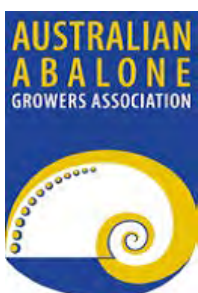




# National biosecurity plan guidelines

for the Australian land-based abalone industry



Australian Government  
Department of Agriculture  
and Water Resources



**FRDC**



Government  
of South Australia  
Primary Industries  
and Regions SA

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## About this publication

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Cover Image Source: Primary Industries and Regions South Australia

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# INTRODUCTION

These guidelines have been developed to provide Australian land-based abalone farms with the tools and templates to create fully auditable biosecurity plans.

Biosecurity plans are important because they provide disease prevention and response measures specific to your farm. They also fulfill biosecurity requirements for movement and trade in 'like' abalone.

In 2015, the Animal Health Committee endorsed the Abalone Health Accreditation Program as a nationally agreed document to facilitate trade in abalone livestock. The program requires that farms develop an auditable biosecurity plan in addition to, in most states, employing targeted and sentinel surveillance.

These guidelines are part of the Fisheries Research and Development Corporation (FRDC) project, Development of sector-specific biosecurity plan templates and guidance documents for the abalone and oyster aquaculture industries (project number: 2016-245). We have developed them:

- in accordance with the national Aquaculture Farm Biosecurity Plan: generic guidelines and template ([www.agriculture.gov.au/fisheries/aquaculture/farm-biosecurity-plan](http://www.agriculture.gov.au/fisheries/aquaculture/farm-biosecurity-plan))
- based on input from a government/industry workshop held on 8 and 9 September 2016.

Biosecurity is a set of measures that help to prevent or reduce the risk of introducing disease onto your farm, spreading disease within your farm, or spreading disease from your farm to the aquatic environment or to other aquatic enterprises.

Worldwide, there is increasing risk of significant aquatic animal diseases and pests, both known and unknown, emerging and spreading. Australia currently has a favorable aquatic animal health status. To maintain this, farmers must work towards implementing preventative biosecurity measures rather than reacting to a disease outbreak.

Effective biosecurity is integral to any successful production system as it helps minimise unnecessary costs, can improve production outcomes, and helps maintain trade and market access. Those measures aimed at preventing disease entering your farm in the first place can lead to a significant return on your investment.

Preventing disease not only protects your business, but has wider benefits for the industry and communities that would potentially be devastated by a significant disease outbreak. Ownership and buy-in by your staff is critical for successfully implementing and operating farm biosecurity.



**Staff must understand that they can help protect their jobs, and ultimately the industry, by preventing the introduction of or minimising the spread of disease.**

# USING THESE BIOSECURITY PLANNING GUIDELINES

This document is designed to help abalone farmers:

- ➔ develop a farm biosecurity plan
- ➔ strengthen an existing farm biosecurity plan

To develop an effective biosecurity plan, farmers need to consider a number of factors. These guidelines provide information, as well as templates and other resources, to help you assess risks common to land-based abalone farms. This will help you develop a biosecurity plan tailored for your farm.

The guidelines identify the major routes of potential disease transmission in abalone farms, including disease entry, spread within your farm and spread from your farm. This will help you assess:

- ➔ risks associated with each route of disease transmission
- ➔ on-farm measures to minimise the risk of disease transmission
- ➔ what other supporting documents you will need to develop a comprehensive plan, for example standard operating procedures (SOPs).

You will also need to consider any additional risks specific to your farm, and associated risk management measures, that you may require.

Each farm will have a different spectrum of biosecurity challenges and operating environments because of variations in:

- ➔ operation size
- ➔ farm location and layout
- ➔ disease status of the region or state/territory
- ➔ proximity to wild abalone populations, fish processors and other aquaculture sites
- ➔ number and type of species farmed
- ➔ available resources.

You will need to develop an individual farm biosecurity plan that takes your farm's uniqueness into account. This ensures that the plan is practical for your operation, as well as being as simple and as low cost as possible to achieve desired biosecurity outcomes.

The guidelines provide supporting documentation, including templates and example SOPs, as appendices to help you develop your plan. You will need to tailor some documents (for example, farm-specific SOPs) specifically for your farm. See Appendix 8 for help on writing an SOP.

You will not need to duplicate existing documents, systems or records. However, where appropriate, reference these within your biosecurity plan.

Once you have navigated through these guidelines and assessed individual farm risks, you can create a farm biosecurity plan. Appendix 10 provides an electronic biosecurity plan editable template.

Appendix 9 provides a self-audit checklist against which you can assess your completed plan. Use this checklist to highlight any remaining gaps.

**Symbols used in these guidelines:**



Pen and paper icon indicates **supporting details** and other information to include in your farm biosecurity plan.



Tick on paper icon indicates **risk management measures** to implement and document. These measures are auditable.



Open file icon indicates **templates** provided to help develop individual farm biosecurity plans.



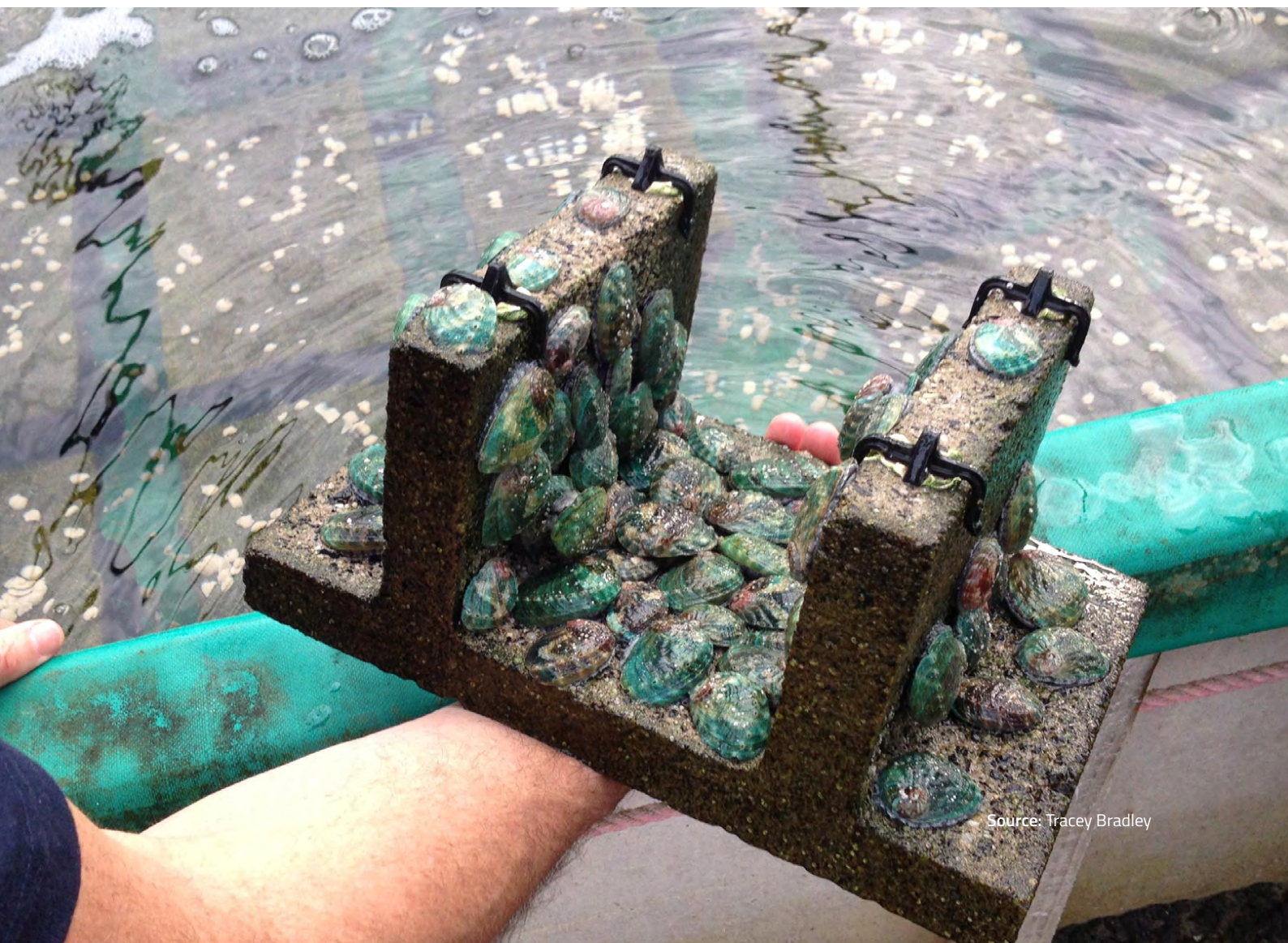
A comprehensive biosecurity plan will be a mandatory requirement of any import protocol.

# ABALONE DISEASES OF SIGNIFICANCE

Three diseases are currently listed as national reportable diseases of abalone (Table 1). These diseases are a threat to farm production and to market access and trade.

Table 1. National reportable diseases of abalone

Disease	Pathogen type	Presence in Australia
Abalone Viral Ganglioneuritis (AVG)	Viral	Endemic (in Australia)
<i>Xenohaliotis californiensis</i>	Bacterial	Exotic ( <b>not</b> in Australia)
<i>Perkinsus olseni</i>	Parasitic	Endemic (in Australia)



Access the full and current list of National Reportable Diseases of Aquatic Animals on the Department of Agriculture and Water Resources website

(at [www.agriculture.gov.au/animal/aquatic/reporting/reportable-diseases](http://www.agriculture.gov.au/animal/aquatic/reporting/reportable-diseases)).

Under state and territory legislation farmers, aquaculture technicians, veterinarians and researchers, or anyone else involved in abalone aquaculture, must immediately report these, as well as any additional jurisdiction-specific diseases, to the relevant authority if suspected or detected. States and territories commonly refer to these diseases as Notifiable Diseases and lists are available on relevant jurisdiction websites.

The diseases shown in Table 1 include a range of pathogen types (viral, bacterial and parasitic). Farm biosecurity planning needs to consider these types and how they are spread when determining risk management measures such as appropriate decontamination.

