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MEMORANDUM OF UNDERSTANDING ON THE CONSERVATION AND MANAGEMENT OF MARINE TURTLES AND THEIR HABITATS OF THE INDIAN OCEAN AND SOUTH-EAST ASIA

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8TH MEETING OF THE SIGNATORY STATES
Da Nang, Viet Nam, 21-25 October 2019
Agenda Item 9.1

AUSTRALIA – NATIONAL REPORT 2019

(Prepared by Australia)

IOSEA MARINE TURTLES MEMORANDUM OF UNDERSTANDING - NATIONAL REPORTING 2019

IOSEA Marine Turtles MoU - National Reports

The purpose of completing the national report is to provide information on your country's implementation of the IOSEA Marine Turtle MoU including, as far as possible, contributions of cooperating non-governmental partners. Implementation will be assessed in terms of the six objectives of the Conservation and Management Plan (CMP). The online questionnaire is divided into these six main objectives, and asks specific questions in relation to the activities that need to be carried out to fulfil those objectives.

Please answer all questions as fully and as accurately as possible. It may seem time-consuming, but once you have completed the first report, the next time will be much easier because you can simply revise your existing report online. Comprehensive responses to the questions posed in Section 1.4 should satisfy many of the reporting requirements of the 2004 FAO Guidelines to Reduce Sea Turtle Mortality in Fishing Operations, thereby avoiding duplication of effort.

Description text is provided below some of the questions to explain what information needs to be provided. Text boxes can be expanded to accommodate longer answers or to explain and provide additional information, beyond what is requested. Details of future plans are especially encouraged. Wherever possible, please try to indicate the source of information used to answer a particular question, if a published reference is available. Remember that you are sharing information with other countries about your progress, so that it may be of benefit to them. At the same time, you may find it useful to look at other countries' reports to get ideas for marine turtle conservation that might be adapted to your context.

When working on the online questionnaire, save your information by clicking on the "Save all" button inside each section. An auto-save feature also saves any changed responses every 30 seconds, and whenever you move between sections. Feel free to attach additional material (published reports, maps etc) to this questionnaire.

Throughout the questionnaire, alongside each question you will find one or more 3-letter abbreviations within square brackets. These are used to indicate the purpose for which the information provided will be used in the subsequent analysis of all of the national reports, as shown in the following table.

To some extent, the order in which these different types of information are listed below is a reflection of their importance – ranging from critical indicators of performance to factual details that are merely informative.

Abbreviation	**Type**	**Treatment / Purpose**
IND	Indicator	The information provided serves, in and of itself, as a key indicator of successful implementation or of pre-requisites for same (eg. of core actions undertaken, resource availability, capacity etc.)
PRI	Priorities	The collective data will be synthesized to give an indication of what has been done already (helping to avoid duplication of effort); what is generally not being done (gaps that need to be addressed); and what interventions or specific assistance may be required.
TSH	Trouble-shooting	

Particular implementation problems and issues (possibly of special interest to a small group of countries) are identified/highlighted with a view to stimulating remedial action in the short-term.

BPR

Best practice

Well-documented examples of best practices / success stories will be compiled and presented as approaches that other Signatory States might consider pursuing (ie adopting or adapting to suit their own circumstances).

SAP

Self-Appraisal

Self-assessment of effectiveness and completeness of actions undertaken – intended to stimulate reflection within a given Signatory State on what more could or should be done in relation to a particular activity.

INF

Information

The information will be collected and compiled, with little or no modification, mainly for purpose of sharing of information that could be of interest or value to other readers and/or other analyses.

GENERAL INFORMATION

Signatory State:
Which agency or institution has been primarily responsible for the preparation of this report?
› Australian Government Department of the Environment and Energy

List any other agencies, institutions, or NGOs that have provided input:
› Western Australian Government, Northern Territory Government, Queensland Government, Australian Fisheries Management Agency

Memorandum in effect in Signatory State since (dd/mm/yyyy):
› 01/09/2001

This report was last modified (dd/mm/yyyy):
› 12/06/2019

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OBJECTIVE I: REDUCE DIRECT AND INDIRECT CAUSES OF MARINE TURTLE MORTALITY

1.1 Introduction to marine turtle populations and habitats, challenges and conservation efforts

Please introduce and summarise, in an abstract of less than a page, the marine turtle populations and their habitats in your country. Comment on their status and highlight the main conservation challenges and achievements to date. It is not necessary to list here by name the individual nesting beaches, feeding areas and developmental habitats that are important for marine turtles in your country, as this information can be generated from the 'Site-Threat' data sheets to be completed in Annex 1. **[INF]**

› Six species of marine turtle (all except the kemp's ridley) are found in Australian waters and are listed as threatened and migratory under the national Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). The Recovery Plan for Marine Turtles in Australia (2017) is sub-ordinate legislation under the EPBC Act and provides the overarching management framework for turtles in Australia. It outlines the conservation status, threats and actions required to recover each species. The Recovery Plan provides for the management of marine turtle species on a genetic stock basis. This is to ensure the maintenance of biodiversity. The Recovery Plan provides a detailed description of habitat use, threats and actions required to manage each stock.

The Recovery Plan for Marine Turtles in Australia (2017) can be found at:
http://www.environment.gov.au/marine/publications/recovery-plan-marine-turtles-australia-2017

You have attached the following Web links/URLs to this answer.

Recovery Plan for Marine Turtles

1.2 Best practice approaches to minimizing threats

Describe any protocol or approaches practiced in your country, which you consider exemplary, for minimising threats to marine turtle populations and their habitats, which may be suitable for adaptation and adoption elsewhere. **[BRP]**

› Recovery Plan

The Recovery Plan for Marine Turtles in Australia (2017) provides a coordinated national framework for marine turtles. It recognises the migratory nature of these species and promotes a coordinated approach to management. The Recovery Plan provides a prioritised approach to addressing threats so that when funding is available it can be directed to the most pressing issues. For further details, see the link provided.

Offset programs

As part of the EPBC Act and state/territory environmental approvals processes, there is scope to use environmental or biodiversity offsets to compensate for residual adverse impacts of an action. This approach has been employed in Australia with current examples including the Northwest Shelf Flatback Turtle Conservation Program (NWSFTCP - an additional undertaking of the Chevron Gorgon Project at Barrow Island) and the Gladstone Ports Corporation Biodiversity Offset Strategy.

The key to successful conservation programs for long lived species such as marine turtles is that they are undertaken over relevant time frames and have strong governance systems in place. For marine turtles this time frame must be multi-decadal.

Key Threatening Process

The listing of Incidental catch (bycatch) of sea turtles during coastal otter-trawling operations in Australian waters north of 28°S was listed as a Key Threatening Process (KTP) under the EPBC Act in 2001. It was determined that a TAP was not required as actions were already underway to manage this threat. Turtle Excluder devices are compulsory across all northern jurisdictions and most southern ones.

Threat Abatement Plans

Threat abatement plans establish a national framework to guide and coordinate Australia's response to key threatening processes registered under the EPBC Act. There are currently four Threat Abatement Plans (TAPs) that list impacts on turtle populations and their habitats as one of their key threatening processes. They are the: TAP for the impacts of marine debris on vertebrate life (2018); TAP to reduce the impacts of exotic rodents on biodiversity on Australia offshore islands of less than 100,000 ha (2009); TAP for predation by the European red fox (2008); and TAP for predation, habitat degradation, competition and disease transmission of feral pigs (2017). There is also a biosecurity plan which builds on a TAP addressing invasive ants - National Invasive Ant Biosecurity Plan (2018-2028). Each of these TAPs includes specific measures for the prevention and management of impacts to marine turtles.

Nest to Ocean Programme

The Australian and Queensland Governments made a $7 million commitment to protect marine turtle eggs and hatchlings from predation by feral pigs and other predators.

The Queensland Parks and Wildlife Service was originally delivering this program over four years, 2014-18, however, the project has been extended to mid-2020. It is being done in close collaboration with the Department of the Environment and Energy and other partner agencies. Key marine turtle rookeries along the coast and on offshore islands were identified and prioritised for active nest protection and predator control efforts. Annual implementation plans and monitoring programs were developed for the priority sites. Due to the geographic scale of this program, the State was divided into a series of four zones or program areas to focus delivery of outcomes and methods according to the factors and characteristics of the individual zone.

They are: Cape York (east coast) to Townsville; Cape York (west coast); Rockhampton to Bundaberg; and Townsville to Rockhampton. Since the start of the program grant-recipients have monitored over 20,000 turtle nests. The program protected 95% of nests allowing for 1.3 million hatchlings being introduced into the population that otherwise would not have survived.

Raine Island Recovery Project

The Raine Island Recovery Project is a five year, $7.95 million collaboration between BHP, the Queensland Government, the Great Barrier Reef Marine Park Authority, Wuthathi and Kemer Kemer Meriam Nation (Ugar, Mer, Erub) Traditional Owners and the Great Barrier Reef Foundation. Raine Island supports the world's largest remaining green turtle population and the most important seabird rookery in the Great Barrier Reef World Heritage Area. For further information relating to Raine Island's recovery please see attached link.

Australian Marine Parks

In 2012, Australia met its international and national commitments to establish a National Representative System of Marine Protected Areas (NRSMPA) by 2012 through the establishment of 40 new Commonwealth marine reserves under the Environment Protection and Biodiversity Conservation Act 1999. These new reserves added more than 2.3 million square kilometres to the former national system of Commonwealth marine reserves and expanding Australia's marine protected areas in Commonwealth waters to 60, covering some 3.2 million square kilometres (including the Great Barrier Reef Marine Park). This is the largest representative network of marine protected areas in the world.

States and the Northern Territory Government also have marine protected areas within their coastal waters under their own legislation and processes as part of the NRSMPA. These Commonwealth marine reserves play an important role in the long-term conservation of marine ecosystems and its related biodiversity, including migratory species.

The Australian Government has developed marine bioregional plans under the EPBC Act. The plans aim to strengthen the operation of the EPBC Act in the Commonwealth marine environment in each marine region to ensure the marine environment remains healthy and resilient. The Plans identify conservation values, key ecological features, regional priorities, regional pressure analysis, and regional advice.

One important element of these Plans is the identification of biologically important areas for over 66 different marine species, including marine turtles. The Conservation Values Atlas allows identification of areas that are important for different behaviours, such as nesting, feeding and inter-nesting activity. Guidance is provided on what actions represent greater risk of impact to marine turtles. This improved spatial information assists developers avoid and mitigate impacts to marine turtles.

StrandNet

The Queensland Marine Wildlife Strandings and Mortality Program (StrandNet) maintains records of stranded and dead marine wildlife (turtles, dugongs, whales, dolphins and sharks).

For more information please refer the hyperlink Department of Environment and Science- Marine Strandings.

Reef 2050 Plan

The Reef 2050 Long-Term Sustainability Plan is the overarching framework for protecting and managing the Great Barrier Reef from 2015 to 2050. The plan is a key component of the Australian Government's response to the recommendations of the UNESCO World Heritage Committee.

The plan provides extra protection for turtles and dugongs through new laws for poaching, and improved sustainability agreements with indigenous communities and local land managers. The plan also improves water quality which will improve resilience in seagrass areas, which supports turtles.

For information relating to Long term Sustainability Plan see attachment.

New South Wales Saving our Species Program

The NSW Government's Saving Our Species (SoS) program aims to secure threatened species in NSW and improve conservation efforts for green and loggerhead turtles. The program has developed draft Conservation Strategies for green and loggerhead turtles in partnership with other jurisdictions for these shared stocks. The Strategy outlines the critical threats and management actions needed to secure the species in NSW.

National Landcare Program and Working on Country

The Australian Government National Landcare Program (which includes legacy projects from the Caring for our Country initiative) and Working on Country program provides funding to Indigenous organisations in the Northern Territory, Queensland and Western Australia engaged in sea management activities to employ full-time equivalent Indigenous rangers.

These rangers undertake activities that include marine debris collection and dugong and turtle-related activities. Turtle-related activities can include recording turtle observations, feral pig control at nesting sites, tagging, measuring, weighing, DNA sampling, fitting transmitters and recording nest sites. See section 1.3.1 for more information on community initiatives.

Western Australia

In Western Australia, all six marine turtle species are protected and may not be taken without a licence issued under the provisions of the Wildlife Conservation Act 1950. WA has mandated use of TEDs in all trawl fisheries since 2006.

Management strategies for marine turtles have been included in the Ningaloo Marine Park and Muiron Islands Marine Management Area, Shark Bay Marine Park, Montebello/Barrow Islands marine conservation reserves Management Plans. Standardised nesting monitoring protocols are in place for some, but not all, populations. Monitoring is conducted and led by a variety of stakeholders including government, non-government and industry. Flatback turtles are monitored at Onslow, Barrow Island, Mundabullangana beaches, Port Hedland,

Eighty Mile Beach, Eco Beach, Cable Beach and Cape Domett. Green turtles are monitored along the Ningaloo Coast. Loggerhead turtles are monitored along the Ningaloo coast and Dirk Hartog Island. Hawksbill turtles are monitored at Varanus Island and Rosemary Island.
Northern Territory
In Northern Territory waters, marine turtles are protected under the Territory Parks and Wildlife Conservation Act 2000 which is managed by the Northern Territory Government. The Northern Territory has mandated use of TEDs in its major trawl fisheries. Activities in the Northern Territory for marine turtle conservation and management include:
• Opportunistic monitoring at nesting sites and marine debris clean-ups often occur concurrently. Data is received from the following groups: Anindilyakwa Rangers, Groote Eylandt and Dhimurru Rangers at Nhulunbuy
• Opportunistic monitoring of olive ridley turtle nesting by Tiwi Island Rangers
• A community monitoring and education program, with flatback hatchlings release on a local Darwin beach
• Engagement with rangers groups as requested on an ad-hoc basis
Long-term monitoring of flatback turtles at:
o Bare Sand Island, Fog Bay
o Field Island, Kakadu National Park (Australian Government) in Van Diemen Gulf
o West Island, Sir Edward Pellew Islands, Gulf of Carpentaria (li-Anthawirriyarra Rangers)
A marine debris monitoring program in the Northern Territory was initiated by the non-government organisation, and is now run by ranger groups, in response to the concerns of coastal Indigenous communities, land councils, government agencies, conservation organisations and the fishing industry. The project has received funding from the Australian Government and continues to be a community based collaboration between Indigenous people, community groups and sea rangers. Based on long-term survey and monitoring data, the Northern Territory Government has identified marine turtle nesting beaches of international, national and regional significance across the Northern Territory coastline. Collaborative research between the Northern Territory Government, Charles Darwin University researchers and Indigenous communities has continued. There have been a number of projects undertaken in the Northern Territory including; nesting studies of olive ridley turtles at the Tiwi Islands, hawksbill turtles at Groote Eylandt, flatback turtles at Sir Edward Pellew Islands, monitoring of green turtle nesting at Cobourg Peninsula (with Conservation Volunteers Australia) and sporadic monitoring of leatherback turtles at Cobourg Peninsula. The Northern Territory Government has a Stranding Database for recording marine fauna mortality or injury. Program planning is currently underway to support some ranger groups in the Gulf of Carpentaria to monitor and manage turtle nest predation from pigs and dogs.
Queensland
Major critical habitats for dugongs (and therefore green turtles) were protected under the gazettal of 16 dugong protection areas (DPAs) under the Queensland Fisheries Act 1994 in 1998. These DPAs primarily restrict commercial fishing activities in these areas to minimise the risk from set mesh nets. Protection of islands used as rookeries have been gazetted as National Parks under the Nature Conservation Act 1992. Mandatory inclusion of turtle excluder devices was introduced in the East Coast Otter Trawl Fishery in 2001. Raine Island, which supports the largest nesting aggregation of green turtles in the world, was declared as a National Park (Scientific) in 2006. This is the highest level of protection under the Nature Conservation Act 1992. The area is also covered under an Indigenous Land Use Agreement (ILUA).
The Queensland Marine Turtle Strategy (2018) provides the overarching strategy for marine turtle species management in Queensland. The strategy can be found at the attached link.

