

Appendix C - Summary of applicant response to issues raised by Representations made under s. 39 of the *Marine Farm Planning Act 1995* in relation to Draft Amendment No. 3 to the Storm Bay off Trumpeter Bay North Bruny Island Marine Farming Development Plan July 1998

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## 1 Introduction

The Planning Authority sought a response from Huon Aquaculture in relation to the issues raised by representors. The applicant provided a response which the PA has summarised as follows within this document.

## 2 Impacts on the Natural Environment

### 2.1 Water quality

#### *Offshore farming*

In response to comments made by representors that showed concern about the use of the term 'offshore' for the locations in which the marine farming is proposed, Huon provides a definition for offshore farming in the EIS on page 14. The definition is possibly biased towards operational considerations as it is based predominantly on sea and weather conditions and their effect on farm staff, especially during storm events. However, most importantly in terms of effects on the natural environment is the consideration that these very conditions also provide for very high water exchange (flushing and mixing characteristics) in and around leases that will act to prevent any accumulation of waste from those farming operations rendering these sites far more sustainable than inshore sites.

#### *Stocking density*

In relation to a comment about stocking density, there is no need to reduce these levels as all data for stocking of pens is provided to the regulator for verification. Further, there is in some cases a possibility that there may be stocking densities that exceed the 8-10 kg/m<sup>3</sup> for transient (short lived) operations such as (but certainly not restricted to) bathing. This level therefore provides some flexibility for such operations, and could be in fact increased for these purposes.

#### *Harmful Algal Blooms*

There is presently no evidence to suggest that fish farm nutrients derived salmon farms increase harmful algal blooms (HABs) indeed the authors of the Environment Research Group of the Scottish Executive report entitled, 'The interaction between Fish Farming and Algal communities of the Scottish waters - A review. (2003/04)' concluded that: 'In our opinion, it is very unlikely that fish farming should have a large scale impact on the occurrence of harmful algal blooms, particularly on toxic algae, which are related to shellfish poisoning.'

Further discussion with Gustaaf Hallegraef (IMAS) one of the works foremost experts on HABs has demonstrated clear mechanisms for nearly all of Tasmanian HABs and shown these not to be linked to the presence of fish farms. E.g., blooms of *Gymnodinium catenatum*, *Noctiluca scintillans* and *Alexandrium tamarense*. Tasmanian fish farms are though susceptible themselves to any increases in HABs, and so their presence and abundance in the fish farming areas are continuously monitored by industry, both through the BEMP monitoring programme and Huon's own Environmental Monitoring Programmes as described in the EIS (Section 6.1).

#### *Nutrient Dispersion Modelling*

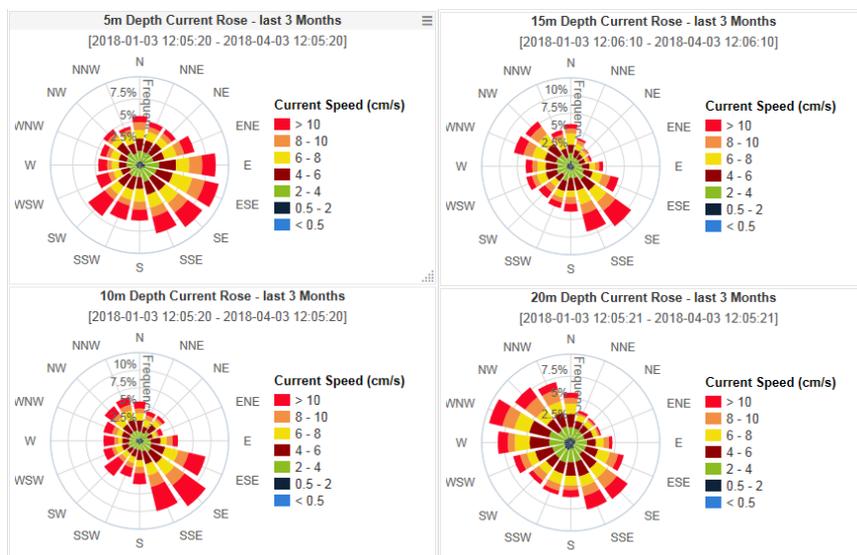
One commenter posed several questions about the nutrient dispersion modelling undertaken.

In relation to connectivity with the Derwent Estuary, Huon submits that: there is currently no scientific evidence to support the possibility of any significant risk for the sensitive receptors in the Derwent estuary from the farms located in Storm Bay.

The hydrodynamic modelling described in the EIS strongly suggests that the prevailing flushing effect of the currents and tides (that is for the surface waters) will move nutrients eastwards initially and then to the south and out of Storm Bay and not towards the D'Entrecasteaux Channel. This evidence is provided in both Sections 5.1.7 & 6.1.1.3 of the EIS. Further In a review of farming in offshore waters (Holmer 2010), in reference to water quality it is stated that: 'None of the available studies of off-coast and offshore farms have detected significant nutrient enrichment of effects on the water column, suggesting a rapid dispersal of dissolved compounds or a rapid transfer of waste products to higher eutrophic levels.'

In terms of the production of nutrients on the seafloor; for there to be any significant increase in nutrients at this level then there would need to be either a build-up of sediments under the pens with a subsequent turnover of nutrients associated with the breakdown of these elements or the waste particles would have to accumulate elsewhere (e.g., sinkhole or sheltered bay). The fate of these nutrients would be the same as described above. For the organic matter in general both the Depomod modelling provided in the EIS (Section 6.1.2.3) and current scientific studies have demonstrated that there will be no significant build-up of these deposits beyond 1km from the lease even from very high production farms (e.g., Haugland et al. 2017).

Hydrodynamic evidence as provided by CSIRO also shows that dissolved nitrogen may at times only be limited in the summer months when. Recent evidence for the flows in the Trumpeter Bay region (provided by a wave current buoy in deployed by Huon (see graphs below) confirms the hydrodynamic modelling provided by Herzfeld, 2008 (EIS Section 5.1.7).



#### *Potential water quality impacts to embayments connected with and fringing Storm Bay*

Given that the risk for nutrient enrichment is very low from these coastal sites then there is simply no mechanism for the proliferation of drift algae due to fish farms in the area. However, Huon would not preclude the possibility of some research/monitoring being undertaken in this area

should it be regarded as a significant risk by the scientific community on the condition that it could be measured in such a way that would directly identify the cause for any increase.

Huon asserts that: all scientific literature regarding offshore or off-coast aquaculture would support the notion that an area as exposed as Storm Bay can support at least the same production level as the Channel/Huon area. All these sources of data are described in the EIS in sections 5 & 6.1.3.

Huon asserts that the scientific evidence provided in the EIS and in the responses above; together with the overall management of the development along Adaptive Management guidelines are indeed adequate to give confidence that the development will not significantly affect the Marine life in the area.

Further, the EIS also makes the case that the predominant flows and currents in the area will transport nutrients out of the systems or mix those nutrients back to background levels at distance of 100m's from that fish farm. For those who doubt that these evidence based assertions are not true then there is further work being carried out through FRDC project 2015-024 and data will be provided on an ongoing basis (farm-based) and through the BEMP that will confirm these already scientifically supported assertions.

All evidence presented in the EIS clearly demonstrates that effects are only detectable at a maximum distance of 1km, and even if this were to be doubled for very high energy sites it would be accompanied by a decrease in loading due to spreading over a larger area. All of these information sources show that the dilution and breakdown of the organic matter will be considerable at this exposed site, and will not have any influence on the Derwent Estuary or Hobart area.

#### **References:**

EIS to accompany the Draft Amendment No. 3 to the Storm Bay off Trumpeter Bay North Bruny Island, MFDP, July 1998

Environment Research Group of the Scottish Executive. The interaction between Fish Farming and Algal communities of the Scottish waters - A review. (2003/04).

Holmer, M. Environmental issues of fish farming in offshore waters: perspectives, concerns and research needs. *Aquacult Environ Interact*. Vol 1. 57-70 (2010)

Haugland, B.T., Keeley, N.B., Woodcock, S., Husa V. & Banister. R. Environmental impact from large salmon farms at wave exposed coast. *Marine Research News* (vol 2 (2017)).

## **2.2 Substrates and fauna**

Some commenters raised concerns about potential ecological effects of feed and faeces disposal into the environment and the potential impacts to fauna.

### *Zone of Effect beneath the pens*

There are multiple lines of evidence provided in the EIS that clearly show that benthic effects from feed and faeces are highly localised and will not extend further than 1km at most from the pens. These lines of evidence are all provided and discussed in Section 6.2, and include the review of farm effects provided in part by the Ministry of Primary Industry New Zealand and the Depomod modelling and discussion of that modelling.

Further by moving to such exposed sites the effects underneath the pens are greatly reduced to the point where faeces and feed do not accumulate for extended periods on the seafloor and following times for the substrate to return (at least visually) to 'normal' are counted in weeks rather than months. Video footage demonstrating the extent of recovery through following periods at the Storm Bay lease is available on Huon's sustainability dashboard:

<https://dashboard.huonaqua.com.au/leases/43>.

#### *Waste collection systems*

In response to a comment that waste collection systems should be utilised, Huon would assert that current waste collection systems as designed for circular net pens are neither a practical proposition, nor an ecologically sound proposition for exposed waters for the following reasons:

1) These systems require some form of collection liner or platform situated either directly under or within the pen. These liners will increase drag significantly on the whole pen infrastructure. At the proposed zone the sand on the seafloor is rippled indicating that surface wave energy penetrates all the way to the seafloor at 40m depth, albeit that the energy dissipates with depth. But in essence this indicates that there is very significant water movement throughout the water column and this 'wave' energy will necessarily cause movement in the sediments in the liner to a far greater extent than the seafloor. In other words, the ability to control the waste is greatly reduced in higher energy environments, and at worst this 'wave' energy will then lead to oscillations of the waste capture equipment itself.

