**SPREP Regional Marine Turtle Action Plan 2018–2022**

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*).

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

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| **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 2017 IUCN Red List of Threatened Species lists marine turtles found in the Pacific as follows:

* **Leatherback**: Vulnerable
* **Hawksbill**: Critically endangered
* **Loggerhead**: Vulnerable
* **Green**: Endangered
* **Olive Ridley**: Vulnerable
* **Flatback**: Data deficient

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 ecotourism attraction, whether it is watching nesters on the beach or watching them swim while 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 they can 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 from hunting turtles.

Ecotourism also 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 follows:

* Fisheries impacts: especially longlines, gill nets, and trawls. 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 in the Pacific islands region 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. sewalls, 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 severity of extreme weather events, and may increase the likelihood of disease outbreaks for sea turtles. Global warming will result in loss of nesting beaches,
* ***Specific Burning Issue Hazards:*** Loss of nesting beaches (e.g. sea level rise, extreme weather); Oceanographic and meteorological changes (e.g. changing currents, ENSO, NAO); Beach temperature change; Sea temperature change.

IUCN 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. This Turtle Action Plan is intended to address the most pressing issues in a cost-effective manner.

**THEMES AND OBJECTIVES**

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| **Theme** | **Objective** |
| 1. **INFORMATION, AWARENESS (EDUCATION) AND COMMUNICATION**
 | * 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.
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| 1. **CAPACITY BUILDING**
 | * Improve capacity within each participating country and territory for marine turtle protection, management, population research and monitoring as well as resourcing.
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| 1. **THREAT REDUCTION/ HAZARD MITIGATION**
 | * Improve the management and protection of marine turtles and their habitats by reducing threats to them, emphasizing community-based approaches.
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| 1. **LEGISLATION, POLICY AND MANAGEMENT/ RECOVERY PLANS**
 | * 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 framework are in place to support national efforts and initiatives
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| 1. **TRADITIONAL KNOWLEDGE AND CUSTOMARY PRACTICES**
 | * Ensure a more cohesive approach in policy and legislation in SPREP member countries and territories that incorporates traditional knowledge and customary marine tenure.
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| 1. **RESEARCH AND MONITORING**
 | * 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
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| 1. **SUSTAINABLE DEVELOPMENT**
 | * Encourage the sustainable use of marine turtles.
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| 1. **Collaboration and Partnership**
 | * Increase national, regional and international collaboration and partnership for turtle conservation and management.
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**THEMES, OBJECTIVES AND ACTIONS**