Key reportable abalone disease resources to help you identify such diseases include:

1. **Aquatic Animal Diseases Significant to Australia: Identification Field Guide 4<sup>th</sup> Edition**, available on the Department of Agriculture and Water Resources website (at [www.agriculture.gov.au/animal/aquatic/guidelines-and-resources/aquatic\\_animal\\_diseases\\_significant\\_to\\_australia\\_identification\\_field\\_guide](http://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources/aquatic_animal_diseases_significant_to_australia_identification_field_guide))

This guide is also available as a free App that can be downloaded from the App Store (Apple devices), Google Play (Android devices) and Microsoft Store (Windows devices). We recommend that you and your staff install this on your mobile phones.

2. **AQUAVETPLAN Disease Strategy Manuals**, available on the Department of Agriculture and Water Resources website (at [www.agriculture.gov.au/animal/aquatic/aquavetplan](http://www.agriculture.gov.au/animal/aquatic/aquavetplan))

You can find AQUAVETPLAN manuals here for Abalone Viral Ganglioneuritis and Withering Syndrome of Abalone.

3. **OIE Disease Chapters – Diseases of Molluscs**, available on the World Organisation for Animal Health website (at [www.oie.int/international-standard-setting/aquatic-manual/access-online/](http://www.oie.int/international-standard-setting/aquatic-manual/access-online/)).

The Fisheries Research and Development Corporation website ([www.frdc.com.au](http://www.frdc.com.au)) is also an excellent resource for emerging issues and latest research. In addition to known diseases of significance, or those listed as reportable, there are potentially other diseases (for example, emerging or unknown diseases) that may be a future risk to production. Good farm biosecurity should be aimed at preventing entry and spread of both known and unknown disease.





# MAJOR ROUTES FOR DISEASE TRANSMISSION

Figure 1 outlines the biosecurity risk levels of a farm and the major ways that disease can be transmitted onto (entry-level), within (internal), and from (exit-level) land-based abalone farms:

- ➔ entry-level transmitters – stock (for example, broodstock, wild abalone, other farm stock), intake water, feed, people (for example, staff and visitors), equipment and vehicles, and other animals (for example, vermin, wild birds, other animals entering via the intake water or returning escapees)
- ➔ internal transmitters – stock, water, people, equipment, vehicles, and other animals can transmit diseases
- ➔ exit-level transmitters – stock (including mortalities, discarded product, escaped abalone), discharge water, people, equipment, vehicles, and other animals and wastes.

When high levels of infection come into close contact with susceptible hosts, it is likely that the disease will become established and spread.

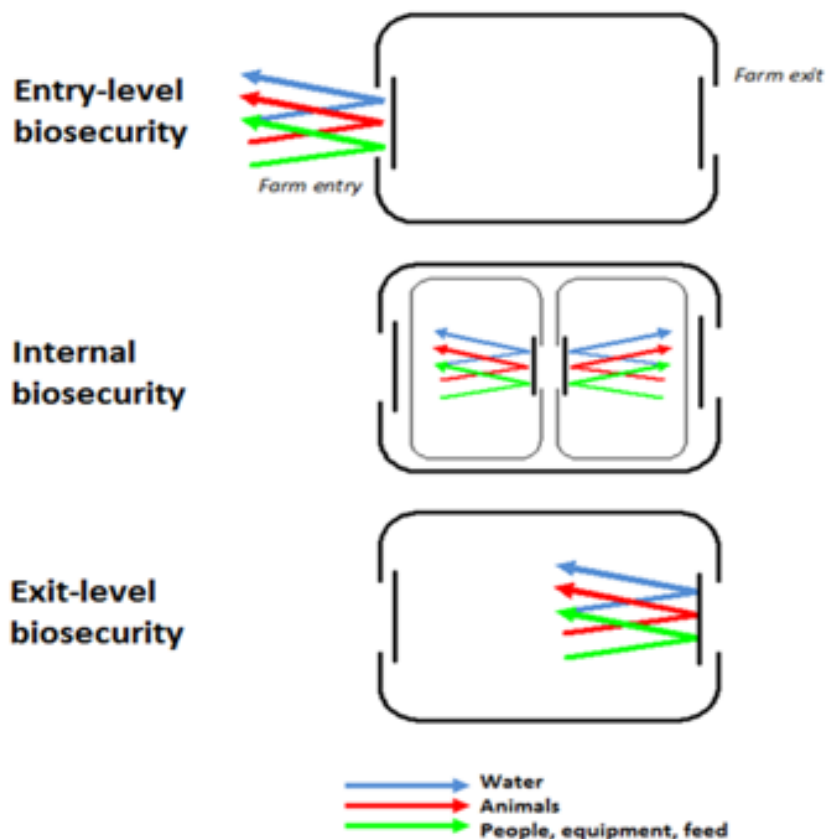


Figure 1. Different levels of farm biosecurity

Source: K. Ellard, (2015). Disease recommendations to support aquatic animal health? Proceedings of the Third OIE Global Conference on Aquatic Animal Health, Session 4, 137-143.



For farms, stock (especially broodstock) and wild abalone, water, and the movement of equipment and people present the highest risk pathways for introducing and spreading disease. Address these pathways as a priority.

# WHAT TO INCLUDE IN YOUR BIOSECURITY PLAN

Your farm biosecurity plan needs to be read and interpreted by a range of people including farm staff, external auditors and jurisdictional staff. As such it should be easy to follow, with clear information and diagrams.

Below, we have outlined a suggested layout and inclusions to help you develop a comprehensive and concise biosecurity plan.

## SECTION 1

### ENTERPRISE INFORMATION

Enterprise information provides essential background detail about your farm. This includes the scale and scope of the operation.

#### Production details



Summarise detail of all relevant elements of farm production.

Relevant details include:

- ➔ stock source(s)
- ➔ product, including species, size and market
- ➔ farm activities – all production and administrative activities
- ➔ staff – number and areas of responsibility
- ➔ any associated sites linked to the farm.

#### Key contacts



Document key details for internal and external contacts, relevant to farm management, biosecurity and stock health.

Relevant contacts include:

- ➔ company, farm and specific area managers
- ➔ consulting veterinarians/abalone health professionals
- ➔ government aquatic animal health contacts
- ➔ laboratories used
- ➔ other industry representatives (for example, association representatives).

## SECTION 2

## MAPS AND DIAGRAMS

Farm design and availability of infrastructure will determine how you can manage biosecurity. Include relevant information in this section of the plan.

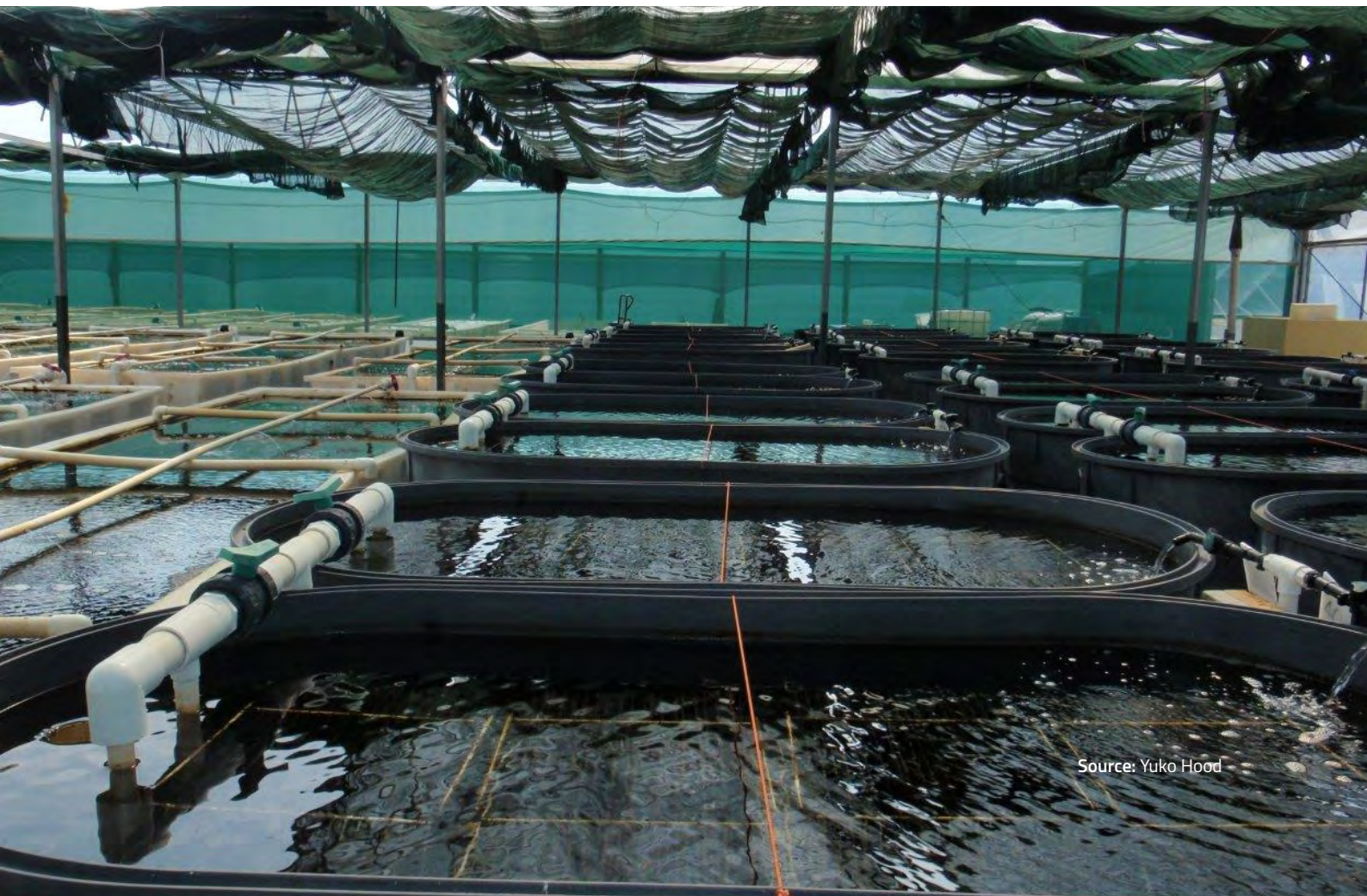
### Farm locality and features



Provide a locality map and associated farm information.

