. A public recall involves advertising and notification procedures that list the farmers details, the product affected and the reason(s) for the recall.

13. Product recall

A product recall is when unsafe product that has been distributed to other businesses and/or the consumer is immediately withdrawn from sale to protect the consumer.

Product may need to be recalled if it:

- is not from an approved source,
- is contaminated with harmful micro-organisms,
- is contaminated with harmful chemicals,
- is contaminated with physical matter such as glass or wood, or
- has been tampered with.

A recall may be required based on a customer complaint. In this instance a customer complaint form will be completed and can be found in the *Records Diary*.

In the event of a product recall, the recall program will be controlled by the manager or delegated employee of the business.

In the event of a product recall, the system as defined in the *Food Recall Protocol* prepared by Food Standards Australia New Zealand (FSANZ) will be used.

13.1 Recall procedure

When product is required to be recalled, this business may receive advice from the Food Authority regarding:

- a decision whether a recall is necessary and if further tests should be performed:
    - management collates and evaluates all information immediately available and the nature and extent of the problem,
    - the recall classification is then made based on these findings (Class 1 or Class 2), and
    - the quantity of affected stock is established as well as the location of that stock:
        - if the product is on site or in company delivery vehicles, it is isolated immediately, or
        - if the product has been dispatched to customers, management will liaise for recall from customers. Delivery records can be used for this and can be recorded on the *Receipt and Despatch Monitoring Form* from the *Records Diary.*

13.2 Classes of recall

Class 1

Where there is a reasonable probability that the use of or exposure to the product will cause adverse health consequence. For example, presence of *E. coli*, toxic chemical contaminants or harmful foreign bodies.

Class 2

Where use or exposure of the product is not likely to cause adverse health consequences. For example, incorrect labelling, physically undesirable product or product deterioration.

If a Class 1 recall is necessary, Food Authority officers are notified immediately by the business. If it is appropriate to the circumstances, information is also sent to the media.

Details notified include:

- classification of the hazard,
- description of the product—product type, batch number, best before date,
- quantity of affected product,
- distribution and sales dates,
- method for consumer identification, and
- contact name and telephone number.

The necessity for storage, isolation and disposal of the product is determined by management.

A written record of events and actions is always kept.

NSW Shellfish Program

The *NSW Shellfish Industry Manual* has been prepared by the Food Authority in accordance with the requirements of the Food Regulation 2015.

The manual provides operational parameters for the NSW shellfish industry as required by the regulation and is a reference document for all parties involved in the implementation and management of the NSW Shellfish Program. It applies to all bivalve molluscs commercially grown in and harvested from NSW waters.

The manual does not include the specific details of individual harvest area classifications and management plans, but provides the requirements for such management plans for areas where shellfish are harvested or collected for human consumption.

The *NSW Shellfish Industry Manual* links with the Australian Shellfish Quality Assurance Program (ASQAP), and definitions, procedures and methodologies are consistent with those used in that manual.

Revision of the manual is the responsibility of the Food Authority in consultation with the NSW Shellfish Committee. Accordingly, details may change from time to time, subject to approval of amendments by the Chief Executive Officer of the Food Authority.

The *NSW Shellfish Industry Manual* is available on the Food Authority website at:
http://www.foodauthority.nsw.gov.au/industry/

Harvest area management plans

Each harvest area is the subject of a management plan formulated in accordance with the NSW Shellfish Program. Management plans specify the conditions under which harvest may be conducted in the relevant harvest area and all other criteria to be applied in managing shellfish safety for shellfish contained in the area. A copy of the current harvest management plan for the areas this business harvests from is kept with this food safety program and available at all times.

