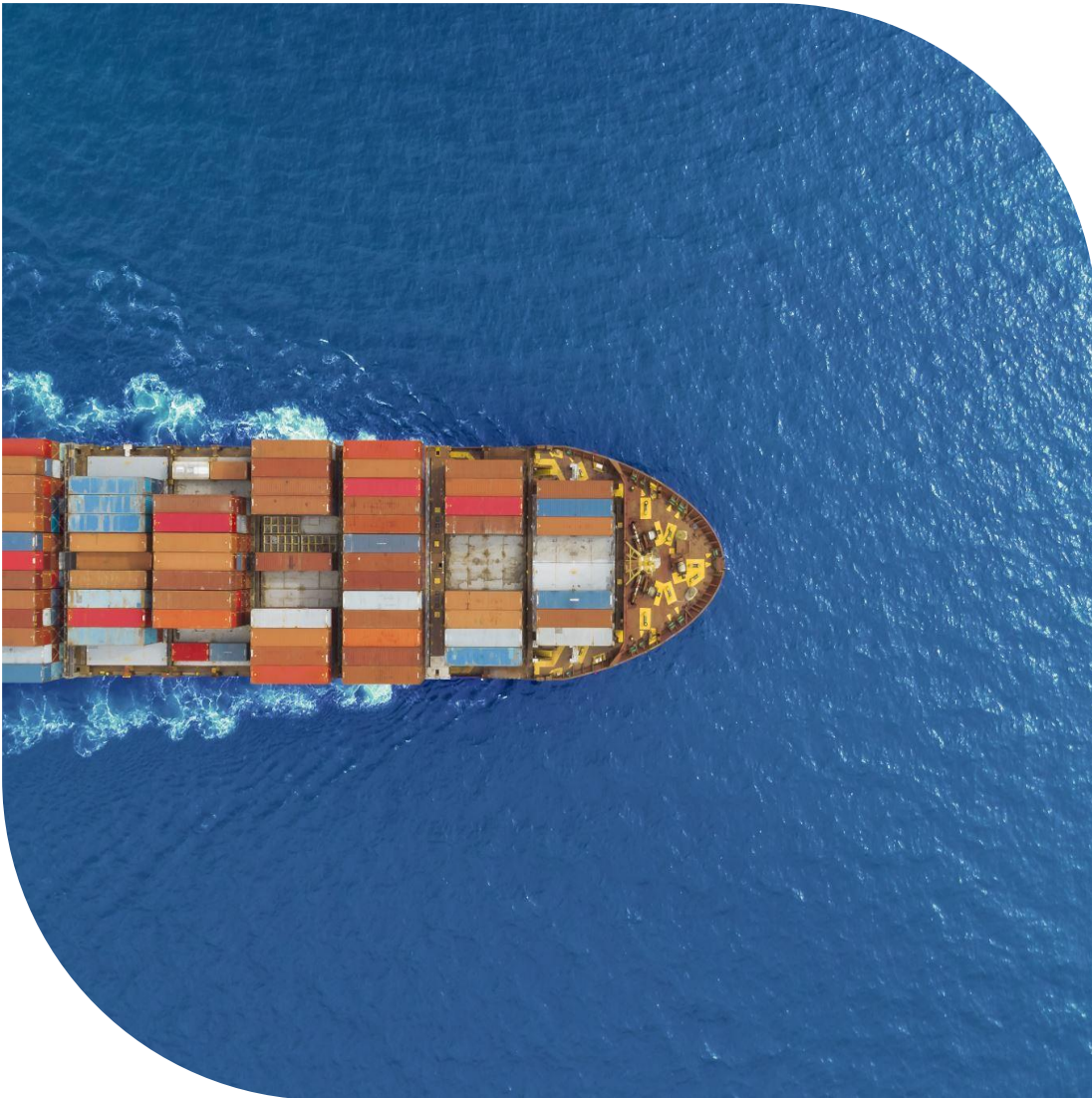




**Australian Government**  
**Department of Agriculture,  
Fisheries and Forestry**

# **Australian biofouling management requirements**

**Version 2**



© Commonwealth of Australia 2023

### **Ownership of intellectual property rights**

Unless otherwise noted, copyright (and any other intellectual property rights) in this publication is owned by the Commonwealth of Australia (referred to as the Commonwealth).

