

Yumbah Nyamat abalone farm works approval decision



Environment
Protection
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Summary report

Yumbah Aquaculture Limited (Yumbah) has proposed construction of a new abalone farm, Yumbah Nyamat, at Bolwarra in western Victoria (Figure 1). The farm will include an abalone hatchery and nursery, with grow out tanks and seawater inflow and outflow pipelines.

The proposed farm requires works approval from Environment Protection Authority Victoria (EPA) under the *Environment Protection Act 1970* (the EP Act) as the development triggers the requirement for a works approval and licence in accordance with the Environment Protection (Scheduled Premises) Regulations 2017.

Following pre-application discussions and reviews of draft application documents, EPA received an application for works approval from Yumbah on 29 October 2018. On the statutory decision date of 15 April 2019, EPA approved the works, subject to conditions.

This publication summarises the key aspects of EPA's assessment and decision-making process for the works approval application. The works approval assessment report is available in full on EPA's website <https://engage.vic.gov.au/epa-works-approvals/yumbah-aquaculture-works-approval-application>



Figure 1: Map showing the location of the Yumbah Nyamat abalone farm.

The proposal also requires approval under the *Marine and Coastal Act 2018* (the MACA). The Department of Environment, Land, Water and Planning (DELWP) granted conditional approval on 5 February 2019.

Additionally, the proposal requires *Planning and*

Environment Act 1987 (the PE Act) consent from Glenelg Shire Council, including an approved Cultural Heritage Management Plan. Conditional approval of the PE Act consent was granted by Council on 10 April 2019.

EPA decision on the works approval application

On 15 April 2019, EPA approved the works proposal, subject to a range of conditions.

EPA notes that in reaching its decision, it has considered only those items that fall within its legislative control. Potential impacts on marine flora and fauna and coastal processes, which fall under the MACA, and potential socio-economic and landscape impacts which fall under the PE Act have not been considered by EPA.

What was proposed in the works approval application?

Yumbah proposed a \$60 million abalone farm, including a hatchery, nursery and grow out tanks, which would pump seawater to the land-based farm, before discharging treated water to the ocean through a series of outlet pipelines.

Production is expected to be 1,000 tonnes of abalone per year, with development proposed to occur in stages over a 4-year period.

Background: Abalone farms

Abalone are molluscs (shellfish) that inhabit rocky reefs to depths of up to 30 metres. On-shore farming involves pumping clean fresh seawater through a series of tanks mimicking their natural environment.

EPA currently licences five abalone farms, including one run by Yumbah near Narrawong, 6 km to the east of the proposed farm.

The existing licensed facilities are smaller than the farm proposed, however, the operational activities are similar.

Works approval application details

Yumbah is a registered Australian company that has operated for more than 20 years. Yumbah owns and operates abalone farms at Narrawong (in Victoria), Bicheno (in Tasmania), Kangaroo Island and Port Lincoln (in South Australia). Yumbah controls and owns all

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aspects of their operations, exporting abalone to Southeast Asia, North America and Europe.

Yumbah has applied for works approval to build a new abalone farm, Yumbah Nyamat, at Lots 1 and 8, 315 Dutton Way, and Lot 2, Princes Highway Bolwarra, Victoria 3305.

Once fully constructed and operational, up to 518 ML of seawater per day would be pumped into the farm through a network of 20 intake pipes, located 400 metres offshore at a depth of approximately 6 metres. Seawater would be distributed to the nursery, hatchery and grow out tanks via a series of internal pipes and drains. Once seawater has passed through the farm it would be discharged continuously back into Portland Bay through eight outlet pipes.

Key features of the proposed farm are shown in Figure 2 and include:

- breeding, hatchery and nursery facilities
- grow-out tanks divided into four sections, totalling approximately 112,000 m² of tanks area and 181,655 m² of shade cloth
- seawater inflow and outflow pipelines
- pump station including back-up generators, and workshop
- sediment entrainment and collection channels
- emergency recirculating reservoirs and pumps
- stormwater retention pond
- ancillary solar power system
- diesel fuel and chemical storage.

Proposed design controls

The proposed design controls include:

- removal of solid waste (including uneaten food, sand and abalone faeces) by sedimentation in solids settling channels
- 100 per cent recirculating capacity designed to maintain water flow across the tanks in an event such as a disease outbreak
- stormwater management via a network including four catchment areas, drains, pits and pipes and a 5 ML stormwater retention dam (subject to final design)
- emergency pumps
- ancillary solar power system that will produce approximately 2 MW of power, representing 30 per cent of the proposed farm's energy requirements
- noise reduction measures.

