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Technical note

Project	Ocean Barramundi Expansion Project		
From:	BMT; Tassal		
Date:	24/02/2025	То:	EPA Services
Doc Ref:			DPIRD
Subject:	Revisions to S38 Referral Supporting Report		

1.1 Introduction

Tassal Operations Pty Ltd (TOPL; referred to as Tassal hereafter) is proposing to implement an expansion of its current ocean barramundi farming operations in Cone Bay, West Kimberley to the broader Buccaneer Archipelago, (the Proposal, see Figure 1). This expansion will allow Tassal to increase production to approximately 17,500 tonnes per annum, while also increasing the environmental sustainability of their operations. The Proposal will help meet anticipated demand in the supply of high-quality barramundi across state, national and international markets.

1.2 Environmental impact assessment process

Tassal has referred this Proposal to the Western Australia (WA) Environmental Protection Authority (EPA) under Part IV (Section 38) of the *Environmental Protection Act 1986 (WA)* (EP Act), as a Proposal that has potential to have a significant impact on the environment.

The preliminary key environmental factors relevant to the Proposal include:

- Marine Environmental Quality;
- Benthic Communities and Habitats;
- Marine Fauna;
- Social Surroundings.

After initial review of the Proposal and its supporting documentation, the EPA determined the Proposal required assessment under the EP Act and set an Assessment on Referral Information level of assessment. In addition, the EPA submitted a formal Request for Additional Information under Section 40(2)(a) of the EP Act on the 6/10/2022, requesting that Tassal submit additional information in the form of a revised Section 38 Referral Supporting Report in order to support the assessment.

Tassal has also provided a copy of the supporting documentation to the Department of Primary Industries and Regional Development (DPIRD) in order to secure an aquaculture licence for the ocean-based leases under the *Fisheries Resources Management Act 1994* (FRMA 1994). DPIRD subsequently has provided this information to relevant stakeholders and decision-making authorities for review, as summarised below:

- Department of Water and Environmental Regulation (DWER)
- Department of Biodiversity, Conservation and Attractions (DBCA)

- Department of Energy, Mines, Industry Regulation and Safety (DMIRS)
- Department of Planning, Land and Health (DPLH)
- Aquaculture operators in proximity to the Proposal
- Mayala Inninalang Aboriginal Corporation RNTBC (MIAC)
- Bardi and Jawi Prescribed Body Corporate (PBC)
- Kimberley Land Council
- Western Australian Fishing Industry Council (WAFIC)
- Recfishwest

These groups subsequently provided comments on the referral supporting documentation.

1.3 This document

This technical note presents a summary of the submissions provided by the EPA through the Request for Additional Information, as well as those received through the FRMA 1994 process. Responses have been provided to each of these submissions, including reference to sections of the Referral Supporting Report where the changes have been made. Further information on changes made to the referral by Tassal have also been included for context, particularly with regards to submissions to aspects of the Proposal that are no longer relevant.

2 Proposal Clarifications and Refinements

Upon acquiring the Ocean Barramundi Expansion Project in August 2023, Tassal conducted a review of the scale and requirements as they saw necessary for the Proposal's long-term success. This review resulted in a major reduction in the scale of the Proposal as detailed below:

- Complete removal of all three land-based nurseries from the Proposal
 - Note: Tassal will still operate a land-based nursery at the Broome Tropical Aquaculture Park, however the infrastructure associated with this nursery was not part of the original Proposal. DPIRD have jurisdiction over the management of the Broome Tropical Aquaculture Park, and will manage the nursery located here directly. This has been approved directly by DWER and DPIRD.
- Removal of 6 of the 13 leases originally proposed, with 7 now remaining
 - Remaining leases are as follows
 - Razor Island
 - Edeline Island South
 - Edeline Island East
 - Cecelia Island
 - Bayliss Island
 - Bayliss Island Extra
 - Dorothy Island

The revised development envelope and indicative footprint for the Proposal is provided in Figure 1. A summary of the key relevance of the clarifications is provided in Table 2.1. This revised Proposal was approved by the EPA under Section 43(a) of the EP Act on 13/06/2024.

Table 2.1 Approved Proposal refinements

Clarification and/or Refinement	Aspects	Significance of clarification and/or refinement
Removal of proposed land-based nurseries at Ardyaloon, Arrow Pearling Base and Broome	Terrestrial Flora Terrestrial Fauna Social Surroundings Marine environmental quality Benthic communities and habitats	 The removal of the three nurseries results in: Complete removal of the terrestrial footprint and development envelope of the Proposal Removal of application of the EPA Factors Terrestrial Flora and Terrestrial Fauna to the Proposal

	refinement
	 Reduction of impacts to the Factors Marine Environmental Quality, Benthic Communities and Habitats, Marine Fauna and Social Surroundings
Social Surroundings Marine environmental quality Benthic communities and habitats Marine fauna	 The removal of these six ocean-based leases results in: Reduction of impacts to the Factors Marine Environmental Quality, Benthic Communities and Habitats, Marine Fauna and Social Surroundings
	Social Surroundings Marine environmental quality Benthic communities and habitats Marine fauna



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Figure 1. Revised Proposal Development Envelope and Footprint

3 Response to State Agency Comments on Referral Supporting Report

3.1 EPA Comments

Table 3.1 presents the EPA comments on the draft Referral Supporting Report and Tassal's response.



Table 3.1 Summary of requested changes to Referral Supporting Report, including relevant sections where changes were made

Requirement	EPA Services Comments	Proponent Responses
Marine Environmental (Quality	
Zone of impact and	The hydrodynamic modelling appears to be generally appropriate however the inputs to the	The prediction of impacts for Marine Environmental Quality has bee
levels of ecological protection	model and approaches taken to designate areas of impacts are not appropriate for predicting impacts to MEQ. Specifically, a zone of impact approach has been used for elements of marine environmental quality that should be addressed through levels of environmental protection. It may be appropriate to continue to use zones of impact for the evaluation of impacts to BCH (i.e. from smothering, reduced light, direct take, etc), however, for predicting and managing impacts to MEQ, the approach outlined in the EPA's Technical Guidance for Protecting the Quality of Western Australia's Marine Environment should be used.	aligns with the Technical Guidance for Protecting the Quality of Wes Environment (EPA 2016a). No reference to Zones of Impact are no defined Environmental Quality Plan has been provided, with further the Environmental Monitoring and Management Plan to ensure thes
	This involves identifying the environmental values (EVs) to be protected and spatially mapping where the associated environmental quality objectives (EQO), including levels of ecological protection (LEP), are proposed to be achieved. It should also be noted that there are 5 environmental values that apply to this proposal. Indigenous cultural and spiritual values must also be protected and considered in this proposal and will require consultation with the relevant Traditional landowners.	
	The proponent should revise the prediction of impacts to ensure that the zone of impact approach is only used for assessing impacts to BCH and that spatially defined EQOs and levels of ecological protection are used to designate areas of impact from MEQ stressors. These should be spatially defined in an Environmental Quality Plan (EQP) that effectively sets out the environmental protection outcome for MEQ that the proponent proposes to achieve. The Environmental Monitoring and Management Plan (EMMP) for marine environmental quality is then based around demonstrating that the EQP is being achieved for the life of the project. The EQP should consider all five environmental values that apply to marine waters.	
Nursery outfall	There is no analysis of the impacts of nursery outfalls on MEQ and no evidence to support the statement that the outfalls from nursery sites do not need to be evaluated. The proponent is expected to identify the EVs to be protected in the vicinity of the outfall and to spatially map the EQOs and LEPs that the proponent proposed to achieve. Monitoring will be required to confirm these are being achieved unless a very strong argument and supporting evidence can be provided to show that a monitoring program is not required, and this is accepted by the EPA.	As per the approved Request to Amend a Proposal During Assessm 43(a) of the EP Act, dated 13/06/2024, all infrastructure related to th been removed from the Proposal. As such, this is no longer relevan
	Please include a monitoring program for the outfalls.	
Use of antibiotics/ pharmaceuticals	Consideration also needs to be given to the use of antibiotics/ pharmaceuticals. At present, it is stated that all efforts will be made to avoid the use of antibiotics however their use is not precluded in the referral documentation. If the use of antibiotics is a possibility at any stage of operations, the impacts must be evaluated and a management and monitoring strategy described within the referral documentation.	A revised impact assessment on the potential impacts of ad-hoc usa therapeutants (which includes antibiotics) has been provided within Supporting Report.
		EMMP in the event that they are used
	Please evaluate the impacts of using antibiotics or pharmaceuticals and include a monitoring program in the event that are used during the life of the facility.	
Data and analysis	The data and analysis contained in Appendix D, Water Quality Baseline Monitoring Report is not adequate for the verification of the integrated hydrodynamic model nor for informing the	

Relevant Section in revised Section 38 Referral Supporting Report

n revised such that it stern Australia's Marine Supporting Document w made. A spatially changes made within se changes align.