### **Creative Commons licence**

All material in this publication is licensed under a [Creative Commons Attribution 4.0 International Licence](https://creativecommons.org/licenses/by/4.0/) except content supplied by third parties, logos and the Commonwealth Coat of Arms.



### **Cataloguing data**

This publication (and any material sourced from it) should be attributed as: DAFF 2023, *Australian biofouling management requirements version 2*, Department of Agriculture, Fisheries and Forestry, Canberra. CC BY 4.0.

This publication is available at [agriculture.gov.au/biofouling](https://agriculture.gov.au/biofouling).

Department of Agriculture, Fisheries and Forestry

GPO Box 858 Canberra ACT 2601

Telephone 1800 900 090

Web [agriculture.gov.au](https://agriculture.gov.au)

### **Disclaimer**

The Australian Government acting through the Department of Agriculture, Fisheries and Forestry has exercised due care and skill in preparing and compiling the information and data in this publication. Notwithstanding, the Department of Agriculture, Fisheries and Forestry, its employees and advisers disclaim all liability, including liability for negligence and for any loss, damage, injury, expense or cost incurred by any person as a result of accessing, using or relying on any of the information or data in this publication to the maximum extent permitted by law.

### **Acknowledgement of Country**

We acknowledge the Traditional Custodians of Australia and their continuing connection to land and sea, waters, environment and community. We pay our respects to the Traditional Custodians of the lands we live and work on, their culture, and their Elders past and present.

# Contents

<b>Introduction</b> .....	<b>1</b>
<b>1 Mandatory pre-arrival reporting requirements</b> .....	<b>2</b>
Proactive biofouling management options .....	2
Vessel operators unable to demonstrate proactive management .....	3
In-water cleaning in Australian waters.....	4
Non-commercial vessels.....	4
<b>2 Verification on arrival</b> .....	<b>5</b>
<b>Appendix A –Minimum Standards for BFMP and BFRB</b> .....	<b>6</b>
Biofouling management plan – minimum standards .....	6
Biofouling record book – minimum standards.....	9
<b>Appendix B – Cleaning report</b> .....	<b>12</b>
Cleaning report – minimum standards.....	12
<b>Glossary</b> .....	<b>13</b>
<b>Version history</b> .....	<b>15</b>

# Introduction

The Australian biofouling management requirements set out vessel operator obligations for the management of biofouling when operating vessels under biosecurity control within Australian territorial seas. These requirements apply to all operators of vessels subject to biosecurity control and provide guidance for vessel operators on best practice biofouling management.

The department's powers to manage biosecurity risk associated with biofouling are contained in the [Biosecurity Act 2015](#) (the Biosecurity Act) and associated legislation.

Biosecurity risk of vessels is managed through pre-arrival reporting, assessment and inspection of vessels subject to biosecurity control. Under the Biosecurity Act, vessels become subject to biosecurity control upon entering Australian territorial seas.

Biofouling occurs when organisms attach and grow on the submerged parts of a vessel. Vessel biofouling is a major pathway for the introduction of marine pests into Australian waters. Once introduced they can spread, threaten marine habitats, and have adverse economic and health effects, including to Australia's fisheries.

Some Australian state and territory legislation relates to the management of biofouling. Please check the relevant state and territory requirements to ensure compliance.

# 1 Mandatory pre-arrival reporting requirements

The operator of a vessel is obligated to accurately report how biofouling has been managed prior to arriving in Australian territorial seas in accordance with section 193 of the Biosecurity Act. This information must be reported through the department's Maritime and Aircraft Reporting System (MARS) and provided at least 12 hours, but no earlier than 96 hours, before the vessel is estimated to arrive at its first port in Australian territory.