2) Capture systems bring the waste or faecal layer much closer to the fish. This exacerbates two processes; firstly it can act to reduce the water quality in the vicinity of the farmed fish, and, secondly it provides the opportunity for cycling of disease pathogens from the faecal waste back to the fish, especially in an environment where the faeces is being continually agitated/disturbed.

For these reasons in particular, Huon could not support mandating such untested and high risk systems.

#### *Uneaten Feed*

As stated in in Section 3.6 of the EIS uneaten feed pellets are to be kept to an absolute minimum at Huon leases. Not only does Huon use the most up to date feeding systems in the world which can identify overfeeding through cameras placed in pens but there are also very regular checks of the seafloor through monthly ROV surveys undertaken by Huon' environmental technical crew. A description of the feed systems and their capabilities are provided on the Huon website at:

<https://www.huonaqua.com.au/sustainability/ethical-farming/fish-health-welfare/keeping-fish-well-nourished/feed-fish/>.

Specifically, in discussing the feed barges the website asserts 'Through the on-board control room, our experienced feeders have the ability to remotely switch on feed to particular pens, monitor feeding using a series of underwater cameras and pellet detection software, and switch the feed off when the fish are no longer hungry. By carefully monitoring how much salmon are eating, we are able to prevent food wastage and reduce our environmental impact.'

#### *Wild Fish*

There are now a number of scientific studies ( e.g., Dempster et al. 2011, Uglem et al. 2014, , Saether 2017, Staglicic 2017) assessing the role of fish farms on wild stocks in their vicinity. Through these studies it is apparent that there are a number of ways in which the wild stocks may interact with fish farms as described in Uglem et al.'s review

It would appear that in general the balance of these interactions is generally positive rather than negative.

Dempster et al., concluded that, proxy measures of fitness provided no evidence that salmon farms function as ecological traps for wild fish, and further suggested that fish farms may act as population sources for wild fish provided they are protected from fishing while resident at farms to allow their increased condition to manifest as greater reproductive output.

Staglicic et al. concluded that; Tuna farms had a high capacity to attract wild fish, the aggregations were multi species abundant and seasonally stable, the farm impact was more pronounced on the bottom than the water column, that the fitness status of bogue and seabream was enhanced (e.g., better gonad development), and with fishing prohibition farm areas can serve as functional MPA's.

Saether results showed that Saithe that had eaten fish farm feed had somewhat softer and more fissured muscle than other Saithe but it was still within the good quality category, such a change in quality is however usual for fish that have good access to food, for example cod when it preys on Capelin. The dead fish though were found to spoil more quickly. Their study also found that the roe or fry of the wild fish (Cod and Saithe) had no essential negative effects when the adults were fed salmon diets, although the adults and the roe and fry had an elevated content of vegetable fatty acids.

As demonstrated in the EIS, the Yellow Bluff and Trumpeter Bay areas are generally depauperate areas in terms of fish species as there is little feed available or change in relief in these highly scoured areas of seafloor (rippled sands) that might provide sustenance and protection (EIS sections, 5.1.5, 5.2.3, 6.1.3, Appendix H). These farms have been purposely positioned away from reef areas, all being situated at least 1km away from any reefs. Further as stated in the EIS the nearest reefs have been and will continue to be monitored through the Storm Bay BEMP programme.

Huon would add that it is very difficult to respond to anecdotal evidence as this is notoriously unreliable. However, if in time concerns regarding wild fish can be shown to be a priority and/or relevant then studies as described under Finfish monitoring below might be considered.

#### *Polychaetes (Annelids)*

One representor asked the question, 'Benthos referenced in reports includes Annelid and Polychaetes is there a reason these appear more than other species?' Annelids (Phylum) are the segmented worms, of which polychaetes are a Class within that Phylum. Polychaetes are omnipresent across nearly all benthic substrates in the marine environment. They are great opportunists and because many are broadcast spawners they can multiply and spread very quickly in order to take advantage of any increased organic matter on the seafloor. Fish faeces is an ideal food source for these polychaetes and where there are fish farms then they can proliferate quickly and act as very efficient digesters and therefore re-cyclers of carbon and associated nutrients (D. O'Brien pers. Comm.).

#### *Shellfish/Finfish Monitoring*

For shellfish refer to Section 3.4 Commercial Fishing. Huon suggests that representor's questions around monitoring of crayfish and abalone and wild fish be answered by the regulator as they will have further information through IMAS. For fish refer to wild fish paragraph in this section above.

Currently the University of Newcastle, NSW, is undertaking fish surveys using baited remote underwater video stations (BRUVS) around Huon's Yellowtail Kingfish farm in Providence Bay NSW, under conditions which are similar but even more exposed than Storm Bay. Results from this study will be available to the public at the end of the study.

Should the perceived threat to Storm Bay, The BRUVS survey approach and associated results warrant an extension of these studies to Storm Bay then Huon may be supportive of such a study.

#### *Assessment of EPBC listed species or communities*

Huon has referred the proposed action through the EPBC Act. As part of the referral a risk assessment was undertaken by independent consultants North Barker.

#### *Mapping*

With regard to the Trumpeter Bay North Bruny Island EIS, this area is already covered by previous mapping undertaken by IMAS through Barrett et al. (2001), and is covered by the information including maps provided in the LIST (see also section 2.4 Marine Vegetation).

The EIS describes numerous other process studies and baseline surveys which confirm the data provided in the maps and further provide more detailed information on the substrates in the proposed area. These are provided in Sections 5.1.1 & 5.1.2 of the EIS. With regard to the representation made recommending that updated habitat mapping is undertaken, Huon would submit that for current EIS such a mapping exercise is not warranted.

#### *Specific threats*

Representors were concerned that endemic handfish, seastars and molluscs and algae would be put at risk from the proposal

With regard to handfish, there is no evidence that fish farms are deleterious to handfish. Indeed the recent species extension of the Spotted handfish to the mouth of the Huon River estuary was associated with a long term fish farm lease at Flathead Bay (picture of one of the handfish observed at the site provided below). Huon would submit therefore that there is probably more evidence at present to suggest that handfish populations can at least co-exist with well managed fish farms.



Spotted handfish photographed under the lease at Flathead Bay (D.O'Brien pers. comm.).

As discussed in Section 2.1 above nutrient enrichment should not be a factor to any significant extent at these exposed sites and at the present TPDNO limit of 40,000 tonnes.

For endemic seastars to be impacted by the proposal, there would have to be a broadscale effect to influence any cushion stars and the potential for this occurring is covered under section 2.1 above. In terms of the endemic 10-armed seastar *Coccinasterias muricata*, none were identified in any of the baseline surveys undertaken on the western side of Storm Bay. For algae there is none present in the vicinity of the proposed Yellow Bluff zone with the nearest algal assemblages being associated with reefs at least 1km away from the farm, a distance at which there should be no significant effect due to reasons outlined in Section 2.1 above. For molluscs, the baseline surveys undertaken for the proposed Yellow Bluff zone included targeted surveys for *Gazamedia gunnii*. No live specimens of this species were identified in those surveys.

Huon would assert that there will be no measurable increases in nutrients at any significant distance from the farms themselves, and that the levels of nutrients and organics in the system will not build up to any excessive levels, under the presently proposed 40,000 tonnes production limit. Further the only nutrient enriched bottom waters that will occur in Storm Bay even with the fish farms in place will be those from the southern ocean waters which are acknowledged to dominate the waters in Storm Bay for the winter months (generally May to November). Evidence for this is provided from the FRDC baseline studies described in Section 5 of the EIS and also in previous CSIRO studies of those waters (e.g. Clementson et al., 1989),

*Compliance with existing management controls in the MFDP area* One representor asserted that the EPA had issued a direction in response to a breach (or breaches) of the *Marine Farming Planning Act 1995* and/or *Living Marine Resources Management Act 1995*, requiring that an 8 pen-bay within the lease (MF261) in one of these MFDP zones not be restocked unless approved. The representor is not correct in their assertion that here was a breach of the Act. All that was requested is that Huon provide a pre-stocking survey after fallowing for specific pen bays that had extensive bacterial mats at the time of the survey, before they could be re-stocked. This has become standard practice for all pens showing de-gassing during any AVS, and occasionally also for where there are extensive

bacterial mats. There were no effects at all associated with the 35m compliance sites in this instance.

## References

Saether, B-J. Aquaculture effect on wild marine fish. <https://nofima.no/en/nyhet/2017/09/aquacultures-effect-on-wild-marine-fish/nyhet/2017/09/aquacultures-effect-on-wild-marine-fish/> (2018).