Section 5, Referral Environmental Monitoring and Management Plan (EMMP) (throughout)

nent under Section ne nursery sites has NA

age of chemical the Referral

Section 5 EMMP – Section 3

een included within the

Section 5 EMMP – Sections 2, 3



EPA Services Comments Requirement

Proponent Responses

derivation of site specific environmental quality criteria (EQC) or acting as a baseline. Specifically,

- Sampling has only been undertaken over 6 months which is not adequate for capturing seasonal variability. A minimum of two years data should be used with at least 20 samples per season for seasonal data to enable calculation of site specific EQC and to establish appropriate baseline datasets for each lease site/grouped leases.
- Data cannot be pooled across lease areas noting they are located in distinct areas. It may be possible to group some lease areas together should they be within the same geographical hydrological setting and the environmental conditions be similar – this may be an appropriate use of PERMANOVA's - to identify which sites can be grouped. It would be expected that a set of baseline data exist for each lease area or at the very least each grouping if evidence supports environmental conditions are consistent across the grouped lease areas.
- Likewise with reference sites data should not be pooled unless there is sufficient evidence to support consistency between environmental conditions. Again, an appropriate use of PERMANOVA's may be to identify which reference sites are similar to which lease areas and enable a suitable reference site to be designated to each lease area/grouped lease areas.
- Application of the zone of impact approach may be appropriate for use in terms of impacts to benthic communities and habitats (BCH) however it is important to remember that within the zone of moderate impact (ZOMI) any impacts are expected to be recoverable. These designations are intended for use to predict permanent impact or loss to BCH (zone of high impact (ZOHI)) and recoverable impact/loss (i.e. in response to a temporary pressure) to BCH (ZOMI). Noting the aquaculture will result in a continuous pressure it is not clear how appropriate the designation of these zones is or how recovery will be achieved.
- Zones of impact (i.e., ZOHI, ZOMI and zone of influence) should not be used for the assessment and management of impacts on marine environmental quality. These impacts are more appropriately modelled and managed in the context of LEPA, HEPA, MEPA and maxEPA.
- It is not clear whether the modelling predicts the impact from farming operations on top of baseline data. For example, Figures 1.4 and 1.3 in the EMMP present the projected levels of DIN and Chlα under different farming scenarios – it is not clear if the values used to delineate different areas of impact are the additive amounts of DIN and Chla or inclusive of baseline amounts.
- Water quality stations used for model calibration were the outer boundary stations it is not clear why the other stations were not used noting the conditions inshore at the sample sites (lease sites) are likely to be considerably different from those offshore at the stations used for calibration.
- The proponent also needs to ensure that references sites are selected that are representative of the baseline condition in lease areas. The use of MaxEPA sites as reference sites may not be appropriate if the baseline conditions at MaxEPA sites are significantly different from those at the lease sites. This does not negate the need to sample at MaxEPA sites but may mean additional reference sites are needed that are representative of lease sites.

Action

Please revise the documentation to address the comments

Benthic communities and habitats

- Additional baseline data has been collected to supplement the original baseline dataset between January 2022-March 2024. This supplemented baseline dataset has subsequently been used to revise site specific EQC while providing an appropriate baseline dataset for each lease.
- Using the supplemented baseline dataset, testing of the environmental conditions at each lease has been conducted to verify whether the environmental conditions are statistically significantly different or not. A subsequent set of pooled data has been defined, with Razor Island within Cone Bay considered independent of the other proposed leases in Strickland Bay, as well as those adjacent to the Bayliss Islands and Dorothy Island. This pooling has only been conducted to calculate site specific EQC that are appropriate for each area. A complete set of baseline data still exists for each individual lease.
- As above, statistical testing (using PERMANOVA's) has been conducted to verify that the proposed reference sites are a) not statistically significantly different to the lease sites they will be compared to; and b) not statistically significantly different to other reference sites from which data will be pooled together for assessment within the EMMP.
- As above, zones of impact are no longer referenced with regards to impacts to marine environmental quality. See below for response regarding recoverable vs permanent impact definition.

- The modelling predictions are inclusive of baseline levels of the parameter that is being assessed. This has been further clarified within the baseline documentation.
- All water quality sites were used for model calibration, not just those on the boundary of the modelled area.
- · Additional reference sites have been included as part of the additional baseline data collection. The appropriateness of these reference sites and their use to compare with lease sites has further been verified using PERMANOVA's (as above)

Relevant Section in revised Section 38 **Referral Supporting** Report



Requirement	EPA Services Comments	Proponent Responses	Relevant Section in revised Section 38 Referral Supporting Report
Local Assessment Units (LAUs)	The understanding of benthic communities and habitats is not appropriate for informing an evaluation of impacts in the context of projected water and sediment quality impacts. While BCH have been mapped directly below and adjacent to the lease areas, the mapping extent does not appear to align with extent of projected impacts, and zones of impact have not been overlayed on BCH map, meaning it is not possible to form a view as to what the total impact to BCH will be.	The extent of the zones of impact have been overlaid on the revised benthic habitat maps to verify total impacts to BCH. Further benthic habitat mapping has been conducted where necessary to provide information across the entirety of the area projected to be impacted by the Proposal. Local assessment units have been revised to capture entire geomorphological areas that are consistent with the EPA's Technical Guidance for the Protection of Benthic Communities and Habitats.	Section 6
	is still not consistent with the EPA's Technical Guidance for the Protection of Benthic Communities and habitats (section 4.2) and not appropriate. There is also no justification as to why some areas are very small (eg. around 20 km2) and others are very large. It would be more appropriate to align the LAUs with the geomorphology of the area (eg bays).		
	While five LAUs may be an appropriate number to divide the area into, the definition of these LAUs should be revised and the proponent should look to align the LAUs with natural features of the region (eg. one entire bay system). Once the LAUs are appropriately defined, the proponent should attempt to map BCH over at least the entire area of projected impact within the LAU which may require extrapolation and interpolation using satellite imagery and side scan sonar. Projected zones of impact should be overlayed with a BCH map to demonstrate that BCH are appropriately understood despite not being mapped across the entire LAU. This will enable an informed calculation of cumulative losses to BCH and a better understanding of the ecological consequence of any losses.		
Cumulative loss calculations	The prediction of impacts to water quality was undertaken by comparing the water quality projected under farming scenarios with the water quality modelled under 'verified baseline' conditions. These comparisons were made using the 50th percentile value of the farming scenario outputs. In accordance with the Technical Guidance, the approach should consider possible (likely worst case) and probable (likely best case) extent of impacts and use these to derive the EQG and EQS for the management of impacts to BCH and facilitate management before impacts extend beyond projected ranges. Care should be taken to ensure that where an area is designated as ZOMI or ZOI there is confidence that the impacts will be recoverable within the required timescale noting the aquaculture development is likely to be a near constant pressure.	A revised zone of impact approach has been undertaken to reflect this guidance. A zone of high impact (ZoHI) has been applied across the entire area where a zone of moderate impact (ZoMI) was previously applied, noting that there is uncertainty regarding the recoverability of impacts under continuous pressure from aquaculture operations. As such, a revised ZoHI now directly abuts with the original zone of influence (ZoI). Though this is not necessarily in line with the Technical Guidance, whereby ideally a ZoHI should abut with a ZoMI and then a ZoI, this approach was deemed the most appropriate to conservatively assess potential impacts to benthic communities and habitats under continuous aquaculture operations.	Section 6
	The prediction of impacts to BCH described many impacts as recoverable however it is not clear how or over what time scale this recovery will occur when the source of pressure will be more or less constant and not temporary. The threshold criteria presented in Table 6.4 do not reflect the latest thresholds developed through the WAMSI Dredging Science Node and thus are not representative of the most contemporary information. There appears to be a misunderstanding relating to the designation of the ZOMI noting that direct loss from mooring of sea pens has not been calculated as it falls within the ZOMI. Given that impacts within this zone are meant to be recoverable and the direct loss of habitat as a result of sea pen mooring and anchoring is likely to constitute permanent direct loss this should be a ZOHI and calculated separately.	Direct loss of habitat from anchorages from sea-pens have always been defined as falling within the Zone of High Impact. This is maintained within this revised impact assessment. Thresholds used for impact assessment have been revised to follow the WAMSI Dredging Science Node.	
	The proponent should revise the projected extent of impacts with careful consideration of what constitutes a recoverable impact and a permanent impact and using the thresholds based on the most contemporary science (WAMSI Dredging Science Node).		