Vessel operators are required to report if they can demonstrate compliance with one of the following 3 proactive biofouling management options:

- 1) implementation of an effective biofouling management plan and record book
- 2) vessel cleaned of all biofouling within 30 days prior to arriving in Australian territory, or
- 3) implementation of an alternative biofouling management method pre-approved by the department.

Vessel operators are eligible for less intervention for biofouling if they report compliance with one of the 3 proactive biofouling management options. Vessel operators that cannot demonstrate compliance with one of the 3 proactive biofouling management options will be subject to further pre-arrival reporting questions through MARS.

Vessel operators are required to report if they intend to in-water clean in Australian waters and to update their pre-arrival report if that intention changes.

The department uses information in MARS to target vessel interventions and assess biosecurity risks associated with vessel biofouling. Biosecurity officers may conduct a vessel inspection on arrival at an Australian port to assess and manage potential biosecurity risks.

## Proactive biofouling management options

A vessel operator that reports they can demonstrate compliance with a proactive biofouling management option must be able to satisfy the required documentary evidence in this section.

### Option 1: Biofouling management plan and record book

If you report that the vessel has implemented an effective biofouling management plan and record book, the following documents must be available on request:

- Biofouling management plan (BFMP) that meets the minimum standards set out in [Appendix A](#).
- Biofouling record book (BFRB) that meets the minimum standards set out in [Appendix A](#).

A biofouling management plan and record book must meet the departments minimum standards to satisfy the requirements of option 1.

## **Option 2: Vessel cleaned of all biofouling within 30 days prior to arrival**

If you report that the vessel has been cleaned of all biofouling within 30 days prior to arrival in Australian territorial seas, the following documents must be available on request:

- cleaning report that meets the minimum standard set out in [Appendix B](#).
- supporting photographs and/or video that meets the minimum standard set out in [Appendix B](#).

A cleaning report and supporting evidence must meet the department's minimum standards to satisfy the requirements of proactive biofouling management option 2.

## **Option 3: Alternative biofouling management method pre-approved by the department**

If you report that the vessel has an alternative biofouling management method, it must be pre-approved by the department and the following documents must be available on request:

- department issued written approval, specific to the vessel and voyage
- any required documents as specified in the department issued approval.

Approval of the alternative biofouling management method must be obtained from the department prior to arrival to meet the requirements of proactive biofouling management option 3.

### **Obtaining pre-approval**

The department will consider applications for an alternative biofouling management method if the vessel operator can provide:

- a proposed alternative method that appropriately manages the biosecurity risk associated with the vessel's biofouling
- sufficient evidence to substantiate the proposal.

Applications for an alternative biofouling management method must include:

- a completed and signed application form
- the most recent in-water inspection and cleaning reports
- evidence to support your application.

The application must be submitted to [marinepests@aff.gov.au](mailto:marinepests@aff.gov.au) no later than 30 days prior to arrival in Australian territorial seas. The department may request further information to process the application. Email [marinepests@aff.gov.au](mailto:marinepests@aff.gov.au) to obtain an application form.

## **Vessel operators unable to demonstrate proactive management**

A vessel operator that cannot demonstrate proactive biofouling management practices using one of the 3 accepted management options will be required to provide additional information in their pre-arrival report.

The department will use these responses to make a preliminary assessment of the biosecurity risks associated with the biofouling management practices on the vessel. This will inform the actions taken by the department on the vessel's arrival into Australia.

## **In-water cleaning in Australian waters**

The approval process to conduct in-water cleaning or treatment in Australian is complex. The application process varies between jurisdictions and can involve multiple government agencies and port authorities who consider the biosecurity risks and impacts the activity will have on the environment.

To request permission to clean your vessel in Australian state or territory waters, contact the relevant authorities. It is important you give authorities sufficient time to consider your request before your proposed cleaning activity. Some Australian state and territory governments have separate legislation relating to the removal and disposal of biofouling. Ensure you check with the relevant state and territories. See [Biofouling in Australia](#) for contacts or more information.

