

Institute for Marine and Antarctic Studies  
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**Submission to the  
Public Consultations on Draft Biosecurity Program:  
Tasmanian Salmonid Industry**

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## **INTRODUCTION**

This submission has been prepared by the Institute for Marine and Antarctic Studies (IMAS) University of Tasmania as a contribution to the public consultations on the Draft Biosecurity Program: Tasmanian Salmonid Industry (please see <https://nre.tas.gov.au/sea-fishing-aquaculture/marine-farming-aquaculture/salmon-farming/have-your-say/biosecurity>). Current world's best biosecurity practice for salmon industries includes separation of year classes, separation of sites, fallowing between stocking cycles, contained and biosecure fish transport and specific and strategic plans for dealing with emergencies.

This submission summarises the main biosecurity initiatives and research activities that IMAS have been involved with to date and going forward. Over the past 25 years, IMAS has provided targeted research support to the Tasmanian salmon industry in the areas of fish health, welfare and biosecurity. IMAS is ready to support any emerging research needs for the salmon industry, and remains actively involved in salmon health research, research on fish nutrition and performance, and research to address animal welfare and environmental and wildlife interaction issues.

IMAS researchers have collaborated with industry and government scientists to address key salmon health and welfare issues (e.g. around amoebic gill disease (AGD)) and to support a range of fish health improvement strategies, including; identification of potential pathogens, treatment and vaccination (e.g. from Clark and Nowak, 1999 to Hudson et al, 2022 – AGD; from Costa et al., 2011 to Ghosh et al., 2018 - *Yersinia ruckeri*; and from Zainathan et al., 2013 to 2017 - Aquareovirus).

IMAS was a founding partner and integral participant in the 2018 Global Salmon Symposium (GSS). At this Symposium, biosecurity was one of 3 critical issues which were identified and discussed as having the potential to “make or break” the industry. IMAS helped to co-ordinate research discussions at the GSS, and as such, played a key role in supporting the commitment to the Biosecurity Blueprint and state-of-the-art experimental research facilities that give Tasmania access to the best research support in the world.

## **COMMENTS ON THE DRAFT BIOSECURITY PROGRAM**

The Draft Biosecurity Program is a great opportunity to address biosecurity issues in the salmonid industry in a constructive way and has the objective to improve the overall biosecurity of all salmonid production in Tasmania.

The Department has been particularly interested in the potential costs and benefits of proposed Regulation. The Draft Biosecurity Program will have a benefit to Tasmania, consequently its cost can be easily justified by the need to ensure sustainability of the industry.

The Draft Biosecurity Program proposes a number of standards related to three schedules: marine operations, freshwater operations and processing operations. Although the standards in the Draft Biosecurity Program are detailed and do address several important issues, however, the Tasmanian Salmonid Industry Discussion Paper August (HAC, 2017) proposed much stricter biosecurity rules (a comparison is provided in Table 1). It is highly unlikely that biosecurity risks are lower now in comparison to 2017.

Table 1. Examples of the differences between the Draft Biosecurity Program and the Tasmanian Salmonid Industry Discussion Paper August 2017.

Biosecurity practice measures	The Draft Biosecurity Program	Tasmanian Salmonid Industry Discussion Paper August 2017
Minimum separation distance	MOS 24 - 4 km except for existing infrastructure	2 tidal excursions (for example 10 km in Storm Bay)  “A physical separation of companies and fish classes is of the utmost importance to the future biosecurity of the Tasmanian salmonid industry.” (Frame 34)
Following	MOS 25 - 6 weeks after removing all fish except Northern Marine Salmonid Biosecurity Zone or if approved in writing by the Secretary	Rigorous following regime - At least one month for the whole lease on annual basis
Separation of year classes	MOS 23 - Single year class unless approved by the Secretary	Single year class mandatory “separation of year classes and subclasses, either by companies coordinating their management of neighbouring leases or by lease ownership being reallocated to create geographically separate company zones.” (Frame 33)
Management/compliance	Biosecurity certification scheme – compliance audit every 3 years, start within 12 months	The TVM (Tasmanian Veterinary Model) should function to separate year classes and separate diseased and non-diseased fish in space and time, which will require close coordination and cooperation by industry, reinforced by strong government regulation.

A particular concern is that some of the standards in the Draft Biosecurity Program do not apply to existing or approved facilities (for example MOS 24, FOS20, FOS35). While it can be expected that it may take time to get the facilities up to a recommended standard, there should be an expectation that this will be undertaken with an appropriate deadline (e.g. 5 years); if this deadline is not adhered to then the facilities should be closed. This is important, because allowing operations to continue that are below current biosecurity expectations (best practice) may give the impression that the standards are not necessary as they only apply only to new facilities and ignore the biosecurity risks created by existing or approved facilities.

