Victorian Fisheries Authority

Application for the Translocation of Live Aquatic Organisms in Victoria

Form B – Translocation Risk Assessment

Explanatory Notes: Risk Assessment (Form B) for Translocating Live Aquatic Organisms

Introduction

When proposed translocations don’t comply with a translocation protocol or the low risk criteria for translocation, they must undergo a full risk assessment.

VFA will inform you if you need to conduct a risk assessment and complete this form after you have submitted an Initial Screening Application (Form A).

Completing the Risk Assessment Form.

The form is divided into 8 sections. Section 1 requires relevant contact details. Sections 2 -7 deal with key issues likely to arise when assessing risks associated with translocation to closed, semi-closed and open systems. Section 8 requires the applicant to identify the social and economic benefits and implications of the translocation.

The questions are designed to gather information that will enable the Translocation Evaluation Panel (TEP) to determine the likelihood and consequences of escape, survival and establishment of the organism, diseases and other unwanted pests associated with the translocation. By providing current and accurate information on the likelihood (probability) and consequences (impact) of an event occurring, the applicant’s responses to the questions provide the main basis on which to assess the risks of the translocation.

Each question is prefaced by explanatory notes designed to provide the applicant with guidance for their answer. Base all answers on factual evidence or analysis and where possible you are encouraged to provide case studies. If a question is not relevant to your proposal please enter NA (not applicable) and provide reason as to why this is the case.

The questions deal with a range of scientific, technical and operational matters that are best addressed through the provision of validated, referenced and current information. Some of this information may be sourced from published material, research institutions, Government agencies and the aquaculture industry. A suitable person to complete this form should possess the following skills and experience:

* A tertiary qualification in Aquatic Biology, Marine and or Freshwater Ecology, Natural Resource Management or similar; or
* Demonstrated experience in the aquaculture industry; or
* Demonstrated experience in fisheries management; or
* Experience in conducting a risk assessment.

Sufficient detail should be provided in response to each question to enable adequate consideration by the TEP. **Yes/no answers will require adequate justification.**

A risk assessment does not have to be completed using the attached template however if you decide to complete it in another format you will still need to address the risks identified below and detailed in Appendix B of the Guidelines for Assessing Translocations of Live Aquatic Organisms in Victoria.

These guidelines and other translocation information can be found at http://agriculture.vic.gov.au/fisheries/policy-and-planning/moving-and-stocking-live-aquatic-organisms

Assessing your proposal.

The TEP is responsible for assessing translocation applications. The TEP does not authorise translocations or stocking, rather it is an advisory panel providing advice to the Secretary, DEDJTR on the risks of a particular proposal.

The quality of the information provided on the Risk Assessment will determine the outcome of the assessment process. Poor quality risk assessments that do not provide the appropriate level of detail, that provide no defensible argument or fail to validate their responses, are unlikely to be successful.

Glossary of terms

**Closed systems:** relate specifically to systems that have effective control over both the movements of organisms and water. Systems that may be considered closed include recirculating aquaculture systems or aquarium displays.

**Open systems:** are defined as systems where there is inadequate or no control over the movement of organisms and water flow. Systems that may be considered open include lakes and rivers.

**Semi-closed systems:** are defined as systems where there is control over the movement of organisms and some control over water flow. Systems that may be considered as semi-closed include farm dams, purpose built aquaculture ponds or small purpose built lakes with some control over water movement.

**Destination:** The system (recirculating aquaculture system, farm dam, waterbody) where the target species is intended to be stocked.

**Target Species:** The aquatic organism that is intended to be translocated for the purpose of stocking.

**Transport medium:** Transport medium, refers generally to the water in which the organism/s are transported. For molluscs and crustaceans this may include damp sponges, ice, ropes etc.

**Potential Receiving Waters:** Any waterbody (natural or man made) that the target species, diseases, parasites, and associated organisms may escape to as a result of any adverse event.

## Risk Assessor Details.

* 1. Risk Assessor

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| Name  Postal address  State       Post Code  Telephone (     )      Facsimile (     )  E- mail  Any relevant qualifications |

## Likelihood of Escape or Release

* 1. Will the transport medium and equipment be treated before and after translocation? Please indicate what treatment will be used.

