Biosecurity Plan template for NSW aquaculture operators

October 2023, Primefact 1720, Second edition

DPI Aquatic Biosecurity, Animal Biosecurity, Biosecurity and Food Safety

This Biosecurity Plan template supplements the NSW DPI [Primefact 1720: What to include in your Aquaculture Biosecurity Plan (Primefact 1720](https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0009/1490823/PUB19-385-Primefact-1720-What-to-include-in-your-Aquaculture-Biosecurity-Plan-2023.pdf)), available at: <https://www.dpi.nsw.gov.au/fishing/aquatic-biosecurity/aquaculture/biosecurity-planning>. It is intended to be used alongside this Primefact 1720 and [Commonwealth resources](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources/aquatic_animal_diseases_significant_to_australia_identification_field_guide) found at: <https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources>. This includes:

* [Aquatic Animal Diseases Significant to Australia: Identification Field Guide](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources/aquatic_animal_diseases_significant_to_australia_identification_field_guide) (the ID guide) also available as an app
* [Australia’s National List of Reportable Diseases of Aquatic Animals](https://www.agriculture.gov.au/animal/aquatic/reporting/reportable-diseases) (National reportable diseases)
* [Aquaculture Farm Biosecurity Plan – generic guidelines and template](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources/aquatic_animal_diseases_significant_to_australia_identification_field_guide) (the generic guidelines)
* [National Biosecurity Plan Guidelines for Australian Barramundi farms](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources/aquatic_animal_diseases_significant_to_australia_identification_field_guide) (sector-specific guidelines for Barramundi)
* [National Biosecurity Plan Guidelines for the Land Based Abalone Industry](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources/aquatic_animal_diseases_significant_to_australia_identification_field_guide) (sector-specific guidelines for Abalone)
* [National Biosecurity Plan Guidelines for Australian Oyster Hatcheries](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources/aquatic_animal_diseases_significant_to_australia_identification_field_guide) (sector-specific guidelines for Oyster hatcheries)

Examples of how to fill out some of the tables can be found both within this template, and within the [generic and sector-specific guidelines](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources/aquatic_animal_diseases_significant_to_australia_identification_field_guide). Whether you use this document as a template to get your biosecurity plan started, or as a source of additional examples, make sure to also check the relevant [Commonwealth resources](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources/aquatic_animal_diseases_significant_to_australia_identification_field_guide) as you complete your biosecurity plan. Remember, your biosecurity plan is intended to be a living document that is used, updated, and reviewed regularly. If completing your biosecurity plan for the first time, include a description of your business, and work with your staff to consider and document your biggest risks and reasonable actions you can do to reduce the identified risks, and you will have made a step in the right direction.

## Cover page: Key information and contacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Company and Trading name |  | | | | |
| **Physical address of the property (including lot and DP number):** |  | | | | |
| **Permit holders/company directors’ contact details:** |  | | | | |
| **Manager contact details:** |  | | | | |
| **All aquaculture permits held by business, including classes/types:** |  | | | | |
| **Reporting details:** | For unexplained mortalities and suspected aquatic pest and disease outbreaks call the 24-hour Emergency Animal Disease Hotline, on **1800 675 888**. Alternatively, if during business hours call 02 4916 3900 and ask to speak to a member of the Aquatic Biosecurity team | | | | |
| **Aquatic veterinarian/consultant:** |  | | | | |
| **Plan prepared by:**  **Contact details:** | | **Version Number**:  **Version Date**:  **Next review due**: | **Summary of changes to plan**: | | |
| **Person responsible for ensuring plan is updated and followed:** | | | | **Signature**: | **Date**: |

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## Overview of the business

### Table 1: Example templates for species cultivated, including supplier or source (also include live feeds)

|  |  |  |
| --- | --- | --- |
| Species cultivated (include type e.g., broodstock, nursery stock or in grow out areas): | Fingerlings/eggs/spat supplied by (include name of business and contact details): | Broodstock/spat collected in the wild from (location, and waterway) |
| **Example 1: Murray cod**  **(broodstock, nursery stock, and grow out stock)** | Fingerlings supplied (when needed) by:  Business:  Phone:  Email:  Address:  Contact person: | Broodstock collection (usual source of fingerlings):  Permit number:  Collection date:  Waterway:  Location within waterway: |
| **Example 2: Sydney rock oysters:**  **(natural caught and purchased spat, and grow out stock)** | QX resistant spat from:  Business:  Phone:  Email:  Address:  Contact person: | Natural oysters from catching slats/sticks from:  Oyster lease number:  Estuary:  Location within estuary:  Oyster lease number:  Estuary:  Location within estuary: |