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| **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: Encourage Education Authorities to include turtle information in school curricula. | Members | High |
| 1.2: Support and strengthen the Lui Bell scholarship and other scholarships in marine science for tertiary students in the region. | All | High |
| 1.3: Provide feedback to communities regarding the results of turtle research and monitoring (nesting, foraging and genetic sampling) and other activities including data sharing in accordance with adopted policies and protocols. | Members/Partners | High |
| 1.4: Strengthen and promote the tag recovery programme and make materials available in local languages. | SPREP | High |
| 1.5: Develop, promote and deliver educational materials and awareness raising activities (e.g. turtle migration, biology/ecology, tagging, TK) to schools, universities and local communities. | SPREP/Partners/Members | High |
| 1.6: Encourage the use of informal / traditional methods of education (e.g. talanoa sessions, turtle calling) using elders within communities where appropriate. | Members | Medium |
| 1.7: 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 |
| **INDICATORS**:* Tag recovery programme active in most member countries and territories.
* Educational materials available in local language in at least 50% of PICTs.
* Traditional knowledge and customs documented appropriately, and report produced and distributed.
* Traditional knowledge and customary practices incorporated in information materials.
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| **THEMES 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: Build in-country capacity to develop and implement a resourcing strategy for marine turtle work. | SPREP/Partners | High |
| 2.2: Facilitate the delivery of identified training tools and materials, including attachments (e.g. Fiji/Vanuatu community exchange), technical assistance and expertise. | SPREP/Partners | High |
| 2.3 Build in country capacity to enforce policies and legislations relating to turtle management. | Members | High |
| 2.4: Undertake in-country nesting beach/foraging grounds monitoring / survey training workshop, including survey methodologies, turtle tagging, best handling practices, genetic sampling and mitigation measures. | SPREP/Partners | High |
| 2.5: Encourage partnerships with tertiary institutions, researchers, government agencies, local communities, NGOS, IGOS, etc. | All | High |
| **INDICATORS**:* At least 1 regional/sub-regional and 10 in-country nesting beach and foraging ground monitoring/survey training workshops undertaken.
* Policy and legislation workshops conducted.
* Enforcement workshops conducted.
* Tools/materials made readily available to SPREP members.
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| **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), predation of eggs and hatchlings by feral/domestic animals, fisheries by-catch, habitat destruction, and climate change. | Members/SPREP | High |
| **Pollution** 3.2: Reduce the use of plastic bags and encourage the development of alternative materials (e.g. cloth bags) | Members | High |
| **Direct take**3.3: Collect information at national levels, where possible, on the amount of turtle harvesting, including those harvested for traditional ceremonies, collection of turtle eggs  | Members/SPREP | High |
| 3.4: Where traditional harvesting is allowed under national legislation, promote the establishment of both minimum and maximum size limits, so that adult turtles are not taken and promote prohibition of the take of turtle eggs and nesters, to ensure that there is adequate recruitment to the population | Members | High |
| **Coastal development**3.5: Encourage a better understanding of the potential impacts of coastal development on sea turtle populations through EIA processes. | Members | High |
| 3.6: Promote the effective protection of turtle nesting beaches through community-based initiatives. | Members | High |
| **Fisheries interactions**3.7: Work with the By-Catch Mitigation Officer of the PEUMP programme, the Regional Fisheries Management rOganization, the fishing industry, Fisheries Ministries and IGOs / NGOs to better quantify and mitigate turtle by-catch in coastal and oceanic fisheries. | SPREP/Members/Partners/WCPFCFishing industry | High |
| 3.8: Encourage the expansion of observer programmes, including through electronic observer programmes, and improve documentation, identification and reporting | Members/Partners/SPREP | High |
| **Climate change**3.9: Undertake a review of the potential impacts of climate change on sea turtles in the Pacific Island region and take mitigation measures.  | SPREP/Partners | Medium |
| **Indicators:*** At least 50% of PICTS have introduced management measures to reduce the use of plastic bags.
* At least 50% of PICTs (including those where turtle harvesting is prohibited) are reliably documenting information on turtle harvesting and turtle egg collection.
* At least 50% of PICTs where turtle harvesting is permitted have introduced strategies to promote sustainable turtle harvesting
* 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 to ensure that 70% of nests are fully productive.
* By-catch in commercial fisheries is mitigated and significantly reduced.
* Number of observers reporting on, *inter alia,* turtle by-catch has increased.
* Review on climate change impacts to sea turtles is completed and mitigation measures recommended for adoption by Members.
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| **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 to support the Regional Marine Turtle Conservation Programme that incorporates traditional knowledge and customary marine tenure.**  |
| **Action** | **Lead** | **Priority** |
| 4.1: Encourage and support national governments in promoting compliance mechanisms that areeffective at the community level, drawing upon and supporting existing laws and controls and conflict resolution systems, and using local community members.  | Members | High |
| 4.2: Where turtle harvesting is permitted, encourage governments to amend policies and legislation regarding turtle size limits to prohibit the removal of mature/adult females from populations and to ensure that preference is given to using smaller sized animals in a managed way to ensure sustainability. | Members | High |
| 4.3: Incorporate relevant traditional knowledge, customary marine tenure and practices into policy, legislation and management plans where appropriate. | Members | Medium |
| 4.4: Ensure adequate protection is provided for nesting beaches and other known critical habitats for turtles through legislation and policy with a goal of achieving at least a 70% nest hatching rate. | Members | High |
| 4.5: Promote the development and strengthening of policies for proper waste management of plastics, to minimize their introduction into the ocean with consequent adverse impacts on marine turtles and other marine fauna. | Members | High |
| 4.6: Promote the use of EIAs to ensure that coastal development is sustainable and critical habitats for marine turtles are protected.  | Members | High |
