

**A Joint Publication of
HELMEPA and AUSMEPA
with the assistance of AMSA**

A GUIDE for SEAFARERS on SHIPS SAILING in AUSTRALIAN WATERS



ΕΛΛΗΝΙΚΗ ΕΝΩΣΗ ΠΡΟΣΤΑΣΙΑΣ
ΘΑΛΑΣΣΙΟΥ ΠΕΡΙΒΑΛΛΟΝΤΟΣ
HELLENIC MARINE ENVIRONMENT
PROTECTION ASSOCIATION



AUSTRALIAN MARINE
ENVIRONMENT PROTECTION
ASSOCIATION



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Forewords by the three sponsoring organisations:

The Hellenic Marine Environment Protection Association (HELMEPA)

Australia is home to some of the world's most cherished and fragile natural wonders. The island-continent's marine environment is not only a vital source of growth in terms of the country's economy but also a source of bountiful and complex ecosystems, which must necessarily be protected at all costs. Sailing along the expansive coastline and traversing the vast national waters extending their reach over three oceans and four seas, seafarers encounter the planet's largest coral reef – The Great Barrier Reef – and extensive areas of diverse flora and fauna such as tropical sea grass, mangroves and algae. As such, these species are especially vulnerable to ship-generated pollution. Particular vigilance and awareness concerning the environmentally sound operation of a vessel is therefore a prerequisite when cruising in these areas.

In June 2010, together with AUSMEPA and AMSA, we published a Guide aimed specifically at Greek seafarers travelling in Australian waters. Today, we at HELMEPA in cooperation with AUSMEPA, address you all – the international seafarer visiting Australia – with this electronic resource, under the auspices of AMSA. One of our aims is to assist you in keeping abreast of current developments in the safe operation of a ship travelling in sensitive areas. Most importantly, however, we aim to remind you of key points to bear in mind and keep as a checklist regarding environmentally friendly practices on board.

We wish you safe journeys to your Australian ports of call and calm voyages as you sail through Australian waters and continue to endeavor to protect its unique marine world.

The Australian Marine Environment Protection Association (AUSMEPA)

AUSMEPA is privileged to join with HELMEPA and AMSA in the joint e-publication of this guide to seafarers and sincerely hopes it will help seafarers contribute to improved environmental and safer operations on ships in Australian waters. AUSMEPA's primary objective is to provide greater awareness of the importance of protecting our marine environment. AUSMEPA strives to do this by providing free education resources to seafarers and to the Australian community through a school education program available from its web site www.ausmepa.org.au

AUSMEPA wishes to express its deep appreciation to HELMEPA for its cooperation by providing the contents of its earlier publication "A Guide for the Greek Seafarers in Australian Waters" which was used as the base text for this e-publication.

The Australian Maritime Safety Authority (AMSA)

As a long standing supporter of HELMEPA and AUSMEPA, the Australian Maritime Safety Authority (AMSA) is pleased to contribute to the Guide for Seafarers on Ships Sailing in Australian waters. AMSA's purpose is to:

- Provide leadership in the development of safety and environmental protection standards for responsible operations of ships and safety to seafarers;
- Monitor compliance with safety and environment protection standards;
- Respond to threats to the marine environment;
- Provide systems that aid safe marine navigation and rescue people in maritime and aviation distress situations.

We trust this Guide will assist all seafarers in working with AMSA to protect Australia's valuable and unique marine environment and enjoy safe passage in Australia's waters. Shipping is a rapidly changing industry, and while the information in this Guide was up to date at the time of publication, all seafarers are encouraged to monitor the AMSA web site at www.amsa.gov.au to check for Marine Notices advising of changes to legislation or other requirements for ships trading in Australian waters.

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INTRODUCTION

A. The Australian marine environment and the need to protect it

Occupying an entire continent of some 7.6 million square kilometres, Australia is the sixth largest country in the world. Its ocean territory is the world's third largest, spanning three oceans and covering around 14 million square kilometres. The coastline of Australia, including hundreds of islands, is approximately 70,000 kilometres. Australia's seas and oceans encompass all five marine, climatic zones: tropical, subtropical, temperate, sub-polar, and polar. Deep ocean basins, tropical coral reefs, temperate rocky reefs, submarine canyons, seagrass beds, mangroves and estuaries diversify Australia's seas.

Australia is one of the most urbanised and coast-dwelling populations in the world. More than 80 per cent of Australians live within 100 kilometres of the coast. Australia's vast oceans provide many benefits to its people and visitors alike, these include food, employment, commerce, tourism as well as recreation and aesthetic values.

Human activity continues to exert pressure on marine environments. Pollution is the most serious problem and the vast majority of marine pollution is caused by land based activities—soil erosion, fertiliser use, intensive primary production, sewage and other urban industrial discharges. However, some pollution is caused by offshore oil and gas exploration and production as well as shipping operations, fishing and aquaculture. All of these sectors of human activity impact on Australia's rich marine biodiversity.

Australia's marine environment is home to 4,000 fish species, 500 coral species in the northern reefs alone, 50 types of marine mammal and a wide range of seabirds. It is estimated that as many as 80 per cent of marine species found in southern Australian waters occur nowhere else. 89 per cent of inshore, freshwater fish are unique to Australia. A high level of diversity assists in maintaining a healthy balance within Australia's low nutrient ecosystems.

Compared with the marine waters of other nations, Australia's oceans are considered to be in good condition; however there is degradation in the east, south-east and south-west. Steps are being taken to address this through the introduction of coastal management and the introduction of much larger marine protected areas. Around seven per cent of Australia's marine jurisdiction is identified marine protected areas. To find out more about what Australia is doing to ensure sustainability of its marine environment see <http://www.environment.gov.au/coasts/index.html>.

To view some of Australia's iconic ocean environments you may like to download the booklet Our Australia. One Place, Many Stories: Oceans at:

<http://www.environment.gov.au/coasts/publications/one-place-many-stories/ebook.html#page/1>

Australia's climate is dominated by the effects of the oceans that surround it. Global warming is expected to have a significant impact on Australia's marine ecology and climate. Observations since 1961 show that approximately 80% of the heat added, has been absorbed by the sea, where temperatures have increased to a depth of at least

3,000 meters. Effects of climate change on marine ecology have already been observed such as the mass coral bleaching in the Great Barrier Reef due to the warming of tropical waters and there is growing evidence to indicate a poleward shift, a trend among terrestrial and marine animals to move southward towards cooler climates. Even greater changes within ecosystems will occur as sea levels continue to rise and coastlines are re-sculpted.

B. Australia's biodiversity and ballast water – biofouling management

Biodiversity is the variety of all life forms including the variety of species as well as the variety of habitats and ecological processes. Conserving biodiversity is essential to safeguarding life on Earth. The living marine environment is like a chain with many links, if one is broken, an entire species may disappear. Every species plays an important role in maintaining healthy ecosystems and the loss of biodiversity weakens the entire, natural environment.

Australia's biodiversity has developed largely in isolation over many millions of years, making this continent one of the most biologically diverse parts of our planet.

It is estimated that Australia is home to as many as 560,000 species. Many of these species are found nowhere else on Earth, about 92% of higher plant species, 87% of mammals, 93% of reptiles, and 45% of birds are endemic, they occur only in Australia.



From "Our Australia - One Place, Many Stories: Oceans", 2011

The transfer of harmful organisms in ships' ballast water is considered to be one of the greatest threats to global, marine biodiversity. With the constant growth of shipping, which serves 90% of the world trade, more than 10 billion tons of ballast water that might carry harmful organisms and pathogens is discharged every year, posing not only environmental threats, but also economic and public health threats. About 150 million tons of ballast water is discharged annually in the vicinity of Australian ports from overseas vessels while more than 200 marine species have been identified to have been introduced in the country's coastal waters, most of which via shipping.

Chapter 5 of this Guide provides information on the Australian ballast water management requirements that have been developed to minimise the risk of introduction and translocation of potentially harmful marine organisms through ballast water discharges.

It is well known that wooden ships were often heavily encrusted with fouling organisms. A wooden vessel in 1750 could have carried 120 marine organisms fouling and a further 30 associated with dry ballast and the anchor chain. Modern studies have shown that biofouling on steel made ships can also be a significant vector for the transfer of invasive species and this process is influenced by a range of factors including the trading routes of a ship, her operating speed, the type of anti-fouling paints used, and the dry-docking and hull cleaning practices.