Requirement	EPA Services Comments	Proponent Responses	Relevant Section in revised Section 38 Referral Supporting Report
Coral habitats	The predictions of loss of BCH talk about the loss or 'rock (coral)' it is not clear if this is considered to be coral habitat or not? If there are uncertainties regarding the presence of coral and it is not possible to distinguish coral from rock habitat in the side scan sonar/satellite imagery data, then these areas should be conservatively classed as coral habitat. Action/s The proponent should clarify which habitat supports coral and update the BCH mapping to	All areas where coral habitats are potentially present have been redefined as 'Coral', not 'Rock (coral)'	Section 6
	reflect this		
Environmental Monitori	ng and Management Plan		
Plan content	• The EMMP does not define appropriate EGS and EQG. While there appears to be a misunderstanding in terms of the nomenclature that should be used (trigger has been used instead of guideline or standard) it is recommended that the entire EQG and EGS framework be revised to ensure consistency with the technical guidance. For example, each 'trigger' should be rewritten as a guideline or standard and the proponent should ensure that for the environmental value of 'ecosystem health' appropriate values are used for each of the MEPA/HEPA/MaxEPA. On several occasions, the same guideline values have been applied for both HEPA and MaxEPA, and the document talks to the 'acceptability of impacts within the maxEPA and HEPA, which does not provide confidence that the MaxEPA objectives of no change from undisturbed conditions will be achieved.	 The EMMP has been substantially revised to remove any uncertainty in the level of impact mitigated EGS' and EQG' throughout the EMMP have been refined, with reference to trigger only where appropriate Guideline values for HEPA and MaxEPA areas have been revised such that they are not referencing the same criteria where appropriate 	EMMP
	• The selection of the Shannon-Weiner diversity index for infauna monitoring to demonstrate that EQS related to organic solid waste have been achieved is not considered appropriate given its low level of sensitivity to species composition and abundance shifts. To demonstrate the required level of environmental protection is being achieved, the infauna monitoring should utilise additional criteria to demonstrate that for HEPA and maxEPA sites, there is no significant changes in the biodiversity, abundance and biomass. For MEPA sites there should be no change in species composition but changes in biomass and abundance are acceptable.	 An additional measure of diversity for assessing infauna has been included which provides sensitivity to species composition and shifts in abundance 	
	• The proposed sampling locations are not appropriate as only MEPA sites are proposed to be sampled initially with an exceedance within the MEPA triggering further sampling in the HEPA. Given that different EQG/EQS should be applied to each of the LEPA zones, the sampling design needs to include sampling within the MEPA, HEPA and maxEPA sites. Sample sites (minimum three) should be located on the boundary of these zones to ensure that environmental quality parameters do not exceed the relevant EQG/EQS at the boundary of the zone Based on the impact predictions in Figure 1.4 and 1.3, elevations of Chla and DIN are projected some distance from the lease areas. Monitoring sites should be selected in areas where elevations in Chla and DIN are projected to occur.	 Timing of the sampling has been revised such that monitoring occurs at all sites under the same regime as the MEPA sites. Additional monitoring sites have been included for monitoring of any potential increases in chlorophyll-a which were projected in nearshore areas distant from the leases. 	
	• Sampling for metal toxicants has only been proposed within the MEPA and HEPA, presumably as no baseline data exists to compare MaxEPA sites to. While it is acceptable to use the default guideline values for these toxicants, baseline data should still be collected to enable identification of the cause of an exceedance should one occur.	• Further baseline data collection at the MaxEPA sites is required prior to the commencement of operations at each lease site. Collection of baseline sediment data for the analysis of metal concentrations will be included as part of this.	
	 Table 3.4 sets out EMP components for aesthetic elements. The EQGs include words such as 'should' and 'excessive' which are not appropriate as they do not represent firm measurable guidelines. The EQGs should be revised and any words that introduce ambiguity as to the strength of commitments or level that will be achieved, removed. 	 Wording such as 'should' and 'excessive' has been removed from the entirety of the EMMP. Objectives of the EMMP have been revised to remove words such as 'minimized and 'excessive' has been removed from the entirety of the EMMP. 	
	Objectives should be revised to reflect clear, specific management targets and avoid the use of words such as minimise. In addition, some objectives talk about the acceptability	Objectives of the EIVINP have been revised to remove words such as 'minimise' and 'acceptability'	
	• The general approach to coral sampling is considered appropriate however it is recommended that additional sampling should be undertaken in the aftermath of extreme events (eg. cyclone or marine heatwave), should they occur, to ensure that the cause of any	 A recommendation to conduct sampling in the aftermath of extreme events has been included within the EMMP. The wording of the EMMP has been revised to make clear 	



Requirement	EPA Services Comments	Proponent Responses
	 long-term impacts be understood and correctly attributed to natural phenomena or the development. In addition the EMMP states that sampling will not commence until the pens are installed and farming has begun. It is recommended sampling start prior to the stocking of the cages in accordance with the proposed BACI design. The monitoring plan proposes the use of pooled data for comparison against EQGs/EQSs. This is not an appropriate approach and care should be taken to avoid inappropriate pooling of data. For example, monitoring data should not be pooled from sites different distances along a monitoring transect, however if multiple sample sites are located on the MEPA/HEPA boundary for one lease area down current of the cages, these may be pooled. Baseline data from different lease areas should also not be pooled unless the leases are located close together and evidence exists to support similar baseline characteristics. MEB is happy to discuss the selection of monitoring sites further, including what data should and should not be pooled. Action/s It is recommended that the EMMP be substantially revised with care taken to ensure sampling and data treatment will be consistent with standard scientific principles and the technical guidance. The proponent should use consistent nomenclature throughout the EMP rather than alternate between the use of words such as indicator, trigger, EQG, EQS and management target, and take care to ensure that the EQG and EQS that are set are appropriate for the designated level of environmental protection. It is recommended that environmental objectives be used to set firm management targets that are appropriate for the environmental receptor/factor. In addition, the EMMP needs to consider all 5 environmental values and spatially map the EQOs and LEPs. If monitoring is to only focus on compliance with the EV of ecosystem health then a strong argument will be required explaining why focusing on this EV will protect each of the other EVs. 	 that baseline sampling of the coral areas is required prior to operatilease. Pooling of data has been clarified, such that site data along a monit not pooled. As noted in previous comments, baseline data for differ only been pooled where statistical evidence exists to suggest that the environmental conditions. Further assessment and monitoring of the Environmental Value ass Surroundings, particularly cultural values of Traditional Owners, has within the EMMP.
Marine Fauna		
Entanglement of predators	It is not clear what the outer net of the sea pen will be made of and whether it will be resistant to tearing by large sharks/crocodiles. If the net is able to be torn, there is concern that marine fauna may become entrapped between the two nets or entangled in the torn nets Action/s Clarify net resilience given the nature of predators likely to be encountered.	Further information has been included to clarify that the net has a brea exceeding the ability of natural predators to cause damage too
Interactions with vessels	While it is acknowledged that vessels will be small and slow moving, there is no consideration for minimum offset distances between vessels and marine mammals should they be present in the area. It is recommended that minimum approach distances consistent with the Australian National Guidelines for Whale and Dolphin Watching be implemented. Action/s Clarify protocols regarding interactions with cetaceans.	Further information on minimum offset distances has been included in mitigative actions regarding marine mammals
Flora and vegetation		
Survey requirements	It is noted that the referral documentation relies on desktop assessments for flora and vegetation. Further information is required, particularly at Ardyaloon noting the presence of the threatened ecological community Monsoon vine thickets on the coastal sand dunes of Dampier Peninsula within the development envelope.	As per the approved Request to Amend a Proposal During Assessmer 43(a) of the EP Act, dated 13/06/2024, all infrastructure related to the been removed from the Proposal. Hence this comment is no longer re

	Relevant Section in revised Section 38 Referral Supporting Report
erations commencing at	
ionitoring transect are ifferent leases have at they are similar in	
associated with Social has also been included	
oreaking strain far	Section 1 Section 7 EMMP
d in the protocols and	Section 7 EMMP
ment under Section he nursery sites has er relevant.	



EPA Services Comments Requirement **Proponent Responses** Action/s Undertake flora and vegetation surveys to confirm vegetation likely to be impacted by the proposal Social surroundings Survey and The referral supporting document outlines that the primary focus of the assessment for the Further stakeholder engagement has been conducted since 2021, including site visits and lease areas is the use of the region for fisheries and tourism. This is not appropriate. Both the on-country heritage surveys. Further details are provided as to the extent of stakeholder consultation requirements nursery sites and lease areas are known to have significance to Aboriginal people and engagement in the relevant sections of the referral supporting documentation and the EMMP, however the following provides a brief summary: therefore the consideration of the potential impacts of the lease areas also needs to consider the values of the area to Traditional Owners and/or relevant or appropriate knowledge holders. • Mayala Inninalang Aboriginal Corporation RNTBC (MIAC) Organisation of a Heritage Agreement The development envelope is also within The West Kimberley National Heritage Place, which Organisation of a Deed of Novation of Negotiation Protocol includes the Wanjina-Wunggurr tradition as one of its protected values. Guidance regarding On-country Heritage Survey inline with the requirements of the Heritage Agreement undertaking consultation with the appropriate Traditional Owners and custodians of the land is Indigenous Land Use Agreement (ILUA) authorised by the Native Title holders. detailed on the National Heritage Website. Input into environmental monitoring targets and objectives referring to Social Surroundings In addition, the EPA has been advised that the studies assessing the impacts on social Dambimangari Aboriginal Corporation (DAC) surroundings as it relates to Aboriginal cultural and heritage values have not been adequately Direct meetings with DAC regarding the Proposal, including attendance at board completed. While the EPA acknowledges that consultation has been undertaken as part of the meetings and presentation of the Proposal marine park co-design process, and may contain relevant information, the consultation and Tassal has proposed several initiatives to address DAC concerns including; collection of information specific to this proposal is required. visit for the DAC Board to Tasmania to inspect salmon operations, an ongoing contract with the DAC Rangers to assist with shoreline clean-ups, and Action/s ongoing information sharing regarding monitoring and management starting with a Please conduct and undertake appropriate consultation and/or surveys with the relevant workshop to review and understand the EMMP provisions for maintaining marine Traditional Owners and/or knowledge holders. environmental quality particularly in the sanctuary and special purpose zones of the

marine park

Relevant Section in revised Section 38 **Referral Supporting** Report

Section 9 EMMP

3.2 DPIRD process comments

Table 3.1 presents the comments on the draft Referral Supporting Report and Tassal's response as collected via the DPIRD review process.

Note that these comments were made based on the original Proposal, then operated under Marine Produce Australia (MPA). Hence, where comments reference MPA, this should now be in reference to Tassal.



