

EPA Guidelines

Environmental guidelines for completion of PIRSA aquaculture licence applications (marine) EPA requirements—information for applicants

Issued May 2007

685/07: This guideline explains to applicants what information is required by the EPA to make environmental assessments of their marine aquaculture licence or licence amendment application which is processed by the Department of Primary Industries and Resources SA (PIRSA). A similar guideline exists for landbased aquaculture activities.*

Introduction

In accordance with provisions of Section 59 of the *Aquaculture Act 2001*, all licence applications and amendments must be referred to the Environment Protection Authority (EPA) before the licence (or amendment) can be approved.

The EPA must, in determining its response to the application, have regard to and seek to further the objects of the *Environment Protection Act 1993* (EP Act) and have regard to the general environmental duty and any relevant environment protection policies under that Act.

The EPA is reliant on a range of information to support its decision-making process. This includes information and advice from PIRSA, the information contained within the application, and for licence amendments access to previous environmental monitoring data.

In assessing your application, the EPA must consider and further the objects of the EP Act. You will need to provide adequate information to remove any uncertainty regarding your ability to

* PIRSA Aquaculture manages the aquaculture licence application process. Consequently all licence applications or enquiries should be directed to PIRSA (telephone 8226 0314). Following their assessment, PIRSA then forward the application to the EPA for consideration. It should be noted this document does not replace any requirements stipulated by PIRSA Aquaculture as part of their formal licence assessment process.



operate the aquaculture venture without resulting in environmental harm. If the EPA is required to seek additional information, the assessment process of your application may be delayed.

This guideline describes information the EPA requires to assess aquaculture licence applications (marine). The EPA encourages applicants to provide detailed information about their proposed aquaculture activities. This will assist in avoiding extended delays or opposition to the aquaculture development.

Potential environmental issues

Whilst the EPA is interested in all aspects of the farm operation, its principal concern lies with activities that may generate pollution based environmental issues. This section describes many of the issues that may be associated with aquaculture activities.

The environmental issues of specific interest to the EPA include:

- water quality
- marine ecology
- waste management
- chemical spillage
- impacts on neighbours (eg noise and odour)

General environmental issues

The EPA can only make its assessment based on the information presented. It is unable to make basic assumptions of farm practices and applicants are encouraged to provide as much information as possible (including where appropriate, photographs or video) of the site/activity.

Water quality

The addition of nutrients to the water in the form of feed, faeces and pseudo-faeces from the culture animals or from cleaning equipment can result in environmental harm. An aquaculture activity where supplementary feed is required (eg finfish, abalone) should be positioned in a location where reasonable depths and current flows ensure that nutrients resulting from uneaten feed and faeces are adequately dispersed. Applicants will be expected to be able to justify the site selection in terms of how the aquaculture activity can occur on site without causing a detrimental impact on water quality.

Applicants should also be aware of the risks associated with issues such as diesel spills, and also that the discharge of grey or blackwater (i.e. sewage) is not permitted within 3 nautical miles of the coast of licensed aquaculture sites.

Chemical use

Applicants must be able to demonstrate their capability to properly manage, store and lawfully apply chemicals that may be used in the operation of their farm. In addition to PIRSA management arrangements, the use of chemicals may require EPA authorisation.

Waste management

Fish waste (mortalities and fish processing)

Mortalities of stock are inevitable in fish farms. Licensed operators should be prepared for managing both small- and large-scale mortality events, and consequently are expected to be able to clearly describe how they intend to manage their mortalities or processing waste.

The method preferred by the EPA for the disposal of ad-hoc mortalities and fish processing waste is composting. If the applicant intends to arrange composting, they should describe how the

composting will occur on a nominated site giving consideration to minimising potential environmental issues such as odour, site contamination and vermin.

Providing consideration is given to potential environmental issues associated with odour, vermin, site and water contamination, and fish are buried in a manner to assist decomposition, the EPA may not oppose the burial of insignificant numbers of fish on a nominated site. However it should be noted that mass mortalities and large volumes of fish waste from fish processing must not be disposed of using this method unless authorisation has been obtained to do so.