Chapter 6 of the Guide deals with the voluntary, national biofouling management guidelines of Australia aimed at reducing the risk of a vessel spreading harmful organisms by implementing sound maintenance practices that could minimize biofouling.

C. The Great Barrier Reef - Safe Navigation and Pollution Prevention

Australia's Great Barrier Reef (GBR) is undisputedly the world's largest "*living organism*", a miracle of nature, stretching for over 2,600 kilometers and covering an area of approximately 344,000 km². The GBR's development history is complex. The discovery of coral, skeleton deposits dating back half a million years is considered as evidence that the reef structure had begun to develop since then, while the current, living reef is believed to have begun growing on the older structure about 20,000 years ago following a series of changes in the sea level.

The growth of a coral reef is a particular process requiring special conditions to occur. They can increase in diameter from 1 to 3 cm per year and they can grow vertically from 1 to 25 cm per year.

In 1981, the GBR was included in the World Heritage List in recognition of its great diversity of species and habitats and for its Outstanding Universal Value.

The Great Barrier Reef:

- is the world's largest coral reef ecosystem, extending to more than 14° of geographic latitude, off the coast of Queensland in north-east Australia, from Torres Strait in the north, to just north of Fraser Island in the south.
- offers habitat for many diverse forms of marine life. It is estimated that there are 1,500 species of fish, more than 4,000 molluscs species.
- has about 900 islands ranging from small coral formations to large continental islands supporting hundreds of bird species, many of which have breeding colonies there.

- has over 2,000 km² of mangroves, with species representing 54 per cent of the world's mangrove diversity and about 6,000 km² of seagrass beds.



The Great Barrier Reef limits (Great Barrier Reef Marine Park Authority)

The Great Barrier Reef Marine Park Authority (GBRMPA) is responsible for the care, development and preservation of the GBR Marine Park's social, economic, cultural and heritage values. This management is complemented by other government agencies in Australia.

Shipping in the GBR Region is managed by a number of Australian and Queensland Government agencies. Shipping rules are uniform nationally and there is a high-level coordination of everyday activities and incident response.

In recognition of the outstanding values of the GBR and the need to protect it from shipping the International Maritime Organization (IMO) in 1990 designated the GBR as a Particularly Sensitive Sea Area (PSSA).

This has allowed Australia to implement a range of special protective measures to control shipping operations; they include, a ship reporting system, coastal vessel tracking service (known as REEFVTS), compulsory pilotage regime, navigational aids, marine pollution response plans and Designated Shipping Areas.

The two most significant risks posed by shipping that threaten the GBR ecosystem are: major oil or chemical spill and the introduction of invasive marine species. These two impacts have the potential to cause extensive, long-term damage to the environment, economic activity and socio-cultural activities in the region.

MARPOL provides certain requirements for the control of operational pollution from ships. Discharge of oil, noxious liquid substances, sewage, and garbage at sea is generally prohibited, unless certain conditions are met. These conditions relate to the marine area where a ship operates, the distance from the nearest land, the quantity and the concentration of pollutants in the effluent and other factors.

The GBR, according to MARPOL, is an area in which no discharge of pollutants is permitted.

Chapter 4 of the Guide explains the no discharge regime within the GBR which constitutes the nearest land off the eastern coast of Australia.

In addition, Chapter 2.1 refers to REEFREP, a mandatory ship reporting system which greatly improves the safety of navigation in the Torres Strait and the GBR.

Abbreviations

ABWMIS	Australian Ballast Water Management Information System
AIS	Automatic Identification System
AMSA	Australian Maritime Safety Authority
ARP	Automated Position Reporting via Inmarsat C
AUSREP	Australian Ship Reporting System
BWMS	Ballast Water Management System
DAFF	The Department of Agriculture Fisheries and Forestry
DGPS	Differential Global Positioning System
EEZ	Exclusive Economic Zone
EPA Victoria	Environmental Protection Authority Victoria
GBRMPA	Great Barrier Reef Marine Park Authority
HELMEPA	Hellenic Marine Environment Protection Association
IMO	International Maritime Organization
MARPOL	International Convention for the Prevention of Pollution from Ships
MSQ	Maritime Safety Queensland
NMCC	National Maritime Co-ordination Centre
QPAR	Quarantine Pre-Arrival Report
RCC Australia	Rescue Coordination Centre, responsible for coordinating search and rescue across the Australian Search and Rescue Region
REEFREP	The Great Barrier Reef and Torres Strait Ship Reporting System
REEFVTS	The Great Barrier Reef and Torres Strait Vessel Traffic Service
SAR	Search and Rescue
SOLAS	International Convention for the Safety of Life at Sea
SRR	Search and Rescue Region

1. SHIP REPORTING IN AUSTRALIA

1.1 General

In its role in implementing the International SOLAS and SAR Conventions, Australia operates the mandatory ship reporting system AUSREP through the Australian Rescue Coordination Centre (RCC AUSTRALIA). As mentioned below, AUSREP is being replaced with a new more modern ship reporting system from 1 July 2012.

To further enhance navigational safety and to reduce the risk of ship generated pollution in the GBR, Australia also operates a more detailed and localized reporting system called REEFREP, mandatory for all vessels operating in the GBR and Torres Strait. Reporting to REEFREP is undertaken through REEFVTS.

1.2 Interaction between REEFVTS and AUSREP

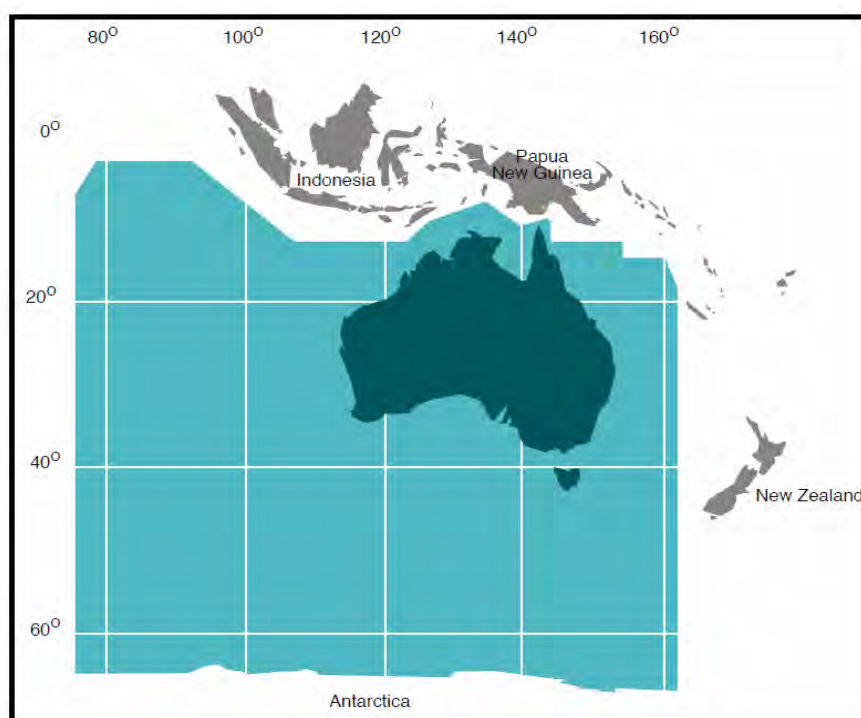
REEFVTS automatically forwards regular position reports to RCC Australia. Ships participating in AUSREP will also continue to be polled while they are transiting the REEFVTS Area.

When a ship departs a port within the REEFVTS Area and intends to report to AUSREP when it exits the REEFVTS Area, the ship should send a Sailing Plan (SP) to RCC Australia no more than 2 hours after it has departed from the port.

When a ship departs the REEFVTS Area and is reporting to AUSREP, the Master should continue reporting to RCC Australia until the ship departs from the AUSREP Area.

1.3 AUSREP

The area of coverage for AUSREP and for the Australian Maritime Search and Rescue Region as shown in the following map are identical.



The AUSREP Manual that provides its users with information to assist them in optimising the service provided can be found on the AMSA web site at http://www.amsa.gov.au/Publications/AUSREP_Book.pdf

1. 4 Modernised Australian Ship Tracking and Reporting System (MASTREP)

In 2009, work commenced on identifying Australia's future vessel tracking and reporting needs while considering the International Maritime Organization (IMO) published mandates of ship reporting requirements and the need for reduced reporting obligations on ships. The working groups determined that, although AUSREP had served the needs of both the mariner and AMSA well; it was no longer as effective or efficient as it should be and a better system for today and the future was required. This was the catalyst for the design and subsequent development of what is to become the Modernised Australian Ship Tracking and Reporting System (MASTREP).