## **Non-commercial vessels**

Non-commercial vessels arriving in Australian territorial seas will have the option to submit a non-commercial vessel pre-arrival report (NCV PAR). If the non-commercial vessel operator submits an NCV PAR, questions relating to the biofouling management practices on the vessel must be answered.

The responses provided in the NCV PAR will inform the department's policies for management of biosecurity risks associated with biofouling on non-commercial vessels. Biosecurity officers will continue to assess the level of biosecurity risk associated with biofouling on arrival and may take necessary actions to address these risks.

For more information relating to non-commercial vessels arriving in Australia see [Biofouling in Australia](#).

## 2 Verification on arrival

The department conducts verification inspections to ensure proactive biofouling management options recorded in the pre-arrival report have been implemented. Biosecurity officers may ask questions and inspect documents to confirm the effectiveness of the management practices. If the department determines that the vessel's biofouling has been managed in accordance with these requirements, a further detailed biofouling assessment will be conducted. This will require vessel operators to provide information on biofouling management actions for biosecurity officers to assess the biofouling related biosecurity risk the vessel presents.

The department may also conduct inspections of vessels' submerged hull and niche areas to inform assessments of whether the vessel presents an unacceptable biosecurity risk associated with biofouling.



# Appendix A: Minimum Standards for BFMP and BFRB

To satisfy the requirements for proactive biofouling management [option 1](#), an effective biofouling management plan and biofouling record book must meet the department's minimum standards. The minimum standards have been adapted from the International Maritime Organization's 2023 [Guidelines for the control and management of ship's biofouling to minimize the transfer of invasive aquatic species](#).

The minimum standards define the necessary information to be included in the biofouling management plan and record book to ensure the vessel operator can demonstrate proactive management of biofouling for its whole in-service period (i.e. period of time between successive dry-dockings). It is recommended that the biofouling management plan and record book are tailored for your vessel, including additional information as required. Visit [Biofouling in Australia](#) for more information.

## Biofouling management plan – minimum standards

### Introduction

Overview of biofouling and the importance of proactive biofouling management. See [Biofouling in Australia](#) for further information.

### Vessel particulars

The biofouling management plan must be vessel specific. The vessel particulars must include, but are not limited to:

- name of vessel
- IMO number
- date of construction
- vessel type
- gross tonnage
- beam or vessel's breadth
- length overall (m)
- maximum and minimum draughts.

### Record of revision of the BFMP

The BFMP must state the dates of most recent and next scheduled dry-docking.

All changes and revisions to the BFMP must be recorded including the responsible person/position for ensuring the plan is properly implemented.

### Index

A table of contents for the BFMP must be included.

## **Operating profile**

The vessel's operating profile is the basis for the selection of the vessel's anti-fouling systems (AFS) and operational practices. The operating profile must include the following for the vessel's entire planned in-service period:

- typical operating speed
- in-service period
- typical trading routes
- typical operating areas, including climate zones where the vessel will operate
- AFS installed are suitable for typical operating profile (Yes/No statement).

## **Description of hull and niche areas where biofouling is most likely to accumulate**

The BFMP must list all hull and niche areas specific to the vessel where biofouling is most likely to accumulate, including the quantity of the areas where relevant (e.g. sea chest x 10).

## **Location of areas where biofouling is most likely to accumulate on the vessel**

The BFMP must include diagrams clearly identifying the location of each area where biofouling is most likely to accumulate on the vessel, including but not limited to:

- general arrangement
- docking plan
- internal seawater systems schematics.

## **Description of the anti-fouling systems (AFS)**

The selected AFS that are applied, re-applied, installed or renewed on the vessel must be described. When more than one type of anti-fouling coating (AFC) or marine growth prevention system (MGPS) are applied, re-applied, installed or renewed, each AFS must be described individually and in accordance with each manufacturer's instructions. The BFMP must include:

- Anti-fouling coatings
  - product name
  - manufacturers
  - types of AFC
  - locations applied
  - intended coating service life
  - operating profiles which are suitable for the AFC including speed and periods of activity and inactivity
  - recommended regime for repairs, maintenance and/or renewal to receive the AFC optimal performance
  - International anti-fouling systems certificate (IAFS).
- Marine growth prevention systems
  - manufacturers

- model
- type
- service life of MGPS
- MGPS operating manual in record book (Yes/No statement).

