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Department of
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Western Australia.*

Fisheries Occasional Publication No.143

Aquaculture of Seaweed in Western Australia

Policy Principles and Guidelines Relating to the Assessment
of Licences and Exemptions for the Aquaculture of Seaweed
in Western Australia

September 2022

Important disclaimer

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1. INTRODUCTION

To support development of a seaweed aquaculture sector, the Department of Primary Industries and Regional Development (DPIRD) has developed policy principles and guidelines for the assessment of licences and exemptions for the aquaculture of seaweed in Western Australia (Policy). Among other things, the Policy provides for the take of reasonable quantities of seaweed under exemption, to enable initial research activity and the ensuing generation of scientific data in respect of the distribution and abundance of seaweed species. The Policy and its expected outcomes will therefore provide a scientific basis to inform future policy on a sustainable allowable take of wild seaweed. It will also assist in identifying seaweed species in Western Australia (WA) that may be suitable for commercial aquaculture and describe sites within the State that may be suitable for growout.

Best practice management measure for seaweed aquaculture will likely evolve with changes in knowledge and experience. Accordingly, these principles and guidelines may be reviewed from time to time to ensure their currency and relevance to changes in technology, biosecurity, farming practices and other matters.

2. SCOPE AND OBJECTIVES

The Policy provides guidance on the allowable take of wild seaweed for the purposes of aquaculture and clarifies the process and information required to assess applications for aquaculture licences, leases and exemptions for seaweed aquaculture in WA.

The key objectives of this Policy are to:

- provide the aquaculture industry with guiding principles for seaweed aquaculture proposals;
- continue to support aquaculture development by progressing the assessment of seaweed aquaculture applications to enable a level of aquaculture activity and growth in this sector, within an ecosystem-based fisheries management framework; and
- facilitate collaboration between industry, Government and researchers, by supporting the proposition of industry and researchers providing data and information on localised seaweed abundance and distribution that may be useful to inform a future seaweed aquaculture policy.

Under the provisions of the *Fish Resources Management Act 1994*, seaweeds are deemed to be “fish”.

Applications that may be assessed include licence variations and exemptions for broodstock collection and research and development (R&D) trials that provide a suitable research plan or proposal. Proposals for R&D exemptions should either

include collaboration with a university or similar research institution, or able to demonstrate appropriate in-house research capability. New licence applications will be considered on a case-by-case basis and subject to the take limits under the Policy. Adjustments can be made in future reviews of the Policy.

To inform the policy development process, where seaweed is collected from the natural environment under the authority of an exemption, the proponent may be required to provide data and information to DPIRD on its distribution and abundance. Where appropriate and by agreement, the proponent may provide reports of R&D trials to DPIRD.

DPIRD may aggregate the data collected from multiple operators for scientific analysis to develop a more effective policy. DPIRD will treat the data and reports provided to it by individual operators as confidential information, which will not be released publicly without the written consent of the operator. In the event the operator does agree to make the information public, the operator will have the right to first redact information it considers confidential or that may comprise intellectual property.

Aquaculture licence holders collecting seaweed from existing aquaculture gear deployed within the authorised site must include collection data in an annual report.

3. BACKGROUND

- a. DPIRD has a statutory obligation to develop and manage aquaculture sustainably in conjunction with the management of other aquatic resources. Consequently, DPIRD is responsible for assessing factors such as a suitable level of wild seaweed collection and availability of suitable locations for seaweed aquaculture within an ecosystem-based fisheries management framework.
- b. DPIRD has received an increasing number of applications and enquiries in respect of seaweed aquaculture.
- c. Nationally and in WA, the commercial aquaculture of some seaweed species is still in its early stages, with little currently known about natural abundance, distribution, seasonal dynamics and cultivation techniques.
- d. Development of principles and guidelines will support decision-making for the take of wild seaweed and for the grant or variation of aquaculture licences for seaweed aquaculture.
- e. DPIRD is part of a national seaweed aquaculture working group being established by the Aquaculture Committee of the Australian Fisheries Management Forum. The group will share information and identify key policy gaps for researchers and funding bodies including stock assessment approaches, harvest strategies and biosecurity protocols for seaweeds.
- f. DPIRD is working to determine the technical and scientific information needed to inform decisions on seaweed aquaculture, including matters such as farm site

sizes, environmental parameters and broodstock collection. This information will inform the development of guidance material and criteria for assessing applications for various seaweed species and culture methods in WA.