### Table 2: Example template of markets for species cultivated

|  |  |  |
| --- | --- | --- |
| Species cultivated | Sale for human consumption to (include name of business and contact details and whether live or processed): | Other sales for example for bait, public or private stocking, aquaculture, or aquarium trade (include name of business and contact details): |
| **Example 1: Freshwater yabbies (*Cherax destructor*)** | Live sales to local restaurants/food markets:  Business:  Phone:  Email:  Address:  Contact person:  Live export sales:  Business:  Phone:  Email:  Address:  Contact person:  Farm gate/web sales for human consumption:  Details in receipt book: | Live bait sales:  Business:  Phone:  Email:  Address:  Contact person:  Live yabbies for the aquarium trade:  Business:  Phone:  Email:  Address:  Contact person:  Farm gate/web sales for private dam stocking/home aquaponics:  Details in folder/file name: |

### Map 1: General location of the property

Insert map here showing closest towns, nearby waterways (both natural and man-made) and distance to nearby aquaculture farms.

### Diagram 1: Sketch of overall property

Clearly define the area that the biosecurity plan applies to (e.g., the entire property or only that part of the property used for aquaculture operations). Include all access points to the area covered by the plan, whether these are locked outside of normal business hours and any signage entering that part of the property. Consider zoning the property into different areas based on level of risk and colour code to show these on the map ([see generic and sector-specific guidelines for examples](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources)). Label all internal roads, vehicle and equipment decontamination areas, and storage areas. See [Primefact 1720](https://www.dpi.nsw.gov.au/fishing/aquatic-biosecurity/aquaculture/biosecurity-planning) or the [generic and sector-specific guidelines](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources) for further details to include in your sketches.

### Diagram 2: Sketch of water movement, use and storage throughout property

Include water movement throughout property, from incoming water treatment and storage, through to use in production ponds and finally to wastewater treatment, storage and disposal/use. Show water inlets in blue and outlets in red and include screening, filtration and treatment measures and direction of water flow throughout the property. See [Primefact 1720](https://www.dpi.nsw.gov.au/fishing/aquatic-biosecurity/aquaculture/biosecurity-planning) or the [generic and sector-specific guidelines](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources) for further details to include in your sketches.

### Diagram 3: Sketch of quarantine facilities (if applicable)

Include all internal and external doors, tanks (including tank number and volume), water inlets (in blue) water outlets (in red), direction of water flow, locations and type of signage, footbaths and handwash, equipment disinfection areas and any other significant features or biosecurity measures. See [Primefact 1720](https://www.dpi.nsw.gov.au/fishing/aquatic-biosecurity/aquaculture/biosecurity-planning) or the [generic and sector-specific guidelines](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources) for further details to include in your sketches.

### Diagram 4: Sketch of nursery facilities (if applicable)

Include all internal and external doors, tanks (including tank number and volume), water inlets (in blue) water outlets (in red), direction of water flow, locations and type of signage, footbaths and handwash, equipment disinfection areas and any other significant features or biosecurity measures. See [Primefact 1720](https://www.dpi.nsw.gov.au/fishing/aquatic-biosecurity/aquaculture/biosecurity-planning) or the [generic and sector-specific guidelines](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources) for further details to include in your sketches.

### Diagram 5: Sketch of broodstock facilities (if applicable)

Include all internal and external doors, tanks (including tank number and volume), water inlets (in blue) water outlets (in red), direction of water flow, locations and type of signage, footbaths and handwash, equipment disinfection areas and any other significant features or biosecurity measures. See [Primefact 1720](https://www.dpi.nsw.gov.au/fishing/aquatic-biosecurity/aquaculture/biosecurity-planning) or the [generic and sector-specific guidelines](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources) for further details to include in your sketches.

