

State of conservation in **Nauru**

COUNTRY REPORT



2013



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

Cover image: Anibare Bay dolomatized limestone pinnacles.

Photo credit: Stuart Chape.



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About this assessment

v

For the Ninth Pacific Islands Conference on Nature Conservation and Protected Areas December 2013, the Secretariat of the Pacific Regional Environment Programme (SPREP) commissioned an assessment of the status of biodiversity and conservation in Oceania. For the purposes of this report, Oceania refers to the 21 countries and territories of the SPREP region. Pitcairn Island is also included in many analyses because the UK is a member of SPREP, although Pitcairn is not formally included as a SPREP territory. The assessment was produced as a comprehensive report, *State of Conservation in Oceania 2013*, along with separate individual country assessments for the countries and territories of the Pacific Regional Environment Programme region.

This Nauru country assessment provides key findings for Nauru that contributed to developing the comprehensive State of Conservation in Oceania 2013 report.

This report assesses the overall state of conservation in Nauru using 16 indicators. The indicators provide information not only about the state of conservation in Nauru but also about what pressures and threats conservation in Nauru is facing and what action is being taken to halt further loss or degradation and improve its long-term sustainability.

Each indicator aims to provide a measure of the current situation and indicate whether it is getting better or worse. Because the amount and quality of available information varies among indicators, a measure of confidence in the data is also provided.

Approach to reporting on the key findings from the review of the state of conservation in Nauru

The assessment is structured in two related parts:

- **State, pressures and threats** considers the current health of key habitat types and resources across Fiji as well as the factors and drivers of environmental change affecting Fiji biodiversity.
- **Response** details action being taken to improve the health and sustainability of Fiji biodiversity considering two key aspects: Environmental Governance and Conservation Initiatives.

In each case, a mixture of habitat-related (such as forest or mangroves) and biodiversity-related (such as threatened species) indicators have been used to present a picture of how biodiversity is threatened and where action is needed to protect it.

The indicators encompass:

Ecosystems

- Terrestrial ecosystems status and rates of change of forest cover



- Freshwater ecosystems – status and threats to rivers, lakes and wetlands
- Coastal ecosystems – status and threats to mangroves, seagrasses and coral reefs
- Marine ecosystems status and threats to ocean health and utilised species

Species

- Threatened species – distribution, status and extinction risk of IUCN Red Listed species
- Endemic species – status and threats
- Migratory marine species of conservation concern – status and threats to marine turtles, cetaceans and dugongs

Response

- **Environmental governance:**
 - Ratification and implementation of Multilateral Environment Agreements (MEAs)
 - National policies and legislation relating to MEAs and biodiversity laws
 - National Biodiversity Strategy and Action Plans (NBSAPs) and other reports to the Convention on Biological Diversity
 - Traditional governance of land and marine resources
- **Conservation initiatives:**
 - Establishment of protected areas for the preservation of ecosystems and species, including Alliance for Zero Extinction Sites, Important Bird Areas, Key Biodiversity Areas, ecologically or biologically significant marine areas
 - Protected Area coverage and invasive alien species management.

Each indicator aims to provide a measure of the current situation and demonstrate whether it is getting better or worse. Because the amount and quality of available information varies among the indicators, a measure of confidence in the data is also provided.

Status

Using each indicator, an attempt is made to summarise and quantify the present situation with respect to the status of species and ecosystems.

For **STATE**, the current condition of biodiversity, habitats and ecosystems is rated from GOOD to FAIR to POOR.

For **PRESSURES**, the assessed level of threat is rated from GOOD (minimal threat) to FAIR to POOR (high threat).

For **RESPONSES**, the assessed level and effectiveness of actions to protect and safeguard biodiversity, habits and ecosystems is rated from GOOD to FAIR to POOR.

Trend

For each indicator, trends were examined in order to assess whether things are getting better or worse or staying about the same. For some indicators, there was insufficient information to judge the trend or even to determine the current state at the regional level.

MIXED: Some aspects have improved, and some have worsened

DETERIORATING: The state of biodiversity related to this indicator has worsened

IMPROVING: The state of biodiversity related to this indicator has improved

UNDETERMINED or UNKNOWN: Not enough information was available to determine a baseline.

