National Ballast Water Management Strategy 2016-2020

Cook Islands

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1. Executive Summary

The importance of coastal and marine environments to every aspect of the lives of Pacific Islanders cannot be overstated. Pacific Island Countries (PICs) maintain resource rights and management responsibilities for over 30million square kilometres of ocean, equivalent to the total land area of Canada, China and the USA. The total population of coastal pacific islanders is only 2.6 million. There are 11 square kilometres of ocean for each Pacific Islander. Jurisdictionally, the ocean is 200 times more significant to the average Pacific Islander than it is to the average global citizen.

At this level of importance, the impacts of marine pollution are a major concern for PICs. Marine bio-invasions including via shipping vector such as Ballast Water and Hull Fouling is considered one of the greatest threats to the world's oceans today. Global economic impacts are considered at billions of dollars every year. Some of these impacts include the disruption to fisheries, fouling of coastal industry and infrastructure and interference with human amenity.

Invasions have already occurred in the Pacific region including the barnacle *Chthalamus proteus*, several macro-algae species, harmful planktonic algae species and the Black Striped Mussel *Mytolopsis sallei* from the Gulf of Mexico/Caribbean.

There have been a number of activities to assist the region in addressing the issue of invasive marine species. A regional strategy to address Shipping Related Invasive Marine Pests in the Pacific (SRIMP-Pac) was developed and endorsed in 2006. Guidelines for Invasive Species Management in the Pacific were developed jointly by the Secretariat of the Pacific Community and Secretariat of the Pacific Regional Environment Programme in 2009. These Guidelines included the objective to develop national invasive species strategies. In 2011, model legislation was developed by SPREP to assist PICTs in giving effect to the BWM Convention. The issue of Marine Invasives is one of the Work Plans included in the Pacific Ocean Pollution Prevention Programme (PACPOL) 2015-2020, with a focus on baseline surveys, adoption of the IMO Ballast Water Management Convention, capacity building and risk assessments.

A number of tools have also been developed by the GEF-UNDP-IMO GloBallast Partnerships Programme to assist developing countries to reduce the transfer of harmful aquatic organisms and pathogens in ships' ballast water and prepare for the implementation of the IMO Ballast Water Management Convention. In collaboration with the International Union for Conservation of Nature (IUCN) Global Marine Programme, the GloBallast Programme developed the *Guidelines for Development of National Ballast Water Management Strategies.* The Guidelines were developed in response to requests from countries for assistance in strengthening and developing national regulatory frameworks related to marine Invasive Alien Species (IAS) in particular with respect to the transfer of potentially harmful aquatic organisms and pathogens in ships' ballast water and sediments.

This National Ballast Water Management Strategy for Cook Islands has been developed in accordance with the GloBallast Guidelines, and was developed primarily during a National Consultation Workshop held in Rarotonga, Cook Islands on 18-19 February 2016. The Workshop was attended by officials from seven different government agencies as well as industry and an NGO. The strategy also applies the requirements of Article 2(5) of the Ballast Water Management Convention. Funding for the workshop was provided by IMO, with in-kind support from Secretariat of the Pacific Regional Environment Programme's PACPOL Strategy, the Cook Islands National Environment Service and the Cook Islands Ministry of Transport. The strategic priorities for Cook Islands are set

out in section 5, with specific action items for each if the strategic priorities set out in the action plan and implementation timetable in section 8.

2. Glossary

APEC – Asia-Pacific Economic Co-operation

BIO – Biosecurity Service, Cook Islands

BWM Convention - International Convention for the Control and Management of Ships' Ballast Water and Sediments

CBD – Convention on Biological Diversity

GEF – Global Environment Facility

GEF – PAS Inv – Global Environment Facility Pacific Alliance for Sustainability. United Nations Environment Programme: Prevention, Control and Management of Invasive Alien Species in the Pacific Islands

GISP – Global Invasive Species Programme

GloBallast - Global Ballast Water Management Programme

IAS – Invasive Alien Species

IMO – International Maritime Organization

ITCP – Integrated Technical Co-operation Programme (IMO)

MARPOL – International Convention for the Prevention of Pollution from Ships

MEPC – Marine Environment Protection Committee of the International Maritime Organization

MMR – Ministry of Marine Resources

MOA – Ministry of Agriculture

MOF – Ministry of Finance

MOT – Ministry of Transport

NES – National Environment Service

NISSAP – National Invasive Species Strategy and Action Plan

OPM – Office of the Prime Minister

PICT – Pacific Island Countries and Territories

PII – Pacific Invasives Initiative

PILN - Pacific Invasives Learning Network

SPC – Secretariat of the Pacific Commission

SPREP - Secretariat of the Pacific Regional Environment Programme

SRIMP-PAC – Shipping-related introduced marine pests in the Pacific Islands: A regional strategy

UNDP – United Nations Development Programme

3. Introduction

3.1 Background to the issue of Invasive Alien Species

3.1.1 Internationally

Shipping carries about 90% in volume of world trade (IMO 2008) and moves an estimated 10 billion tonnes of ballast water globally each year. This water frequently contains a multitude of living organisms; one study estimates that 7,000 species are carried around the world in ballast water every day (USGS, 2005, cited in GEF-UNDP-IMO 2009). The presence of these species has become a major environmental challenge and there is a growing body of research and documentation of the detrimental effects of aquatic IAS (GEF-UNDP-IMO 2009).