The transition to MASTREP will occur in three phases, with the first two phases focussing on maximising the use of new technology and minimising manual reporting requirements. Position reporting will be automated using the Automatic Identification System (AIS). This will alleviate the obligation for ships to provide 24 hourly position reports. In addition, the data in the system will be more accurate, as data will be fed into the system using AIS – either collected terrestrially or by satellite. Positional data will be updated at time intervals between five minutes and five hours depending on the location and source.

Greater visibility of vessels in Australia's Search and Rescue region will enhance the ability to prosecute a SAR incident, ensuring the most appropriate vessels will be tasked to respond. The proposed third phase of the project will work towards the realisation of a single window reporting concept to streamline the current separate processes used by ships to communicate relevant information to AMSA and other Australian authorities. This is in line with the principles contained in IMO FAL.5/Circ.36.

The transition from AUSREP to MASTREP has commenced with Phase 1 implemented in July 2012; Phase 2 in July 2013 and proposed Phase 3 from late 2014.

More information can be found at

http://amsa.gov.au/shipping_safety/ausrep/documents/masatrep_faq.pdf

2. VESSEL TRAFFIC SERVICES

There are 18 Vessel Traffic Services operating in Australia's ports and coastal regions including the world's largest, Great Barrier Reef and Torres Strait VTS (REEFVTS). More details on the individual port VTS centres can be found in the Admiralty list of Radio Signals.

2.1 The Great Barrier Reef and Torres Strait Vessel Traffic Service (REEFVTS)

The Great Barrier Reef and Torres Strait Ship Reporting System (REEFREP) was established as a mandatory ship reporting system under the International Convention for the Safety of Life at Sea (SOLAS Regulation V/11). REEFREP was formally adopted by the IMO's Maritime Safety Committee in Resolution MSC.52 (66), and later amended by Resolutions MSC.161 (78) and MSC.315 (88).

REEFREP is an integral component of the Great Barrier Reef and Torres Strait Vessel Traffic Service (REEFVTS). Within the REEFVTS area ships identify themselves and report their intended passage through the region. This information, together with the monitoring and surveillance systems used by REEFVTS, assists with the proactive monitoring of a ship's transit through the Great Barrier Reef and Torres Strait.

The purpose of REEFVTS is to enhance navigational safety in Torres Strait and the Inner Route of the Great Barrier Reef thereby minimising the risk of a maritime accident and consequential pollution and major damage to the marine environment. REEFVTS also provides the ability to respond more quickly in the event of any safety or pollution incident.

2.2 System Overview

REEFVTS is manned and operated 24 hours a day by personnel operating from the REEFVTS Centre, radio call identity "REEFVTS", situated in Townsville.

REEFVTS provides both information services and navigational assistance services in the REEFVTS area. In summary, the services delivered include:

- Ship Traffic Information (STI) - Ship encounters are predicted and this information is sent to individual ships as STI, usually through Inmarsat C messaging.
- Maritime Safety Information (MSI) - Information that is relevant to the ships location and intended movement is provided.
- Navigational Assistance - REEFVTS may contact that ship, if there is information available to REEFVTS which may help on-board decision-making such as where the ship is heading into shallow water or deviating from a planned route.

Information about REEFVTS including a chart let of the REEFVTS area can be found at www.amsa.gov.au/Shipping_Safety/REEFVTS/index.asp

The REEFVTS User Manual provides users of the Great Barrier Reef and Torres Strait Vessel Traffic System (REEFVTS) with information to assist them in participating in the REEFVTS reporting system. The manual can be found on the AMSA web site at www.amsa.gov.au/Shipping_Safety/REEFVTS/Documents/User_Guide.pdf

3. SAFETY OF NAVIGATION

AMSA manages a network of navigational aids around Australia's coastline assisting mariners to make safe and efficient passages. The network includes traditional lighthouses, beacons, Differential Global Positioning System (DGPS) and Automatic Identification System (AIS) stations, broadcasting tide gauges, etc.

3.1 Differential Global Positioning System (DGPS)

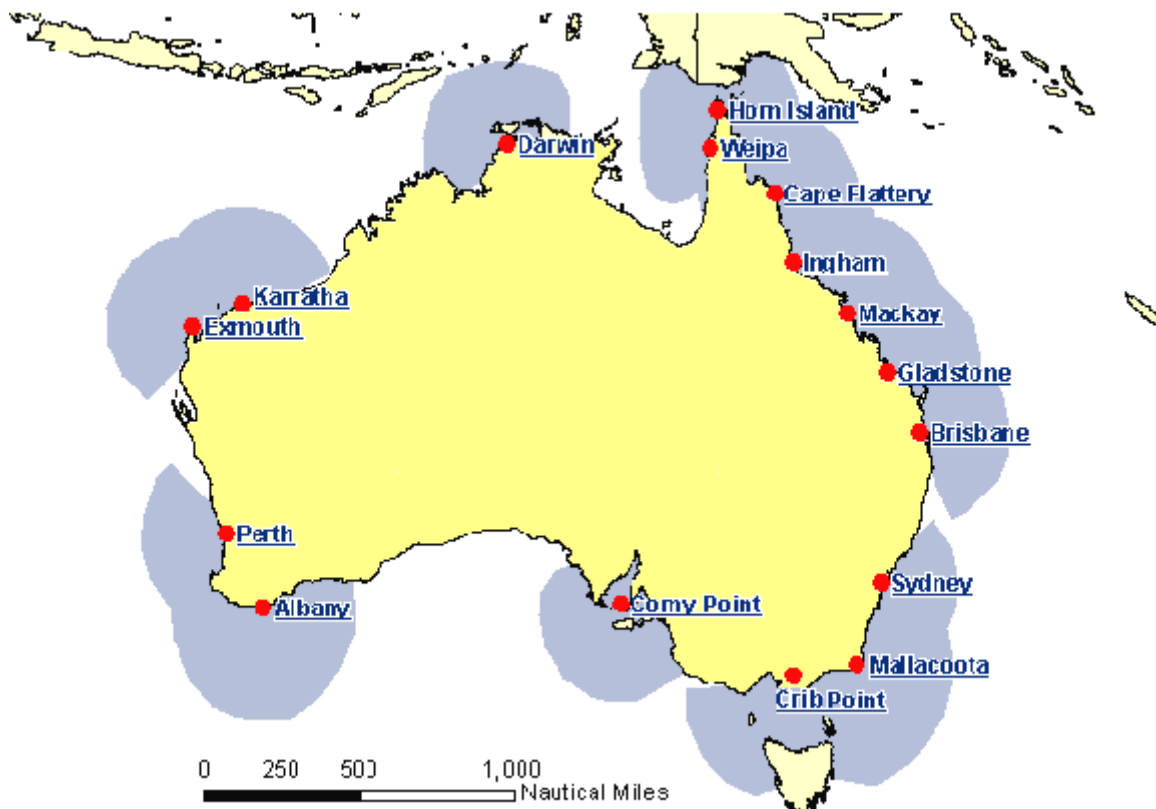
Use of the DGPS data enables mariners to improve positional accuracy with a GPS receiver to better than 5 meter. The DGPS broadcasts also provide a continuous check on the integrity of GPS.

There are seven DGPS Broadcasting Stations to provide coverage of all the shipping routes along the Queensland coast at:

- Horn Island (Torres Strait) on 320 kHz;
- Mackay on 315 kHz;
- Cape Flattery on 304 kHz;
- Brisbane on 294 kHz;
- Gladstone on 313 kHz;
- Ingham on 306 kHz; and
- Weep on 316 kHz.

Other Australian DGPS Sites are located as follows:

- Sydney (NSW) on 308 kHz;
- Mallacoota (NSW) on 318 kHz;
- Crib Point (VIC) on 314 kHz;
- Corny Point (SA) on 316 kHz;
- Albany (WA) on 315 kHz;
- Perth (WA) on 316 kHz;
- Exmouth (WA) on 297 kHz;
- Karratha (WA) on 304 kHz; and
- Darwin (NT) on 294 kHz.



DGPS stations along the coastline of Australia

The Horn Island station provides acceptable coverage along the entire length of the Great North East Channel (a distance of about 130 nautical miles) and to a range of about 140 nautical miles to the south.