Exemptions (in writing by the Secretary or for some standards by an authorised officer) are allowed for some standards (e.g. MOS 21, MOS 22, MOS 23, MOS 25, MOS 44, MOS 47). Whilst this may be appropriate in some circumstances to allow time for upgrades and transition, exemptions should be considered carefully as they may suggest that the biosecurity standards are less important than operational and commercial concerns.

While the optimum separation will depend on local conditions and pathogens, there is no denying that further distance is better, and that separation of companies should be more than sites within a company; these principles are widely accepted by all biosecurity experts.

Implementing the highest level of biosecurity possible is important for the salmon industry in Tasmania, and should include:

- Development of single year class farming areas
- Adequate and clearly defined site separation (including existing sites)
- Coordinated and sufficient fallowing
- Closed transport only for salmon between sites

To protect both the industry and the receiving waters there is a clear need for the highest level of biosecurity, which will in turn require effective government regulation and independent monitoring/auditing. A key limitation in the Draft Biosecurity Program is the fact that the proposed standards do not apply to existing, and even some planned facilities, and for some standards industry can receive an exemption from the standards. This could present problems to other industry players and could be interpreted by the broader community as suggesting that biosecurity is not seen as a priority over and above economic considerations.

#### **Detailed comments:**

##### Schedule 1 Marine Operations

MOS 7 2: 5 yearly review seems overly long, particularly when enterprise specific review is yearly (MOS 9(e)).

MOS 9: Very little detail is included on what should be in a biosecurity management plan e.g. is monitoring in the plan? A template should be provided in the Biosecurity Program and the Response Plan should be standardised and provided in the Biosecurity Program.

MOS 21. Only one salmonid species should be farmed within a marine farm, but authorisation possible. Allowing another salmonid species on a marine farm will increase risks of disease outbreaks.

MOS 23. Single year class does not apply to all zones, the Northern Marine Salmonid Biosecurity Zone exempt. Furthermore, the Secretary can authorise multiple year classes within a marine farm. Scientific reviews of international practices relating to salmon farming biosecurity have

clearly highlighted the use of single year class regions as being a best practice approach to managing biosecurity and disease risk (Hammell and Dohoo 2005, Mardones et al 2014).

MOS 24. Separation of marine farming structures (basically separation of farming sites) does not apply to an established marine farm. This means that the separation distance between established marine sites is not determined. Whilst it is acknowledged that a transition period may be appropriate, there should be a deadline for all facilities, including existing or approved, to meet the standard for separation of marine farming structures. The risk factors underpinning separation distance have been linked to local hydrodynamic conditions, with biosecurity risk changing depending on water movement and exchange rates, but regardless of hydrodynamic conditions short distance between sites is an important risk factor (Mardones et al 2014). Distances less than 5 km increased risk of viral disease outbreaks in farmed Atlantic salmon (Jarp and Karlsen 1997). For example, the risk of ISAV dissemination from infected to adjacent farms was inversely related to seawater distance among the farms (Mardones et al 2014, Aldrin et al 2011, Salama and Murray 2013). The relatively short distance between farming sites could be overcome by zonal production, which means coordinated production within a whole zone (potentially multiple companies) to manage biosecurity risk. For example, using only one year-class of fish in the zone, and coordinating sea transfer and harvesting of fish in the zone, and fallowing of the zone (Lillehaug et al 2015). Other countries established exclusion or management zones (for example Disease Management Areas – DMAs), which are defined by clusters of sites sharing tidal excursions, bays or other common waterways (Werkman et al 2011, Salama and Murray 2013). For example, in Scotland farms are grouped within disease management areas with boundaries defined by where the closest pair of farms is separated by more than twice the tidal excursion distance - 7.2 km in main Scotland and 3.6 km in Shetland Islands (Salama and Murray 2013).

MOS 25. Fallowing period can be reduced by the Secretary. It is currently unclear in the plan if fallowing will happen for all farms in a biosecurity zone at the same time, which is the preferred biosecurity practice. Preferably fallowing should occur in the whole biosecurity zone at the same time. For example, coordinated stocking and fallowing is required within each Disease Management Area in Scotland 6 weeks – 6 months, Faroe Is – 2 months and Norway – 3 months.

MOS 47. Blood water can be released into environment if permitted or directed by an authorised officer. Blood water can be a source of pathogens and should not be released into the environment (Munro et al 2003).

### Schedule 2 Freshwater Operations

FOS 20. Fresh water source standard does not apply to existing or approved freshwater facilities. As above, there should be a deadline for all facilities, including existing or approved, to meet the fresh water source standard.

FOS 35. Secure storage and disposal of wastewater standard does not apply to existing or approved freshwater facilities. There should be a deadline for all facilities, including existing or approved, to meet the secure storage and disposal of wastewater standard.

### Schedule 3 Processing Operations

POS 16. Blood water can be released into environment if permitted or directed by authorised officer. Blood water can be a source of pathogens and it should not be released into environment (Munro et al 2003).

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