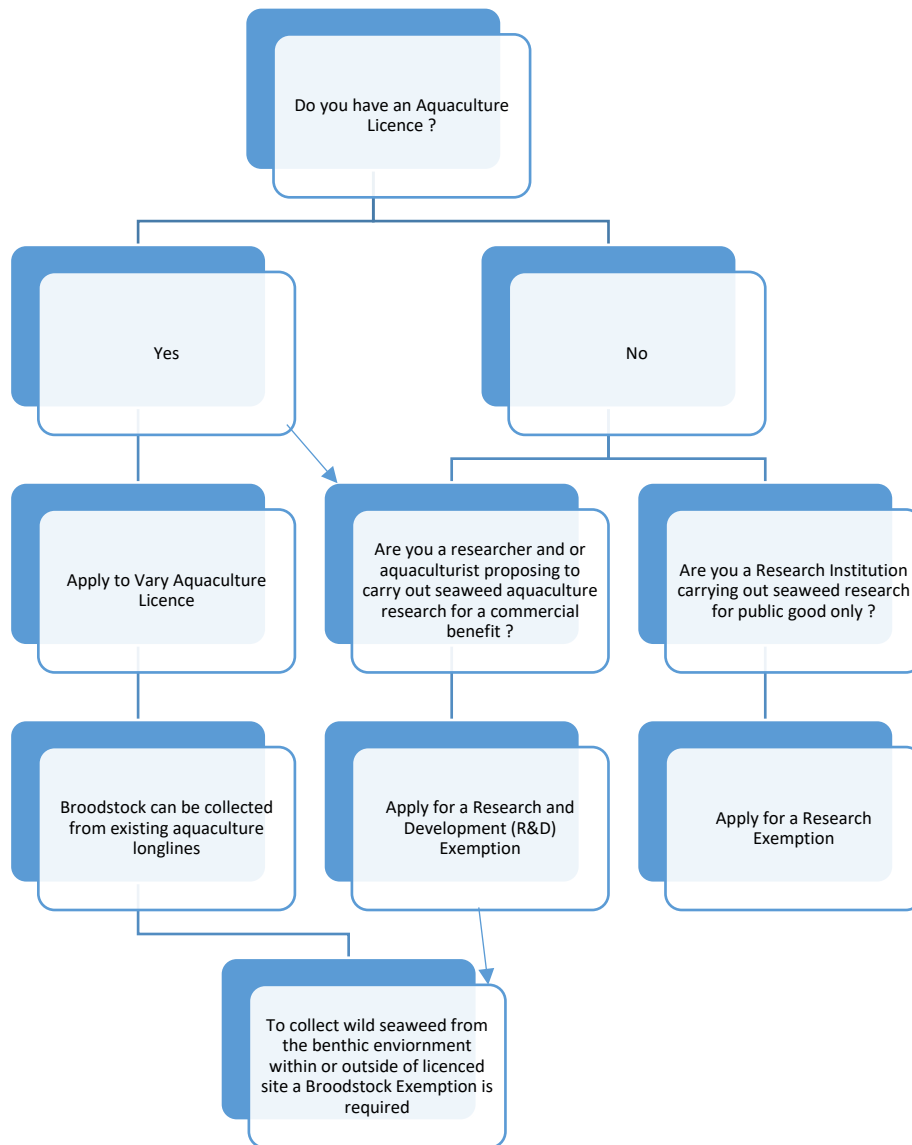
- g.** At DPIRD's request, the Aquaculture Council of Western Australia (ACWA) organised a workshop on seaweed aquaculture that involved industry stakeholders; the workshop was held in February 2022.
- h.** Further informed by the outcomes of the workshop, the Policy outlines principles that will support the need for research and acknowledges that some trials will need to occur to generate relevant data.
- i.** The Policy is limited only to the take of seaweed from licensed aquaculture sites or from the natural environment under a Ministerial exemption to collect broodstock for aquaculture purposes. It does not address opportunistic collection of seaweed from beach casts or pearling infrastructure; or take of seaweed for non-aquaculture related testing or feed purposes.

4. PROCESS

Before making an application for an authorisation or exemption, a proponent should be clear on whether the application is for the grant of a new licence, variation to an existing licence; R&D aquaculture trial; or research only (see decision tree below).

Proponents who already hold an aquaculture licence may need to collect broodstock under an exemption. For proponents who are unsure if an aquaculture proposal will be feasible and would like to undertake research prior to attempting aquaculture at a commercial scale, an exemption may be the appropriate approval instrument. An R&D aquaculture trial exemption enables small-scale research to determine the feasibility of proposals before making applications for an aquaculture licence and lease for commercial production.

The following decision tree may assist proponents determine the most appropriate application.



The Aquatic Management Directorate will co-ordinate applications to ensure a consolidated and consistent DPIRD position.