The data format for all stations conforms to international standards for the transmission of DGPS data in the maritime radionavigation band which is 285 to 325 kHz in the Australian region. Further details are available on the AMSA website:

http://www.amsa.gov.au/Shipping_Safety/Navigation_Safety/Differential_Global_Positioning_System/

When navigating on GPS and DGPS, it must be remembered that most Australian charts will require corrections to geographical position. Older charts in particular may contain errors of position, and users are advised to carefully read the Notes and Cautions on the chart.

When navigating with an Electronic Charting System (ECS) and GPS, prudent mariners must still monitor their position in relation to their surroundings using traditional methods, such as bearings and ranges.

3.2 Carriage and use of ECDIS

According to Regulation 19, Chapter V (Safety of Navigation) of SOLAS, ships must have nautical publications and nautical charts for the planning and the display on them the route of the intended voyage and the plotting and monitoring positions throughout the voyage. An electronic chart display and information system (ECDIS) with adequate back-up arrangements is accepted as it meets these up-to-date chart carriage requirements.

The IMO resolution MSC.282(86) has amended SOLAS Regulation V/19 to include a new paragraph (19.2.10) detailing a mandatory carriage requirement of ECDIS on certain kinds of ships engaged on international voyages depending on ship type, size and construction date. For example, cargo ships, other than tankers, of 50,000 gross tonnage and upwards constructed before 1 July 2013 must be fitted with an ECDIS not later than the first survey on or after 1 July 2016.

The 2010 Manila Amendments to the STCW Convention and Code have introduced several additional specific competencies in the use of ECDIS for masters and officers in charge of a navigational watch serving on ECDIS-fitted ships. Training requirements in accordance with the 2010 Manila Amendments become effective on 1 July 2013.

3.3 Additional shipping safety requirements for the GBR

3.3.1 Designated Shipping Areas

By law, ships transiting or making voyages through the GBR Region are confined to Designated Shipping Areas as defined by the *Great Barrier Reef Marine Park Zoning Plan 2003*. Refer to <http://www.comlaw.gov.au/Details/F2005B02402> for more information.

The Designated Shipping Area- the Inner Route of the GBR Marine Park is a vital part of the Queensland shipping industry and receives a relatively high amount of shipping traffic. This is why vessel traffic, reporting and management systems and other provisions like compulsory pilotage are so important to help protect the GBR.

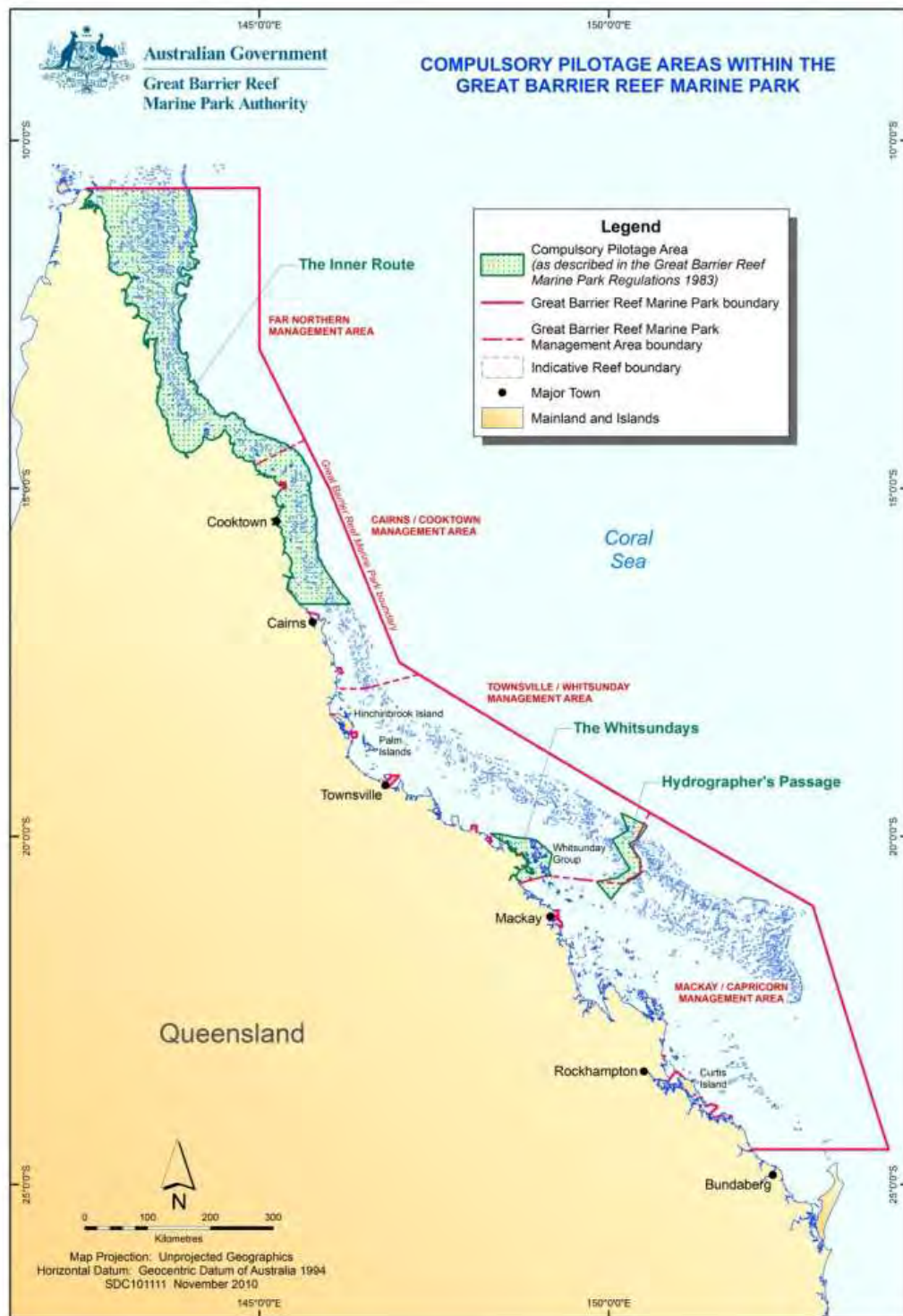
3.3.2 Compulsory Pilotage

Compulsory pilotage is one of the protection measures that the Australian Government adopted in 1991 to reduce the risk of ship grounding and collisions in the GBR.

This means that all vessels over 70 metres in length, or transporting bulk oil, chemicals and liquefied gas cargoes are required to carry a marine pilot when taking passage through the 'inner route', Hydrographer's Passage and the Whitsundays compulsory pilotage area (*Refer to the map below*).

The *Great Barrier Reef Marine Park Act 1975* (section 59F) allows for the Master or owner of a ship to apply for an exemption from the requirement to carry a pilot in these areas. The exemption may only be granted if the Minister (or his/her delegate) is of the opinion that:

- a pilot would not provide additional environmental protection benefit, for example if an operator has considerable experience and the ship is equipped with suitable navigational aids; or
- the ship does not pose a threat to the environment because it is likely to remain stationary or in a limited area within the compulsory pilotage area.



4. POLLUTION PREVENTION

Australian legislation implements the International Convention for the Prevention of Pollution from ships (MARPOL) which generally permits certain operational discharges from ships, providing that strict restrictions are met, and contains special requirements for ships navigating in the GBR Region.

The following webpage outlines the relevant discharge standards for ships operating in Australian waters, including the GBR:

http://www.amsa.gov.au/Marine_Environment_Protection/Protection_of_Pollution_from_Ships/Discharge_Standards.asp

4.1 MARPOL Annexes I, II, IV and VI

Discharges of oil, noxious liquid substances, sewage, and air emissions in the 200 nautical mile Australian EEZ may only be made in full compliance with the relevant provisions of MARPOL.

In addition, the MARPOL Convention has designated the Great Barrier Reef as an area in which no discharges of pollutants are permitted. This area is between the Queensland coastline and “nearest land” defined as a line drawn between coordinates on the outer edge of the Great Barrier Reef. Specific distances are then measured seaward of that line.

As the Great Barrier Reef is considered to be “nearest land” for the purposes of the MARPOL discharge standards, normal operational discharges permitted by MARPOL are generally prohibited in the Reef region. For example, discharges of tank washings from oil tankers under the MARPOL regulations may only be made more than 50 nautical miles from the outer edge of the Great Barrier Reef.