Appendix 1 – Depuration

To be used if depuration is carried out

The depuration process is a critical food safety step in shellfish production. There are a number of requirements followed to ensure that the depuration process is effective and all shellfish sold are safe for human consumption:

- shellfish are washed so all dirt, mud and other matter is removed before they are placed in the depuration tank,
- shellfish are placed in baskets to a maximum depth of 8cm,
- the depuration tank is only filled with water from a classified area, on the high tide to ensure water quality is acceptable,
- all depuration plant operators are accredited by the Food Authority by completing the approved course,
- all product is depurated for 36 hours,
- UV light systems are operating in accordance with manufacturers guidelines,
- Temperature and salinity are monitored throughout the depuration process in accordance with guidelines outlined in NSW Shellfish Industry Manual. This information is recorded in the *Product Record Book*.
- shellfish are depurated in accordance with guidelines outlined in *NSW Shellfish Industry Manual.*
    - shellfish must not be placed into baskets or fish boxes in a depuration plant with more than three shellfish on top of each other;
    - shellfish must be evenly distributed throughout the tank or tray of the plant and not be subjected to undue water turbulence from aeration or circulation systems
    - no more than two layers of baskets of shellfish are to be stacked on top of each other within individual tanks, and these must be separated to prevent fouling of the lower layer (eg. by corrugated sheeting overlapped in the direction of the water flow). A baffle must be used when two layers of baskets of shellfish are stacked on top of each other to ensure the water flow in the tank is even throughout its depth and width;
    - the tops of the containers holding the shellfish should be at least 25mm under the water;
    - all shellfish must be at least 25 mm above the base of the tank or corrugated sheeting during depuration to avoid contamination from the shellfish faeces.
- Shellfish will be closely inspected for signs of gaping or weakness if the water circulation has failed for any period, and those found to be dead or dying must be removed and not sold for human consumption.

Breakdown of services

If there is a breakdown of services due to equipment failure or interruption of electrical supply of less than 6 hours duration, the period of depuration must be made up to the required 36 hour period following resumption of normal services. If a breakdown of services of more than six hours occurs, depuration of the shellfish must recommence from the beginning for the full 36 hours, or the shellfish must be returned to the harvest area.

The nature and duration of the breakdown must be recorded in the *Product Record Book*.

Servicing equipment

Once shellfish have been removed, the tanks, trays, baskets and filters must be thoroughly cleaned prior to further use.

The tanks, containers used for carting water, water disinfection unit, pump, filter baskets, corrugated sheeting, conduits, baffles and associated plumbing must be cleaned.

Premises used for the depuration of shellfish will:

- be of a construction that allows for easy cleaning of floors, walls and ceilings.
- have adequate artificial lighting with adequate covers to prevent food contamination in the case of breakage.
- have adequate ventilation to allow surfaces to dry.
- have accessible toilet and hand washing facilities.
- have a potable water supply.
- have adequate pest control measures to ensure that pests are not present in the building.
- have surrounding grounds that are free from conditions that would provide harbourage for pests or inadequate drainage.
- have adequate security to prevent unauthorised access while it is in operation.
- have fittings and plumbing that are non-toxic and are maintained in a condition that will not contaminate the shellfish.
- have shellfish trays that are impervious, easily cleaned and designed to allow adequate flow through the mesh.

Testing

Shellfish which have been harvested from a conditionally restricted area in open status, and have been depurated are to be tested.

- A sample of depurated shellfish to be tested for *E. coli* once every calendar month depuration is carried out.

NOTE: Post depuration testing is to ensure the depuration process is successful at reducing potentially hazardous material from shellfish. Post depuration testing is a test on the depuration plant, not each individual harvester.

It is strongly recommended that product testing be completed on the first batch of shellfish that are harvested and depurated at the beginning of every calendar month. This ensures testing requirements are met.

When resuming harvest after a layoff of three or more months, the first batch harvested must be tested.

In the event of a failed test, corrective action will be taken as outlined in section 4.2 of the Food Safety Program.

Sample requirements

All shellfish sent for analysis are shellfish that are ready for sale. The purpose of product testing is to ensure that the harvesting and/or depuration process has produced shellfish that are safe for human consumption.

The following procedures are **not permitted** when taking samples for analysis:

- Samples cannot be depurated if the remaining shellfish are direct harvest,
- A sample of shellfish cannot be harvested and depurated solely for the product test, and
- All samples must be taken from a batch of shellfish ready for sale.

This business ensures that the samples they send meet the laboratory's minimum sample size requirements. To determine how many shellfish must be sent for analysis, a team member contacts the laboratory responsible for analysing the shellfish sample.