### Diagram 6: Sketch of culling, grading and processing facilities (if applicable)

Include all internal and external doors, water inlets (in blue), waste-water disposal (in red), other waste disposal, locations and type of signage, footbaths and handwash, equipment disinfection areas and any other significant features or biosecurity measures. See [Primefact 1720](https://www.dpi.nsw.gov.au/fishing/aquatic-biosecurity/aquaculture/biosecurity-planning) or the [generic and sector-specific guidelines](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources) for further details to include in your sketches.

## Risk Analysis Step One – Hazard identification

### Where to find existing hazard tables for your cultivation species

To see if hazard tables already exist for pathogens (disease agents) of concern for your aquaculture species see the [generic and sector-specific guidelines](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources) or speak with industry representatives to find out if this information is otherwise available.

### How to generate hazard tables for your aquaculture species if these are not already available

On the pages that follow are two different examples of hazard table templates. The first template ([Table 3](#_Table_3:_Example)) is adapted from the [generic guidelines](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources) and is used to record in depth information on each pathogen with a separate table required for each pathogen. The second template ([Table 4](#_Table_4:_Example)) has been adapted from the [Barramundi guidelines](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources) and can be used to record information on several pathogens within the one table.

To fill your hazard tables:

1. Start with the [National reportable list](https://www.agriculture.gov.au/animal/aquatic/reporting/reportable-diseases) and check each of the diseases for your category (finfish, molluscs or crustaceans) within the [ID guide](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources/aquatic_animal_diseases_significant_to_australia_identification_field_guide) and the [OIE Manual of Diagnostic Tests for Aquatic Animals 2019](https://www.woah.org/en/what-we-do/standards/codes-and-manuals/#ui-id-4) (the OIE Manual) available at: <https://www.woah.org/en/what-we-do/standards/codes-and-manuals/#ui-id-3> to see which of your aquaculture species are susceptible to each disease. Also check whether these are known to be endemic (present in) or exotic to Australia. Some you will be familiar with straight away, others you might not have previously been aware of (for example the susceptibility of freshwater yabbies to White Spot Syndrome virus, usually known for its impact on prawns). You may also wish to add further sources of information or the relevant pages from the [ID guide](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources/aquatic_animal_diseases_significant_to_australia_identification_field_guide) to your plan.
2. Check for additional notifiable pathogens for NSW listed as prohibited matter under [Schedule 2 of the NSW *Biosecurity Act 2015*](https://www.legislation.nsw.gov.au/#/view/act/2015/24/sch2) found at <https://www.legislation.nsw.gov.au/#/view/act/2015/24/sch2>; or notifiable matter (for example Winter mortality of Sydney Rock Oysters) under [Schedule 1 of the Biosecurity Regulation 2017](https://www.legislation.nsw.gov.au/#/view/regulation/2017/232/sch1) found at: <https://www.legislation.nsw.gov.au/#/view/regulation/2017/232/sch1>. Note that unexplained mortalities are reportable in NSW - to report call the animal disease hotline on 1800 675 888.
3. You may also wish to add hazard tables for some of the disease agents applicable to your aquaculture species that, although not listed as notifiable species, could impact your aquaculture operations if not appropriately managed. Research your aquaculture species, ask your aquatic veterinarian, and work together with staff and other industry members to create hazard tables for other pathogens that may significantly impact your aquaculture operations.

### Table 3: Example individual hazard template: Diseases of Silver perch – Epizootic Ulcerative Syndrome (EUS, Red Spot Disease)