Table 3.2 Summary of requested changes to Referral Supporting Report, including relevant sections where changes were made

Respondent	Issue	Comments / advice	Proponent Respor
DBCA	Mayala and Lalang-garram Marine Parks	The proposed development envelope (i.e. aquaculture lease sites) for this activity / operation are located within areas identified to be included in the general use zones of the Mayala and Lalang-gaddam marine parks. It should be noted that the Lalang-gaddam Marine Park is made up of the Lalang-garram / Camden Sound, Lalang-garram / Horizontal Falls, North Lalang-garram and Maiyalam marine parks.	Detailed informatic project is given wit support the project the Environmental how the identified
		The recently announced but not yet created Mayala and Lalang-gaddam marine parks are to be jointly vested with the Conservation and Parks Commission and respective traditional owners of the areas. The marine parks will be jointly managed by the Department of Biodiversity, Conservation and Attractions (DBCA) and respective traditional owners in accordance with the requirements of the Conservation and Land Management Act 1984 (CALM Act) and Mayala and Lalang-gaddam marine park management plans. It should be noted that the draft management plans for both the Mayala (https://www.dpaw.wa.gov.au/images/documents/conservation- management/managementplans/Proposed%20Mayala%20Marine%20Park%20indicative%20joint%20management%20plan.pdf) and Lalang-gaddam (https://www.dpaw.wa.gov.au/images/documents/conservation-management/managementplans/Lalang- gaddam%20marine%20park%20amended%20and%20indicative%20joint%20management%20plan.pdf) marine parks are yet to be approved by the Minister for Environment under section 60 of the CALM Act. (NOTE: these marine parks have since been approved)	finfish aquaculture the Mayala and La Appropriate manage within the EMMP. the Marine Environ Department of War (DWER), as well a of Climate Change Water (DCCEEW) reviews include ch help ensure environ protected. These r
		It is recognised that environmental management of aquaculture activities / operations is the statutory responsibility of the Department of Primary Industries and Regional Development, under the Fish Resources Management Act 1994, and that aquaculture activities / operations may be permitted within the general use zone of the marine parks, provided they do not compromise the parks ecological and cultural values.	addressed within the relation of the revised of
		The draft Mayala and Lalang-gaddam joint management plans, identify some of the key environmental considerations in relation to the use of the marine parks for commercial aquaculture, including:	The requirements provided comment EMMP to meet rec
		Eutrophication due to solids and nutrient release.	a Management and
		 Impact / escape of foreign biota and transmission of disease. 	(MEMP) to meet re
		Direct impact on the benthic environment.	licences where en
		Social impacts with conflicting recreational and other commercial uses.	requirements are r
		Cultural and heritage impacts.	conjunction with D
		Visual impacts.	legislative requirer Making Authority (
		It is important that a suitable level of information is included in the Environmental Monitoring and Management Plan (EMMP) and other associated documentation, to demonstrate that potential risks and impacts of aquaculture activities / operations on the Mayala and Lalang-gaddam marine parks and its values, have been identified and management measures implemented to avoid or mitigate impacts in alignment with the marine park management plans.	
	Traditional owner engagement	Recommendation 1: That information on the consultation undertaken with the respective traditional owner groups in relation to the proposed development is made available as part of the EMMP or other associated project documentation.	Information regard with affected Tradi included within Se
		Discussion: The marine parks will be jointly vested and managed with the respective traditional owners, and it is important to recognise that managing the marine park in a culturally appropriate manner is a key objective of the parks. The proposal needs to be managed to ensure consistency with cultural laws and protocols. It is currently unclear what level of consultation with the respective traditional owner groups has been undertaken. This information should be made available as part of the EMMP or other associated project documentation.	documentation sub EMMP. This inform summary of the Tr the issues that hav outcomes.
			Tassal is committe Traditional Owner

nses

Relevant Section

on on the scope of the proposed hin the referral documentation (to EMMP ts referral under Section 38A of Protection Act 1986), including risks associated with marine may impact on the key values of alang-gaddam marine parks. gement strategies are provided This plan has been reviewed by nmental Branch (MEB) of the ter and Environmental Regulation s the Commonwealth Department , Energy, the Environment and Recommendations from these anges to the proposed EMMP to onmental values of the area are ecommendations have been he revised EMMP, while further ation between the project and the arks has also been provided referral documentation.

of all the departments which have will be provided within a split uirements under the EP Act, and d Environmental Monitoring Plan equirements under the FRMA. PIRD process for aquaculture vironmental monitoring managed directly by DWER in PIRD such that they address the nents of each respective Decision DMA).

ing the consultation undertaken itional Owner groups is already ction 3 of the referral omitted and Section 7 of the nation includes a detailed aditional Owner groups consulted, e been raised as well as relevant

ed to further consultation with groups, with an Indigenous Land Use Agreement (ILUA) with MIAC finalised in

All sections

Section 3 Section 9 EMMP



Respondent	Issue	Comments / advice	Proponent Responses	Relevant Section
		Much of the land bordering the marine parks is exclusive possession native title land, and as such, any component of the proposal which has the potential to intersect these lands (e.g. fish burial, freshwater access, etc.), is likely to require consultation and authorisation by the respective traditional owner groups.	January 2025; as well as continued engagement with DAC regarding environmental monitoring associated with the Proposal. Management strategies within the EMMP will link with these agreements to ensure the usage of the area is consistent with cultural laws and protocols.	
	Seascape aesthetics	Recommendation 2: That potential impacts on seascape aesthetics of the marine parks are identified and described within the EMMP and management and / or mitigation measures for impacts considered.	Impacts to visual amenity have been discussed within the impact assessment to Social Surroundings.	Section 9 EMMP – Section 3
		Recommendation 3: That any potential restrictions on accessing areas within the marine parks, particularly restrictions to areas that are used for cultural purposes, resulting from the implementation of the proposal are identified and described. Discussion: Presently, the monitoring and management of aesthetic values within the EMMP, only relates to water quality matters (i.e. nuisance organisms, faunal deaths, surface films, surface debris, odour, etc). The presence of sea cages (i.e. the proposed disturbance footprint) have the potential to impact on the aesthetic values of the marine parks. It may be beneficial to undertake an assessment of the aesthetics of sea cage locations prior to (and following) installation, to ensure any impacts on aesthetics are considered and managed and / or mitigated as appropriate.	There will be no exclusion zones around the proposed leases, except in the immediate vicinity of sea-pens and related infrastructure. There is no restricted access for recreational fishing, tourism or for the use of the area for cultural purposes. This follows the same approach as currently exists for Tassal's Cone Bay operations.	
		Given the size of the infrastructure, installation may also lead to access restrictions at certain locations, including cultural protection zones or sites. Consideration of these potential impacts and how they will be managed should be outlined within the EMMP.		
	Monitoring methodology	Recommendation 4: That further monitoring sites are included in areas outside linear transects. Recommendation 5: That further baseline information is collected and provided for all parameters (e.g. water quality, sediment appearance, infauna, trace metals, chlorophyll-a, coral, etc.). Discussion: The current monitoring program includes a range of linear transects that align with the projected prevailing currents and tidal patterns associated with the lease areas. However, there is the potential for impacts to extend to areas beyond identified linear transects if water movements do not align with projected currents and tides (i.e. water flows). For example, neap tides and strong winds may result in water flows in different directions from those projected (i.e. typical tides and currents). It is therefore recommended that additional monitoring sites are deployed in areas outside of the prevailing water flows. While it is recognised that the EMMP commits to undertaking baseline monitoring of coral (Section 3.1.4), no baseline information on other parameters (e.g. water quality, sediment appearance, marine fauna, seagrass health, seascape aesthetics, infauna, trace metals, chlorophyll-a, etc.) is proposed to be collected or assessed prior to infrastructure installation. For example, in Section 3.1.5 of the EMMP it states that " monitoring at each of the impact and respective reference sites will only begin once sea-pens have been installed and farming operations have begun" (page 33). In instances where baseline information as been collected, it appears to be insufficient to enable a fully informed analysis of potential impacts prior to and following the implementation of the proposal. Appropriate baseline monitoring escueres is required to ensure the any potential impacts on the marine parks and their associated values can be accurately determined. Recommendation 6: That further reference monitoring sites be selected outside of the modelled zones of impact.	 Baseline information for all of the identified parameters is already presented within the referral documentation. Further baseline information on sediment and water quality has been collected in response to DWER requests to help ensure the understanding of the marine environment is sufficient for informing the impact assessment. The designation of the linear transects for collection of water quality information follows DWER guidance and recommendations, as outlined directly in discussions with DWER; DWER have not requested any further transect work is required to complete their assessment. The location of reference sites has been adjusted within the EMMP as per DWER comments, using the additional baseline information to be collected to verify the appropriateness of these locations. Sites which have been used to inform the model boundary conditions, which are located on the inner and outer boundary of the modelled area, were originally called 'reference' sites. The naming convention of these sites will be changed in the revised referral information to clarify that they are not 'reference' sites. The newly defined 	Section 5 EMMP – Sections 2, 3
		Recommendation 7: That justification for the location and number of sentinel monitoring sites is provided within the EMMP, with additional sites considered.	reference sites for the monitoring program in the EMMP have been tested in the additional baseline program to confirm that they are	