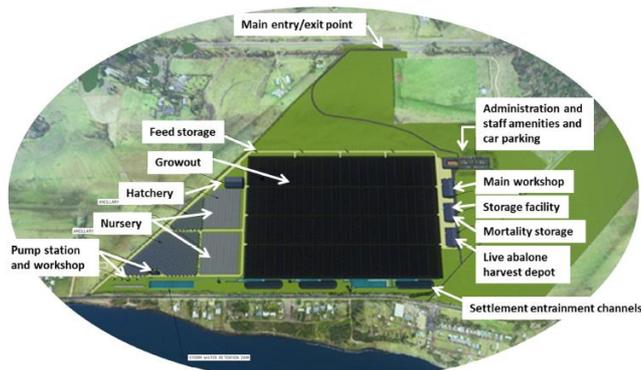
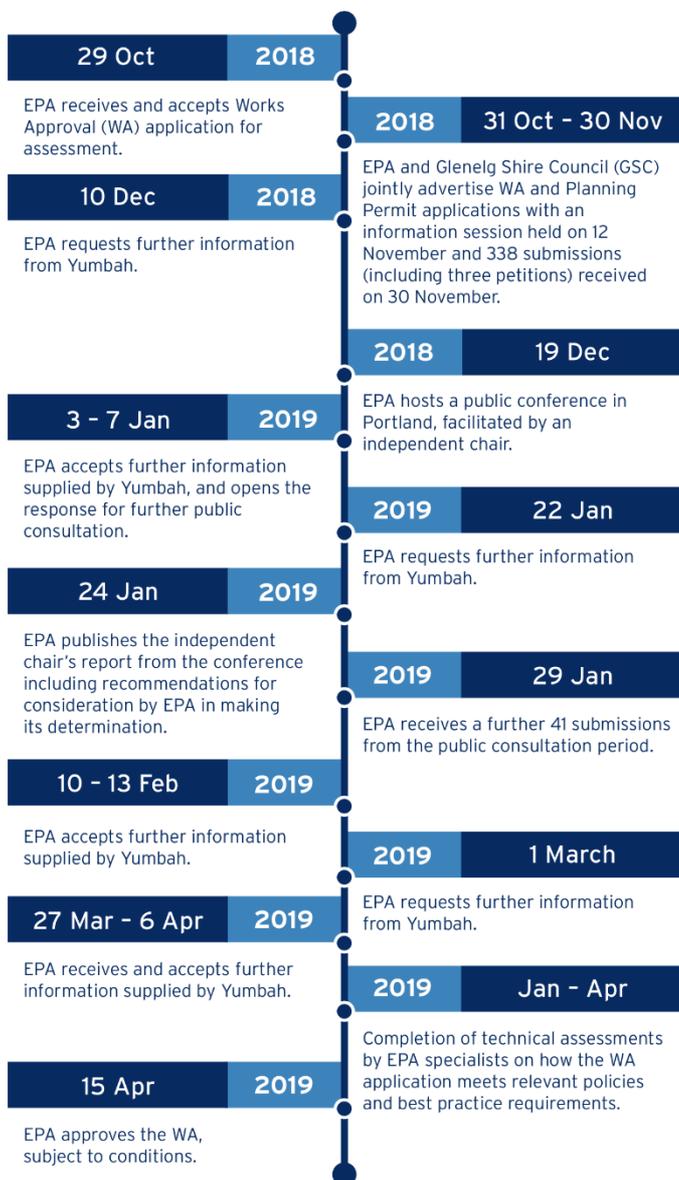


Figure 2: Proposed Yumbah Nyamat layout (Image: Yumbah Aquaculture Limited)

Works approval application process

The diagram below shows some of the key steps in the works approval application and assessment process.



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EPA assessment process

Relevant legislation and policies

The works approval application is required to comply with the EP Act and relevant subordinate legislation. Other related legislation needs to be considered, such as the *Climate Change Act 2017*.

The Act, regulations, and state environment protection policies (SEPPs) establish a framework to ensure that proposals such as this are appropriately designed, constructed, operated and managed to minimise risks to the environment and human health.