In Australian waters operational discharges from ships are regulated by MARPOL and other Protection of the Sea Legislation which is administered by AMSA. As Australia is party to the *1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972* (London Protocol) which recognises measures that prevent, reduce and where practicable eliminate pollution caused by the dumping of waste at sea, the dumping of controlled material (such as wastes or other matter including vessels, aircrafts or platforms) is subject to strict requirements under the *Environment Protection (Sea Dumping) Act 1981*.

In the case of sea dumping inside the GBR Marine Park, strict provisions apply under the Sea Dumping Act and the *Great Barrier Reef Marine Park Act 1975*, which are both administered by the GBRMPA. For sea dumping in Australian waters outside the boundary of the GBR Marine Park the Sea Dumping Act is administered by the Australian Government Department of Sustainability, Environment, Water, Population and Communities. Refer to <http://www.comlaw.gov.au/Details/C2010C00163> for requirements under the Sea Dumping Act.

MARPOL is strictly enforced under Australian laws, which provide for a maximum penalty of up to \$Aus 2.2 million for a ship’s Master and \$Aus 11 million for the owner of a ship violating the discharge or emission standards. Reports of actual or probable oil

spills should be made in accordance with the form set out in the ship's Shipboard Oil Pollution Emergency Plan. Reports should be forwarded without delay to:

Manager Marine Environment Standards c/- RCC Australia AusSAR Telephone +61 2 62306811 (1800 641 792 within Australia) Facsimile +61 2 62306868
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Where a ship's Master or agent finds reception facilities in an Australian port inadequate – for example a facility not available or inconveniently located, unreasonable charges and/or undue delay – the Master should communicate all relevant details using the IMO reporting format.

The report should be forwarded to the vessel's flag State and a copy sent to AMSA (as the port State authority) at the following address:

General Manager
Marine Environment Division
Australian Maritime Safety Authority
GPO Box 2181
Canberra ACT 2601

AMSA will investigate the report with the relevant port authority and provide information on the outcome of the investigation to IMO and the flag State.

4.2 Sewage Discharge in the GBR Marine Park

Sewage discharge is an identified risk to the GBR ecosystem ([Great Barrier Reef Outlook Report 2009](#)). Discharge of sewage is of concern due to increased nutrients and pathogens in the water column. Compounded with other impacts, it can adversely affect corals, fish, seagrasses and other flora and fauna of the GBR - particularly in poor tidal areas such as bays and lagoons. Localised effects on a coral reef can include reduced species diversity; lower coral cover and suppressed coral recruitment.

Refer to <http://www.gbrmpa.gov.au/about-us/legislation-regulations-and-policies/vessel-sewage-regulations> for specific sewage discharge requirements for the GBR.

4.3 The Revised Annex V of MARPOL

MARPOL Annex V, which entered into force on 31st December 1988, contains the regulations adopted for the prevention of marine pollution by garbage from ships. In July 2011, IMO revised the Annex and it will enter into force on 1st January 2013.

The revised Annex provides a more effective garbage management onboard ships through the reduction of quantities of garbage normally produced, their collection,

treatment and delivery to Port Reception Facilities, while, with only limited exceptions, it almost prohibits any discharge of garbage at sea.

Under the revised Annex, garbage is grouped into 9 categories, as shown in the table that follows.

Category	Type of Garbage
A	Plastics They include all solid materials that contain one or more high molecular mass polymers as an essential ingredient and are formed during either the manufacturing of the polymers or in their fabrication as finished product by heat and/or pressure.
B	Food Wastes
C	Domestic Wastes All types of wastes that are not covered by other Annexes, they are generated in the ship's accommodation spaces and they do not include grey water.
D	Cooking Oil
E	Incinerator ashes Ash and clinkers resulting from shipboard incinerators that are used for the incineration of garbage.
F	Operational wastes All solid wastes (including slurries) that are not covered by other Annexes and are collected on board during normal maintenance or operations or used for cargo stowage and handling. Cleaning agents and additives contained in cargo hold and external wash water are also included in this category.
G	Cargo residues Leftovers of any cargo that are not covered by other Annexes, whether in wet or dry condition or entrained in wash water including loading and unloading excess or spillage remaining on deck or in holds after loading or unloading.

H	Animal carcasses
I	Fishing Gear

Discharge of the following garbage into the sea outside Special Areas shall only be permitted while the ship is en route and as far as practicable from the nearest land but, in any case, not less than:

- a. 3 nautical miles: food wastes passed through a comminuter or grinder. Such comminuted or ground food wastes shall be capable of passing through a screen with openings no greater than 25 mm.
- b. 12 nautical miles: food wastes not processed as mentioned above.
- c. 12 nautical miles: cargo residues that do not contain any substances classified as harmful to the marine environment and cannot be recovered with the use of commonly available methods for unloading.

While many dry bulk cargoes may be considered harmless to the marine environment, a chief concern is the potential impact on ocean sediments and bottom-dwelling inhabitants of a build-up of materials, especially in ports and relatively shallow shipping lanes.

IMO also recommends that wherever possible, cargo residues should be completely cleaned up prior to sailing and either delivered to the intended cargo space or to a port reception facility. Shipboard areas where spillage is most common should be protected to enable residues to be easily recovered.

It is understood that dry cargo residues on deck areas are washed down by ships' crews not only for operational reasons but safety reasons as well. The safety of the ship, her crew and others involved in the ship's operation is of vital importance. Therefore, MARPOL provides exceptions from the discharge restrictions where there is a threat to the safety of the ship and to those on board.

Cargo residues are considered to be harmful to the marine environment, if they are residues from solid bulk substances, which are classified according to certain criteria (UN Globally Harmonized System for Classification and Labeling of Chemicals) as toxic, persistent, of high bio-accumulation potential etc., and/or they consist of synthetic polymers, plastics or rubber.

Solid bulk cargoes should be classified and declared by the shipper as to whether they are harmful to the marine environment or not. Such declaration should be included in the information required in section 4.2 of the IMSBC Code. Cleaning agents or additives contained in cargo hold, deck and external surfaces wash water, may be discharged into the sea when these substances are not harmful to the marine environment. The en route criterion is not applicable when the discharge of cleaning agents in cargo hold, deck and external surfaces wash water is carried out outside Special Areas and of deck and external wash water within Special Areas.

A summary of discharge requirements within and outside Special Areas is shown in the following table.

Type of garbage	All ships (only while en route)		Offshore platforms located more than 12 nautical miles from the nearest land and ships within 500 m from platforms
	Outside Special Areas	Within Special Areas	
Food waste comminuted or ground	≥ 3 nautical miles	≥ 12 nautical miles ¹	PERMITTED
Food waste not comminuted or ground	≥ 12 nautical miles	PROHIBITED	PROHIBITED
Non-harmful cargo residues not contained in wash water	≥ 12 nautical miles	PROHIBITED	PROHIBITED
Non-harmful cargo residues contained in wash water		≥ 12 nautical miles	
Non-harmful cleaning agents and additives contained in cargo hold wash water	PERMITTED ²	≥ 12 nautical miles	PROHIBITED
Non-harmful cleaning agents and additives in deck and external surfaces wash water		PERMITTED ²	
Animal carcasses	≥ 100 nautical miles and in the maximum possible depth	PROHIBITED	PROHIBITED
All other garbage (plastics, incinerator ash, cooking oil, paper, wood, glass etc.)	PROHIBITED	PROHIBITED	PROHIBITED

1 The discharge of introduced avian products in the Antarctic area is not permitted unless incinerated, autoclaved or otherwise treated to be made sterile.

2 The en route criterion is not applicable in these cases

In accordance with MARPOL Regulation V/6(a), AMSA and the Great Barrier Reef Marine Park Authority will accept the cleaning of cargo residues from a vessel within the 12 nautical mile limit only in the following circumstances:

- To ensure the safe operation of a helicopter for taking a pilot on board or for some other such purpose. This condition applies **only** to the helicopter landing area and its immediate vicinity to avoid dust raised by the down-draft of the helicopter rotors and is **not** extended to include the systematic wash-down of the entire vessel. For additional information on helicopter operations, refer to the *Australian Code of Practice for Ship-Helicopter Transfers*, copies of which can be obtained from any AMSA office;
- Where there is a need to avoid navigational hazards, like dust being blown onto areas such as the wheelhouse or bridge wings; and
- Where residues cause a serious safety hazard to personnel when spillages are not cleaned from deck areas, adjacent walkways and working areas.