Data confidence

The amount and quality of data available for assessing any trends were examined. The quality, quantity and reliability of data varied due to a number of factors—for example, by country, by species or by ecosystem. This term allowed a measurement of the level of data confidence.

High: A large amount of recent data available

Medium: A moderate amount of recent and relatively recent data available

Low: Not enough information was available to determine a baseline

The progress toward meeting the Aichi Convention on Biological Diversity 2020 Goals and Targets is assessed here at the regional level for each indicator, in addition to assessing

Figure i Interpreting the indicator icons

Status is represented by colour:

POOR = red

FAIR = yellow

GOOD = green

Trend is indicated by the direction of one or two arrows:

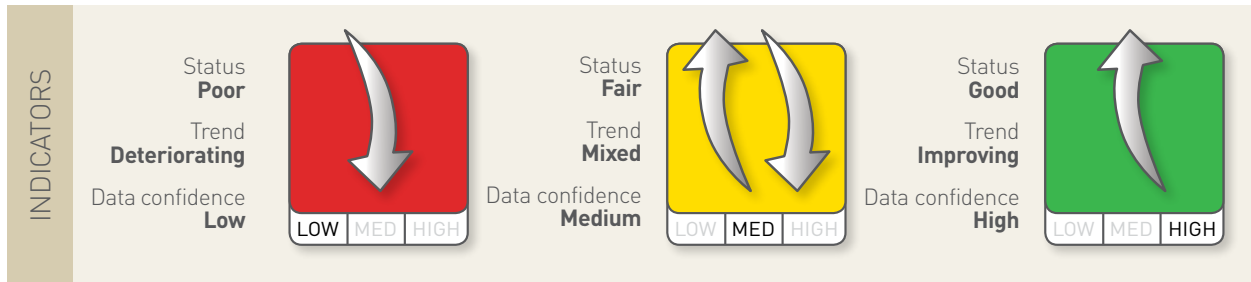
DETERIORATING = downward

MIXED = one upward, one downward

IMPROVING = upward

Data confidence is indicated by a highlighted word:

LOW, MED (medium) or HIGH



whether or not current measures provide an adequate level of protection for the species and ecosystems in question.

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Key acronyms

ACRONYM	DEFINITION
AFD	Agence Française de Développement
AUSAID	Australia Aid
CBD	Convention on Biological Diversity
CCCPIR	Coping with Climate Change in the Pacific Island Region
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	Convention on the Conservation of Migratory Species of Wild Animals
FAO	Food and Agriculture Organization
GEF	Global Environment Facility
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
IOSEA	Indian Ocean South East Asia (Marine Turtle MoU)
IUCN	International Union for Conservation of Nature
MEA	Multilateral Environmental Agreement
MoU	Memorandum of Understanding
NBSAP	National Biodiversity Strategy and Action Plan
NGO	Non-Governmental Organization
PACC	Pacific Adaptation to Climate Change
PAS	Pacific Alliance for Sustainability
PIGGAREP	Pacific Islands Greenhouse Gas Abatement through Renewable Energy project
Ramsar	Convention on Wetlands of International Importance
SPC	Secretariat of the Pacific Community
SPREP	Secretariat of the Pacific Regional Environment Programme
UNCCD	United Nations Convention to Combat Desertification
UNCLOS	United Nations Convention on Law of the Sea
UNDP	United Nations Development Program
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USP	University of the South Pacific
WCPFC	Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean
WHC	World Heritage Convention

Introduction: Nauru

Nauru attained independence in 1968 after a history of foreign occupation and became the world's smallest independent republic to join the United Nations (UN) in 1999. This island nation is located in the South Pacific Ocean south of the Marshall Islands and occupies only 21 square kilometres of land area including 30 kilometres of coastline. The weather in Nauru is characterised by a monsoon season with the rainy season spanning November to February. The terrain can be described as sandy rising to a fertile ring around raised coral reefs with a phosphate plateau in the centre. At its highest point, it only reaches about 60 metres. Nauru has an estimated population projection of almost 10,000 people (calculated for July 2014).