You will need to assess and document specific disease transmission risks based on farm location. Relevant details include:

- status of state or territory, region and/or bay for known diseases or marine pests of concern (for example, Abalone Viral Ganglioneuritis [AVG])
- proximity to other aquaculture production (for example, marine-based abalone farms, other aquaculture leases, fish processors)
- proximity to potential high-risk sites (for example, wild abalone populations)
- presence and type of wildlife (birds), feral animals or vermin
- nearby roads, towns, boat ramps, marinas.



## Farm maps and schematic diagrams

It is likely that you will need more than one farm map in your biosecurity plan, to cover different levels of detail. Ensure maps and diagrams include the following information.

### Facility layout



Provide a farm layout map and associated access information.



Appendix 1 includes a **biosecurity sign**.

Relevant details include the presence and location of:

- ➔ perimeter fences
- ➔ farm entry/exit points and gates (and if gates are lockable)
- ➔ access/biosecurity sign location(s)
- ➔ access road(s)
- ➔ car park(s)
- ➔ reception point for farm visitors
- ➔ sheds/storage areas, tanks and other infrastructure
- ➔ water intake and discharge pipes/channels
- ➔ water pumps and filtration equipment
- ➔ vehicle loading/delivery area(s)
- ➔ wash down/disinfection area(s)
- ➔ mortality pit(s)
- ➔ sedimentation pond(s)
- ➔ emergency muster point(s).



**R1.** The farm has a secure perimeter or otherwise well-defined boundary establishing a clearly defined biosecurity zone.



**R2.** You can close the main production area entrance to vehicle traffic if you activate the emergency response plan.



**R3.** Access gates are lockable and locked when no company personnel are on site.



**R4.** Clearly display entry signage that provides direction for visitors and includes company contact details.

## Production areas and biosecurity zone classifications



Provide a farm diagram outlining production areas and associated biosecurity zone classifications.

Be sure to include:

- ➔ entry and exit points for each production area/zone
- ➔ the location of any physical biosecurity measures between production areas/zones (for example, disinfection/sanitisation points, boot change areas)
- ➔ the class of stock within each production area/zone (for example, broodstock, juveniles, growout)
- ➔ the number of tanks or raceways in each area (to give an indication of farm size)
- ➔ typical stock and staff/visitor movements including those between farm production areas/zones and between sites (if applicable).

Ensure you describe biosecurity zones (Table 2) shown in diagrams, and used in your farm biosecurity plan, in detail within supporting SOPs.

*Table 2. Summary of example farm biosecurity zones*

Biosecurity zone	Access
<b>Extreme (red)</b>	<ul style="list-style-type: none"> <li>➔ highly restricted</li> <li>➔ authorised personnel only</li> <li>➔ no entry to any other zones following access.</li> </ul>
<b>High (amber)</b>	<ul style="list-style-type: none"> <li>➔ limited access</li> <li>➔ authorised personnel only</li> </ul>
<b>Moderate (yellow)</b>	<ul style="list-style-type: none"> <li>➔ limited access</li> <li>➔ authorised personnel only</li> </ul>
<b>Low (green)</b>	<ul style="list-style-type: none"> <li>➔ no access restrictions (staff or visitors).</li> </ul>



**R5.** Divide the farm into biosecurity zones with zone-specific requirements relating to access, entry and exit procedures, and dedicated equipment.



**R6.** Clearly display biosecurity zone signage, consistent with biosecurity zone definitions and familiar to all personnel.

## SECTION 3

## ROUTINE MEASURES TO ADDRESS MAJOR DISEASE TRANSMISSION ROUTES

This section outlines routine risk management measures to address major disease transmission routes common to land-based abalone farms (as per page 6).

Routine measures are implemented and followed as part of normal daily farm operations. For each measure, we have assigned a risk category. These will help to highlight the measures you need to prioritise to provide the highest degree of assurance that you will not introduce or spread disease.

The risk-rating categories, based on a risk assessment, are outlined in Table 3.

*Table 3. Risk-rating categories*

Risk category	Potential risk level
Category A	Failure to implement risk management measures may result in a <b>critical risk</b> of disease transfer.
Category B	Failure to implement risk management measures may result in a <b>high risk</b> of disease transfer.
Category C	Failure to implement risk management measures may result in a <b>moderate risk</b> of disease transfer.
Category D	Failure to implement risk management measures may result in a <b>low risk</b> of disease transfer.

### Additional farm-specific risks – not covered by these guidelines



Provide a locality map and associated farm information.

When developing your farm-specific biosecurity plan, you will also need to assess **any additional risks associated with your specific farm, not covered in these guidelines**. You will need to implement appropriate risk management measures. We have outlined this process below.

#### 1 Identify risks and perform a risk assessment

Identify any additional farm-specific risks (or routes of disease transmission). Perform a risk assessment for each risk identified:

- ➔ estimate the likelihood of disease entering the farm by this route
- ➔ determine the consequence of disease entry by this route

The level of risk posed is disease-dependent. As your farm biosecurity plan is not targeted at a specific disease, it is best practice to consider the worst-case scenario – an exotic or other emergency (or significant) abalone disease such as Withering Syndrome.

		Consequence rating				
		Insignificant	Minor	Moderate	Major	Catastrophic
Likelihood rating	Remote	1	2	3	4	5
	Unlikely	2	4	6	8	10
	Possible	3	6	9	12	15
	Likely	4	8	12	16	20
	Certain	5	10	15	20	25

Figure 2. Risk estimation matrix

Risk level	Action
1–2 Negligible	Acceptable level of risk. No action required.
3–5 Low	Acceptable level of risk. On-going monitoring may be required.
6–10 Medium	Unacceptable level of risk. Active management is required to reduce the level of risk.
12–15 High	Unacceptable level of risk. Intervention is required to mitigate the level of risk.
16–25 Extreme	Unacceptable level of risk. Urgent intervention is required to mitigate the level of risk.

Figure 3. Assessment of disease consequences

Medium, high or extreme risks are considered unacceptable and require you to implement management measures. Monitor low risks to ensure the risk profile does not change over time.

You can find detailed information on performing a risk assessment in part 3 (pages 25 to 28) of the Aquaculture Farm Biosecurity Plan – generic guidelines and template, on the Department of Agriculture and Water Resources website

(at [www.agriculture.gov.au/fisheries/aquaculture/farm-biosecurity-plan](http://www.agriculture.gov.au/fisheries/aquaculture/farm-biosecurity-plan)).

## 2 Identify appropriate risk management measures

Manage risks with a variety of measures, including physical (for example, infrastructure and equipment), procedural (for example, production practices and training) or other supporting measures (for example, signage).

To address any specific additional risks identified for your farm, consider each of these measures as part of a standard approach.

## 3 Develop or identify associated supporting documentation

Support risk management measures with appropriate documentation (for example, SOPs, checklists, record keeping templates) outlining detailed risk management measures.

For example, your biosecurity plan may identify a risk management measure as the 'use of footbaths between biosecurity zones'. Appropriate documentation to support this practice would be a 'Disinfection SOP', which details the type of disinfectant used, when it requires inspection and how regularly and by whom the disinfectant is to be changed. Do not include this level of detail in the body of your farm biosecurity plan, but instead reference the appropriate supporting documentation. You could use a document number, name or other relevant code to reference an SOP.

Accompany SOPs by a date-stamped checklist wherever possible to provide evidence that an accountable staff member is following the SOP procedure(s). Supervisors, managers and/or auditors can readily monitor checklists.

## Animals



**Objective:** Minimise the risk of stock and other animal movement introducing and spreading disease.





The most significant risk for bringing disease onto a farm is through stock, especially if you don't know the health status of the stock.

Manage stock introduction and movement carefully to minimise this risk. See Table 4 for a summary of risk management measures.



Table 4. Risk management measures for stock and animal movement

Risk category	Risk management measures	
<b>(A) Critical</b>		<b>R7.</b> Obtain health status information and appropriate permits for stock before it enters the farm. Ensure the health status of any introduced stock is equal to or better than that of stock already present. Permanently quarantine stock if you cannot achieve this.
		<b>R8.</b> Permanently quarantine introduced stock of unknown (for example, wild) or lower health status. This includes isolation in separate water from all other farm stock in separate production units/dedicated quarantine facilities with appropriate biosecurity measures.
		<b>R9.</b> House multiple marine aquaculture species (for example, oysters and abalone) separately, with appropriate biosecurity measures and do not share water across species.
<b>(B) High</b>		<b>R10.</b> Inspect stock on introduction to the farm and clean if required.
		<b>R11.</b> Dispose of mortalities or unwanted stock in an appropriate manner* that is approved by the relevant jurisdictional authority. Ensure dead or unwanted stock is not returned to the environment or accessible to scavengers (for example, birds).
		<b>R12.</b> Investigate health problems (suspected diseases) with assistance from aquatic animal health professionals.
		<b>R13.</b> Ensure staff responsible for managing abalone husbandry are trained in, and aware of, their role and responsibility in reporting signs of disease and high mortality.
		<b>R14.</b> In accordance with jurisdictional requirements, immediately inform relevant authorities of any significant, unexplained mortality event or suspected reportable disease.
		<b>R15.</b> Keep stock stress to a minimum by ensuring appropriate water quality, hygiene, stocking density, nutrition and handling.
		<b>R16.</b> Prevent escapees.
		<b>R17.</b> Control birds or exclude them from production areas.

Risk category	Risk management measures
(C) Moderate	 <b>R18.</b> Inspect abalone health, mortality and behaviour daily. Record this information.
	 <b>R19.</b> Remove mortalities twice weekly (at a minimum).
(D) Low	 <b>R20.</b> Ensure domestic animals (for example, cats and dogs) do not have access to production areas at any time.
	 <b>R21.</b> Bait vermin as necessary (if you observe live rodents, droppings or nests).

