

PACIFIC ISLANDS REGIONAL MARINE SPECIES PROGRAMME

2013–2017



SPREP
Secretariat of the Pacific Regional
Environment Programme

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The Pacific environment, sustaining our livelihoods and natural heritage in harmony with our cultures.



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ABBREVIATIONS & ACRONYMS

ABS	access and benefit sharing
CBD	Convention on Biological Diversity
CITES	Convention on International Trade of Endangered Species of Wild Fauna and Flora
CMS	Convention on the Conservation of Migratory Species of Wild Animals
CMT	customary marine tenure
CROP	Council of Regional Organizations in the Pacific
CTI	Coral Triangle Initiative
DAP	Dugong Action Plan
DWFN	distant-water fishing nation
EIA	environmental impact assessment
EEZ	exclusive economic zone
FAO	Food and Agriculture Organization of the United Nations
FFA	Pacific Islands Forum Fisheries Agency
FFEM	Fonds Français pour l'Environnement Mondiale (French Global Environment Facility)
IAC	Inter-American Convention for the Protection and Conservation of Sea Turtles
IFAW	International Fund for Animal Welfare
IFREMER	Institut Français de Recherche pour l'Exploitation de la Mer (French Research Institute for Exploitation of the Sea)
IGO	inter-governmental organisation
IOSEA	Indian Ocean–South-East Asian Marine Turtle Memorandum of Understanding
IPR	intellectual property rights
IUCN	The World Conservation Union (International Union for the Conservation of Nature)
IUU	illegal, unreported and unregulated fishing
IWC	International Whaling Commission
MMA	marine managed area
MOU	memorandum of understanding
MPA	marine protected area
MTAP	Marine Turtle Action Plan
NBSAP	National Biodiversity Strategic Action Plan
NCSA	National Capacity Self Assessment
NGO	non-governmental organisation
NMFS	United States National Marine Fisheries Service
NPoA	National Plan of Action
NSDS	National Sustainable Development Strategies
PI	Pacific Islands
PICTs	Pacific Island countries and territories
PIRGWDW	Pacific Islands Regional Guidelines for Whale and Dolphin Watching
PIR	Pacific Islands region
RFMOs	regional fisheries management organisations
RMTCP	Regional Marine Turtle Conservation Programme
SPC	Secretariat of the Pacific Community
SPREP	Secretariat of the Pacific Regional Environment Programme
SPTO	South Pacific Tourism Organisation
SPWRC	South Pacific Whale Research Consortium
TK	traditional knowledge
TREDS	Turtle Research and Monitoring Database System
TRM	traditional resource management
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change
USP	University of the South Pacific
WCPFC	Western and Central Pacific Fisheries Commission
WDAP	Whale and Dolphin Action Plan
WDCS	Whale and Dolphin Conservation Society
WPRFMC	Western Pacific Regional Fishery Management Council
YOST	Year of the Sea Turtle

Foreword



As the regional organisation charged with the protection and sustainable development of the Pacific islands environment, SPREP promotes collaboration and provides assistance to ensure that the use, management and conservation of natural resources and species is sustainable. The conservation and management of threatened and migratory species, particularly dugongs, whales, dolphins and marine turtles, has long been a key feature of SPREP's work on biodiversity conservation. Since 2003 SPREP and its partners underlined, developed, reviewed and implemented three consolidated regional Marine Species Action Plans – an initiative designed, endorsed and implemented by the SPREP member countries and territories. In 2009, the regional Plan of Action for Sharks was developed and launched jointly by SPC, FFA and SPREP.

The commitment by SPREP and its partners reflects not only the regional and global conservation significance of our iconic marine species but also their integral role in many of our region's cultures and traditions. This important link would be lost if these species disappear, and a number of species are already under threat. In addition, these large marine species play a significant ecological role in the functioning of coastal and oceanic habitats and systems. They also have growing economic importance through the Pacific's capacity to offer outstanding ecotourism experiences through activities like whale watching, where the economic returns are substantial.

The 2013–2017 Marine Species Action Plans are built on the momentum generated by the successful implementation of previous plans. Many advances and achievements have been made in the areas of policy, legislation, research and awareness to secure significant protection for marine species, including through establishment of marine protected areas, national Exclusive Economic Zone-wide sanctuaries, moratoria and regional agreements concluded under international Conventions. It is particularly encouraging to note the increased engagement of local communities in the implementation of these regional plans as they are a critical stakeholder in efforts to conserve and manage these species.

The 2013–2017 Marine Species Action Plans reflect new directions based on lessons learnt and achievements under recent action plans. The thematic areas are strengthened and specific priority actions accommodate major global events and are in line with existing strategies, as well as addressing issues highlighted in relevant international conventions.

I commend all those across the Pacific islands region, as well as external partners who continue to work tirelessly for these threatened and migratory species, and call upon your passion and perseverance to ensure their continued existence in and across our oceans.

A handwritten signature in black ink that reads "D Sheppard". The signature is written in a cursive, flowing style.

David Sheppard

DIRECTOR GENERAL
SPREP



Pacific Islands Regional Marine Species Programme 2013–2017

OVERALL VISION

The Marine Species Programme of the Secretariat of the Pacific Regional Environment Programme (SPREP) outlines a regional strategy for the cooperative conservation and management of dugongs, marine turtles, whales and dolphins. Other marine species of conservation concern will be added as the need arise. The strategy, which will be implemented through Action Plans during 2013–2017, will enable Pacific Islanders to take a primary role in achieving the following vision:

A healthy Pacific Ocean with sustainable populations of whales, dolphins, marine turtles, dugongs and other species, and meets the aspirations of Pacific Island peoples and protects their natural and cultural heritage.

INTRODUCTION

The Pacific Islands region that is served by SPREP covers 32 million km² and is in the middle of the largest continuous marine habitat on the planet, the Pacific Ocean. This region is home to a diverse range of large marine animals, including cetaceans (whales and dolphins), sirenians (dugongs), and marine turtles etc. Over half of the world's known species of cetaceans are found in the region. The area also supports the world's largest remaining populations of dugongs, and green, hawksbill and loggerhead turtles.

Dugongs, turtles, whales, dolphins and other large marine species play a significant ecological role in the functioning of coastal and oceanic habitats and systems. They are widely regarded as flagship species for Pacific marine ecosystems and often feature prominently in promotional tourist materials for many Pacific Island countries and territories (PICTs). Therefore, the continuing health of populations of these marine animals is essential to maintaining a healthy Pacific Ocean.

These marine creatures are also recognised as being a fundamental element of Pacific Islanders' culture and heritage. Many Pacific Island cultures have legends and traditional uses of marine mammals, turtles and other large marine species, which indicates the importance of these creatures to people's identities, way of life and heritage.

All species are vulnerable to over-harvesting, however these long-lived species with low reproductive potential are particularly vulnerable to over-harvesting and environmental change. Dugongs and turtles have been hunted extensively in the region, both for traditional and subsistence purposes, and more recently for commercial gain. They are now considered endangered throughout their range and many small and/or isolated populations are vulnerable to extinction. Dolphins have also been sought after for food, often through local drive hunts. These species remain a highly valued food item (meat and oil) and medicine (oil), and their shells (turtles), skin and bones (dugongs and cetaceans) are often used for jewelry and ornaments. Dugong bone and the teeth of small cetaceans have been important in certain ceremonies (e.g. marriages and funerals) in New Caledonia, Papua New Guinea (Manus Province), and the Solomon Islands (Malaita). In Fiji, *tabua* (sperm whale teeth) are a highly valued commodity in cultural ceremonies and exchanges.

While subsistence hunting of dugongs and turtles may have been sustainable in the past, the combination of increasing human populations and the introduction of new harvesting technologies (e.g. outboard motors and gill nets) has severely impacted several species, resulting in fragmentation of populations and even local extinctions.

For many species of large whales, commercial whaling during the nineteenth and twentieth centuries, largely by countries from outside the region, has reduced the breeding populations of South Pacific whales to extremely low levels, possibly to local extinction for some species. For all marine species, there is a growing awareness of their non-consumptive values and benefits to local communities (e.g. boat or shorebased tourism activities, such as whale watching).

Most of these species have distribution and migratory pathways that extend across and beyond international boundaries further contributing to their vulnerability. Thus, Pacific Island countries and territories have a shared responsibility to ensure the recovery and maintenance of viable populations of these species and their habitats, including under the provisions of various international agreements such as the Convention on Biological Diversity (CBD), Convention on the Conservation of Migratory Species of Wild Animals (CMS), and the Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES).

In recent years, there has been a growing awareness of the increasingly threatened status of many of these iconic species and of the need for a concerted and coordinated approach among Pacific Island nations to arrest and reverse declining population trends.



CONSERVATION CHALLENGES

In addition to the above-mentioned threats to these species, the overarching problems and challenges surrounding conservation efforts in the Pacific Islands region (PIR) include:

- Lack of data and information, including basic population parameters and longterm data sets;
- Absence and lack of ongoing and long-term research, survey and monitoring programmes;
- Limited public awareness and education programmes;
- Limited in-country skills / capacity to provide leadership in marine species conservation management;
- Limited national management mechanisms to protect marine animals and their habitats;
- Lack of resources, including accessing sustained funding;
- Limited information exchange, linkages and collaboration at the national and regional levels; and
- Lack of enforcement capacity.

STRATEGIC APPROACH

Pacific Island peoples are stewards of their marine environment and depend on these resources for their way of life. The 2013–2017 Marine Species Programme supports them by:

- Increasing knowledge, awareness and understanding of these species and their habitats, and their ecological and cultural values;
- Building capacity and securing human and financial resources to enable implementation of the action plans;
- Identifying and mitigating threats;
- Improving the condition of marine species and their habitats through improved management;
- Promoting appropriate customary management practices and traditional stewardship;
- Ensuring that marine species populations recover and continue to fulfill their ecological roles;
- Fostering the sustainable use of marine species, including non-consumptive uses (e.g. tourism);
- Enhancing cooperation and coordinated action at national, regional and international levels; and
- Fostering opportunities for multi-species approaches.

ROLES AND RESPONSIBILITIES

These Action Plans and their implementation are the collective responsibility of SPREP member states, the SPREP Secretariat, partner non-governmental and intergovernmental organisations and private sector organisations.

COMMITMENT, FUNDING AND HUMAN RESOURCES

The SPREP Secretariat will continue to play an important role in facilitating the exchange of information, coordinating efforts, building capacity, securing resources, and regularly monitoring and reporting on Action Plans implementation.

It is recognised that, beyond existing in-country capacity, significant additional resources will be needed to achieve the aims and objectives of these Action Plans. We in the Pacific Islands region call upon all donor partners and supporters to assist in providing the necessary resources for implementing the Action Plans at regional and national levels.

OBJECTIVE: To ensure ongoing and efficient facilitation and implementation, management and coordination of the regional Marine Species Action Plans	
Actions	Lead
1: Incorporate marine species actions for implementation as part of other national projects and / or programmes (such as national biodiversity strategies and action plans, including projects under funding opportunities such as GEF).	Members
2: Identify and seek opportunities to secure funding through universities, NGOs, Institutions and Initiatives.	All
3: Develop and prepare funding proposals that specifically address marine species issues, particularly priority actions identified in these action plans.	All
4: Continue the regular provision of information related to upcoming funding opportunities.	SPREP
5: Identify through appropriate mechanisms (e.g. CMS Dugong MoU) technical advisors and secure opportunities for their support of the Marine Species Action Plans.	SPREP
6: Actively support marine species biodiversity conservation by committing appropriate resources including staffing, funds etc.	Members
7: Seek members' commitment via fora such as the annual SPREP Meeting for marine species and biodiversity conservation.	SPREP
INDICATORS:	
<ul style="list-style-type: none"> ▪ Actions incorporated and carried out through national projects / programmes. ▪ Funding proposals submitted and work carried out. ▪ Partnership developed for all Pacific Island range state. ▪ Technical advisers available. 	

NETWORKING, REPORTING AND INFORMATION MANAGEMENT

The SPREP Secretariat will take the primary responsibility for networking, information management, archiving and regional reporting. SPREP will continue to rely on reporting and information from members and partners to achieve this.