Table 1 Key geographic statistics for Nauru

Nauru	Size	Unit
Land area	21	km ²
Agricultural land (2011)		km ²
Coastline	30	km
Territorial sea	12	naut. miles
Exclusive Economic Zone	200	naut. miles

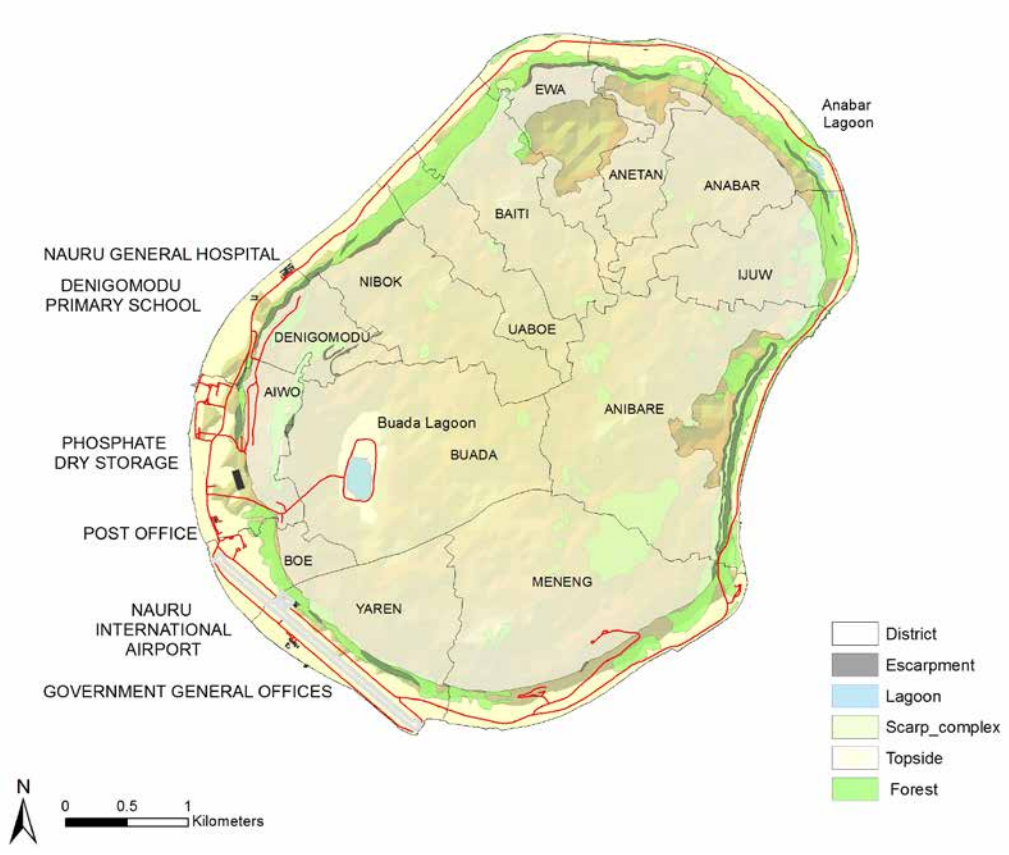
Economy

With an economy traditionally based on phosphate exportation, Nauru has few other resources, and most necessities are imported. Industries on Nauru include phosphate mining, offshore banking and coconut production (with coconut being the only agricultural product of note). At one stage, Nauru faced bankruptcy as a result of over-spending of trust fund money. With the closing of the Australian refugee processing centre, the country is now almost totally dependent on food imports and foreign aid. Statistics on the Nauru economy do exist; however, GDP estimates vary widely.

Environmental issues

Reported environmental issues in Nauru include limited natural freshwater resources. Currently, the population depends on roof rainwater tanks in combination with an aging desalination plant. Intensive phosphate mining during the past 90 years has left 90% of the centre of Nauru a mining wasteland. Primary resources of phosphate were exhausted in 2006; however, deep-layer secondary phosphates will continue to be mined over the next 30 years. The rehabilitation of mined land and the replacement of income from phosphate exportation are serious pressures faced by this tiny island nation.