You have attached the following Web links/URLs to this answer.

Department of Environment and Science - Queensland Marine Turtle Conservation Strategy 2018

Department of the Environment and Energy - Reef 2050 Plan Long Term Sustainability Plan

Department of Environment and Science - Marine Strandings

Department of the Environment and Energy - Conservation Values Atlas

Department of the Environment and Energy - Marine Bioregional Plans

Raine Island Recovery Plan

1.3 Programmes to correct adverse economic incentives

1.3.1 Describe any socio-economic studies or activities that have been conducted among communities that interact with marine turtles and their habitats. **[BPR, INF]**

Elaborate on the nature of the socio-economic study/ activity undertaken, the results obtained (successful or otherwise) and the desirability/ suitability for replication.
Include references to published reports, where available.
› Specialised Indigenous Ranger Program and Indigenous Ranger Capacity Building Program
The Australian Government has provided $30 million funding to further build technical skills and employ over 2600 Aboriginal and Torres Strait Islander people across the country, through to June 2020.
For more information see links below.
Community initiatives

The Australian Government has allocated funds to assist Traditional Owners in Northern Australia develop community-driven approaches to turtle and dugong management. These initiatives include:
• The Australian Government Working on Country programme, engaged in sea and land management activities, employs 839 full-time equivalent Indigenous rangers. These rangers undertake activities that include marine debris collection and dugong and turtle-related activities. Turtle-related activities can include recording turtle observations, feral pig control at nesting sites, tagging, measuring, weighing, DNA sampling, fitting transmitters and recording nest sites.
For more information see Working on Country Programme link below.
• For example, the Wunambal Gaambera Aboriginal Corporation's Uunguu Rangers are a partner in the above mentioned program. See link below for the Healthy Country Plan.
• The Torres Strait Regional Authority's (TSRA) Land and Sea Management Unit through its Environmental Management Program, provides support to 14 community based dugong and turtle management plans in the Torres Strait region. The plans aim to: promote community control and empowerment; respect cultural values and traditional knowledge; conserve natural and cultural values of their management area; and utilise two-way management through mutual investigation and implementation of Western and Indigenous systems of knowledge.
See link below for further information on the Land and Sea Management Unit.
Traditional Use of Marine Resources Agreements (TUMRAs)
TUMRAs relates to activities conducted by Traditional owners such as fishing, collecting, hunting and gathering. To allow for sustainable use of resources for traditional purposes.
For more information on Australia TUMRAs see link below.

You have attached the following Web links/URLs to this answer.

Department of the Environment and Energy - Traditional Use of Marine Resources Agreements

Torres Strait Regional Authority - Land and Sea Management Unit

Healthy Country Plan

Working on Country Programme

Indigenous Ranger Capacity Building Program

Specialised Indigenous Ranger Program

1.3.2 Which of these adverse economic incentives are underlying threats to marine turtles in your country? **[TSH]**
☑ Others (Please describe)

› Not Applicable
Marine turtles and their eggs are of economic, cultural, and spiritual importance to Aboriginal and Torres Strait Islander people who have had close associations with turtles for thousands of years. Turtles and their eggs have economic value because they provide sustenance, particularly for remote and isolated communities where alternative sources of protein may not be readily available or affordable. They are for personal, domestic and non-commercial communal needs only and cannot be traded for financial gain. Turtles play a significant role in the customary economy of many communities. This harvest is legal under the Native Title Act 1993.

1.3.3 Has your country taken any measures to try to correct these adverse economic incentives? **[BPR]**
☑ Yes (If yes, please describe these measures in detail)

› Many of the Australian Government initiatives are designed to support the sustainable use of turtle resources and provide compliance and enforcement training to Indigenous rangers. Indigenous Rangers conduct meetings with local stakeholders such as hunters, respond to local concerns, breaches and compliance needs and provide information sessions while continuing to conduct assessments of nests and predation rates

1.4 Reduction of incidental capture and mortality

1.4.1 Indicate, and describe in more detail, the main fisheries occuring in the waters of your country, as well as any high seas fisheries in which flag vessels of your country participate and interact with marine turtles.

Tick 'YES' to indicate that a fishery is present and interacting marine turtles or 'NO' to indicate that a fishery is not present or is not interacting with marine turtles. **[INF]**
If a fishery is present, use the text box to indicate, for example, the approximate geographic distribution of the fishery, how long it has been operating, how many vessels are involved, etc.

a) Shrimp trawls:
☑ Yes (Please provide details)

› Australian government managed commercial fisheries that are known to or potentially could interact with

marine turtles include (1):
• Northern Prawn trawl - located off Australia's northern coast, and extends from the low water mark to the outer edge of the Australian fishing zone in the area between Cape York in Queensland and Cape Londonderry in Western Australia.
• Torres Strait Prawn trawl - located in the eastern section of the Torres Strait Protected Zone. Trawl sector of the Coral Sea Fishery including waters from Sandy Cape, Fraser Island to Cape York, generally east of the outer boundary of the Great Barrier Reef Marine Park to the edge of the Australian Fishing Zone, excluding the area of the Coringa-Herald and Lihou Reef National Nature Reserves. Coral Sea Fishery – longline and trawl (2).
• Western Trawl Fisheries - North West slope and western deep water beyond 200m isobath to the outer edge of the Australian fishing zone.
• Southern and Eastern Scalefish and Shark Fishery - extends from near Fraser Island in Queensland to Cape Leeuwin in south west Western Australia.
Detailed information on these fisheries and their interactions with marine turtles can be found in the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) Fisheries Status Report in the link below.
State-managed trawl fisheries that are known to or potentially could have interactions with marine turtles include (1):
• Queensland East Coast Otter Trawl Fishery
• Queensland Gulf of Carpentaria Developmental Finfish Trawl Fishery
• Queensland River and Inshore Beam Trawl Fishery
• Queensland Stout Whiting Trawl Fishery (for descriptions of Queensland managed fisheries see Fisheries Queensland Status Reports at the link below).
• NSW Ocean Trawl
• NSW Estuary Prawn Trawl
• South Australian Prawn Trawl
• Northern Territory Finfish Trawl
• Western Australian Shark Bay Prawn
• Western Australian Shark Bay Scallop
• Western Australian Broome
• Western Australian Exmouth Gulf Prawn
• Western Australian Onslow and Nickol Bay Prawn
• Western Australian Kimberly Prawn
• Western Australian Pilbara Trawl
• Western Australian Abrolhos Islands and Mid West Trawl (for descriptions of Western Australian managed fisheries see Western Australian Annual Reports at the link below).
• Tasmanian Scalefish Fishery
1. Some of the fisheries in this list have not had any recorded interactions with marine turtles, however, as they operate in the area of marine turtles, interactions are possible.
2. This fishery includes a broad range of gear types, only some of which interact with marine turtles. See Fisheries Status Report attachment.

You have attached the following Web links/URLs to this answer.

Western Australia Annual Reports

Fisheries Queensland Status Reports

Australian Bureau of Agriculture and Resource Economics and Sciences - Fisheries Status Report

b) Set gill nets:

☑ Yes (Please provide details)

› The following fisheries could potentially have interactions with marine turtles:
• Western Australian Tropical and Temperate Shark Fisheries
• Queensland Gulf of Carpentaria Inshore Fin Fish Fishery
• Queensland East Coast Inshore Fin Fish Fishery
• Tasmanian Scalefish Fishery
• Northern Territory Offshore Net and Line Fishery
Details on mitigation and management arrangements for these and other fisheries where set gillnets may interact with marine turtles can be found at the following State Fisheries websites:
• Western Australia -
www.fish.wa.gov.au
• South Australia -www.pir.sa.gov.au/fisheries
• Victoria- https://vfa.vic.gov.au/
• Tasmania - https://dpipwe.tas.gov.au/sea-fishing-aquaculture
• New South Wales - http://www.dpi.nsw.gov.au/fisheries/commercial
•Queensland - https://www.daf.qld.gov.au/
• Northern Territory - http://www.nt.gov.au/d/Fisheries/

You have attached the following Web links/URLs to this answer.

Northern Territory State Fisheries
Queensland State Fisheries
New South Wales State Fisheries
Tasmania State Fisheries
South Australia State Fisheries
Victoria State Fisheries
Western Australia State Fisheries

c) Anchored Fish Aggregating Devices (FADs):
☑ Yes (Please provide details)

› FADS are prohibited in AFMA-managed Commonwealth fisheries, however NSW Department of Primary Industries regulates FADs. Information can be found in the Use of FADs in NSW link below.

You have attached the following Web links/URLs to this answer.

New South Wales- Use of FADs in NSW

d) Purse seine (with or without FADs):
☑ No (Please provide details)

› Few or no turtle interactions have been reported to date in purse seine fisheries across Australia. Most purse seine activity is in fisheries in southern and south western waters in Australia as recorded in the Fisheries Annual Report for 2018. Annual reports for Commonwealth fisheries can be found at the Corporate Publications and Reports link.

You have attached the following Web links/URLs to this answer.

Australian Fisheries Management Authority - Corporate Publications and Reports

e) Longline (shallow or deepset):
☑ Yes (Please provide details)

› The following fisheries are known to or potentially could have interactions with marine turtles:
• Western Australian Temperate and Tropical Shark Fisheries.
• Eastern Tuna and Billfish Fishery: extends from Cape York, Queensland, to the South Australian/Victorian border, including Tasmania. This also includes waters of the AFZ adjacent to Norfolk Island and the high seas areas covered by the Convention on the Conservation of Highly Migratory Fish stocks in the Western and Central Pacific Ocean.
• Western Tuna and Billfish Fishery: westward from the tip of Cape York covering part of Queensland, Northern Territory, Western Australia, South Australia to the South Australian\Victorian border out to and beyond the 200 nm Australian Fishing Zone (AFZ) boundary. This includes the high seas areas covered by the Indian Ocean Tuna Committee.
• Southern Bluefin Tuna Fishery: The fishery encompasses the Australian Fishing Zone and high seas activities, focussing on the waters off southern Australia. Most Southern Bluefin Tuna catch by longlining occurs off the east coast of Australia.
• Line and Trap Sector of the Coral Sea Fishery
• Northern Territory Offshore Net and Line Fisher
• Northern Territory Timor Reef Fishery
• Queensland Deepwater FinFish Fishery
• NSW Ocean Trap and Line Fishery

f) Driftnet:
☑ No (Please provide details)

› The method is prohibited under Commonwealth legislation and is not permitted in any Australian fisheries.

g) Others (Please provide details)
› Direct Take
Turtles are traditionally fished in the Torres Strait Protected Zone and within this zone, the turtle fishery is managed by the Torres Strait Protected Zone Joint Authority and commercial fishing is not permitted. The Torres Strait traditional fishing for dugong and turtle is managed through the community management plans supported by the Torres Strait Regional Authority.
Trap and pot fisheries
Trap and pot fisheries would have some (generally rare) interactions where turtles become entangled in the float line. Trap and Pot Fisheries include:
• Western Australian Western Rock Lobster Fishery
• South Australian Rock Lobster Fishery

• New South Wales Ocean Trap and Line Fishery
• Western Australian West Coast Deep Sea Crab Fishery
• Western Australian Shark Bay Experimental Blue Swimmer Crab Fishery
• Western Australian South Coast Crustacean Fishery
• Victorian Rock Lobster Fishery
• Queensland Spanner Crab Fishery
• Queensland Mud Crab Fishery
• Queensland Blue Swimmer Crab Fishery
• Tasmanian Rock Lobster Fishery
• Coral Sea Fishery

1.4.2 Please indicate the relative level of fishing effort and perceived impact of each of the above fisheries on marine turtles (e.g. in terms of by-catch) [TSH]. Select from one of the following descriptions: RELATIVELY HIGH, MODERATE, RELATIVELY LOW, NONE (i.e. not present), UNKNOWN (i.e. unable to answer for whatever reason).

a) Shrimp trawls
Please select only one per line

	UNKNOWN	NONE	RELATIVELY LOW	MODERATE	RELATIVELY HIGH
Fishing efforts:	☑	☐	☐	☐	☐
Perceived impact:	☑	☐	☐	☐	☐

- Source of information / clarification
› Regulation requires shrimp trawlers to have turtle excluder devices in the trawl nets. There is an Australian Government legislation requirement to take all reasonable steps to minimise interactions and report interactions.
AFMA releases quarterly reports on interaction with protected species, including turtles, divided into fishing type. These are available online at AFMA Protected Species Interaction Reports linked below.

You have attached the following Web links/URLs to this answer.

Australian Fisheries Managment Authority - Protected Species Interaction Reports

b) Set gill nets
Please select only one per line

	UNKNOWN	NONE	RELATIVELY LOW	MODERATE	RELATIVELY HIGH
Fishing effort:	☑	☐	☐	☐	☐
Perceived impact:	☑	☐	☐	☐	☐

- Source of information / clarification
› AFMA releases quarterly reports on interaction with protected species, including turtles, divided into fishing type. These are available online at AFMA Protected Species Interaction Reports linked below.