Appendix 2 – Wet storage (de-sanding)

To be used if wet storage is carried out

The wet storage process is a critical food safety step in shellfish production. There are a number of requirements followed to ensure that the wet storage process is effective and all shellfish sold are safe for human consumption.

- The tank and equipment used in wet storage has been approved by the Food Authority
- Three wet storage options are available

  1. CONTINOUS FLOW THROUGH SYSTEM.
     Can only be used with water that is drawn from APPROVED area, when area is in OPEN status.
  2. RECIRCULATED SYSTEM WITH DISINFECTION.
     Can be used with water from APPROVED OR CONDITIONALLY RESTRICTED area when area is in OPEN status.
     OR
  3. Can be used with water sourced from outside classified areas (eg. beach). Water must be tested when water is collected and once every month that batch of water is used (see testing below for details).

- Shellfish are washed so all dirt, mud and other matter is removed before they are placed in the wet storage tank,
- Shellfish are placed in baskets to a maximum depth of 8cm,
- If more than one batch of shellfish is being held in wet storage at the same time, the identity of each harvest area batch must be maintained.
- Temperature and salinity are monitored throughout the wet storage process in accordance with guidelines outlined in NSW Shellfish Industry Manual. This information is recorded in the *Product Record Book*.
- Shellfish will be closely inspected for signs of gaping or weakness if the water circulation has failed for any period, and those found to be dead or dying must be removed and not sold for human consumption.
- UV light systems are operating in accordance with manufacturers guidelines (recirculated systems)

Premises used for the wet storage of shellfish will:

- be of a construction that allows for easy cleaning of floors, walls and ceilings
- have adequate artificial lighting with adequate covers to prevent food contamination in the case of breakage
- have adequate ventilation to allow surfaces to dry
- have accessible toilet and hand washing facilities
- have a potable water supply
- have adequate pest control measures to ensure that pests are not present in the building
- have surrounding grounds that are free from conditions that would provide harbourage for pests or inadequate drainage;

- have adequate security to prevent unauthorised access while it is in operation
- have fittings and plumbing that are non-toxic and are maintained in a condition that will not contaminate the shellfish
- have shellfish trays that are impervious, easily cleaned and designed to allow adequate flow through the mesh

Breakdown of services

In the event of a breakdown, nature and duration of the breakdown must be recorded in the Product Record Book.

Servicing equipment

Once shellfish have been removed, the tanks, trays, baskets and filters must be thoroughly cleaned prior to further use.

The tanks, containers used for carting water, water disinfection unit, pump, filter baskets, corrugated sheeting, conduits, baffles and associated plumbing will be cleaned after wet storage.

After cleaning, all items must be thoroughly rinsed with clean water.

Cleaning of wet storage tank

Cleaned before each batch of shellfish are wet stored. This cleaning process may only be a water rinse.

- UV light system will have a deep clean carried out every 6 months. This cleaning includes de-scaling the system with an acid solution and using a detergent to reduce algae growth. (If UV lights are stored in fresh water and do not require de-scaling, this can be proved during audit.)

Testing

- Water used for wet storage
    - RECIRCULATED SYSTEM WITH DISINFECTION.
        - **Water drawn from outside classified areas (eg. beach).**
            - **Test water when first collected. Water must not exceed 70cfu/100ml. This test is required once every calendar month.**

        In the event that source water used for wet storage (de-sanding) returns a result greater than 70cfu/100ml the water must not be used for wet storage. Water to be discarded and new water collected.

        eg. 1 Water used for wet storage is collected from a beach each time wet storage is to be used. A monthly sample of the source water is required and must not exceed 70cfu/100ml.

            - If water is used on multiple batches of shellfish. Test water once every calendar month this same batch of water is used. Water must not exceed 0cfu/100ml.

In the event that water reused in wet storage plant returns a result greater than 0cfu/100ml the water must be discarded and new water collected.

eg. 2 Water used for wet storage is collected from a beach and re-used for multiple cycles. An initial source water sample is required and then a monthly sample collected from the spray bar must return 0cfu/100ml.