Prior to a scheduled dry-docking, an evaluation of qualitative observations regarding the vessel's biofouling should be made with the purpose of a potential improvement of the AFS selection. Previous reports on the performance of the vessel's AFS should be part of the evaluation.

### **Installation of anti-fouling systems**

The locations on the vessel that are protected with the selected AFS must be described. If necessary, the individual AFS can be identified as 'AFS A', 'AFS B', etc. Areas with no protection must also be described. The BFMP must include:

- areas on the vessel where AFS is applied
- type of AFS
- date of application.

### **Inspection schedule**

Planned inspections of all hull and niche areas carried out according to fixed intervals must be described. The BFMP must contain:

- hull and niche area to be inspected (e.g. areas with no AFS)
- inspection schedule (e.g. inspection within 12 months)
- management actions (e.g. inspection more frequently).

### **Cleaning schedule**

Planned cleaning of the hull and niche areas carried out according to fixed intervals must be described. The BFMP must contain:

- areas where cleaning methods will be applied
- cleaning methods
- cleaning schedules.

### **Monitoring of biofouling risk parameters and contingency actions**

Details of relevant tools and data collection monitoring of specified biofouling risk parameters must be provided.

Biofouling risk parameters should be monitored when the vessel is in operation. When a parameter goes beyond the deviation limit, the risk of biofouling is increased, and the recommended contingency actions must be set out. The BFMP must include:

- biofouling risk parameters
- evaluation deviations including a deviation limit of the risk parameters
- contingency actions (e.g. inspect and clean at next available port of call/location)

- long-term actions (e.g. increase inspection frequency).

### **Capture and disposal of waste**

Details of how biofouling waste should be disposed of and/or treated to ensure it is handled in a safe and environmentally sound manner, in accordance with local regulations must be provided.

### **Safety procedures for the vessel and crew**

Details of the safety procedures for the vessel and crew including specific operational or safety restrictions associated with the AFS or MGPS systems that affect the vessel and/or crew must be provided.

### **Crew training and familiarisation**

Details of the crew training and familiarisation on biofouling management must be included in the BFMP. A training register must be maintained that lists trained crew and the person responsible for delivering the training.

## **Biofouling record book – minimum standards**

A biofouling record book (BFRB) must be used in conjunction with the biofouling management plan. The biofouling record book can be incorporated into the management plan or can be a standalone document.

The biofouling record book must demonstrate that the BFMP has been implemented through records of relevant biofouling activities such as inspections, maintenance, cleaning and crew training. The BFRB must also record when the vessel experiences higher risk for biofouling accumulation determined by monitoring of biofouling risk parameters. Relevant contingency actions must also be recorded.

Entries in the BFRB must be signed and dated by the officer or officers in charge.

The BFRB must be maintained from the date the BFMP implementation and retained for the entire service life of the vessel. The BFRB may be electronic or hard copy and must be made available for inspection on request.

Items that must be recorded in the BFRB include, but are not limited to:

- Cleaning:
  - date and location of cleaning activities
  - general observations with regard to biofouling prior to cleaning, if any (i.e. nature and extent of microfouling and macrofouling)
  - estimation of percentage cover and level of biofouling after cleaning
  - records of permits required to undertake in-water cleaning, if applicable
  - details of the hull and niche areas cleaned
  - reference to any supporting evidence/reports of the cleaning (e.g. report from supplier, photographs/videos and/or receipts)
  - method, manufacturer and model of the cleaning method used, if not given in the BFMP
  - name, position and signature of the person in charge of the activity.