EPA considers that the following SEPPs and EPA guidance documents are particularly relevant to this proposal:

- SEPP (Air Quality Management)
- SEPP (Control of Noise from Commerce, Industry and Trade)
- SEPP (Waters)
- *Environmental Guidelines for Major Construction Sites* (Publication 480)
- *Hydrological Assessment (Groundwater Quality) Guidelines* (Publication 668)
- *Guidelines for the determination and assessment of mixing zones* (Publication 1344)
- *Noise from Industry in Regional Victoria* (Publication 1411) (NIRV)
- *Demonstrating Best Practice* (Publication 1517)
- *Recommended Separation Distances for Industrial Residual Air Emissions – Guideline* (Publication 1518)

Departmental and agency consultation

In assessing the application, EPA consulted with departments and agencies including:

- Agriculture Victoria
- DELWP
- Friends of the Great South West Walk
- Glenelg Hopkins Catchment Management Authority
- Glenelg Shire Council
- Gunditj Mirring Traditional Owners Aboriginal Corporation
- Victorian Fisheries Authority
- Wannon Water.

Community engagement

Engagement by Yumbah

Prior to their application, Yumbah held pre-application discussions and meetings with Regional Development Victoria, EPA, various Victorian government departments,

Great South Coast Regional Assembly, Aboriginal Victoria, Glenelg Shire Council and in September 2018 local residents.

Engagement by EPA

A Joint Consultation Process was followed by Council and EPA, with both the works approval and planning permission applications jointly advertised and notified in newspapers and communicated via the Engage Victoria website.

EPA received 338 submissions via Glenelg Shire Council, including three petitions (totalling 1,300 signatories). Of the 338 submissions received, 240 objected to the proposal and 98 were in favour. Some of the issues raised in the submissions fell outside the jurisdiction of EPA (EP Act). Issues raised in the submissions fell broadly into the following categories:

- site selection and land use zoning
- noise and odour
- marine ecology and whales
- dust generation and health effects
- socio-economics
- effluent discharge and biosecurity
- hydrology and water table
- climate change, sea-level rise, coastal erosion and planning restrictions
- visual and landscape amenity
- other.

Midway through the consultation period, on 12 November 2018, EPA and Glenelg Shire Council held a joint information session in Portland. DELWP and Yumbah were represented at the meeting.

Following a review of the submissions, EPA held a community conference in Portland on 19 December 2018. An EPA-appointed independent facilitator chaired the conference, which was attended by more than 120 community members.

The facilitator subsequently produced a report, published on the Engage Vic website, which documented the key issues and concerns raised, while also providing recommendations to EPA, Glenelg Shire Council and Yumbah. Under section 20B(4) of the EP Act, EPA are required to take into consideration the discussions and resolutions of any conference and the recommendations of the person presiding. Such requirements do not apply to Glenelg Shire Council or Yumbah.

Following review of the submissions, recommendations from the section 20B conference report, referral responses and EPA's technical assessment, three requests for further information were made to Yumbah. Yumbah's accepted responses to each of these were published on the Engage Vic website, with public comments accepted if received.

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EPA assessment

What did EPA assess?

EPA has undertaken a comprehensive technical assessment of the works approval application using its own internal specialists and referrals to other lead agencies.

For more information on how EPA assessed all the key issues of concern, see sections 5 to 7 of the full report.

Regulatory compliance

EPA has determined that the proposal meets the principles of the EP Act, and noted that EPA has no record of pollution reports related to Yumbah's existing Narrawong farm and that Yumbah nor any of its directors have been convicted of a relevant offence that would trigger a 'fit and proper person' test under legislation.

EPA has determined that, subject to a range of conditions, the works approval application:

- is permitted by the land use planning scheme
- would not adversely affect the interests of any person
- would not adversely affect the quality of any segment of the environment
- complies with relevant SEPPs, regulations and guidelines.

EPA has determined that audits should be performed by an EPA-appointed industrial facilities auditor (or alternative expert approved by EPA) at the following development points:

- final detailed design: to be verified by an EPA appointed industry facilities auditor (or alternative expert approved by EPA) to provide assurance that the farm has been constructed in line with the application and conditions of the works approval
- commissioning stage: the first phase of the plant (including the first grow out module) should be verified by an EPA-appointed industry facilities auditor to confirm that the farm is operating in accordance with the application and conditions of the works approval and commissioning approval from EPA.

Key issues

EPA assessed the following issues as relevant to the application. This section summarises the findings relating to them.

Climate change, energy use and greenhouse gas emissions

EPA reviewed the potential greenhouse gas emission sources at the site associated with the combustion of fossil fuels and consumption of electricity. The primary sources of energy use, and hence emissions, are the operation of pumps, aerators, diesel generators and other plant equipment, and fuel usage by on-site vehicles.

Approximately 30 per cent of the proposed farm's electricity use would be sourced from the on-site solar panels.