Over two-thirds of the world's surface is covered by water. Open oceans, semi-enclosed or enclosed seas, coastal areas, estuaries, rivers and lakes are host to highly diverse ecosystems that span all of earth's climatologic zones. The productivity of these ecosystems has largely shaped development of human society and led to human settlement along coastal margins. Globally the number of people living within 100 km of the coast increased from 1 billion in 1990 to 2.2 billion in 1995, or 39 percent of the world's population (WRI 2006). The number continues to increase (Tamelander *et al.* 2010).

The movement of marine species over large distances has prevailed since the beginning of travel by ship; for example, a wooden sailing ship in 1750 could have carried 120 marine organisms fouling and boring into the hull, and another 30 associated with dry ballast (Carlton, 1999). The introduction of sea water ballast with the advent of metal-hulled ships led to a dramatic increase in the movement of organisms, and of the types of organisms that could be transported. With the current rates of increase in ocean transport the movement of species, a proportion of which may have potential as invasive alien species (IAS), the issue has become of great global importance (Bax *et al.* 2003).

Marine invasions are not just historical. At any given moment some 10,000 different species are being transported between bio-geographic regions in ballast tanks alone (Carlton 1999). And ballast water is just one of an ever expanding list of vectors that mirror the worldwide expansion in trade and tourism (Thresher 1999; 2000). Fortunately, most of these potential invaders die. Many species cannot survive the dark and often dirty conditions in ballast tanks over a long voyage; for others, the environmental conditions at the port of discharge are not suitable. Even when conditions are apparently suitable, most organisms fail to establish, and of those that do establish most fail to become invasive—although some may become invasive after decades (or centuries) of otherwise unremarkable existence (Crooks & Soulé, 1999). Nonetheless, as ballast water has become cleaner, ship's transit speeds have increased, and environmental management of ports has improved, marine organisms are likely to find commercial shipping and other vectors an increasingly hospitable means of transport worldwide.

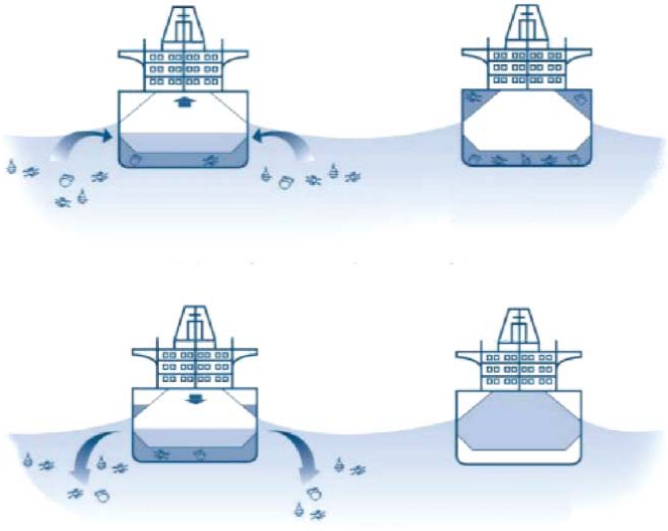

Figure 1: Cross section of a ship showing ballast water and the ballast water cycle. From GloBallast, IMO.

When a species is transported outside of its native range and introduced to areas where it does not normally occur, it may under suitable conditions become established and, in the absence of natural predators or parasites, drastically change the ecosystem, its functions and species composition (Molnar *et al.* 2008). Such species are called **invasive alien species** (IAS): non-native to the ecosystem under consideration and causing or likely to cause economic and/or environmental harm (Clinton, 1999; Tamelander *et al.,* 2010). IAS is widely recognised as one of the most significant threats to global biodiversity (Wilcove *et al.* 1998). In a recent report McGeoch *et. al.* (2010) state that invasive alien species alter ecosystem processes, decrease native species abundance and richness via competition, predation, hybridization and indirect effects, change community structure and alter genetic diversity. Island ecosystems are especially vulnerable due to their biological and physical features, and the fact that many are hosts to high levels of endemism. Human activities also contribute to the spread of IAS, such as through deliberate introductions as in aquaculture. Regardless, the main vectors for species transport and the majority of marine species introductions are shipping (Cohen & Carlton, 1998; Ruiz *et al.* 2000; Hewitt *et al*, 2004).