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| The transport medium (usually water) and equipment used to transport the proposed species for translocation, can harbour infectious organisms and unwanted pests. Appropriate disinfection procedures and appropriately designed transport vessels may reduce the load of infectious organisms or reduce the likelihood of spillage en-route. International standards of procedures can be located on the Office International des Epizooties (OIE) website [www.oie.int](http://www.oie.int) in the Manual of Diagnostic Tests for Aquatic Animals 2006 |

# Important note for questions 2.2 - 2.7

Questions 2.2 -2.7 apply to closed and semi-closed systems only (see glossary of terms). If your translocation event is the stocking of organisms into a system that is defined as an open system please disregard questions 2.2 -2.7 and proceed to question 2.8. A definition of each system is provided in the Explanatory Notes.

* 1. How close and accessible are potential receiving waters?

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| The risk of escape from closed or semi-closed systems can be heightened where the facility is in close proximity to a waterway. In addition, infectious organisms found in untreated effluent water may be transported via a watercourse to larger waterways that contain susceptible species. Please estimate the distance to potential receiving waters and identify their potential to transport organisms, including fish, pathogens or other pests. |

* 1. Is the receiving facility fully enclosed and secure from unauthorised access?

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| Fully enclosed and secure systems can effectively reduce the risk of escape of aquatic organisms. The level of physical security is also important as it prevents unauthorised access to the property. Provide details of the security measures in place or proposed to be in place at the site. |

* 1. Based on knowledge of the facility’s waste water treatment and disposal, and the capability to contain all life stages of the target species, are any life stages likely to be released from the facility during normal operations?

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| Effective screening of waste water outflow is an important mechanism to prevent escape of the target species. However, such screening needs to take into account all life stages of the target species including eggs, larvae, fingerling, sub-adult and adult forms. For both closed and semi closed systems describe the mechanisms in place to control organism and water movement throughout the system. |

* 1. Based on knowledge of the facility’s waste water treatment and disposal, are any diseases present in the facility that are likely to escape?

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| It is imperative to consider the diversity of unwanted organisms that may be in wastewater and, recognise that some life stages of infectious organisms are well adapted to withstand unfavourable conditions. It is therefore appropriate that wastewater treatment methods are well designed to eradicate all infectious organisms. Provide details of any treatment systems with reference to OIE disinfection standards where possible. |

* 1. Does the facility have adequate contingency plans in the event of a technical failure?

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| Technical failures of fish farms may result in unplanned release of water and or stock from the facility. Please provide details of the contingencies and design elements that will be used to contain any stock and water in the case of technical failure. |

* 1. Have local environmental issues (e.g. 1 in 100 year flood levels, land subject to flooding) been considered in containment planning?

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| In the first instance, local environmental issues may be discovered and responded to when applying for a planning permit. Consult with your local council or Department of Sustainability and Environment office for further information about important environmental sites and environmental issues in your area. |

* 1. Are there any disease, parasite or unexplained mortality issues in the source area or source facility? For imports of live aquatic organisms, what is the OIE disease zoning status of the source area?

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| Provide details as to whether there have been any disease, parasite or unexplained mortalities in the source area or facility. For imports: According to OIE guidelines, there are three classes of disease zoning: free, surveillance and infected. Information on these zones can be obtained from the relevant countries export approval authority or through the OIE. |

* 1. What is the nature of any disease surveillance programs in the source area or source facility?

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| Understanding the health status of organisms in an aquaculture facility is an important economic and environmental consideration. Programs to monitor fish mortalities and disease can include the regular screening of fish and or wastewater. Monitoring of fish and wastewater can also allow an aquaculture venture to measure the effectiveness of their treatment system. Provide details of any monitoring programs that are undertaken in the source area or facility. |

* 1. What quarantine processes and/or treatments will the consignment be subject to?

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| Quarantining of new stock is an established best practice approach for many aquaculture facilities. Quarantine provisions are best developed to manage the risks associated with particular species and source areas. Quarantine procedures can be obtained from AQIS at [www.aqis.gov.au](http://www.aqis.gov.au). Alternatively, quarantine procedures may be customised for the species. |

* 1. Are undesirable species (e.g. parasites, blue green algae, other species) likely to be translocated with the consignment that are not currently found at the destination or potential receiving waters?

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| Translocating the target species may cause parasites or diseases present in the source area to also be translocated. List parasites and diseases species present in the source area and provide details as to whether any of these species are likely to be transported with the consignment. Various publications on fish diseases and parasites may assist the applicant in answering this question. |

* 1. Based on the answers to Questions 2.1 to 2.11, what is the likelihood of escape?