The works approval application includes several practices and management systems to reduce energy consumption.

The application has comprehensively considered potential climate change impacts in accordance with EPA's interim guidance.

Information provided in the application on energy use is sufficient and based on best available information.

Air emissions – odour

EPA notes that the *Recommended Separation Distances for Industrial Residual Air Emissions – Guideline* (Publication 1518) does not apply to the proposed farm, as it would not include seafood processing on-site. Hence, there is no specific set back distance.

EPA has no historical or direct evidence that abalone farms within Victoria generate odour complaints from communities around those facilities. Significant odour has not been detected by any EPA authorised environmental protection officers during the 16 compliance inspections of abalone farms conducted over the past 10 years, with no significant or strong odours detected by two EPA odour specialists on a site visit to Yumbah's Narrawong farm.

EPA does not consider well-designed and operated abalone farms to be a significant source of off-site odour.

EPA considers the application to comply with SEPP (Air Quality Management).

EPA recommendation

- An odour survey should be undertaken of the first phase of the farm, to confirm that any odour generated by on-site activities is not experienced off-site and that the proposed odour mitigation measures are effective.
- A confirmatory assessment that following detailed design and the proposals would still comply with SEPP (Air Quality Management) to be completed following detailed design and prior to construction.

Noise

EPA considers that the background noise monitoring, modelling approach and assumptions presented in the application are satisfactory. Potential noise sensitive receptors were identified, as were principal noise sources with typical equipment noise levels sourced from past projects. Meteorological and terrain conditions were considered.

EPA noted it has no direct evidence that abalone farms are a source of significant on- or off-site noise issues and that it considers abalone farms to have a low risk of generating significant on or off-site noise.

EPA considers the application to comply with *Noise from Industry in Regional Victoria* (NIRV) criteria.

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EPA recommendations

- Conditions should be attached to the works approval to ensure that the final design, plant selection and operational regime continue to comply with guideline, including a detailed updated noise assessment (incorporating confirmed noise emission sources specifications and locations) following detailed design.
- Noise generated by the operation of the first phase of the farm and the performance of the noise attenuation measures should be verified by an independent auditor noise survey during commissioning.

Wastewater management

EPA considers that the proposed wastewater management system would comply with s20 of SEPP (Waters). The proposed wastewater management system aligns with the wastes hierarchy. Yumbah has taken all reasonably practicable steps to ensure that the wastewater discharge does not exceed the environmental quality objectives, with minimisation of risks to the beneficial uses of the receiving waters. Accordingly clauses 1 and 2 of s21 of SEPP (Waters) would also be met, but that a mixing zone (a defined area approved by EPA where the environmental quality objectives in the receiving waters would not be met be required).

EPA recommendations

- Detailed monitoring of the wastewater treatment should be undertaken to confirm that its performance aligns with the modelled concentrations and proposed licence limits.
- Water flow meters should be installed on the discharge outlets.
- To inform the subsequent EPA licence application, Yumbah should submit an assessment of expected water quality parameter concentrations under recirculation conditions against licence limits.

Stormwater management

The selection of a 1-in-20-year storm event using worst case duration of five minutes as a design base is sufficiently protective.

No significant impacts from stormwater are expected. EPA considers that the proposed stormwater management meets the requirements of s34(1) of SEPP (Waters). The proposal is unlikely to cause any pollution or hazard to stormwater quality.

EPA recommendations

- Suitably worded conditions should be included to ensure the implementation of the following mitigation measures: all fuel and chemicals to be stored on-site should be stored in a designated facility designed to adhere to the requirements of AS1940-2017, AS3833-2007, AS3780-2008 and EPA publication 1698.

Marine discharge

As part of EPA's assessment it reviewed modelling undertaken of the wastewater discharge. This indicated

that a mixing zone would be required, due to predicted exceedances of environmental quality objectives. While the mixing zone would include areas used for water-based recreational activities, the discharge would not be harmful to people.

EPA considers that the proposed marine discharge would comply with SEPP (Waters) and in particular with s22 and 23 and that relevant beneficial uses would be protected.

EPA recommendations.

- Monitoring should be conducted to assess impacts to soft-sediment and seagrass habitats around the discharge points.

Biosecurity

It is noted the Victorian Fisheries Authority (VFA) is the lead regulatory agency of aquaculture in Victoria and that farm would need to be operated under a regulated aquaculture licence by that Authority. Such a licence would require annual audits by Agriculture Victoria. Both of these organisations provided referral responses to EPA.