5. AUSTRALIAN BALLAST WATER MANAGEMENT REQUIREMENTS

5.1 General

Each year about 150 million tons of ballast water is discharged in Australian waters from overseas vessels. Australian scientists have identified over 200 introduced marine species in Australian coastal waters, most of which have been translocated from overseas ports to Australian ports via shipping. A number of these organisms have become harmful to Australia's marine environment, threatening fisheries, aquaculture, tourism industries and public health.

Unlike other major pollutants of the oceans that can eventually be cleaned up, harmful aquatic organisms and pathogens, once established, are virtually impossible to eradicate and can have serious and permanent consequences.

The impact from harmful aquatic organisms threatens marine and estuarine environments in Australia and around the world.

The shipping industry operates within a highly regulated environment established by the IMO. The International Convention for the Control and Management of Ships Ballast Water and Sediments (BWM Convention) was adopted by a Diplomatic Conference at IMO in February 2004. The BWM Convention aims to prevent the potentially devastating effects of the transfer of harmful aquatic organisms through ballast water discharge.

The BWM Convention will enter into force 12 months after 30 IMO Member States, representing 35 per cent of world merchant shipping tonnage, have ratified the Convention. Australia has signed the Convention subject to ratification and as a signatory is obliged to refrain from actions that would defeat the object and purpose of the Convention.

Under the BWM Convention, ballast water exchange in the open sea will be progressively replaced by ballast water treatment using on-board ballast water management systems (BWMS). The feasibility of this replacement is related to the effectiveness of the treatment of ballast water and the probability aquatic organisms have of surviving after the treated ballast water is discharged into the sea. In addition, the exchange of ballast is not always feasible in areas that do not meet the requirements of depth and distance from land.

It is important that officers and crew are familiar with the procedures for managing ballast, whether that is by exchange or treatment. Regular training must be undertaken with the aim to minimize possible safety hazards, for example during the exchange of ballast water as this operation can directly influence the safety of the vessel.

Seafarers involved in ballast water management should be familiar with:

- the ship's Ballast Water Management Plan,
- the method of ballast water management,

- the ship's pumping system including the piping arrangement, the pumps and all the arrangements of air and overflow pipes so that crew working on deck is well aware of the process in effect,
- the functionality of the air pipe heads and the air/overflow pipes to make sure that there is no blockage of air/overflow pipes, ball failure, freezing or unintentional closure of the pipe,
- the expected time of ballast water exchange at sea for which the full knowledge of the ship's operational plan, the routing and the passages and ports time schedule is required. This becomes ever important when the water exchange is to be carried out in the open sea, in deep water or inside designated areas,
- the alternative methods of ballast water exchange and the risks involved, the consequences to the stability and strength of the vessel, the advantages of each method or the possibility of using treatment alternatives,
- the procedures for recording in the Ballast Water Record Book, sampling and sounding to prove a proper record,
- the ballast pump capacity restrictions, if any, and
- the precautions to be taken when entering tanks for the removal of sediment and the procedures for the safe handling and packaging of sediment and its storage thereof.

5.2 Mandatory Australian Requirements

The National Seaports Program of the Department of Agriculture, Fisheries and Forestry - Biosecurity (DAFF Biosecurity, formerly the Australian Quarantine Inspection Service - AQIS) is the lead agency of the Australian Government for the regulation of ballast water taken up outside Australia's territorial sea.

On 1 July 2001, after extensive consultation with the IMO and the shipping industry, Australia implemented mandatory ballast water management requirements requiring vessels to achieve a 95% volumetric exchange of ballast water.

All internationally plying vessels intending to discharge ballast water anywhere inside the Australian territorial sea are required to manage their ballast water in accordance with Australia's Ballast Water Management Requirements (the requirements).

Full details of the Australian Ballast Water Management Requirements may be downloaded from the DAFF website:

http://www.daff.gov.au/aqis/avm/vessels/quarantine_concerns/ballast

Australia does not require any action by the Master that imperils the lives of seafarers or the safety of the ship.

All vessels arriving in Australia from international waters are required to submit a *Quarantine Pre-Arrival Report (QPAR)* to DAFF Biosecurity 12-96 hours prior to arriving in an Australian port. The QPAR may be submitted electronically, which is DAFF Biosecurity's preferred method of submission (eQPAR), or by email or fax (QPAR) to the Maritime National Coordination Centre (MNCC).

Masters / agents who do not submit the QPAR to DAFF Biosecurity will not be given formal quarantine clearance to enter port. This will cause delays to the vessel and additional DAFF Biosecurity charges will be incurred by the vessel.

The QPAR requires masters to declare whether or not they intend to discharge ballast in Australian waters and whether accurate records of ballast exchanges have been maintained.

Vessel masters may also submit an Australian Ballast Water Management Summary Sheet (ABWMS) to DAFF Biosecurity's Maritime National Coordination Centre (MNCC). The ABWMS replaces the previous versions of this form which were known as the "AQIS Ballast Log and the AQIS Ballast Water Summary" and requires details about ballast water uptake ports, mid-ocean exchanges and intended Australian discharge locations.

Vessels are not permitted to discharge ballast water in Australian waters until DAFF Biosecurity has verified and confirmed that appropriate ballast exchanges have been conducted. Ballast verification can occur prior to arrival by submitting the ABWMS to the [MNCC](#) for assessment prior to arrival or alternatively an onboard verification can be conducted by DAFF Biosecurity officers following arrival.

Completed originals of both the QPAR and ABWMS, including any comments by DAFF Biosecurity on the back of the forms, must be retained on the vessel for a period of two years and provided to DAFF Biosecurity on request.

Vessels cannot discharge ballast water without written permission from DAFF Biosecurity.

Vessels that are eligible for PDC (Pratique Documentary Clearance) may be required to undergo an onboard ballast water verification at no further charge, provided ballast water exchanges and documentation are deemed as compliant by a DAFF Biosecurity officer. This activity may be conducted at a first or subsequent port of arrival. Notification of inspection times will be given through the ship's agent.

5.3 Ballast water management using Type Approved ballast water management systems (BWMS)

Once the BWM Convention enters into force, Australia will recognize the IMO's approval process and accept discharge from ballast water management systems (BWMS) that have received Type Approval. Prior to the Convention entering into force, vessels arriving in Australian waters are required to continue to manage their ballast water in accordance with Australia's current ballast water requirements but can apply to use Type Approved BWMS on future voyages. Applications will only be considered on a case by case basis.

Ship agents and vessel operators are requested to notify DAFF Biosecurity of any arriving vessels fitted with a BWMS with intended use to satisfy Australia's current ballast water management requirements. Specific information (including vessel details, type of BWMS, BWMS certification, discharge intentions and voyage details) will need to be provided to DAFF Biosecurity as soon as possible but at least 10 working days

prior to arrival and cooperation will be sought from the vessel upon arrival in the form of providing access for DAFF Biosecurity officers to assist in the verification. The intention of the verification inspection is to determine whether the crew is familiar with the operation of the system and that it has been operated in accordance with systems stated operating parameters and the ship's ballast water management plan. If the vessel meets DAFF Biosecurity's verification requirements it will be granted approval to use the BWMS on future visits to Australia.

Further information on Australia's Ballast Water Management Requirements and ballast water reporting requirements can be obtained by contacting the DAFF Biosecurity National Seaports Program.

DAFF Biosecurity Seaports Program:

email address: seaports@daff.gov.au

homepage address: www.daff.gov.au/aqis/avm/vessels

Contact numbers:

Calling within Australia Mobile: 0409 604 543

Free call 1800 020 504

Overseas enquires: Mobile: +61 409 604 543

Maritime National Coordination Centre:

email address: maritimencc@daff.gov.au

Calling within Australia Mobile: 1300 004 605

Fax: 1300 005 882

Overseas enquires: Mobile:

Fax:

Home page address: www.daff.gov.au/aqis

5.4 Domestic ballast water management requirements

Victoria, one of seven maritime Australian states / territories, introduced additional requirements for the management of Australian sourced domestic ballast water on 1 July 2004.

The Victorian arrangements are administered by the Environmental Protection Authority (EPA) Victoria. The key purpose of the policy is to protect Victoria's marine environment from marine pests introduced via domestic ballast water, which is ballast water that originates from an Australian port or within Australia's territorial sea.

EPA Victoria requires all ships intending to visit a Victorian port to submit a Ballast water report form and log 24 hours prior to arrival into state waters detailing the origin of all domestic ballast water on board. No domestic ballast water discharge is permitted in

Victorian waters unless approval has been granted from EPA in writing by an Authorised EPA officer.