The CBD Global Biodiversity Outlook 2 (CBD 2006) discusses trends in invasive alien species (headline indicator: p. 34). Invasive species are a global problem requiring responses at all levels. Many countries have established systems to prevent and control IAS and, as part of risk assessments, to predict the likelihood of alien species becoming invasive and the potential ecological and economic cost they may incur (CBD 2006). Invasive species can have devastating impacts on native biota, causing extinctions and affecting natural and cultivated ecosystems. Since the 17th century invasive alien species have contributed to nearly 40% of all animal extinctions for which the cause is known. While a major source of marine introductions of alien species is hull fouling and the release of ballast water from ships, other vectors such as aquaculture and aquarium releases are also important and less well-regulated than ballast water. In the marine ecosystem, the movement of non-native species has been well studied. For example, of the 150 species that have arrived in the Great Lakes, 75% originated in the Baltic Sea. Similarly, migration flow from the Red Sea to the Mediterranean through the Suez Canal continues unabated with nearly 300 species of these Lessepsian migrants,

including decapod crustaceans, molluscs and fishes having entered the Mediterranean since 1891 (CBD 2006).

The increases in global maritime traffic and aquaculture and the consequent increases in IAS are now widely acknowledged as a critical trans-boundary problem in marine waters globally (UNEP, 2006). IAS has caused environmental impacts in almost half of the regions considered by the Global International Waters Assessment. In marine habitats there are a greater number of introduced species, but many remain undetected. The impact of IAS in the Black Sea (below) is a powerful example of what can happen when IAS run rampant.

The Black Sea: The collapse of the fisheries of the Black Sea during the last 40 years is a *classic case of IAS being introduced when the environment was already severely stressed.* Overfishing had depleted the top predators leading to "fishing down" the food web. Since the 1970s urban and industrial expansion, intensive fertiliser use and atmospheric deposition led to eutrophication, hypoxia and bottom up impacts on the food web. Additional stressors in the 1980s included chemical pollution, the alteration of the inflowing rivers and continued overfishing. In the late 1980a ballast water introduced the combed jellyfish (*Mnemiopsis leidyi*), which by 1989 had spread throughout the Black Sea, reaching densities of 15.2 kg/m^2. *Mnemiopsis* voraciously consumed anchovy eggs and larvae, while eutrophication and intensive fishing of anchovies and other small pelagic fish continued, resulting in the collapse of the pelagic fisheries of the Black Sea. The anchovy catch fell from 534,000 tonnes in 1986, to only 88,000 tonnes by 1991, with a loss of 150,000 jobs (UNEP 2006).

3.1.2 Regionally

> *"The transboundary nature of shipping and the inter-connectedness of the seas and oceans dictate that no one port or country can effectively control the spread of (IAS) via shipping. In order to be effective, countries must work cooperatively with both their neighbours and the broader global community to implement harmonized measures. The SRIMP-PAC Strategy provides a regional framework for cooperation between Pacific Island countries and territories and also with Pacific-Rim countries, including through APEC."* (Anderson *et al.,* 2003).

Information about terrestrial invasive species in the Pacific is well documented: however, this cannot be said for marine invasives, where most of the existing research has been carried out in Hawaii and the American territories and very little in the other SPREP member countries. The difficulties with investigating marine invasives include:

- The cost of carrying out surveys;
- A lack of taxonomic expertise for the identification and recognition of invasives;
- A lack of historical information on when or how invasives arrived; and
- A lack of information on the impact of invasives on the local ecosystems, and the consequent economic impacts.

The importance of coastal and marine environments to every aspect of the lives of Pacific Islanders cannot be overstated. Pacific Island Countries (PICs) maintain resource rights and management

responsibilities for over 30 million square kilometres of ocean, equivalent to the combined land areas of Canada, China and the United States of America. The total population of Pacific islanders is only 6.7 million people and only 2.6 million if the largely inland population of Papua New Guinea is excluded. There are 11 square kilometres of ocean for each and every Pacific Islander. Jurisdictionally, the sea is nearly 200 times more significant to the average Pacific Islander than it is to the average global citizen. At this level of importance, the impacts of marine pollution are a major concern for Pacific island countries and territories (PICTs). For many PICTs the ocean is their only significant natural resource and the good governance and sustainable management of their ocean resources is the key to their economic and social well-being.

Marine bio-invasions including via shipping vectors such as Ballast Water and Hull Fouling is considered one of the greatest threats to the world's oceans today. Global economic impacts are considered at billions of dollars every year. Some of these impacts include the disruption to fisheries, fouling of coastal industry, impact on tourism, and infrastructure and interference with human amenities. Invasions have already occurred in our region including the barnacle *Chthalamus proteus,* several macro-algae species, harmful planktonic algae species and the Black Striped Mussel *Mytolopsis sallei* from the Gulf of Mexico/Caribbean.