You have attached the following Web links/URLs to this answer.

Australian Fisheries Managment Authority - Protected Species Interaction Reports

c) Anchored Fish Aggregating Devices (FADs)
Please select only one per line

	UNKNOWN	NONE	RELATIVELY LOW	MODERATE	RELATIVELY HIGH
Fishing effort:	☑	☐	☐	☐	☐
Perceived impact:	☑	☐	☐	☐	☐

- Source of information / clarification
› FADs are prohibited in Commonwealth Managed Fisheries.
AFMA releases quarterly reports on interaction with protected species, including turtles, divided into fishing

type. These are available online at AFMA Protected Species Interaction Reports linked below.

You have attached the following Web links/URLs to this answer.

Australian Fisheries Management Authority - Protected Species Interaction Rpeorts

d) Purse seine (with or without FADs)

Please select only one per line

	UNKNOWN	NONE	RELATIVELY LOW	MODERATE	RELATIVELY HIGH
Fishing efforts:	☑	☐	☐	☐	☐
Perceived impact:	☑	☐	☐	☐	☐

- Source of information / clarification

› AFMA releases quarterly reports on interaction with protected species, including turtles, divided into fishing type. These are available online at AFMA Protected Species Interaction Reports linked below.

You have attached the following Web links/URLs to this answer.

Australian Fisheries Management Authority- Protected Species Interaction Reports

e) Longline (shallow or deepset)

Please select only one per line

	UNKNOWN	NONE	RELATIVELY LOW	MODERATE	RELATIVELY HIGH
Fishing effort:	☑	☐	☐	☐	☐
Perceived impact:	☑	☐	☐	☐	☐

- Source of information / clarification

› AFMA releases quarterly reports on interaction with protected species, including turtles, divided into fishing type. These are available online at AFMA Protected Species Interaction Reports linked below.

You have attached the following Web links/URLs to this answer.

Australian Fisheries Managemnet Authority - Protected Species Interaction Reports

f) Driftnet

Please select only one per line

	UNKNOWN	NONE	RELATIVELY LOW	MODERATE	RELATIVELY HIGH
Fishing effort:	☐	☑	☐	☐	☐
Perceived impact:	☐	☑	☐	☐	☐

- Source of information / clarification

› This method is not permitted in any Australian fisheries.

g) Others (from 1.4.1 g))

Please select only one per line

	UNKNOWN	NONE	RELATIVELY LOW	MODERATE	RELATIVELY HIGH
Fishing effort:	☑	☐	☐	☐	☐
Perceived impact:	☑	☐	☐	☐	☐

- Source of information / clarification

› Direct take

Under the Native Title Act 1993, native title holders are not prohibited or restricted from exercising native title rights (which could include hunting turtle and dugong) for personal, domestic and non-commercial communal needs. Dugong and turtle are of considerable cultural value to Aboriginal and Torres Strait Islanders and the harvest of these animals is, for the most part, managed sustainably by communities. Torres Strait Fisheries

are managed under the Torres Strait Fisheries Act. More details about the fisheries can be found at the link below.
Trap and pot fisheries
AFMA releases quarterly reports on interaction with protected species, including turtles, divided into fishing type. These are available online at AFMA Protected Species Interaction Reports linked below.

You have attached the following Web links/URLs to this answer.

Australian Fisheries Management Authority - Protected Species Interaction Reports
The Torres Strait Protected Zone Joint Authority - The Fisheries

1.4.3 Describe any **illegal fishing** that is known to occur in or around the waters of your country that may impact marine turtles. Describe the measures being taken to deal with this problem and any difficulties encountered in this regard. **[TSH]**
› In the early 2000s some illegal fishing occurred at Scott Reef and Browse Island in the Timor Sea where foreign fishers sometimes landed (illegally) and harvested nesting green turtles for their eggs. While limited illegal fishing still occurs in these areas, no incidents of killing turtles for their eggs have been detected in recent years on any vessels that have been apprehend or boarded for educational purposes, nor has there been any reports of raided nests or dead turtles onshore.
Intermittent reports of suspected illegal fishing for turtle and dugong in the Torres Strait have been received by AFMA over the years. AFMA is responsible for fisheries compliance operations with the TSRA Rangers managing Turtle and Dugong Management Plans in place for all the outlying communities in the Torrs Strait Protected Zone. With the assistance of the Department of Foreign Affairs and Trade (DFAT) multiple joint agency cross border patrols take place each year providing education and awareness visits to Treaty Villagers of the Papua New Guinea Western Province. Australian Border Force (ABF) also provides aerial surveillance and surface assets to detect and deter illegal fishing in this region. It is considered that the illegal harvest is small as a result of these measures.

1.4.4 Which of the following methods are used by your country to minimise incidental capture/mortality of marine turtles in fishing activities? [IND]

a) **Appropriate handling** of incidentally caught turtles (e.g. resuscitation or release by fishersusing equipment such as de-hooking, line cutting tools and scoop nets)
☑ YES (Details/future plans)

› AFMA has a range of documentation and training guides to assist in the successful release and handling of turtle and other species. See link below: AFMA - Bycatch Reports, Publications and ID Guides.
The AFMA Bycatch Strategy 2017-2022 is aiming to achieve consistent bycatch management throughout the industry through education programs for the fishing industry and mechanisms to report bycatch information.
Action 1. Improved monitoring and reporting of Commonwealth fisheries bycatch
Action 2. Streamlining management arrangements
Action 3. Streamlining management arrangements
Action 4. Improving environmental stewardship by fishers
For the complete Bycatch Strategy 2017-2022 see link below.

You have attached the following Web links/URLs to this answer.

Australian Fisheries Management Authority - Bycatch Strategy 2017-2022
Australian Fisheries Managment Authority - Bycatch Reports, Publications and ID Guides

b) **Devices that allow the escape of marine turtles** (e.g. turtle excluder devices (TEDs) or other measures that are comparable in effectiveness)
☑ YES (Details/future plans)

› Turtle excluder devices are mandatory, for more information relating to turtle excluder devices please refer to the link below.

You have attached the following Web links/URLs to this answer.

Australian Fisheries Management Authority - Turtle Excluder Devices

c) **Measures to avoid encirclement** of marine turtles in purse seine
☑ NO (Details/future plans)

› Few or no turtle interactions have been reported to date in purse seine fisheries across Australia. Most Australian purse seining activity occurs in fisheries in southern Australian waters where marine turtle presence is minimal.

d) **Appropriate combinations** of hook design, type of bait, depth, gear specifications and fishing practices

☑ YES (Details/future plans)

› Australian Government has funded research on bycatch mitigation measures such as hook design (including circle hooks), type of bait, weighted swivels and wire leaders/traces to reduce bycatch. A trial of the use of circle hooks in the Eastern Tuna and Billfish Fishery was conducted which demonstrated a capacity to reduce Marine Turtle interactions, however, capture rates of shark species increased. As a consequence, the use of circle hooks is not compulsory but there is substantial voluntary use of circle hooks by industry, particularly in areas with the potential for higher marine turtle interactions.

e) **Monitoring and recovery of fish aggregating devices** (FADs)

☑ NO (Details/future plans)

› FADs are prohibited in Commonwealth fisheries. Under the Sea Installation Act 1987, exemption certificates for Fish Aggregating Devices (FADs) can only be issued if the installation, when so installed, will be used solely for scientific or marine archaeological purposes, or for a purpose deemed appropriate by the Environment Minister. FADs used for commercial fishing do not require a permit or exemption under the Act and can be installed in waters south of 20o S in the Skipjack fishery.

f) **Net retention and recycling schemes**

☑ YES (Details/future plans)

› GhostNets Australia has been operational since 2004, working with indigenous groups in Australia. Information about GhostNets work can be found at the link below.
Tangaroa Blue Foundation was funded through a Caring for our Country Grant in 2012/2013 to expand the Australian Marine Debris Initiative. Further information about the work they do can be found at the Tangaroa Blue Foundation link below.
The Australian Fisheries Management Authority, in cooperation with the Department of the Environment and Energy and other Australian Government agencies, complements and supports the indigenous ranger programs by managing the retrieval, reporting and disposal of fishing related marine debris such as ghost nets and fish aggregating devices in offshore Australian waters. The Northern Prawn Fishery fishing industry cooperates with these groups in both locating and, where feasible and safe, in retrieval of ghost nets.

You have attached the following Web links/URLs to this answer.

Tangaroa Blue Foundation
Ghostnets Australia

g) **Spatial and temporal control of fishing** (e.g. seasonal closures of fishing activities)

☑ YES (Details/future plans)

h) **Effort management control**

☑ YES (Details/future plans)

› All relevant Australian fisheries have limited entry and, unless managed by quotas, have strict effort limits. In general, fishing effort in most relevant Australian fisheries has declined under improved management.

1.4.5 Which of the following programmes has your country developed – in consultation with the fishing industry and fisheries management organisations – to promote implementation of measures to minimise incidental capture and mortality of turtles in national waters and in the high seas? [IND]

Please use the corresponding text boxes to explain/clarify each of your responses, including ‘NOT APPLICABLE’ responses, and indicate future plans in this regard. [IND]
Please describe the collaboration, when/where the programmes were introduced, any difficulties encountered, and general results obtained (i.e. successful and unsuccessful). Provide references to publications, where available.

a) **Onboard observer programmes**

X
☑ YES (Details/future plans)

› AFMA operates an in-house Observer Program, which places observers (independent of the fishing industry) on fishing vessels to provide reliable and verified information on fishing catch, effort, and practices on-board fishing vessels operating in Commonwealth waters. For information relating to the on board observer program see the link below.
AFMA now requires e-monitoring systems for commercial fishing boats in the Eastern Tuna and Billfish Fishery, Western Tuna and Billfish Fishery and the Gillnet, Hook and Trap sector of the Southern and Eastern Scalefish and Shark Fishery. AFMA’s information on e-monitoring with requirements of the system can be found at E-monitoring Requirements link.

You have attached the following Web links/URLs to this answer.

Australian Fisheries Managment Authority - E-monitoring Requirements
Australian Fisheries Managemnet Authority - Onboard Observer Program

b) **Vessel monitoring systems**
☑ YES (Details/future plans)

› VMS help AFMA to monitor vessel position, course and speed. Guidelines surrounding the use of VMS can be found at Vessel Monitoring link.

You have attached the following Web links/URLs to this answer.

Australian Fisheries Management Authority- Vessel Monitoring

c) **Inspections** (i.e. at sea, in port, at landing sites)
☑ YES (Details/future plans)

› Many fisheries have established compliance strategies and programs that have the capacity to further target measures to monitor and minimise the interactions with protected species such as marine turtles.
Surveillance and enforcement activities are undertaken by the AFMA, Maritime Border Command, the Royal Australian Navy, Great Barrier Reef Marine Park Authority, and state and territory Fisheries Officers.
Compliance and enforcement programs include sea flights and port inspections, electronic monitoring.

d) **Training programmes / workshops** to educate fishers
☑ YES (Details/future plans)

› December 2018 - Torres Strait Turtle Planning Workshop in Townsville.
The purpose was to review current Torres Strait marine turtle monitoring and management activity to see if improvements could be made.
Queensland. 2018-114 Completing Australia's First National Bycatch Report
2015-208 Developing a National Bycatch Reporting System
AFMA Management and Bycatch officers regularly attend ports and vessels to advise of regulations and requirement with regard to minimise and avoid interaction with turtles and best practice to facilitate release.

You have attached the following Web links/URLs to this answer.

Workshop Queensland.2018-114
Workshop 2015-208

e) **Informative videos, brochures, printed guidelines** etc.
☑ YES (Details/future plans)

› Many fisheries are provided with information and education material that addresses the identification and handling of protected species such as marine turtles. For instance, both Queensland and the Northern Territory have developed a set of information brochures covering a wide range of protected species including turtles that contains advice on identification and mitigation actions.
Commonwealth fishers and scientific observers are provided with the Protected Species ID Guide, which includes the Indo-Pacific Marine Turtle ID Guide. Turtle identification and handling guidelines are also available for many Commonwealth managed fisheries.
Crew Member Observers in the Northern Prawn Fishery are provided with turtle identification guides as well as information on release procedures for maximizing turtle survival rates as part of an annual training program. The same information has also been provided to all operators in the fleet. The Torres Strait Prawn Fishery handbook, which is distributed to all license holders annually, provides sea turtle identification guides as well as turtle recovery procedures.
See AFMA Bycatch Discarding for more information.

You have attached the following Web links/URLs to this answer.

Australian Fisheries Managemnet Authority- Bycatch Discarding

1.4.6 Are the mitigation measures described in 1.4.4 and 1.4.5 periodically reviewed and evaluated for their efficiency? **[SAP]**
☑ YES (Please give details)

› All jurisdictions have review processes for fisheries management arrangements. The Australian Fisheries Management Authority carries out a 6 monthly assessment of the implementation of Fisheries Bycatch Work Plans for Australian Government fisheries, with a review of each plan every 2 years. Fisheries Management Plans are reviewed as appropriate.

1.4.7 In your country, what types of data collection, research and development have been undertaken to support the reduction of marine turtle incidental catch (while taking into consideration the impact of

various mitigation measures on other species)? **[SAP]**
› AFMA developed the ecological risk assessments (ERAs) for Commonwealth fisheries in 2001. Between 2002 and 2009 AFMA commissioned ERAs for all Commonwealth fisheries. In most fisheries ERAs have been rerun. Since the implementation of the ERAs, each successive year has shown a decline in the number of threatened or protected species being trapped as bycatch.
Interactions with protective species are reported in the fishery status reports for each species.

1.4.8 Has your country exchanged information and provided technical assistance (formally or informally) to other Signatory States to promote the activities described in 1.4.4, 1.4.5 and 1.4.7 above? **[SAP]**
☑ YES (If yes, please give details of the exchanges/technical assistance)

› Representatives from OceanWatch Australia have attended and participated at international forums such as:
South American Fisheries Forum (2006);
American Association for the Advancement of Science (2007);
New Zealand Mitigation Workshops (2008);
Forum Fisheries Agency workshop (2008); and
Annual Symposium on Sea Turtle Biology and Conservation (2009).