Dempster et al. Proxy measures of fitness suggest coastal fish farms can act as population sources and not ecological traps for wild gadoid fish. PLoS ONE Vol 6 (1) 9pp. Jan (2011)

Staglicic N. et al. Ecological role of bluefin Tuna (*Thunnus thynnus*) fish farms for associated wild fish assemblages in the Mediterranean Sea. Mar Env Res. 132. 79-93 (2017)

Uglem I. et al. Impacts of wild fishes attracted to open-cage salmonid farms in Norway. Aquacult. Environ. Interact. 6. 91-103. (2014)

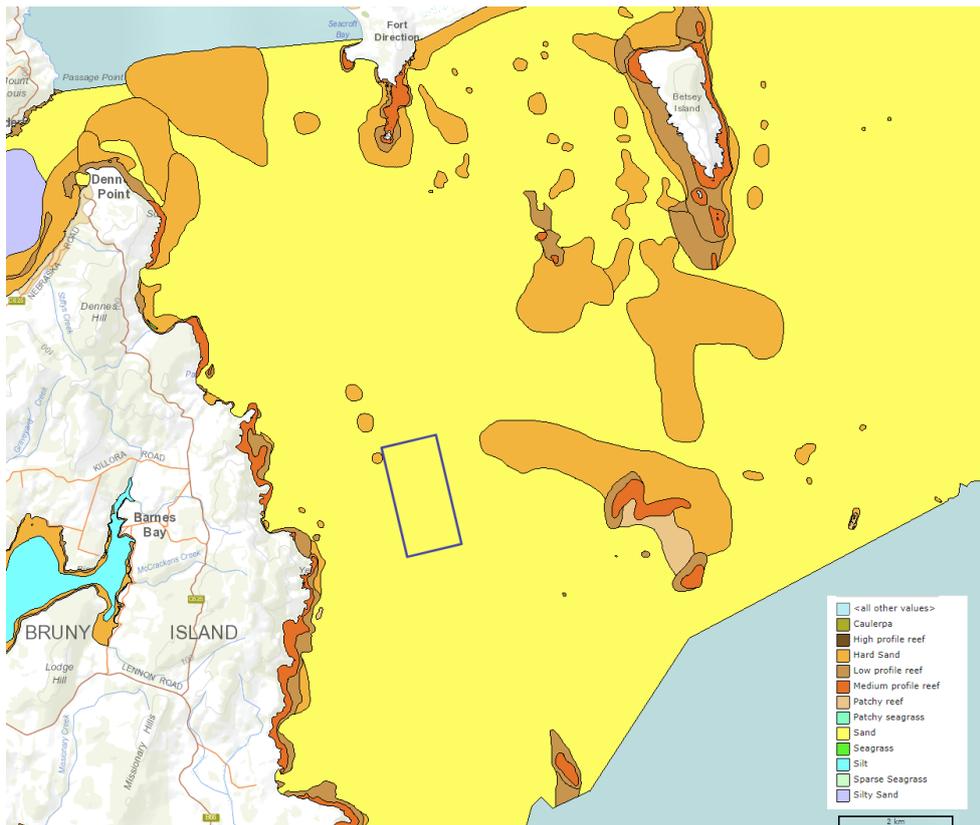
### 2.3 Decommissioning and Rehabilitation

One commenter queried what the decommissioning and rehabilitation plans were. Huon suggest that this is for the government to outline regulation requirements that outline decommission and rehabilitation. Refer to section 3.7. Huon will comply with all requirements of its lease and license conditions.

### 2.4 Marine vegetation

Representations raised concerns about the potential effects of the proposal on marine vegetation.

The Land Information Systems Tasmania (LISTmap - <https://maps.thelist.tas.gov.au/listmap/app/list/map>) provides a marine habitat mapping survey of Southeast Tasmania. This data was collected by the Tasmanian Aquaculture and Fisheries Institute (TAFI) through intensive field sampling from June to December 2000 by marine researchers. The data set shows that the areas within 1.5km from the proposed East of Yellow Bluff (EOYB) boundary is either sand or hard sand.



A bathymetric survey of a proposed extension to the Trumpeter lease on the eastern side of North Bruny Island was conducted from the IMAS vessel *RV Southern Cross* on the 7th November 2016. The proposed extension covered an area of 6.85 km<sup>2</sup> (685 ha), with depths ranging from 23.79m to 36.04m (Mean Sea Level). Seafloor characterisation was computed from Angle vs Range Analysis (ARA) algorithms, and the seafloor characterisation within the proposed extension to the lease was found to be mainly sand of various compositions, combined with silt.

The nature of the seafloor described by ROV and sediment grab samples and *Gazameda Gunnii* survey components of an initial environmental assessment of a proposed new marine farming zone north of Trumpeter Bay on the western side of Storm Bay, was conducted in October 2016.

From the ROV survey the great majority of sites shared the common features of fine to medium grained rippled sands, with varying amounts of shells and shell grit or gravel.

The fauna was depauperate consisting generally of ascidians and Screw shells (found at most sites), and Japanese seastars, Hermit crabs and Ribbon worms (at a few sites only). However, there appeared to be numerous Anthozoa (suspected Edwardsiidae) at most sites. There was also the occasional Flounder, Flathead and Stingaree. Drift algae was present at all sites.

Based on the above surveys the proposed EOYB lease is well away (>1.5km) from seagrass of macrophyte communities. Based on recent research conducted in Tasmania, dissolved nutrients from fish farms have no significant effect on rocky reef communities beyond 400m. Therefore, the risk to algal overgrowth, shading and loss to sea grass and macrophytes due to farming operations at the proposed EOYB is negligible.

Huon Aquaculture has referred this project under the *Environment Protection Biodiveristy Conservation Act 1999*. As such, independent consultants from North Barker Ecosystem Services conducted an assessment of potential risks to EPBC-listed species or communities. From North Barker Risk Assessment:

*“Based on the absence of the community and the lack of a suitable substrate, no direct impact will occur on the community.*

*In terms of changes in nutrient levels, the expected contributions of the proposal to nutrient loads are not expected to have any impact on potential habitat for the community due to the large separation distance (minimum 1.5 km from potential habitat) and the surrounding volume of water for dilution. In addition, the approved conservation advice for giant kelp marine forests suggests that changes in nutrient availability is more of a threat in warmer waters, and that increasing temperatures are the greatest risk to the community in cool water areas (the species typically occurs in waters with a mean surface temperature between 5 and 20 ° C.”*

*There is presently no scientific evidence to attribute any of these ‘changes to fish farming in the area. Indeed, there are a number of other potentially significant factors that might equally be considered, such as: overfishing, environmental changes (e.g., temperature) through global warming, increase in the incidence and spread of introduced species altering the ecology of the system, changes in the influx of other land derived nutrients (forestry to dairy, then dairy back to forestry etc)/increased population, and, changes in the influences of coastal currents in the region (EAC vs. Leeuwin).*

*With respect to the incidence of algal blooms in the area and specifically HABs, then this has already been covered in 2.1.*

*In terms of the growth of alteration of growth of algae on the foreshores or rocky reefs then we would refer the representor back to section 6.1.3.1 of the EIS, which details numerous studies on marine Vegetation in the Channel/Huon, that clearly demonstrate that fish farming has, to now, had no broadscale effect on Marine vegetation in the Channel. To this we can now also add the most recent work, an update of 2002/03 surveys undertaken by Crawford et al (Draft Nov 2017). The key findings/results were:*

*‘Similar to the previous surveys conducted in 2002/03, there were no clear patterns in abundance of Ulva or Hormosira with distance from salmon farms even though production from salmon farms had increased substantially over that time.’*

*‘These results suggest that factors other than nutrients from salmon farms were also influencing the abundance of intertidal algae, as the results were consistent at all sites, regardless of the distance from salmon farming operations.’*

## **References**

Geophysical Survey & Mapping (GSM) – Trumpeter Lease (East of Yellow Bluff) Extension. CSIRO, November 2016.

An Initial Environmental Assessment of a proposed amendment to the marine farming zone at Storm Bay off Trumpeter Bay. AMD, March 2017

EIS to accompany the Draft Amendment No. 3 to the Storm Bay off Trumpeter Bay North Bruny Island, MFDP, July 1998

Assessment of potential impacts on threatened species and communities and migratory species listed under the EPBC Act. North Barker Environmental Services, January 2018

Reassessment of intertidal macroalgal communities near to and distant from salmon farms and an evaluation of using drones to survey macroalgal distribution. Crawford, C. & Harwin, S. FRDC Project No 2014-241. 44pp. (2018).

## 2.5 **Birds**

Representations raised concerns about the potential effects of the farms on birds.

The new fortress pen design should ensure that all birds and mammals interactions including threatened species are minimal. Impacts on MNES species have been considered as part of Huon's EPBC referral process and no significant impacts are considered likely. Below surface lighting produces a diffuse underwater glow, which can be visible from above but which is unlikely to be visible from a lateral viewpoint. This is unlikely to have any impact on MNES species.

Because the potential interaction of oceanic birds with the proposal is expected to be limited to opportunistic foraging attempts, potential impacts could be mortalities or injuries from net entanglements. The potential for entanglements will be mitigated by net-pen configuration that ensures that all nets are kept taught at all times and that there will be no tears or holes in the bird nets. Regular inspection of nets for tears and holes by the dedicated predator management crew and marine operations team will ensure that they are quickly fixed, minimising the potential for birds to find their way through the nets and then become trapped.

This management crew also will have the responsibility for removing entangled birds from the nets (where possible, subject to OH&S considerations) and will be trained in bird handling for such scenarios.

With the location of the proposal and the mitigation measures, the project will not impact an existing population of these species through means such as fragmentation or range reduction, nor impact upon known or potential breeding habitat, nor have a significant impact on foraging habitat. Further, the project will not introduce any new pests or diseases that could impact on sea birds.

Below surface lighting produces a diffuse underwater glow, which can be visible from above but which is unlikely to be visible from a lateral viewpoint. This is unlikely to have any impact on MNES species.

### **References:**

EPBC Act referral – Huon Aquaculture Storm Bay off Trumpeter Bay, North Bruny Island

Assessment of potential impacts on threatened species and communities and migratory species listed under the EPBC Act. North Barker Environmental Services, January 2018

## 2.6 **Marine Mammals**

Concerns were raised about the potential impacts to marine mammals such as seals and whales.