Respondent	Issue	Comments / advice	Proponent Responses	Relevant Section
		Discussion: The locations of a number of the reference monitoring sites appear to be located within areas that could be impacted by chlorophyll-a, dissolved inorganic nitrogen, and sediments as a result of the implementation of the proposal. As trigger and threshold criteria make use of comparisons between impact and reference sites, there needs to be certainty that reference sites are outside any areas of influence (i.e. potential impact areas), from the proposed aquaculture activities.	suitable for comparison to the 'impact' sites at the leases. These sites have been located so that they are beyond the projected area of influence from the leases as shown in the modelling, while remaining in areas of similar depth and habitat as found at the proposed leases.	
		In addition, the EMMP does not provide adequate information to justify the identified sites of three sentinel monitoring locations to be used as part of the monitoring program. Based on the information provided in the EMMP, it appears that sentinel monitoring sites will be installed and monitored to record water quality within sanctuary and / or special purpose zones (i.e. cultural protection areas) within the marine parks. Given the modelled impacts (e.g. chlorophyll-a) indicate that the proposal is likely to result in impacts on areas where the sentinel monitoring sites are to be deployed, it appears unlikely that the sites will capture appropriate information for comparison to impact sites. It is also unclear what meaningful information three sentinel sites may provide, given the low number of sites and the potential for variability in conditions (e.g. water depth, substrate) between areas.	 The sentinel sites have been included within the monitoring program to monitor any potential changes to water / sediment quality within the sanctuary / special purpose zones, for which a Maximum Level of Ecological Protection is defined. Data from these sites will not be compared to the impact sites, i.e. they are not to be used as reference sites for defining the environmental quality criteria for impact assessment. 	
	Monitoring program - seagrass	Recommendation 8: That seagrass health is included as a monitoring measure in the EMMP. Discussion: Seagrass is included as a Key Performance Indicator (KPI) in the proposed Mayala and Lalang-gaddam marine park management plans. Seagrass is poorly mapped in the Buccaneer Archipelago and there are likely to be areas of seagrass within both marine parks not presently mapped (e.g. Berry et al. 2017), with diversity and densities not well understood. Consequently, there is the potential that unmapped areas of seagrass are within the proposal's projected zones of impact. Seagrass is an important value of the marine parks, both intrinsically, and as important habitat for culturally significant dugongs (Dugong dugon, listed as specially protected). As there is the potential that the proposal could impact on seagrass through decreasing water and sediment quality, it is considered important that monitoring is extended to include seagrass health.	 No seagrass habitats have been identified in the habitat mapping within the proposed leases (where seagrasses are unlikely to occur noting the depth limitation and the limited light availability). The potential for seagrass habitat is noted in nearshore areas of the Archipelago. Seagrass monitoring would only be included as an Environmental Quality Standard if Environmental Quality Guidelines were exceeded, as per EPAs technical guidance. At this point, DWER have not required the monitoring of seagrass habitats as part of the EMMP. 	Section 6
	Monitoring program – coral	Recommendation 11: That the coral monitoring program proposed in the EMMP is expanded to include subtidal corals and a larger sample size. Discussion: The current scope for coral monitoring includes the installation of three 1 m2 quadrats per intertidal reef, which will be monitored annually. Given the low level of sampling currently proposed, there is likely to be low statistical power with any analysis of the information collected. Previous research into the amount of sampling required to detect changes in coral, indicates that in order to detect a 20 per cent change in coral cover, at least 38 photo quadrats are required along a 50 metre transect (Leujak and Ormond, 2007). Consequently, consideration should be given to expanding the intensity of sampling proposed at each monitoring location to ensure robust data capable of the required analysis is captured. It currently appears that only intertidal corals are proposed to be monitored. Intertidal corals are less diverse, are exposed for greater periods of time during low tides, and are better adapted to dealing with stressors than subtidal corals (Schoepf et al. 2015). Subtidal corals are more likely to be affected by changes in water quality and would be a more appropriate indicator of coral health. It is recommended that investigations into the inclusion of subtidal coral health in the monitoring program are undertaken.	• The coral monitoring program has been adjusted such that it focuses on subtidal corals, rather than intertidal corals, considering that if subtidal corals are protected it can be assumed that intertidal corals are also protected. Sample sizes have been adjusted, with consideration for the outcomes of scientific studies such as Leujack and Ormond 2007.	Section 6 EMMP
	Monitoring program – sediment quality	Recommendation 12: That total nitrogen is added to the list of analytes for sediment nutrients, as part of the monitoring program. Recommendation 13: That sediment appearance measurements are conducted annually, not only when Environmental Quality Guidelines (EQG) for water quality are exceeded.	 Total nitrogen has been added to the list of analytes for sediment nutrients. Sediment appearance has only been included within the MEPA, noting that changes to sediment appearance as a result of nutrient enrichment if they occur will be concentrated near the sea-pens. If sediment appearance in the MEPA does not change, then it can be assumed 	



Respondent	Issue	Comments / advice	Proponent Response
		Recommendation 14: That sediment appearance transects be extended along the entire length of the Moderate Ecological Protection Area (MEPA) transect and include the High Ecological Protection Area (HEPA) sites and the edges of the modelled area of impact for each lease area. Recommendation 15: That sediment appearance indicators are included in the monitoring program and analysed with counts of invertebrate burrows / re-workings / bioturbation in addition to algal mat presence to assess potential impacts. Discussion: Currently, the measurement of sediment appearance is only proposed to be undertaken when the EQG for Total Suspended Solids (TSS) or ammonia toxicity are exceeded and will only be monitored within the MEPA. If measurements of sediment appearance are only undertaken in response to the exceedance of the EQG within the MEPA, it is likely to fail in capturing other potential changes in sediment quality (e.g., increased nutriter) toads / detritus, changes in disolved oxygen, etc.) that could lead to a change in sediment quality (e.g., increased nutriter) toads / detritus, changes in disolved oxygen, etc.) that could lead to a change in sediment appearance, and is also likely to fail in detecting changes in areas outside the MEPA, and that would be instructional in determining an appropriate timeframe to implement adaptive management. The proposed monitoring of sediment appearance only includes the detection of algal mats in relation to ecosystem health. Although algal mats are one indicator of benthas health, other indicators, such as counts of invertebrate burrows, re-workings and / or biotrubation are likely to provide a more holistic indication of ecosystem health.	 that the HEPA or limpacted and mor appearance in the sediment appearance MEPA, then it can that the appearance within the HEPA at the EPAs Technic defining the releval levels of ecological mitigative actions out to reduce nutricages (i.e. within the alleviate nutrient et action would occu subsequent impact MaxEPA sites The monitoring pro- EQGs and EQSs at guidance and the Reference Docum appearance is use that if not met it 'in risk that the associ objective has not lassociated with se dissolved oxygen, phosphorous and EQGs are not excu assumed that the appearance) is no requirement to mo regardless of whe exceeded defeats framework. As suc annually should no In addition to the se identification for al for bioturbation / in sediment re-workit
	Monitoring program – water quality	Recommendation 16: That Dissolved Inorganic Nitrogen (DIN) measures are included in the water monitoring program. Discussion: DIN is an important consideration in water quality and has been included in the modelling within the EMMP (Figure 1.5). While it is recognised that ammonia concentration has been proposed to be monitored within the EMMP, other forms of nitrogen, such as nitrates and nitrites, are not included as part of the scope of the monitoring program. These water quality values are important for ecosystem health and function, and elevated levels have been shown to negatively affect seagrass health (Thomsen et al. 2020). Comment: Modelled DIN indicates that levels are likely to exceed background concentrations in nearshore and sheltered lease areas, with possible impacts encroaching into the identified Mayala and Lalang-gaddam marine park sanctuary and special purpose zones (i.e. cultural protection areas). As outlined within the EMMP, there should be no detectable change to environmental and ecosystem values within the marine park sanctuary and special purpose zones as a result of the proposal, the DIN modelling results appear	 DIN is not required that the impacts a captured with the impacts to the ma are captured throu oxygen, sediment appearance and c Revised modelling will not exceed ba identified sanctual the Mayala Marine Park.

inconsistent with this commitment.

Relevant Section

MaxEPA areas are not nitoring of sediment ese areas is not required. If the ance does change within the be conservatively assumed ce has potentially changed and beyond as well. This follows al Guidance in terms of ant EQGs/EQSs for different al protection. As such, defined in this case would be carried ient enrichment at the sea the MEPA) which would enrichment impacts. Mitigative Ir prior to there being t downstream at the HEPA and

ogram is designed to have as per EPAs technical Environmental Quality Criteria nent (EPA 2017). Sediment ed only as an EQS, considering ndicates there is a significant ciated environmental quality been achieved'. The EQGs ediment appearance are volatile suspended solids, total total organic carbon. If these eeded, then it can safely be EQS (i.e. sediment ot exceeded either. Hence, the onitor sediment appearance ther the EQGs have been the purpose of the monitoring ch, its inclusion to be monitored ot be required.

sediment appearance Igal mats, further information nvertebrate burrows and ng has also been included.

d to be monitored considered ssociated with DIN are already monitoring of Ammonia, while rine environment beyond DIN ugh the monitoring of dissolved nutrients, sediment coral health.

of DIN indicates that levels ckground condition within the y or special purpose zones of Park or Lalang-garram Marine EMMP