1.4.9 What legislative and practical measures has your country taken in support of UN General Assembly Resolution 46/215 concerning the moratorium on the use of large-scale driftnets? **[SAP]**
› Australia passed legislation in 1991 (Commonwealth Fisheries Management Act 1991) that gives effect to the Convention for the Prohibition of Fishing with long Drift Nets in the South Pacific. In the Great Barrier Reef World Heritage Area, the largest commercial nets that can be used are 1.2km in length. They can only be used in accordance with the Queensland Fisheries Act (1994) and Fisheries Regulations 1995. In the Torres Strait, commercial net fishing for finfish is banned because of concerns about the undesirable impact of net fishing, particularly in terms of bycatch such as marine turtles. The Australian Fisheries Management Authority has introduced restrictions on net sizes for nets used in traditional fishing for finfish to reduce the risk of incidental catch of turtle.

1.5 Addressing harvest of, and trade in, marine turtles; and protecting of habitat

1.5.1 Does your country have legislation to prohibit direct harvest and domestic trade in marine turtles, their eggs, parts and products; and to protect important turtle habitats? **[IND]**

Please provide details (title/date) of the relevant legislation, as well as any exemptions (e.g. for traditional harvest) under that legislation.
☑ YES

› Australian Government legislation
All six marine turtle species in Australia are listed as threatened and migratory under the national Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), and considered as matters of National Environmental Significance (MNES). Additionally, under the EPBC Act, areas of the marine environment under Australian Government jurisdiction (i.e. Commonwealth areas) and World Heritage Areas, are also a matter of NES (in some cases marine turtles are one of the World Heritage values underlying the World Heritage listing). It is an offence to kill, injure, take, trade, keep or move these species in a Commonwealth area or World Heritage Area, unless the person taking the action holds a permit under the EPBC Act or the activity is carried out in accordance with a State/Territory permit.
Australian Government Fisheries Management Act 1994 allows the Minister for the Environment or under the Native Title Act (1993). Section 211 of the Native Title Act 1993 provides a native title right to direct harvest of marine turtles by Traditional Owners, where that harvest is for the purpose of satisfying personal, domestic, or non-commercial communal needs; and in the exercise of native title rights and interests. Great Barrier Reef Marine Park Traditional use activities in the Great Barrier Reef Marine Park are managed under the Great Barrier Reef Marine Park Act 1975, and the Great Barrier Reef Marine Park Regulations 1983. The Great Barrier Reef Marine Park Zoning Plan 2003 recognises that under section 211 of the Native Title Act 1993, native title holders may undertake traditional use of marine resources in the Great Barrier Reef Marine Park.
Torres Strait “Fisheries Management Notices” (FMN) declared under the Torres Strait Fisheries Act 1984 are used to implement operational management arrangements within the various fisheries. One FMN is current for ‘regulating’ the direct harvest of marine turtles within the Torres Strait turtle fishery area. FMN 66 limits the taking of marine turtles to traditional fishing and prohibits the take and carriage of turtles from commercially licensed fishing boats unless that boat is operating under the conditions of a Traditional Inhabitant Boats licence and is less than 6 metres in length. In addition to this notice, other FMNs are in effect that ensure the direct harvest of marine turtles is reduced or eliminated through the use of turtle excluder devices in the area of the prawn fishery (FMN 81 & 82).
Also in the Torres Strait, marine turtles have been declared an Article 22 traditional fishery under the Torres Strait Treaty 1985 between Australia and Papua New Guinea. Traditional inhabitants harvest turtles as part of their traditional way of life and livelihood, which is protected by the Treaty. Under the Treaty, traditional inhabitants means, in relation to Australia, persons who (i) are Torres Strait Islanders who live in the protected zone or the adjacent coastal area of Australia, (ii) are citizens of Australia, and (iii) maintain traditional

customary associations with areas or features in or in the vicinity of the Protected Zone in relation to their subsistence or livelihood or social, cultural or religious activities. A further purpose of the Treaty is to protect and preserve the marine environment.
Queensland
The Queensland Nature Conservation Act 1992 provides for the listing of marine turtles as vulnerable species and creates offences for taking, keeping or using these species (or products from these species) without authority. However the Queensland Aboriginal and Torres Strait Islander Communities (Justice, Land and Other Matters) Act 1984 provides, despite any other Act, that an Aboriginal or Torres Strait Islander resident in a community government or Indigenous Regional Council (IRC) area shall not be liable to prosecution for an offence for taking marine products or fauna by traditional means for consumption by members of the community.
Northern Territory
Marine turtles are protected wildlife in the Northern Territory under Section 43 of the Territory Parks and Wildlife Conservation Act 2001. Section 66 of the Act prohibits the taking, interference with, possession, control or movement of protected wildlife, unless authorised to do so under the Act. Section 122 of the Act recognises the rights of Aboriginal peoples who have traditionally used an area of land or water to continue to use that area for traditional hunting, food gathering (other than for sale) and for ceremonial and religious purposes. Traditional hunting of marine turtles by Aboriginal people is covered by Section 122 and is therefore authorised under Section 66 of the Act. Such authorisation does not permit the utilisation of marine turtles other than in accordance with Aboriginal tradition.
Western Australia
The Western Australian Department of Biodiversity, Conservation and Attractions has legislative responsibility to conserve wildlife on Department of Biodiversity, Conservation and Attractions managed lands and waters under the Conservation and Land Management Act 1984 and to conserve and protect flora and fauna throughout the State under the Biodiversity Conservation Act 2016. Pursuant to the Wildlife Conservation Act, Notice 2005 specially protects fauna and the six species of marine turtles (loggerhead, green, hawksbill, leatherback, flatback and olive ridley) are listed as fauna that is rare or is likely to become extinct. Section 23 of the Wildlife Conservation Act 1950 provides for Australian Aboriginals and Torres Strait Islanders to harvest marine fauna (and flora) from Crown land, except nature reserves and wildlife sanctuaries, and any other land (includes waters), provided that where it is occupied it is with the consent of the occupier, for food for themselves and their families, but not for sale. Department of Biodiversity, Conservation and Attractions managed land is occupied land. While Wildlife Conservation Regulation 63 indefinitely suspends section 23 in relation to "Specially Protected Fauna" an exemption is in place in relation to the six turtle species.
Tasmania
In Tasmanian waters, all marine turtles are listed as Specially Protected Wildlife under the Wildlife Regulations (General) 2010 of the Nature Conservation Act 2002 which is managed by the Tasmanian Department of Primary Industries, Parks, Water and Environment.
Loggerhead turtles (Caretta caretta) are listed as Endangered and green (Chelonia mydas), leatherback (Dermochelys coriacea) and hawksbill (Eretmochelys imbricate) as Vulnerable under the Tasmanian Threatened Species Protection Act 1995. It is an offence to take (kill, injure, catch, damage, destroy and collect), buy, sell or have possession of any specially protected wildlife or any product of specially protected wildlife in Tasmania, unless licensed to do so via a permit issued under the Nature Conservation Act 2002 and (for listed species) the Threatened Species Protection Act 1995.
New South Wales
In New South Wales, three species of marine turtles (loggerheads, leatherbacks and green turtles) are protected under the Biodiversity Conservation Act 2016. Loggerheads are listed as endangered and green turtles and leatherbacks are listed as vulnerable. The Office of the Environment and Heritage is responsible for administering the Threatened Species Conservation Act 1995, which aims to protect species, populations and ecological communities threatened with extinction in NSW. The TSC Act, through Part 8A of the National Parks and Wildlife Act 1974 (NPW Act) prohibits the harming, picking, possessing, buying or selling of individual threatened species. The Act prohibits damaging their habitat and contains provisions to protect endangered populations and threatened ecological communities.
Victoria
In Victoria, the leatherback turtle (Dermochelys coriacea) is listed as threatened under the Flora and Fauna Guarantee Act 1988. The leatherback Turtle (Dermochelys coriacea) is considered critically endangered in Victoria according to the Department of Environment, Land, Water and Planning.

1.5.2 Which, among the following list, are economic uses and cultural values of marine turtles in your country? [INF]

Please rate the relative prevalence / importance of each consumptive or non-consumptive use. Use the text boxes below each rating to explain or clarify your responses.

a1) Meat consumption

☑ YES

a2) Meat consumption: relative prevalence/importance

☑ UNKNOWN

› Marine turtles and eggs have economic value (by providing food that would otherwise have to be bought) and cultural value to Aboriginal and Torres Strait Islander people in Australia. The relative prevalence/importance of the consumption of meat and fat of marine turtles and eggs to coastal Aboriginal and Torres Strait Islander people varies for different communities. For this reason a scale for the relative prevalence/importance of meat consumption, egg consumption or fat consumption has not been indicated.

b1) Egg consumption
☑ YES

b2) Egg consumption: relative prevalence/importance
☑ UNKNOWN

› See note above

c1) Shell products
☑ YES

c2) Shell products: relative prevalence/importance
☑ UNKNOWN

› Shells are valued by some Indigenous people and are used in traditional ornaments like dari in the Torres Strait.

d1) Fat consumption
☑ YES

d2) Fat consumption: relative prevalence/importance
☑ UNKNOWN

› See note above

e1) Traditional medicine
☑ YES

e2) Traditional medicine: relative prevalence/importance
☑ UNKNOWN

› See note above

f1) Eco-tourism programmes
☑ YES

f2) Eco-tourism programmes: relative prevalence/importance
☑ LOW

› In Queensland, a turtle ecotourism and information centre exists at Mon Repos Conservation Park, Queensland providing comprehensive interpretative and educational information. From November to March, visitors can see nesting and hatching turtles on the beach at night. For more information see link below.
Some eco-tourism activities to watch nesting flatback turtles occur on Bare Sand Island near Darwin. See link below.
In Western Australia, there is the Ningaloo Turtle Program. Information relating to the program can be found at the link below.

You have attached the following Web links/URLs to this answer.

AusTurtle Bare Sand Island Sea Turtle Research

Mon Repos Conservation Park

Ningaloo Turtles

g1) Cultural / traditional significance
☑ YES

g2) Cultural/traditional significance: relative prevalence/importance
☑ HIGH

› As noted above marine turtles and their eggs are of economic, cultural, and spiritual importance to Aboriginal and Torres Strait Islander people who have had close associations with turtles for thousands of years. Turtles and their eggs have economic value because they provide sustenance, particularly for remote

and isolated communities where alternative sources of protein may not be readily available or affordable. Turtles play a significant role in the customary economy of many communities. This harvest is legal under the Native Title Act 1993.

1.5.3 Please indicate the relative level and impact of traditional harvest on marine turtles and their eggs. **[IND, TSH]**

	RELATIVELY HIGH	UNKNOWN	NONE	RELATIVELY LOW	MODERATE
Level of harvest:	☐	☑	☐	☐	☐
Impact of harvest:	☐	☑	☐	☐	☐

Source of information / explanation:
› Please see the Recovery Plan for a discussion of Indigenous take of turtles in Australia (link below).

You have attached the following Web links/URLs to this answer.

Recovery Plan for Marine Turtles in Australia

1.5.4 Have any domestic management programmes been established to limit the levels of intentional harvest? **[SAP]**

Use the text box to give details.
☑ YES

› The Australian Government supports a range of initiatives in collaboration with traditional owners and Indigenous communities to manage the levels of intentional harvest of marine turtles to be sustainable.

1.5.5 Describe any management agreements negotiating between your country and other States in relation to sustainable levels of traditional harvest, to ensure that such harvest does not undermine conservation efforts. **[BPR]**
› The Department of the Environment and Energy has worked closely with the CMS COP-appointed Councillor for Marine Turtles to develop a Single Species Action Plan for Loggerhead Turtles in the South Pacific Ocean. The Australian Government has provided a voluntary contribution to the CMS to facilitate implementation of high priority activities contained in the Plan.
The Memorandum of Understanding (MoU) between Australia and Indonesia (1974) permits traditional Indonesian fishers to enter areas of the Australian Fishing Zone and Continental Shelf ‘within the Box’ for traditional fishing, but excludes the take of turtles, and other CITES listed species, in the box. For more information see the link below.
The Torres Strait Treaty (the Treaty) between Australia and Papua New Guinea came into force on February 15 1985. The Treaty defines borders between Australia and PNG and protects the right to live a traditional way of life. For more information see link below.

You have attached the following Web links/URLs to this answer.

The Torres Strait Treaty (the Treaty) between Australia and Papua New Guinea
The Memorandum of Understanding (MoU) between Australia and Indonesia (1974)
Single Species Action Plan for Loggerhead Turtles in the South Pacific Region

1.6 Minimizing mortality through nesting beach programmes

1.6.1 Measures and effectiveness

First, tick one of the YES/NO-boxes to indicate whether or not your country has any of the following measures in place to minimise the mortality of eggs, hatchlings and nesting females. If yes, then **estimate the relative effectiveness** of these measures. **[IND, SAP]**

Use the text boxes below each rating to elaborate on your responses, including any lessons learned that might be of value to other Signatory States, and indicate your plans for the coming year. Please explain any “Not Applicable (N/A)” responses.

a1) Monitoring/protection programmes
☑ YES

a2) Monitoring/protection programmes: relative effectiveness
☑ UNKNOWN

› Please note that in Australia, a range of measures are used by all jurisdictions (i.e. Australian Government,

state/territory government and, local government) and may reflect differing priorities for protection and conservation. There may also be considerable variability in terms of the effectiveness of these measures across different jurisdictions. For this reason a scale for the relative prevalence/importance has not been indicated.
The Recovery Plan has been implemented to allow for ongoing monitoring of a number of threats to turtles. The plan also provides priority actions to address high risk threats and identifies index beaches and foraging areas for ongoing monitoring.

b1) Education/awareness programmes
☑ YES

b2) Education/awareness programmes: Relative effectiveness
☑ UNKNOWN

› Government, state/territory government and, local government) and may reflect differing priorities for protection and conservation. There may also be considerable variability in terms of the effectiveness of these measures across different jurisdictions. For this reason a scale for the relative prevalence/importance has not been indicated.
Some examples include; Gnaraloo Station trust, Mon Repos Conservation Park and reefHQ Great Barrier Reef (links below).