\*For further disposal information, see the AQUAVETPLAN Operational Procedures Manual – Disposal at [www.agriculture.gov.au/animal/aquatic/aquavetplan/disposal](http://www.agriculture.gov.au/animal/aquatic/aquavetplan/disposal).

## People



**Objective:** Minimise the risk of people movement introducing and spreading disease.

The risk of people introducing disease to your farm is greatest if they have recently visited other farms, or environments potentially containing diseases of concern.

Contaminated skin, clothing and footwear can all potentially spread disease. See Table 5 for a summary of risk management measures.











Source: Tracey Bradley

## Staff



Appendix 2 is an example of a **pre-employment biosecurity declaration**.

Table 5. Risk management measures for staff movement

Risk category	Risk management measures
(B) High	 <p><b>R22.</b> Do not permit staff to visit other aquaculture sites or seafood processors before entering the farm (unless they have been appropriately decontaminated).</p>
	 <p><b>R23.</b> To ensure effective disinfection at all times, locate footbaths (or provide the opportunity to change into zone-specific boots) and hand sanitation stations at the farm entrance/exit and between biosecurity zones.</p>
(D) Low	 <p><b>R24.</b> Ensure boots worn in production areas are not worn or taken outside their designated production area.</p>
	 <p><b>R25.</b> Ensure staff attend work in laundered, clean clothes each day.</p>
	 <p><b>R26.</b> Only permit designated staff to routinely enter farm quarantine areas.</p>
	 <p><b>R27.</b> Ensure work flow is unidirectional (from low- to high-risk zones) when staff need to access multiple zones during a day. Make sure you have an appropriate procedure when this is not possible.</p>

## Visitors – contractors, suppliers and other service personnel, family and neighbours



Appendix 3 provides a **visitor biosecurity declaration** template.











Appendix 4 provides a **visitor log** template.



Appendix 5 provides suggested **farm entry conditions for visitors**.

Table 6. Risk management measures for visitor movement

Risk category	Risk management measures
<b>(B) High</b>	 <b>R28.</b> All visitors must complete a biosecurity declaration on arrival to ensure you assess their risk to farm biosecurity. Consider refusing entry to high-risk visitors.
<b>(C) Moderate</b>	 <b>R29.</b> Limit movement of people onto and through the farm, in particular restrict visitor access to quarantine zones.
	 <b>R30.</b> Appropriately disinfect all visitors on production area entry and exit using footbaths (or provide the opportunity to change into zone-specific boots) and hand sanitation stations.
<b>(D) Low</b>	 <b>R31.</b> Visitors must sign-in on arrival (by completing the farm visitor log) and undergo a farm biosecurity induction.
	 <b>R32.</b> Clearly display farm entry requirements to visitors at the sign-in point.
	 <b>R33.</b> Ensure contractors conduct routine maintenance work within quarantine area(s), where possible, between batches and before final disinfection.
	 <b>R34.</b> The farm manager must approve all visitors and visits must be unidirectional from lowest to highest risk areas.
	 <b>R35.</b> Accompany visitors at all times when on site.

## Equipment, vehicles and vessels











**Objective:** Minimise the risk of equipment, vehicle or vessel movement introducing and spreading disease.

Depending on their history of use, contaminated equipment, vehicles or vessels can carry and spread disease agents.

Equipment and vehicles pose the greatest risk of disease transfer if used off-site (for example, dive equipment or vehicles returning from fish processors) or in association with stock or wild fish, especially if these are diseased. See Table 7 for a summary of risk management measures.

*Table 7. Risk management measures for equipment, vehicle and vessel movement*

Risk category	Risk management measures
<b>(B) High</b>	 <p><b>R36.</b> Do not permit equipment, vehicles or vessels that have been in contact with off-site abalone or water used to hold or process off-site abalone to enter the farm. In exceptional circumstances, make sure you can appropriately clean and disinfect* such equipment, vehicles or vessels, or those of unknown origin or status, before using on the farm.</p>
<b>(C) Moderate</b>	 <p><b>R37.</b> Use specific equipment, clearly labelled, per zone.</p>
	 <p><b>R38.</b> Do not remove equipment from its dedicated zone and use elsewhere on the farm.</p>
	 <p><b>R39.</b> Keep equipment used for multiple aquatic marine species (for example, oysters and abalone) species specific and do not share.</p>
	 <p><b>R40.</b> If moving equipment between zones or species (for example, an expensive item), ensure you clean and disinfect* it appropriately.</p>
	 <p><b>R41.</b> Keep equipment properly maintained and appropriately decontaminated* as required. Ensure maintenance records are maintained and up-to-date.</p>

Risk category	Risk management measures
<b>(D) Low</b>	 <b>R42.</b> Park visitor vehicles in a dedicated parking area.
	 <b>R43.</b> Ensure the farm has a dedicated delivery and loading area.
	 <b>R44.</b> Regularly clean all farm areas and keep free of rubbish and clutter.
	 <b>R45.</b> Clean contractor tools before entry and ensure they are free of dust/organic matter.

\*Use appropriate cleaning and disinfection methods where deemed necessary based on risk.

Appropriate cleaning and disinfection methods are outlined in the:

- ➔ AQUAVETPLAN Operational Procedures Manual – Decontamination, found on the Department of Agriculture and Water Resources website (at [www.agriculture.gov.au/animal/aquatic/aquavetplan/decontamination](http://www.agriculture.gov.au/animal/aquatic/aquavetplan/decontamination))
- ➔ Australian Pesticides and Veterinary Medicines Authority (APVMA) permit to allow hypochlorite for disinfecting abalone harvesting equipment and for decontamination against Abalone Viral Ganglioneuritis (AVG), found on the APVMA website (at [portal.apvma.gov.au/permits](http://portal.apvma.gov.au/permits); to view the current permit search using keywords hypochlorite and abalone).

You can also find biofouling management guidelines, for minimising the spread of marine pest species, on the Australian Government marine pests website (at [www.marinepests.gov.au/marine\\_pests/publications/Documents/Aquaculture\\_guidelines.pdf](http://www.marinepests.gov.au/marine_pests/publications/Documents/Aquaculture_guidelines.pdf)).











## Water, waste and feed



**Objective:** Minimise the risk of water, waste and feed introducing and spreading disease.

Farm water supply can pose a significant risk of disease transfer depending on if the source water carries disease. This is particularly important if there are host animals in the water source, or if it is close to water discharge from other aquatic enterprises or processors. See Table 8 for a summary of risk management measures.

*Table 8. Risk management measures for water, waste and feed*

Risk category	Risk management measures
(A) Critical	 <b>R46.</b> Treat incoming water appropriately (for example, screens on intake pipes, filtration) to minimise the risk of disease/pest entry.
	 <b>R47.</b> Treat discharge water from dedicated quarantine facilities appropriately to minimise the risk of disease/pest establishment in the marine environment.
(B) High	 <b>R48.</b> Ensure water intake and outflow avoid cross contamination.
	 <b>R49.</b> Ensure water flow within the farm minimises disease spread between biosecurity zones.
	 <b>R50.</b> Dispose of other waste appropriately (for example, used water filters, fouling, faeces).
(D) Low	 <b>R51.</b> Regularly service and maintain filtration equipment and keep a record.
	 <b>R52.</b> Ensure potable water is available for cleaning and disinfection procedures.
	 <b>R53.</b> Only use manufactured or appropriately treated feeds.

## SECTION 4

**ADDITIONAL SUPPORTING MEASURES****Training**

**Objective:** Ensure all farm staff understand they share the responsibility of maintaining farm biosecurity and must practice good biosecurity in all their work.



Appendix 6 provides suggested **training record template**.

Ensure all staff are appropriately trained so they understand both farm- and role-specific biosecurity requirements.

Staff need to understand the major routes of disease transmission and signs of abalone ill-health.

Use a training record to ensure you do not overlook staff training. It will also remind you to refresh training regularly (annually at a minimum), as well as after you update any procedures or associated documents.

You can also use a training record to document additional role-specific training such as sample collection, packaging and submission.



**R54.** Ensure the farm has a biosecurity manager responsible for creating, maintaining and reviewing the biosecurity plan, associated documents and activities including staff training.



**R55.** Ensure that staff can readily access the farm biosecurity plan and all associated documents at all times.



**R56.** Provide all staff with a farm biosecurity induction and ongoing biosecurity training relevant to their role. Document this and ensure it encompasses:

- ➔ the farm biosecurity plan
- ➔ the emergency response plan
- ➔ SOPs, associated documents including checklists and work practices that support these plans.



## Record keeping



**Objective:** Record information necessary to support good biosecurity practices, in accordance with the farm biosecurity plan.

Good record keeping is necessary for auditing farm biosecurity plans and to provide demonstrable proof that you are following biosecurity protocols.

In the event of a disease outbreak, you can use these records to trace the potential source of disease and identify breakdowns in adherence to biosecurity protocols. You can also use them to help review and improve farming practices and protocols.

The minimum information that you should record is outlined below.

### 1 Stock movements

Records of stock movements and inventory are essential for tracing activities in the event of a disease outbreak.

At a minimum, we suggested you include:

- ➔ source of stock, including original and most recent source (if different)
- ➔ movement of stock within the farm (for movement between different biosecurity zones such as nursery and grow out)
- ➔ movement of stock from the farm, to other farms or to processors.

Records for each movement should include the following at a minimum:

- ➔ date of movement
- ➔ batch or other identifier
- ➔ number of individuals
- ➔ buyer (for sales) or stock origin, including contact details



**R57.** Maintain detailed records about stock movements and inventory and keep them readily accessible.

### 2 Stock health, mortality and water quality records

Health and performance records provide evidence that you are regularly monitoring stock. Records, especially of mortalities, help you monitor for unusual health problems.

At a minimum, we suggest you include:

- ➔ mortalities (including the method of disposal and if you have archived any samples)
- ➔ details of any poorly performing abalone
- ➔ water quality information
- ➔ results of laboratory testing associated with clinical disease or undertaken for health certification purposes or Abalone Health Accreditation Program surveillance.