### *Seal management*

Huon Aquaculture has replaced all of its marine farm pens with the new design, at a cost of approximately \$80 million. This is possibly the first time in the history of the industry world-wide

that one company has made such a commitment to anti-predator system design and roll-out. All pens deployed at Storm Bay off Trumpeter Bay will be of the new design.

We have found that once seals recognise that they can no longer consume salmon from our pens, they no longer see them as a food source so in general, we haven't seen an increase in the number of seals around our farming operations in the south east, but rather we have seen a dramatic reduction in seal interaction recently. Since the rollout of the new pens, the last seal to be trapped and relocated by Huon was in August 2016. We therefore do not anticipate that an expansion of our operations in the area will result in a further increase in the seal population. Huon is continually improving the design of our Fortress Pens and interactions are adaptively managed and we continue to review and improve systems.

Huon acknowledges that the Australian fur seal populations has increased from historic lows since the introduction of protection measures that ended the commercial harvest of seals in Australia.

No seal relocation events have occurred from any of Huon Aquaculture's leases since August 2016 and we do not anticipate any further seal relocation events moving forward. No seals have ever been relocated from Huon's Storm Bay off Trumpeter Bay lease. This can be credited to an across-the-board rollout of Huon's Fortress Pens.

Fortress pens are currently used across all of Huon's operations in Tasmania and have proven to be a superior pen enclosure and predator exclusion system.

All pens deployed at Storm Bay off Trumpeter Bay will be of the Fortress Pen design which minimise seal interactions.

Historically seals were only trapped occasionally as a measure to disrupt behaviour where a seal or seals pose an unacceptable risk to staff, have entered a pen or are constantly trying to breach the defence system of the pen. The trapping and relocation of seals can provide a period where staff can detect and remedy weaknesses in anti-predator systems before the seals behaviour could become entrenched.

Huon Aquaculture support the state government's commitment to remove long distance seal relocations as a viable management option for the industry.

Huon's practices in this area reflect best environmental management techniques, as supported by the development and rollout of the anti-predator Fortress Pens and the dramatic reduction in interactions with predators on our farms.

Huon does not anticipate an increase in seal or other marine mammal interactions with its operations. Huon notes that SBTB 26 did not supply a risk assessment or other methodology through which they have asserted that 'marine mammal health will be affected by pollutants, debris and noise'.

Huon has had no negative interactions between pollutants, debris or noise with marine mammals at Storm Bay to date and are unaware of any situations where seals have interacted with marine debris from Huon's farms in the past.

Huon has Standard Operating Procedures in regards to the handling of hazardous materials that could be counted as 'pollutants'.

*Marine Debris*

In regards to marine debris, Huon understands the importance of maintaining the integrity of the marine environment and surrounding areas in which we farm. In support of this, Huon now GPS track the larger pieces of infrastructure on that farm (such as mambas).

Huon has supplied DPIPWWE with a document that lists all ropes used by Huon along with images of equipment that have been stamped with Huon's logo. As this document was prepared and submitted to DPIPWWE after the EIS was submitted, a copy of this document has been provided and is titled '180130 HUON Branding of Equipment'. This document can be used to easily identify any piece of equipment as Huon's. A copy of this document has been provided to DPIPWWE and supplied as an attachment.

Regardless of the origin of marine debris, during regular clean-ups Huon removes all debris including that which originates from other marine farms, households or waterway users. More information regarding mitigation measures on marine debris can be found in section 2.7 of the Section 40 responses.

Large pieces of marine debris were identified in a risk assessment as part of the EPBC Referral Act as posing a risk to whales. To mitigate risks, Huon commits to protocols aimed at preventing collision between marine mammals by enforced accountability.

#### *Whales*

Although Huon Aquaculture have never had a direct interaction with any whale species in Tasmania, we occasionally have observed whales in the vicinity of our farms. On these rare occasions the whale behaviour hasn't changed or altered as it came closer to the farm.

Vessel operators always keep a lookout for marine mammals, including whales, and will take avoidance action if and as necessary in accordance with the Parks & Wildlife's whale watching guidelines. Huon Aquaculture has always reported any marine mammal that appears injured or in poor condition to DPIPWWE Wildlife Management Branch, and will follow the advice given by the departments Wildlife Officers.

Regarding noise, Huon's operations are compliant with noise regulations and therefore does not anticipate that there will be any impact on marine mammals. Huon notes that noise was not identified through the EIS or EPBC Referral processes as being a potential issue to marine mammals. In Huon's experience, noise is not a deterrent to seals.

Huon accepts that noise, lighting, wastes and vessel movements all have the potential to impact on threatened species. Wherever possible, Huon has taken mitigation steps against potential impacts.

Regarding noise, Huon's operations are compliant with noise regulations and therefore does not anticipate that there will be an impact on marine mammals or other marine life.

Huon also notes that neither noise or light was identified through the EIS or EPBC Referral processes as being a potential issue to marine mammals or marine life in general. The primary source of information in the EIS regarding birds has come from an original report and supplementary report by BirdLife Tasmania which was supplied as appendix J with the EIS.

In over 30 years of operating in the waters of Tasmania, Huon have not had an interaction with whales.

Notably, since commencing operations in Storm Bay in 2014, Huon has recorded no whale sightings in proximity to its leases and has had no whale interactions of any type at current lease sites Storm Bay.

Huon notes that a Humpback Whale calving ground has been identified by IMAS along the coast of Western Australia <http://www.imas.utas.edu.au/news/news-items/study-identifies-extended-humpback-whale-calving-range-along-western-australia-coast> and Tasmania's Parks and Wildlife Service notes that while a proportion of Southern Right Whales do give birth in waters off Tasmania, 'it is likely that the humpback and southern right whales prefer the calmer waters of the east coast' (<http://www.parks.tas.gov.au/?base=5385>). Given the location of these calving grounds, and the actions outlined in section 6.1.5 of the EIS, Huon does not believe that an expansion of its operations in Storm Bay will have an impact on whale calving grounds and therefore, the recovery of these species.

In the unlikely event that whales approach the farm, vessel operators will always keep a lookout for marine mammals, including whales, and will take avoidance action if and as necessary in accordance with the Tasmanian Parks & Wildlife's whale watching guidelines<sup>1</sup>, including:

- not approaching in a boat any closer than 100m to a whale, which is the recommended distance for boats moving at slow speed and with no wake (that is, less than 8 knots)
- vessels under steam not approaching any closer than 300m
- withdrawing immediately if the whale shows any kind of disturbance
- adopting a slow speed while in the area
- not approaching from the rear of the animal.

The regular inspections of net-pens will maximise the likelihood of marine mammals, including whales, being spotted before they enter a marine farm area. Judicious positioning of crew vessels between an approaching whale and the marine farm, with motors off or idling, will be used to try to passively divert whales away. No active diversion or harassment of the animals would occur. If whales nevertheless venture into a situation of potential harm, the crew will immediately advise the Parks & Wildlife Service. Huon Aquaculture will establish this protocol in advance, through consultation with the Service.

#### **References:**

*EIS section 6.1.5*

EIS appendix J

EIS section 6.1.5

<http://www.imas.utas.edu.au/news/news-items/study-identifies-extended-humpback-whale-calving-range-along-western-australia-coast>

<http://www.parks.tas.gov.au/?base=5385>

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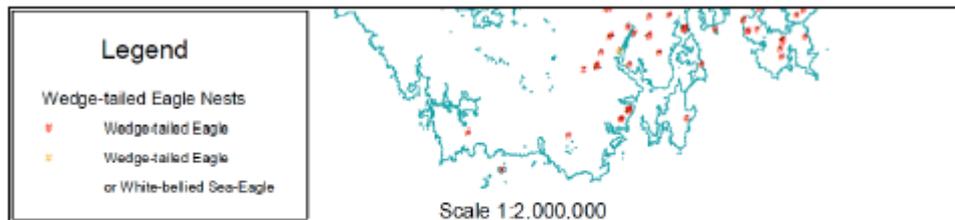
<sup>1</sup> <http://parks.tas.gov.au/index.aspx?base=2990>

## 2.7 Threatened species

Representors queried what potential impacts to threatened species may occur.

Huon Aquaculture has referred this project under the *Environment Protection Biodiversity Conservation Act 1999*. As such, independent consultants from North Barker Ecosystem Services conducted an assessment of potential risks to EPBC-listed species or communities..

Huon also conducted a risk assessment of threatened species and listed appropriate mitigation measures in section 6.1.5 of the EIS. Maps of threatened species distributions in south east Tasmania are also provide, for example:



*Figure 71 - Map of Wedge-tailed Eagle nests (extracted from map in Threatened Species Section 2006, Threatened Tasmanian Eagles Recovery Plan 2006-2010).*

## References

Assessment of potential impacts on threatened species and communities and migratory species listed under the EPBC Act. North Barker Environmental Services, January 2018

EIS to accompany the Draft Amendment No. 3 to the Storm Bay off Trumpeter Bay North Bruny Island, MFDP, July 1998

## 2.8 Species escapes

### *Fortress Pens*

One representor recommended information be provided in relation to the recent failure of Huon Aquaculture's "fortress pens" in Port Stephens.