IMPLEMENTATION AND COORDINATION

OBJECTIVE: Ensure successful Marine Species Programme implementation through effective and sustained management, coordination and communication	
Actions	Lead
<p>1. Provide sustained regional and national facilitation and coordination by:</p> <ul style="list-style-type: none"> ▪ Ensuring continuation of the Marine Species Programme within SPREP and current associated positions; ▪ Nominating appropriate national officers for implementation and reporting of the Marine Species Programme Action Plans at the national level. 	<p>SPREP Members/ Partners</p>
<p>2. Continue to build and strengthen dugong, marine turtle, whale and dolphin and shark networks, consisting of SPREP members and partners including intergovernmental organisations (IGOs), non-governmental organisations (NGOs), donors, technical experts and other interested parties by:</p> <ul style="list-style-type: none"> ▪ Maintaining list servers; ▪ Maintaining a contacts database; ▪ Disseminating relevant information related to the Action Plans to the network list of contacts on a regular basis; ▪ Ensuring SPREP has updated information; ▪ Encouraging in-country networks; ▪ Facilitating access to information and resources including scientific and technical reports. 	<p>SPREP SPREP SPREP Members Members SPREP/ Partners</p>
<p>3. Develop and implement a Communication Strategy that ensures effective outreach and support at the national, regional and international levels by:</p> <ul style="list-style-type: none"> ▪ Developing a communication outreach package in consultation with SPREP members and partners; ▪ Providing training for national coordinators to effectively use and communicate information, including support for language translation; ▪ Ensuring target audiences include politicians, local communities, donor agencies, IGOs, NGOs, technical experts; ▪ Promoting understanding and supporting input from communities and decision-makers. 	<p>SPREP SPREP Members Members</p>
<p>4. Develop and implement monitoring, evaluation and reporting mechanisms by:</p> <ul style="list-style-type: none"> ▪ Developing a streamlined and simple reporting format for SPREP members and partners, drawing from lessons learned from other reporting requirements. Further developing this as an online reporting mechanism; ▪ Incorporating information from Action Plans reports into other national reporting mechanisms, where possible and appropriate (e.g. CBD, CMS, UNFCCC, CITES, UNCCD); ▪ Preparing an annual report on Action Plans implementation for SPREP meetings, with a focus on in-country progress, including successes and constraints, and also implementation of arrangements under CMS; strengthen the need for producing annual progress reports (as opposed to end of plan report); ▪ Undertaking mid-term and final review of Action Plans implementation, including lessons learned, and providing status report to SPREP members and partners. 	<p>SPREP Members SPREP/ Members/ Partners SPREP/ Partners</p>
<p>5. Develop and maintain an information management system that includes databases, covering lessons learned, achievements and investments, that is accessible and promotes information sharing by:</p> <ul style="list-style-type: none"> ▪ Maximizing online access to Action Plans information and databases; ▪ Securing archiving of reports and information through the SPREP Library and Information Centre; ▪ Ensuring the information management system is readily available and easily accessible; ▪ Ensuring that any restrictions on source information should be respected. 	<p>SPREP SPREP SPREP SPREP</p>

OBJECTIVE: Ensure successful Marine Species Programme implementation through effective and sustained management, coordination and communication

Actions	Lead
6. Promote the integration of Marine Species Programme and Action Plans priorities into national strategies, plans and projects as appropriate and relevant to national needs.	Members
7. Promote the integration of Marine Species Programme and Action Plans priorities into regional and international strategies, plans and projects as appropriate and relevant to regional and international needs.	Members/ SPREP/ Partners
8. Facilitate an informal and open-ended technical working group, comprising scientists, policy-makers and managers, to provide technical advice on Action Plans implementation as required. As part of this technical working group, promote linkages with the relevant groups of the IUCN Species Survival Commission.	SPREP
9. Continue to foster collaboration with the CMS and CITES Secretariats as well as other relevant species conventions and MEAs.	SPREP/ Members
<p>10. Further national, regional and international collaboration and cooperation by:</p> <ul style="list-style-type: none"> ▪ Initiating dialogue and collaboration with the fisheries, tourism and transport sectors at the regional and national levels in relation to information, awareness raising and management actions to address impacts; ▪ Fostering interagency collaboration at the national level and engagement with the private sector; and ▪ Fostering NGO partnerships at the national, regional and international levels. 	Members/ SPREP/ Partners Members Partners/ Members
11. Identify and develop appropriate responses for the conservation needs of other marine species for SPREP members' consideration.	SPREP





Dugong Action Plan

2013–2017

GOAL: To maintain and improve the status of dugong populations and their habitats, in keeping with the traditions of the people of the Pacific Islands range states

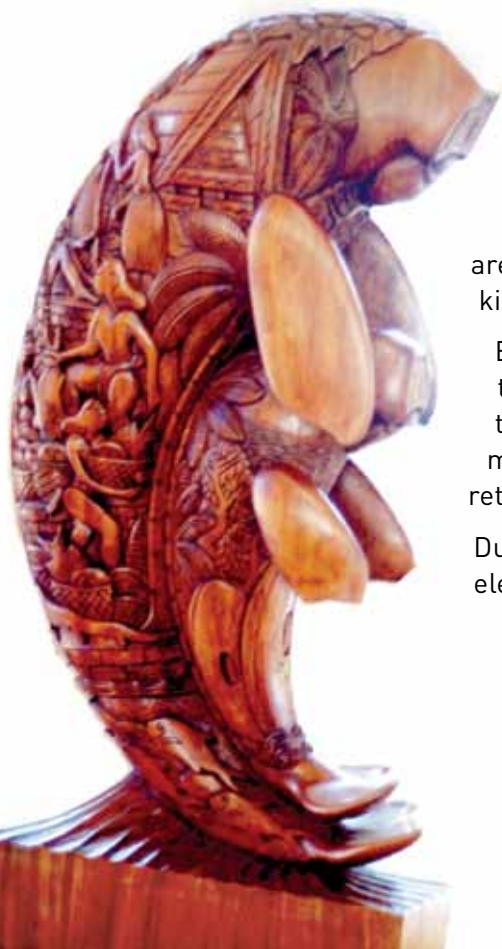
INTRODUCTION

The dugong (*Dugong dugon*) is the only surviving species of the family Dugongidae and the only strictly herbivorous marine mammal. Its closest relative, Stellar's sea-cow, was hunted to extinction within 27 years of its discovery in the eighteenth century. Dugongs are long-lived and slow breeding (low reproductive rate, long generation time and high investment in each offspring). They have a lifespan in the wild of about 70 years (oldest recorded is a 73-year old female). They first breed at the age of 7–17 years, with a gestation period in the region of 13–15 months, and their young suckle for 14–18 months. Female dugongs bear one calf every 2.5 to 7 years depending on food supply. Adult survival is the most critical life history parameter for dugongs, and populations can only be sustained through low levels of human-induced mortality.

Dugongs spend most of their time feeding on seagrass beds in shallow waters less than 10 metres deep. Because they are dependent on seagrass, dugongs play an important ecological role in the structure of seagrass ecosystems. If a particular seagrass habitat is lost, dugongs may postpone their breeding and move to another area. They maximize the intake of nutrients by selecting, for food, seagrass species that are highly digestible and have high nutrients. They can supplement their diet with invertebrates (polychaete worms, sea squirts and shellfish). Dugongs are capable of undertaking long-distance movements of up to several hundred kilometres in two to three days.

Because of their life history characteristics, dugong populations are slow to recover when they are lost from a particular area. Furthermore, without the influence of dugong grazing activities, seagrass communities in an area may change to less favourable species for dugongs, thus discouraging their return.

Dugongs are a highly significant subsistence food source, and are an important element of many Pacific Island cultural traditions.



SPECIES DISTRIBUTION

Dugongs occur in 38–45 countries and territories, tropical and subtropical coastal and island waters from east Africa in the Indian Ocean to Vanuatu in the Pacific Ocean, between about 26° and 27° north and south of the equator. While they still exist at the extreme ends of their range, they have become extinct in several places.

It is generally believed that throughout much of its range, the dugong is represented by relict populations separated by large areas where its numbers have been greatly reduced or already extirpated. The only remaining large populations of dugongs are those in northern Australia, southwestern Papua New Guinea, and the Arabian Gulf.

Dugongs occur in six countries and territories in the Pacific that are members of SPREP: Australia, New Caledonia, Palau, Papua New Guinea, Solomon Islands and Vanuatu. Palau's dugong population is considered to be the most isolated in the world and unlikely to be supplemented by recruitment from any other area. According to one report, "The Vanuatu Archipelago is the eastern limit of the dugong's range. Seagrass beds become less frequent and less diverse progressing eastwards across the Pacific, placing a natural barrier to the eastward extension of the dugong's range." Because they are highly mobile, dugongs are capable of moving across the exclusive economic zones of different countries.

SPECIES STATUS

The dugong is one of a suite of large, long-lived marine vertebrates, including turtles and inshore cetaceans, which are under pressure from human activities (Preen, 1998). The 2008 IUCN Red List classifies dugong as vulnerable to extinction on a global scale, and it is therefore considered to be facing a high risk of extinction in the wild. All dugong populations are also listed on Appendix 1 of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which prohibits commercial international trade of the species. Dugongs are additionally listed on Appendix II of the Convention on the Conservation of Migratory Species of Wild Animals (CMS), which means they are considered to have an unfavourable conservation status and require international agreements for their conservation and management.

In the Pacific Islands region the status of dugong populations is generally unknown (with the exception of the Torres Strait) but of concern, particularly in Palau where the population is likely to be facing extinction. Analyzing by region using IUCN parameters, Marsh (2010) estimated that the dugong population in Palau can be classified as critically endangered while dugong populations in other Pacific Islands are in the data deficient category.

TRADITIONAL KNOWLEDGE AND CUSTOMS

The dugong plays a significant role in the culture of Pacific Island communities. In some societies, the dugong is considered to be an important totem (because of its large size and strength), and features prominently in stories and legends. The activities associated with hunting dugongs and the preparation of the meat also have great significance and are an expression of long cultural traditions.

Specific parts of the dugong are used in customary events (e.g. weddings, funerals and traditional feasts) as well as for making traditional items, including drums, spoons, scrapers, hooks, laces and necklaces. Although dugong meat is a traditional and sometimes highly prized meat in some societies, some cultures place traditional taboos against killing them.

INCOME GENERATING OPPORTUNITIES THROUGH ECO-TOURISM

Similar to other eco-tourism activities that are based on marine animals (e.g. whales and dolphin watching), several countries have dugong watching (e.g. Australia, the Philippines and Vanuatu) and “swim with dugongs” (e.g. the Philippines and Vanuatu) operations.

THREATS

Threats to dugong have been broadly categorised into two areas: those that cause direct mortality to dugongs, and those that result in loss or degradation to their habitats.

Threats that cause direct dugong mortality include:

- **Harvesting for food, medicine and artefacts:** Dugongs make an easy target for coastal hunters and they have been long sought after for their meat, oil, skin, bones and teeth. Specific parts of the dugong are used in customary events (e.g. weddings, funerals and traditional feasts) as well as for making traditional items, including drums, hooks and necklaces. Given the low numbers or unknown status of dugong populations in some areas, this is perhaps the greatest threat in the Pacific Islands region. For most countries, it is unknown whether the level of harvest is sustainable, and there is concern over the use of modern equipment for hunting them.
- **Incidental by-catch, destructive fishing methods and vessel strikes:** The incidental drowning of dugongs caught in fisheries gear, such as nets, is considered to have contributed to the decline of dugongs in some areas of the Pacific range states. The increase in vessel traffic also increases the likelihood of dugongs being killed by vessel strikes.

Because of their dependence on seagrasses, dugongs are very vulnerable to habitat loss and disturbance. Threats to their habitat include:

- **Coastal development including human settlement:** These activities increase sedimentation and turbidity in coastal waters where seagrasses are found. Sedimentation and turbidity not only smother seagrasses, but also reduce the amount of light reaching them, resulting in the degradation of seagrasses and a reduction in their density and productivity.
- **Nutrient runoff from land:** This causes nutrient enrichment, which leads to increases in epiphytic growth in the water column, which in turn results in reduced light levels for seagrasses. Nutrient enrichment may also change the community structure of seagrass habitats, e.g. increased seaweeds and fewer seagrasses.
- **Agricultural pollution:** Herbicide runoff from agricultural activities also presents a potential risk to seagrass habitats.



THEMES AND OBJECTIVES

THEMES	OBJECTIVES
1. Information, Awareness/Education and Communication	<ul style="list-style-type: none"> ▪ Raise awareness and share information about the importance of dugongs and their habitats.
2. Capacity Building	<ul style="list-style-type: none"> ▪ Build in-country capacity to strengthen dugong management.
3. Threat Reduction	<ul style="list-style-type: none"> ▪ Reduce direct and indirect causes of dugong injury and mortality.
4. Management and Protection	<ul style="list-style-type: none"> ▪ Improve the management and protection of dugong habitats. ▪ Improve the management and protection of dugongs. ▪ Ensure sufficient supporting mechanisms are in place to support national efforts and initiatives. ▪ Improve compliance and enforcement.
5. Traditional Knowledge, Customary Marine Tenure and Traditional Resource Management	<ul style="list-style-type: none"> ▪ Recognize the value of traditional knowledge, traditional resource management and customary marine tenure.
6. Research and Monitoring	<ul style="list-style-type: none"> ▪ Improve our understanding of dugong populations and habitats through research and monitoring.
7. Sustainable Practices/ Interactions with Dugongs	<ul style="list-style-type: none"> ▪ Encourage sustainable practices related to dugong interactions.
8. National, Regional and International Collaboration	<ul style="list-style-type: none"> ▪ Enhance national, regional and international collaboration.



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THEMES, OBJECTIVES AND ACTIONS

THEME 1: INFORMATION, AWARENESS/EDUCATION AND COMMUNICATION

OBJECTIVE 1: Raise awareness and share information about the importance of dugongs and their habitats

Actions	Lead	Priority
1.1: Develop information and awareness material on dugongs and their habitats.	All	High
1.2: Provide assistance to the Pacific Islands range states to enable them to deliver effective and appropriate educational and awareness programmes to the public.	SPREP/ CMS/ Partners	High
1.3: Increase community awareness of ecological and biological information on dugongs, the threats they face and the need for their conservation including their habitats.	Members/ Partners	High
1.4: Ensure opportunities are provided for community knowledge holders to share traditional knowledge (in relation to any awareness programmes conducted in communities).	Members/ Partners	Medium
1.5: Encourage and support the incorporation of dugong ecological and biological information and conservation issues into school curricula.	Members	High
1.6: Facilitate and encourage networking and linkages to relevant community monitoring groups, such as Seagrass Watch (http://www.seagrasswatch.org), and other NGOs, in information exchange.	SPREP/ Partners	Medium
1.7: Maintain and update the dugong webpage on SPREP's website as well as the "Facebook" developed for the PYoD, and include links to other relevant sites for educational materials on dugongs.	SPREP	Medium
1.8: Ensure the inclusion of dugongs in the planning, development and implementation of national, regional and international conservation campaigns.	All	High
1.9: Work with watercraft users to raise awareness about the importance of dugongs and their habitats and associated guidelines developed to encourage responsible boating behavior (e.g. slower speeds, not anchoring in seagrass areas). (Link to Actions 3.7 and 4.7)	Members/ Partners	High
1.10: Work with key industry stakeholders to raise awareness about the importance of dugongs and their habitats in order to encourage responsible boating behavior (e.g. slower speeds, not anchoring in sea grass areas).	Members/ Partners	High
1.11: Provide feedback to local communities on dugong management, particularly if local people are involved in surveys, monitoring and/or enforcement.	Members/ Partners	High
1.12: Continue to operate the Pacific Islands (PI) Dugong listserv, providing information and opportunities to share experiences.	SPREP	High

INDICATORS:

- Appropriate educational/awareness programmes delivered to Pacific Island dugong range states.
- Information sheets on threats produced, translated where necessary, and distributed to communities and all relevant stakeholders.
- Dugong conservation issues and information included in school programmes in Pacific range states.
- Dugong webpage continues to be active and maintained on SPREP website.
- Awareness raised about watercraft guidelines (developed and implemented under Actions 3.6 and 3.7).
- PI Dugong listserv operational.