There have been a number of activities to assist the region in addressing the issue of invasive marine species. A region-wide study on the management of ship's waste in Pacific Island Ports (Nawadra & Polglaze, 2002) described the capabilities of ports in the region for dealing with waste from shipping and provided a wide-ranging series of recommendations for improvements. It was noted that only a handful of ports within the region (Apra, Guam; Papeete, French Polynesia and Noumea, New Caledonia) had at that time the capability to properly deal with the entire spectrum of ship-generated waste. In May 2015 the Marine Environment Protection Committee of the International Maritime Organization endorsed a Regional Reception Facilities Plan (RRFP) for the Small Island Developing States (SIDS) in the Pacific Region. This plan was submitted by SPREP and co-sponsored by Australia, New Zealand and a number of Pacific island countries. The RRFP will take effect from May 2016 and will allow SIDS to satisfy their waste reception facility obligations under MARPOL through regional arrangements by identifying ports that will serve as Regional Waste Reception Centres.

A regional strategy to address Shipping Related Invasive Marine Pests in the Pacific (SRIMP-Pac) was developed and endorsed in 2006. A number of tools have since been developed by the GloBallast Partnership UNDP/GEF Project being implemented by the Project Coordinating Unit (PCU) at IMO where SPREP is a Regional Coordinating Organisation (RCO). SPREP together with IMO GloBallast PCU have implemented many activities in the region including the model act development and regional training in various aspects of ballast water management.

The establishment of the Pacific Invasives Learning Network (PILN) through SPREP is coordinating a national, regional and international communications network and the establishment of national teams focussing on invasives: Marine invasives are within the general mandate of PILN.

A number of important initiatives focussed on invasives are also partners within the region, such as the Global Invasive Species Programme (GISP; www.gisp.org), and the Pacific Invasives Initiative (PII; pacificinvasivesinitiative.org).

The Regional Invasive Species Strategy (RISS) 2000 (see www.sprep.org) was the first regional strategy of its kind in the world, and provided a framework for efforts to increase country capacity to take the five steps in relation to invasive species. This strategy was a lead-in to the establishment of

PILN. With respect to marine invasives steps 1 and 2 may be possible, but the remainder are either extremely difficult and costly, or impossible to implement. There are very few examples where marine invasives have been eradicated, and only then at great cost.

The steps to address invasive species as identified in the RISS 2000 are:

1. Prevent invasives getting to each island;
2. Detect them quickly if they do;
3. Respond rapidly to the incursion;
4. Control the population; and
5. Eradicate the species from the island.

SPREP (Tye, 2009) published guidelines for invasive species management in the Pacific. While focussing mostly on the management of terrestrial IAS, the guidelines do provide a comprehensive framework for IAS management overall. There are nine thematic areas which apply equally to the management of all IAS. The Bio-security Management Action (C1: Bio-security) has direct value for any management strategy for marine IAS.

3.1.3 National (Cook Islands)

The Cook Islands is an island country in the South Pacific Ocean in free association with New Zealand. It comprises 15 islands whose total land area is 240 square kilometres (92.7 sq mi). The Cook Islands' Exclusive Economic Zone (EEZ), however, covers 1,800,000 square kilometres (690,000 sq mi) of ocean. The Cook Islands' defense and foreign affairs are the responsibility of New Zealand, which is exercised in consultation with the Cook Islands.

The Cook Islands' main population centres are on the island of Rarotonga (10,572 in 2011), where there is an international airport and the main Port of Avatiu. The newly redeveloped Avatiu harbour was opened in April 2013, and now provides a greater capacity to cater for larger vessels. The port handles about 90% of food imports and 100% of the country's fuel supply.

The smaller Port of Arutanga is located on the western side of the island of Aitutaki north of Rarotonga. The harbor is shallow, and incoming vessels are serviced by barges that ferry goods to port. A concept proposal for the Port of Aitutaki involving the enlargement and deepening of the Aitutaki main entrance channel to accommodate local inter Island ships and visiting yachts, and deepening the area in front of the existing fishing club for use as a marina, is to be undertaken as a long term project.

Tourism is the country's main industry, and the leading element of the economy, ahead of offshore banking, pearls, and marine and fruit exports.

The climate of the Cook Islands is sub-tropical and tropical oceanic moderated by trade winds. In August 2012, the Prime Minister of the Cook Islands declared what was then the world's largest marine park over the southern half of the country's exclusive economic zone – the Cook Islands Marine Park (Marae Moana). The declaration covers 1.065 million square kilometres –an area more than twice the size of Papua New Guinea. The Park is expected to be formally designated by the end of 2016 and will contribute to conserving the region's marine biodiversity, boosting local economic growth and preserving the health of the ocean globally.

Environment challenges currently being faced by the Cook Islands include the effects of climate variability and climate change on biodiversity, coral reef diseases, high sedimentation, and decline in important food species. Cook Islands marine ecosystems are vulnerable to invasive alien species.

Cook Islands is a signatory to the Ballast Water Convention, although the convention itself has yet to enter into force internationally (see below). The *Maritime Transport Act 2008* authorized the making of rules in which in this case the *Maritime (International Convention for the Control Management of Ships Ballast water and Sediments) Rules 2014 No.1* was made and will give effect to the Ballast Water Convention to be part of the Cook Islands Laws.