An incident investigation following the fish escape event at the Marine Aquaculture Research Lease (MARL) in Providence Bay NSW was conducted by an independent Investigation Facilitator. A summary investigation report is available online:

<https://www.huonaqua.com.au/wp-content/uploads/2018/02/Incident-Investigation-Summary.pdf>

It is not appropriate to draw conclusions regarding the fortress pens performance in Tasmania based on events at the research lease, 6km offshore from Port Stephens, NSW. The incident investigation found that the key factor which led to the net failure was the build-up of excessive biofouling. The main biofouling species was a barnacle which is more robust and quicker growing than barnacle species in Tasmania. The investigation found that the biofouling growth led to damage of sea pen 1602 in two key ways:

- The barnacles, which appear to have caused damage to a number of ropes, led to the remaining ropes holding the nets becoming overloaded.

- The excessive weight due to the biofouling growth put extra strain on the net rigging once the initial compromised ropes had been severed.

Fortress pens are currently used across all of Huon's operations in Tasmania and have proven to be a superior pen enclosure and predator exclusion system.

The fortress pens have already proved their performance during extremely rough conditions in Storm Bay and Huon is confident in their ability to withstand conditions experienced at the proposed site at Yellow Bluff.

This confidence is based on 3.5 years of farming experience in Storm Bay and backed up by modelling conducted by external consultants, Aquastructures AS from Norway.

### *Species Escapes*

Salmonid farming has been underway for more than 30 years in Tasmania (<http://www.tsga.com.au/history/>), and HAC has been farming Atlantic salmon since 1988.

To date no naturally recruiting populations of Atlantic salmon have been reported in Tasmania. Recent scientific research investigating the risk of establishment of the species from Tasmanian marine farms includes:

- M. Steer and J. Lyle (2003). Monitoring Escapees in Macquarie Harbour: a collaborative study between the salmon industry (TSGA) and the Tasmanian Aquaculture and Fisheries Institute (TAFI);
- Kátya Abrantes, Jeremy Lyle, P. Nichols, and J. Semmens, (2011) Do exotic salmonids feed on native fauna after escaping from aquaculture cages in Tasmania, Australia? *Can. J. Fish. Aqua. Sci.* 68: 1539–1551;
- K. Abrantes, J Semmens, J Lyle & P Nichols. (2010). Can Biochemical Methods Determine If Salmonids Feed And Thrive After Escaping from Aquaculture Cages? Final Report for NRM Cradle Coast Project CCCPR24006, 55p.

Huon continues to improve its farming practices to ensure escape events do not occur. The introduction of the fortress pens has significantly reduced the interactions of seals, historically one of the main causes of holes in salmon pens.

Huon has also developed a sub-sea team with dedicated Remotely Operated Vehicles (ROVs) and specialist operators. These ROVs are used to regularly inspect both the inner fish net and outer predator net for holes. This has become standard practice before any crowding operations such as bathing.

Species escapes is covered extensively under Section 6.1.9 of the EIS.

### **References**

MARL Incident Investigation Summary

EIS to accompany the Draft Amendment No. 3 to the Storm Bay off Trumpeter Bay North Bruny Island, MFDP, July 1998

#### **2.9 Disease and biosecurity**

Representations raised concerns about whether the industry might be susceptible to high biosecurity risk.

The Tasmanian Biosecurity Act is important but is a fairly high-level document which forms the basis for more detailed biosecurity management and strategy. Huon strongly agrees that complete review of biosecurity issues is important in underpinning the future sustainability of the industry. Yellow Bluff is an important part of improving biosecurity within the region.

## 2.1 Stock husbandry and feed

Information regarding what is in the feed can be found here:

<https://www.huonaqua.com.au/sustainability/ethical-farming/fish-feed/>

There are no risks associated with the use of astaxanthin for more information refer to the link above.

For more information on astaxanthin, refer to the following link:

<https://www.huonaqua.com.au/sustainability/ethical-farming/fish-feed/>

## References

*3.5.3 and 6.1.8.1 of the EIS*

<https://www.huonaqua.com.au/sustainability/ethical-farming/fish-feed/>

## 2.2 Waste Streams on Land

Representors queried where smolt would be supplied from and what the potential environmental impacts from the hatcheries are.

The majority of smolt supplied to the Strom Bay lease will be generated from within Huon Aquacultures Recirculating Aquaculture Systems (RAS). These state of the art aquaculture facilities are designed to reuse up to 98% of their internal water volume each day.

Huon promotes reuse of its waste streams and Huon Aquacultures RAS systems achieve this for wastewater and fish faeces.

The Lonnavele RAS system reuses 100% of its wastewater with drip irrigation of over 20 hectares Plantation Forestry, this commenced in 2007 and the first harvest of trees will occur next summer well ahead of unirrigated trees in the same area.

The Forest Home hatchery reuses 100% of its wastewater for the irrigation of Organic under conversion crops grown for the Bruny Island Cheese company. Although only around 12 months into the 36-month full Organic Certification process, Huon has been able to highlight that aquaculture wastewater can be managed effectively and treated to meet the organic certification process. The organic under conversion crops grown are harvested and removed from the site to feed cattle effectively removing the nutrients from our waste stream from the site.

The new Whale Point Growout RAS facility will also achieve 100% reuse of its wastewater by treating this waste stream to a level that will allow us to reuse the water within our offshore AGD bathing programme.

100% of Huon Aquacultures RAS sludge (faeces and waste feed) is reused. It is removed from site by approved K100 transporters for composting by K100 composting facilities which on sell the composted material for garden and broad acre use.

### 2.3 Introduced marine pests (IMP's)

Representors raised concerns about introduced marine pests.

Huon would refer the representor to sections 6.1.10 and 6.1.12 of the EIS. These describe the comprehensive management systems that are in place for the fish farming industry in Tasmania. These are targeted more to the prevention of the spread of disease (e.g., viruses/bacteria) and as such go further in their detail and intent than equivalent biosecurity protocols aimed at preventing the spread of flora and fauna. These are further supported by Huon's adoption of Fortress pens and the use of a well-boat to service these pens as described in the EIS. These operational systems now preclude the need to transfer gear and water for bathing from site to site on any regular basis. Although internationally the extended aquaculture industry may have been responsible for aiding the transfer of some marine pests there is no direct evidence that this has been the case with the Tasmanian salmonid industry.

#### References

EIS to accompany the Draft Amendment No. 3 to the Storm Bay off Trumpeter Bay North Bruny Island, MFDP, July 1998

### 2.4 Marine and Coastal

Representors raised concerns about marine debris.

The importance of maintaining the integrity of the marine environment and surrounding areas in which marine farms operate is a major factor in decision making for Huon, whether that is improving farming practices, purchase of equipment or locating and/or expanding lease sites.

Huon understands that marine debris may cause potential harm to the environment in which it operates and may impact the enjoyment and safety of their users of the waterway and the community more broadly. It is this the responsibility of Huon to undertake activities that reduce marine debris.

Huon has a marine debris policy which forms part of the company's broader Environmental Management Plan and sits alongside specific Environmental and Waste Management Plans for each operational site.

Further to the use of identifiable ropes and markings on equipment, substantial pieces of equipment such as Mamba lines have GPS trackers attached to them. In the unlikely event that substantial equipment should break free from a lease, the GPS tracker notifies Managers that the equipment has broken free so it can be safely and swiftly removed.

Huon is an active participant in the Huon and D'Entrecasteaux Collaboration and regularly conducts clean-ups on 'Adopted' shorelines. A copy of Huon's marine debris clean-ups since 24 August 2016 has been supplied and is titled 'Huon Marine Debris clean-up table'.

Huon acknowledges that the TSGA is currently engaging with a working group to expand the 1300 number and is also considering other platforms such as a mobile app. It should be noted that Macquarie Harbour growing region's shorelines are also 'Adopted' by companies operating there, and NRM will be expanding the 1300 number to this area.

## References

*EIS section 6.2.11.3*

### 2.5 Climate change & Greenhouse gas emissions

Some commenters queried whether salmonid farming will be sustainable under future climate scenarios.

Huon believe this is adequately address in the EIS. See section 6.1.14.

Huon is well aware of the research that has been done and the potential future impacts of climate change and is working with the scientific community to address. However, Huon understands that as in many areas, we always need to follow an adaptive management strategy.

## References

*EIS section 6.1.14*

### 2.6 Environmental management

Representations commented on the need for broadscale environmental monitoring, biogeochemical modelling and adaptive management.

Fish farming has already commenced in Storm Bay through the Trumpeter Bay and subsequent Storm Bay leases. Baseline monitoring was undertaken for the Storm Bay region through two IMAS research studies, and reef life surveys provide historical baselines for the rocky reefs in the area. The benthos for these farms and the present proposed lease area was sampled as part of the regulatory requirements for both in the Initial Environmental Assessments (also provided as part of the EIS) and lease baseline regulatory requirements, undertaken prior to any farming on these leases. This information is provided in the EIS and in particular in sections 5.1 (referenced also on pg. 76) & 5.2.

There is no need for a Management Control to specify the collection of further baseline data as Huon would submit that the necessary data has previously been collected.

Further, Huon has also committed to a comprehensive BEMP for Storm Bay as stated in the EIS (Section 6.1.1.4).

Huon would agree with the comments made by the Derwent Estuary Programme in regard to a staged and precautionary approach to industry expansion in Storm Bay and would also have that expectation of the biogeochemical model to be undertaken for Storm Bay.

Huon provides environmental monitoring data via its web based Sustainability Dashboard for the general public, this includes temperature and dissolved oxygen level, ROV surveys, and some production data. In the future it is the company's intention to also make wavebuoy data in the general area also available to the public through the Dashboard or Huon website.

Huon would support the provision of environmental data to the public that is collected through industry based broadscale regional assessments. Further, research programmes intended to help define the appropriate monitoring programmes that support the adaptive management of the industry should also be made available to the public.