**R58.** Maintain detailed stock health, mortality and water quality records and keep them readily accessible.

## SECTION 5

**EMERGENCY PROCEDURES**

**Objective:** Ensure you develop emergency procedures and identify additional biosecurity measures to implement if there is a suspected emergency animal disease or serious endemic disease. This could be either on the farm, or because of an increased threat of introducing disease if an outbreak is suspected in the state/territory or region.



Appendix 7 provides an **emergency response plan template**.

An emergency response plan is an essential document for each farm and must provide clear guidelines as to the:

- ➔ specific trigger(s) for an emergency animal disease alert (for example, mortality rate, abnormal stock behavior)
- ➔ key emergency contacts
- ➔ notification pathways and responsibilities, including jurisdictional notification
- ➔ high biosecurity risk management measures that you need to immediately implement when you activate the emergency plan – this includes stock movement and farm access restrictions (examples of these are included within the emergency response plan template)
- ➔ sample collection, storage and submission guidelines
- ➔ disposal and quarantine protocols
- ➔ the physical location and/or web link of key response or other resource documents (for example, AQUAVETPLAN, jurisdiction disease response plan(s), farm disease response plan(s)).

This plan must be in line with AQUAVETPLAN, found on the Department of Agriculture and Water Resources (at [www.agriculture.gov.au/animal/aquatic/aquavetplan](http://www.agriculture.gov.au/animal/aquatic/aquavetplan)), and other jurisdictional requirements.

Farm emergency plans should also include the procedures you need to follow in the event of a non-disease emergency that may influence farm biosecurity, for example a power failure, water treatment failure or natural disaster. This will ensure you have clearly identified responsibilities, notification pathways and other procedures before such an event.



**R59.** Ensure the farm has an emergency response plan.

## SECTION 6

## LEGISLATIVE AND JURISDICTIONAL REGULATORY REQUIREMENTS

Farm practices must comply with:

- ➔ relevant agency and jurisdictional legislation (local, federal and state/territory)
- ➔ license conditions
- ➔ requirements of the Abalone Health Accreditation Program (for participating farms).



**R60.** Adhere to applicable import requirements and obtain translocation permits for all stock and equipment movement.



**R61.** Undertake batch testing or surveillance requirements in compliance with jurisdictional regulations or the Abalone Health Accreditation Program.



**R62.** Only keep commercially farmed species on site in accordance with license conditions.



**R63.** Ensure any veterinary medicines provided to stock are compliant with relevant state and national legislation (including the Commonwealth regulator, Australian Pesticides and Veterinary Medicines Authority).

We have looked at other regulatory requirements in previous sections, including:



**R11.** Dispose of mortalities or unwanted stock in an appropriate manner that is approved by the relevant jurisdictional authority. Ensure dead or unwanted stock is not returned to the environment or accessible to scavengers (for example, birds)..



**R14.** In accordance with jurisdictional requirements, immediately inform relevant authorities of any significant, unexplained mortality event or suspected reportable disease.

## SECTION 7

## DOCUMENT CONTROL AND REVISION RECORD



Include document control information and a revision record in your farm biosecurity plan.

This ensures you provide evidence to demonstrate your plan is being maintained as a living document and is continually reviewed and updated based on:

- ➔ changed biosecurity threats
- ➔ ongoing learnings
- ➔ infrastructure upgrades
- ➔ changes in farm practices
- ➔ newly available risk management tools or information
- ➔ audit recommendations.



**R64.** Ensure you regularly review the farm biosecurity plan (annually at a minimum).

## SECTION 8

## AUDIT RECORD



Include a record of any audits completed (if applicable).

Include both:

- ➔ internal and external audits
- ➔ scheduled and completed audits

Note key outcomes/audit recommendations for reference and to demonstrate that you are critically reviewing your plan.

Include brief but specific notes of any findings or required corrections, or refer to a detailed document containing this information.



**R65.** Regularly audit your farm biosecurity plan (annually at a minimum) to ensure you are implementing it effectively and improving on it as appropriate.

## SECTION 9

**SUPPORTING DOCUMENTS**

Include a list of associated documents (SOPs, checklists and record keeping templates) that are referenced within your farm biosecurity plan.

This list ensures you can readily identify supporting documents and make them accessible for review and audit. You do not need to include them in the body of your plan. Keep them elsewhere (to ensure version control is preserved) or include them as appendices.

We suggest you include the following supporting documents (Table 9), although you may incorporate multiple topics into the same SOP depending on your farm. Farm size, number of staff and scale of production are all likely to influence SOP requirements.

Checklists are essential supporting documents and you should use them in association with SOPs wherever possible. Checklists provide the evidence that an accountable staff member is following procedures outlined in an SOP at correct intervals.

*Table 9: Standard operating procedures and record keeping*

Suggested standard operating procedures and checklists	Record keeping templates/other documents
New employee induction and training	Pre-employment biosecurity declaration
Farm visitors	Visitor biosecurity declaration
Stock arrivals, movement and dispatch	Visitor log
Escapee prevention, inspection and collection	Farm entry conditions for visitors
Collecting and disposing of mortalities and other waste	Staff training record
Disinfection	---
Farm biosecurity zones	---
Emergency response plan	---



**R66.** Clearly identify supporting documents (for example, SOPs, checklists and templates) associated with the farm biosecurity plan and keep them readily available.



**Each individual farm's biosecurity plan, and its effective implementation and operation, will directly influence the ability of the abalone industry to withstand an outbreak of disease, and the cost of control.**

## APPENDIX 1

**BIOSECURITY SIGN**

You can buy corflute signs at [www.farmbiosecurity.com.au/buy-a-gate-sign/](http://www.farmbiosecurity.com.au/buy-a-gate-sign/)



APPENDIX 2

# PRE-EMPLOYMENT BIOSECURITY DECLARATION

I, ..... hereby agree to abide by MY EMPLOYER'S BIOSECURITY rules and standards.

I understand the following applies at all times:

**I must:**

1. attend work in clean, laundered clothes
2. only enter those areas of the farm I am approved to access
3. follow a one-directional flow of work (from low-risk to high-risk zones) if required to enter more than one zone during daily work
4. immediately report any biosecurity breaches to management
5. immediately report any suspicion of disease to management.

**I must not:**

1. visit other aquaculture sites or seafood processors for 24 hours before entering the farm unless I have had a full head-to-toe shower and changed into clean, laundered clothes and shoes
2. wear or take boots outside their designated production area
3. move any zone-specific equipment to any other zone.

Signature ..... Date .....

APPENDIX 3

# VISITOR BIOSECURITY DECLARATION

1. Are you entering production areas of the farm?

Yes  No

2. Have you been in contact with any aquaculture or the aquatic environment in the previous 24 hours, including:

- recreational fishing
- seafood processors
- water sports/activities (including diving)

Yes  No

(Go to question 3)

3. If yes, have you had a head-to-toe shower and changed into clean clothes and shoes?

Yes  No

- postpone non-essential visit
- farm manager to assess risk before granting access

I ..... agree to abide by the entry conditions for visitors.

Signature ..... Date .....





## APPENDIX 5

**FARM ENTRY CONDITIONS FOR VISITORS**

Entry to this farm is subject to the following conditions:



If entering production areas, visitors must **not have been in contact with any other aquaculture, seafood processors or the aquatic environment** on the same day (or within the previous 24 hours).



Visitors must **complete a visitor biosecurity declaration**.



Visitors must **complete the visitor's log**.



Visitors must **wear boots** provided.



Visitors must **clean/sanitise hands** before entering production areas.



## APPENDIX 7

**EMERGENCY RESPONSE PLAN TEMPLATE**

This document outlines employee actions and responsibilities if an emergency animal disease is suspected on the farm.

**Plan trigger**

Unusually high, unexplained mortality. <Define this for your farm (for example, a specific mortality rate, abnormal stock behaviour)>.

**Important contacts**

Include contacts appropriate to your farm. The table below contains some examples

Title	Name	Contact details
Company/general manager	<name>	Mobile: Phone: Email:
Farm manager	<name>	Mobile: Phone: Email:
District veterinary officer	<name>	Mobile: Phone: Email:
Aquatic animal health officer	<name>	Mobile: Phone: Email:
Consultant veterinarian	<name>	Mobile: Phone: Email:
Fishwatch Hotline (or equivalent)	<name>	Mobile: Phone: Email:
Laboratory	<name>	Mobile: Phone: Email:
Emergency Animal Disease Watch Hotline	<name>	Phone: 1800 675 888

## Notifications and responsibilities

<Allocate responsibilities to relevant personnel.>

When this plan is triggered, employees must immediately implement the following practices.

Action	Responsibility	Complete/date
1. Contact the relevant authority through the relevant reporting pathway for your state/territory (for example, district veterinary officer, aquatic animal health officer, the Emergency Animal Disease Watch Hotline or the Fishwatch Hotline)	Name: Position:	Y/N <date>
2. Follow all instructions as the relevant authority directs.	Name: Position:	Y/N <date>
3. Collect, package and submit samples for pathology as the relevant authority directs.	Name: Position:	Y/N <date>
4. Do not dispatch any stock from the farm until the relevant authority approves it.	Name: Position:	Y/N <date>
5. Isolate any suspected or known diseased stock.	<name>	Y/N <date>
6. Stop all movements of stock between tanks and zones.	Name: Position:	Y/N <date>
7. Restrict farm access to visitors: <ul style="list-style-type: none"> <li>➔ secure the farm perimeter</li> <li>➔ deny access to non-essential visitors</li> <li>➔ postpone routine repair/maintenance</li> <li>➔ postpone non-essential deliveries, including stock.</li> </ul>	Name: Position:	Y/N <date>
8. Check for escapees.	Name: Position:	Y/N <date>
9. Check sentinel stock (if applicable).	Name: Position:	Y/N <date>
10. Do not let personnel, equipment and machinery leave the farm until the relevant authority approves it.	Name: Position:	Y/N <date>

Action	Responsibility	Complete/date
11. Restrict staff access to farm production areas. Only let authorised staff carry out essential stock management and husbandry procedures.	Name: Position:	Y/N <date>
12. Ensure you make all staff aware of the actions being taken and their individual responsibilities.	Name: Position:	Y/N <date>
13. Advise all customers/processors immediately affected.	Name: Position:	Y/N <date>
14. Compile a list of movements over the preceding two weeks – including stock, personnel, equipment and machinery.	Name: Position:	Y/N <date>
15. Implement husbandry changes – reduce feeding to cut waste and uneaten food in tanks, and increase water flow.	Name: Position:	Y/N <date>
16. Arrange a dive inspection of nearby wild populations to check for signs of disease (as the relevant authority advises).	Name: Position:	Y/N <date>

## Sample collection, packaging and dispatch

Collect samples as the [relevant authority](#) advises.