You have attached the following Web links/URLs to this answer.

reefHQ
Mon Repos Conservation Park
Gnaraloo Station Trust

c1) Egg relocation/hatcheries
☑ YES

c2) Egg relocation/hatcheries: Relative effectiveness
☑ UNKNOWN

› Please note that in Australia, a range of measures are used by all jurisdictions (i.e. Australian Government, state/territory government and, local government) and may reflect differing priorities for protection and conservation. There may also be considerable variability in terms of the effectiveness of these measures across different jurisdictions. For this reason a scale for the relative prevalence/importance has not been indicated.
The Department of the Environment and Energy considers that conservation of marine turtles in the wild should be the primary focus of conservation efforts and ex-situ efforts such as hatcheries a secondary option. Egg relocation occurs at Mon Repos Conservation Park, near Bundaberg, Queensland.

d1) Predator control
☑ YES

d2) Predator control: Relative effectiveness
☑ UNKNOWN

› Please note that in Australia, a range of measures are used by all jurisdictions (i.e. Australian Government, state/territory government and, local government) and may reflect differing priorities for protection and conservation. There may also be considerable variability in terms of the effectiveness of these measures across different jurisdictions. For this reason a scale for the relative prevalence/importance has not been indicated.
Predation has been listed as a threat, as mentioned in the Recovery Plan and management is undertaken by a range of stakeholders.

You have attached the following Web links/URLs to this answer.

Recovery Plan for Marine Turtles in Australia

e1) Vehicle / access restrictions
☑ YES

e2) Vehicle/access restriction: relative effectiveness
☑ UNKNOWN

› Please note that in Australia, a range of measures are used by all jurisdictions (i.e. Australian Government, state/territory government and, local government) and may reflect differing priorities for protection and conservation. There may also be considerable variability in terms of the effectiveness of these measures across different jurisdictions. For this reason a scale for the relative prevalence/importance has not been

indicated.
Vehicles can have an impact on nest sites, as mentioned in the Recovery Plan and some councils have closed beaches during nesting seasons.

You have attached the following Web links/URLs to this answer.

Recovery Plan for Marine Turtles in Australia

f1) **Removal of debris / clean-up**
☑ YES

f2) Removal of debris /clean-up: relative effectiveness
☑ UNKNOWN

› Please note that in Australia, a range of measures are used by all jurisdictions (i.e. Australian Government, state/territory government and, local government) and may reflect differing priorities for protection and conservation. There may also be considerable variability in terms of the effectiveness of these measures across different jurisdictions. For this reason a scale for the relative prevalence/importance has not been indicated.
Marine debris has been listed as a threat in the Recovery Plan, which helps allow management undertaken by a range of stakeholders.
The threat abatement plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans allows for the implementation of programs that remove marine debris. Information around funding of programs can be found at the link below.

You have attached the following Web links/URLs to this answer.

Threat Abatement Plan - Marine debris 2018
Recovery Plan for Marine Turtles in Australia

g1) Re-vegetation of frontal dunes
☑ YES

g2) Re-vegetation of frontal dunes: relative effectiveness
☑ UNKNOWN

› Please note that in Australia, a range of measures are used by all jurisdictions (i.e. Australian Government, state/territory government and, local government) and may reflect differing priorities for protection and conservation. There may also be considerable variability in terms of the effectiveness of these measures across different jurisdictions. For this reason a scale for the relative prevalence/importance has not been indicated.
Loss of vegetation has been listed as a threat for some genetic populations, as mentioned in the Recovery Plan and management is undertaken by a range of stakeholders.

You have attached the following Web links/URLs to this answer.

Recovery Plan for Marine Turtles in Australia

h1) Building location/design regulations
☑ YES

h2) Buidling location/design regulations: relative efectiveness
☑ UNKNOWN

› Please note that in Australia, a range of measures are used by all jurisdictions (i.e. Australian Government, state/territory government and, local government) and may reflect differing priorities for protection and conservation. There may also be considerable variability in terms of the effectiveness of these measures across different jurisdictions. For this reason a scale for the relative prevalence/importance has not been indicated.
Under the Environment Protection and Biodiversity Conservation ACT 1999 (EPBC Act), actions that have, or are likely to have a significant impact on a matter of national environmental significance require approval from the Australian Government Minister for the Environment. The Minister will decide whether assessment and approval is required under the EPBC Act.
There are currently eight matters of national environmental significance protected under the EPBC Act, including listed threatened species such as marine turtles.
A streamlined approach for the environmental approval of offshore petroleum and greenhouse gas activities in Commonwealth waters came into effect in 2014. The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) is now the sole assessor for offshore petroleum activities in Commonwealth waters. This means that actions will not require individual referral, assessment or approval under the EPBC Act provided they are undertaken in accordance with the endorsed NOPSEMA Program.

i1) Light pollution reduction
☑ YES

i2) Light pollution reduction: Relative effectiveness
☑ UNKNOWN

› Please note that in Australia, a range of measures are used by all jurisdictions (i.e. Australian Government, state/territory government and, local government) and may reflect differing priorities for protection and conservation. There may also be considerable variability in terms of the effectiveness of these measures across different jurisdictions. For this reason a scale for the relative prevalence/importance has not been indicated.
The Australian and Western Australian Governments are currently developing National Light Pollution Guidelines for Wildlife including marine turtles, shorebirds and migratory shorebirds. The Guidelines are currently in draft and are anticipated to be finalised by the end of 2019.
Bundaberg Regional Council is currently undertaking the “Reducing urban glow: supporting sea turtle survival using open data”. For more information please see link below.
In Queensland the Low Glow collaboration a program in partnership with The Walt Disney Company, The Prince’s Trust Australia and Greenfleet Australia. Is working to reduce light pollution on Mon Repos beach using local support. More information can be found at the link below.

You have attached the following Web links/URLs to this answer.

Low Glow Collaboration Program
Reducing Urban Glow: Supporting Sea Turtle Survival Using Open Data

1.6.2 Has your country undertaken any evaluation of its nest and beach management programmes? **[SAP]**

Use the text box to elaborate on your response, if necessary.
☑ NO

OBJECTIVE II: PROTECT, CONSERVE AND REHABILITATE MARINE TURTLE HABITATS

2.1 Measures to protect and conserve marine turtle habitats

2.1.1 What is being done to protect critical habitats outside of established protected areas? (NB: It is assumed that legislation relating to established protected areas will have been described in Section 1.5.1) **[BPR, SAP]**

› Marine turtle habitats are protected through a range of mechanisms, including local, state/ territory and Australian Government legislation.
Please see the Recovery Plan for a discussion of protected areas.

You have attached the following Web links/URLs to this answer.

Recovery Plan for Marine Turtles in Australia

2.1.2 Are assessments routinely made of the environmental impact of marine and coastal development on marine turtles and their habitats? **[IND, SAP]**

Use the text box to elaborate on your response.
☑ YES

› Under the Environment Protection and Biodiversity Conservation ACT 1999 (EPBC Act), actions that have, or are likely to have a significant impact on a matter of national environmental significance require approval from the Australian Government Minister for the Environment. The Minister will decide whether assessment and approval is required under the EPBC Act.
There are currently eight matters of national environmental significance protected under the EPBC Act, including listed threatened species such as marine turtles.
A streamlined approach for the environmental approval of offshore petroleum and greenhouse gas activities in Commonwealth waters came into effect in 2014. The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) is now the sole assessor for offshore petroleum activities in Commonwealth waters. This means that actions will not require individual referral, assessment or approval under the EPBC Act provided they are undertaken in accordance with the endorsed NOPSEMA Program.
In undertaking assessment, NOPSEMA has committed to having regard to existing protective mechanisms of the EPBC Act, such as recovery plans and threat abatement plans, to ensure that they have all the relevant information available to inform their decision making. Activities that will have an unacceptable impact on listed threatened species, such as listed marine turtles, will not be approves. Separate to Commonwealth requirements, all states and territories have legislation that requires assessment of impacts to marine species and their habitats.

2.1.3 Is marine water quality (including marine debris) monitoring near turtle habitats? If yes, describe the nature of this monitoring and any remedial measures that may have been taken. **[SAP]**
☑ YES

› Reef 2050 Water Quality Improvement Plan 2017-2022
More than $600 million dollars is approved by both the Australian and Queensland Governments to deliver programs to improve water quality through to 2022. It has identified how to achieve long term sustainability of the water through management of agriculture, mining and city waste.
Queensland Government and Great Barrier Reef Marine Park Authority Joint Field Management Program. The joint field team provides conservation and monitoring, incidence response, welcoming visitors and upholding compliance. The rangers can respond to a wide variety of incidences that may affect water quality including oil or pollution spills.
For more information on QLD/GBRMPA Joint Field Management Program see the link below.
In NSW the Saving Our Species program is training local community volunteers to monitor marine debris close to known turtle zones.

You have attached the following Web links/URLs to this answer.

New South Wales Government Saving Our Species
Queensland and GBRMPA Joint Field Managment Program
Reef 2050 Water Quality

2.1.4 Are measures in place to prohibit the use of poisonous chemicals and explosives? **[SAP]**

Use the text box to elaborate on your response.
☑ YES

› The Great Barrier Reef Marine Park Authority works closely with the Australian Department of Defence to minimise the potential for negative interactions with protected species when conducting live firing exercises and underwater demolitions within the Great Barrier Reef Marine Park. In all states and territories the use of

chemicals and explosives in industry is regulated and closely monitored.

2.2 Rehabilitation of degraded marine turtle habitats

2.2.1 Are efforts being made to recover degraded coral reefs? If yes, give details (location, duration, effectveness, lessons learned, future plans etc.). **[IND, SAP]**

Provide sufficient details of the measures taken, especially those measures shown to have been effective in recovering degraded coral reefs. Please indicate future plans in this regard.
☑ YES (Details/future plans)

› Reef 2050 Plan
The plan outlines concrete management measures for 35 years to ensure the Outstanding Universal Value of the Reef is preserved now and into the future. Through preventative measures, and improving the knowledge and sustainability of businesses and communities around the reef.
The other program associated with the Great Barrier Reef is the Great Barrier Reef Extreme Weather Response Program, which was implemented by the Great Barrier Reef Marine Park Authority following the extreme weather events of the 2010-11 summer. Please see the link below for the full plan.
All other marine parks in Australia are monitored by the Parks Australia, to be able to maintain/improve their natural values. For information relating to marine parks in Australia and maintaining their values see the link below

You have attached the following Web links/URLs to this answer.

Parks Australia - Marine Parks
Great Barrier Reef Extreme Weather Event Response Program
Rreef 2050 Plan- Long Term Sustainability Plan

2.2.2 Are efforts being made to recover degraded mangrove habitats that are important for turtles? If yes, give details (location, duration, effectiveness, lessons learned future plans etc.). **[IND, SAP]**
☑ YES (Details/future plans)

› In the Great Barrier Reef Marine Park, reef water quality improvement plans are in place to improve mangrove and seagrass habitat over the longer term.
In Western Australia, mangrove habitats are given special consideration when developments are proposed. The Western Australia Environmental Protection Agency has guidelines as to the amount of mangrove habitat that can be disturbed/destroyed in given areas. In addition, where industrial developments disturb/destroy mangroves they undertake rehabilitation and replanting programmes, where required.

2.2.3 Are efforts being made to recover degraded sea grass habitats? If yes, give details (location, duration, effectiveness, lessons learned future plans etc.). **[IND, SAP]**
☑ YES (Details/future plans)

› Seagrass restoration network mission is ‘to enable the sharing of knowledge and tools for seagrass conservation, recovery and restoration and foster an integrated long-term approach to developing restoration solutions.’ The network links scientists, government, and community and industry practitioners to create seagrass colonies that have a mixture of species suitable to the area. See the link below for further information.
Seagrass recovery mechanisms (WAMSI)
WAMSI, under the Blueprint for Marine Science 2050 Report, lists seagrass as an important ecological feature of the marine landscape. One theme for WAMSI research is ‘Primary Producer response to dredging’ which focuses on the effects of dredging on key primary producers such as seagrass. More information on this report can be found at the link below.
Shark Bay seagrass restoration project
The Shark Bay seagrass restoration project is a part of Shark Bay Salt Pty Ltd, which is situated in the middle of a world heritage area. Since 2001, the seagrass restoration project is restoring 122 hectares in collaboration with the University of Western Australia, through the use of collected seeds. See link below for further information.

You have attached the following Web links/URLs to this answer.

Shark Bay Seagrass Restoration Project
Seagrass Recovery Mechanisms (WAMSI)
Seagrass Restoration

OBJECTIVE III: IMPROVE UNDERSTANDING OF MARINE TURTLE ECOLOGY AND POPULATIONS THROUGH RESEARCH, MONITORING AND INFORMATION EXCHANGE

3.1 Studies on marine turtles and their habitats

3.1.1 Give a list of available literature that includes baseline information from studies carried out in your country on marine turtle populations and their habitats. **[INF]**

› Please see the reference list in the Recovery Plan for Marine Turtles in Australia.

In addition, the following scientific publications were published in 2018-19:

Bayliss, P. and M. Fischer (2018). Indigenous participation in monitoring megafauna within the Reef 2050 Integrated Monitoring and Reporting Program Reef Integrated Monitoring and Reporting Program. Brisbane.

Bell, I., & Jensen, M. P. (2018). Multinational genetic connectivity identified in western Pacific hawksbill turtles, Eretmochelys imbricata. Wildlife Research, 45(4). doi:DOI: 10.1071/WR17089

Bell, I., Meager, J. J., Van de Merwe, J., & Hof, C. (2018). Green turtle (Chelonia mydas) population demographics at three chemically distinct foraging areas in the northern Great Barrier Reef. Science of the Total Environment, 652, DOI: 10.1016/j.scitotenv.2018.1010.1150.

Bevan, E., Whiting, S., Tucker, T., Guinea, M., Raith, A., & Douglas, R. (2018). Measuring behavioral responses of sea turtles, saltwater crocodiles, and crested terns to drone disturbance to define ethical operating thresholds. PLoS ONE, 13(3), e0194460. doi:https://doi.org/10.1371/journal.pone.0194460

Booth, D. T., & Dunstan, A. (2018). A preliminary investigation into the early embryo death syndrome (EEDS) at the world's largest green turtle rookery. PLoS ONE, 13(4), e0195462. doi:https://doi.org/10.1371/journal.pone.0195462

Caron, A. G. M., Thomas, C. R., Berry, K. L. E., Motti, C. A., Ariel, E., & Brodie, J. (2018). Ingestion of microplastic debris by green sea turtles (Chelonia mydas) in the Great Barrier Reef: Validation of a sequential extraction protocol. Marine Pollution Bulletin, 127, 743-751.