|  |  |
| --- | --- |
| Pathogen type and name: | Fungus: *Aphanomyces invadens* |
| Known distribution: Include whether endemic in or exotic to Australia | Endemic - In many freshwater catchments and estuaries in Australia. Prior outbreaks in fish farms in NSW on the east coast and in the Riverina west of the Great Dividing Range |
| Transmission pathways: | Horizontal transmission through the water supply |
| Consequences: | Juveniles and young adults most susceptible to disease. Can result in high mortalities with remaining ulcerated fish unmarketable. |
| Is this disease prohibited or notifiable matter? | **Yes** – this is a National notifiable disease of significance, and notifiable matter in NSW  For unexplained mortalities and to report suspicions of this notifiable disease call the 24-hour Emergency Animal Disease Hotline on **1800 675 888.** |
| Further information: | 1. Aquatic Animal Diseases Significant to Australia: Identification Field Guide (5th Edition) or app: <https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources/aquatic_animal_diseases_significant_to_australia_identification_field_guide> 2. OIE Manual of Diagnostic Tests for Aquatic Animals 2019 (Chapter 2.3.2): 3. <https://www.woah.org/en/what-we-do/standards/codes-and-manuals/#ui-id-3> 4. Diagnosis, treatment and prevention of the diseases of the Australian Freshwater Fish Silver Perch (*Bidyanus bidyanus*) on NSW DPI website at: <https://www.dpi.nsw.gov.au/fishing/fish-species/species-list/silver-perch> 5. Factsheet: Reduce your risks of EUS, and other EUS information on NSW DPI website at: <https://www.dpi.nsw.gov.au/fishing/pests-diseases/animal-health/wildfish-shellfish/red-spot> |

### Table 4: Example multiple hazard (pathogen) template for an aquaculture species (e.g. Silver perch)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Disease: | Pathogen type (e.g. Virus, bacteria) | Exotic to Australia (Yes/No) | Susceptibility of Silver perch (Confirmed/possible) | Notifiable (Yes/No) |
| *Example:* Infection with *Aphanomyces invadens* (Epizootic Ulcerative Syndrome, EUS, Red Spot disease) | Fungus | No | Confirmed | Yes |
|  |  |  |  |  |
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Note: see Section 3 of the [Barramundi guidelines](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources) for example of how to organise and colour code the above template for easy use.

## Risk Analysis Step Two – Risk Assessment

### Risk assessment templates

Risk assessment templates and examples can be found in the [generic and sector-specific guidelines](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources). Alternatively, the risk template below and supporting tables (consequence, risk impact and likelihood, and risk tolerance tables) have been adapted from the Hazard and Incident Risk Assessment template under ‘Forms and templates – Surveillance, WHS and risk’ on the NSW DPI website at: <https://www.dpi.nsw.gov.au/climate-and-emergencies/emergency/management/resources-and-publications>. Though the following table has been split in two for the examples in Tables 6 to 9 in this document, where you have the room (for example in an Excel spreadsheet or A3 size), it can be easier to read across the page (as shown in [Table 5a](#_Table_5a:_Example) below).

Risk assessment requires you to identify possible risks, estimate the likelihood of the risk occurring, determine the possible consequences and calculate a risk ranking. In your plan you will need to assess the any hazards entering, spreading within and exiting your business through movement of water, people, animals, vehicles and equipment, feed or wastes.

### Table 5a: Example risk assessment template

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Risk factors/causes | Effect/impact on the business, industry or environment if risk eventuates | Mitigation strategies to control risks (current controls/existing mitigation strategies) | Current consequence (1-5) | Current likelihood (A-E) | Current risk (VH, H, M, L) | Future risk treatment (proposed controls/mitigation strategies) | Residual consequence (1-5) | Residual likelihood (A-E | Residual risk (VH, H, M, L) | Audit recommended (Y, N) |
|  |  |  |  |  |  |  |  |  |  |  |

### Table 5b: Example consequence table for Animal health & welfare and Environment & heritage risk

|  |  |  |
| --- | --- | --- |
|  | Animal health & welfare | Environment & heritage |
| **5. Extreme** | **Significant** animal illness/injuries/deaths across whole operation.  **Widespread** animal welfare issues.  Considerable plant damage/loss across **whole operation**. | **Irreversible** large-scale environmental impact with **loss of valued ecosystems.** |
| **4. Major** | Considerable animal illness/injuries/deaths on **multiple sections of operation**. Animal welfare impacted across multiple regions.  Considerable plant damage/loss in whole operation. | Long-term environmental impairment in neighbouring or valued ecosystems. **Extensive remediation** required. |
| **3. Moderate** | Some animal illness/injuries/deaths on **multiple sections of operations**.  Animal welfare impacts across a region.  Some plant damage/loss in multiple sections of operations. | Impacts external ecosystems and **considerable remediation** is required. |
| **2. Minor** | **Limited** animal illness/injuries &/or deaths in part of business  Limited plant damage/loss | **Short-term** and/or well-contained environmental effects**. Minor remedial** actions probably required. |
| **1. Negligible** | **Isolated** impact on few animals within business | **Change from normal** conditions within environmental regulatory limits & environmental effects are within site boundaries. |

Note: You may wish to also add other columns (e.g. to consider market share/access & customer service impacts for your business and industry).