[Document which staff members you have trained in sample collection and packaging.](#)

### Sample collection

Follow these guidelines when submitting fresh samples:

- ➔ Collect samples aseptically.
- ➔ Do not submit dead animals unless specifically requested to do so, submit live (preferably moribund) samples from affected tanks.
- ➔ Place samples in individual sterile containers (do not mix 'healthy' specimens with those from affected tanks if asked to submit both).
- ➔ Keep samples refrigerated or on ice to prevent decomposition and ensure sufficient ice is included to keep samples cool throughout transport.

### Sample labelling

- ➔ Ensure that sample labels will remain attached and legible.
- ➔ Unlabeled samples are unacceptable.
- ➔ Labels should include:
  - farm descriptor (for example, name or license number)
  - contact details
  - date
  - descriptor, based on what has been requested (for example, 'abalone from affected tank').

### Packaging samples

- ➔ Carefully pack samples to avoid breakage, leakage or contamination.
- ➔ Place samples in non-breakable, leak-proof containers – do not use glass jars.
- ➔ Pack samples in an appropriate container (for example, a disposable poly box or foam esky) together with sufficient paper or other absorbent material to soak up any leakage. Secure the lid.

### Packaging samples

- ➔ Submit samples as soon as possible following collection.
- ➔ Submission details:

Name: [of state or territory laboratory](#)

Address: [you are submitting samples to](#)

Contact number: [of laboratory liaison or case manager](#)

Name and contact number: [of courier – arrange transport directly through the relevant authority or laboratory \(ensure these arrangements are clear in this plan\)](#)

## Disposal and quarantine protocols

Insert disposal protocol information (for example, 'In the event that this plan is triggered double-bag mortalities and dispose of in a mortality pit that is immediately covered over. Do not return dead stock to the environment or let scavengers have access to them').

You need to consider disposal options in this plan, depending on the volume of stock. For further information, see 'AQUAVETPLAN – Operational procedures manual – Disposal', found on the Department of Agriculture and Water Resources website (at [www.agriculture.gov.au/SiteCollectionDocuments/animal-plant/aquatic/aquavetplan/disposal-manual.pdf](http://www.agriculture.gov.au/SiteCollectionDocuments/animal-plant/aquatic/aquavetplan/disposal-manual.pdf)).

Insert details of quarantine protocols, including isolation and disinfection, or reference a farm-specific quarantine SOP

## Key response plans

Insert the details of any other response plans or documents for other abalone diseases if applicable.

If you identify Abalone Viral Ganglioneuritis (AVG), your farm will follow:

- ➔ the requirements of 'AQUAVETPLAN – Disease Strategy Manual – Abalone Viral Ganglioneuritis', found on the Department of Agriculture and Water Resources website (at [www.agriculture.gov.au/Style%20Library/Images/DAFF/\\_data/assets/pdffile/0020/2403371/abalone-aquavetplan.pdf](http://www.agriculture.gov.au/Style%20Library/Images/DAFF/_data/assets/pdffile/0020/2403371/abalone-aquavetplan.pdf) [include the electronic and/or physical location on site])
- ➔ any specific state or territory emergency response documents (insert their electronic and/or physical location on site)
- ➔ directions from the [relevant authority](#).

If you identify Withering Syndrome (infection with *Xenohaliotis californiensis*), your farm will follow:

- ➔ the requirements of 'AQUAVETPLAN – Disease Strategy Manual – Withering Syndrome of Abalone', found on the Department of Agriculture and Water Resources website (at [www.agriculture.gov.au/SiteCollectionDocuments/animal-plant/aquatic/aquavetplan/withering-abalone.pdf](http://www.agriculture.gov.au/SiteCollectionDocuments/animal-plant/aquatic/aquavetplan/withering-abalone.pdf) [include the electronic and/or physical location on site])
- ➔ any specific state or territory emergency response documents (insert their electronic and/or physical location on site)
- ➔ directions from the [relevant authority](#).



## APPENDIX 8

## HOW TO WRITE A SIMPLE STANDARD OPERATING PROCEDURE

Standard Operating Procedures (SOPs) provide detailed and clear instructions on how to carry out a task/tasks. This means that any employee can carry out the task/tasks correctly each and every time.

A well-written SOP will also help ensure that trainers have covered all relevant details.

### Key considerations when writing a standard operating procedure

- ➔ Ensure the SOP is concise, but still contains all the necessary information to perform the procedure.
- ➔ Keep SOPs short and consider breaking longer SOPs into multiple shorter SOPs.
- ➔ Where appropriate, use tables, lists, flow diagrams, photos, icons and/or other graphics rather than large blocks of text. These can be more effective than text alone.
- ➔ Write for the target audience (those using the SOP) in plain English. Ensure steps are clear.
- ➔ Avoid vague statements. Use language such as 'must use' rather than 'please use' or 'should use'.
- ➔ Ensure SOPs follow a logical thought process and number the steps to complete the procedure.

### Suggested format

#### Title

Example: [Disposal of Biological Waste SOP \(DBW1.0\)](#)

Consider assigning a brief reference code or number that you can use in your farm biosecurity plan and other documents.

#### Purpose

What is the reason for having this procedure, what is its aim?

For example: [This procedure aims to ensure you dispose of biological waste properly, including abalone mortalities, to minimise the risk of spreading disease from the farm.](#)

You may also need to include relevant additional (non-biosecurity) reasons for having this procedure (for example, work health and safety or environmental protection requirements).

#### Responsibilities

List staff member(s) and what they are required to do. For example:

Staff member(s)	Responsibility
All	Understand and follow this procedure. Report any breach of this procedure to your supervisor or the farm manager immediately.
Administration officer	Order replacement mortality bags when supervisor or farm manager advises.
Farm manager	Ensure all staff follow this SOP. Maintain and update this SOP.

## Definitions

Include definitions of any technical terms or acronyms used. Omit this section if not required.

## Procedure

List the activities and tasks that make up this procedure, as well as any checklists staff members need to use. For example:

1. Check tanks daily for mortalities.
2. Record any mortalities on the daily checklist.
3. Immediately report any mortalities over x% to the farm manager. Do not remove mortalities in this instance until the farm manager advises, as you may need to observe the situation further and collect samples.
4. Remove mortalities from tanks at the end of each day, moving from lower to higher risk zones (for example, grow out, then nursery).
5. Sanitise hands and boots between zones as per the Disinfection SOP.
6. Place mortalities into mortality bags and seal with tape.
7. Place sealed bags into the mortality pit.
8. Do not return to any production area following mortality disposal.
9. Advise the administration officer when 'x' bags remain so they can order more.

## Document control

To ensure the SOP remains relevant and appropriately updated, include document control information.

Document control	Details	Approval/review	Details
Version	e.g. 1.0	Approved by	Name Position
Status	e.g. Approved, Draft	Date approved	<date>
Contact	Name Position	Next review due	<date> (should not exceed 12 months)

## APPENDIX 9

**AUDIT CHECKLIST**

Page ref.	Associated req.	Infrastructure and facility standards	Yes	No	N/A	Corrective action/ comments
9	R1, R2	Does the farm have a secure perimeter? Can you close off access to prevent vehicle entry when required?				
9	R3	Are access gates closed and locked during non-business hours?				
9	R4	Is there adequate signage to inform visitors of the biosecure area and what they need to do on arrival?				
10	R5	Do clear biosecurity zones exist on the farm? Do zone-specific procedures support this?				
10	R6	Are staff familiar with the farm's biosecurity zones and associated requirements?				
20	R46 to R48	Does water intake, discharge and flow throughout the farm minimise disease entry and spread?				
14	R16	Do you prevent escapees appropriately?				
20	R51	Can you provide evidence to demonstrate an appropriately maintained water treatment/ filtration?				
18, 19, 20	R41, R44, R52	Can you provide evidence of appropriately maintained and cleaned farm infrastructure and equipment? Is potable water available for cleaning?				
18	R37 to R40	Is equipment used on the farm dedicated to a zone (or species) and clearly labelled as such?				
18, 19	R36, R45	Do you assess any equipment brought onto the farm for risk and appropriately treat it (clean and/or disinfect)?				
19	R42, R43	Does the farm have dedicated areas for visitor parking and delivery/ loading?				

Page ref.	Associated req.	Personnel standards	Yes	No	N/A	Corrective action/ comments
16	R22, R24 to R27	Does each employee sign a 'Pre-Employment Biosecurity Declaration' that specifies farm and role biosecurity requirements?				
16	R23	Are hand sanitisation stations and footbaths (or separate boots) available, and used, at production area entrance/exit and where required between biosecurity zones?				
17	R31	Is there a visitors' log that all visitors must complete on arrival?				
17	R28	Do all visitors sign a visitor biosecurity declaration? Match this to the visitors' log.				
17	R32	Do you prominently display the farm entry conditions for visitors near the visitors' log?				
17	R29, R30, R33 to R35	Are there appropriate (and documented) procedures in place to manage the risks posed by visitors to the farm?				
21	R54	Does the farm have a specified biosecurity manager?				

Page ref.	Associated req.	Production practices	Yes	No	N/A	Corrective action/ comments
14	R8, R9,	Do you house and manage stock of different disease risk separately?				
14	R7, R10	Is there an appropriate procedure in place for stock introduction and stock movement within and from the farm?				
14, 15	R11, R19	Is there an appropriate procedure in place for disposing of dead stock?				
14	R15	Are appropriate procedures in place to optimise stock health?				
14, 15, 22	R12, R18, R58	Can you provide evidence to demonstrate you regularly monitor stock health and you investigate any health problems?				