- **Water drawn from APPROVED OR CONDITIONALLY RESTRICTED area when area is in OPEN status.**
    - **If water is only used on one batch of shellfish and not reused (ie. discarded after use), no testing required.**
    - **If water is used on multiple batches of shellfish. Test water once every calendar month this same batch of water is used. Water must not exceed 0cfu/100ml.**
- **CONTINOUS FLOW THROUGH SYSTEM.**
    - **Water that is drawn from APPROVED area, when area is in OPEN status.**
        - **No testing required**

Monitoring forms

- Staff training records (Form 1)
- Dry Storage Temperature Log (Form 2)
- Pre-operational checklist (Form 3)
- Thermometer calibration log (Form 4)
- Internal audit checklist (Form 5)
- Manual amendments and incident sheet
- Contact details

Staff training record (Form 1)

Date	Staff member	Type of training	Trained by	Staff signature
eg.	John Smith	personal hygiene harvesting and food handling tank cleaning and sanitation	David Jones	

Dry storage temperature log (Form 2)

Product record number	Date	Temp (°C)	Temp (°C) dispatched	Supplied to

Pre-operational checklist (Form 3)

Completed before each harvest.

Satisfactory (✓) Unsatisfactory (×) and action taken to fix issues recorded in comments column.

Completed by:_____

Date								**Corrective action /Comments**
All equipment and the facility in good repair								
Food contact surfaces clean								
All equipment clean								
All packaging material stored correctly								
Food transport vehicles clean in good repair								

Completed by:_____

Date								**Corrective action /Comments**
All equipment and the facility in good repair								
Food contact surfaces clean								
All equipment clean								
All packaging material stored correctly								
Food transport vehicles clean in good repair								

Thermometer calibration record (Form 4 – every 12 months)

Date	Reference temperature	Thermometer temperature	Signature

If the thermometer temperature is more than 1 degree Celsius outside the temperature of the reference, a new thermometer is purchased.

Internal audit checklist (Form 5 – every 12 months)

Tasks		Corrective action required/taken
Management responsibility Is the scope and purpose still current? Are the members of the HACCP team still current?	 Y/N/NA Y/N/NA	
HACCP plan Are the product specifications correct? Is the flow diagram still correct (all relevant sections ticked)? Is the Risk Analysis still valid?	 Y/N/NA Y/N/NA Y/N/NA	
Premises and equipment Do the storage, depuration/de-sanding/wet storage comply with standards? Do vehicles comply with standards?	 Y/N/NA Y/N/NA	
Supplier approval program Is the Approved Supplier List up to date?	 Y/N/NA	
Food handling procedures Has the Product Record book been fully completed for every harvest? Has the Temperature Monitoring Sheet been filled?	 Y/N/NA Y/N/NA	
Testing and calibration Have all thermometers and temperature gauges been calibrated every 12 months? Are all test records available for; water (wet storage) and shellfish (beach harvest)	 Y/N/NA Y/N/NA Y/N/NA	
Cleaning and sanitation Has the Pre-operational Checklist been completed before every harvest? Is the chemicals list up-to-date?	 Y/N/NA Y/N/NA	
Pest control Are procedures and map still correct? Are pest control records filled?	 Y/N/NA Y/N/NA	

Tasks		Corrective action required/taken
Personal hygiene Have all staff been trained in personal hygiene and signed form 1?	Y/N/NA	
Product identification and traceability Are invoices or Product Record book filled for each sale? Is every batch sold fully labelled?	 Y/N/NA Y/N/NA	
Comments:		
Internal audit carried out by: Signed …… Date ……..		

Manual amendment and incident sheet

Manual amendments are required when changes are made to this program. These changes must be recorded in this section.

Note: Changes can only be made with written approval from the Food Authority.

Manual section	Page number	Date of issue	Reason for amendment

Incident sheet – Document here any issues and action taken to fix the issue.

Date	Nature of event	Corrective action

Manual section	Page number	Date of issue	Reason for amendment

Contact details

Contact name	Phone number	Fax number
NSW Food Authority Consumer & Industry Helpline	1300 552 406	02 9741 4888
NSW Shellfish Program	02 9741 4848	02 9741 4896
Pest control		
Transport company		
Laboratory		
Local area coordinator		

Department of Primary Industries
Food Authority

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