- Inspection:
  - date and location of inspections
  - methods used for inspections (divers, remotely operated vehicle, including inspection tools/devices)
  - areas inspected of the vessel
  - observations with regard to biofouling (nature and extent of microfouling and macrofouling in percentage cover at each hull location)
  - observations with regard to anti-fouling system (AFS) condition
  - reference to any supporting evidence/reports of the inspection
  - name, position and signature of the person in charge of the activity.
- When the vessel operates outside of the expected operating profile specified in the BFMP (e.g. speed, stationary periods, temperature or salinity):
  - duration and dates when vessel was not operating in line with its BFMP.
  - reason for departure from normal operation
  - contingency actions taken to minimise biofouling accumulation (e.g. more frequent inspections) taken in the period when the vessel is operating outside the expected operating profile
  - time and location (port name or latitude/longitude) when the vessel returns to the normal operational profile as specified in the BFMP.
- Maintenance/service or damage to AFC:
  - date/period and description of any observed reduction of the efficacy, damage or deviation from maintenance/service to AFC during its lifetime
  - date/period and description of any operation beyond expected lifetime
  - contingency actions taken to minimise biofouling accumulation (e.g. more frequent inspections)
  - date/period and location where any AFC maintenance or repair was performed (e.g. in dry-dock)
  - description of any AFC, including patch repairs, that was applied during maintenance. Detail the type of AFC, the area and locations it was applied to (including the location of dry-dock support blocks, if relevant), an estimated percentage cover of re-application of the AFC, the coating thickness achieved and any surface preparation work undertaken (e.g. complete removal of underlying AFC or application of new AFC over the top of existing AFC).
  - reference to any supporting data for AFC maintenance (e.g. AFC technical file)
  - name, position and signature of the person in charge of the activity.
- Maintenance/service or downtime/malfunction of MGPS:
  - date/period and description of any observed reduction of the efficacy, downtime, malfunction or deviation from maintenance/service of marine growth prevention system (MGPS) during its lifetime
  - date/period and description of operation beyond the expected lifetime
  - date and location of any instances when the system was not operating in line with the BFMP

- records of maintenance (including regularly monitoring the electrical and mechanical functions of the systems, calibration, or adjustment of treatment dosages)
- contingency actions taken to minimise biofouling accumulation (e.g. more frequent inspections)
- name, position and signature of the person in charge of the activity.

# Appendix B: Cleaning report

A cleaning report must be prepared after an inspection or cleaning operation. The report must contain the details of the biofouling management actions undertaken on the vessel. The cleaning report must be prepared by the cleaning operator.

Digital tools may be applied for the reporting and assessment of results. The outcome from the reports must be recorded in the BFRB including reference to the detailed report or assessment.

Guidelines for inspection reports can be found in the International Maritime Organization's [2023 Guidelines for the control and management of ship's biofouling to minimize the transfer of invasive aquatic species](#).

## Cleaning report – minimum standards

To satisfy the conditions of proactive management option 2, a cleaning report must be provided on request and include at a minimum:

- vessel particulars
- details of the company that performed the cleaning activity
- location, commencement and completion times and dates the cleaning operations took place and the date the final report was provided
- Water clarity and tidal current (maximum and minimum in metres)
- specified sections of the hull and niche areas that were cleaned
- methods of cleaning and treatment
- manufacturer and model of cleaning method used (if applicable)
- specified sections of the hull and niche areas that were not cleaned due to absence of biofouling
- supporting photographs or videos must be:
  - date and time stamped
  - clear and in focus
  - high quality (not pixelated)
  - written description of the image, including the location on the vessel
  - stable and smooth video recordings
- general observations regarding biofouling (i.e. estimates of percentage cover and level of biofouling (e.g. micro/macrofouling), extent of biofouling and predominant biofouling types, e.g. mussels, barnacles, tubeworms, algae and slime), before and after cleaning, including those areas that were not cleaned.
- Name, position and signature of the person in charge of the activity.