Cruz, L. M., Shillinger, G. L., Robinson, N. J., Santidrian Tomillo, P., & Paladino, F. V. (2018). Effect of light intensity and wavelength on the in-water orientation of olive ridley turtle hatchlings. Journal of Experimental Marine Biology and Ecology, 505, 52-56. doi:https://doi.org/10.1016/j.jembe.2018.05.002

Delisle, A., Kim, M., Stoeckl, N., & Lui, F. W. (2018). The socio-cultural benefits and costs of the traditional hunting of dugongs Dugong dugon and green turtles Chelonia mydas in Torres Strait, Australia. Oryx, 52(2), 250-261. doi:https://doi.org/10.1017/S0030605317001466

Dogruer, G., Weijs, L., Tang, J. Y., Hollert, H., Kock, M., Bell, I., . . . Gaus, C. (2018). Effect-based approach for screening of chemical mixtures in whole blood of green turtles from the Great Barrier Reef. Science of the Total Environment, 612, 321-329. doi:http://dx.doi.org/10.1016/j.scitotenv.2017.08.124

Duncan, E. M., Broderick, A. C., Fuller, W. J., Galloway, T. S., Godfrey, M. H., Hamann, M., . . . Godley, B. J. (2018). Microplastic ingestion ubiquitous in marine turtles. Global Change Biology, 1-9. doi:10.1111/gcb.14519

Finlayson, K. A., Leusch, F., & Van de Merwe, J. (2018). Primary green turtle (Chelonia mydas) skin fibroblasts as an in vitro model for assessing genotoxicity and oxidative stress. Aquatic Toxicology, 207. DOI: 10.1016/j.aquatox.2018.11.022

Flint, M., Brand, A., Bell, I., & Hof, C. (2019). Monitoring the health of green turtles in northern Queensland post catastrophic events. Science of the Total Environment. doi:DOI: 10.1016/j.scitotenv.2019.01.65

Fuentes, M. M. P. B. (2018). Microplastics may heat marine turtle nests and produce more females. The Conversation.

Garig Gunak Barlu Marine Park (Cobourg) summary turtle beach nesting reports 2016 – 2018.

Gaus, C., Villa, A., Dogruer, G., Heffernan, A. L., Vijayasarathy, S., Lin, C., . . . Bell, I. (2018). Evaluating internal exposure of sea turtles as model species for identifying regional chemical threats in nearshore habitats of the Great Barrier Reef. Science of the Total Environment, 658, DOI: 10.1016/j.scitotenv.2018.1010.1257. doi:DOI: 10.1016/j.scitotenv.2018.10.257

Groom, R. A., Griffiths, A. D., & Chaloupka, M. (2018). Estimating long-term trends in abundance and survival for nesting flatback turtles in Kakadu National Park, Australia. Endangered Species Research, 32, 203-211. doi:doi: 10.3354/esr00795

Groom, R. A., Neil, K. M., & Marsh, H. D. (2018). Suggested improvements to the Australian environmental impact assessment process to benefit marine megafauna. Environmental and Planning Law Journal, 35(1), 46-59.

Harris, R. M. B., et al. (2018). "Biological responses to the press and pulse of climate trends and extreme events." Nature Climate Change 8: 579–587.

Hays, G. C., Alcoverro, T., Christianen, M. J. A., Duarte, C. M., Hamann, M., Macreadie, P. I., . . . Esteban, N. (2018). New tools to identify the location of seagrass meadows: marine grazers as habitat indicators. Frontiers in Marine Science, 5(9), 1-6. doi:doi: 10.3389/fmars.2018.00009

Howe, M., FitzSimmons, N. N., Limpus, C. J., & Clegg, S. M. (2018). Multiple paternity in a Pacific marine turtle population: maternal attributes, offspring outcomes and demographic inferences. Marine Biology, 165(2), https://doi.org/10.1007/s00227-00017-03258-y doi:https://doi.org/10.1007/s00227-017-3258-y

Jensen, M. P., Allen, C. D., Eguchi, T., Bell, I. P., LaCasella, E. L., Hilton, W. A., . . . Dutton, P. H. (2018). Environmental warming and feminization of one of the largest sea turtle populations in the world. Current

Biology, 28, 1-6. doi:https://doi.org/10.1016/j.cub.2017.11.057
Johnson, J. E., Welch, D. J., Marshall, P. A., Day, J., Marshall, N., Steinberg, C. R., . . . Simpfendorfer, C. (2018). Characterising the values and connectivity of the northeast Australia seascape: Great Barrier Reef, Torres Strait, Coral Sea and Great Sandy Strait. Retrieved from Cairns:
Jones, K., Jensen, M. P., Burgess, G., Leonhardt, J., van Herwerden, L., Hazel, J., . . . Ariel, E. (2018). Closing the gap: mixed stock analysis of three foraging populations of green turtles (Chelonia mydas) on the Great Barrier Reef. PeerJ, 6, e5651. doi:DOI 10.7717/peerj.5651
Kennelly, S. J. (2018). Developing a National Bycatch Reporting System (FRDC Project No 2015/208).
Kyne, P., Brooke, B., Davies, C. L., Ferreira, L., Finucci, B., Lymburner, L., . . . Tulloch, V. (2018). Final Report. Scoping a Seascape Approach to Managing and Recovering Northern Australian Threatened and Migratory Marine Species. Retrieved from Charles Darwin University, Darwin:
Larson, S., Stoeckl, N., Jarvis, D., Addison, J., Prior, S., & Esparon, M. (2018). Using measures of wellbeing for impact evaluation: Proof of concept developed with an Indigenous community undertaking land management programs in northern Australia. Ambio, https://doi.org/10.1007/s13280-018-1058-3. doi:https://doi.org/10.1007/s13280-018-1058-3
Liles, M. J., Peterson, T. R., Seminoff, J. A., Gaos, A., Altamirano, E., Henriquez, A. V., . . . Peterson, M. J. (2019). Potential limitations of behavioral plasticity and the role of egg relocation in climate change mitigation for a thermally sensitive endangered species. Ecology and Evolution, DOI: 10.1002/ece3.4774. doi:DOI: 10.1002/ece3.4774
Mackarous, K. and Griffiths, A.D. (2018). Northern Territory Marine Megafauna Strandings: January 2017 – December 2017. Report by Department of Environment and Natural Resources, Darwin. http://hdl.handle.net/10070/305981
Marsh, H., Hagihara, R., Hodgson, A., Rankin, R., & Sobtzick, S. (2018). Monitoring dugongs within the Reef 2050 Integrated Monitoring and Reporting Program - Final report of the dugong team in the megafauna expert group, July 2018. Retrieved from Townsville:
Miller, R. L., Marsh, H., Cottrell, A., & Hamann, M. (2018). Protecting migratory species in the Australian marine environment: A cross-jurisdictional analysis of policy and management plans. Frontiers in Marine Science, 5, 229. doi:doi: 10.3389/fmars.2018.00229
Rees, A. F., Avens, L., Ballorain, K., Bevan, E., Broderick, A. C., Carthy, R. R., . . . B.J., G. (2018). The potential of unmanned aerial systems for sea turtle research and conservation: a review and future directions. Endangered Species Research, 35, 81-100.
Riskas, K. A., Tobin, R. C., Fuentes, M. M. P. B., & Hamann, M. (2018). Evaluating the threat of IUU fishing to sea turtles in the Indian Ocean and Southeast Asia using expert elicitation. Biological Conservation, 217, 232-239.
Sequeira, A. M. M., Rodríguez, J. P., Eguíluz, V. M., Harcourt, R., Hindell, M., Sims, D. W., . . . Thums, M. (2018). Convergence of marine megafauna movement patterns in coastal and open oceans. Proceedings of the National Academy of Sciences. doi:10.1073/pnas.1716137115
Stubbs, J. L., Mitchell, N. J., Marn, N., Vanderklift, M. A., Pillans, R. D., & Augustine, S. (2019). A full life cycle Dynamic Energy Budget (DEB) model for the green sea turtle (Chelonia mydas) fitted to data on embryonic development. Journal of Sea Reserach, 143, 78-88. doi:https://doi.org/10.1016/j.seares.2018.06.012
Thomson, J. A., Whitman, E. R., Garcia-Rojas, M. I., Bellgrove, A., Ekins, M., Hays, G. C., & Heithaus, M. R. (2018). Individual specialization in a migratory grazer reflects long-term diet selectivity on a foraging ground: implications for isotope-based tracking. Oecologia, https://doi.org/10.1007/s00442-018-4218-z. doi:https://doi.org/10.1007/s00442-018-4218-z
Thums, M., Rossendell, J., Guinea, M., & Ferreira, L. (2018). Horizontal and vertical movement behaviour of flatback turtles and spatial overlap with industrial development. Marine Ecology Progress Series, 602, 237-253. doi:https://doi.org/10.3354/meps12650
Tucker, T., Whiting, S., Pendoley, K., FitzSimmons, N. N., Berry, O., Mitchell, N., & Bentley, B. P. (2018). Questions of scale; Collaborative Turtle Research Along the Kimberley's Remotest Coasts. In H. McGlashan, K. Coate, J. Gresham, & G. R. Hart (Eds.), The Natural World of the Kimberley (pp. 9): WA Kimberley Society, Inc.
Vijayasarathy, S., Baduel, C., Hof, C., I, B., del Mar Gómez Ramos, M., Gómez Ramos, M. J., . . . Gaus, C. (2018). Multi-residue screening of non-polar hazardous chemicals in green turtle blood from different foraging regions of the Great Barrier Reef. Science of the Total Environment, 652, 862-868.
Villa, C. A., Bell, I., Hof, C., Limpus, C. J., & Gaus, C. (2018). Elucidating temporal trends in trace element exposure of green turtles (Chelonia mydas) using the toxicokinetic differences of blood and scute samples. Science of the Total Environment, 651, DOI: 10.1016/j.scitotenv.2018.1010.1092. doi:DOI: 10.1016/j.scitotenv.2018.10.092
WAMSI Turtle Project Report
WAMSI Benthic Project Report – Turtle Component
Whiting, S. D., Tucker, T., Pendoley, K., Mitchell, N., Bentley, B. P., Berry, O., & FitzSimmons, N. N. (2018). Marine Turtles in the Kimberley: key biological indices required to understand and manage nesting turtles along the Kimberley coast. Retrieved from Perth, Western Australia:
Wilson, P., Thums, M., Pattiaratchi, C. B., Meekan, M., Pendoley, K., Fisher, R., & Whiting, S. (2018). Artificial light disrupts the nearshore dispersal of neonate flatback turtles Natator depressus. Marine Ecology Progress Series, 600, 179-192. doi:https://doi.org/10.3354/meps12649
WWF - Australia. (2018). Rivers to Reef to Turtles Project Final Report (2014-2018). Retrieved from: https://www.wwf.org.au/what-we-do/species/green-turtle/rivers-to-reef-to-turtles

3.1.2 Have **long-term** monitoring programmes (i.e. of at least 10 years duration) been initiated or planned for priority marine turtle populations frequenting the territory of your country? **[IND, BPR]**

Please give details of the nature, duration and continuity of these programmes.
☑ YES

› Please see stock tables in the Recovery Plan for details.

You have attached the following Web links/URLs to this answer.

Recovery Plans for Marine Turtles in Australia

3.1.3 Has the genetic identity of marine turtle populations in your country been characterised? **[INF, PRI]**

Please give details (e.g. which species, which populations?).
☑ YES

› Please see stock tables in the Recovery Plan for details.
Mixed stocks of foraging grounds have not been completed for loggerheads, hawksbills, and many green turtle populations

You have attached the following Web links/URLs to this answer.

Recovery Plans for Marine Turtles in Australia

3.1.4 Which of the following methods have been or are being used to try to identify migration routes of turtles? Use the text boxes to provide additional details [INF, PRI]

a) Tagging
☑ YES (Details/future plans)

› Monitoring and tagging has occurred at sites across northern Australia over both long and short time frames. Please see Recovery Plan for details.

You have attached the following Web links/URLs to this answer.

Recovery Plan for Marine Turtles in Australia

b) Satellite tracking
☑ YES (Details/future plans)

› Please see:
Waayers, D., et al., Satellite tracking of marine turtles in the south eastern Indian Ocean: A review of deployments spanning 1990-2016. Indian Ocean Turtle Newsletter, 2019. 29: p. 23-37.

3.1.5 Have studies been carried out on marine turtle population dynamics and survival rates (e.g. including studies into the survival rates of incidentally caught and released turtles)? **[INF, PRI]**
☑ YES

› Please see Recovery Plan for details.

You have attached the following Web links/URLs to this answer.

Recovery Plan for Marine Turtles in Australia

3.1.6 Has research been conducted on the frequency and pathology of diseases in marine turtles? **[INF, PRI]**
☑ YES

› Please see Recovery Plan and additional reference list above for details.

You have attached the following Web links/URLs to this answer.

Recovery Plan for Marine Turtles in Australia

3.1.7 Is the use of traditional ecological knowledge in research studies being promoted? **[BPR, PRI]**
☑ YES

› The Environment Protection and Biodiversity Conservation Act 1999 promotes the use of traditional ecological knowledge in cooperation with Indigenous people. The North Australian Indigenous Land and Sea Management Alliance conducted a Traditional Ecological Knowledge project as part of their Dugong and Marine Turtle Project.
The Torres Strait Regional Authority is supporting the use of Traditional Ecological Knowledge system in Torres Strait to enable Rangers' cultural and natural resource management activities to be informed by Ailan Kastom

(Island Custom). The project will allow for cultural datasets to complement other western scientific datasets through a geospatial, computer based system, with associated mechanisms to ensure that culturally sensitive data and Indigenous intellectual property rights are appropriate protected.

3.2 Collaborative research and monitoring

- 3.2.1 List any **regional** or **sub-regional action plans** in which your country is already participating, which may serve the purpose of identifying priority research and monitoring needs. **[INF]**

Use the text box to elaborate on your response.
› Australia supports the South Pacific Regional Environment Programme and the associated action plan for marine turtles coordinated by the Secretariat.
CMS Single Species Action Plan for Loggerhead Turtles in the South Pacific - the implementation was reviewed in October 2018. Australia has initiated a number of programs to address high priority actions particularly around terrestrial predation.
Papua New Guinea is a member on the Torres Strait Scientific Advisory Committee which provides research advice on Torres Strait fisheries (including marine turtles) to the Protected Zone Joint Authority.
In the Torres Strait region communities, with the support of the TSRA, have developed dugong and turtle management plans, which contain community derived objectives, concerns, and research priorities from their perspective.

3.2.2 On which of the following themes have collaborative studies and monitoring been conducted? Use the text boxes to describe the nature of this international collaboration or to clarify your response. Answer 'NO' if the studies/monitoring undertaken do not involve international collaboration. [INF, PRI]

a) Genetic identity
☑ YES (Details/future plans)

› Please see Recovery Plan and list of additional publications above for details.