Applicants are expected to have thought about and subsequently been able to nominate in circumstances of major fish mortalities where and how those fish will be disposed of. For example, if it is likely that fish will be disposed of via a licensed waste or composting facility, the applicant should nominate that site and confirm that the site operators have been contacted and are licensed to take organic waste as well as nominating how those fish will be transported to the site.

Regardless of disposal method, the EPA considers it essential for licensees to forward plan for these types of events so that disposal is undertaken in an approved manner. Under no circumstances should fish mortalities and fish waste be disposed of at sea. Water containing fish blood as a result of harvest activity may be discharged, but not closer than 3 nautical miles from land.

Biofouling

There is an expectation that biofouling will need to be removed from culture structures periodically. Applicants will need to specify how and where they intend on cleaning their culture equipment and how they intend to dispose of biofouling removed from the culture equipment. It should be noted the removal and disposal of biofouling at sea is not permitted, and as a consequence applicants should nominate alternative disposal arrangements.

Other waste

As with any form of business venture, solid waste in the form of office materials, personal waste (eg food and drink containers, etc), disused equipment, feed bags, rope, etc should be removed and disposed of lawfully on-shore. Applicants should be able to describe their day-to-day waste management processes, including contingency plans for the recovery and lawful disposal of equipment. The EPA encourages the concept of reduce, reuse and recycle of wastes.

Site contamination

The addition of nutrients via supplementary feeding, animal faeces and biofouling material into the water column can lead to suspended material settling onto the sea floor and contaminating the benthic environment. If contamination continues overtime, it may also give rise to the formation of anoxic sediments. A consequence of this may be an impact on seagrass and/or other aquatic vegetation under or near the culture structures.

Structures in the water column may also cause a change in hydrodynamics potentially leading to the deposition of fine particulate organic matter. This can lead to a change in the composition and numbers of organisms and aquatic vegetation found naturally in the area.

It is therefore important that marine aquaculture sites are positioned away from extensive seagrass beds and are located in areas of reasonable depth and current flow to ensure that any sediments and organic matter generated as part of the farming process are adequately dispersed. The applicant will need to specify whether there is seagrass present on the site, water depth at the site and current flow. Fallowing is considered an important strategy to minimise the potential for contamination of the benthic environment, and consequently the applicant should specify proposed fallowing arrangements.

Air quality

Although odours are not usually associated with offshore marine-based aquaculture activities, applicants should identify any potential sources for odour and how they will be managed. This includes the transportation and onshore disposal of mortalities and other organic waste.

Noise

The applicant should be aware of potential noise issues that may affect the amenity of neighbouring properties. Some farms may use bird-scarers and automatic-feeders that will possibly generate some noise. The applicant should specify any potentially noisy equipment that will be used on site and whether it is likely to pose an issue.

Scouring/shading

Beyond 'pollutant' type impacts, the EPA will be particularly interested in issues such as the ability to avoid potential impacts on seagrass and other aquatic vegetation through shading and scouring. Applicants should therefore clearly describe management arrangements for their specific sites to demonstrate a capacity to operate without loss of that seagrass such as positioning and securing of culture structures and the minimum distance to be maintained between culture structures and sea floor.

Environmental monitoring results

All licensed sites are required to participate in environmental monitoring in accordance with PIRSA Aquaculture Regulations. If the application is an amendment to an existing licensed operation, the EPA should be provided with and will seek access to all recent and relevant monitoring data to assist in determining whether an aquaculture activity is likely to contribute to environment harm. Consequently the EPA encourages all licensees to actively participate in their environmental monitoring requirements. The EPA will be reluctant to endorse any licence amendments that may be requested without this information.

Environmental checklist

The following section provides a checklist that can be used by the applicant to assist with the provision of information with their licence application. The applicant is reminded that this document does not replace **any** of the requirements imposed by PIRSA as part of their formal licence assessment process. If the information present in the application is inadequate, the EPA will be required to request further information, which will delay the application.