THEME 2: CAPACITY BUILDING

OBJECTIVE 1: Build in country capacity to strengthen dugong management

Actions	Lead	Priority
2.1: Identify and prioritize skills required by relevant national authorities, and local communities and stakeholders for improving capacity for dugong management.	Members	High
2.2: Build national capacity at all levels, including communities, in areas as identified in 2.1 to participate in dugong management, research and monitoring (access to expertise / resources).	Members/ Partners/ SPREP	High
2.3: Encourage Pacific Island range states for Pacific Island nationals to undertake [student] scholarships / fellowships for developing related marine science expertise in the region.	Members/ Partners	High
2.4: Encourage Pacific Island nationals to undertake post-graduate studies on dugong conservation / management.	Partners	High
2.5: Encourage regional universities and scientists to strengthen partnerships with Pacific Island range states to increase provision of technical advice and support for effective dugong conservation/ management and research (e.g. internships in dugong projects; study visits).	Partners/ Members	High

INDICATORS:

- Skills required to improve dugong management etc identified.
- Students from Pacific Island range states enrolled in post graduate studies on dugong.
- Training to build national and community capacity in dugong management conducted.
- Internships from range states completed.



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THEME 3: THREAT REDUCTION		
OBJECTIVE 1: Reduce direct and indirect causes of dugong injury and mortality		
Actions	Lead	Priority
3.1: Identify, assess and evaluate threats and potential threats to dugong populations at the national level.	Members/ Partners	High
(i) Direct Take		
3.2: Reduce (to the greatest extent practicable) the illegal taking of dugongs.	Members/ Partners	High
3.3: Ensure that subsistence and customary use of dugongs is sustainable in areas where take is permitted.	Members/ Partners	High
3.4: Promote alternative livelihood programmes such as, guide or boat operators in the tourism sector, for fishermen who harvest dugongs.	Members/ Partners	Medium
(ii) Fisheries Interactions		
3.5: Reduce to the greatest extent practicable the incidental capture and mortality of dugongs in the course of fishing activities (e.g. spatial and temporal closures and gear modification).	Members/ Partners	High
3.6: Prohibit the use of destructive fishing practices e.g. blasting, and gears (refer Action 4.12 under Management, Improved compliance and enforcement).	Members	High
(iii) Watercraft Strikes/Interactions		
3.7: Develop guidelines for responsible watercraft operations.	Partners/ SPREP	Medium
3.8: Implement at national level (and support from regional level) the responsible watercraft guidelines.	Members/ Partners	High
3.9: Apply mechanisms to reduce to the greatest extent practicable dugong/vessel interaction in areas identified in 6.5 and 6.6, e.g. spatial and temporal marine areas access restriction, speed limitation.	Members/ Partners	Medium
(iv) Coastal Development		
3.10: Ensure EIAs for any coastal development consider their impacts on dugongs and their habitats as well as other marine life. (Link to Actions 4.1 and 4.6 below).	Members	High
3.11: Ensure impacts are avoided or appropriately mitigated. (Link to Actions 4.1 and 4.6 below).	Members	High
3.12: Develop mitigation measures to adequately address impacts of coastal development on dugongs and their habitats.	Members	High
(v) Pollution/Debris		
3.13: Encourage appropriate procedures for the discarding of fishing gear (ghost nets) e.g. ghost net clearing programmes on beaches / reefs; recycle of debris for trade.	Members	High
(vi) Climate Change		
3.14: Actively manage the impacts of key threats to build resilience of dugongs and their habitats to climate change.	All	High
INDICATORS:		
<ul style="list-style-type: none"> ▪ Assessment and report on threats (identification and evaluation) completed in Pacific Island range states; ▪ Measures to address identified threats to dugongs developed and implemented in Pacific Island range states. 		

THEME 4: MANAGEMENT AND PROTECTION

OBJECTIVE 1: Improve the management and protection of dugong habitats

Actions	Lead	Priority
4.1: Establish where necessary and review where existing, relevant legislation including traditional/customary measures, to incorporate dugong habitat protection. (Link to Actions 3.10 and 3.11 above)	Members/ SPREP/ Partners	High
4.2: Protect water quality by promoting sustainable land use practices to reduce adverse impacts on dugongs and their habitats.	Members/ Partners	Medium
4.3: Promote and support appropriate community based management and conservation actions for dugong habitats.	Members/ Partners	High
4.4: Seek opportunities to strengthen protection mechanisms for dugong and their habitats e.g. marine protected areas (MPAs).	Members/ Partners	High
4.5: Where appropriate, rehabilitate degraded dugong habitats.	Members/ Partners	Low

INDICATORS:

- Legislation and policies as well as traditional management systems that protect dugongs and their habitats in place in all Pacific Island range states.
- Sustainable land use practices that reduce impacts on dugongs and their habitats in place.
- Mechanisms such as MPAs and EIA processes in place that include enforcement of laws relating to dugongs.

OBJECTIVE 2: Improve the management and protection of dugongs

4.6: Establish, where necessary, and review, where existing, relevant legislation including traditional / customary measures, to incorporate protection for dugongs. (Link to Actions 3.10 and 3.11 above)	Members/ SPREP/ Partners	High
4.7: Establish, where necessary, and review, where existing, appropriate specific legislation including relevant traditional / customary measures, to reduce the mortality of dugongs.	Members/ SPREP/ Partners	High
4.8: Develop appropriate dugong rescue / stranding guidelines for dugong range states based on existing ones (e.g. the <i>Marine Animal Rescue Program Reference Guide</i> by David Schofield and Cynthia Perry)	SPREP/ CMS/ Partners	High

INDICATORS:

- Legislation and/or traditional measures for the management and protection of dugongs in place.
- Legislation and/or traditional measures to reduce dugong mortality in place.
- Dugong rescue/stranding guidelines developed.

OBJECTIVE 3: Ensure sufficient supporting mechanisms are in place to support national efforts and initiatives.

4.9: Encourage development of national dugong action plans, including recovery plans, based on the regional action plan to promote and guide national dugong conservation programmes and initiatives.	Members/ SPREP	High
4.10: Ensure the development of management plans for marine sanctuaries, MPAs and other ecosystem-based protection mechanisms include dugongs.	Members/ SPREP	High

INDICATORS:

- National dugong management/recovery plans developed.
- Management plans for marine sanctuaries, etc, that include dugongs, developed.

THEME 4: MANAGEMENT AND PROTECTION

OBJECTIVE 4: Improved compliance and enforcement

4.11: Strengthen enforcement and engage local communities in monitoring, surveillance and reporting of illegal activities.	Members	High
4.12: Strengthen the enforcement and awareness of existing laws against the use of poisonous chemicals, explosives and other destructive fishing practices in the marine environment.	Members/ Partners	High

INDICATORS:

- Enforcement mechanisms including engagement of communities in place/strengthened.
- Awareness campaigns on existing laws on destructive practices conducted.

THEME 5: TRADITIONAL KNOWLEDGE, CUSTOMARY MARINE TENURE AND TRADITIONAL RESOURCE MANAGEMENT

OBJECTIVE 1: Recognise the value of traditional knowledge, traditional resource management and customary marine tenure

Actions	Lead	Priority
5.1: Support documentation of traditional knowledge, practices and values.	Members/ Partners	Medium
5.2: Ensure that documented traditional knowledge is held and maintained by the appropriate authority and is adequately protected and shared where appropriate / possible.	Members	High
5.3: Incorporate relevant traditional knowledge, resource management, and customary marine tenure into dugong and associated habitat management.	Members	Medium
5.4: Where appropriate, raise awareness regarding the value of relevant traditional knowledge and practices in the management of dugongs and their habitats.	Members/ Partners	Medium
5.5: Ensure relevant traditional protocols and knowledge are adequately accommodated in the design and implementation of biological surveys.	Members/ Partners	High

INDICATORS:

- Traditional knowledge in dugong Pacific Island range states documented, maintained and, where appropriate, incorporated into management.
- Community based management supported.
- Information and survey results disseminated to communities.

THEME 6: RESEARCH AND MONITORING

OBJECTIVE 1: Improve our understanding of dugong populations and habitats through research and monitoring

Actions	Lead	Priority
6.1: Determine the distribution, abundance and trends of dugong populations in order to provide a base for conservation efforts and actions, using local knowledge and / or scientific methodologies.	Members/ Partners	High
6.2: Collect genetic samples (including from strandings) in accordance with procedures (e.g. the Great Barrier Reef Marine Parks Authority necropsy manual) and undertake genetic analyses to determine the distinctiveness / connectivity of Pacific Island dugong populations.	Members/ Partners	Medium
6.3: Where appropriate, undertake satellite tagging to assist in understanding dugong migratory patterns and behavior in the region.	Partners	Medium
6.4: Distribute the book, <i>Ecology and Conservation of the Sirenia: dugongs and manatees</i> by Helene Marsh, Thomas J. Ohea and John E. Reynolds III, when published.	SPREP	Medium
6.5: Identify and map areas of dugong habitat, particularly seagrass beds, taking note of their condition (e.g. intact, partially disturbed, degraded)	Members/ Partners	High
6.6: Identify and map areas of high dugong /vessel interaction including dugong occurrence.	Members/ Partners	High
6.7: Increase research attachment through training programme as appropriate.	Partners/ Members	High
6.8: Assess the impact of threats, including those from Climate Change, on dugongs and causing the degradation of dugong habitats and develop mitigation measures.	Partners/ Members	High

INDICATORS:

- Updated baseline surveys completed for distribution and abundance for all Pacific range states by 2017.
- Maps of dugong habitats and dugong/vessel interaction completed.
- Relevant information on dugong population status distributed.
- Genetic sampling initiated in all range states and satellite tagging conducted in at least one.



THEME 7: SUSTAINABLE PRACTICES / INTERACTIONS WITH DUGONGS

OBJECTIVE 1: Encourage sustainable practices related to dugong interactions

Actions	Lead	Priority
7.1: Identify and encourage / facilitate improved livelihoods (including income generating activities) that are not detrimental and which promote conservation outcomes to dugongs and their habitats, in consultation with local communities and other stakeholders.	Members	Medium
7.2: Document the extent of dugong eco-tourism and related activities in the region.	Members/ SPREP	Medium
7.3 Determine the level of interaction and impact of eco-tourism related activities.	Partners/ Members	High
7.4: Develop and implement as and where appropriate, guidelines for responsible dugong watching and other related activities.	Partners	Medium
7.5: Encourage, where appropriate, a permitting system to regulate dugong watching operations and other related activities.	Members	High
7.6: Encourage inclusion of legislation e.g. in Action 4.6 above, to prohibit the keeping of dugongs in captivity, with exceptions via a permitting system for purposes such as rehabilitation.	Members	High

INDICATORS:

- Eco-tourism activities associated with dugongs documented for all PI range States.
- Guidelines for responsible dugong watching and other related activities developed and effectively implemented.
- Policy/legislation in place for issuance of permits to regulate dugong watching operations and other related activities.
- Legislation that include prohibition of the keeping of dugongs in captivity with appropriate exceptions via a permitting system, in place.



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THEME 8: NATIONAL, REGIONAL AND INTERNATIONAL COLLABORATION**OBJECTIVE 1: Enhance national, regional and international collaboration**

Actions	Lead	Priority
8.1: Strengthen collaboration with range states to combat illegal trade, and to cooperate in enforcement activities relating to dugong products.	Members	High
8.2: Ensure any export/import of dugong products satisfies the requirements under CITES.	Members	High
8.3: Collaborate to address/combat illegal dugong/products trade and with TRAFFIC Asia and other relevant agencies for illegal trade from the Pacific Islands region.	Members/ Partners	Medium
8.4: Encourage Pacific range states to actively participate in the implementation of this action plan as well as the CMS MoU for the Conservation and Management of Dugongs and their Habitats.	Members	High
8.5: Develop and implement national databases of relevant information in relation to dugong conservation and management and ensure data is accessible to range members.	Members/ Partners	Medium
8.6: Develop a regional database using 'Lady of the Sea Profiles' as the basis with regular updates from national databases / States.	SPREP/ Members	Medium
8.7: Create and strengthen partnerships among Governments and all other existing and new stakeholders in research, conservation and management efforts.	All	High
8.8: Encourage range states to collaborate with other range states in dugong work (e.g. Australia / PNG partnerships, New Caledonia / Vanuatu)	Members	High

INDICATORS:

- Collaboration and partnership formalized to eliminate illegal trade of dugong products.
- Partnerships developed for research and conservation effort among most range states and stakeholders.





Marine Turtle Action Plan 2013–2017

GOAL: To conserve marine turtles and their habitats, in keeping with the traditions of the people of the Pacific Islands region.

INTRODUCTION

Marine turtles have lived in the world's oceans for over 100 million years. Of the world's seven marine turtle species, six occur in the Pacific:

- Flat back turtle (*Natator depressus*)
- Green turtle (*Chelonia mydas*)
- Hawksbill turtle (*Eretmochelys imbricata*)
- Leatherback turtle (*Dermochelys coriacea*)
- Loggerhead turtle (*Caretta caretta*)
- Olive Ridley turtle (*Lepidochelys olivacea*).

The seventh species of marine turtles, Kemp's Ridley (*Lepidochelys kempii*), is distributed only throughout the Gulf of Mexico and U.S. Atlantic seaboard, from Florida to New England.

Marine turtles play an integral ecological role in the functioning of marine habitats. They are long-lived and slow to mature, using a range of habitats at different stages of their life cycle. They are highly migratory, capable of traveling thousands of miles, and readily cross jurisdictional boundaries. Because of these life history characteristics, they are vulnerable to a variety of threats over their lifetime. Their migratory nature means that their survival and conservation requires a rigorous, coordinated regional effort among range states and territories. Marine turtles also play an integral part in the traditions of Pacific Island people, featuring in legends and traditional uses. Information exchanges, linkages and collaboration are needed at the national, regional and international levels in order for conservation and management efforts for marine turtles to be effective.

SPECIES DISTRIBUTION

Of the six marine turtle species that occur in the Pacific region, the green and hawksbill turtles are the most widely recorded species, with confirmed records in nearly all countries and territories (refer to Table 1). These two marine turtle species also nest in most Pacific Island countries and territories. The flatback turtle is known to occur only in Australia and southern Papua New Guinea.