Respondent	Issue	Comments / advice	Proponent Responses	Relevant Section
	Monitoring program - chlorophyll-a	Recommendation 17: That further mitigation strategies are identified to manage chlorophyll-a concentrations if levels are likely to result in impacts on adjacent areas and environmental values of the Mayala and Lalang-gaddam marine parks. Discussion: Modelled chlorophyll-a concentrations appear to exceed the designated Environmental Protection Authority (EPA) threshold value of 0.7 µg/L for HEPAs (EPA 2017; BMT 2022) and the Environmental Quality Standards (EQS) outlined in the EMMP. Given the high levels of chlorophyll-a projected, it is important that mitigation and management strategies are outlined in the EMMP, and are able to be implemented to reduce the level of chlorophyll-a to acceptable levels. Comment: Modelled chlorophyll-a concentrations indicate that levels will exceed background concentrations in nearshore areas, with impacts extending into the Barrali (Strickland Bay) special purpose zones (i.e. cultural protection areas), specifically the cultural protection areas around Edeline Island. As outlined within the EMMP, there should be no detectable change to environmental values within the proposed special purpose zones as a result of the proposal, the chlorophyll-a modelling results appear inconsistent with this commitment.	 Mitigative actions are included within the EMMP such as cessation of feeding, harvesting of fish from cages, fallowing etc which will reduce chlorophyll-a levels rapidly should an exceedance of the thresholds occur. See Section 5.4 of the referral supporting documentation for further details. As stated in the EMMP, Tassal will commit to ensuring there is no detectable change to environmental and ecosystem values within the marine park sanctuary and cultural protection zones. The modelling is inherently conservative, following the precautionary principle, and hence impacts in reality are likely to be less. Comprehensive monitoring as defined within the EMMP following the EPAs Technical Guidance will ensure that no impacts to sanctuary or special purpose zones occur as a result of the Proposal. Though the modelling showed elevated chlorophyll-a there were no subsequent shading effects projected, and hence seagrass (if and where present) health should not be impacted by this cause-effect pathway. There are no projected areas of impact from the applicants Cone Bay operations. All modelling is only associated with the proposed leases. Tassal furthermore plans to cease using the current Cone Bay lease once enough of the proposed sites are operational. 	EMMP
	Trigger and threshold values	Recommendation 18: That further justification is provided for the use of trigger and threshold values for EQS within the EMMP. Discussion: Presently, it is unclear how the trigger and threshold values identified in the EMMP have been determined (e.g. greater than 60 per cent dissolved oxygen saturation). DBCA recommends that the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (DAWE 2018) are used to determine the appropriate triggers and thresholds for water quality monitoring, if not already used.	These criteria are taken directly from ANZG 2018 or EPA 2017 (Cockburn Sound Environmental Quality Criteria reference document) where relevant (i.e. DO concentration). These are the only sources for the threshold values used.	EMMP
	Fallow period	Recommendation 19: That sea-pen fallowing periods are extended to at least one year, to allow sediment and water quality in areas directly adjacent to sea cages to recover. Discussion: Section 1.3.3 in the EMMP states that production will continue "at a single lease area until all fish are harvested, with a subsequent fallowing period of approximately 1 month occurring prior to restocking" (page 14). Under various modelling scenarios undertaken by the applicant, it appears that the time required to achieve a recovery of sediment and water quality of areas directly adjacent to sea cages ranges from 1-8 years. Given these timeframes, a one month fallow period appears insufficient to allow site recovery, and no justification is provided in the documentation for the one month fallowing time period. Comment: It appears that activities associated with the Edeline Island North lease, where sediment and water quality impacts from two years of continuous farming (i.e. the timeframe for grow-out of fish, over one stocking period) is likely to extend into the Barrali (Strickland Bay) special purpose zones (i.e. cultural protection areas), could compromise park ecological and cultural values.	 A minimum fallow period of one month has been set. There may be an opportunity to fallow a lease for longer periods (i.e. up to a year), however this will not be feasible across all the leases at any one point in time. Recovery of impacts has been revised Tassal will operate the leases that are in close proximity to each other such that the overall loading of biomass in the system is kept to a minimum. They will do this by following an approach whereby the stocking of the leases with biomass will be staggered, such that for example two leases which are in close proximity would always be at opposite ends of the production cycle, i.e. one lease is at the end of the cycle 	Section 1 Section 6 EMMP



Respondent	Issue	Comments / advice	Proponent Responses	Relevant Section
		It appears that the Crocodile Creek and Conilurus Island lease areas, if operated simultaneously, is likely to result in a continuous apron of impacted sediment and water quality for approximately 10 kilometres. This broadscale impact may have implications for the resilience of the ecosystem and the ability for marine fauna to move through areas of the Lalang-gaddam marine park. Consideration could be given to limiting the number of lease areas active within a single period, to reduce the potential extent and concentration of sediment and water quality impacts.	when farmed fish biomass is at its greatest whereas the other will be at the start of the cycle having had fish biomass only recently introduced. This will be followed not only to reduce environmental impacts at any point in time but also to reduce biosecurity risks.	
	Freshwater access	Comment: DBCA understands that the freshwater supply for the applicant's Cone Bay operations is provided via a water pipeline. This pipeline intersects a culturally important site and impacts aesthetics within the area. It is currently unclear how freshwater will be supplied to the proposed lease areas associated with this application. If freshwater is proposed to be piped from terrestrial water sources to lease areas, this should be considered as part of the scope of the application and will require consultation with respective traditional owners.	• Freshwater to the lease areas will not be piped from terrestrial water sources. Freshwater will be collected at sea using on-board desalination infrastructure on each of the feed barges located at each lease.	Section 1
	Sea-pen mesh size	Comment: The EMMP proposes to manage the interaction of large predators and farmed finfish with anti-predator netting. However, the specifications of both the predator exclusion and the finfish retention netting have not been described in the documentation. Without this information, an assessment of the potential impacts cannot be undertaken, as the risk of predator access and entanglement is unclear. Some wildlife, including threatened fauna, listed under the Biodiversity Conservation Act 2016 (BC Act) may have the potential to become entangled in netting if the design and mesh size is not suitable, such as the green sawfish (<i>Pristis zijsron</i> , ranked endangered).	• Further information has been provided regarding the breaking strain/mesh size of both netting types within the referral supporting documentation and EMMP, including the potential for interaction with both small and large marine fauna.	Section 7 EMMP
	Fauna interaction	Comment: Although the risk of crocodile interaction has been identified in the EMMP, further information should be provided in the documentation on measures to be implemented to manage crocodile risk, including strategies to manage 'nuisance' crocodiles. It should be noted that authorisation [i.e. fauna taking (dangerous fauna) licence] under the BC Act is required to take dangerous fauna if threatening public health or safety.	 Tassal currently have a Dangerous Fauna Licence (No. L012447) for their Cone Bay operations. When 'nuisance' crocodiles have been present at the site, the management of these crocodiles has always been undertaken by qualified Rangers, rather than by Tassal staff or personnel. Tassal plans to follow a similar approach with the newly proposed leases, with agreements to be finalised with the respective Rangers for each group of leases. 	Section 7 EMMP
	Infrastructure and operational management	Comment: The design and management of all proposed infrastructure should take into account the potential for wildlife entrapment and entanglement by minimising the number of ropes and surface buoys, and avoiding the use of rope gauges, colours and tensions that are more frequently associated with whale entanglements. Loops of a size that could entrap wildlife should also be avoided. Monitoring and infrastructure repair should be undertaken when required to maintain rope tensions and minimise unintentional loss of gear like ropes and floats which present a hazard to wildlife. Any loose ropes or other aquaculture equipment that is in a state of disrepair should be made safe (mended or removed) as soon as sea conditions permit and missing or detached aquaculture equipment searched for and removed from the natural environment. It is recommended that the applicant refer to How et al. 2015 and How et al. 2020 for comprehensive information on marine mammal entanglement mitigation measures. Any applicable or relevant industry-specific, best-practice standards / codes of practice for infrastructure and operational management in relation to marine mammal entanglement should also be applied during management planning and implementation.	 Usage of ropes and lines will be minimised as much as practicable. Nets and lines will be inspected daily at each site to ensure that any damaged material is removed or replaced as soon as it is identified as sea conditions permit. This follows industry best-practice standards and codes for the use of sea-pen infrastructure. As part of operational monitoring, staff training and standard operating procedures will be detailed under a formal maintenance system. 	Section 7 EMMP
		Planning and management documentation should address potential entanglement scenarios to identify appropriate response procedures, contact details, and both training and licence requirements to ensure best practice and safe wildlife handling. DBCA considers that, as part of the management documentation, monitoring and reporting of wildlife interactions should be a component of an adaptive management program that includes investigations into the cause of incidents and a commitment to modify operations and infrastructure design, if required.	 Response procedures, contacts and processes have been detailed within the revised referral supporting document and EMMP 	
	Lighting	Comment: Light can disorientate wildlife, including birds, leading to collision with infrastructure causing injury or death. Light over water may also attract marine animals causing disruption to predator-prey relationships with the potential to negatively impact conservation significant species.	• Lighting at the leases will be minimal. The only lighting present will be that for navigational safety purposes on the buoys that surround the sea-pens. Blackout curtains and other mitigative strategies will prevent any light from the feed barges (which includes accommodation for	Section 7 EMMP