The conclusions of the assessment of potential biosecurity effects are that whilst there were outbreaks of a virulent disease that affected two land-based abalone farms and the wild abalone populations, subsequent studies established that the disease agent is thought to be constantly present in the wild abalone population of Victoria. However, this usually only affects a small number of animals at any one time, and since 2010 there have no detections of the virus in the wild within Victorian waters or abalone farm.

If approved and constructed, the farm would be operated under a VFA regulated Aquaculture Licence. Such a licence would require the farm to operate in accordance with the VAATP and the National AHAP with mandatory annual audits by Ag Vic, and the development of a Biosecurity Plan and implementation of measures set out in the NBPG. EPA concludes that biosecurity risks at the proposed farm have been considered and would be managed.

The proposed design of the WAA includes a number of features to assist in managing biosecurity risk and is considered best practice by the VFA and EPA.

The combination of the design and adoption of operational procedures which would be mandated and audited under the VFA regime would ensure that biosecurity risks would be appropriately managed such the beneficial uses under SEPP (Waters) would be protected.

Land and groundwater

EPA considers that the proposal provides an appropriate understanding of land and groundwater conditions at the site.

The hydrogeological assessment presents sufficient data to develop a conceptual hydrogeological model and enable potential risks to groundwater to be assessed. The shallow nature of groundwater means that it is vulnerable to impact from site operation should spills or leaks occur.

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EPA recommendation

- EPA has identified a series of mitigation measures to ensure operations do not have a detrimental impact on the environment or beneficial uses of groundwater.

Solid waste management

According to the application, the largest volume of waste generated at the farm would be sludge from the wastewater treatment process.

EPA recommendations

- Yumbah should develop and implement a waste monitoring and management plan to confirm the quantities of waste requiring dewatering, and thus the sizing of the dewatering facility.
- Following detailed design Yumbah should confirm the design and specification of the abalone mortality and storage shed.
- Yumbah is required, through a licence condition, to dispose of sludge, mortalities and unwanted larvae at an appropriate licensed waste treatment facility. Dewatered sludge must not be applied on land or reused for landscaping on the farm.

Issues associated with construction

Best practice environmental management is required for construction activities. EPA's *Environmental Guidelines for Major Construction Sites* (Publication 480) provides guidelines on minimising environmental impacts and eliminating health risk and nuisance to residents near a construction site. This overarching guideline covers a variety of topics including air emissions, noise and vibration, land disturbance, waste minimisation and other environmental issues.

EPA will require a series of mitigation measures to be enacted prior to, and during, farm construction.

Conditions of approval

The works approval is subject to a range of conditions. Some conditions must be met prior to construction; others will extend through the lifetime of the farm's operation.

In addition to EPA works approval, prior to commencing construction, Yumbah must obtain both MACA and a planning permit, which EPA understands has been achieved.

Activities that Yumbah must undertake following works approval include the following:

- demonstrate that the performance of the first phases of the farm meet the design and operational criteria via commissioning approvals; this would involve independent EPA appointed auditor verification of compliance (and if successful, Yumbah would then need to apply for a licence to operate the farm)
- obtain EPA commissioning approval involving proof of performance testing for plant selection, final position of some key items, and other ancillary elements; the approval will include specific monitoring requirements to be met prior to the next stage and any subsequent licence
- obtain from EPA a licence to discharge wastewater
- obtain an aquaculture licence from the Victorian Fisheries Authority, under the *Fisheries Act 1995*, to operate the farm.

Appeal process

If you object to the issuing of the works approval or its conditions, you may have the decision reviewed by applying in writing within 21 days of the date of issue to:

**Registrar, Planning and Environment Division
Victorian Civil and Administrative Tribunal (VCAT),
7th Floor, 55 King Street, Melbourne VIC 3000**

An application fee may be applicable when lodging an appeal with VCAT. Contact VCAT on (03) 9628 9777 for further details on fees associated with an appeal. A copy of the appeal should also be forwarded, within seven days of lodgement, to:

**Director, Development Assessments Unit,
Environment Protection Authority Victoria, GPO Box
4395, Melbourne VIC 3001**

More information

Read EPA's full assessment report on Engage Vic <https://engage.vic.gov.au/epa-works-approvals/yumbah-aquaculture-works-approval-application>

Please contact EPA on 1300 372 842 (1300 EPA VIC) or via email on contact@epa.vic.gov.au

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Figure 3: Abalone tanks under shade clothes in the existing Yumbah Narrawong facility (Image: Yumbah Aquaculture Limited)