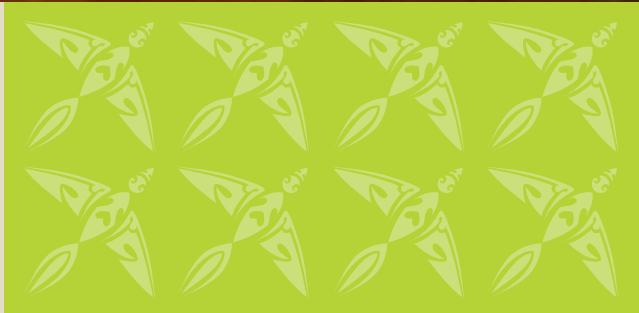
Figure 1 Map of Nauru



A limestone karst on Nauru Island as a result of the over-mining of phosphate
Photo credit: U.S. Department of Energy's Atmospheric Radiation Measurement Program Wikipedia Commons

Table 2 Summary of population and economic factors for Nauru

Factor	Measurement	Year
Population	9,488	2014
Population growth rate	0.56%	2014
Labour force		
Unemployment rate	90.00%	2004
Employment by sector		
Agriculture		
Industry		
Services		
Export commodities	Phosphates	
International tourism arrivals		
Yearly tourist arrivals to residents ratio		
GDP growth rate	na	2013
Inflation rate	na	2008
GDP per capita (Purchasing Power Parity [PPP])	USD 5,000	(2005 est.)
GDP by sector		
Agriculture	6.10%	
Industry	33.00%	
Services	60.80%	(2009 est.)



Recently identified skink, *Emoia spp.*, endemic to Nauru.
Photo credit: R Stirnemann

STATE, PRESSURES AND THREATS

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The many and significant pressures and threats impacting Nauru's biodiversity have undoubtedly had a serious impact on many terrestrial, freshwater and marine ecosystems and species.

There is an urgent need to take stock of the current state of the natural systems and resources of Nauru, so the greatest risks can be identified and mitigation and recovery actions developed.

The greatest current threats to biodiversity conservation result from human activities. These threats are habitat loss; invasive alien species; urban, agricultural and industrial pollution; and over-exploitation. The direct effects of climate change and their interactions with the current threats will only exacerbate the risks to biodiversity. These pressures work singly or in tandem with each other in complex ways, and the actual magnitude of each pressure varies from country to country.

This section looks at the state of Nauru's natural systems and the species that inhabit them as well as the impact of these pressures and threats on biodiversity.

1 Ecosystems

1.1 Terrestrial ecosystems – Forest cover

Key points

- Most countries and territories of Oceania have relatively high forest cover, with an average of 61% of land area covered in forest in 2010, higher than the global average of 31%.
- Across Oceania, the 0.4% of forest cover area lost per year between 2005 and 2010 is significantly higher than the global deforestation average for the same period of 0.14%. Most of the loss in Oceania is accounted for by Papua New Guinea.
- Rates of deforestation vary widely across the countries and territories of the SPREP region, but they have risen in the larger countries such as the Solomon Islands and Papua New Guinea in recent years.
- Forest habitat loss in the Pacific is mostly due to economic activities such as logging and agriculture and to a lesser extent to mining and infrastructure development, such as roads and settlements. Forest degradation is also caused by natural disasters, such as cyclones and fire, and the spread of invasive species.
- Future projected increases in the human population are likely to intensify pressure on the Pacific's forest resources. Climate change is also expected to have a significant, but as yet unpredictable, impact on the health, vitality and biodiversity of Pacific forests.
- Most countries only have low percentages of their land area protected.

Background and relevance of indicator

This indicator considers the extent of terrestrial ecosystems in Nauru. It measures the rates of forest cover change and identifies key pressures and threats to forest cover.

Forest is defined as land area greater than 0.5 hectares with trees over 5 metres high and/or canopy cover of more than 10%. Forest habitat conversion and loss directly impoverish biodiversity and may facilitate other pressures, such as the influx of weeds and browsing animals, increased soil erosion, reduced water quality and the sedimentation of lagoon areas.