Table 1: Marine Turtle Species Occurrence in the Pacific Islands Region

Species	AS	AU	CK	FM	FJ	FP	GU	KI	MH	NA	NC	NZ	NI	NM	PA	PG	SA	SI	TK	TO	TU	VA	WF
Leatherback		✓			✓	✓	✓?	✓?	✓		✓	✓			✓	✓	✓	✓		✓?	✓	✓	
Green	✓	✓	✓	✓	✓	✓	✓	✓	✓	?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hawksbill	✓	✓	✓	✓	✓	✓	✓	✓	✓	?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Loggerhead		✓	✓?		✓			✓?			✓	✓			✓	✓	✓?	✓	✓	✓			✓
Olive Ridley		✓			✓	✓		✓?	✓			✓			✓			✓		✓?			✓
Flatback		✓														✓							✓?

SPECIES STATUS

Marine turtles are recognised internationally as species of conservation concern. The 2011 IUCN Red List of Threatened Species lists marine turtles found in the Pacific as follows:

- **Leatherback:** Critically endangered
- **Hawksbill:** Critically endangered
- **Loggerhead:** Endangered
- **Green:** Endangered
- **Olive Ridley:** Vulnerable
- **Flatback:** Data deficient (due to lack of research).

Kemp’s Ridley marine turtle (*Lepidochelys kempii*), not found in the Pacific, is classified as “critically endangered”.

All species of marine turtles are listed in Appendix I of CITES, which means that all marine turtle species are considered to be threatened with extinction under this convention and commercial international trade in specimens of these species is generally prohibited. Under the Convention on the Conservation of Migratory Species of Wild Animals (CMS), marine turtle species are listed in Appendix I (migratory species that are categorised as being in danger of extinction throughout all or a significant proportion of their range) and Appendix II (migratory species that have an unfavourable conservation status or would benefit significantly from international cooperation organised by tailored agreements).

The status of marine turtles in the Pacific Islands region remains generally unknown. However, concerted efforts have been initiated in the last several years in response to the growing concern on the need for conservation and sustainable use of marine turtles in the region.

TRADITIONAL KNOWLEDGE AND CUSTOMS

Marine turtles have long held economic, cultural and spiritual value to Pacific Island peoples. The spiritual and cultural importance of turtles is illustrated through stories, traditions and customs, including contemporary ceremonies.

Marine turtles have been an important food source for many coastal people for hundreds of years. Many communities continue to eat marine turtles on a subsistence level, and use their shell for traditional crafts. Many Pacific Islanders are extremely knowledgeable about marine turtles and are able to provide information on the biology of species found in their areas (e.g. information on where they occur and at what time of year, habitat preferences, etc.). Such information is often lacking within local government wildlife authorities,

yet traditional knowledge is often overlooked. Sometimes local communities are the best conservationists. Traditionally, people took only what was needed for their community and would only take turtles at particular times of the year or from particular areas, thus ensuring that this resource was available to them in the future. Unfortunately, in many places, this traditional knowledge and sustainable use of turtles has been lost or is often ignored. This Action Plan recognises the fundamental role that traditional knowledge and customs play in turtle conservation, and aims to address the issue of community-based management.

INCOME GENERATING OPPORTUNITIES THROUGH ECO-TOURISM

In some places, marine turtles are fast becoming an eco-tourism attraction, whether it is watching nesters on the beach or watching them swim on a dive. Responsible ecotourism with turtles can generate income for local communities in a positive way, while also conserving turtles and their habitats, and potentially offsetting the black market trade and overfishing.

Local fishermen are well placed to provide information on the local marine environment and make skilled and knowledgeable guides. There is potential for local fishermen to earn enough as guides to offset the money that they may otherwise make on the black market or from fishing.

Eco-tourism provides direct employment as well as a trickle-down effect to jobs in other businesses such as hotels, restaurants and taxis. This can become an incentive for entire communities to safeguard their natural environment, thus creating an economy where turtles are worth more alive than dead.

THREATS

The IUCN Marine Turtle Specialist Group (<http://www.iucn-mtsg.org/hazards>) has identified the five most significant threats to marine turtles as listed below:

- **Fisheries impacts:** The most severe of these impacts are by-catch mortality, habitat destruction and food web changes.
Specific Burning Issue Hazards: Coastal gillnets; Driftnets; Bottom trawls; Pelagic longlines; Pot and trap fisheries; Discarded fishing gear; Seafloor alterations; Food web.
- **Direct take:** Sea turtles and their eggs are killed by people throughout the world for food, and for products including oil, leather and shell.
Specific Burning Issue Hazards: Egg take; Take of turtles in-water; Take of nesting females.
- **Coastal development:** This includes both shoreline and seafloor alterations, such as nesting beach degradation, seafloor dredging, vessel traffic, construction, and alteration of vegetation.
Specific Burning Issue Hazards: Vessel traffic; Coastal construction (e.g. buildings, roads); Shoreline alteration (e.g. coastal armoring, sand mining, beach debris); Seafloor alterations (e.g. dredging, mining); Oil and gas activities; Exotic dune and beach vegetation.
- **Pollution and pathogens:** Marine pollution, including plastics, discarded fishing gear, petroleum by-products, and other debris directly impact sea turtles through ingestion and entanglement. Light pollution disrupts nesting behavior and hatchling orientation, and leads to hatchling mortality. Chemical pollutants can weaken sea turtles' immune systems, making them susceptible to pathogens.
Specific Burning Issue Hazards: Ingestible plastics and Styrofoam; Oil, tar and other chemicals; Light pollution; Pathogens (e.g. Fibropapilloma); Nutrients and sediments (e.g. agricultural runoff, sewage).
- **Global warming:** may impact natural sex ratios of hatchlings, will increase the frequency of extreme weather events, and may increase the likelihood of disease outbreaks for sea turtles. Global warming will result in loss of nesting beaches, and cause other alterations to critical sea turtle habitats and basic oceanographic processes.
Specific Burning Issue Hazards: Loss of nesting beach (e.g. sea level rise, extreme weather); Oceanographic and meteorological changes (e.g. changing currents, ENSO, NAO); Beach temperature change; Sea temperature change.

The Group also notes that “if uncontrolled, these hazards will result in decline, local extinction and/or prevent recovery of sea turtles”.

Within the Pacific region the main threats to marine turtles are:

- Unsustainable harvesting (direct take for meat and handicraft, including the taking of nesting females, and egg harvesting);
- Feral animal predation on turtle nests (eggs);
- Incidental capture in commercial fishing;
- Degradation of habitat (e.g. through coastal development and natural disaster);
- Pollution, marine debris (e.g. plastic bags and fishing gear) and pathogens;
- Boat strikes; and
- Climate change.

The main challenges to effective conservation of marine turtles in the region include the lack of data on populations, harvesting level and interactions with fishing activities due to limited research and monitoring. A major constraint is limited resources, both financially and in terms of manpower (including skills) available for implementing management actions in the region.

THEMES AND OBJECTIVES

THEMES	OBJECTIVES
1. Information, Awareness/ Education and Communication	<ul style="list-style-type: none"> ▪ Provide assistance to participating member agencies to enable them to deliver effective and accurate information, awareness and education programme to the people of the Pacific Islands region.
2. Capacity Building	<ul style="list-style-type: none"> ▪ Improve capacity within each participating country and territory for marine turtle protection, management, population research and monitoring as well as resourcing.
3. Threat Reduction	<ul style="list-style-type: none"> ▪ Improve the management and protection of marine turtles and their habitats by reducing threats to them, emphasizing community-based approaches.
4. Legislation, Policy and Management/Recovery Plans	<ul style="list-style-type: none"> ▪ Ensure a more cohesive approach in policy and legislation in SPREP member countries and territories to support the Regional Marine Turtle Conservation Programme that incorporates traditional knowledge and customary marine tenure. ▪ Ensure sufficient supporting frameworks are in place to support national efforts and initiatives
5. Traditional Knowledge and Customary Practices	<ul style="list-style-type: none"> ▪ Ensure a more cohesive approach in policy and legislation in SPREP member countries and territories that incorporates traditional knowledge and customary marine tenure.
6. Research and Monitoring	<ul style="list-style-type: none"> ▪ Identify and monitor all major marine turtle nesting beaches in the Pacific Islands region. ▪ Identify major marine turtle stocks in the Pacific Islands region. ▪ Identify and monitor all major marine turtle foraging grounds in the Pacific Islands region. ▪ Implement the Turtle Research and Monitoring Database System (TREDS) in SPREP member countries and territories
7. Sustainable Development	<ul style="list-style-type: none"> ▪ Encourage the sustainable use of marine turtles.
8. Collaboration and Partnership	<ul style="list-style-type: none"> ▪ Increase national, regional and international collaboration and partnership for turtle conservation and management.

THEMES, OBJECTIVES AND ACTIONS

THEME 1: INFORMATION, AWARENESS/EDUCATION AND COMMUNICATION		
OBJECTIVE 1: Provide assistance to participating member agencies to enable them to deliver effective and accurate information, awareness and education programme to the people of the Pacific Islands region		
Action	Lead	Priority
1.1: Collate and review existing available information and education materials on marine turtles, such as those available at http://seatuttle.org , to suit the needs of the region.	SPREP	Medium
1.2: Encourage schools to include turtle information in school curricula.	Members	High
1.3: Provide relevant information and education materials in local languages.	Members	High
1.4: Investigate options for providing scholarships in marine science for tertiary students.	All	High
1.5: Provide feedback to communities regarding the results of turtle research and monitoring and other activities including data sharing in accordance with adopted policies and protocols.	Members/ Partners	High
1.6: Review, strengthen and promote the tag recovery programme and make materials available in local languages.	SPREP	High
1.7: Revive the regional "Turtle Talk" newsletter established under the YOST campaign for SPREP Members.	SPREP	Medium
1.8: Provide the materials and information to mass media in country to inform public on marine turtle issues through local media.	Members/ Partners	High
1.9: Develop relevant regional promotional materials (e.g. documentary) to be made available to SPREP Members.	SPREP/ Partners	Medium
1.10: Develop, promote and deliver educational materials and awareness raising activities (e.g. turtle migration, biology/ecology, tagging, TK) to schools, universities and local communities. (Link to 5.4)	SPREP/ Partners/ Members	High
1.11: Promote and support programmes for schools to adopt nearby beaches where turtle nest, with the children as "wardens" watching over the nests and then (under supervision) can witness/assist with baby turtle migration from nests to the sea.	Members/ Partners	Medium
1.12: Develop agreements with cultural groups / leaders / individual knowledge holders, regarding IPR, appropriate use and dissemination of information. (Links to 6.1 of traditional knowledge and customary practices).	Members	Medium
1.13: Encourage the use of informal / traditional methods of education (e.g. talanoa sessions, turtle calling) using elders within communities where appropriate.	Members	Medium
1.14: Encourage community awareness using successful models of community based networks, e.g. WSB's Vanua-tai monitors network and Dau ni Vonu in Fiji.	All	High
1.15: Deliver/implement a Pacific Islands regional symposium on sea turtles conservation.	SPREP/ Partners	High
1.16: Distribute relevant information to Members via PI listserv and upload relevant information to SPREP website under the Marine Turtle webpage.	SPREP	High

INDICATORS:

- Educational materials collected, reviewed translated and disseminated.
- Tag recovery programme active in most member countries and territories.
- Educational materials available in local language in at least 50% of PICTs.
- Schools involved in turtle nesting conservation.
- Traditional knowledge and customs documented appropriately, and report produced and distributed.
- Traditional knowledge and customary practices incorporated in information materials.
- Working group established for PICT regional symposium and symposium conducted.
- Information on marine turtles consistently circulated to Members.
- Pacific Islanders on scholarships undertaking research on marine turtles.



Turtle satellite tagging in Fiji.

THEME 2: CAPACITY BUILDING**OBJECTIVE 1: Improve capacity within each participating country and territory for marine turtle protection, management, population research and monitoring as well as resourcing.**

Action	Lead	Priority
2.1: Identify and prioritize skills required by relevant government agencies and local communities for turtle management and protection, using mechanisms such as the National Capacity Self Assessment.	SPREP/ Members	High
2.2: Build in-country capacity to develop and implement a resourcing strategy for marine turtle work.	SPREP/ Partners	High
2.3: Facilitate the delivery of identified training tools and materials, including attachments (e.g. Fiji/Vanuatu community exchange), technical assistance and expertise.	SPREP/ Partners	High
2.4: Provide a regional workshop for policy and legislation drafters to build capacity in relation to turtle management.	SPREP/ Partners	Medium
2.5: Build in-country capacity to enforce policies and legislations relating to turtle management.	Members	High
2.6: Undertake a regional and sub-regional training workshops focused on turtle nesting beach/foraging grounds monitoring, best handling practices, genetic sampling and climate change adaptation and mitigation measures.	SPREP/ Partners	High
2.7: Undertake in-country nesting beach/foraging grounds monitoring/survey training workshop, including survey methodologies, turtle tagging, best handling practices and genetic sampling.	SPREP/ Partners	High
2.8: Provide training in SPREP Members in the use of TREDIS and in data analysis.	SPREP	High
2.9: Encourage partnerships with tertiary institutions, researchers, government agencies, local communities, NGOs, IGOS, etc.	All	High
2.10: Provide training to relevant personnel in cultural awareness.	Members	Medium
2.11: Foster relevant partnerships to build /strengthen regional capacity for genetics sampling, storage and analysis.	SPREP/ Partners	Medium

INDICATORS:

- National reports by at least 50% of PICTs include documentation of required national skills of turtle conservation.
- At least 1 regional/sub-regional and 10 in-country nesting beach and foraging ground monitoring/survey training workshops undertaken.
- Policy and legislation workshop conducted.
- Enforcement workshops conducted.
- Tools/materials made readily available to SPREP Members.
- All Members with marine turtle programmes effectively using TREDIS.

THEME 3: THREAT REDUCTION/HAZARD MITIGATION

OBJECTIVE 1: Improve the management and protection of marine turtles and their habitats by reducing threats to them, emphasizing community-based approaches.