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| This question asks the applicant to consolidate responses to all questions in this section and provide a summary argument on the likelihood of escape with particular reference to the effectiveness of proposed control measures at managing the risk of escape or release, including the threat of disease and parasite transfer  Summary argument: |

## Consequences of Escape or Release

* 1. What species (including diseases and parasites) and life stages (e.g. gametes, fertilised eggs, juveniles, adults, etc) are likely to escape?

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| This question requires the applicant to provide details of species that are likely to escape from the destination. Adverse events may make it possible for the target species, disease and parasites to escape from the destination eg system failure, flood, transport via waterfowl and vermin Provide details of the life stages that may be released or escape during an adverse event. |

* 1. In the event of an escape how many individuals are likely to escape?

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| The consequence of a handful of species being released during an adverse event may be less than that of an event where thousands of the one species are released, however both escapes may constitute a risk. Please provide details of the number of organisms likely to escape. |

* 1. Based on the answers to Questions 3.1 to 3.2, what are the consequences of escape?

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| The proponent must provide a consolidated response to all questions in this section and provide a summary argument on the consequence of escape with particular reference to the effectiveness of proposed control measures for managing these risks.  Summary argument: |

## Likelihood of Survival

* 1. Is the natural and/or current range of the species/genetic stock known?

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| A species' natural range is an area where that species is found prior to any translocation events occurring. The current range of a species may differ to its natural range through a number of reasons including habitat degradation or over-fishing. Genetic homogeneity of a species may also differ between areas due to separation of a species through physical barriers. |

* 1. Are the water quality, habitat and food requirements known for the species and are they available at the destination or potential receiving waters?

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| If the environmental and biological requirements of the species to be translocated exist at the destination or potential receiving waters, the likelihood of survival is increased. The applicant should provide information demonstrating temperature, water quality, habitat and food requirements of the target species and those that are found at the destination and potential receiving waters. Some of the parameters that may be provided include temperature, dissolved oxygen, pH and salinity. |

* 1. For diseases and parasites, are suitable hosts likely to be available at the destination or potential receiving waters and are the hosts required for the completion of all the lifecycle stages?

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| Many diseases and parasites are opportunistic and can infect a range of hosts at the destination or potential receiving waters. Others are species specific and can only affect a particular host during a particular lifecycle stage. |

* 1. Based on the answers to Questions 4.1 to 4.3, what is the likelihood of survival?

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| In consideration of the responses made to questions 4.1-4.3 provide a detailed summary describing the likelihood of survival of the target species, parasites and pathogens at the destination and the potential receiving waters.  Summary argument: |

## Consequences of Survival

* 1. Is the species endemic to, or currently present, at the destination and the potential receiving waters?

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| A species endemic to the destination and potential receiving waters poses a lower risk to the environment than non-endemic species. The presence of the target species at the destination and potential receiving waters indicates that survival of the species in those waters is likely. |

* 1. Is the species likely to alter the physical environment and/or destabalise local plant communities?

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| Some species habits may have an effect on the physical habitat in which they live, eg yabbies are known for burrowing, potentially causing seepage of ponds. Please also provide details of the species behavioural characteristics and evidence as to whether the target species is or is not likely to cause an effect on local plant communities at the destination and potential receiving waters. |

* 1. Based on the answers to Questions 5.1 to 5.2, what are the consequences of survival?

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| In consideration of the responses made to questions 5.1-5.2 provide a detailed summary describing the likelihood of survival of the target species, parasites and pathogens at the destination and potential receiving waters.  Summary argument: |

## Likelihood of Establishment

* 1. Are the environmental requirements for the completion of all stages of the life cycle known and are they available at the destination and potential receiving waters?

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| Many species require certain environmental conditions to successfully complete all stages of their life cycle. For example many warm water natives require a temperature increase to spawn. The applicant should demonstrate the environmental conditions required for the completion of all life stages of the target species and identified parasites or diseases and whether or not they are present at the destination and potential receiving waters. |

* 1. Is the ability of the species to hybridise with local species known?

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| Hybridisation of species may occur where two separate species interbreed and produce offspring. Viable offspring, such as in some abalone species, or unviable offspring may be produced from this cross breeding. If a species can interbreed with another species at the destination or potential receiving water, then the likelihood of a hybrid population in that waterway increases. Please provided details as to whether or not the target species will be able to interbreed with species at the destination and potential receiving waters and in the case that this may occur, will the offspring be viable or unviable. |

* 1. Based on the answers to Questions 6.1 to 6.2, what is the likelihood of establishment?