Once you have estimated the consequence (1. Negligible to 5. Extreme), for your risk you can now estimate the Likelihood (A. Almost certain to E. Rare) of the event occurring (see definitions below). You can then line up your estimated consequence on the left of the table with the estimated likelihood across the top of the table to calculate the overall risk rating (Low to Very High) for the event.

### Table 5c: Example Risk rating table with Likelihood definition

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Likelihood | | | | |
|  |  |  | **E. Rare** | **D. Unlikely** | **C Possible.** | **B. Likely** | **A. Almost certain.** |
|  |  |  | **Would only occur under exceptional circumstances**  (e.g., once every 100 to 1000 years) | **Could occur only in unusual circumstances**  (e.g., once every 10 to 100 years) | **Could occur, but more than likely will not**  (e.g., once every 1 to 10 years) | **Will probably occur**  (e.g., 2 - 10 times/year; could occur on a monthly/quarterly basis) | **Expected to occur in most circumstances**  (e.g., >10 times per year; could occur on a daily/ weekly basis) |
| **Consequence** | **5. Extreme** | Refer to Table 5b | Medium | High | High | Very high | Very high |
| **4. Major** | Low | Medium | High | High | Very high |
| **3. Moderate** | Low | Medium | Medium | High | High |
| **2. Minor** | Low | Low | Medium | Medium | Medium |
| **1. Negligible** | Low | Low | Low | Low | Medium |

It is important when doing a risk assessment to think about what level of risk would be considered acceptable for the business and what types of action are proposed to manage the various levels of risk. This may include a consideration of the cost (e.g. time or money) of the additional proposed measures versus benefit of avoiding or minimising the impacts of the event.

### Table 5d: Example of general risk tolerance

|  |  |  |
| --- | --- | --- |
| Risk rating: | Basic tolerance | Management |
| Very high | Generally intolerable | **Urgent attention.** Escalate to manager/permit holder for priority response. Where disease outbreak suspected report matter on 1800 675 888 |
| High | Undesirable | **Intervention required.** Escalate to manager/permit holder for acceptable management actions. |
| Medium | Tolerable | **Active management.** Review risks and treatments, and approve acceptable management actions. |
| Low | Broadly acceptable | **Ongoing monitoring.** Managed through routine operations. Review/monitor risks and their treatments for effectiveness, reliability and any changes in the likelihood and consequences. |

### Completing your risk assessment

The risk assessment examples on the following pages have been developed using the template shown in [Table 5a](#_Table_5a:_Example), [5b](#_Table_5b:_Example), [5c](#_Table_5c:_Example) and [5d](#_Table_5d:_Example) with the exception that the template in [Table 5a](#_Table_5a:_Example) has been split into two separate tables, one for current mitigation measures and the second for assessment of the same risk for proposed future mitigation measures. Work with your staff to identify the greatest risks to your business, industry and the environment associated with the movement of water, animals (including your fish and both wild and domestic animals), people (staff and visitors), vehicles & equipment, feed, and wastes onto, within and off the farm to complete a risk assessment for your business.

### Table 6: Example for *risk of entry* to farm/business - Risk to animal production and welfare associated with water source using current mitigation measures

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Risk factors/causes | Effect/impact on the organisation, industry or environment if risk eventuates | Mitigation strategies to control risks (current controls/existing mitigation strategies) | Current consequence (1-5) | Current likelihood (A-E) | Current risk (VH, H, M, L) |
| Pathogen X\* is known to be capable of transmitting through water and being present within natural waterways (under specific environmental conditions). Operation ABC has limited access to alternative water sources (e.g. high-quality bore water) to be able to reduce this risk without treatment of the incoming water. | Pathogen X\* causes localised mortality and poses high risk if infected stock spread to onsite. Once present Pathogen X is extremely difficult to remove and may require destruction of infected stock, disinfection and decontamination of infected areas on site. | Screening, filtration, disinfection of water source i.e. by chlorine - 200mg/L for 2 hours or equivalent.  Regular checks on screens, filters and quality checks on effectiveness of disinfection method (dissolved chlorine levels).  Filtration and sanitation infrastructure regularly serviced via maintenance schedule to maintain performance.  Water intake avoided where signs of Pathogen X\* appear in source waterway. | 4 | C | H |