# Glossary

Term	Definition
anti-fouling coating (AFC)	A surface coating or paint designed to prevent, repel or facilitate the detachment of biofouling from the hull and niche areas that are typically or occasionally submerged.
anti-fouling system (AFS)	A coating, paint, surface treatment, surface, or device that is used on a vessel to control or prevent attachment of organisms.
Australian territorial seas	The waters (including the internal waters of Australia) within the outer limits of the <a href="#">territorial sea</a> of Australia (including every external territory). The territorial sea is a belt of water not exceeding 12 nautical miles in width measured from the territorial sea baseline.
biofouling	The accumulation of aquatic organisms such as microorganisms, plants and animals on surfaces and structures immersed in or exposed to the aquatic environment. Biofouling can include pathogens.
biosecurity	The exclusion, eradication or effective management of pests and diseases that threaten the economy, environment, human health, or social and cultural values.
capture	The process of containment, collection and removal of biofouling material and waste substances surfaces during cleaning in water or dry-dock.
cleaning system	The equipment used for, or the process of removal of biofouling from the vessel surface, with or without capture.
coastal waters	A belt of water between the limits of the Australian States and the Northern Territory and a line 3 nautical miles seaward of the territorial sea baseline.
dry-dock cleaning	The cleaning of submerged areas when the vessel is out of water.
fouling rating	The allocation of a number for a defined inspection area of the vessel surface based on a visual assessment, including description of biofouling present and percentage of macrofouling coverage.
intended coating service life	The period for which the anti-fouling coating is specified for and expected to be effective based on a range of vessel-related and environmental parameters.
invasive aquatic species	Non-native species to a particular ecosystem which may pose threats to human, animal and plant life, economic and cultural activities and the aquatic environment.
in-water cleaning	The removal of biofouling from a vessel's hull and niche areas while the vessel is in the water.
macrofouling	Biofouling caused by the attachment and subsequent growth of visible plants and animals on structures and vessels exposed to water. Macrofouling is large, distinct multicellular individual or colonial organisms visible to the human eye such as barnacles, tubeworms, mussels, fronds/filaments of algae, bryozoans, sea squirts and other large attached, encrusting or mobile organisms.
marine growth prevention system (MGPS)	An anti-fouling system used for the prevention of biofouling accumulation in niche areas or other surface areas but may also include methods which apply surface treatments.
microfouling	Biofouling caused by bacteria, fungi, microalgae, protozoans, and other microscopic organisms, that creates a biofilm also called a slime layer.
niche areas	Submerged surface areas on a vessel that may be more susceptible to biofouling than the main hull due to structural complexity, different or variable hydrodynamic forces, susceptibility to AFC wear or damage, inadequate or no protection by AFS. They include, but are not limited to, waterline, sea chests, bow thrusters, propeller shafts, inlet gratings, jack-up legs, moon pools, bollards, braces, and dry-docking support strips.
non-commercial vessel	A vessel that used, or it intended to be used, wholly for recreational purposes (whether or not crew are employed on the vessel).



<b>Term</b>	<b>Definition</b>
ship	A vessel of any type whatsoever operating in the aquatic environment and includes hydrofoil boats, air-cushioned vehicles, submersibles, floating craft, fixed or floating platforms, floating storage units (FSUs) and floating production storage and off-loading units (FPSOs).
states	Coastal, port, flag or Member states, as appropriate.
vessel	Any kind of vessel used in navigation by water, however propelled or moved, including: <ul style="list-style-type: none"> <li>• a barge, lighter or other floating craft</li> <li>• an air-cushion vehicle, or other similar craft, used wholly or primarily in navigation by water</li> <li>• an installation</li> <li>• any floating structure.</li> </ul>
waste	Dissolved and particulate materials that may be released or produced during cleaning or maintenance, and may include biocides, metals, organic substances, removed biofouling, pigments, microplastics or other contaminants that could have a negative impact on the environment.

# Version history

The Australian biofouling management requirements are updated periodically. You can check that this version is still current at [Biofouling in Australia](#).

Version	Date	Reason for issue
1	15 June 2022	First release of the document in line with the department’s new biofouling management requirements.
2	1 December 2023	Review and update of the document to reflect the completion of the education phase of the biofouling management implementation. Providing clearer guidance on how operators can meet the departments requirements.