The *Prevention of Marine Pollution Act 1998* (Cook Islands) also provide for the prevention of marine pollution by vessel give effect to various international conventions on marine pollution and protection of the marine environment. Section 3 in particular prohibited the pollutants into Cook Islands waters, with "pollutants" defined as including any water.

Section 21 of the *Biosecurity Act 2008* of the Cook Islands also deals with ballast water as follows;

"21. Environmental obligations of masters and captains -
(2) The master of every incoming vessel shall take all reasonable steps to ensure that -

> *(a) no garbage containing any animal, plant, animal product or plant product; and*
>
> *(b) no bilge water or ballast water is discharged from the vessel into the sea while the vessel is in the Cook Islands."*

In addition, approval from the Cook Islands Department of Agriculture is required for any ship to discharge ballast in the Cook Islands. The Director of Quarantine within the Ministry of Agriculture has advised that do date there have been no such requests.

The Cook Islands National Sustainable Development Plan 2011-2015 lists "control of invasive species" as one of the strategies under *Priority Area 6: Ecological Sustainability*, and makes reference to "stepping up" efforts to actively control invasive species.

In July 2015, a National Invasive Species Strategy and Action Plan (NISSAP) was released by the National Environment Services (NES). This Plan was still in draft form at the time of developing this strategy, and was expected to be finalised by mid-2016. The plan seeks to bring together previously fragmented and under-resourced management efforts with an agreed plan of priority actions. This Plan notes that there has not yet been any work conducted on the control of any marine alien invasive species. With regards to marine invasives, the draft plan also notes that"

"There is very limited information on marine invasives. One example is the native crown-of–thorns starfish (Acanthaster plancii) that feeds on corals which undergoes periodic outbreaks. "

A number of action items in the draft NISSAP relate to marine invasives and these action items were taken into account by the February 2016 National Consultation Workshop. A number of the NISSAP action items were modified as a result of discussions at the workshop, while several were retained as originally proposed and are included as action items below.

The National Consultation Workshop also noted the GEF *"Ridge to Reef"* program may be a source of assistance for some of the action items in this Strategy. This program promotes an eco-system based approach for island nations in the Pacific, Africa and the Caribbean to target reversing degradation of coastal resources: finding ways to reduce transfers of chemicals, nutrients and sediments from agriculture, forestry in catchments and untreated wastewater to minimize the damage to their coastal ecosystems and coral reefs to coastal waters.

3.2 Ballast Water Management Convention

The International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention) was adopted at an International Maritime Organization (IMO) Diplomatic Conference in 2004. The Convention will enter into force 12 months after ratification by 30 States, representing 35 per cent of world merchant shipping tonnage. The BWM Convention aims to prevent the spread of harmful aquatic organisms from one region to another, by establishing standards and procedures for the management and control of ships' ballast water and sediments. Cook Islands has ratified the BWM Convention.

Under the Convention, all ships in international traffic are required to manage their ballast water and sediments to a certain standard, according to a ship-specific ballast water management plan. All ships will also have to carry a ballast water record book and an international ballast water management certificate. The ballast water management standards will be phased in over a period of time. As an intermediate solution, ships should exchange ballast water mid-ocean. However, eventually most ships will need to install an on-board ballast water treatment system.

A number of guidelines have been developed to facilitate the implementation of the Convention. The Convention will require all ships to implement a Ballast Water and Sediments Management Plan. All ships will have to carry a Ballast Water Record Book and will be required to carry out ballast water management procedures to a given standard. Existing ships will be required to do the same, but after a phase-in period of less than five years, depending on the scheduling of MARPOL surveys for the particular vessel.

Parties to the Convention are given the option to take additional measures which are subject to criteria set out in the Convention and to IMO guidelines. The Convention places obligations on Flag States, Port/Coastal States as well as ships. Flag state obligations include putting in place appropriate legislation and arrangements for the survey and inspections of registered vessels and issuing/inspecting the required documentation, as set out below. Port State obligations are primarily set out in the IMO Guidelines for Port State Control under the BWM Convention (Resolution MEPC.252(67) adopted in October 2014. These Guidelines include procedures for ship inspections, sampling, control actions and reporting requirements.

International Ballast Water Management Certificate

Ships of 400 gross tonnage and above are subject to the survey by the Administration or by an organization recognized by the Administration. After completion of a survey, an International Ballast Water Management Certificate has to be issued by the Administration or by an approved Classification Society.

Ballast Water Management Plan

Each ship is to have on board and implement a ballast water management plan that is approved by the Administration. Such a plan is to be developed taking into account BWM Convention requirements and relevant guidelines. The ballast water management plan should include:

- Ship's name, shipowner's name and address, flag, port of registry, gross tonnage, IMO number, length, beam, international call sign;
- The total ballast capacity of the ship in cubic metres;
- A brief description of the main ballast water management methods used on the ship; and`
- Ballast tank arrangement etc.