Under the policy, high risk domestic ballast water, regardless of its source, must not be discharged into Victorian state waters.

The risk status of any domestic ballast water can be assessed by the ship or the ship's agent prior to entering Victorian state waters by accessing the Australian Ballast Water Management Information System (ABWMIS).

The http://www.marinepests.gov.au/commercial_shipping is a web-based application developed and administered by the Australian government. For access to or further information on the ABWMIS please contact the Australian Ballast Water Unit (ABWU@daff.gov.au) or access www.management.marinepests.gov.au/bw/.

The ABWMIS enables ships, intending to discharge ballast water in Victorian ports, to lodge ballast water information, on a tank-by-tank basis, and receive a risk assessment.

The ABWMIS will assess the domestic ballast water as either 'low risk' or 'high risk'. If the ABWMIS is not used, ballast water is regarded as high risk.

If high risk domestic ballast water is intended to be discharged within Victorian waters (12 nautical miles off the coast) and ports, it must be managed in accordance with the Victorian requirements. Approved management action is a full 95% sequential exchange or a 300% full tank capacity flow through exchange. Full details of the requirements can be viewed and downloaded from the Victorian Environment Protection Authority's (EPA) website: www.epa.vic.gov.au/water/ballastwater/.

EPA Victoria maintains a 24 hour helpline for ballast water enquiries: +61 3 9695 2547 or email: ballast.water@epa.vic.gov.au.

5.5 Sediment Management

Sediment that has settled out of ballast water has the potential to harbor marine pests in the form of viable organisms such as cysts and eggs that can remain dormant for long periods of time. When sediment is removed from the ship's ballast tanks and is to be disposed of by that ship at sea, such disposal should only take place in areas outside 200 nm from land and in water depths of over 200 m.

When disposing of sediment to a designated reception facility, all sediment shall be prevented from entering the marine environment. This includes sediment that has settled out of ballast water or comes from the routine cleaning or repair of spaces used to carry ballast water (such sediment may be mixed with water and constitute a slurry or tank washings). All sediment disposed of at reception facilities must be managed in accordance with all relevant state requirements including human health, environmental and safety requirements. A designated reception facility is a facility identified by a jurisdiction where the cleaning or repair of ballast water tanks occurs.

Once the Convention enters into force, details of reception facilities for ballast tank sediment disposal will be provided to the IMO and made available to ships.

6. AUSTRALIAN BIOFOULING MANAGEMENT REQUIREMENTS

6.1 What is Biofouling?

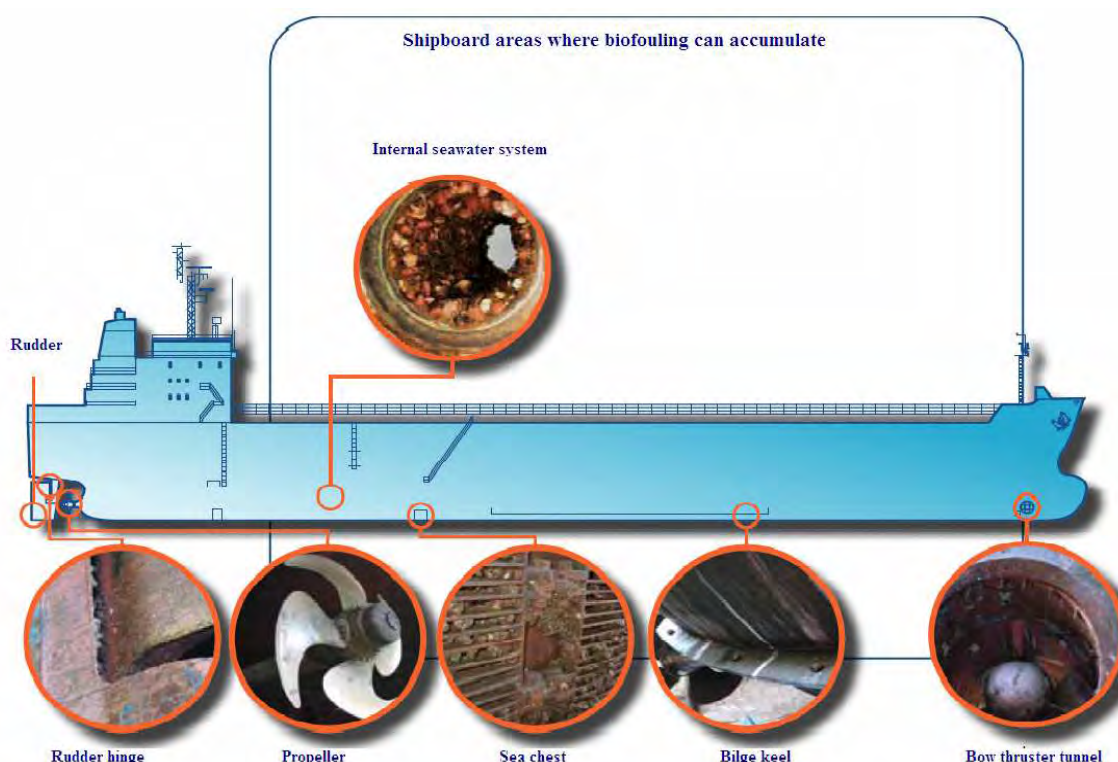
Biofouling means the accumulation of aquatic organisms such as micro-organisms, plants and animals on surfaces and structures immersed in or exposed to the aquatic environment, including wharves, jetties or any part of a vessel hull (including the hulls, rudders, propellers and other hull appendages) or internal seawater systems (including sea chests and pipe work), or to any equipment or equipment spaces attached to or onboard the vessel (including mooring devices, anchor wells, cable lockers, cargo spaces, bilges etc.).

Biofouling can cause problems to a vessel's daily operations by blocking internal seawater systems and decreasing fuel efficiency due to increased drag resistance.

The translocation of marine species and pests to Australia and around the world via biofouling on vessel hulls and in damp or fluid-filled spaces (niche areas) such as anchor lockers, bilges, sea chests or internal seawater systems is also a major concern.

To reduce the risk of trans locating a marine pest, vessels or equipment that are found to have heavy biofouling or to pose a high risk of accumulating heavy biofouling, are advised to treat their biofouling by implementing biofouling management measures such as dry-docking, cleaning and antifouling renewal.

The areas on a ship where biofouling can occur are seen in the following picture.



Shipboard areas where biofouling can accumulate

6.2 IMO Guidelines on Biofouling

IMO Resolution MEPC.207(62) provides guidelines for the control and management of the biofouling of the vessel through the voluntary implementation of certain practices with the aim to reduce the risk of transferring harmful marine organisms that are attached to the hull.

Particular emphasis is given to the selection and maintenance of antifouling paints, the protection and condition of sea chests and cooling water piping, the tunnels of the bow and stern thrusters, the rudder and propeller, the anodes, etc.

These Guidelines propose the development and the implementation of a Biofouling Management Plan, which may be a stand-alone plan or integrated in the vessel's planned maintenance system and will include:

- a description of hull areas susceptible to biofouling and a program of inspections, maintenance and cleaning of each area,
- details of the used antifouling paints or any other protection systems,
- procedures for the maintenance of antifouling paints and systems fitted for the protection of sea water piping system, the periodical in-water inspections, etc.
- maintenance of a Biofouling Record Book and procedures for the training of the crew.

6.3 Australia's National Biofouling Management Guidelines

Currently, there are no mandatory requirements in Australia concerning the management of biofouling on internationally arriving vessels.

However, to assist vessel operators in managing for biofouling on their vessels, Australia has developed voluntary national biofouling management guidelines for a range of vectors including: the aquaculture industry, commercial fishing vessels, the petroleum industry, commercial shipping, recreational vessels and non-trading vessels.

This guidance can be applied to all vessels including commercial ships, yachts, non-trading vessels such as tugs, dredges, semi-submersibles and barges, fishing vessels, petroleum vessels and infrastructure such as drilling rigs, offshore support vessels and mobile offshore drilling units amongst others.

The National biofouling management guidelines are currently available via the Australian Government website www.marinepests.gov.au .

The Australian government is currently investigating measures to reduce the risk to Australia's marine environment, industries and human health from the threat posed by harmful aquatic organisms introduced through biofouling.

6.4 In-water Cleaning within Australia

Currently, in-water cleaning activities in Australian waters are considered under the 'Australian and New Zealand Environment and Conservation Council (ANZECC) Code of Practice for Antifouling and In-water Hull Cleaning and Maintenance, 1997'.