You have attached the following Web links/URLs to this answer.

Recovery Plan or Marine Turtles in Australia

b) Conservation status
☑ YES (Details/future plans)

› Please see Recovery Plan and list of additional publications above for details.

You have attached the following Web links/URLs to this answer.

Recovery Plan for Marine Turtles in Australia

c) Migrations
☑ YES (Details/future plans)

› Please see Recovery Plan and list of additional publications above for details.

You have attached the following Web links/URLs to this answer.

Recovery PLan for Marine Turtles in Australia

d) Other biological and ecological aspects
☑ YES (Details/future plans)

› Please see Recovery Plan and list of additional publications above for details.

You have attached the following Web links/URLs to this answer.

Recovery Plan fo Marine Turtles in Australia

3.3 Data analysis and applied research

3.3.1 List, in order of priority, the marine turtle populations in your country in need of conservation actions, and indicate their population trends. **[PRI]**
› Please see Section 5.5: Stocks at highest risk in the Recovery Plan.

You have attached the following Web links/URLs to this answer.

Recovery Plan for Marine Turtles in Australia

3.3.2 Are research and monitoring activities, such as those described above in Section 3.1, periodically reviewed and evaluated for their efficacy? **[SAP]**

☑ YES

3.3.3 Describe how research results are being applied to improve management practices and mitigation of threats (in relation to the priority populations identified in 3.3.1, among others). **[SAP]**
› Long term monitoring projects are undertaken to detect long term changes in population treads to identify priority areas for management. Tagging and genetic studies provide information on genetic diversity, migration patterns and key nesting and foraging areas to help identify critical sites for protection. Information on life history parameters is used for population modelling studies to estimate sustainable levels of harvest and to model other impacts on populations. Research on interactions between marine turtles and fisheries are used to mitigate these threats.
Individual programs include an evaluation and improvement component to ensure ongoing improvement.

3.4 Information exchange

3.4.1 Has your country undertaken any initiatives (nationally or through collaboration with other Range States) to standardise methods and levels of data collection? **[BPR, INF]**
☑ YES [If yes, please give details of the agreed protocol(s)]

› Most researchers work collaboratively, and many methods are standardised. This occurs either through shared knowledge, shared training or through the IUCN methods manual.

3.4.2 To what extent does your country exchange scientific and technical information and expertise with other Range States? **[SAP, IND]**
☑ OCCASIONALLY

3.4.3 If your country shares scientific and technical information and expertise with other Range States, what mechanisms have commonly been used for this purpose? Comment on any positive benefits/outcomes achieved through these interactions. **[INF]**
› Various international forums have been used for information sharing, including workshops and training provided through IOSEA, CMS and SPREP.

3.4.4 Does your country compile and make available to other countries data on marine turtle populations of a regional interest?

Please give details **[INF]**
☑ YES

› Queensland Parks and Wildlife has developed a regional mapping system for marine turtle nesting populations and their breeding migrations in the Indo-Pacific Region.

OBJECTIVE IV: INCREASE PUBLIC AWARENESS OF THE THREATS TO MARINE TURTLES AND THEIR HABITATS, AND ENHANCE PUBLIC PARTICIPATION IN CONSERVATION ACTIVITIES

4.1 Public education and information programmes

4.1.1 Describe the educational materials, including mass media information programmes that your country has collected, developed and/or disseminated. **[INF, PRI]**

Details/future plans:
› In Western Australia, information is shared primarily through the North West Shelf Flatback Turtle Conservation Program website which includes code of conduct, methods manuals, project information and strategic plan.
In the Great Barrier Reef Marine Park, GBRMPA administers the Reef Guardian Program. The Program allows for stake holders to undertake and expand their knowledge on how to create a healthier reef.
In the Torres Strait, the Torres Strait Regional Authority, in collaboration with the Department of Employment, Economic Development and Innovation, are training traditional owners, rangers and high school children in Seagrass Watch.
reefHQ Aquarium Turtle Hospital
The reefHQ Aquarium Turtle Hospital in Townsville, Queensland opened in August 2009. The hospital was developed to rehabilitate sick and injured marine turtles so they can be released back into the Great Barrier Reef Marine Park, enhancing their long term survival and sustainability as a threatened species. The hospital plays a key role in raising community awareness in relation to threatened species and encouraging behavioural change that contributes to nature conservation.
The facility provides visitors with an opportunity to see and learn about the plight of marine turtles, through educational talks and guided tours of the hospital.
Educational books on turtles and climate change have been distributed to schools in Torres Strait through ranger educational programs. They can be found at the link below.
In Western Australia, the Ningaloo Turtle Program has developed a range of education, awareness and information resources that can be downloaded from their website listed below.
Tangaroa Blue Foundation has a Marine Debris Education Kit aligned to the national curriculum which highlights the impacts of marine debris on wildlife including turtles.

You have attached the following Web links/URLs to this answer.

North West Shelf Flatback Turtle Conservation Program
Tangaroa Blue Foundation - Marine Debris Education Kit
Ranger Educational Programs
Ningaloo Turtles Resources
reefHQ Turtle Hospital
TSRA Seagrass Watch
GBRMPA Reef Guardians

4.1.2 Which of the following groups have been the targets of these focused education and awareness programmes described in above in Section 4.1.1? **[PRI, INF]**
☑ Fishing industry
☑ Local/Fishing communities
☑ Indigenous groups
☑ Tourists
☑ Teachers
☑ Students
☑ Additional information

› Throughout Australia turtle conservation has benefited from two-way knowledge around turtle management. Ranger programs have been funded from various sources and training has been provided from a variety of sources including government, non-government and industry in the fields of turtle research, marine debris, feral animal control, data bases, GIS, and project management.

4.1.3 Have any community learning / information centres been established in your country? **[BPR, SAP]**

Please give details and indicate future plans
☑ YES

› In Queensland, a turtle ecotourism and information centre exists at Mon Repos Conservation Park providing comprehensive interpretative and educational information.
reefHQ provides educational opportunities for the community through the Turtle Hospital.
In Western Australia, a marine turtle tourism interpretative centre has been built at North-West Cape (Jurabi).

You have attached the following Web links/URLs to this answer.

Jurabi Turtle Centre
reefHQ
Mon Repos Conservation Park

4.2 Alternative livelihoods opportunitiesDescribe initiatives already undertaken or planned to identify and facilitate alternative livelihoods (including income-generating activities) for local communities. **[IND, BPR]**
› Government funded programs such as Specialised Indigenous Ranger Program, Indigenous Ranger Capacity Building Program and Caring for Country, provide new work opportunities for local communities.

4.3 Stakeholder participation

4.3.1 Describe initiatives already undertaken or planned by your country to involve **local communities**, in particular, in the planning and implementation of marine turtle conservation programmes. Please include details of any incentives that have been used to encourage public participation, and indicate their efficacy. **[BPR, IND]**
› The Australian Government Working on Country Programme supports Indigenous rangers in undertaking marine turtle conservation initiatives (see 4.2).
The Australian Government provides funding to the Torres Strait Regional Authority to support the development and implementation of community-based dugong and turtle plans in the Torres Strait region. Refer to section 1.3.1 for more information.
Traditional Use of Marine Resource Agreements (TUMRAs) are being developed and implemented in the Great Barrier Reef Marine Park. Refer to section 1.2.1 for more information.
In Western Australia, the marine turtle tourism interpretative centre and the Ningaloo Community Turtle Monitoring Program have been developed to raise community awareness and involvement in marine turtle conservation activities. Industry monitoring programs occur at Barrow Island, Mundabullangana and Wickham, while community groups drive programs at Port Hedland and Cable Beach, Broome. Along the Ningaloo coast, local pastoral lease holders are collaborating with the Western Australian Department of Biodiversity Conservation and Attractions in fox baiting and monitoring programs. Refer to sections 1.3.1 and 4.1.3 for other examples.
AusTurtle is a Non-Government Organisation that encourages public participation in turtle research at Bare Sand Island in the Northern Territory. Researchers and volunteers monitor nesting and foraging turtles (see Section 1.6 for some examples).

4.3.2 Describe initiatives already undertaken or planned to involve and encourage the cooperation of **Government institutions, NGOs** and the **private sector** in marine turtle conservation programmes. **[IND, BPR]**
› The Australian National Marine Turtle Symposium is held biannually. The 4th Australian Marine Turtle Symposium in 2018, brought together scientists, industry, government, and community and Indigenous groups to share knowledge and build partnerships to conserve turtles in Australia.
In 2021 Australia will host the International Sea Turtle Symposium in Perth.
In Western Australia, a number of partners are involved in the turtle monitoring programs at Ningaloo, Port Hedland and Wickham, Barrow Island and Mundabullangana and include: Cape Conservation Group, Care for Hedland, Rio Tinto, Environmental Association, BHP Billiton Iron Ore, Pilbara Iron, Woodside Energy, Chevron Australia, Apache Energy, Gorgon, and Dampier Primary School.
The Raine Island Project – please see above.

OBJECTIVE V: ENHANCE NATIONAL, REGIONAL AND INTERNATIONAL COOPERATION

5.1 Collaboration with, and assistance to, signatory and non-signatory States

5.1.1 Has your country undertaken a national review of its compliance with Convention on International Trade in Endangered Species (CITES) obligations in relation to marine turtles? **[SAP]**
☑ YES (If yes, please elaborate briefly)

› Australia has not undertaken a national CITES review specifically for marine turtles, however, we provide annual trade and compliance reports to the CITES Secretariat as well as biannual reports on Australia's administration and legal arrangements in relation to CITES.

5.1.2 Does your country have, or participate/cooperate in, CITES training programmes for relevant authorities? **[SAP]**
☑ YES (If yes, please provide details of these training programmes)

› Yes - for the Oceania region

5.1.3 Does your country have in place mechanisms to identify **international** illegal trade routes (for marine turtle products etc.)? Please use the text box to elaborate on how your country is cooperating with other States to prevent/deter/eliminate illegal trade. **[SAP]**

Please give details of particularly successful interventions and prosecutions; and/or mention any difficulties experienced that impede progress in this area. Please provide references to any published reports (e.g. already prepared for CITES purposes) that give a more ample explanation.
☑ YES

› Australia is a Party to CITES, and the Australian Border Force (ABF) manages a broad range of risks at the border, including the importation and exportation of goods that Australian law prohibits, restricts or regulates. Information relating to restrictions and inputs can be found at the link below.
Further information about penalties relating to obligations associated with CITES listings in the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) can be found at the link below.
The Department of the Environment and Energy is engaged in INTERPOL's Environment Security Sub-Directorate and regularly exchanges intelligence and coordinates international law enforcement operations with a number of countries, including those in the Asia-Pacific region. See link below.
The Australian Government provided a voluntary contribution of $20,000 through CMS to CITES to assess the "Status, scope and trends of legal and illegal international trade in marine turtles, its conservation impacts, management options and mitigation priorities" (CITES CoP17 Decisions 17.222 and 17.223). The study focused on eight countries from three regions (East Africa, Inter American and Southeast Asian/ Coral Triangle). The final report will be provided for information at CITES CoP18.

You have attached the following Web links/URLs to this answer.

Australian Border Force - Prohibited Goods
INTERPOL - Our repsonse to environmental crime
Department of the Environment and Energy - Wildlife trade and the law

5.1.4 Which international compliance and trade issues related to marine turtles has your country raised for discussion (e.g. through the IOSEA MoU Secretariat, at meetings of Signatory States etc.)? **[INF]**
› Please see CITES report above.

5.1.5 Describe measures in place to prevent, deter and eliminate domestic illegal trade in marine turtle products, particularly with a view to enforcing the legislation identified in Section 1.5.1**. [INF]**
› As detailed above, Australia's Environment Protection and Biodiversity Conservation Act (1999) and various state/territory government legislation regulate domestic trade in marine turtle products.
In 2016 the Australian Criminal Intelligence Commission (ACIC) reported on a two year investigation into the practice of illegal killing, poaching and transportation of turtle and dugong meat. The report concluded (amongst other findings) that there was no substantive evidence to suggest that an organised commercial trade in turtle and dugong meat existed in Queensland.

5.2 Prioritisation, development and implementation of national action plans

5.2.1 Has your country already developed a national **action plan** or a set of **key management measures** that could eventually serve as a basis for a more specific action plan at a national level? **[IND]**

Please explain.

☑ YES

› Please see Recovery Plan for Marine Turtles in Australia 2017.

You have attached the following Web links/URLs to this answer.

Recovery Plan for Marine Turtles in Australia

5.2.2 From your country's perspective, which **conservation and management activities**, and/or which particular **sites or locations**, ought to be among the highest priorities for action?
(List up to 10 activities from the IOSEA Conservation and Management Plan). **[PRI]**
› Climate change is recognized as the greatest threat to marine turtles, see Recovery Plan for details.

You have attached the following Web links/URLs to this answer.

Recovery Plan for Marine Turtles in Australia

5.2.3 Please indicate, from your country's standpoint, the extent to which the following **local** management issues require **international** cooperation in order to achieve progress. **[PRI]**
In other words, how important is **international** cooperation for addressing these issues?
Please select only one per line

	NOT AT ALL	LIMITED	IMPORTANT	ESSENTIAL
Illegal fishing in territorial waters	☐	☐	☐	☑
Incidental capture by foreign fleets	☐	☐	☐	☑
Enforcement/patrolling of territorial waters	☐	☐	☐	☑
Hunting/harvest by neighboring countries	☐	☐	☐	☑
Poaching, illegal trade in turtle products	☐	☐	☐	☑
Development of gear technology	☐	☐	☑	☐
Oil spills, pollution, marine debris	☐	☐	☐	☑
Training / capacity-building	☐	☐	☑	☐
Alternative livelihood development	☐	☑	☐	☐
Identification of turtle populations	☐	☐	☐	☑
Identification of migration routes	☐	☐	☐	☑
Tagging / satellite tracking	☐	☐	☑	☐
Habitat studies	☐	☐	☑	☐
Genetics studies	☐	☐	☑	☐

Use the text box to list and rank any other local management issues for which international cooperation is needed to achieve progress.
› International cooperation is essential for the following local management issues:
•Feminisation of stocks (Jensen et al 2018)
•Implementation of the Single Species Action Plan for Loggerhead Turtles in the South Pacific
• Ghost nets – olive ridleys drown in ghost nets in Australian waters that originate from outside Australia's jurisdiction.
• Hawksbill turtle harvest in Solomon Islands of turtles that breed in Solomon Islands but forage in the Great Barrier Reef World Heritage Area (Miller et al. 1998; Parmenter 1983).
• Under the Torres Strait Treaty 1985 Papua New Guinea nationals can harvest turtles in Torres Strait

(including Australian waters).However, the illegal harvest of turtle and dugong by PNG fishermen still remains a priority management issue for Torres Strait communities and the TSRA.
• Identifying the sustainable harvest of marine turtles in the Papua New Guinea and Australian sectors of the Torres Strait
• Foreign marine debris - Dr Kathy Townsend (University of Queensland) is undertaking research on turtles in Moreton Bay, which shows at least 30% of turtles necropsied died because of plastic ingestion.
• There are limited local management issues relating to alternative livelihood development in Australia and they do not rely on international cooperation. Alternative livelihood development in PNG may benefit from cooperation from Australia.
• It is necessary to obtain samples from other countries to understand the shared nature of our stocks.