Action	Lead	Priority
3.1: Prioritise and address the regional threats to turtles, including harvesting of turtles and eggs, tourism, pollution and waste (plastic debris), fisheries by-catch, habitat destruction, and climate change.	Members/ SPREP	High
(i) Pollution and pathogens		
3.2: Reduce the use of plastic bags and encourage the development of alternative materials (e.g. cloth bags)	Members	High
3.3: Encourage use of alternative materials for fishing equipment with lesser impacts on marine turtles.	Members	Medium
(ii) Direct take		
3.4: Assess and document information on the amount of turtle harvesting, including those harvested for traditional ceremonies, collection of turtle eggs, at the national level, where possible.	Members/ SPREP	High
3.5: Encourage sustainable turtle harvesting (where harvesting is allowed) and eliminate the take of turtle eggs and nesters.	Members	High
(iii) Coastal development		
3.6: Conduct a regional review of national environmental impact assessment processes to ensure marine turtle impacts are adequately considered.	SPREP/ Members	High
3.7: Ensure policy makers and legislators better understand the impacts of coastal development on sea turtle populations	Members	High
3.8: Promote the effective protection of turtle nesting beaches and use appropriate community-based measures to mitigate the impacts.	Members	High
(iv) Fisheries interactions		
3.9: Continue to work with the fishing industry, fisheries authorities, regional fisheries management organisations and other IGOs / NGOs to reduce turtle by-catch in coastal and oceanic fisheries.	Members/ Partners	High
3.10: Encourage the adoption of observer programmes and improve documentation, identification, reporting and observer coverage for information on turtle by-catch (reference to FFA turtle by-catch action plan)	Members/ Partners	High
3.11; Assess and document information on the amount of turtle by-catch at the national level where possible.		
3.12: Encourage the use of circle hooks on long-lines to reduce accidental turtle mortality.	Members/ Partners	High
(v) Climate change		
3.13: Undertake a review of the potential impacts of climate change on sea turtles in the Pacific Island region and identify and implement potential mitigation measures. (Link to 2.6 under Capacity Building above).	SPREP/ Partners	Medium

INDICATORS:

- All PICTs have prioritised threats to marine turtles.
- At least 50% of PICTs have introduced management measures to reduce the use of plastic bags.
- At least 50% of PICTs are documenting information on turtle harvesting and turtle egg collection.
- At least 50% of PICTs have introduced sustainable turtle harvesting strategies.
- Regional review is completed on national EIA processes.
- Critical habitats for EIA assessments are identified and information is provided to decision makers.
- All major nesting beaches are protected and appropriate mitigation measures are implemented.
- By-catch assessed and procedures put in place by PICTs to reduce by-catch.
- Number of PICTs involved in the observer programme has increased.
- Review on climate change impacts to sea turtles is completed and mitigation measures identified and implemented.



Rescuing green turtle stranded from Samoa tsunami.

THEME 4: LEGISLATION, POLICY AND MANAGEMENT/RECOVERY PLANS

OBJECTIVE 1: Ensure a more cohesive approach in policy and legislation in SPREP member countries and territories that incorporate traditional knowledge and customary marine tenure to support the Regional Marine Turtle Conservation Programme

Action	Lead	Priority
4.1: Complete review that identifies gaps and conflicts in current policies and legislation (in member countries and territories) that support / limit the RMTCP, including participation in conventions, treaties, MoUs, agreements, etc.	SPREP/ Partners	High
4.2: Address gaps and conflicts found in the review of policies and legislation as described in action 4.1 where required.	Members	High
4.3: Encourage and support compliance mechanisms that are more effective at the community level, drawing upon and supporting existing laws and controls and conflict resolution systems, and using local community Members.	Members	High
4.4: Amend relevant policies and legislation regarding turtle size limits to better reflect the impact of removing mature/adult females from populations and where possible, to ensure that preferences is given to using smaller sized animals in a controlled manner to ensure sustainability.	Members	High
4.5: Incorporate relevant traditional knowledge, customary marine tenure and practices into policy, legislation and management plans where appropriate.	Members	Medium
4.6: Ensure adequate protection is provided for nesting beaches and other known critical habitats for turtles through policy and legislation.	Members	High
4.7: Develop and strengthen policies for recycling of plastic and proper waste management to minimize impacts on marine turtles (noting need for changing technologies)	Members	High
4.8: Develop, strengthen and enforce EIA policies to ensure that coastal development is sustainable and critical habitats for marine turtles are protected.	Members	High

INDICATORS:

- Review of current national policy/legislation completed and disseminated.
- Policies and legislation in PICTs amended to address gaps for marine turtles for conservation, which also includes the protection of critical habitats and application of size limits that reflect the impact of removing mature female turtles.
- Traditional knowledge and management practices incorporated into legislation, policies and plans.
- Appropriate compliance mechanisms are put in place.
- Appropriate policies are in place and enforced to reduce impact of waste and pollution on marine turtles.

OBJECTIVE 2: Ensure sufficient supporting frameworks are in place to support national efforts and initiatives.

Action	Lead	Priority
4.9: Develop and implement national marine turtle action plans, including recovery plans, where necessary, based on the regional action plan, to promote and guide national marine turtle conservation programmes and initiatives.	Members/ SPREP	High
4.10: Ensure the development of management plans for established/declared marine sanctuaries, MPAs and other ecosystem-based protection mechanisms include marine turtles.	Members/ SPREP	High

Indicators:

- National marine turtle management/recovery plans developed and implemented.
- Management plans for marine sanctuaries, etc that include marine turtles developed.

THEMES 5: TRADITIONAL KNOWLEDGE AND CUSTOMARY PRACTICES

OBJECTIVE 1: Ensure a more cohesive approach in policy and legislation that incorporates traditional knowledge and customary marine tenure in SPREP member countries and territories

Action	Lead	Priority
5.1: Review and identify gaps and conflicts in relevant policies and legislation that support / limit the protection and promotion of relevant TRM, TK, IPR, ABS and CMT pertaining to marine turtle conservation.	Members	High
5.2: Address gaps and conflicts found in the review of policies and legislation as described in action 5.1 where required.	Members	High
5.3: Encourage integration of TRM, TK, CMT into national, provincial and community management plans, including National Sustainable Development Strategies, NBSAP and other development plans.	Members/ Partners	Medium
5.4: Promote awareness on the value of TRM, TK, CMT and community rights on IPR and ABS through education and awareness at the community level, including the preparation and distribution of awareness materials and facilitation of appropriate national fora and community workshops and media. (Link to 1.10).	Members/ Partners	Medium
5.5: Document TK and Customary practices on marine turtles and archive under the appropriate authority.	Members/ Partners	Medium

INDICATORS:

- Review of policies /legislation to TK and other customary management and practices completed.
- TK, tenure and management practices integrated into developments plans.
- Education and awareness of TK and other customary practices and materials disseminated to local communities in each PICT.
- Traditional Knowledge and Customary practices documented and protected under the appropriate government authority.



Green turtle. © Andy Bruckner, NOAA

THEME 6: RESEARCH AND MONITORING

OBJECTIVE 1: Identify and monitor all major marine turtle nesting beaches in the Pacific Islands region

Action	Lead	Priority
6.1: Undertake literature search of available information regarding turtle nesting sites in the Pacific including previous flipper and satellite tagging activities.	All	High
6.2: Identify and report known information, including TK, provided by communities regarding turtle nesting sites.	Members/ Partners	High
6.3: Identify and map turtle nesting beaches and prioritise index sites for long term monitoring.	Members/ Partners/ SPREP	High
6.4: Undertake turtle nesting beach surveys for new sites to collect initial baseline data for at least five years and continue surveys for those already initiated.	Members/ Partners/ SPREP	High
6.5: Initiate long term turtle nesting monitoring at index nesting beaches and continue for those already initiated.	Members/ Partners/ SPREP	High
6.6: Incorporate monitoring of specific impacts of climate change and determining responses of marine turtles, in long term turtle nesting monitoring: <ul style="list-style-type: none"> ▪ Nests sand temperature using data loggers (to provide an indication of likely hatchling sex ratio); ▪ Hatchling success; ▪ Nesting population each year; ▪ Temporal changes of beach morphology 	Members/ Partners/ SPREP	High
6.7: Develop and distribute a regional manual for conducting turtle nesting monitoring beach surveys.	SPREP/ Partners	High

INDICATORS:

- Literature search on turtle nesting completed and reported within the first 2 years and be used to inform further actions in the plan.
- Known information and TK on turtle nesting identified and reported by all Members.
- Key index nesting beaches in all PICTs identified and prioritized.
- Long term monitoring initiated at index nesting beaches in the Pacific region (at least five major sites).
- Regional manual for conducting turtles nesting monitoring beach surveys developed and used by all PICTs.
- Estimates obtained of current nesting beach population for the Pacific.
- Map of key turtle nesting sites across the Pacific updated.

OBJECTIVE 2: Identify major marine turtle stocks in the Pacific Islands region

Action	Lead	Priority
6.8: Distribute regional procedures and protocol for genetic sampling, which includes non-lethal techniques and address ownership of genetic information and material collected.	SPREP/ Partners	Medium
6.9: Develop partnerships to undertake genetic sampling and analysis with Members and relevant genetic researchers (such as Dr. Peter Dutton) and Laboratories/Institutes (such as IFREMER-Indian Ocean), including facilitation of CITES permits.	SPREP/ Partners/ Members	High
6.10: Report the results of genetic sampling and identification of major turtle stocks in the region to Members.	Partners	High

INDICATORS:

- Regional procedures and protocols for genetic sampling finalized, distributed and implemented by participating PICTs.
- Work towards identifying Pacific stocks of marine turtles progressed and results reported and published.
- Map of Pacific marine turtle stock(s) produced and distributed to Members.

OBJECTIVE 3: Identify and monitor all major marine turtle foraging grounds in the Pacific Islands region	Lead	Priority
6.11: Collate and distribute published information on marine turtle foraging grounds in the region to Members.	SPREP/ Partners	Medium
6.12: Identify and map major / critical in-water sites and prioritise foraging habitats for long term monitoring.	Members/ Partners/ SPREP	High
6.13: Undertake long term surveys at major marine turtle foraging sites for abundance and trend estimates at these sites.	Members/ Partners	Medium
6.14: Undertake seagrass mapping and monitoring where possible.	Members/ Partners	Medium
6.15: When opportunities arise, ensure aerial surveys include turtles at foraging grounds.	All	Medium
6.16: Encourage the use of CMS standardized questionnaire for marine turtles (distribution, identification of foraging areas, occurrence and interaction with fisheries).	All	Medium
6.17: Undertake satellite tagging to fill information gaps where it is needed, cost effective and feasible.	All	High

INDICATORS:

- Known and published information of marine turtles foraging grounds in the region collated and distributed to Members (centralized repository of information).
- Major marine turtle foraging sites identified, mapped and prioritized for monitoring.
- Long term foraging ground site surveys initiated at major sites in the region (at least five major sites).
- Seagrass mapping and monitoring undertaken across the region.
- Results of turtle tracking distributed to PICTs through the SPREP websites and the marine turtle network (centralized repository of information).

OBJECTIVE 4: Implement the Turtle Research and Monitoring Database System (TREDS) in SPREP member countries and territories	Lead	Priority
6.18: Continue implementation of Information and Data Sharing Policy for TREDS.	All	High
6.19: Continue to conduct in-country TREDS training, follow up for use and report generation.	SPREP	Medium
6.20: All Members to use TREDS in accordance with the adopted policy.	Members/ Partners	High
6.21: Members and participating organizations/projects submit data at least annually to the TREDS Database Officer for incorporation into regional database to enable regional analysis.	Members/ Partners	High
6.22: Reporting <ul style="list-style-type: none"> ▪ Members and participating organizations/projects report to SPREP at least annually on tagging records and activities, noting that tag re-issue will be dependent on reporting. ▪ Report recovered tags immediately to SPREP using appropriate form (where available) or providing standard information. ▪ SPREP to provide reward (such as a t-shirt, poster, etc.) for recovered tags; ▪ SPREP to report annually to each member on tags distributed and recovered, results of mapping, and other significant data, including an annual summary report of all countries combined to be distributed to all Members and participating organizations/projects. 	All	High

<p>6.23: Institutional commitment</p> <ul style="list-style-type: none"> ▪ SPREP commits to long-term maintenance of the TREDS programme; ▪ Seek long-term funding from Members and partners (including NGOs, IGOs and the private sector) to maintain TREDS Officer and programme. 	<p>SPREP/ Partners</p>	<p>High</p>
<p>6.24: Continue to distribute tags and applicators to Members undertaking tagging activities and engaged in SPREP approved tagging programme.</p>	<p>SPREP</p>	<p>High</p>
<p>6.25: Link to other databases that contain marine turtle data and ensure the SPC database is linked to TREDS.</p>	<p>SPREP</p>	<p>Medium</p>
<p>Indicators:</p> <ul style="list-style-type: none"> ▪ Members effectively using TREDS and reporting annually to SPREP. ▪ SPREP produce five annual reports of summary data. ▪ Increased return of tags and reporting of tagging information. ▪ Information from TREDS used to provide a picture of turtle distribution and migration at regional level. ▪ TREDS programme, including responsible officer, secured for the long term. ▪ Link to other relevant turtle database completed. 		



Capacity building in turtle satellite tagging.