Note: Tables [5b](#_Table_5b:_Example) and [5c](#_Table_5c:_Example) were used to estimate the consequence and likelihood and calculate the current risk for the business. From our general risk tolerance table ([Table 5d](#_Table_5d:_Example)) we know that a current risk of ‘H’ (High) is ‘undesirable’ and that our intended management response is ‘intervention required’ Further mitigation measures are then proposed for the business and the risk re-assessed. \**Hypothetical only*

### Table 7: Example for *risk of entry* to farm/business: Risk to animal production and welfare associated with water source for proposed mitigation measures

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Risk factors/causes | Effect/impact on the organisation, industry or environment if risk eventuates | Future risk treatment (proposed controls/mitigation strategies) | Residual consequence (1-5) | Residual likelihood (A-E | Residual risk (VH, H, M, L) | Audit recommended (Y, N) |
| Pathogen X\* is known to be capable of transmitting through water and being present within natural waterways (under specific environmental conditions). Operation ABC has limited access to alternative water sources (e.g. high-quality bore water) to be able to reduce this risk without treatment of the incoming water. | Pathogen X\* causes localised mortality and poses high risk if infected stock spread to onsite. Once present Pathogen X\* is extremely difficult to remove and may require destruction of infected stock, disinfection and decontamination of infected areas on site. | Current measures and:  Additional disinfection of water source through ozonation or ultraviolet irradiation.  Efficiency of disinfection checked and logged on a regular schedule.  Where Pathogen X\* is known to include a spore phase in the lifecycle additional chlorination (as standard treatments like UV and ozone may not be effective against more resistant life stages like spores) | 4 | D | M | Y |

Note: now that the additional future measures have been added the residual risk has been assessed as ‘Medium’ risk. From the general risk tolerance table ([Table 5d](#_Table_5d:_Example)) this level of risk is considered ‘tolerable’. \**Hypothetical only*

### Table 8: Example for *risk of spread* *within* farm/business: Risk to animal production and welfare associated with movement of people for current mitigation measures

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Risk factors/causes | Effect/impact on the organisation, industry or environment if risk eventuates | Mitigation strategies to control risks (current controls/existing mitigation strategies) | Current consequence (1-5) | Current likelihood (A-E) | Current risk (VH, H, M, L) |
| People are known to transmit Pathogen X\* in aquaculture facilities. Pathogen X\* can remain viable on skin, clothing and boots for a number of days following contact. If present in one part of the facility, then Pathogen X\* can quickly spread throughout the entire facility/farm unless adequate biosecurity practices are in place. | Pathogen X\* causes localised mortality and poses high risk if spread within site. Pathogen X\* is extremely difficult to remove and may require destruction of infected stock, disinfection and decontamination of infected areas on site. | Footbaths and handwash at entry to each building in production areas and between different risk areas within buildings.  All entries to buildings/production areas clearly marked with signage (e.g. “Biosecure area -Authorised entry only”). Doors and gates locked outside of normal business hours.  Property zoned according to risk with standard operating procedures for movement between areas (e.g. start workday in cleanest areas and move to dirtier areas last, without return to clean area that day or prior to head-to-toe shower and clean clothes and boots). | 4 | C | H |

Note: Current risk rating has been assessed as ‘High’. From the general risk tolerance table ([Table 5d](#_Table_5d:_Example)) this level of risk is considered ‘undesirable’. \**Hypothetical only*

### Table 9: Example for *risk of spread within* farm/business: Risk to animal production and welfare associated with movement of people for proposed mitigation measures