5.3 Cooperation and Information exchange

5.3.1 Identify existing frameworks/organisations that are, or could be, useful mechanisms for cooperating in marine turtle conservation at the sub-regional level. Please comment on the strengths of these instruments, their capacity to take on a broader coordinating role, and any efforts your country has made to enhance their role in turtle conservation. **[INF, BPR]**
› The Torres Strait Treaty (the Treaty) between Australia and Papua New Guinea came into force on February 15 1985. The Treaty defines borders between Australia and PNG and protects the right to live a traditional way of life (including traditional hunting). For more information please go to https://dfat.gov.au/geo/torres-strait/Pages/the-torres-strait-treaty.aspx
The Department of the Environment and Energy has supported stakeholders at different levels to conduct marine debris clean-ups and to find potential solutions to stopping marine debris. Information around marine debris and the Australian governments approach visit https://environment.gov.au/marine/marine-pollution/marine-debris
Australia is also involved in the SPREP Regional Marine Turtle Action Plan 2018-2022. Where the key goal is to conserve habitats for marine turtles, while keeping with the traditions of the people of the Pacific Islands Region. Information can be found at: https://www.sprep.org/node/12374

5.3.2 Has your country developed, or is it participating in, any networks for cooperative management of shared turtle populations? **[BPR, INF]**
☑ YES (if yes, give details)

5.3.3 What steps has your country taken to encourage Regional Fishery Bodies (RFBs) to adopt marine turtle conservation measures within Exclusive Economic Zones (EEZs) and on the high seas? Please describe the interventions made in this regard, referring to specific RFBs. **[SAP]**
› The Australian Government seeks to ensure that relevant RFBs (referred to in Australia as Regional Fishery Management Organisations – RFMOs) take appropriate approaches towards turtle conservation in line with approaches implemented domestically. Australia supports the implementation of the United Nation Food and Agriculture (FAOs) Technical Guidelines for Responsible Fisheries, as well as the FAO Guidelines to Reduce Sea Turtle Mortality in Fishing Guidelines.

5.4 Capacity-building

5.4.1 Describe your country's needs, in terms of human resources, knowledge and facilities, in order to build capacity to strengthen marine turtle conservation measures. **[PRI]**
› The Australian Government continues to build on and resource current initiatives that increase the capacity of Indigenous communities to implement marine turtle management and monitoring activities at a local level.

5.4.2 Describe any training provided in marine turtle conservation and management techniques (e.g. workshops held, training manuals produced etc.), and indicate your plans for the coming year. **[PRI, INF]**
› Western Australia have produced a Monitoring Field Guide
Necropsy guides and workshops can be found at University of Queensland:
https://veterinary-science.uq.edu.au/vet-marti-resources
Queensland Marine Turtle Field Guide:
https://environment.des.qld.gov.au/wildlife/pdf/marine-turtle-field-guide.pdf
Ningaloo Turtle Monitoring Field Guide:
http://www.ningalooturtles.org.au/pdf_downloads/training-guides/NTP-Turtle-Monitoring-Field-Guide-Edition_7-wCover.pdf
In NSW
Sea Turtle Foundation hosted a 'Bridging the Gap' workshop focused on increasing data collection and research outcomes from animals entering rehabilitation in NSW and SE Qld. Attendees included Australia Zoo, Sea World, Australian Seabird Rescue, Southern Cross University, Taronga, Macquarie University, Dolphin Marine Conservation Park, Sea Turtle Foundation, Sea Life Aquarium, Griffith University and University of Queensland.
Topics included: Communication protocols, Plastics (micro and macro), fishing gear, spirochiid flukes,

fibropapilloma antimicrobial resistance, microbiome, ecotoxicology, seagrass, metabolic analysis, permits and standards.
A larger workshop is being considered for September 2019 by Sea Turtle Foundation at Sea World.

You have attached the following Web links/URLs to this answer.

Ningaloo Turtle Monitoring Field Guide

Queensland Marine Turtle Field Guide

University of Queensland Veterinary Science - Turtle Necropsy Guide

5.4.3 Specifically in relation to **capacity-building**, describe any partnerships developed or planned with universities, research institutions, training bodies and other relevant organisations. **[BPR]**
› The Australian Government provides funding support and has partnership arrangements with universities, researchers, provincial governments, community groups and Indigenous communities. Some good examples include:
The northern hub of the National Environmental Research Program also funds a NAILSMA-led marine turtle monitoring program with Indigenous communities and research organisations.
In the Torres Strait region the TSRA actively collaborates with expertise from several research institutes in conjunction with Traditional Owners, rangers and communities, including the Australian Institute of Marine Science.
WAMSI Turtle project in Kimberley WA:
Northwest Shelf Flatback Turtle Conservation Program
Delambre Island Flatback turtle monitoring with Ngarluma Aboriginal Corporation
Roebuck Bay – Flatback foraging project with Yawuru Aboriginal Corporation
Numrous government Coast care and NRM projects were developed as collaborations that included Indigenous partnerships in Cape York, Northern Territory

You have attached the following Web links/URLs to this answer.

WAMSI Turtle Project in Kimberley WA

Australian Institute Marine Science - Indigenous Engagement Strategy

NAILSMA - Marine Turtle Monitoring Program

5.5 Enforcement of conservation legislation

5.5.1 National policies and laws concerning the conservation of marine turtles and their habitats will have been described in Section 1.5.1. Please indicate their effectiveness, in terms of their practical application and enforcement. **[SAP, TSH]**
› Australia has three tiers of environmental legislation at the Commonwealth, state and territory, and local government levels. Most development proposals will be examined and assessed against the legislative requirements of the Acts relevant to that state and, if necessary, at the Commonwealth level. Overall, the various environmental legislations are considered to be effective in managing impacts on listed species, and in ensuring that consideration has been given to the relevant species and their lifecycle requirements.
In addition, most government agencies have developed policies and guidelines, and planning documents (i.e. recovery plans) to inform the public about what constitutes an important habitat area for relevant species; activities that are permissible; and how to manage impacts.
In granting an approval to undertake an activity, the proponent is bound by the strictures of the approval. Enforcement is a component of the approval. Non-compliance of an approval will instigate an investigation. When determining the feasibility of an activity consideration is given to all relevant planning documents, policies and guidelines. All environment legislation has some enforcement and compliance component. One of the limiting factors in applying enforcement is gaining access to the remote locations of turtle populations and their habitats.

5.5.2 Has your country conducted a review of policies and laws to address any gaps, inconsistencies or impediments in relation to marine turtle conservation? If not, indicate any obstacles encountered in this regard and when this review is expected to be done. **[SAP]**

Please give details.
☑ NO

› The EPBC Act is reviewed every ten years. Recovery Plans are reviewed every five years and a review of the Marine Turtle Recovery Plan is due in 2022.

5.5.3 From the standpoint of law enforcement, has your country experienced any difficulties achieving cooperation to ensure compatible application of laws across and between jurisdictions? **[TSH]**

Please give details.
☑ NO

› Australasian Environmental Law Enforcement and Regulators neTwork (AELERT) is a collective of environmental regulatory agencies from Australian and New Zealand governments at local, state and federal levels. AELERT members come together to pursue and advance best practice and risk-based approaches to the administration and enforcement of environmental regulation. AELERT provides a number of platforms for environmental regulators to work together and exchange information and knowledge. See link below for further information.

You have attached the following Web links/URLs to this answer.

Australasian Environmental Law Enforcement and Regulators neTwork (AELERT)

OBJECTIVE VI: PROMOTE IMPLEMENTATION OF THE MOU, INCLUDING THE CMP

6.1 IOSEA Marine Turtle MoU membership and activities

6.1.1 What has your country already done, or will it do, to encourage other States to sign the IOSEA MoU? **[INF]**

› Australia has made representations to other States in the region on the benefits of signing the MoU, with limited results. Although outside the geographical scope of the IOSEA Turtle MoU, an Australian continues to be represented at the Secretariat of the Pacific Regional Environment Programme regional marine turtle conservation program workshops and meetings. SPREP has worked to ensure that their marine turtle Action Plan complements the work of the IOSEA Marine Turtle MoU.

6.1.2 Is your country **currently** favourable, in principle, to amending the MoU to make it a legally binding instrument? **[INF]**

☑ NO VIEW

6.1.3 Would your country be favourable, over a **longer time horizon**, to amending the MoU to make it a legally-binding instrument? **[INF]**

☑ NO VIEW (Use the text box to elaborate on your response, if necessary)

› Australia notes the call for a timetable for the consideration of the legal character of the IOSEA MoU. A move towards a binding format should not be assumed and should only occur with the support of all relevant Range States. Importantly any proposals in this respect would have to provide a robust justification of costs and benefits. Australia supports encouraging other Range States to join the MoU and implement the Conservation and Action Plan.

6.2 Secretariat and Advisory Committee

What efforts has your country made, or can it make, to secure funding to support the core operations of the IOSEA MoU (Secretariat and Advisory Committee, and related activities)? **[IND]**

› In 2014, Australia made a contribution of $20,000 to the IOSEA MoU.
In 2016, a contribution to CMS/CITES of $20,000 was made towards research on ‘the legal and illegal trade in marine turtles: to research its status, scope and trends, conservation impacts and management options, and to identify areas where immediate mitigation efforts may be needed.’

6.3 Resources to support implementation of the MoU

6.3.1 What funding has your country mobilised for **domestic** implementation of marine turtle conservation activities related to the IOSEA Marine Turtle MoU? Where possible, indicate the specific monetary values attached to these activities/programmes, as well as future plans. **[IND]**

› Australian Government funding for domestic implementation of marine turtle conservation activities related to the IOSEA Marine Turtle MoU is primarily provided through Working on Country Programs, Commonwealth Marine Park management and monitoring and the National Environmental Science Program (NESP).
The NSW government under Saving Our Species (SOS) has developed and implemented NSW TurtleWatch with a $100,000 commitment over three years to look at past nesting records and nest temperatures to track turtles, and train volunteers.

6.3.2 Has your country tried to solicit funds from, or seek partnerships with, other Governments, major donor organizations, industry, private sector, foundations or NGOs for marine turtle conservation activities? **[IND]**

☑ YES (If yes, give details of the approaches made (both successful and unsuccessful))

› The Raine Island Project is funded by BHP through the Great Barrier Reef Foundation and implemented by the Queensland Department of Environment and Science and the Great Barrier Reef Marine Park Authority.
In Western Australia, the petroleum and gas industries currently support marine turtle research including monitoring and satellite tracking studies and genetic studies, as well as university student research projects to investigate impact of tourism on marine turtles and to test methods to mitigate these impacts. A number of partners are involved in the community monitoring and long term census programs including, Cape Conservation Group, Murdoch University, Care For Hedland Environmental Association, University of Canberra, BHP Billiton Iron Ore, Pilbara Iron, Woodside Energy, Chevron Australia, Apache Energy, Gorgon, Threatened Species Network, NRM Regional Coordinating Group, Coastcare, and Rio Tinto.
As part of its approval process for development, Gorgon joint ventures are required to prepare an environmental protection plan. The plan includes a $60m commitment to a series of new initiatives to conserve the flatback turtle population in the area undergoing development as well as other endangered species.
Activities to be funding include:

• A 60-year North West Shelf Flatback Turtle Conservation Programme to survey, monitor and research turtle populations; and
• The eradication of non-Indigenous species.

You have attached the following Web links/URLs to this answer.

Raine Island Project

6.3.3 Describe any initiatives made to explore the use of economic instruments for the conservation of marine turtles and their habitats. **[BPR]**
› This is an area that has not been investigated to date.

6.4 Coordination among government agencies

6.4.1 Has your country designated a lead agency responsible for coordinating national marine turtle conservation and management policy? If not, when is this information expected to be communicated to the IOSEA MoU Secretariat? **[IND]**

Please elaborate, as necessary.
☑ YES

› The Australian Government Department of the Environment and Energy is the lead agency responsible for coordinating national marine turtle conservation and management policy through the Recovery Plan for Marine Turtles in Australia (2017).

You have attached the following Web links/URLs to this answer.

Recovery Plan for Marine Turtles in Australia

6.4.2 Are the roles and responsibilities of all government agencies related to the conservation and management of marine turtles and their habitats clearly defined? **[IND]**

Use the text box to elaborate.
☑ YES

› The Australian Government has responsibility for the management of marine turtles and their habitats in Commonwealth marine areas. The Australian Government is also responsible for the development and implementation of national approaches to turtle management, such as the Recovery Plan for Marine turtles in Australia 2017 and the National Light Pollution Guidelines. The Australian Government also leads on international affairs. State and territory governments oversee marine turtle monitoring and conservation within state and territory jurisdictions.

6.4.3 Has your country ever conducted a review of agency roles and responsibilities? If so, when, and what was the general outcome? If not, is such a review planned and when? **[SAP]**

This question seeks to ascertain whether Signatories have made a serious examination of which agencies have a role to play in marine turtle conservation, either directly or indirectly, and which therefore should be apprised of the IOSEA MoU and its provisions.
If no internal review of interagency roles and responsibilities has been or will be undertaken, please elaborate if only to indicate that the necessary arrangements are already clear and not in need of further review.
☑ YES (Use the text box to elaborate)

› The Australian Government Department of the Environment and Energy maintains dialogue with other agencies and reviews roles and responsibilities on an on-going basis.

OTHER REMARKS

Please provide any comments/suggestions to improve the present reporting format.
› Consideration should be given to how the information contained in these reports assist in progressing priority work under the IOSEA MoU. The reports should be targeted and focussed on the key actions contained in the Conservation and Management Plan.