THEME 7: SUSTAINABLE DEVELOPMENT

OBJECTIVE 1: Encourage the sustainable use of marine turtles

Action	Lead	Priority
7.1: Document the extent of marine turtle eco-tourism, including head-starting programmes, and turtle related activities in the region.	Members/ Partners/ SPREP	Medium
7.2: Develop and apply regional guidelines for responsible and sustainable eco-tourism based on marine turtles.	Partners/ SPREP	Medium
7.3: Identify and encourage / facilitate alternative livelihoods (including income generating activities) that are not detrimental to marine turtles and their habitats, in consultation with local communities and other stakeholders.	Partners/ Members	Medium
7.4: Prohibit the commercial harvesting of marine turtles, commercial trade of their parts and derivatives.	Members	High
7.5: Encourage sustainable management principles to traditional / subsistence uses of turtles permitted for food, including through community-based management approaches.	Members	High
7.6: Discourage the keeping of marine turtles in captivity (except through a permitting system for rehabilitation, research and educational purposes).	Members	Medium
7.7: Develop best practice guidelines for turtles permitted to be kept in captivity and make available to SPREP Members.	SPREP/ Partners/ Members	Medium
7.8: Encourage member states to establish sustainable funding mechanisms (e.g. trust funds, GEF funding) for marine turtle conservation.	All	High

INDICATORS:

- The extent of marine turtle eco-tourism and turtle related activities in the region are documented.
- Guidelines developed and distributed to Members on best practice for responsible and sustainable marine turtle eco-tourism.
- PICTs have identified, prioritized and implemented some form of alternative livelihood initiatives.
- No illegal harvesting of marine turtles and commercial harvesting prohibited.
- Management principles applied to turtle use permitted for traditional and subsistence use.
- Activities involving captive marine turtles have been discouraged.
- Regional guidelines on turtles in captivity are developed and shared with SPREP Members.
- Sustainable funding mechanisms are encouraged and investigated by member countries.



THEME 8: NATIONAL, REGIONAL AND INTERNATIONAL COLLABORATION AND PARTNERSHIP

OBJECTIVE 1: Increase national, regional and international collaboration and partnership for turtle conservation and management

Action	Lead	Priority
8.1: Re-initiate negotiations or consultations for a regional marine turtle arrangement, e.g. MoU under the auspices of CMS or other alternatives.	SPREP	Medium
8.2: Encourage and support sub-regional or bilateral arrangement between states that share the same turtle stocks as illustrated by results from research.	Members/ SPREP	Medium
8.3: Dr. George Balazs and Dr. Colin Limpus to continue as Marine Turtle Technical Advisers to SPREP and members and increase utilization.	SPREP	High
8.4: Establish direct contact and formal communication with various stakeholders in turtle conservation (ie: Inter American Convention for the Protection and Conservation of Sea Turtles (IAC), WCPFC, SPC, FFA, USP, US National Marine Fisheries Services, IUCN, collaborating Universities and Laboratories, collaborating NGOs, etc.).	SPREP/ Partners	Medium
8.5: Foster partnerships to support MTAP implementation at national and regional levels (including Governments, NGOs, private sector and local communities).	Members/ SPREP/ Partners	High
8.6: Continue to develop and strengthen regular communication exchanges with countries / territories through media, including a section on marine turtles in the SPREP newsletter and other relevant newsletters and PI-Marine Turtle list server.	SPREP/ Partners	High
8.7: Continue to identify and strengthen communication between relevant laboratories and universities to conduct genetic analysis for marine turtle biopsy samples.	SPREP/ Partners	High
8.8: Encourage Members to abide with CITES principles and regulation concerning marine turtles trade, export/import.	Members/ SPREP	High

INDICATORS:

- A regional arrangement for the conservation of marine turtles in the Pacific Islands in place and signed by most Members.
- Communications with agencies working on turtle conservation established and active.
- Partnership established for MTAP implementation.
- SPREP Members participating and collaborating in the Regional network.
- Genetic analysis of marine turtle samples for member countries undertaken by a collaborative laboratory and results received by the member countries in a timely manner.



Whale & Dolphin Action Plan

2013–2017

GOAL: To conserve whales and dolphins and their habitats for the peoples of the Pacific Islands region.

INTRODUCTION

Whales and dolphins (cetaceans) are an important component of the marine biological diversity of the Pacific Islands region. Over half the world's known species of whales and dolphins are found in this region, and for some species, such as humpback whales, the region is a vital breeding area. Whales and dolphins are widely regarded as flagship species for Pacific marine ecosystems, and feature prominently in promotional tourism material. Many Pacific Island cultures have legends about whales and dolphins, and the people have traditional uses for them. These species are generally long-lived and have low reproductive rates. For many species of large whales, commercial whaling during the nineteenth and twentieth centuries, largely by countries from outside the region, has reduced the breeding populations of South Pacific whales to extremely low levels, possibly to local extinction for some species. Recently, many Pacific Island countries and territories have declared whale sanctuaries or marine sanctuaries for marine animals including whales and dolphins.

SPECIES DISTRIBUTION

Based on largely opportunistic records, at least 30 different whale and dolphin species are known to migrate or reside (on either an occasional or year-round basis) within the Economic Exclusive Zones (EEZs) of the 22 Pacific Island Countries and Territories (PICTs). Species including the largest of all marine mammals, the blue whale, as well as numerous other baleen whale species like the minke, fin, sei and humpback are present in the Pacific Islands Region (PIR). In addition, toothed cetaceans of all sizes including false killer whales, short-finned pilot whales and many dolphin species such as pan-tropical spotted, striped and Risso's occur in the waters of many PICTs.

Given the current state of information the most commonly reported species across the region include the sperm whale, short-finned pilot whale and spinner dolphin. Most current and comprehensive distribution and abundance information is available for humpback whales. Rarely sighted species include snubfin dolphin, Indo-Pacific humpbacked dolphin, and some of the beaked whale species. However, the limited research efforts in the PIR, coupled with the very large expanse of marine area, make it plausible that there may also be many unreported species that inhabit these waters. A comprehensive understanding of whale and dolphin diversity and distribution in the Pacific Islands Region is considered to be incomplete as there are many locations that have not been surveyed. On a relative basis however New Caledonia, French Polynesia, Northern Marianas Islands, Papua New Guinea and Samoa have documented a comparatively higher number of species in their waters than other PICTs. Relatively few records have been documented from other PICTs

including Wallis and Futuna, Tokelau, and Pitcairn Islands due mainly to the absence of sampling effort and current work undertaken.

Table 1 provides a checklist of species presence as noted from either a peer-reviewed or verified record within the waters of given PICTs. However, these records or inferences regarding relative diversity should be viewed as preliminary as not all records are of equal reliability or from a recent survey or observation (additional details on record quality as well as additional tentative records can be found in Miller, 2009). Furthermore, there has been unevenness in effort and documentation in terms of both locations and species' focus across the PIR.



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Table 1: Presence of cetacean species in Pacific Island Countries and Territories.

Source: Miller, 2012.

CETACEAN SPECIES	PACIFIC ISLAND COUNTRY OR TERRITORY																						
	AS	CI	FSM	Fi	FP	Gu	Ki	MI	Na	NC	Ni	NMI	Pa	PNG	PI	Sa	SI	Tok	Ton	Tu	Va	WF	
Minke whales	✓	✓		✓	✓			✓		✓	✓	✓				✓			✓	✓			
Sei whale		✓				✓				✓	✓	✓		✓					✓				
Bryde's-like whales		✓	✓	✓					✓	✓		✓	✓	✓		✓	✓					✓	
Blue whales		✓		✓			✓	✓		✓							✓						
Fin whale				✓				✓		✓													
Humpback whale	✓	✓		✓	✓	✓		✓		✓	✓	✓		✓	✓	✓			✓		✓	✓	✓
Common dolphins		✓						✓		✓													
Pygmy killer whale					✓					✓		✓	✓	✓					✓				
Short-finned pilot whale	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓		✓		✓		✓
Risso's dolphin					✓	✓				✓		✓		✓		✓	✓		✓				
Fraser's dolphin		✓	✓		✓		✓		✓					✓		✓	✓						
Snubfin dolphin														✓			✓						
Orca	✓	✓	✓	✓	✓		✓	✓		✓	✓		✓	✓		✓	✓		✓	✓	✓	✓	✓
Melon-headed whale		✓	✓		✓	✓		✓	✓	✓		✓	✓	✓		✓	✓		✓		✓		✓
False killer whale	✓			✓	✓	✓				✓	✓	✓		✓		✓	✓		✓				
Indo-Pacific humpback dolphin														✓									
Pantropical spotted dolphin	✓	✓	✓	✓	✓		✓	✓		✓		✓		✓			✓		✓	✓	✓	✓	✓
Striped dolphin	✓		✓			✓		✓				✓	✓			✓	✓						
Spinner dolphin	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓	✓
Rough-toothed dolphin	✓				✓		✓			✓		✓				✓	✓						
Bottlenose dolphins	✓		✓	✓	✓		✓	✓		✓				✓		✓	✓		✓	✓	✓	✓	✓
Diminutive sperm whale	✓			✓	✓	✓				✓		✓		✓		✓					✓		
Sperm whale	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Blainville's beaked whale		✓		✓	✓		✓			✓						✓							
Gingko-toothed whale			✓				✓																
Cuvier's beaked whale	✓	✓			✓	✓				✓		✓		✓		✓							

Note: "Diminutive sperm whale" is *Kogia* species, either dwarf sperm whale or pygmy sperm whale.

SPECIES STATUS

Cetacean species present in the PIR vary in conservation status according to the IUCN system of species classification (IUCN, 2001). Endangered species present in the PIR include the Sei whale, blue whale, fin whale and the Oceania subpopulations of the humpback whale. Near Threatened species include the snubfin dolphin and the Indo-Pacific humpback dolphin, and the sperm whale is listed as Vulnerable. Some species are also listed as Least Concern, however, the majority of cetacean species are listed as Data Deficient (DD). Such a designation infers that there is “inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status” (IUCN, 2001). This lack of information provides a difficult starting point for conservation efforts as it has been noted that DD species should not be treated as non-threatened, and in fact “it may be appropriate ... to give them the same degree of attention as threatened taxa, at least until their status can be assessed” (IUCN, 2001).

PICT cetacean species listed on CMS Appendix I are Sei, blue, fin, humpback and sperm whales. A number of PICT cetacean species are also listed on CMS Appendix II including orca, snubfin dolphin, and Bryde’s whale. Some of the CMS listings are population specific yet still may encompass some of the PIR within the given range.

TRADITIONAL KNOWLEDGE AND CUSTOMS

Whales and dolphins are important to the cultures, legends, traditions and heritage of many Pacific Island peoples. In Fiji, sperm whale teeth have particular cultural significance. Whales and dolphins are associated with identity, lifestyle and wellbeing. Migrations of whales are used as an environmental cue on some islands, and ceremonies and ritual surround cetaceans across the region. In some traditions, they are viewed as incarnations of humans.

INCOME GENERATING OPPORTUNITIES THROUGH ECO-TOURISM

Whale and dolphin watching tourism is conducted in 119 countries globally generating USD 2.1 billion dollars per year (Hoyt, 2008). A regional review of the status of marine mammal tourism activities commissioned by the International Fund for Animal Welfare (IFAW) in collaboration with SPREP, SPWRC and the South Pacific Tourism Organisation (SPTO), showed that whale watching is becoming an important component of tourism development in the region with a total estimated direct economic value of USD \$7.5 million and USD \$21 million in total value in 2005.

The climate and opportunities available for marine mammal tourism in the Pacific region are world class. Furthermore, the growth potential and economic benefits of cetacean-based tourism has proved an effective argument against the killing of whales. However, the industry grew at 45% per year in the period 1998 – 2005 which is raising questions about the sustainability of the activity. Issues related to the growth of the industry include the potential impacts on marine mammal populations and the need for management measures.

There is growing concern from the international scientific community that the cumulative effects of marine mammal tourism may threaten the recovery and survival of target species. Several management tools exist in the region to assist the sustainable development of the industry and aim to reduce impacts and increase the educational values of the activity: The Pacific Regional Guidelines for Whale and Dolphin Watching (SPREP, 2008), and the Whales Alive Whale Watching Operator and Guide Training Program.

THREATS

Key threats to cetaceans in the Pacific Islands Region include:

- scientific whaling (in Antarctic feeding grounds),
- pollution,
- habitat degradation,
- noise,
- ship strikes,
- climate change,
- drive hunts,
- captures for captivity,
- fisheries by-catch,
- ecotourism, and
- lack of scientific information.

Key species involved, geographic location of the coverage of the threats, and the time of year (or regularity) of different threats varies across the region.



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THEMES AND OBJECTIVES

THEMES	OBJECTIVES
1. Information, Awareness/ Education and Communication	<ul style="list-style-type: none"> ▪ Develop communication strategies, training programmes and protocols for key issues within the Whale and Dolphin Action Plan; ▪ Increase awareness and understanding of whales and dolphins in the region
2. Capacity Building	<ul style="list-style-type: none"> ▪ Increase in-country expertise and capacity.
3. Threat Reduction	<ul style="list-style-type: none"> ▪ Minimize the impacts of the major (five) hazards listed below on whale and dolphin populations in the Pacific Islands region: <ul style="list-style-type: none"> ▪ Fisheries interactions. ▪ Climate change. ▪ Coastal development. ▪ Pollution/pathogens. ▪ Direct take.
4. Ecosystem and Habitat Protection	<ul style="list-style-type: none"> ▪ Support and encourage the designation (establishment) of national whale/ marine sanctuaries, marine park, MPAs in SPREP members ▪ Support the management of whale / marine sanctuaries, MPAs and marine parks ▪ Identify and protect critical habitat and migratory pathways.
5. Legislation, Policy and Management/ Recovery Plans	<ul style="list-style-type: none"> ▪ Develop country level legal, policy and institutional framework to support the effective implementation of the whales and dolphins action plan. ▪ Develop and support implementation of regional/ national whale and dolphin species management and recovery plans
6. Cultural Significance and Value	<ul style="list-style-type: none"> ▪ Document the range of cultural practices, values and knowledge associated with whales and dolphins and encourage a more cohesive approach in policies and legislation. ▪ Preserve and protect the traditional knowledge and values associated with whales and dolphins. ▪ Ensure appropriate cultural knowledge, practices, and values inform and underpin management measures.
7. Research and Monitoring	<ul style="list-style-type: none"> ▪ Establish abundance/distribution of all cetaceans in the Pacific Islands region. ▪ Estimate key demographic parameters to help diagnose trends ▪ Undertake research and monitoring to identify hazards and develop hazard mitigation strategies. ▪ Improve data collection and database management systems. ▪ Undertake comprehensive habitat mapping. ▪ Improve information received on stranding events in the Pacific Island Region.
8. Whale and Dolphin-based Tourism	<ul style="list-style-type: none"> ▪ Ensure the development of whale and dolphin tourism is sustainable throughout the Pacific Islands Region. ▪ Ensure best practice management of whales and dolphins tourism in the PIR. ▪ Whale and dolphin based tourism watching is conducted responsibly with minimum impact and maximum education and economic values.
9. National, Regional and International Collaboration and Cooperation	<ul style="list-style-type: none"> ▪ Promote and enhance national, regional and international coordination, collaboration and partnership for whale and dolphin conservation in the Pacific Islands Region.