Respondent	Issue	Comments / advice	Proponent Responses	Relevant Section
		DBCA advises that the approach to minimal lighting outlined in Environmental Assessment Guideline No. 5 (EPA 2010) and National Light Pollution Guidelines for Wildlife including Marine Turtles, Seabirds and Migratory Shorebirds (DoEE 2020) is appropriate for all wildlife at in-water and land-based aquaculture facilities.	Tassal staff) polluting the surrounding environment.	
			 The sea-pens will be designed to meet the National Light Pollution Standards. 	
Mayala Inninalang Aboriginal Corporation RNTBC (MIAC) / Kimberley Land Council (KLC)	Impact on native title rights and interests	MIAC notes that the proposed aquaculture licence will impact the determined native title rights and interests which exist over this area. MIAC is the determined, registered native title body corporate for that area.	Tassal have subsequently engaged with MIAC with the following outcomes	Section 3 Section 9 EMMP
		 If MIAC were prepared to support the proposal, MIAC's rights and interests should be addressed in an appropriate agreement between the native title holders and MPA Fish Farms Pty Ltd. MIAC and the KLC are not currently funded to engage in negotiations of that kind, and the expectation of MIAC and the KLC is that proponents will pay for the costs associated with the negotiation process. If the proposal is intended to proceed, any planning should consider the costs and timeframes associated with those negotiations. 	 Organisation of a Heritage Agreement Organisation of a Deed of Novation of Negatistican Protocol 	
			 On-country Heritage Survey inline with the requirements of the Heritage Agreement 	
			 Authorisation of an Indigenous Land Use Agreement (ILUA) Input into environmental monitoring targets and objectives referring to Social Surroundings 	
		The KLC requests that any developments in DPIRD's consideration of this proposal be notified to the KLC and MIAC within reasonable timeframes for the KLC and MIAC to provide further comment.		
		The KLC and MIAC are of the view that further information regarding the aquaculture licence applications, the intentions of MPA Fish Farms Pty Ltd (the operator of the Proposal at the time), long-term impacts of barramundi farming on MIAC's determined native title areas and long-term environmental impacts should be discussed and MIAC should be consulted in relation to the application.		
		With the limited information contained in your email, the timeframe imposed on MIAC to provide comments of 'substantive nature' is not possible by 20/07/2022.		
		MIAC requests further information about the application and the opportunity to discuss the application with DPRID before the licence is granted. In addition, MIAC requests that the licence is not granted until appropriate negotiations between MIAC and MPA Fish Farms Pty Ltd have occurred.		
DPLH	Proposal	State Planning Policy 2.0 - Environment and Natural Resources (SPP2.0) provides guidance on Marine Resources and Aquaculture. The planning framework recognises that these sectors are important contributors to the State's economy, however Western Australia's planning system does not directly engage in planning for the marine environment. At the land use planning level, planning strategies, schemes and decision making should take into account areas of significance for aquaculture and align land-based infrastructure to support these, whilst also avoiding and minimising adverse impacts due to conflicting land use proposals.	Proposal is being assessed by DWER as required.	NA
		The Kimberley Regional Planning and Infrastructure Framework broadly designates the subject area as an 'aquaculture zone'. The Framework further notes the Kimberley has a relatively pristine environment that has disease free status and research expertise which is conductive to development of this industry. Cone bay is noted for its opportunities for significant pre and post farm-gate opportunities.		
		The subject sites are located outside of the operating Shire of Derby/West Kimberley Local Planning Scheme No 5 and Town Planning Scheme No. 7 as well as Interim Development Order No. 9. A new scheme, Local Planning Scheme No. 9 is currently being prepared, and will soon be advertised for public comment. This new scheme will cover the entire local government area (excluding marine areas), zoning and reserving the land in the subject area 'cultural and natural resource use' and 'public purposes – Government Services', respectively.		
		The Shire's Local Planning Strategy notes that the coastal areas subject to this application are remote, have high environmental value and landscape value and are important from a cultural and heritage perspective.		



mments / advice	Proponent Respons
s recommended that the proposal be referred to the Department of Water and Environmental Regulation, as the proposal will quire significant infrastructure, large volumes of fish food and waste. This could all have the potential to pollute the environment that s remained relatively untouched in this area of the Shire of Derby - West Kimberley.	
e Buccaneer archipelago has Western Australia's highest concentration of traditional owner communities living adjacent to an sting or proposed marine park and are developing on those waters for food supply and traditional practices. It is recommended that Aboriginal Directorate be contacted for comment due to the significance this large project could have to the traditional owners.	
is proposal is represented in Tangraph as FNA 16543, and one of the sites (Site F) intersects mining exploration licence E04/1266 Id by Koolan Iron Ore Pty Ltd (no longer relevant to the current Proposal).	NA
erall, this application raises no significant access concerns, and Department of Mines, Industry Regulation and Safety lodges no fections.	
nile I note that no issues have been raised by the Kimberley Gillnet and Barramundi Managed Fishery (KGBMF) License holders en I circulated this recently, I should also note they had a small lead in and most of them would have been at sea and unlikely to ve had access to email.	 All mass mortalit the guidelines se strict EPA dispose
wever, concern over previous aquaculture activities in Cone Bay has been raised at KGBMF fisheries management meetings in past. It is worth noting these concerns now which included: The potential for food/effluent to build up leading to isolated eutrophication events. Rumours of mass mortality events and associated environmental concerns. Potential for fish escapes due to predator interactions with cages. The genetic origin of the stocked fish. Dete that the background material associated with the application provided by Tassal appears to consider and acknowledge the first ee concerns, although it is not clear what might lead to a mass mortality in the first place and if there are any long lasting or further iching impacts of such an event. Similarly, the information notes an intention to undertake monitoring of nearby habitats but does is tipulate thresholds/limits for impacts and the resulting management measures if these thresholds are breached. regard to the genetic origin, the background information states only that fingerling will be sourced from DPIRD, and we therefore we to trust that DPIRD has appropriate policies and procedures in place surrounding the sourcing and maintenance of genetic lines. m unsure if the current policy has been updated from the previous, which suggested brood stock only needed to be sourced in stralia? eviously when WAFIC investigated industry concerns, it became apparent that fingerlings were being source from Mainstream in toria and there was little transparency surrounding the exact origin of brood stock (at least some of the fish housed at Mainstream originate from the Kimberley region). It should also be noted that Mainstream were selectively breeding for various traits including h growth rates. While these traits may be appropriate for onshore/inland operations, perhaps it is more appropriate that local brood ck are relied upon for saltwater sea cage operations where there is potential for scape (look at the developments in Lake Argyle a veeks ago). The presence of no	 Mile officially 2018 mortality, caused algae and secon by the onset of th An algae mitigati developed reduct mortality caused seen Tassal take which it reduced significantly, intro- pens and monitor surrounding envi indication of pote New farm develor enhance these n volume pens cre- stocking density, detect chlorophy and allow to mal- and when not to to the surface to column in which It is important tha facilities are min for this reason th non-commercial Western Australi aimed at minimis consequent inter fish and existing
	Intents / advice recommended that the proposal be referred to the Department of Water and Environmental Regulation, as the proposal will uire significant infrastructure, large volumes of fish food and waste. This could all have the potential to pollute the environment that remained relatively untouched in this area of the Shire of Derby - West Kimberley. a Buccaneer archipelago has Western Australia's highest concentration of traditional owner communities living adjacent to an sing or proposed marine park and are developing on those waters for food supply and traditional practices. It is recommended that Aborginal Directorate be contacted for comment due to the significance this large project could have to the traditional owners. a proposal is represented in Tangraph as FNA 16543, and one of the sites (Site F) intersects mining exploration licence E04/1266 d by Koolan Iron Ore Pty Lid (no longer relevant to the current Proposal). erail, this application raises no significant access concerns, and Department of Mines, Industry Regulation and Safety lodges no ections. erail, this application raises no significant access concerns, and Department of Mines, Industry Regulation and Safety lodges no ections. erail to that no issues have been raised by the Kimberley Cillnet and Barramunci Managed Fishery (KGBMF) Licease holders in lociculated this recently, 1 should also note they had a small lead in and most of them would have been at sea and unlikely to is had access to email. wever, concern over previous aquaculture activities in Cone Bay has been raised at KGBMF fisheries management meetings in past. It is worth noting these concerns now which included: The potential for food/effluent to build up leading to isolated eutrophication events. Rumours of mass mortality urents and associated environmental concerns. Potential for fish escapes due to predator interactions with cages. The genetic origin, the background information rates an intention to underake monitoring of nearly habitats but does sipulate thresho

Relevant Section NA ties are reported to DPIRD under Throughout et out in the EMMP and follow a documentation sal license agreement. 9 Cone Bay experienced a mass d by a Chaetoceros danicus ndary bacterial infection created he algae. ion policy has since been cing the potential for mass I from algal blooms. This has e management decisions in I maximum stocking density oduce the use of air diffusion into oring chlorophyll levels in the ironment to provide early ential algae blooms. opment allows Tassal to further nitigation processes using larger eating a further reduction in , the use of sensors in pens to /II and oxygen concentrations ke data fed decisions on when feed (feed events bring fish up feed bringing fish into the water photosynthetic algae bloom) at escapes from aquaculture imised as much as possible. It is hat the commercial and aquaculture of barramundi in ia is subject to strict conditions sing escapes, to avoid any ractions between aquaculture wild stocks. PA (now as Tassal) has stocked urrent Barramundi translocation erates stocking events in line lanagement Paper 159, this all occurring within the Buccaneer Archipelago, the

same area currently under application.