The industry as a whole is supported by Adaptive Management principles as described in Section 6 of the EIS. This system is underpinned by environmental monitoring which includes targeted research projects which are aimed at clarifying the relationships between fish farming and the environment and other resource users. Those research projects are also described in the EIS under the relevant sections. Huon would accept that the results of this monitoring should be made available to the public.

## References

EIS to accompany the Draft Amendment No. 3 to the Storm Bay off Trumpeter Bay North Bruny Island, MFDP, July 1998

EIS to accompany the Draft Amendment No. 3 to the Storm Bay off Trumpeter Bay North Bruny Island, MFDP, July 1998

*Discussion paper available via <https://www.huonaqua.com.au/wp-content/uploads/2017/08/Huon-Aquaculture-Salmonid-Industry-Discussion-Paper.pdf>*

## 2.7 Freshwater Resources

### *Freshwater Use*

Representors queried the source and volumes of freshwater required for the proposal.

Huon is the first company globally to use a well-boat for the purpose of bathing fish in freshwater. What this means is that rather than using large liners full of freshwater, fish are transferred into the wells of a boat to swim around for a few hours before they are returned back to a pen.

Where freshwater liners only provide single use of freshwater before it is released back into the sea, a well-boat can clean and reuse the same supply of water up to six times. This has a significant impact on Huon's freshwater efficiency for marine farming.

Huon Aquaculture currently has freshwater fill station at Port Huon, Hideaway Bay, Stringers Bay, Flathead Bay and a sea-based water bathing facility at the East of Redcliffs lease. The water that we use comes from our dams or from the mouth of rivers before freshwater mixes with sea water. This reduces the environmental or social impact of our use of this freshwater.

The total freshwater usage is available on Huon's sustainability dashboard:

<https://dashboard.huonaqua.com.au/environment/freshwater>

*Efforts to further reduce freshwater use:*

- *Ronja Storm*, Huon's new well boat is currently being built in Norway and when completed, will measure 116 meters, have the capacity to bathe an entire 240-meter Fortress Pen, and will have an on-board desalination system to produce its own freshwater from sea water.
- Huon is currently constructing a state-of-the-art salmon nursery at Whale Point on the Huon River. The facility will use world class recirculation technology that will purify up to 98 per cent of the water used so it can be re-used over and over again. The water that isn't reused will be disinfected and undergo a nutrient removal process so that it can be used to bathe fish on the well-boat.

## References

### **3 Impacts on the Human Environment**

#### **3.1 Visual**

Representors raised concerns about the visual impacts of the proposal.

Huon would refer the representor to sections 6.2.1.1.2, 6.2.1.1.3 and 6.2.1.2 of the EIS.

As the visibility of farming operations is based on several variables including the type and size of structure, weather conditions, elevation of viewpoint and so on, Huon undertakes assessment of visual impacts on a case-by-case basis through creating viewsheads for specific locations.

It should be noted that there are two land holders with a direct view of the lease site and land-based view fields towards the lease would be from walking tracks. These land holders have been engaged with both within, and external to the Section 40 process.

To assess the visual impact out the mouth of the River Derwent, Huon as prepared an additional viewshed from Bonnet Hill, overlooking Kingston.

The viewshed is attached and is titled '180314 VIEWSHED Bonnet Hill with barge'. Huon does not believe that there will be a significant impact to the visual amenity as evidenced through the Bonnet Hill viewshed, therefore does not agree with SBTB 21 that there is a problem.

It is important to note that the intrusiveness is highly subjective and that many in the community and waterside residents enjoy a "working" river.

#### **References**

*EIS sections 6.2.1.1.2, 6.2.1.1.3 and 6.2.1.2*

*180314 VIEWSHED Bonnet Hill with barge*

#### **3.2 Navigation**

Representors raised concerns about navigation safety.

Huon would refer representors to section 6.2.2 (Navigation) of the EIS.

##### *Marine debris*

In regards to comments about marine debris, refer back to the answer in section 2.4 of this document.

The importance of maintaining the integrity of the marine environment and surrounding areas in which marine farms operate is a major factor in decision making for Huon, whether that is improving farming practices, purchase of equipment or locating and/or expanding lease sites.

Huon understands that marine debris may cause potential harm to the environment in which it operates and may impact the enjoyment and safety of their users of the waterway and the community more broadly. It is this the responsibility of Huon to undertake activities that reduce marine debris.

Huon has a marine debris policy which forms part of the company's broader Environmental Management Plan and sits alongside specific Environmental and Waste Management Plans for each operational site.

#### *Lease and equipment visibility*

It should be noted that Huon's existing leases are marked according to section 3.1.7 of the Storm Bay off Trumpeter Bay Marine Farm Development Plan.

In addition to adhering to the management control set out by the MFDP, Huon consults with MAST when developing marking of proposed leases and MAST considers the best type of mark taking safety, navigation, and lines of site into consideration. Huon follows MAST's advice when marking leases.

As stated in the Visual section of the EIS (6.1.2), Huon is bound under current Management Controls to;

- 1) Given the offshore location of the marine farming lease, the lessee should take measures which improve the visibility of the marine farming structures and equipment on the marine farming lease area to other marine users. All buoys and other floating marine farming structures and equipment on the sea must be of bright colours (e.g. yellow, blue), or be any other colour that is specified in the marine farming licence;
- 2) Regardless of satisfying (i) above, the lessee should aim to reduce the overall visual impacts of the marine farming lease

Under current Management Controls, farm infrastructure must be dark and unobtrusive to reduce the visual impact. However, Huon believes that a balance must be struck between visual impact and safety which is why Huon have changed the colour of their Mamba lines to make them more visible. This was done in close consultation with the relevant department. Further colour changes to farm infrastructure is a matter for the government to respond to.

In addition to changing the colour of Mamba lines, all large pieces of equipment are GPS tagged and in the unlikely event that equipment breaks free, Managers are immediately notified by mobile app and can swiftly and safely recover the equipment.

#### *Specific recommendations*

In relation to specific recommendations made by representors:

The TSGA is currently engaging with a working group, which includes Huon, to expand the 1300 number and is also considering other platforms such as a mobile app.

Huon agrees that nautical charts should show details of the boundary marks of marine farms. Huon are in discussions with MAST about this issue and are very open to this being a more effective system. It should be noted that this issue should be brought up with MAST and subsequent surveyors as they are responsible for interpreting Huon's nautical information. The process of including boundary marks on nautical charts is complex as it involves both government and private surveyors.

Huon notes that synchronised lights can't be used in Storm Bay as Huon have been advised by MAST to use cardinal markers as they are a more effective marker for the conditions in the area. Cardinal marks can't be synchronised. For leases in the Channel that don't require cardinal marks, Huon are rolling out synchronised lights.

Storm Bay lease uses Sealign GSM corner markers with GSM capabilities that can provide real time information on the position and the operational status of the lights thereby providing for a safer lighting regime for that area. In addition to this, large pieces of equipment are tracked by GPS.

Huon is currently preparing a Standard Operating Procedure (SOP) that includes the points raised in this section.

#### *Sydney to Hobart yacht race*

Huon does not believe that there will be an impact on the Sydney to Hobart Yacht Race as is stated/suggested by some commenters. This is evidenced that the lease was moved out of a Navigation Lane after consultation with MAST, and through consultation with 10 boating clubs and face-to-face meetings with several of these including the Royal Yacht Club and CYCT, none of the clubs raised the Sydney to Hobart Yacht Race as a concern.

It is important to note that the participants in the Sydney to Hobart Yacht Race are experienced, world-class sailors and to date, there has been no indication that Huon's existing operations in the area have had an impact on the race.

#### **References**

*EIS section 6.2.2*

EIS section 6.2.2 and section 3.1.7 of MFDP

EIS section 6.2.2

EIS section 6.2.2 (Navigation) and 6.2.11.3 (Impacts on the Human Environment > Mitigation Measures)

EIS section 6.2.2.2

EIS section 6.1.2

### **3.3 Noise and Lights**

#### *Noise*

Representors raised concerns about the impacts of noise to residential amenity

Huon would refer the representor to section 6.2.6 of the EIS which sets out noise regulations that govern overall operations of vessels. Huon's vessels are compliant with noise regulations set out in Section 6.2.6 of the EIS.

In relation to comments from a representor that Huon been contacted and have acknowledged there is an existing issue with noise and other impacts from regular passage of larger industrial vessels, but to date no solution has been forthcoming, Huon is engaged with community and on numerous times requested specific further information regarding perceived sources of noise. To date, no information has been forthcoming on which Huon can base noise mitigation measures. Further to this, Huon complies with all noise regulations.

Huon accepts that more vessels may move between Tinderbox and Dennes Point however, these vessels are noise compliant. To date, no information has been forthcoming on which Huon can base noise mitigation measures on perceived noise in the Storm Bay area. Further details on the vessels

that will service the proposed lease and the days of the week that movements are expected can be found in Section 3.4.4 (Servicing the Proposed Leases) of the EIS.

To reduce vessel movements, we are using a wellboat which reduces the amount of vessel movements typically associated with operations. This will be further complimented by the introduction of the Huon Supply in late 2018/19 which will reduce the feed deliveries. The use of the control room also allows management of feeding operations to be conducted remotely which limits vessel traffic between pens and two and from the lease.

In regard to a recommendation that noise limits should be imposed in either the MFDP or the environmental licence, Huon does not agree that 'there are no legally enforceable limits or guidelines on noise emitted by marine farming operation' as Huon has regulations in license conditions which are enforceable and Huon's vessels are already regulated under these conditions. See section 6.2.6 of the EIS for further details.