THEMES, OBJECTIVES AND ACTIONS

THEME 1: INFORMATION, AWARENESS/EDUCATION AND COMMUNICATION

OBJECTIVE 1: Develop communication strategies, training programmes and protocols for key issues within the Whale and Dolphin Action Plan

Actions	Lead	Priority
1.1: Identify key issues for each member and support development of appropriate education strategies and programmes (e.g. known threats; species ID; status).	Members/ Partners	High
1.2: Develop appropriate education and awareness tools incorporating scientific and traditional knowledge for different target audiences at a regional and national level.	All	High
1.3: Integrate traditional knowledge, stories and customs into education and awareness tools and materials.	Members/ Partners	Medium
1.4: Capacity building of Government agencies and community trainers to facilitate stewardship, and to develop and deliver outreach programmes.	Partners	Medium

INDICATORS:

- Community and school education programmes implemented.
- Regionally relevant factsheets to inform governments and industries on key issues are produced e.g. fisheries interaction, cultural practices, regulation, biology, natural history, species ID etc).
- Training programmes carried out in country for key government agencies and identified local community stewards.

OBJECTIVE 2: Increase awareness and understanding of whales and dolphins in the region

Actions	Lead	Priority
1.5: Implement educational and awareness tools in schools and/or communities using relevant networks and methods.	Members/ Partners	High
1.6: Provide materials and information to mass media in-country to inform public.	All	High
1.7: Disseminate educational materials targeted at recreational / private boaters to ensure minimum impact.	Members/ Partners	Medium
1.8: Declare 2014 as the Pacific year of the whale and support the planning, development, and implementation of in-country and regional conservation campaigns (in support of international effort by SORP).	SPREP/ Partners/ Members	High
1.9: Take advantage of freely available educational materials from organizations such as the U.S. National Oceanic and Atmospheric Administration (NOAA), and games for children (e.g. http://www.environment.gov.au/coasts/publications/whales-kids-interactive/index.html , developed by the Australian Government) to increase understanding of the importance of cetaceans.	All	Medium

INDICATORS:

- Presentations on whales and dolphins carried out in schools, village halls and annual festivities.
- Whales and dolphins are profiled through documentaries, interviews and regular spots in local media.
- ID guides, factsheets and guidelines / brochures are distributed to boaters, mariners, yacht clubs, through government agencies and NGOs.
- Educational programmes implemented in schools, education centres and museums.
- Informal/ traditional methods of education are employed at community level.
- 2014 celebrated as the Year of the Whales.

THEME 2: CAPACITY BUILDING

OBJECTIVE 1: Increase in-country expertise and capacity.

Actions	Lead	Priority
2.1: Identify and address training needs and support proposal writing to implement WDAP at country and regional level, using existing processes such as National Capacity Self Assessment (NCSA).	Members/ Partners	High
2.2: Develop training packages on common priorities (e.g. stranding, data recording, legislation, communication, etc.) based on regional priorities and convene workshops based on identified needs.	SPREP/ Partners	High
2.3: Support internship training on whales and dolphins in existing research centers.	SPREP/ Partners	Medium
2.4: Build in-country capacity to prepare relevant regulation, legislation and policy.	Partners/ SPREP	High
2.5: Conduct national and / or (sub)regional training workshops on necropsy, including collection and storage of tissues, skeletal remains and analysis.	Partners/ SPREP	Medium
2.6: Conduct sub-regional training and verification of whale and dolphin sightings, reporting, abundance estimation techniques.	Partners/ SPREP	Medium
2.7: Develop database complementary to that under the Marine Turtle Action Plan.	SPREP/ Partners	High
2.8: Develop surveillance and enforcement capacity for implementation of national protection measures including whale and dolphin watching tourism operations.	Members/ Partners	High
2.9: Conduct industry training and certification programmes for whale / dolphin watching operators and guides, which should be required to attain a whale and dolphin watching permit / license where applicable.	Partners	Medium
2.10: Develop capacity to negotiate and advocate for regional policies and positions	Partners/ SPREP	Medium

INDICATORS:

- Training needs identified and addressed.
- Training packages prepared and made available.
- Increase technical capacity to obtain information and assist in conservation of whales and dolphins in the region.
- Improved capacity to develop and implement policies and legislation.
- Whale/dolphin operator training and certification programs are implemented in SPREP nations.
- Number of countries/territories providing information for the database.

THEME 3: THREAT REDUCTION

OBJECTIVE 1: Minimize the impacts of the major hazards listed below on whale and dolphin populations in the Pacific Islands region:

- Fisheries interactions.
- Climate change.
- Coastal development.
- Pollution/pathogens.
- Direct take.

Actions	Lead	Priority
(i) Fisheries Interactions		
3.1: Collaborate to improve data and share information on fisheries / cetaceans interactions, and successful and unsuccessful tactics for mitigation.	All	High
3.2: Foster industry / research institution / government partnership to develop and test mitigation techniques to reduce bycatch and depredation.	All	High
INDICATORS:		
<ul style="list-style-type: none"> ▪ Improved catch reporting systems. ▪ System of collecting data from fishing operators on by-catch and depredation developed and used. ▪ Properly tested depredation / mitigation techniques. ▪ Increased adoption of mitigation techniques by fisheries. 		
(ii) Direct take		
3.3: Take actions to ensure a favourable conservation status of affected whale and dolphin species.	Members/ Partners	High
3.4: Ensure compliance with all relevant international regulations and conventions/ agreements.	Members/ Partners	High
INDICATORS:		
<ul style="list-style-type: none"> ▪ Improved reporting and recording of direct take data/information. ▪ Management system in place, e.g. management plans, policies, regulations etc that ensure sustainability of species stocks. ▪ Adoption of international regulations/agreements applied to capture activities. 		
(iii) Climate Change		
3.5: Facilitate the collation and dissemination of current knowledge of the impacts of climate change on cetaceans and their habitats.	SPREP/ Partners	Medium
3.6: Build links into international fora addressing climate change.	SPREP/ Partners	Medium
3.7: Analyze information/impacts of climate change.	Partners	Medium
INDICATORS:		
<ul style="list-style-type: none"> ▪ Document/presentation on climate change impacts to whales and dolphins provided to Members. ▪ Links to international fora addressing climate change established. 		

(iv) Pollution and Pathogens

3.8: Encourage improved waste management at community and national levels (including fishing operations) to reduce plastics and other debris in the marine environment.	All	High
3.9: Reduce amount of discarded fishing gear in the ocean.	Partners/ Members	High
3.10: Disseminate waste management guidelines to relevant Departments/Agencies for promotion.	Partners	High
3.11: Consider and reduce impacts of underwater noise pollution from any source that could affect whales and dolphins.	Members/ Partners	High

INDICATORS:

- Better information on the impacts of plastics and other debris to whales and dolphins.
- Waste management guidelines promoted at all levels.
- Impacts of underwater noise pollution to whales and dolphins considered and reduced for any undertaking in the sea.

(v) Coastal Development and Tourism

3.12: Implement appropriate recommendations resulting from assessments of the impacts of whale and dolphin watching and swim-with activities.	Members/ Partners	High
3.13: Encourage consultation/consideration of impacts on whales and dolphins in national legislative and environmental impact assessment (EIA) processes and ensure proponents consider impacts to cetaceans through EIA processes.	Members/ Partners	High
3.14: Identify particular localised areas and populations that are currently subject to negative impacts from coastal development and tourism activities, and develop appropriate monitoring and mitigation of any significant impacts.	Partners/ Members	High
3.15: Develop management and mitigation strategies to reduce identified impacts/localized effects from coastal development and tourism activities on whales and dolphins.	Members/ Partners	High

INDICATORS:

- Consideration of impacts on whales and dolphins incorporated into processes such as EIA, and potential impact information made available.
- Monitoring on identified localized populations.
- Strategies to reduce impacts from coastal development developed and implemented.



THEME 4: ECOSYSTEM AND HABITAT PROTECTION

OBJECTIVE 1: Support and encourage the designation (establishment) of national whale/ marine sanctuaries, marine park, MPAs in SPREP member countries and territories

Actions	Lead	Priority
4.1: Support effort to declare/establish EEZ wide / national whale / marine sanctuaries, large MPAs and marine parks with technical / policy advice.	SPREP/ Partners	High

INDICATORS

- Additional SPREP members formally designate/establish national EEZ-wide sanctuaries and other marine protected areas that protect cetaceans.

OBJECTIVE 2: Support the management of whale / marine sanctuaries, MPAs and marine parks

Actions	Lead	Priority
4.2: Support the development and implementation of management plans and strategies for sanctuaries/MPAs/Marine Parks.	SPREP/ Partners	High
4.3: Harmonize local and national MPAs for the protection and management of cetaceans where possible.	Members	Medium

INDICATORS

- Management Plans and strategies for all established sanctuaries/MPAs/Marine Parks developed and implemented.
- Local and national MPAs etc linked properly in terms of management and implementation.

OBJECTIVE 3: Identify and protect critical habitat and migratory pathways

Actions	Lead	Priority
4.4: Identify (through research etc including the use of satellite tagging) and protect critical cetacean habitat and migratory pathways.	Partners/ Members	High
4.5: Link with and utilize existing large scale marine habitat programs regionally and nationally to share information.	Members/ Partners	Medium

INDICATORS:

- Critical habitat and migratory pathways are identified, mapped and protected.



THEME 5: LEGISLATION, POLICY AND MANAGEMENT/RECOVERY PLANS

OBJECTIVE 1: Develop country level legal, policy and institutional framework to support the effective implementation of the whales and dolphins action plan

Actions	Lead	Priority
5.1: Update legislative and policy review for SPREP member countries and territories and disseminate the final report. The review will include: <ul style="list-style-type: none"> ▪ identifying legislative inconsistencies and gaps; ▪ habitat and species protection measures including sanctuary declaration, MPAs, MPs and associated management plans; ▪ regulation of distant water and local fleets, including observer programme coverage to document commercial fishing impact and interaction with whales and dolphins. 	Members/ SPREP/ Partners	High
5.2: Based on review, strengthen or amend existing policies and legislation, develop new ones where necessary, for the effective conservation management of whales and dolphins, including measures to mitigate threat and ensure habitat protection.	Members	High
5.3: Identify and respond to country / territory legal and policy needs.	Partners/ SPREP	Medium
5.4: Utilise the processes and outcomes used for NCSA and other related biodiversity mechanism, to address legal and policy needs for whale and dolphin conservation needs.	Members	Medium

INDICATORS:

- Regional legislative/management review completed and widely disseminated.
- Harmonisation of in country/territory policy and legal instruments.

OBJECTIVE 2: Develop and support implementation of regional/national whale and dolphin species management and recovery plans

Action	Lead	Priority
5.5: Actively seek resources to ensure the Oceania Humpback Whale Recovery Plan is sufficiently supported for successful implementation.	Partners (SPWRC/ SPREP)/ Members	High
5.6: Develop and implement national whale and dolphin action plans, including recovery plans, where necessary, based on the regional action plan, to promote and guide national whale and dolphin conservation programmes and initiatives.	Members/ SPREP/ Partners	High
5.7: Ensure to develop management plans for established/declared marine sanctuaries, MPAs and other ecosystem-based protection mechanisms that include whales and dolphins.	Members/ SPREP	High

INDICATORS:

- Implementation of the Oceania Humpback Whale recovery Plan sufficiently supported/ funded.
- National whale and dolphin management/recovery plans developed and implemented.
- Management plans for marine sanctuaries etc that include whales and dolphins developed.

THEME 6: CULTURAL SIGNIFICANCE AND VALUE

OBJECTIVE 1: Document the range of cultural practices, values and knowledge associated with whales and dolphins and encourage a more cohesive approach in policies and legislation

Actions	Lead	Priority
6.1: Undertake a review of customary practice and knowledge related to the conservation and management of whales and dolphins.	Members/ Partners	Medium
6.2: Promote the adoption and integration of customary practices related to the conservation and management of whales and dolphins, where appropriate.	Members	Medium
6.3: Review and identify gaps and conflicts in relevant policies and legislation to support the protection and promotion of traditional resource management (TRM), traditional knowledge (TK), intellectual property rights (IPR), access and benefit sharing (ABS), and customary marine tenure (CMT).	Members/ Partners	High
6.4: Address gaps and conflicts found in the review where required, in consultation with local communities and relevant stakeholders.	Members	Medium
6.5: Support and promote the introduction of appropriate formal protection of IPR, TK and ABS at a national, regional and international level.	Members	High
6.6: Support the documentation of traditional knowledge, practices, heritage and values, using existing networks.	Partners	Medium

INDICATORS:

- TK and other customary practices and values documented and incorporated where relevant.
- Review on gaps carried out and report published and disseminated.
- Artifacts and narratives (oral histories) documented and conserved in local museums.

OBJECTIVE 2: Preserve and protect the traditional knowledge and values associated with whales and dolphins

Actions	Lead	Priority
6.7: Identify and empower appropriate in-country authorities to hold, maintain and promote traditional knowledge.	Members	High
6.8: Establish documentation protocols and agreed partnerships with cultural groups/ chiefly bodies and individual knowledge holders regarding appropriate use and dissemination of information.	Members	Medium

INDICATORS:

- Each country has identified appropriate authority to house and promote cultural information.
- Ongoing promoting and support for TK, ABS in national, regional and international fora.

OBJECTIVE 3: Ensure appropriate cultural knowledge, practices, and values inform and underpin management measures

Actions	Lead	Priority
6.9: Assess the sustainability of cultural practices involving whales and dolphins that may represent a threat to whales and dolphins (e.g. Solomon Islands dolphin drive).	Partners/ Members	High
6.10: Ensure traditional protocols and knowledge are respected in the design and implementation of biological surveys	Partners/ Members	High
6.11: Ensure national and local policies and management respect and draw upon traditional knowledge.	Members	High

THEME 6: CULTURAL SIGNIFICANCE AND VALUE

6.12: Support development of community (based) management plans to include conservations of whales and dolphins.

