



Submission in response to the Inquiry into Finfish Farming in Tasmania.

Prepared by Aquenal Pty Ltd.

28 November 2019.



For further information on this submission, please contact

Dr Joe Valentine: General Manager, Aquenal Pty Ltd.

E: jvalentine@aquenal.com.au

T: +61(0)3 62292334

P: 244 Summerleas Road, Kingston, Tasmania, Australia 7050.

Submitted to

Legislative Council Government Administration Committee 'A'.

Inquiry Secretary

Legislative Council

Parliament House

Hobart Tas, 7000.



29 November 2019

Mr Stuart Wright
Inquiry Secretary
Legislative Council
Parliament House
Hobart Tas, 7000.

Dear Stuart,

Thank you for the opportunity to make a submission to the **inquiry into finfish farming in Tasmania**. Aquenal has a long history of undertaking environmental monitoring and ecological surveys in Tasmania on behalf of the finfish farming industry and associated government and research institutions. As such, we are well placed to make a valuable contribution towards this inquiry in the form of a series of recommendations relevant to the stated Terms of Reference. Here we provide a brief background of Aquenal Pty Ltd, followed by a response towards two points of the Terms of Reference: 1a. data collection and publication; and 2c. management of finfish farming operations with respect to the prevention of environmental harm.

Dr Joe Valentine

General Manager, Aquenal Pty Ltd.



Background - Aquenal Pty Ltd.

Aquenal is a Tasmanian-based team of marine and environmental scientists with expertise in the assessment of marine, estuarine and coastal environments (see <http://www.aquenal.com.au/>). Aquenal specialise in baseline surveys and compliance monitoring, environmental analysis and management (including risk and impact assessments), introduced pest surveys and management plans, threatened species management, marine park biodiversity monitoring, marine taxonomy, coastal GIS mapping, and underwater visual assessments. We have undertaken projects at sites from tropical through to temperate environments of Australia and are also involved in international biodiversity research programs.

As a local Tasmanian marine consultancy, we have a long history of providing support to the Tasmanian finfish farming industry and associated government agencies and research institutions. Indeed, Aquenal has had key responsibilities relating to broad-scale monitoring and baseline surveys on behalf of the major salmon industry companies. Aquenal has conducted more than sixty Baseline Environmental Assessments (required for marine farming licences) in all marine farming development regions in Tasmania since 1997. Aquenal have also been responsible for undertaking the field work, laboratory analysis and reporting of the Broadscale Environmental Monitoring Programs (BEMPs) in south-eastern Tasmania which are a key regulatory requirement for the finfish farming industry. Some BEMP programs include ten years of data and collectively, Aquenal has conducted several hundred consecutive monthly surveys for this monitoring initiative. We are also heavily involved in other environmental surveys and research programs related to the environmental effects of the finfish industry, including benthic invertebrate, seagrass and rocky reef surveys.



Legislative Council Terms of Reference

(1) The implementation of the Sustainable Industry Growth Plan for the Salmon Industry and its impact on commercial finfish farming operations and local communities, including: (a.) data collection and publication.

With respect to collection of environmental information and data (see Action 10 of the Growth Plan) Aquenal support the current practice of engaging *independent* environmental scientists where possible to carry out the existing and proposed broad scale monitoring programs. Engaging independent organisations (e.g. consultancies or university institutions such as IMAS) outside industry or government is critical to ensure the integrity of data collection. It is advantageous to have experienced independent scientists analysing and interpreting the data because they are at arms-length from economic imperatives. These principals are central to maintaining public confidence in the salmon industry – a key plank of the Growth Plan. Monitoring requirements such as the Broadscale Environmental Monitoring Programs (BEMPs) currently recognise these principals by stipulating that *‘monitoring required by this licence schedule must be undertaken by a consultant’*. Areas currently under exploration identified in the Growth Plan, such as Storm Bay, currently rely heavily on IMAS and local marine consultancies for environmental surveys and monitoring programs. Aquenal recommends the continuation of the engagement of independent environmental practitioners in future broad scale monitoring programs.

Aquenal is responsible for the collection, curation, analysis, dissemination and reporting of data collected under baseline environmental assessments and a range of ongoing monitoring programs and surveys. We strongly support the push for transparency within the Salmon Plan to maintain public confidence in the salmon industry (e.g. see Action 10 of the Growth Plan) and therefore strongly support the publication of all reporting emanating from environmental surveys and monitoring programs. We are also generally supportive of the publication of some datasets but caution that this data must be supported by meticulous metadata records that ensure that the data is used and interpreted correctly. Metadata includes information about a dataset that describes characteristics such as content, quality, format, location and contact information (e.g. <http://www.bom.gov.au/water/standards/>). We note that the data portal will be hosted by IMAS (see Action 10 of the One Year Review of Growth Plan) and we consider the continued engagement of experienced databased managers at IMAS as essential for ensuring well-constructed and well-maintained online databases for environmental information from the Salmon Industry.