Respondent	Issue	Comments / advice	Proponent Responses	Relevant Section
			 Tassal currently has an ongoing management plan for cage and net maintenance that reduces the impact of predator interaction and the potential of fish escapes. Tassal also has a biosecurity policy in line with 'The National Biosecurity Plan Guidelines for Australian Barramundi Farms' further reducing the potential for disease impact to wild stocks. Long term Tassal do have ambitions to develop broodstock and hatchery facilities in the Kimberley however require suitable scale to undertake at reasonable cost. The future development of broodstock locally allows for local genetic selection and incorporation into ongoing farm genetic development, in time presenting less impact to genetic diversification of wild barramundi stocks 	
Recfishwest	Proposal	Recfishwest understands that the existing aquaculture sites are non-exclusive, meaning that boating and fishing activities are not prohibited activities within these sites. Recfishwest have also been closely involved with the marine park process that has been taking place in the Buccaneer Archipelago for the last 18 months, and still has concerns about the potential impact on recreational fishing access and experiences as the park zoning is yet to be finalised. As we are still unsure of the impact that the marine park will have on recreational fishing following its finalisation, Recfishwest are unable to support this application from MPA Fish Farms for 13 new aquaculture sites within the Buccaneer Archipelago at this time.	 Tassal recognises the non-exclusive tenure an aquaculture lease provides and therefore suggests the proposed aquaculture sites will have minimal impact on recreational fishing access. In 19 years of current operation MPA (now Tassal) has responded to multiple requests for help from recreational fishermen including assisting sinking vessels in the middle of the night, engine problems and medical emergencies. Further aquaculture development in this remote area provides a safer fishing environment for recreational fishers where assistance is more readily available from commercial operators on-site. 	Throughout documentation
Paspaley Pearling Company Pty Ltd	Siting of leases	Natural Pearls Pty Ltd and Blue Seas Pearling Pty Ltd are members of the Paspaley Group of Companies (hereinafter referred to as 'Paspaley'). Paspaley have pearl oyster farm leases ('leases') in the Buccaneer Archipelago in the immediate area the subject of the application as follows: Coppermine Creek A Coppermine Creek B Coppermine Creek D Mary Island Powerful and Sir Frederick Islands The map enclosed with your email of 22/06/2022 illustrates that certain sites in the application abut and/ or are in very close proximity to the above (we could not locate specific names for each site). Paspaley has not previously been consulted in respect of the application. We strongly object to any sites in the application to Paspaley's leases. One site is on the boundary of the Mary Island lease and other sites are within close proximity to the Coppermine Creek leases. This contravenes established practice and policies. As one of Australia's most mature and established aquaculture industries, pearling has dealt with the orderly development and management of leases in the marine environment over many years. Well considered policy has been established in this regard, including Ministerial Policy Guideline No 17 (MPG 17) which addresses the appropriate distances between leases (p. 9-11)4. The	 All sites listed in Paspaley's submission have now been removed from the Proposal. Tassal (as MPA) has engaged in open communication with Paspaley. Tassal has sought to continue this communication and hopes to establish a collaborative approach with the pearling industry. There is no established practice or policy that relates to aquaculture finfish lease distances to pearl leases. MPG 17 refers to distance between pearl oyster aquaculture authorisations or pearl oyster farm leases only. The primary reason for the separation outlined in the policy is stated as: "The initial reason for the industry view arose from a problem with pearl oyster mortality, which industry believed could have been transmitted from one pearl oyster farm to another". Tassal is not aware of any transmissible diseases between finfish and oysters and 	NA



Respondent	Issue	Comments / advice	Proponent Responses	Relevant Section
		rationale for this provision is based on the strong view that distances between leases should apply due to disease mitigation, commercial security, and the opportunity for expansion. In the first instance and pursuant to MPG 17, where the application does not comply with the prescribed distances (5 nautical miles), those sites should be refused outright. In addition, it must be contextualised that the application is for an intensive aquaculture activity proposed to sit alongside existing pearling interests. The integration of which appears not to have been factored. The application contains a singular objective for MPA to 'improve production practices, achieve more competitive economies of scale, and reduce biosecurity risks'. However, it has not considered: • The already established pearling interests in the immediate vicinity; and • The cumulative impacts of the application on the marine environment for pearl farming, specifically, the effect on the conditions required for the successful production of pearls. In this regard there is no detailed information in the application around biosecurity systems or plans, the inputs (feed) or the intensity (stocking densities). Pearl farming in contrast is an extensive farming system, with low stocking densities, no inputs, and a sensitivity to environmental factors.	 understands DPIRD undertook a risk assessment in respect of this during establishment of the KADZ. Tassal has in December 2024 undertaken to conduct its own risk assessment regarding biosecurity risk between pearl oysters and finfish and will share the findings of that assessment with Paspaley. Increased activity in the region, supported by the creation of the Marine Parks might afford Paspaley greater comfort that interference with pearling lease infrastructure will be reduced due to greater levels of surveillance and environmental management from all parties operating in the area. The Proposal involves a reduced environmental impact in comparison to the KADZ lease due to increased spatial variation of production biomass throughout the region. The existing barramundi lease is licenced to produce marginally less biomass (15,000 tonnes vs 17,500) than is being proposed spread across 7 separate sites and the existing barramundi lease less than 0.8 nm from an existing pearl lease. There is no evidence of impact reported to the pearling leases over the past 19 years of operations with the current barramundi lease. 	
Maxima Pearling Pty Ltd	Siting of leases	Maxima Pearling Company Pty are concerned about and object to the proximity of the site designated as site E in the maps provided with the MPA application. This proposed site is very close to MPC's activity on the north side of Cone Bay. The proximity of this the proposed site to Maxima Pearling's existing pearling leases may significantly increase the biosecurity risks to pearling operations and may physically interfere with current and future activity of Maxima Pearling Company and its subsidiary companies Maxima Rock Oyster Company Pty Ltd and Maxima Rock Lobster Pty Ltd. Pearling Operations The boundary of the MAX Pearling Company pearling lease site is approximately 0.5 of nautical mile (900m) from the closest boundary of the MPA proposed site E. Ministerial Policy guideline No. 17 provides a clear policy that is applied to the distances between Pearling Lease sites. This minimum distance is to ensure a reasonable biosecurity buffer between sites and to provide a buffer for commercial security. While 2nm is the absolute minimum distance between sites the recommended distance (for best practice) is 5nm. Leases can be approved if the distance between leases in greater than 2nm but less than 5nm. To issue leases that are less than 5 nm apart both parties must agree in writing to the sites being closer than 5nm. While MPG 17 does not explicitly cover the distance between Pearling Leases and Aquaculture leases in the absence of any other policy position. On this basis Maxima does not support the issue of a lease at site E. Tropical Rock Oyster Maxima Rock Oyster Company have an existing R&D exemption that is less than 0.4 nm (700m) from the closest boundary of the future development of Maxima's R&D trials with Tropical Rock Oyster at its existing R&D exemption and expansion. MPC are concerned that site E if approved may have a significant impact on the future development of Maxima's R&D trials with Tropical Rock Oyster at its existing R&D exemption and expansion. MPC are concerned that site E if approved may	 Tassal has engaged in open communication with Maxima and hopes to establish a collaborative approach with the pearling industry. There is no established practice or policy that relates to aquaculture finfish lease distances to pearl leases. MPG 17 refers to distance between pearl oyster aquaculture authorisations or pearl oyster farm leases only. The primary reason for the separation outlined in the policy is stated as: "The initial reason for the industry view arose from a problem with pearl oyster mortality, which industry believed could have been transmitted from one pearl oyster farm to another". The Proposal involves a reduces environmental impact in comparison to the KADZ lease due to increased spatial variation of production biomass throughout the region. The existing barramundi lease is licenced to produce marginally less biomass (15,000 tonnes vs 17,500) than is being proposed spread across 7 separate sites. There is no evidence of impact reported to the pearling leases over the past 19 years of operations with the current barramundi lease. Tassal's current operation within the KADZ are ~410 m from the nearest pearling leases. The 	NA



Respondent

Issue

Proponent Responses Relevant Section newly proposed site at Razor Island (closest site to the nearest pearling leases) is 780 m at the nearest point. Tassal is not aware of any transmissible diseases between finfish and oysters and understand DPIRD addressed this during the implementation of the KADZ.

Tropical Rock Lobster

Comments / advice

Maxima Rock Lobster Company have an application for an R&D exemption that is also less than 0.4 nm (700m) from the proposed site E. Consultation with stakeholders for the Tropical Rock Lobster R&D exemption commenced in October 2020. The application for the exemption was lodged in early 2021. The issuing of the exemption site for tropical rock lobster grows out trials has been delayed due to the complex process of assessing biosecurity risks and the development of a suitable translocation protocols to address those biosecurity risks. The exemption could not be issued until the translocation protocols and biosecurity issues are resolved. Maxima intention is to follow through on the issue of the TRL exemption site once the translocation protocols can be finalised, and the Qld based lobster hatchery is able to comply with the proposed translocation protocol.

Maxima is concerned about the proximity of the MPA site E to the proposed Tropical Rock Lobster exemption site.

Operational Position

Maxima strongly supports all but one of the sites proposed by MPA. Maxima's objection is to site E. The objection is based on the proximity of site E to Maxima's existing operations (Pearl production, Tropical rock oyster production and tropical rock lobster production) and the potential for a significant increase in biosecurity risks and the risk of changes to water quality due to the short distance between the sites.

Maxima hopes that Tassal seeks and achieves the Traditional Owners consent/involvement and that this proposal provides the platform for the expansion of an aquaculture industry in the Kimberley.

- Maxima.

• Tassal has in December 2024 undertaken to conduct its own risk assessment regarding biosecurity risk between pearl oysters and finfish and between tropical rock lobster and finfish and will share the findings of that assessment with

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