Huon notes that noise modelled in the EIS does not allow for operations to change over time, so imposing a limit based on hypothetical operational changes over time is unsuitable. Huon currently operates in a way that decreases vessel movements wherever possible as is evidenced by the use of a wellboat and a control room for remote feeding. Boat movements to and from the proposed lease will be further reduced by the introduction of the Huon Supply in late 2018/19.

Huon believes that this has been adequately responded to in the EIS. Huon would refer the representor to section 3.4.4 of the EIS.

#### *Light*

Light is required for the control of sexual maturation. Continuous subsurface lighting may be used in the first year of fish at sea from June through to the end of October. The subsurface lighting will comprise 20 to 25 400-watt sub-surface metal halide or LED lights per pen.

This lighting produces a diffuse underwater glow, which can be visible from above but which is unlikely to be visible from a lateral viewpoint. The lights will be powered by the generators described above for the feeding system.

Huon believes that the visual impact of its operations are sufficiently low which is inclusive of the use of underwater lighting.

#### **References**

EIS section 3.4.4

*EIS section 6.2.6*

*EIS section 6.2.6*

*EIS section 3.4.4*

*EIS section 6.2.6*

### 3.4 Commercial fishing

Marine farming leaseholders are granted exclusive rights of occupation of marine farming lease areas. An unavoidable impact is that the general public is excluded from undertaking activities within the lease area.

Huon has made every attempt to prevent the perceived loss of access for commercial operators which has been done through active engagement with commercial and recreational fisher through the EIS process. See section 6.2.8. for further information. Huon has engaged with;

- Tasmanian Seafood Industry Council (TSIC)
- Tasmanian Rock Lobster Association
- Tasmanian Abalone Council
- Local Seine fishers
- TARFish

It should be noted that after receiving feedback from the fishing community, Huon re-sited the zones further east. This directly speaks to Huon's willingness to work with fishers to allow access to fishing grounds wherever practicable.

Huon does not agree with TSIC that there has been a loss of access rights as the information provided by commercial fishers to date does support this comment. Huon does not support compensation to commercial fishers as once mitigation measures (discussed in 6.2.9.3 of the EIS) were implemented, the impacts on fishing are anticipated to be minimal due to increased distance from shore and the retention of preferred fishing grounds in Trumpeter Bay. There is no anticipated impact on the commercial fisheries access to, volume of or long-term recruitment of commercial species.

Huon's sites in Storm Bay are located to maximise the distance from inshore and offshore reefs. All our offshore sites are positioned at distances well in excess of which there is any scientific evidence that we can cause any effect to the reef.

Huon are aware of the preference of TSIC for a 1.5nM buffer around rocky reef habitats. In this instance, Huon were unable to move the lease any further north or east as it would impede on a commercial shipping lane. Huon understand TSIC's preference and will take this into consideration when establishing any new leases. Huon notes that TSIC provide no scientific basis for this preference.

Information from research papers specific to the potential impacts of wild stocks consuming salmon feed, and the presence of wild stock around pens has been provided in Section 2.2 Substrates and Fauna of this document.

Huon acknowledges the presence of commercial fishers in the region. Consultation has indicated that whilst there is school whiting north of the proposed area, this was discussed with the local commercial fisher in relating siting of the lease to minimise any potential interactions or access limitations.

Regarding the potential for impact from nutrients on the water column and seafloor, this is discussed in depth in section 6.1.1 of the EIS. In summary, oxygen depletion from faeces and waste food decomposition is typically localised to the seabed and bottom waters within moderately to well flushed leases.

In preparation for the monitoring program, baseline surveys have already been undertaken and include rocky reef assessments, sediment chemistry and biology, and water column nutrients. Further, the FRDC project 2015/024, 'Managing Environmental Interactions' (Macleod et al., ongoing) is assessing the extent, nature and risk associated with environmental impacts from fish farms at exposed sites, as well as methodologies to best evaluate these impacts.

Huon notes that the transfer of farming efforts towards higher energy (generally more offshore) farming environments reduces potential environmental impacts because of the greater depth, current flow and dissipation of nutrients and organic carbon at the amended lease location.

Huon Aquaculture is committed to extending the scope of near-field environmental research to sub tidal reefs in Storm Bay, and is working with IMAS (through FRDC project 2015/024) to facilitate both the review of the data already collected for rocky reefs and also to extend the collection of data in that area into the future. This research will better inform the potential impacts on shellfish, crayfish and abalone habitat.

Colin Buxton's *Review of the Tasmanian Abalone Council Report on the risks to the Abalone Fishery from Further Expansion of the Salmonid Industry* found that 'evidence for a direct cause and effect relationship between loss of abalone productivity and salmon farming is not clearly apparent from catch and effort data. This analysis point to depletion in the fishery itself to be the most likely cause for a loss of productivity in the Southeast and Easer zones in general'.

Huon is supportive of further research into the potential effects on recreational and commercial shellfish, crayfish and abalone.

## **References**

EIS section 6.2.8

EIS section 6.1.3 and 6.2.9.3

*EIS section 6.1.1 (Water Quality)*

Colin Buxton's *Review of the Tasmanian Abalone Council Report on the risks to the Abalone Fishery from Further Expansion of the Salmonid Industry*

### **3.5 Recreational fishing**

Marine farming leaseholders are granted exclusive rights of occupation of marine farming lease areas. An unavoidable impact is that the general public is excluded from undertaking activities within the lease area.

Whilst Huon accepts that marine farming operations will have an effect on some recreational activities, it is of the opinion that no recreational activity would be excluded from the plan area as a result of this proposal. In addition, the *Living Marine Resources Act (1995)* states that it is an objective of the resource management and planning system of Tasmania to 'sustain the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations.'

Therefore, there should be some limitation to resources to preserve them for future access. The Act states that this is an acceptable trade off.

In regards to recreational shellfish, crayfish and abalone fisheries, Huon has engaged with commercial fishers across a range of sectors, specifically, rock lobster, abalone and seine fishers. As a result of the consultation, Huon has already re-sited the proposed new lease further away from shore, and away from known reefs for rock lobster fishing.

Feedback from one of the two seine fishers indicated that there was unlikely to be any interaction between the two operations as it was not currently an area (bottom) fished by them.

Regarding Rock Lobsters, from March 2017 – Feb 2018, 97.72% of the total Rock Lobster allocation had been taken. This equates to 1025.71 tonnes caught, and 23.99 tonnes uncaught (<http://dpi.pwe.tas.gov.au/sea-fishing-aquaculture/commercial-fishing/rock-lobster-fishery/rock-lobster-catch>). These figures suggest that the Rock Lobster fishery is robust and it is important to note that the proposed lease was moved away from known reefs to minimise impact on rock lobster fishing.

As Huon's proposed lease is at a distance well in excess of which there is any scientific evidence that we can cause any effect to the reef, there is not anticipated to be an impact on Rock Lobster or other species of shellfish that inhabit reef habitats.

A report by Jeremy M. Lyle and Sean R. Tracey on the 2016-17 Rock Lobster and Abalone season, stated that 'most active fishers suggested that the quality of the fishery had improved or was at least similar to the 2015-16 season'

([https://secure.utas.edu.au/data/assets/pdf\\_file/0020/1023185/1617\\_RLAB\\_FWMG\\_FINAL.pdf](https://secure.utas.edu.au/data/assets/pdf_file/0020/1023185/1617_RLAB_FWMG_FINAL.pdf))

which suggests that the Rock Lobster fishery remains strong despite Huon already operating in the area.

In regards to the Abalone fishery, feedback from the fishery indicated that they were more comfortable with aquaculture further off-shore and this is reflected in a distance of almost 2km to shore. There is no abalone fishing in the immediate vicinity of the farms.

Research by Colin Buxton has also found that there is no clearly apparent direct evidence between loss of abalone productivity and salmon farming. Additionally, a report by Craig Mundy and Hugh Jones (IMAS) found that 'there have been persistent reports from divers of changes to reef habitat. These changes appeared to follow extensive depletion of abalone populations by fishing, suggesting a level of interdependency between abalone and habitat'

([http://www.imas.utas.edu.au/data/assets/pdf\\_file/0006/982464/TasAbaloneAssessmentFY2016.pdf](http://www.imas.utas.edu.au/data/assets/pdf_file/0006/982464/TasAbaloneAssessmentFY2016.pdf)).

Given that there is no Abalone fishing in the immediate vicinity of Huon's operations, and that the most immediate risk to the industry is from overfishing, Huon does not believe that its operations will have an impact on the fishery.

Huon will continue to engage with TARFish to better educate fishers and is supportive of research or other evidenced based approaches to considering interactions between species.

## References

<http://dpi.pwe.tas.gov.au/sea-fishing-aquaculture/commercial-fishing/rock-lobster-fishery/rock-lobster-catch>

[https://secure.utas.edu.au/\\_data/assets/pdf\\_file/0019/743113/Managing-Inshore-Stocks-of-Southern-Rock-Lobster-for-Sustainable-Fishery.pdf](https://secure.utas.edu.au/_data/assets/pdf_file/0019/743113/Managing-Inshore-Stocks-of-Southern-Rock-Lobster-for-Sustainable-Fishery.pdf)

[https://secure.utas.edu.au/\\_data/assets/pdf\\_file/0020/1023185/1617\\_RLAB\\_FWMG\\_FINAL.pdf](https://secure.utas.edu.au/_data/assets/pdf_file/0020/1023185/1617_RLAB_FWMG_FINAL.pdf)

[http://www.imas.utas.edu.au/\\_data/assets/pdf\\_file/0006/982464/TasAbaloneAssessmentFY2016.pdf](http://www.imas.utas.edu.au/_data/assets/pdf_file/0006/982464/TasAbaloneAssessmentFY2016.pdf)

### 3.6 Recreational activities

Huon's lease area will take up less than 1% of the Storm Bay area.