2) Application of the Marine Farming Planning Act 1995 relating to (c.) management of finfish farming operations with respect to the prevention of environmental harm.

Aquenal is supportive of moves to collect a wider range of environmental information in and around finfish farms in Tasmania under the Growth Plan (see Action 10) and the streamlining of regulatory monitoring under the Marine Farming Planning Act 1995. We caution that this should not come at the expense of existing long term monitoring programs. We would particularly like to highlight the impressive nature of the Huon/D'Entrecasteaux Channel Broadscale Environmental Monitoring Programs (Table 1; Figure 1). Long-term monitoring datasets with a large spatial spread of sites are invaluable for understanding the potential effects of finfish farming on the environment because they are able to untangle observed changes arising from aquaculture from other spatially (e.g. currents and oceanic swell) and temporally (e.g. seasonality, oceanic cycles) distributed drivers in the system. Broad Scale Environmental Monitoring Programs (BEMP) in south-eastern Tasmania have been running for 5-10 years and include monthly water quality measurements across broad spatial scales (Table 1; Figure 1). There are few monitoring programs in the world that have such spatially extensive and high resolution (i.e. monthly) measurements of a high number of parameters across such a long time frame. The integrity of these programs should be maintained when considering any modifications to environmental monitoring for the Salmon Industry in Tasmania.

Aquenal is aware that the EPA has commenced development of revised Environmental Standards as part of the Growth Plan (see Section 10). As one of the specialists on the ground conducting field work, laboratory work and data analysis, we are acutely aware of the strengths and weaknesses of the current monitoring and baseline assessment programs. There are potential improvements for these programs to make them more efficient and maximise their ability to contribute to our understanding of the potential effect of finfish farming on the environment. Aquenal are enthusiastic to contribute our ideas to the EPA review of Environmental Standards.

Table 1: Statistics of current Broadscale Environmental Monitoring Programs in southern Tasmania.

BEMP	Years	Consecutive months	No. sites	Number measurements		
				Water Quality [#]	Nutrient [§]	Algae [%]
Huon/D'Entrecasteaux (TSGA)	2009-ongoing	161	15	28526	31155	18271
Tasman Peninsula (Tassal)	2014-ongoing	75	9	7439	8125	24201
Mercury Passage (Tassal)	2014-ongoing	63	7	4377	5495	12685

[#] Temperature, dissolved oxygen, salinity measured at surface, 5m and bottom.

[§] Chlorophyll *a*, total ammoniacal nitrogen, nitrate, dissolved reactive phosphorus, total nitrogen, total phosphorus and salinity measured at surface, 5m and bottom.

[%] Density of algal species integrated across the water column.

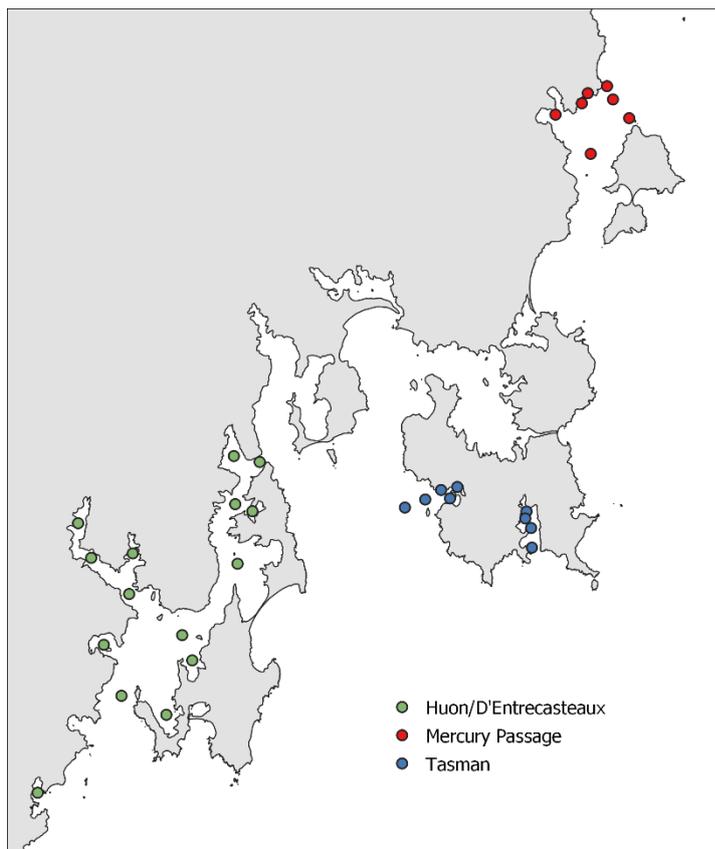


Figure 1: Location of sites in three Broadscale Environmental Monitoring Programs (BEMP) in southern Tasmania.