Page ref.	Associated req.	Production practices	Yes	No	N/A	Corrective action/ comments
14	R17, R20, R21	Do you effectively prevent and control farm access by wildlife, vermin or domestic animals?				
20	R53	Do you only use manufactured or appropriately treated feeds?				
14, 14, 24	R11, R14, R60 to R63	Can you provide evidence that employees know and adhere to all applicable legislative and/or jurisdictional requirements? Provide evidence of required documentation.				

Page ref.	Associated req.	Documentation and training	Yes	No	N/A	Corrective action/ comments
14	R13	Are farm production staff appropriately trained in reporting disease and mortality?				
23	R59	Does the farm have an emergency response plan?				
21	R55, R56	Are all staff aware of the location, content and their role and responsibilities associated with the farm's emergency response plan, biosecurity plan and associated documents (for example, SOPs)?				
21	R56	Do you have a current training record for each employee?				
22	R57	Is there a system in place to record stock inventory and movements and can you readily interrogate this for tracing purposes?				
25	R64, R65	Can you provide evidence, through revision and audit records, that you critically review the biosecurity plan and improve on it as appropriate?				
26	R66	Can you readily identify and provide on request all supporting documents associated with the farm biosecurity plan?				

## APPENDIX 10

**BIOSECURITY PLAN TEMPLATE****How to use template**

Use this template to create a farm biosecurity plan. For further information, use the National Biosecurity Plan Guidelines for the Australian Land Based Abalone Industry [www.agriculture.gov.au/animal/aquatic/guidelines-and-resources](http://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources) in conjunction with this template.

We have included explanatory text in **blue**, which you can **delete** after completing your plan.

Replace the text in **red** with details specific to your farm.



Available templates are shown in **green** next to the template symbol. The National Biosecurity Plan Guidelines for the Australian Land Based Abalone Industry has templates in the appendices, which you can modify for your farm.

- Delete information or risk management measures that do not apply to your farm.
- +** Add additional information or risk management measures applicable to your farm.

Delete this section when you have completed your plan.

## SECTION 1

**ENTERPRISE INFORMATION****Production details**

Add additional categories to this table as required, or delete any categories or detail not applicable.

Category	Details
Broodstock and/or stock source	<enter details>
Species/product	Species: Size of product: Market:
Site activities	For example: <ul style="list-style-type: none"> <li>➔ broodstock quarantine, conditioning and spawning</li> <li>➔ nursery and grow out</li> <li>➔ company administration</li> </ul>
Staff	Farm production staff: <number> (consider further breakdown of staff per zone) Administration staff: <number> Senior management: <number>
Associated sites	<enter details>

**Key contacts**

Add additional contacts to this table as required, or delete any contacts not applicable.

**Internal Contacts**

Name	Position	Contact details
<name>	Company/general manager	Mobile/phone: Email:
<name>	Farm manager	Mobile/phone: Email:
<name>	Administration manager	Mobile/phone: Email:
<name>	Operations manager	Mobile/phone: Email:

## External Contacts

Name	Position	Contact details
<name>	Aquatic animal health officer	Mobile/phone: Email:
<name>	District veterinary officer	Mobile/phone: Email:
<name>	Consulting veterinarian	Mobile/phone: Email:
<name>	Laboratory	Mobile/phone: Email:
<name>	Industry representative	Mobile/phone: Email:
<name>	Courier	Mobile/phone: Email:



## SECTION 2

**MAPS AND DIAGRAMS**

Obtain maps from google maps [www.google.com.au/maps](http://www.google.com.au/maps). Satellite images help demonstrate the farm location relative to major towns, roads and other infrastructure in the area.

Create diagrams easily within this document by inserting shapes of various colour and size.

Ensure maps are large, clear and legible.

You may be able to combine some maps or diagrams depending on the size and/or complexity of the farm.

**Farm locality and features**

Add additional categories to this table as required, or delete any categories not applicable.

Category	Details
Farm location and access	<ul style="list-style-type: none"> <li>➔ address, state, region of state</li> <li>➔ closest town name, distance from closest town</li> <li>➔ GPS coordinates</li> <li>➔ road(s) from which you can access the farm.</li> </ul>
Disease status of state/region	Known diseases or marine pests of concern (for example, Abalone Viral Ganglioneuritis [AVG]) for the state (or region).
Proximity to other aquaculture production	For example: <ul style="list-style-type: none"> <li>➔ marine-based abalone farms</li> <li>➔ other aquaculture leases</li> <li>➔ processors.</li> </ul>
Proximity to high-risk sites	For example, wild abalone populations, ports
Other	For example: <ul style="list-style-type: none"> <li>➔ presence and type of wildlife, feral animals or vermin</li> <li>➔ significant natural features</li> <li>➔ boat ramps, marinas.</li> </ul>

Insert a small map of the wider state area with the farm location marked. Then insert a larger farm locality map and mark applicable additional information. Use symbols to mark relevant features, for example:

-  Farm
-  Processor
-  Wild abalone population

## Farm maps and schematic diagrams

### Farm layout



#### Biosecurity sign

Insert a farm layout map/diagram and include details relating to the following risk management measures. Display these as part of the map/diagram or list them as additional information.



**R1.** The farm has a secure perimeter or otherwise well-defined boundary establishing a clearly defined biosecurity zone.



**R2.** You can close the main production area entrance to vehicle traffic if you activate the emergency response plan.



**R3.** Access gates are lockable and locked when no company personnel are on site.



**R4.** Clearly display entry signage that provides direction for visitors and includes company contact details.

### Production areas and biosecurity zone classifications

Insert a diagram of farm production areas and their associated biosecurity zone classifications. Display details relating to the following risk management measures, applicable to your **farm**, as part of the map/diagram or as additional information.



**R5.** Divide the farm into biosecurity zones with zone-specific requirements relating to access, entry and exit procedures, and dedicated equipment.



**R6.** Clearly display biosecurity zone signage, consistent with biosecurity zone definitions and familiar to all personnel.

*Example farm biosecurity zones*

Biosecurity zone	Access
<b>Extreme (red)</b>	<ul style="list-style-type: none"><li>→ highly restricted</li><li>→ authorised personnel only</li><li>→ no entry to any other zones following access.</li></ul>
<b>High (amber)</b>	<ul style="list-style-type: none"><li>→ limited access</li><li>→ authorised personnel only</li></ul>
<b>Moderate (yellow)</b>	<ul style="list-style-type: none"><li>→ limited access</li><li>→ authorised personnel only</li></ul>
<b>Low (green)</b>	<ul style="list-style-type: none"><li>→ no access restrictions (staff or visitors).</li></ul>

Develop supporting SOPs to capture further detailed information relating to your biosecurity zone classifications, such as who is authorised to access each zone, entry and exit procedures and any additional relevant information.

SECTION 3

# ROUTINE MEASURES TO ADDRESS MAJOR DISEASE TRANSMISSION ROUTES




## Animals















**Objective:** Minimise the risk of stock and other animal movement introducing and spreading disease.

Amend the risk management measures outlined in the following sections to reflect actual farm practices. Add specific detail where applicable and delete any measures not applicable.

For example, amend 'Mortalities or unwanted stock are disposed of in an appropriate manner' to reflect the actual procedure: 'Place mortalities in plastic bags, seal with tape and place in a mortality pit. Cover the pit every x weeks.'

Risk category	Risk management measures	Supporting documentation
<p><b>(A) Critical</b></p>	<p> <b>R7.</b> Obtain health status information and appropriate permits for stock before it enters the farm. Ensure the health status of any introduced stock is equal to or better than that of stock already present. Permanently quarantine stock if you cannot achieve this.</p>	<p>Add titles or codes of any associated SOPs, checklists or record keeping templates in this column</p>
	<p> <b>R8.</b> Permanently quarantine introduced stock of unknown (for example, wild) or lower health status. This includes isolation in separate water from all other farm stock in separate production units/ dedicated quarantine facilities with appropriate biosecurity measures.</p>	
	<p> <b>R9.</b> House multiple marine aquaculture species (for example, oysters and abalone) separately, with appropriate biosecurity measures and do not share water across species.</p>	

Risk category	Risk management measures	Supporting documentation
<b>(B) High</b>	 <b>R10.</b> Inspect stock on introduction to the farm and clean if required.	Add titles or codes of any associated SOPs, checklists or record keeping templates in this column
	 <b>R11.</b> Dispose of mortalities or unwanted stock in an appropriate manner* that is approved by the relevant jurisdictional authority. Ensure dead or unwanted stock is not returned to the environment or accessible to scavengers (for example, birds).	
	 <b>R12.</b> Investigate health problems (suspected diseases) with assistance from aquatic animal health professionals.	
	 <b>R13.</b> Ensure staff responsible for managing abalone husbandry are trained in, and aware of, their role and responsibility in reporting signs of disease and high mortality.	
	 <b>R14.</b> In accordance with jurisdictional requirements, immediately inform relevant authorities of any significant, unexplained mortality event or suspected reportable disease.	
	 <b>R15.</b> Keep stock stress to a minimum by ensuring appropriate water quality, hygiene, stocking density, nutrition and handling.	
	 <b>R16.</b> Prevent escapees.	
	 <b>R17.</b> Control birds or exclude them from production areas.	









Risk category	Risk management measures	Supporting documentation
<b>(C) Moderate</b>	 <b>R18.</b> Inspect abalone health, mortality and behaviour daily. Record this information.	Add titles or codes of any associated SOPs, checklists or record keeping templates in this column
	 <b>R19.</b> Remove mortalities twice weekly (at a minimum).	
<b>(D) Low</b>	 <b>R20.</b> Ensure domestic animals (for example, cats and dogs) do not have access to production areas at any time.	Add titles or codes of any associated SOPs, checklists or record keeping templates in this column
	 <b>R21.</b> Bait vermin as necessary (if you observe live rodents, droppings or nests).	