In addition, the *Living Marine Resources Act* (1995) states that it is an objective of the resource management and planning system of Tasmania to 'sustain the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations.' Therefore, there should be some limitation to resources to preserve them for future access. The Act states that this is an acceptable trade off.

Huon's view is that there is an extremely low impact on waterway access as set out in Section 5.5.5 of the EIS.

### References

Living Marine Resources Act 1995 [http://www7.austlii.edu.au/cgi-bin/viewdb/au/legis/tas/consol\\_act/lmrma1995339/](http://www7.austlii.edu.au/cgi-bin/viewdb/au/legis/tas/consol_act/lmrma1995339/)

EIS section 5.5.5

### 3.7 Tourism

Huon believes that potential impacts to tourism has been adequately responded to in the EIS. Huon would refer the representor to sections 6.2.1.1.2, 6.2.1.1.3 and 6.2.1.2 of the EIS.

Further to this, Huon abides by all conditions set out by the department which states that all farming equipment must be dark and unobtrusive. It should however, be acknowledged that not everyone supports the view that the region should be free of fish farms, and many members of the community enjoy a working river and the employment and flow-on effects that fish farming brings.

Huon note that representors raising concerns about potential impacts to tourism have both failed to identify perceived 'risks to tourism' and their associated 'impact'. If this claim is to be made, Huon would argue that these groups should supply a risk assessment or other factual basis for their claims. Huon notes that no submissions were received from tourism operators, land-based or otherwise, which indicates that these claims are not supported the by the tourism industry. Additional to this, no substantive evidence has been supplied to Huon to date that its existing operations in Storm Bay have had an impact on tourism operators. Representors have failed to identify what part of the Bruny Island brand or experience would be impacted and have provided no evidence to support this claim.

Huon would like to note that tourism and fish farming aren't mutually exclusive. In Macquarie Harbour for example, the two not only coexist, but fish farms form an integral part of water tours by tourism operators.

In addition to this, Huon notes that concerns have been raised in the media recently by a shack owner on the island about the increasing number of tourists visiting the island which is contrary one representor's concerns that fish farming will negatively impact tourism.

## **References**

*EIS sections 6.2.1.1.2, 6.2.1.1.3 and 6.2.1.2*

*EIS section 6.2.11*

*Media clipping dated 30 March 2018*

*EIS section 6.2.11*

### **3.8 Farm location**

Some representors suggested that expansion into Storm Bay should correspond with closure or relocation of farms in more inshore/ sheltered waters. Huon has voluntarily closed down or relocated our shallowest and most inshore leases in the Channel. Huon has no intention to further reduce our leases on the Channel as sheltered sites are an important part of Huon's production as they offer sheltered growing conditions for young fish and are an important part of Huon's overall production.

### **3.9 Socio-economic impacts**

Representors raised concerns about the potential for industry expansion in Storm Bay to impact on tourism and the Tasmanian and Bruny Island Brands.

Huon has been involved in building 'Brand Tasmania' and will continue to champion it locally and nationally through producing high-quality produce. In addition to this, Frances Bender led the Tasmanian industry's response to the (former) Federal Government's Biosecurity Bill. Frances Bender's response to this Bill and her ongoing championship of Biosecurity and the importance of protecting Tasmania's clean and disease-free status, demonstrates thorough understanding of the pressures on Tasmanian produces to maintain the Tasmanian brand.

Huon contends that salmon is farmed safely and sustainability and contributes to the Bruny Island brand as a local producer. In addition to this, Huon are partnered with Bruny Island Cheese, one of the island's best known producers, to assist with organically grown fodder for their farming operations in the Huon Valley. In Huon's view, this evidences the ability of salmon farming operations and other tourism and food related industries to work cooperatively to enhance the Tasmanian Brand and reputation as "clean and green."

To date, Huon has not been contacted by Bruny Island producers with concerns that salmon farming has, or will have an impact on the island's food reputation.

In relation to impacts to the Tasmanian Brand, representors pointed to industry performance in Macquarie Harbour. Huon's views regarding the management of Macquarie Harbour are well documented and have remained consistent since 2014.

In addition to this, Huon took the unprecedented step of pursuing legal action over the issue which demonstrates that Huon has taken steps in an effort to constitute effective change to the management of the industry.

In relation to perceptions of the industry generally, Huon specifically and the salmon industry more widely enjoys broad support within the Tasmanian community. This is evidenced by a recent community attitude research study of southern Tasmanian residents undertaken by the Company in December 2017.

The research found that;

- ~80% of Tasmanians support the industry
- ~70% support the expansion of the industry

Huon believes that issues around environmental impact, employment, State finances and Tasmania's future are adequately addressed in the EIS.

In relation to comments from a representor that marine fish farms will not need to pay council rates, paid by all land-based businesses, salmon farming is managed by the State Government who determine the fees and charges associated with management of the industry and Huon specifically in the marine environment.

In this context, Huon is currently subject to lease and license fees as well several levies for "environmental management and regulatory decision making" and to support "assessment of industry proposals, tactical research and scientific projects specifically focused on expanding industry production."

Huon's land-based operations are subject to local council rates, fees and charges. In addition, Huon pays lease and license fees and invests significantly in research. Huon notes that the Tasmanian Government is responsible for determining the fees and charges associated with the management of the industry.

## **References**

*See responses in Section 3.11 above.*

*Point 2 – media clipping dated November 10, 2017*

*Point 4 - media clipping dated June 24, 2016*

*EIS section 6.2.11 and 6.2.8*

*EIS section 6.2.13*

## **4 Holistic Impact Assessment**

Refer to section 2.1, response to Derwent Estuary Program.

For detail, refer to sections 2.1 and 2.2.

The current process does not accommodate shared planning and cumulative impact consideration unless it is undertaken on a voluntary basis by all applicants. There are commercial, investment and company philosophy considerations that are necessarily difficult to align.

We support the fact that a biogeochemical model supported by the BEMP is required before expansion further than the 40,000 tonne limit.

Huon are supportive of exploring the potential of an AMA and regulation as it refers to biosecurity and fish health.

## **5 Land-Based Salmon Farming**

Huon is developing Australia's first "salmon nursery" at our Whale Point industrial site in Port Huon which will take our first step toward land based farming and further support our move into off-shore farm sites.

Whale Point is expected to be up and running in 2019.

Right now, land-based salmon farming is not a viable farming method for a range of reasons as listed below. There are no large scale successful land-based salmon growing operations with around 0.04% of global salmon production currently undertaken in land-based facilities.

Current drawbacks to land-based salmon farming:

1. The fish need to be held at very high stocking densities to be economically viable, this is up to 10 times higher than would be the case in sea-pens. Sea-pens are lower density than other free range animals.
2. Fish have a need to go to saltwater at a certain time in their life cycle. They can be held on land in freshwater but can become stressed. If you grow the salmon in seawater there are issues with disposing of the waste as it cannot go on land due to the very high salt content.
3. Although it is a more controlled environment if something goes wrong you can lose all the fish. This happened recently at a land based facility.
4. The capital cost is very high and it is not currently economic to produce on land.

Technology is advancing steadily however and if Huon do shift to land-based farming, it would make sense to build facilities close to markets and cease operations in Tasmania. As a fiercely Tasmanian company, Huon want to avoid that and believe a balance of land-based and off-shore marine farming will allow us to stay right where we are.

## **6 Moratorium**

A key driver for Huon Aquaculture's success to date has been the ability to satisfy domestic market demand. Around 90% of Huon Aquaculture's salmon is sold in Australia, however over 70% of all seafood consumed in Australia is imported.

To ensure Huon Aquaculture mitigates against the risk of import replacement of Australian production and to continue to meet market demand, Huon Aquaculture needs to continue to increase production at around 10% per annum to match domestic demand growth.

To address the growth currently being experienced domestically and internationally, Huon Aquaculture must expand its marine farming operations and consolidate the company's experience in off-shore farming, whilst meeting community and stakeholder expectations.

Huon therefore does not support a moratorium on fish farm expansion.

Huon supports the ongoing development of policy, regulation and standards that meet world's best practice. It is Huon's view that the Tasmanian Government needs to adequately resource the development and implementation of this to guide the safe and sustainable ongoing growth of the industry.

## **Reference**

EIS Section 2.1 (Proposed Amendment Development)

### **7 Stakeholder Consultation**

Huon has been actively engaged in wide-ranging and ongoing consultation since 2016 in relation to this proposal, and notes that Huon did not determine the timing of the consultation over Christmas. Huon supports a collaborative approach to the shared waterway as is evidenced by its involvement in the Huon and D'Entrecasteaux collaboration. Huon notes that the Derwent Estuary Program Pty Ltd is part of this collaboration.

The presumption that Farming in the Storm Bay can have a significant effect on the Derwent estuary is far from being the case even in theory at present e.g., the precursory Storm Bay modelling in the EIS suggests that there will be no measurable (let alone significant) impact as far north as the Derwent estuary. It is more likely that conditions in the Derwent could possibly affect the farms. However, as there is a modelling boundary between the Derwent and the Channel and Storm Bay then it would make perfect sense that the monitoring data is targeted towards making the model as reliable as possible through having rigorous environmental data across these boundary areas. Huon would possibly submit that the DEP should be involved on a case by case basis for issues arising across the boundary of the two "programmes".

Huon are supportive of TSIC's request to establish a forum and are open to taking a leadership role in this process.