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Risk factors/causes | Effect/impact on the organisation, industry or environment if risk eventuates | Future risk treatment (proposed controls/mitigation strategies) | Residual consequence (1-5) | Residual likelihood (A-E | Residual risk (VH, H, M, L) | Audit recommended (Y, N) |
| People are known to transmit Pathogen X\* in aquaculture facilities. Pathogen X\* can remain viable on skin, clothing and boots for a number of days following contact. If present in one part of the facility, then Pathogen X\* can quickly spread throughout the entire facility/farm unless adequate biosecurity practices are in place. | Pathogen X\* causes localised mortality and poses high risk if spread within site. Pathogen X\* is extremely difficult to remove and may require destruction of infected stock, disinfection and decontamination of infected areas on site. | Current measures and:  Designated gumboots and separate PPE that remain in the most vulnerable areas (e.g. nursery).  Where number of staff permits – separate staff for hatchery and broodstock areas to other higher risk areas (e.g. grow out, processing).  Updated staff training and induction regarding biosecurity measures.  Introduction of regular “tool box talks” regarding biosecurity. | 4 | D | M | Y |

Note: now that the additional future measures have been added the residual risk has been assessed as ‘Medium’ risk. From the general risk tolerance table ([Table 5d](#_Table_5d:_Example)) this level of risk is considered ‘tolerable’. \**Hypothetical only*

## Risk Analysis Step Three – Risk mitigation/risk management (documentation and implementation)

From undertaking the risk assessment with your staff, you should now have several risk mitigation measures that you can implement to increase your biosecurity onsite. The next step is to record these, including who will be responsible for implementing each measure, a due date for implementation and what resources are required to put the new measure in place. If extensive additional measures are required, you may need to look at implementing measures over a reasonable period to allow time for any consultation, training, purchasing, modifications and deployment. If a phased approach is needed, focus on those measures that reduce the highest biosecurity risks first.

### Table 10: Example - Implementation of risk mitigation measures for your business

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Risks: | Additional mitigation measures | Actions to take | Resources required | Responsibility | Due Date | Complete |
| **Entry to farm** | | | | | | |
| Water – risk from water source | Disinfection via ozonation or ultraviolet irradiation. | Consult with supplier on relevant system for operation.  Acquisition and engagement of contractor  Prepare SOP and update any relevant existing procedures | Screens, filters  Staff time | Farm manager | Dec 2020 |  |
| Additional chlorination of water | Prepare SOP and update any relevant existing procedures  Conduct staff training  Purchase additional chlorine | Chlorine, PPE, measuring equipment  Staff time | Farm manager | Sept 2020 |  |
| Efficiency of disinfection checked and logged on a regular schedule. | Set up maintenance schedule  Put in place log book procedure | Maintenance schedule, log book for checks undertaken | Farm manager | Sept 2020 |  |
| Vehicles & Equipment |  |  |  |  |  |  |
| People |  |  |  |  |  |  |
| Animals |  |  |  |  |  |  |
| Feed |  |  |  |  |  |  |
| Wastes |  |  |  |  |  |  |
| **Spread within farm** | | | | | | |
| Water |  |  |  |  |  |  |
| Vehicles & Equipment |  |  |  |  |  |  |
| People – risk of spread within the business from movement of staff and visitors | Designated gumboots and separate PPE for each vulnerable area (e.g. nursery) | Check staff sizes  Purchase additional equipment | Staff time  Budget | Farm manager | Dec 2020 |  |
| Rostering of separate staff for hatchery and broodstock areas to other higher risk areas (e.g. grow out, processing). | Consult with staff over area preferences and changes to rostering  HR rostering process updated | Staff time | HR Manager | Sept 2020 |  |
| Updated staff training and induction regarding biosecurity measures. | Training and induction materials to be updated to incorporate new practises | Staff time | HR Manager | Dec 2020 |  |
| Introduction of regular “tool box talks” regarding biosecurity. | Consult with staff  Schedule tool box meetings | Staff time | Farm manager | Sept 2020 |  |
| Animals |  |  |  |  |  |  |
| Feed |  |  |  |  |  |  |
| Wastes |  |  |  |  |  |  |
| **Exit to industry/environment** | | | | | | |
| Water |  |  |  |  |  |  |
| Vehicles & Equipment |  |  |  |  |  |  |
| People |  |  |  |  |  |  |
| Animals |  |  |  |  |  |  |
| Feed |  |  |  |  |  |  |
| Wastes |  |  |  |  |  |  |

Note: Further templates, including for Standard Operating Procedures (SOPs), biosecurity responsibility agreements for staff to sign, and pre-site questionnaires for visitors can all be found in the [generic and sector-specific guidelines](https://www.agriculture.gov.au/animal/aquatic/guidelines-and-resources).

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