The information that is provided with the licence application should aim to:

- give a clear and detailed explanation of the activity that is being proposed
- identify all potential environmental impacts that may be associated with both the construction and operation of the facility
- describe any action that will be taken to minimise the potential for environmental impacts
- identify whether any environmental impacts have occurred on or off site, and what management arrangements have been implemented to address those impacts.

It should be noted that not all points on the checklist will be relevant to all sites and will depend on the type of aquaculture activity being proposed. Further, applicants should note that the EPA should be able to obtain this information from material provided by the applicant to PIRSA. Consequently the applicant is **NOT** expected to provide this information to the EPA in addition to the information they provide to PIRSA.

General information

- Provide a scale map of the site showing structures associated with the aquaculture development (cages, longlines, racks, etc). Include proximity of seagrass and where structures will be placed in relation to that seagrass.
- Include photographs or videos of the proposed site, with particular reference to ecologically sensitive areas (eg seagrass beds, etc).
- Provide benthic information on the site including presence of seagrass (percentage cover and density) and other aquatic vegetation.
- Provide the water depth and current flow on the site.
- Describe in detail the type of culture system to be used on the site. Photographs and illustrations are particularly useful for describing system design. Include the size and number of culture units.

Water quality

- Identify the proposed feeding rates, type of feed used and expected production tonnages.
- Identify any chemicals that may be used in association with the farming activity, what they will be used for, and how they will be applied and disposed.

Waste management

- Identify the types and volumes of organic waste that may be produced on the site (eg fish waste from mortalities and/or processing, etc) and how or where they will be disposed.
- Identify how biofouling will be removed and disposed of.
- Provide any names and contact details of commercial waste disposal services proposed to be used for waste disposal (eg waste depots, composters).
- If burial or composting of organic waste is proposed, provide an accurate description on how and where this will be undertaken.
- Describe what other forms of waste may be generated on site (eg disused equipment, empty feedbags, chemicals, etc) and how will this be managed?
- If there is any fish processing undertaken on the site, describe how waste will be managed.

Site contamination

- Describe how potential site contamination from the build-up of organic matter on the seafloor under and around the culture structures will be minimised.
- Identify whether water depth and current flow on the site are adequate to dilute and disperse wastes that are likely to be generated as part of the aquaculture activity.

Air quality and noise

- Indicate the distance between the proposed site for the aquaculture activity and the nearest neighbour who may be affected by noise and air quality issues.
- Identify the likely sources of noise (eg pumps, generators, bird-scarers, etc) and how they will be managed.

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- Identify the likely sources of odour (eg feed, organic waste, mortalities) and how they will be managed.

Environmental monitoring

- Provide any environmental monitoring information for the site/activity that may assist the EPA in their assessment process.

Other useful documents

The following documents provide further information on some of the topics discussed in this guideline.

- *EPA Fact Sheet: Aquaculture management and the Environment Protection (Water Quality) Policy 2003*, viewed 18 May 2007, <www.epa.sa.gov.au/pdfs/aquaculture_mgmt.pdf>.
- *EPA Information: Construction noise 2007*, viewed 18 May 2007, <www.epa.sa.gov.au/pdfs/info_construction.pdf>.
- *EPA Information: Environmental noise 2007*, viewed 18 May 2007, <www.epa.sa.gov.au/pdfs/info_noise.pdf>.

FURTHER INFORMATION

Legislation

Legislation may be viewed on the internet at: <www.legislation.sa.gov.au>

Copies of legislation are available for purchase from:

Service SA Government Legislation Outlet 101 Grenfell Street Adelaide SA 5000	Telephone: Facsimile: Internet:	13 23 24 (08) 8204 1909 < shop.service.sa.gov.au >
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For general information please contact:

Environment Protection Authority GPO Box 2607 Adelaide SA 5001	Telephone: Facsimile: Freecall (country): Internet: E-mail:	(08) 8204 2004 (08) 8124 4670 1800 623 445 < www.epa.sa.gov.au > < epainfo@epa.sa.gov.au >
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