Australia and New Zealand have recently reviewed this code of practice and new guidelines will be available in the near future.

Until the new guidelines are available, the ANZECC Code will continue to be used. More information about the guidelines is available via the DAFF website www.daff.gov.au/biosecurity/draft-antifouling-guidelines.

6.5 GBR Marine Park Position Statement on translocation of marine species

Ship operator's transiting or making voyages within the waters of the GBR Marine Park should refer to the Great Barrier Reef Marine Park Authority Position Statement on the translocation of species in the Great Barrier Reef Marine Park. This position statement is available at:

http://www.gbrmpa.gov.au/data/assets/pdf_file/0006/3939/gbrmpa_TranslocationPositionStatement_2007.pdf

The Position Statement complements the National Biofouling Management Guidelines and Australia's Ballast Water Management Requirements. The GBRMPA Position Statement is aimed at reducing the risks associated with activities which may result in the translocation of marine pests in the GBR Marine Park through a process of risk management. The GBRMPA encourages ship's operators to undertake a risk assessment of marine pest translocation from their shipping activities and identify adequate prevention and management measures to address any risks of translocation.

7. UNDER KEEL CLEARANCE MANAGEMENT (UKCM) SYSTEM IN TORRES STRAIT

7.1 Background

On 16 December 2011 AMSA declared an Under Keel Clearance Management (UKCM) system for Torres Strait as 'operational'. The UKCM system contributes to protecting the marine environment and enhancing the safety and efficiency of deep draught vessels transiting Torres Strait.

The Torres Strait lies between Papua New Guinea and the northern tip of the Australian continent and is a vital shipping route for the Asia-Pacific region. Numerous large vessels transit Torres Strait and face many challenges to safe navigation due to the numerous reefs, shallow waters, complex tides and strong tidal streams.

7.2 UKCM System

The UKCM system is specifically designed to complement other measures to protect the marine environment and to deliver enhanced safety and efficiency of navigation in Torres Strait and the Great Barrier Reef. Additionally, the system:

- validates the existing under keel safety margin for deep draught vessels; and
- helps evaluate the appropriateness of the draught limit regime.

The UKCM system is web-based and uses accurate vessel information, hydrodynamic modelling and environmental data from tide, stream, wind and wave sensors to estimate a vessel's UKC. Use of the UKCM system helps to ensure compliance with AMSA's UKC safety margin specified in Provision 94 of Marine Order 54.

The system provides outputs based on historic and predicted data as well as real-time data obtained from met-ocean sensors, vessel AIS transmissions, official bathymetry and vessel stability information. The UKCM system is provided by AMSA as a specific aid to navigation for deep draught transits of Torres Strait.

7.3 Operational Status

The operational status of the UKCM system means that vessel operators, masters and watchkeepers, pilotage providers and coastal pilots are able to use the system to:

- assess loading scenarios for deep draught vessels,
- optimise the scheduling of deep draught transits and pilot transfers, and
- improve the safety and efficiency of deep draught transits.

As a general principle, mariners are to use all available means to navigate safely and therefore, as an aid to navigation; the UKCM system can provide relevant information and may be used for planning deep draught transits through Torres Strait. Based on monitoring of the UKCM system over the course of system trials, AMSA recommends use of the UKCM system for all vessels with a draught of nine metres or more. Circumstances may warrant use of the UKCM system for vessels of lesser draught.

AMSA considers the use of the system to be an effective way of minimising UKC risks and, when integrated into a pilotage provider's safety management system, is considered by AMSA to satisfy the UKC aspects of the safety management system required by Marine Orders 54.

Precautions have been taken to ensure that the information in and generated by, the UKCM system is accurate. However, the responsibility for safe navigation continues to reside with mariners (masters and pilots) through the appropriate use of the system in conjunction with other aids to navigation, official hydrographic products and prudent seamanship, which includes voyage planning as defined in IMO Resolutions. AMSA accepts no liability arising from misuse of the system or misinterpretation of information provided or generated.

Access to the UKCM system is available for approved users through a vetted registration process. To request registration, please follow the registration application process available at <https://ukcm.amsa.gov.au>

8. MARINE POLLUTION INCIDENTS

Australia implements a number of IMO conventions that specifically address pollution from ships through a range of Protection of the Sea Legislation. To support this legislation, AMSA administers the National Plan to Combat the Pollution of the Sea by Oil and Other Noxious and Hazardous Substances (National Plan).

The National Plan brings together the combined resources of the:

- Commonwealth Government,
- State and Northern Territory (State/NT) Governments including emergency services,
- The oil, shipping, ports, chemical and petroleum exploration and production industries.

The National Plan sets out a clear definition of the responsibilities of the participants, formalised in an Inter-Governmental Agreement (IGA). The IGA details such matters as:

- The divisions of responsibilities,
- Contingency planning,
- Access to Commonwealth equipment,
- The management and control of financial affairs.

The national contingency plan hierarchy consists of:

- National Marine Oil and Marine Chemical spill plans,
- The Marine Pollution Contingency Plan for the GBR Marine Park,
- State/NT plans,
- Port and industry plans.

9. MARITIME EMERGENCY RESPONSE COMMANDER

AMSA has appointed a Maritime Emergency Response Commander (MERCOT) to act on behalf of the Authority during a shipping casualty. The MERCOT is responsible for the management of responses to shipping incidents in Commonwealth waters, with intervention powers to take such measures as may be necessary to prevent, mitigate or eliminate a risk of significant pollution, including the power to direct a port to release a tug to provide emergency assistance to a vessel at risk or designate a place of refuge for a ship in emergency situations that present a risk of significant pollution.

The MERCOT has appropriate statutory powers to enable effective decision-making consistent with the aim of the National Marine Emergency Response Arrangements; see

http://www.amsa.gov.au/Marine_Environment_Protection/National_Maritime_Emergency_Response_Arrangements/

The MERCOT will endeavour to consider all relevant legal, practical, environmental, socio-economic and operational issues in deciding whether and how to respond to a maritime casualty, as dictated by the circumstances of each particular casualty.

Incidents requiring the intervention of MERCOT will occur randomly and infrequently, and will be in response to actual or potentially serious emergencies. MERCOT's intervention, therefore, will be for incidents where there is actual or a threat of significant pollution posed by a ship.

State and Northern Territory Governments retain powers to deal with lesser threats of pollution or other environmental damage within their respective jurisdictions, to the extent that they are available, and may still exercise powers independently. However, MERCOT will be able to step in and exercise his/her intervention powers if, in the MERCOT's opinion, such action is needed to fully address the threat in question, and MERCOT's directions prevail over any other direction where inconsistency occurs.

Marine Pollution Incidents in the GBR

Shipping activity has the potential to adversely impact on the environmental, economic and socio-cultural values of the GBR World Heritage Area. The greatest threats are of a major oil or chemical spill following an incident. A major oil spill or shipping incident occurs about every two years in the GBR World Heritage Area, the last being Shen Neng at Douglas Shoals (2010).

The Marine Pollution Contingency Plan for the GBR Marine Park refers to specific planning and response arrangements for pollution events in the GBR while being consistent and complementary to the National Plan. The Plan provides the policy, strategic setting and incident response procedures to pollution events. In the event of a marine incident, the GBRMPA provides environmental and scientific advice to the agency combating the spill, which is either AMSA or MSQ.

- For ship operators transiting or making voyages through waters of the GBR, the GBRMPA recommends that the operator have in place a marine pollution contingency plan for the vessel/s. A contingency plan should include: A Risk Assessment which examines the potential for any oil, chemical or hazardous or

noxious substance spills, including damage or release of cargo that may be harmful to the environment, identification of prevention and mitigation measures that comply with all relevant Commonwealth and State/NT legislation.

- Provisions for planning and preparedness.
- Response procedures.
- Reporting procedures.
- Provisions for ensuring that the master and all crew on board are suitably qualified and trained and are aware of provisions contained within the contingency plan.
- Mechanisms in place to manage fatigue of master and crew.

Wreck Removals

When a vessel is wrecked, sunk or abandoned in the GBR Marine Park the GBRMPA may order the responsible person/s to remove the property from the GBR Marine Park in a reasonable timeframe under Regulation 94 of the *Great Barrier Reef Marine Park Regulations 1983*; http://www.austlii.edu.au/au/legis/cth/consol_reg/gbrmpr1983366/