Members

High

INDICATORS:

- Case studies supported on sustainability of cultural practices in countries interested in supporting sustainability assessments.
- Relevant whale and dolphin traditional knowledge and cultural values are used and acknowledged in scientific surveys design and execution and formulation of national management policies.



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THEME 7: RESEARCH AND MONITORING**This Action Plan promotes only non-lethal techniques for research****OBJECTIVE 1: Establish abundance/distribution of all cetaceans in the Pacific Islands region.***Prioritization to be given to those species or populations known to be subject to direct or indirect threats, and/or have a data deficient or unfavourable conservation status.*

Actions	Lead	Priority
7.1: Develop and maintain a web-accessible whale and dolphin sighting database.	Partners	High
7.2: Improve understanding of species diversity in all PICTs.	Partners/ Members	High
7.3: Establish distribution, range and habitat information of PIR cetacean species through the conduct of dedicated surveys.	Partners/ Members	High
7.4: Develop a training manual that encompasses abundance survey methodologies using a variety of techniques including platforms of opportunity and methodologies commonly available and accessible in the Pacific Islands region.	Partners	High
7.5: Undertake workshops to target delivery of training on abundance estimate techniques.	Partners/ SPREP	High
7.6: Disseminate species identification and related information resources to all PICTs (e.g. IFAW and SPC identification kit for observer programme).	SPREP/ Partners	High
7.7: Increase use of remote sensing device, especially acoustic.	Partners	Medium

INDICATORS:

- Online regional sighting database established and operational.
- Up-to-date whale and dolphin species diversity lists for all PICTs.
- Abundance estimates manual completed and training workshops undertaken.
- Improved estimates of distribution, abundance and habitat for PIR whale and dolphin species.
- At least one remote sensing device deployed in the region for at least six months.

OBJECTIVE 2: Estimate key demographic parameters to help diagnose trends*Prioritization to be given to those species or populations known to be subject to direct or indirect threats, and/or have a data deficient or unfavourable conservation status.*

ACTIONS	Lead	Priority
7.8: Estimate the following parameters of PIR cetacean populations: <ul style="list-style-type: none"> ▪ annual survival rate; ▪ annual growth rate; ▪ annual birth rate and birth interval; ▪ annual migration and immigration rates. 	Partners/ Members	Medium

INDICATORS:

- Key demographic parameters established for PIR cetacean populations.

THEME 7: RESEARCH AND MONITORING

This Action Plan promotes only non-lethal techniques for research

OBJECTIVE 3: Undertake research and monitoring to identify hazards and develop hazard mitigation strategies

Actions	Lead	Priority
7.9: Collate all available information on the scale of depredation, by-catch and fisheries interaction in order to better assess level of priority and possible mitigation actions.	Partners/ SPREP/ Members	High
7.10: Promote increased reporting of cetacean related information (sightings, fisheries entanglements or by-catch, depredation etc.) from all fishing vessels.	Members/ Partners	High
7.11: Include assessments of impacts in researches on abundance, structure, distribution, trends of humpback, minke, fin and sperm whales	Partners/ Members	High
7.12: Include assessments of harvest impacts in researches on abundance, structure, distribution, trends for whale and dolphin species targeted.	Partners/ Members	High
7.13: Identify locations and circumstances in which pollution (including noise, fishing gear, plastics etc.) and pathogens may be introduced into the PIR marine environment.	Partners/ Members	Medium
7.14: Assess whether identified pollutants and pathogens (Link to Action 7.13) sources might adversely affect cetaceans in the PIR.	Partners/ Members	Medium
7.15: Collect information on the potential impact of plastics and fishing gear on whales and dolphins, including from stranding networks.	Partners/ Members	High
7.16: Review impacts of seabed mining on cetacean populations in the PIR.	Partners	Medium
7.17: Encourage reporting of ship-strikes.	Partners/ Members	Medium
7.18: Document the number of animals, species, location and date of any take (hunting, captivity purposes, research etc.).	Members/ Partners	High
7.19: Assess the impacts of climate change on PIR cetacean species.	Partners/ Members	Medium
7.20: Develop a threat assessment for each PIR cetacean species (with reference to populations if necessary).	Partners/ SPREP/ Members	High
7.21: Identify potential for significant impact / localized effects from tourism activities on whales and dolphins.	Partners/ Members	Medium
7.22: Assess the potential impacts of whale and dolphin watching and swim with activities on the animals.	Partners/	High

INDICATORS:

- Scale of depredation and by-catch from fishing operations assessed.
- Non-lethal research carried out on abundance of whales and dolphin species that are targeted in whaling, hunt and live capture.
- Improved record keeping on cetacean take e.g. hunts, captivity etc.
- Assessment of pollutants, pathogens, sea bed mining and climate change made.
- Information on impacts of plastics and fishing gear compiled.
- Impacts of tourism related activities assessed.

THEME 7: RESEARCH AND MONITORING

This Action Plan promotes only non-lethal techniques for research

OBJECTIVE 4: Improve data collection and database management systems

Actions	Lead	Priority
7.23: Maintain regional species inventory database including directed research and monitoring as well as anecdotal and opportunistic records.	WDCS	High
7.24: Promote the reporting of as much information as possible from any anecdotal or opportunistic sightings including ship strikes and fisheries interactions, as well as sighting reports from the community, boating/dive community records, ferries etc.	Members/ Partners	High
7.25: Promote the development of national sighting and stranding networks, inclusive of all relevant stakeholders.	SPREP/ Partners/ Members	High
7.26: Facilitate the process by which sighting and stranding records are reported to the national network. In addition, provide effective feedback and updates to the network – and from the network to regional databases.	All	High
7.27: Undertake training sessions and workshops on species identification for relevant stakeholders	Partners/ Members	Medium
7.28: Ensure the forms to be included in the regional stranding booklet / manual to be produced under Action 7.35 below cover adequate data to be collected for useful records/analysis.	SPREP/ Partners	High

INDICATORS:

- Regional databases operational and current.
- National networks include all relevant stakeholders and contain opportunistic and anecdotal reports as well as directed survey information.
- All stranding events are well documented.
- Species identification and responses to stranding events improved.

Objective 5: Undertake comprehensive habitat mapping

Prioritization to be given to those species or populations known to be subject to direct or indirect threats, and/or have a data deficient or unfavourable conservation status.

Actions	Lead	Priority
7.29: Collate a listing of key habitat characteristics for as many PIR cetacean species as possible.	Partners/ Members	High
7.30: Undertake habitat mapping of relevant environmental variables on species identified in Action 7.29.	Partners/ Members	High
7.31: Ground truth proposed distribution of cetacean species as per habitat maps through research surveys.	Partners/ Members	High

INDICATORS:

- Increased understanding of habitat preferences and use by PIR cetacean species.
- Maps of cetacean species distribution in the PIR based on habitat and environmental characteristics.

THEME 7: RESEARCH AND MONITORING**This Action Plan promotes only non-lethal techniques for research****OBJECTIVE 6: Improve information received on stranding events in the Pacific Island Region**

Actions	Lead	Priority
7.32: Encourage as much information as possible to be collected at a stranding event. If possible, full necropsies should be undertaken, including examination for plastic ingestion.	Members/ Partners	High
7.33: Develop a website to improve the documentation of whale and dolphin strandings in the Pacific Islands region (referred to as ' <i>A Pattern of Strandings</i> ').	SPREP/ SPWRC	High
7.34: Collect community records and knowledge on whales and dolphins and incorporate into the regional stranding database.	Members/ Partners	Medium
7.35: Produce a regional stranding booklet / manual with species identification, forms and instructions in English, Pidgin and French.	SPREP/ Partners	High
7.36: Encourage an MoU between the University of Auckland and SPREP for processing and storage of tissue samples for genetic work.	SPREP	High
7.37: Provide basic stranding kits (including for genetic samples) to members.	SPREP/ Partners	High
7.38: Assist in funding for experts to attend national workshops in the region.	SPREP/ Partners/ Members	Medium

INDICATORS:

- Stranding Database and network established and operational.
- Stranding manual produced in three languages and distributed.
- Tissue archive and protocols for deposition and access established.
- Kits for genetic sampling distributed and used.



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THEME 8: WHALE AND DOLPHIN BASED TOURISM

OBJECTIVE 1: Ensure the development of whale and dolphin tourism is sustainable throughout the Pacific Islands Region.

Actions	Lead	Priority
8.1: Document and share lessons learnt from countries/territories with established whale and dolphin watching industries.	Partners/ Members	High
8.2: Maintain a regional database to document the growth and economics of whale and dolphin tourism.	Partners/ SPREP	High
8.3: Assess carrying capacity of target population of whales and dolphins to manage size of the industry.	Partners	High
8.4: Encourage diversification from a single species (e.g. humpback whales) industry, where available, to minimize impacts.	Members/ Partners	Medium

INDICATORS:

- A regional database is established to assess growth of the industry.
- Industries, governments and stakeholders (NGOs, SPREP) meet in-country as required to discuss issues and actions.
- Baseline research on target populations is conducted as a basis for recommendations regarding the carrying capacity of populations to sustain numbers of tourism interactions.

OBJECTIVE 2: Ensure best practice management of whales and dolphins tourism in the PIR

Actions	Lead	Priority
8.5: Review and distribute Pacific Islands Regional Guidelines for Whale and Dolphin Watching (PIRGWDW) as necessary.	Partners/ SPREP	High
8.6: Encourage annual stakeholder meetings (Govt, industry, scientists, NGOs) to assess management of the whale watch industry and use as a basis for industry review and reporting.	Members/ Partners	High
8.7: Encourage licensing and limiting of licenses or permits as a tool for management.	Members/ Partners	High
8.8: Encourage/support countries to review/develop national guidelines/regulations in line with the SPREP endorsed PIRGWDW.	SPREP/ Partners	High
8.9: Develop and conduct a regional programme for national compliance and enforcement training workshops.	Partners/ SPREP	High
8.10: Support countries to legislate cetacean watching guidelines into law.	Partners/ SPREP	High

INDICATORS:

- Stakeholders meetings conducted and reports developed.
- Guidelines reviewed and distributed.
- Licenses limited for management of the industry.
- National guidelines developed based on the regional guidelines and made into national regulations.
- Workshop conducted for national compliance and enforcement of guidelines/regulations.

THEME 8: WHALE AND DOLPHIN BASED TOURISM

OBJECTIVE 3: Whale and dolphin based tourism watching is conducted responsibly with minimum impact and maximum education and economic values.

Actions	Lead	Priority
8.11: Develop a regional programme to conduct national whale watching training for operators and guides/stakeholders.	Partners	High
8.12: Develop measures to reduce contact time with pregnant females and cow-calf pairs including closed areas.	Members/ Partners	High
8.13: Develop whale watching operator reporting programme to collect useful data (tourists and animal numbers).	Members/ Partners	High
8.14: Support countries to develop an education kit for onboard operations.	Partners	Medium
8.15: Ensure socio-economic benefits of whale and dolphin watching stays or are shared with communities.	Members/ Partners	High
8.16: Assist whale and dolphin watching feasibility studies to explore potential for whale watching tourism in countries.	Partners	High

INDICATORS:

- Regional programme to conduct national whale watching training for operators and guides/stakeholders established.
- Programme for whale watching operators to collect useful data developed and implemented.
- Educational kit available on board whale watching boats.
- Increased share of communities on from whale and dolphin watching.
- Whale and dolphin watching feasibility studies undertaken in additional members.



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THEME 9: NATIONAL, REGIONAL AND INTERNATIONAL COLLABORATION AND COOPERATION

OBJECTIVE 1: Promote and enhance national, regional and international coordination, collaboration and partnership for whale and dolphin conservation in the Pacific Islands Region.

Actions	Lead	Priority
9.1: Promote understanding by facilitating effective information sharing mechanisms (e.g. networks) to assist in addressing cross sectoral issues and migratory species conservation.	SPREP/ Members	High
9.2: Encourage and support PICTs in removing internal cross sectoral barriers in order to effectively implement the WDAP at the local and national Government levels.	SPREP/ Members/ Partners	High
9.3: Facilitate PICTs involvement and participation in relevant international and regional meetings and initiatives for whales and dolphins conservation, noting that members are responsible for selecting appropriate representatives to these meetings.	SPREP/ Partners/ Members	Medium
9.4: Promote cooperation and highlight achievements and lessons learned in whale and dolphin conservation at national regional and international fora.	All	High
9.5: Develop linkages and relationships with relevant regional organisations and processes, such as RFMOs (e.g. MoUs, information exchange and cross-sectoral integration).	SPREP/ Partners/ Members	Medium
9.6: Develop partnerships/relationships, e.g. through MoUs, with relevant private sector organisations to reduce threats to whales and dolphins such as by-catch, depredation and marine debris (such as fishing and tourism industries, NGOs).	Members/ SPREP/ Partners	Medium
9.7: Ensure integration of whale and dolphin conservation into national, regional and international initiatives including: NBSAPs; National Sustainable Development Strategies; Pacific Islands Regional Oceans Policy; Action Strategy for Nature Conservation, CROP Marine Sector Working Group; RFMOs; NBSAP Working Group). CTI, Micronesian challenge, Oceanscape, Funding opportunities e.g. GEF.	Members	High
9.8: Coordinate and facilitate the compilation of PICTs position for relevant international processes and MEAs on whales and dolphin.	SPREP/ Members/ Partners	High
9.9: Assess members capacity to implement the WDAP, CMS Cetacean MoU, CITES and CBD where relevant, using, e.g. the NCSA process already in place in countries.	Members/ SPREP/ Partners	High

INDICATORS:

- Number of national, regional and international organisations, processes and frameworks incorporating PIR whale and dolphin conservation needs.
- Number of national, regional and international partnerships created to support WDAP implementation.
- Number of NBSAPs or equivalent strategies integrating WDAP action.
- Capacity strengthened to draft, manage and enforce legislation and policy in country / territory.



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SPREP's VISION: The Pacific environment – sustaining our livelihoods and natural heritage in harmony with our cultures.