Additionally, the ballast water management plan is to include designation of the officer in charge of reviewing the plan and ensuring that the plan is properly implemented. The plan is to be written in the working language of a ships' personnel and kept on board the ship and available for inspection by port/flag State authorities. The plans developed for each ship in accordance with the requirements of Ballast Water Management Convention are to be regularly reviewed by shipowner, ship operator and ship master. Any amendments to the plan should be approved by the Administration.

Ballast Water Record Book

Each ship is to have on board ballast water record book written in the working language of a ships' personnel and kept on board the ship and available for inspection by port/flag State authorities. Each operation concerning ballast water is to be fully recorded in the ballast water record book and each entry signed by the officer in charge of the operation concerned. Officers duly authorized by the Administration may inspect ballast water record book on board any ship, and may make a copy of any entry.

Entries in the ballast record book are to be made on each following occasions:

- When ballast water is taken on board;
- Whenever ballast water is circulated or treated for ballast water management purposes;
- When ballast water is discharged into the sea;
- When ballast water is discharged to a reception facility; and
- Accidental or other exceptional uptake or discharge of ballast water.

3.3 Shipping Activity

Pacific leaders have stated that Pacific Countries are not Small Island Developing States but are in fact Large Ocean States. Our leaders have said – the Pacific Ocean is our lifeblood. The Pacific Ocean is vast, in fact comprising 98% water, 2% land.

As Large Ocean States, island members of SPREP such as the Cook Islands are overwhelmingly dependant on shipping for economic survival. Shipping in the region can be grouped into the following broad categories:

- Transit shipping: Ships which pass through the region without stopping, en-route to other destinations;
- International shipping (as distinct from transit shipping): Ships calling at the major ports of the region from outside the region, either with incoming cargo or tourists (cruise ships) or exports;
- Regional shipping: Ships trading (both cargo and passengers) between the countries and territories within the region;
- Domestic shipping: Ships trading (both cargo and passengers) within each country in the region;
- Foreign fishing fleet: Fishing vessels from distant water fishing nations operating within the region;
- Domestic fishing fleet: Fishing vessels from the Pacific islands themselves; and
- Miscellaneous: Special purpose vessels such as Navy ships and research ships and smaller vessels such as tourist vessels, yachts and private pleasure and fishing craft.

Shipping matters, including ballast water management, are the responsibility of the Cook Islands Ministry of Transport. Port State Control is currently conducted only on request from other IMO

member states. However, in the long term the Cook Islands is proposing to join the Tokyo MOU and undertake more regular port State control inspections.

Maritime Cook Islands is a Cook Islands owned and operated company, based in Rarotonga, that performs the Flag State responsibilities for the Ministry of Transport. Maritime Cook Islands has appointed IACS Class Societies and other Recognized Organizations as well as a network of Flag State Surveyors around the world. As at February 2016, there are 151 international vessels on the Cook Islands register.

The ports of Avatiu and Aitutaki are the main gateways to the Cook Islands. Shipping statistics for both ports are provided below.

The Cook Islands Ministry of Finance and Economic Management reports the value of exports and imports from 2010 to 2014 as set out in the following table:

Year	*NZ$ Value of Exports ('000)*	*NZ$ Value of Imports ('000)*
2010	*7163*	*125,778*
2011	*3855*	*138,383*
2012	*6552*	*137,927*
2013	*12,984*	*141,515*
2014	*21,276*	*133,670*

The major export is fresh or chilled fish, followed by pearls and live fish. Japan dominates the export market followed by Australia, New Zealand and Hawaii/United States. Imports arrive primarily from New Zealand, followed by Australia, Fiji, United States and Japan. As the main focus of port operations is clearly imports, the discharge of ballast water in the ports is rarely required and consequently the risk of IAS being introduced in this way is considered low. Nevertheless, the Port Authority reported that on at least one occasion during 2015, a foreign fishing vessel mothership did

enter the port and discharged ballast alongside while loading a cargo fish. Inspection by the Harbour Master confirmed that on this occasion the vessel had exchanged ballast at sea.

3.4 Existing Introductions

A 2000 Report to the Government of the Cook Islands on Invasive Plant Species of Environmental Concern listed 66 species as "invasive or potentially invasive in the Cook islands". The 2000 report also listed known problem species present at that time in American Samoa, Fiji, French Polynesia, Hawai'i, Samoa and Tonga but were not present in the Cook Islands. The report notes that these species would be of high risk of introduction from air and ship traffic between these points and the Cook Islands.

While no introductions of IAS via shipping have been confirmed in the Cook Islands, the National Consultation meeting noted that a cushion starfish found near the main Port of Avatiu could have arrived either by shipping or been carried by ocean currents.

3.5 Scope

This Strategy applies to all areas of Cook Islands.

4. Purpose of the Strategy

The purpose of this strategy is to minimise the risks of IAS by seeking to avoid adverse economic, environmental and public health impacts, whilst not unduly impeding trade; and taking a practical approach to ballast water management. This will be achieved by establishing a work plan and a system to monitor the implementation of a ballast water management strategy for Cook Islands and provide for future revision on the plan.