5. RISKS AND MITIGATION

- Assessing applications and granting licences in the absence of an appropriate framework may lead to future management issues such as wild stock sustainability or have a wider ecological impact.
- This Policy has a measured approach, which will assist to manage sustainability concerns in any future reviews of the Policy.
- DPIRD has received several applications relating to sites at the Houtman Abrolhos Islands (Abrolhos) Fish Habitat Protection Area (FHPA), which reflects the growing interest in the Abrolhos for aquaculture purposes. DPIRD

has commenced an aquaculture planning process for the Abrolhos including the FHPA.

6. GUIDING PRINCIPLES

The following Policy principles will apply to exemptions for broodstock collection, R&D trials and licence applications with the following specifications, unless otherwise approved in writing.

1. *Exemption applications should have an accompanying research proposal in collaboration with a university, research institution, or demonstrate appropriate in-house research capability.*
2. *Applicants should provide justification for the proposed species.*
3. *Applicants should demonstrate proven knowledge to identify specific species; however, if this is not possible, provide justification to support identification at genus level.*
4. *Broodstock take of Asparagopsis spp. from the natural benthic environment is limited to up to 20 kg wet weight per individual exemption holder per site, or at the discretion of the CEO, unless appropriate justification can be provided (other species will be assessed on merit).*
5. *Broodstock take of Asparagopsis spp. from the natural benthic environment is limited to a cumulative 200 kg wet weight per DPIRD bioregion annually (total of 800 kg wet weight within WA) (other species will be assessed on merit).*
6. *Broodstock take of Asparagopsis spp. will be limited to a total of 100 kg within specific ecosystems within a bioregion (for example, Exmouth Gulf, Shark Bay, Abrolhos FHPA, general use areas of marine parks), unless appropriate justification can be provided (other species will be assessed on merit).*
7. *Applications for exemptions to collect seaweed should identify specific collection sites.*
8. *For applications for exemptions to collect seaweed from existing aquaculture gear on an authorised aquaculture site where the applicant is not the licence holder for that site, written consent must be obtained from the licence holder and provided with the application. Generally, the collection of seaweed from existing aquaculture gear in an authorised site will not be restricted and not included in any limits on broodstock take from the benthic environment. Existing*

aquaculture gear must be shown to be for pre-existing aquaculture activities and not for the purpose of collecting seaweed, unless otherwise authorised.

9. *Any seaweed to be taken from the benthic environment (for example, from reefs) must be within a general area outlined in the relevant exemption instrument. Within the general area, take must be limited to 10% of an observable survey area. For example, in a 100 x 1 metre belt transect (100 m²), only 10 m² should be taken. That site can only be surveyed once per year and no further take allowed within 200 metres of the site.*

All take of seaweed from the natural environment under an exemption must be reported to DPIRD by species (scientific and common names if possible), amount (in kilograms wet weight) and location (GPS (Global Positioning System) coordinates). Aquaculture licence holders collecting from existing aquaculture gear must provide the collection data in an annual Management and Environmental Monitoring Plan (MEMP) report.

10. *The size of trial sites may be limited, subject to the proposal.*
11. *Gear restrictions (such as deployment of lines and anchorage) may apply and will be considered by DPIRD's Aquatic Science and Assessment team on a case-by-case basis.*
12. *An exemption will be for a maximum term of two years with proponents able to apply for further authorisation subject to the policy principles in place at the time.*
13. *Persons named on an exemption authorising the collection of wild seaweed should only be those that will carry out the collection activity. If the proposal includes collection from a licensed aquaculture site, the aquaculture licence holder must also be named.*
14. *In addition to regular reporting requirements, DPIRD may specify technical information to be reported to inform the future policy development process.*

7. MANAGEMENT AND ENVIRONMENTAL MONITORING PLANS

7.1 Purpose

DPIRD is responsible for all the operational, compliance and enforcement activities associated with the environmental management of the WA aquaculture industry. This responsibility has been given effect through the removal of aquaculture operations as “specified premises” under the *Environmental Protection Act 1986*. This responsibility is met in accordance with the Memorandum of Understanding between DPIRD and the Department of Water and Environmental Regulation.

The protection and management of the aquatic environment are based on an underlying set of values that reflect the contemporary views the community holds on the importance and place of the aquatic environment within society. Licence holders are required to operate in a manner consistent with these environmental values.

To be sustainable and expand, marine aquaculture needs to operate in a manner that is demonstrably consistent with these values – the MEMP provides the mechanism to do so.

The MEMP must provide sufficient detail to satisfy the CEO that any risks to the environment and public safety will be managed per s.92A(1) of the *Fish Resources Management Act 1994*. A MEMP provides information on the background and purpose of the aquaculture activity, including its objectives, other information such as the species of fish to be farmed, the location of the site and the farming method, and details of environmental monitoring and management and biosecurity.