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| **INDICATORS:*** Polices and legislation in at least two PICTs amended to address gaps for marine turtles for conservation, which also includes the protection of critical habitats and application of size limits to prohibit the removal of eggs and mature female turtles.
* Traditional knowledge and management practices incorporated into legislation, policies and plans in at least two PICTs.
* Appropriate policies are in place and enforced in at least 2 PICTs to reduce impact of waste and pollution on marine turtles.
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| **Objective 2: Ensure sufficient supporting frameworks are in place to support national efforts and initiatives.** |
| **Action** |  |  |
| 4.7: Support the development of management plans for established/declared marine sanctuaries, MPAs and other ecosystem-based protection mechanisms that include marine turtles. | Members/SPREP | High |
| **Indicators**:* Management plans for marine sanctuaries etc that include marine turtles developed in at least one PICT.
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| **THEME 5: RESEARCH AND MONITORING** |
| **OBJECTIVE 1: Identify and monitor major marine turtle nesting beaches in the Pacific Islands region.** |
| **Action** | **Lead** | **Priority** |
| 5.1: Support turtle nesting beach surveys for new sites to collect initial baseline data for at least five years. | Members/Partners/SPREP | high |
| 5.2: Encourage community-based long term turtle nesting monitoring at index nesting beachesm including for those already initiated. . | Members/Partners/SPREP | High |
| 5.3: Encourage monitoring of specific impacts of climate change and responses of marine turtles, in long term turtle nesting monitoring, including:* Nests’ sand temperature using data loggers (to provide an indication of likely hatchling sex ratio);
* Hatchling success (70% hatch success indicates a good sign of a recovering population);
* Nesting population each year;
* Temporal changes of beach morphology
 | Members/Partners/SPREP | High |
| 5.4: Develop and distribute a regional manual for conducting turtle nesting monitoring beach surveys. | SPREP/Partners | High |
| **INDICATORS:*** Long term monitoring of index nesting beaches in the Pacific region.
* 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.
* Updated map of key turtle nesting sites across the Pacific
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| **OBJECTIVE 2: Identify major marine turtle stocks in the Pacific Islands region** |
| 5.5: Work with appropriate partners to undertake genetic sampling and analysis including facilitation of CITES permits, where necessary.. | SPREP/Partners/Members | High |
| 5.6: Report regularly the results of genetic sampling and identification of major turtle stocks in the region to Members.  | Partners | High |
| **INDICATORS:*** 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**.**
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| **OBJECTIVE 3: Identify and monitor all major marine turtle foraging grounds in the Pacific Islands region** |
| 5.7: Encourage community monitoring toundertake long term surveys at major marine turtle foraging sites  | Members/Partners | High |
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| **INDICATORS:*** Long term foraging sites ground surveys initiated at major sites in the region.
* Results of turtle tracking distributed to PICTs through the SPREP websites and the marine turtle network (centralized repository of information).
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| **OBJECTIVE 4: Upgrade the Turtle Research and monitoring Database System (TREDS) in SPREP member countries and territories** |
| 5.8 SPREP to upgrade TREDS to a more user-friendly web-based system and seek funding for a TREDS Database Officer | SPREP/Partners | High |
| 5.9: Conduct regional TREDS training to familiarize PICT members with the new web-based system. | SPREP/Partners | High |
| 5.10: Members and participating organizations/projects submit data at least annually to the TREDS Database Officer for incorporation into regional database to enable regional analysis and reporting. | Members/Partners | High |
| 5.11: Continue to distribute tags and applicators to members undertaking tagging activities and engaged in SPREP approved tagging programme. | SPREP | High |
| **Indicators:*** TREDS programme ,including responsible database manager, secured for the long term
* All members effectively using upgraded TREDS and reporting annually to SPREP
* SPREP produce 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
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| **THEME 6: SUSTAINABLE DEVELOPMENT** |
| **OBJECTIVE 1: Encourage the use of marine turtles to be sustainable** |
| **Action** | **Lead** | **Priority** |
| 6.1: Prohibit the commercial harvesting of marine turtles and their eggs, and commercial trade of their parts and derivatives. | Members | High |
| 6.2: Where subsistence use of turtles is permitted for food, encourage sustainable management principles , including through community-based management approaches. | Members | High |
| 6.3: Encourage SPREP member countries to establish sustainable funding mechanisms (e.g. trust funds, GEF funding) for marine turtle conservation. | All | High |
| **INDICATORS:*** Compliance mechanisms in place in at least two PICTs to prohibit illegal harvesting of marine turtles and commercial harvesting.
* Sustainable management principles are applied to turtle take that is permitted for traditional and subsistence use in at least two PICTs.
* Sustainable funding mechanisms for turtle conservation are encouraged and investigated by Members.
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| **THEME 7: COLLABORATION AND PARTNERSHIP** |
| **Objective 1: Increase national, regional and international collaboration and partnership for turtle conservation and management.**  |
| **Action** | **Lead** | **Priority** |
| 7.1: Dr. George Balazs and Dr. Colin Limpus requested to continue as Marine Turtle Technical Advisers to SPREP and the RMTCP  | SPREP | High |
| 7.2: Foster partnerships to support MTAP implementation at national and regional levels (including Governments, NGOs, private sector and local communities) | Members/SPREP/Partners | High |
| 7.3: Continue to develop and strengthen regular communication exchanges with countries / territories through media, including the PI-Marine Turtle listserv. | SPREP/Partners | High |
| 7.4: Continue to identify and strengthen communication between relevant laboratories and universities to conduct genetic analysis for marine turtle biopsy samples. | SPREP/Partners | High |
| 7.5: Encourage members to abide with CITES principles and regulation concerning marine turtles trade, export/import. | Members/SPREP | High |
| **INDICATORS**:* Communications with agencies working on turtle conservation established and active
* Partnership established for MTAP implementation.
* Number of SPREP members participating and collaborating in the Regional network.
* Number of marine turtle samples provided for genetic analysis by member countries undertaken by a collaborative laboratory
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