5. Strategic Priorities

The strategic priorities agreed during the National Consultation meeting for inclusion in this Ballast Water Management Strategy were:

Raising awareness: Action items in the draft NISSAP to develop and utilise awareness materials on the potential threat of invasive species were supported, noting that it was also timely given the likelihood that the Ballast Water Management Convention will enter into force internationally during 2017. It was also recognised that materials needed to be targeted to specific sectors, for example the diving and/or fishing industries could be utilised to report sightings of any new species in Cook Islands waters.

Building Capacity: An action item in the draft NISSAP to build the capacity of the Ministry of Marine Resources in marine invasive species was supported. It was recognised that capacity building was also required in the areas of ballast water sampling, inspecting ships for compliance with the Ballast Water Management Convention as well as more general enforcement of the Convention, and record keeping for officials based on the outer islands.

Baseline and Monitoring: An action item in the draft NISSAP to carry out surveys for marine invasives at Rarotonga and Aitutaki ports was supported. The National Consultation meeting also agreed that such surveys should be conducted in Penrhyn and Suwarrow and other locations as necessary.

Management Action: It was agreed that the existing Biodiversity Steering Committee should be invited to assume responsibility for oversighting this strategy, and to include the Ministry of Transport in its membership. It was also agreed that the Biodiversity Steering Committee be asked to give further consideration to the need to monitor the potential for distribution of invasive species around the outer islands by domestic shipping. The National Consultation meeting also highlighted concerns regarding transfer of species by hull fouling, noting in particular that cruising yachts visit the region in large numbers and may pose a significant risk of introductions. It was noted that while hull fouling was beyond the scope of the Ballast Water Management Strategy, it was considered appropriate to include an action item to encourage further work on the issue by the Committee that will oversight the Ballast Water Management Strategy. It was also noted that SRIMP-PAC does address hull fouling, and includes information on pre-border and at-border management hull fouling measures. The more-recently adopted IMO *Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species* (Biofouling Guidelines) (resolution MEPC.207(62)) were also highlighted.

Specific action items under each of these strategies are set out in section 8 below.

6. Leading Agency

GloBallast defines the responsibilities of the Leading Agency for the purposes of a National Ballast Water Management Strategy as follows:

- Integration of the National Strategy into pertinent national policies/strategies and ensuring that necessary legislation is in place;
- Devising and ensuring implementation of necessary scientific, operational and administrative arrangements for all ships visiting the country's ports;
- Ensuring that all key stakeholders are fully conversant with the National Strategy, appropriately trained and properly authorized to act on its behalf, where required;
- Monitoring and reviewing on an ongoing basis how effectively the National Strategy is being implemented and introducing changes, as necessary;
- Ensuring effective enforcement of national laws and regulations;
- Administration of relevant international instruments related to ballast water management;
- Incorporating into the National Strategy improved measures that become possible due to experience gained in operating the National Strategy and/or through developments in research or technology, or changed international requirements or 'best practice';
- Ensuring the ongoing liaison and cooperation of all key stakeholders; and
- Participating in international, regional and national matters relating to BWM.

In the Cook Islands, the Ministry of Transport (MoT) is *inter alia* responsible for regulating the maritime transport system under the mandate of the Maritime Transport Act 2008 and associated maritime Acts. The Maritime Division of the MoT, under the Director of Maritime, is directly responsible to the Secretary of Transport for regulation of the maritime section of the transport system and for marine pollution response. The MoT is therefore the "Lead Agency" for the purposes of administering the operational arrangements of the BWM Convention.

However, Ministry of Transport resources are limited and there are at least three other agencies in the Cook Islands with active roles in broader invasive species management:

- The Ministry of Agriculture (MOA) has responsibility for the pest surveillance and monitoring programme throughout the Cook Islands as well as implementation of bio-security legislation;
- The National Environment Service (NES) is the central government agency charged with protecting, managing and conserving the environment of the Cook Islands. NES also has responsibility for the Cook Island's National Invasive Species Strategy and Action Plan (NISSAP) (currently under development); and
- The Ministry of Marine Resources (MMR) has responsibility for offshore and inshore fisheries and agriculture, as well as pearl industry support and environmental management.

7. National "Task Force"

The GloBallast Guidelines provide for the establishment of a "Task Force" to oversee and review implementation of the strategy. GloBallast defines the responsibilities of the "Task Force" as being to work together after the development of the National Strategy to provide guidance, oversight, and advice on matters relating to harmful aquatic organisms and pathogens, while the Lead Agency is primarily responsible for administering the operational arrangements.

In the Cook Islands, the draft Cook Islands *National Invasive Species Strategy and Action Plan 2015-2020* notes the previous appointment of a Biodiversity Steering Committee (BSC) for the previous National Biodiversity Strategy and Action Plan in 2002. The BSC consists of representatives of the following agencies:

- National Environment Service;
- Ministry of Agriculture;
- Ministry of Marine Resources;
- Ministry of Finance and Economic Management;
- Ministry of Culture;
- Natural Heritage Trust;
- House Of Ariki and Koutu Nui; and
- Te Ipukarea Society.