## People














**Objective:** Minimise the risk of people movement introducing and spreading disease.

### Staff

Risk category	Risk management measures	Supporting documentation
(B) High	 <p><b>R22.</b> Do not permit staff to visit other aquaculture sites or seafood processors before entering the farm (unless they have been appropriately decontaminated).</p>	<p>Add titles or codes of any associated SOPs, checklists or record keeping templates in this column</p>  Pre-employment biosecurity declaration
(D) Low	 <p><b>R23.</b> To ensure effective disinfection at all times, locate footbaths (or provide the opportunity to change into zone-specific boots) and hand sanitation stations at the farm entrance/exit and between biosecurity zones.</p>	<p>Add titles or codes of any associated SOPs, checklists or record keeping templates in this column</p>  Pre-employment biosecurity declaration
	 <p><b>R24.</b> Ensure boots worn in production areas are not worn or taken outside their designated production area.</p>	
	 <p><b>R25.</b> Ensure staff attend work in laundered, clean clothes each day.</p>	
	 <p><b>R26.</b> Only permit designated staff to routinely enter farm quarantine areas.</p>	
	 <p><b>R27.</b> Ensure work flow is unidirectional (from low- to high-risk zones) when staff need to access multiple zones during a day. Make sure you have an appropriate procedure when this is not possible.</p>	

## Visitors – contractors, suppliers and other service personnel, family and neighbours











Risk category	Risk management measures	Supporting documentation
(B) High	 <p><b>R28.</b> All visitors must complete a biosecurity declaration on arrival to ensure you assess their risk to farm biosecurity. Consider refusing entry to high-risk visitors.</p>	<p>Add titles or codes of any associated SOPs, checklists or record keeping templates in this column</p>  Visitor biosecurity declaration
(C) Moderate	 <p><b>R29.</b> Limit movement of people onto and through the farm, in particular restrict visitor access to quarantine zones.</p>	<p>Add titles or codes of any associated SOPs, checklists or record keeping templates in this column</p>
	 <p><b>R30.</b> Appropriately disinfect all visitors on production area entry and exit using footbaths (or provide the opportunity to change into zone-specific boots) and hand sanitation stations.</p>	
(D) Low	 <p><b>R31.</b> Visitors must sign-in on arrival (by completing the farm visitor log) and undergo a farm biosecurity induction.</p>	 Visitor log
	 <p><b>R32.</b> Clearly display farm entry requirements to visitors at the sign-in point.</p>	 Entry conditions for visitors
	 <p><b>R33.</b> Ensure contractors conduct routine maintenance work within quarantine area(s), where possible, between batches and before final disinfection.</p>	
	 <p><b>R34.</b> The farm manager must approve all visitors and visits must be unidirectional from lowest to highest risk areas.</p>	
	 <p><b>R35.</b> Accompany visitors at all times when on site.</p>	




## Equipment, vehicles and vessels











**Objective:** Minimise the risk of equipment, vehicle or vessel movement introducing and spreading disease.

Risk category	Risk management measures	Supporting documentation
(B) High	 <p><b>R36.</b> Do not permit equipment, vehicles or vessels that have been in contact with off-site abalone or water used to hold or process off-site abalone to enter the farm. In exceptional circumstances, make sure you can appropriately clean and disinfect* such equipment, vehicles or vessels, or those of unknown origin or status, before using on the farm.</p>	Add titles or codes of any associated SOPs, checklists or record keeping templates in this column
(C) Moderate	 <p><b>R37.</b> Use specific equipment, clearly labelled, per zone.</p>	Add titles or codes of any associated SOPs, checklists or record keeping templates in this column
	 <p><b>R38.</b> Do not remove equipment from its dedicated zone and use elsewhere on the farm.</p>	
	 <p><b>R39.</b> Keep equipment used for multiple aquatic marine species (for example, oysters and abalone) species specific and do not share.</p>	
	 <p><b>R40.</b> If moving equipment between zones or species (for example, an expensive item), ensure you clean and disinfect* it appropriately.</p>	
	 <p><b>R41.</b> Keep equipment properly maintained and appropriately decontaminated* as required. Ensure maintenance records are maintained and up-to-date.</p>	
(D) Low	 <p><b>R42.</b> Park visitor vehicles in a dedicated parking area.</p>	Add titles or codes of any associated SOPs, checklists or record keeping templates in this column
	 <p><b>R43.</b> Ensure the farm has a dedicated delivery and loading area.</p>	
	 <p><b>R44.</b> Regularly clean all farm areas and keep free of rubbish and clutter.</p>	
	 <p><b>R45.</b> Clean contractor tools before entry and ensure they are free of dust/organic matter.</p>	

## Water, waste and feed




**Objective:** Minimise the risk of water, waste and feed introducing and spreading disease.

Risk category	Risk management measures	Supporting documentation
<b>(A) Critical</b>	 <p><b>R46.</b> Treat incoming water appropriately (for example, screens on intake pipes, filtration) to minimise the risk of disease/pest entry.</p>	<p>Add titles or codes of any associated SOPs, checklists or record keeping templates in this column</p>
	 <p><b>R47.</b> Treat discharge water from dedicated quarantine facilities appropriately to minimise the risk of disease/pest establishment in the marine environment.</p>	
<b>(B) High</b>	 <p><b>R48.</b> Ensure water intake and outflow avoid cross contamination.</p>	<p>Add titles or codes of any associated SOPs, checklists or record keeping templates in this column</p>
	 <p><b>R49.</b> Ensure water flow within the farm minimises disease spread between biosecurity zones.</p>	
	 <p><b>R50.</b> Dispose of other waste appropriately (for example, used water filters, fouling, faeces).</p>	
<b>(D) Low</b>	 <p><b>R51.</b> Regularly service and maintain filtration equipment and keep a record.</p>	<p>Add titles or codes of any associated SOPs, checklists or record keeping templates in this column</p>
	 <p><b>R52.</b> Ensure potable water is available for cleaning and disinfection procedures.</p>	
	 <p><b>R53.</b> Only use manufactured or appropriately treated feeds.</p>	

SECTION 4

# ADDITIONAL SUPPORTING MEASURES



**Objective:** Ensure all farm staff understand they share the responsibility of maintaining farm biosecurity and must practice good biosecurity in all their work.

## Training

Describe what training is undertaken by staff, how it is recorded and how often it is refreshed.

 [Training record template](#)



**R54.** Ensure the farm has a biosecurity manager responsible for creating, maintaining and reviewing the biosecurity plan, associated documents and activities including staff training.



**R55.** Ensure that staff can readily access the farm biosecurity plan and all associated documents at all times.



**R56.** Provide all staff with a farm biosecurity induction and ongoing biosecurity training relevant to their role. Document this and ensure it encompasses:

- ➔ the farm biosecurity plan
- ➔ the emergency response plan
- ➔ SOPs, associated documents including checklists and work practices that support these plans.

Site biosecurity manager details:

Name	Contact details	Responsibilities
<name>	Mobile: Phone: Email:	<insert details>

## Record keeping



**Objective:** Record information necessary to support good biosecurity practices, in accordance with the farm biosecurity plan.

### 1 Stock movements

Outline how and what stock movement information is kept and accessible – this may involve referencing existing systems.



**R57.** Maintain detailed records about stock movements and inventory and keep them readily accessible.

### 2 Stock health, mortality and water quality records

Outline how and what stock health, mortality records and water quality records are kept and accessible. This may involve referencing existing systems.



**R58.** Maintain detailed stock health, mortality and water quality records and keep them readily accessible.

## SECTION 5

# EMERGENCY PROCEDURES



**Objective:** Ensure you develop emergency procedures and identify additional biosecurity measures to implement if there is a suspected emergency animal disease or serious endemic disease. This could be either on the farm, or because of an increased threat of introducing disease if an outbreak is suspected in the state/territory or region.



Emergency response plan template

Reference the site emergency response plan (ERP) here, clearly noting its electronic and physical location. Outline the trigger for enacting the ERP, such as a specific mortality rate or abnormal stock behaviour.



**R59.** Ensure the farm has an emergency response plan.

## SECTION 6

## LEGISLATIVE AND JURISDICTIONAL REGULATORY REQUIREMENTS

Outline any legislative and/or jurisdictional requirements that apply to the farm and describe how the farm is adhering to these.



**R60.** Adhere to applicable import requirements and obtain translocation permits for all stock and equipment movement.



**R61.** Undertake batch testing or surveillance requirements in compliance with jurisdictional regulations or the Abalone Health Accreditation Program.



**R62.** Only keep commercially farmed species on site in accordance with license conditions.



**R63.** Ensure any veterinary medicines provided to stock are compliant with relevant state and national legislation (including the Commonwealth regulator, Australian Pesticides and Veterinary Medicines Authority).

## SECTION 7

## DOCUMENT CONTROL AND REVISION RECORD

Document control	Details	Approval/review	Details
Version	e.g. 1.0	Approved by	Name Position
Status	e.g. Approved, Draft	Date approved	<date>
Contact	Name Position	Next review due	<date> (should not exceed 12 months)

### Revision record

Date	Version	Revision description
Date	e.g. 1.0	Should be brief but specific – avoid vague statement like ‘plan updated’ but rather state ‘SOP XXXX added’, ‘Key contact details amended’.



**R64.** Ensure you regularly review the farm biosecurity plan (annually at a minimum).

SECTION 8

## AUDIT RECORD

Date	Type	Auditor(s)	Audit notes – remedial action	Date of next audit
Date	Internal or external	Name of auditor	Should be brief but specific – avoid vague statements such as ‘minor changes made’. Instead provide details or reference to a full audit report.	Next audit date



**R65.** Regularly audit your farm biosecurity plan (annually at a minimum) to ensure you are implementing it effectively and improving on it as appropriate.

SECTION 9

## SUPPORTING DOCUMENTS

List documents that are referenced in, or associated with, this plan. Add documents to this table as required and delete any that are not applicable.

Standard operating procedures	Record keeping templates/other documents
New employee induction and training	Pre-employment declaration
Farm visitors	Visitor biosecurity declaration
Stock arrivals, movement and dispatch	Visitor log
Escapee prevention, inspection and collection	Farm entry requirements for visitors
Collection and disposal of mortalities and other waste	Staff training record
Disinfection	N/A
Farm biosecurity zones	N/A
Emergency response plan	Emergency response plan



**R66.** Clearly identify supporting documents (for example, SOPs, checklists and templates) associated with the farm biosecurity plan and keep them readily available.