7.2 Guidance for Management and Environmental Monitoring Plans

This guidance section relates to the MEMP required under applications for aquaculture licences; however, where applicable, it may also be used as a guide for information to include in an R&D application.

Applications for the grant of a new aquaculture licence or to vary an existing aquaculture licence, must be accompanied by a MEMP that includes all the species applied for.

Where a proponent holds an aquaculture licence and wishes to grow or undertake R&D trials on identified seaweed species, the proponent may make an application to vary the licence to include intended species or genera, subject to Principle 3 above and section 2 below. In this situation, the licence holder’s MEMP will need to be revised to incorporate the proposed new species.

For all proposed seaweed species, the following information is to be incorporated into the standard DPIRD MEMP template.

7.2.1 Purpose

- An overview and background on the aims and objectives of the proposed seaweed aquaculture. Risk should be considered with reference to the compatibility of the aquaculture activity of the proposed species with the licensed site's current aquaculture production activities and local ecological environment.

7.2.2 Species and Quantity of Fish/Seaweed

- Identification to species level; if this is not possible, justification why identification to genus level only is proposed.
- Justification for farming of multiple seaweed species should be provided.
- Include only the proposed species to be commercially grown or used for R&D for exemption or variation to the aquaculture licence.
- Evidence the species occurs naturally in the local environment.

7.2.3 Farming Methods and Aquaculture Gear

- The proponent should demonstrate ability to identify the proposed species.
- Identify whether a proposal to collect seaweed from aquaculture gear is for broodstock, research or commercial purposes. Provide method of collection if proposing to collect seedstock.
- Description of how proposed species will be grown, for example:
 - Aquaculture gear - will existing lines only be used or additional lines or other aquaculture gear deployed?
 - Describe anchorage systems and measures to reduce impact on the benthic environment.
 - Provide GPS coordinates of locations within the current licensed or proposed site under the variation that are requested to be used for seaweed farming.
 - Describe the benthic environment (such as sand, coral, seagrass or reef) and its compatibility with the proposed species to be farmed (e.g., no impact of shading, invasive nature).
 - Compatibility of proposed seaweed species with the existing species on the licence to mitigate risks to existing operation.
 - Maximum expected stocking densities on the licensed site, also including consideration the stocking density of other species on the licence.
 - Source of broodstock, noting only species that occur naturally in the bioregion or within specific ecosystems within a bioregion (such as within the Abrolhos Islands FHPA) in which the site is located will be authorised.
 - Records, including environmental monitoring, harvesting and movement of stock onto and off the site.

7.2.4 Environmental Monitoring Parameters

- Site environmental surveys - baseline assessment and suitability of licensed or proposed sites, and surrounding reefs and ecosystems.
- Ongoing monitoring.

7.2.5 Impact on Protected Species and other Aquatic Fauna

Avifauna at the Arolhos Islands

- In addition to the other aquatic fauna addressed in DPIRD's MEMP template, proposed aquaculture sites need to minimise impacts on threatened and, or migratory seabirds covered under the EPBC Act.
- Demonstrate measures to mitigate
 - Entanglement in aquaculture gear
 - Preventing provision of roosts
 - Changed abundance of prey and potential impact on foraging behaviour.
 - Information provided on impact to seabirds and mitigating measures should have regard for the report *Impact Assessment of aquaculture on seabird communities of the Arolhos Islands, to support the Midwest Aquaculture Development Zone proposal*, which is available at:
https://www.epa.wa.gov.au/sites/default/files/PER_documentation/appendix_1d_-_seabirds_eia.pdf

7.2.6 Biosecurity

- Monitoring of aquaculture equipment for biofouling and marine pests.
- Ensuring aquaculture gear is secure and properly maintained.
- Acknowledgement that no supplementary feeding (including addition of nutrients) of proposed species is required.
- Proposed species monitored for signs of declining health or disease.

8. POLICY DEVELOPMENT AND REVIEW

The Policy will be further informed by the national working group, information generated from exemptions and existing licence holders and other sources of technical and scientific information.

The Policy may be reviewed from time to time subject to new data or information becoming available.

9. FURTHER INFORMATION

Information on the Aquaculture Licence application process can be found at the following page

<https://www.fish.wa.gov.au/Fishing-and-Aquaculture/Aquaculture/Aquaculture-Management-and-Licensing/Pages/default.aspx>

Information on Management and Environmental Monitoring Plans can be found here

https://www.fish.wa.gov.au/Documents/Aquaculture/memp_guidance_statement.pdf

Email: Aquaculture@DPIRD.wa.gov.au for more information