The BSC provides a forum for discussion of issues affecting the environment and biodiversity, giving overall policy guidance, support and advice on biodiversity-related issues and meets when required.

The draft Cook Islands *National Invasive Species Strategy and Action Plan 2015-2020* proposes that this existing BSC be organised to also take on the role of co-ordinating the new Action Plan, and that its composition also be reviewed to identify any missing key stakeholders.

The National Consultation Workshop agreed that the BSC should also be invited to review its composition to consider including the Ministry of Transport and to amend its terms of reference to assume responsibility for the oversight of this Strategy. A suggested addition to the terms of reference for the BSC was *"To oversee and review implementation of the Cook Islands National Ballast Water Management Strategy, with Ministry of Transport responsible for operational matters related to the Ballast Water Management Convention."*

8. Action Plan and Implementation Timetable

Strategy/Theme	Action item	Responsible Agency/Agencies	Funding source/s?	Timing
Raising awareness	Develop and utilise awareness materials on the potential threat of marine invasive species to the Cook Islands to coincide with the BWM Convention coming into force.* Materials to be targeted to specific sectors, for example diving and/or fishing industries to report sightings of new species.	MMR, NES, MOA, Marea Moana, Te Tpukarea Society (NGO)	GEF (GEF5-Ridge to Reef), National budget, IMO, port fees, SPC, SPREP, marine private sector companies (shipping companies, dive companies)	2016/2017**
	Raise awareness of Island Governments of the threat posed by invasive species including marine invasives (organise a presentation during the Mayors meeting in 2017 and distribute awareness materials as appropriate)*	NES, MOT, Office of the Prime Minister		2017
	Investigate possibility of developing self-learning tools on invasive species (targeting adults and students)*	NES, MMR, SPREP/SPC (regionally targeted)	GEF6 IAS	2017/18
Building capacity	Ensure that a staff member at Marine Resources has an awareness of, and is involved in, marine invasive species issues as a key part of their role.*	MMR		2016
	Ensure appropriate sampling equipment is provided to Cook Islands Port State Control officers. Ensure that a ballast water sample testing capability is developed, taking into account IMO Guidelines for ballast water sampling.	MOT PSC, CIPA, (Equipment) (MMR - Testing)	National budget (MoF), IMO (ITCP)	2017 (prior to BWMC coming into force)
	Cook Island officials to attend training course in Port Biological Baseline Survey	MMR, NES MOT (support	GEF6 IAS, IMO ITCP	2017/18

		funding)		
	Strengthen surveillance and compliance with ballast water regulations, including delegation of enforcement powers to relevant officials, and carry out capacity building for staff involved.*	MOT, CIPA, Maritime Police?	IMO ITCP, SPC, SPREP	2017 (before BWMC in force)
	Ensure that any training on biodiversity, species identification and record keeping/database undertaken for staff on Pa Enua include information on marine species.*	BIO, MOA, SPC, SPREP, FAO, OPM, MMR, NES, NHT	SPC, SPREP	2017 onwards
Baseline and monitoring	Carry out surveys for marine invasives at Rarotonga, Aitutaki and Penrhyn ports, Suwarrow and other locations as necessary.*	MMR, NES, SPREP, SPC	National budget, GEF (Ridge to Reef for Rarotonga and Aitutaki), marine park, CC/IAS proposal	As soon as possible
Management action	The Biodiversity Steering Committee be invited to: • review its composition to consider including the Ministry of Transport and to identify any other key stakeholders in marine invasive species management that could contribute to the Committee's work;* • amend its terms of reference to assume responsibility for oversight of the Cook Islands National Ballast Water Management Strategy, with the Ministry of Transport to take the lead in discussions under a new standing agenda item; • consider the need to monitor the potential for distribution of invasive species around Pa Enua by Cook Islands domestic shipping as well as ships from international ports traveling directly to Pa Enua; • consider undertaking additional work to identify and address issues associated with transfer of marine invasives through hull bio-fouling (biofouling).	NES, Steering Committee members Marae Moana?		2016/17
	Discuss with SPREP the creation of a Cook Islands Pacific Invasives Learning Network *	SPREP, NES, MOA, BIO, MMR, NGOs, NHT	Noumea Convention, SPREP	2017

	Any early detection and rapid response plan developed and/or simulation exercises carried out in accordance with the National Invasive Species Strategy and Action Plan (NISSAP) take into account marine invasives.*	NES, BIO, MOA, MMR, MOT, SPC, SPREP	GEF-PAS IAS project	Plan and exercise completed in 2016

* Based on an Action Item from draft National Invasive Species Strategy and Action Plan 2015-2020.

**Timing will be dependent on international entry into force of the BWM Convention.

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