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| In consideration of the responses made to questions 6.1 -6.2 provide a detailed summary describing the likelihood of establishment of the target species at the destination and the potential receiving waters.  Summary argument: |

## Consequences of Establishment

* 1. How `natural` is the destination and potential receiving waters and is the level of disturbance suitable to the target species?

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| The consequences of a non-endemic species establishing itself within a pristine area may be considered a greater risk than in an area where the waterway is degraded or has a number on non-endemic species already within it. Please indicate in your response the level of disturbance the waterway has been subject to and what these disturbances are, eg snag removal, bank erosion etc. Depending on the species being translocated, some require a pristine habitat to survive while others may thrive in a disturbed environment. Please indicate if the level of disturbance is suitable to the target species. |

* 1. Are there any endangered or rare species at the destination or potential receiving waters?

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| A list of threatened species can be obtained from the Department of Sustainability and Environment web page. The applicant must consider whether the species proposed to be stocked will pose a risk to other aquatic fauna/flora, which may include invertebrates, amphibians and reptiles. In the case where threatened species are located at the destination and/or potential receiving waters demonstrate whether the target species will have an effect on them. |

* 1. Is the target species subject to an eradication or minimisation program at the destination or potential receiving waters?

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| It is important to ensure that where a species is subject to an eradication program in a particular area that the translocation will not re-introduce the species into the area. Information as to whether the species in subject to such a program can be obtained through your local DEPI office. |

* 1. Is the target species genetically modified?

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| Species that have been genetically modified may be more suited to an environment than species endemic to that area and may therefore displace these species through competition for food and habitat. Please provide details as to whether the target species has been genetically modified and what are the implications of the modifications. |

* 1. Should the target species establish at the destination or potential receiving waters, is it likely that it can be eradicated?

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| There are many examples of animal translocations that have resulted in the establishment of feral populations. In most of these cases attempts to prevent their spread or eradicate the species has not been successful. Please provide details as to whether it is likely that the species to be translocated could be eradicated from the potential receiving waters. |

* 1. Based on knowledge of the species’ growth, reproductive characteristics and behaviour, is the target species likely to displace local species in similar ecological niches?

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| The displacement of species through competition for similar ecological niches can be as damaging to biodiversity as predation or habitat destruction. Provide details as to whether any life stages of the species proposed to be translocated may displace species found at the destination and the potential receiving waters. |

* 1. Based on knowledge of the species’ behaviour and physical characteristics, is it likely to be a significant predator at the destination or potential receiving waters?

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| The possibility of predation by the target species on species found in the potential receiving waters must also be considered. Noting that most recreational species in Victoria are predatory by nature, provide details as to whether any life stages of the target species may predate on species found at the destination or potential receiving waters. |

* 1. Is the consignment of the same genetic stock as local populations?

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| The mixing of genetic stocks can reduce the genetic integrity of species and in turn may reduce it's resistance to disease or certain environmental conditions. It is therefore important that genetic stocks are not mixed in order to maintain genetic integrity within natural populations. Provide details describing the source of the stock/broodstock. |

* 1. What effects are any released diseases or parasites likely to have at the destination or potential receiving waters?

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| Some diseases and parasites are host specific. Therefore the effect of these on other species in the potential receiving waters will alter depending on the inhabitants of those waters. Provide details of the potential effects that any diseases or parasites could have on species found at the destination or potential receiving waters. |

* 1. Based on the answers to Questions 7.1 to 7.9, what are the consequences of establishment?

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| Based on questions 7.1-7.11 what are the consequences of establishment of the target species or diseases and parasites at the destination or potential receiving waters.  Summary argument: |

## Socio-Economic

* 1. What are the social or community impacts associated with your proposal to translocate?

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| Describe the social benefits that may be gained from the proposal to translocate an organism e.g fish for tourism. Detail whether these social benefits will "outweigh" any of the social aspects of other activities in the proposed receiving waters e.g damage to other recreational fisheries. |

* 1. What are the estimated economic impacts associated with your proposal to translocate?

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| Provide details of the economic impacts of the proposal. These may be positive effects such as regional employment and tourism or negative effects such as the cost of eradication and or recovery programs. |