How the indicator was assessed

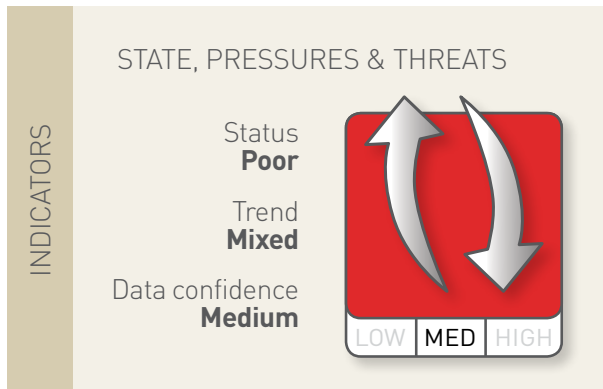
Data for this indicator come primarily from the FAO Forest Resource Assessment, the most comprehensive five to ten yearly global assessment of forest status and trends. However, there is variability in the completeness and currency of data provided by countries on their forest resources.

State, pressures and threats

Only 250 hectares of Nauru are suitable for cultivation; coconuts (*Cocos nucifera*) are the main crop plant (Food and Agriculture Organisation of the United Nations (FAO) 2010).

According to the FAO (Food and Agriculture Organisation of the United Nations (FAO) 2010), "Nauru has no forest area". Data below (see Table 3) therefore represents other land (including an unknown proportion of wooded land). It is 'assumed' that there has been no change in wooded cover of land in Nauru since 1990 (Food and Agriculture Organisation of the United Nations (FAO) 2010). However, reforestation of mined areas is occurring, with

up to 15% of land previously exploited for mining reforested (Duburiya and Jeremiah 2012).



already leading to reduced freshwater species richness (from flow alteration, barriers, habitat and water quality degradation, introduction of invasive species and overharvesting).

- The cumulative effects of these threats are exacerbating the risk of extinctions, with several endemic fish species reported in the IUCN Red List as threatened, and are compromising the sustainable use of freshwater ecosystems by local communities.

Background and relevance of indicator

Maintenance of freshwater and wetland ecosystems is vital for Oceania as many of these systems provide an important contribution to ecosystem services and subsistence livelihoods, especially river systems. On the larger volcanic islands, there are significant areas of riverine (rivers), lacustrine (lakes, ponds) and palustrine (non-tidal wetlands) habitats. The smaller atoll countries and territories of Oceania generally have few, if any, wetlands other than reef systems, although there may be small areas of mangrove or Pandanus swamp. Freshwater resources on atolls and coral and limestone islands are generally limited to groundwater. Nauru, Niue, Kiribati, Tonga, Tuvalu and the Republic of the Marshall Islands have no significant surface water resources.

This indicator assesses the threats to river, lake and wetland ecosystems. Availability and reliability of water resources limit economic and social development, especially in countries that rely almost entirely on a single source of supply, such as groundwater (Kiribati), rainwater (Tuvalu, northern Cook Islands), surface reservoirs, or rivers and other surface flows.

How the indicator was assessed

Threat assessments and other relevant information were sourced from recent reviews, reports, and publications (Secretariat of the Pacific Islands [SPC] Applied Geoscience Commission 2011, Jungblut 2013).

1.2 Freshwater ecosystems

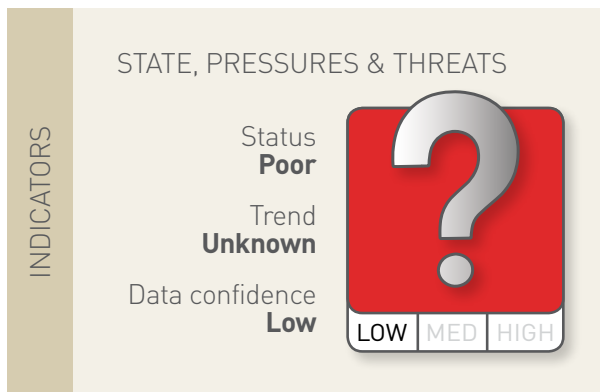
Key points

- Some of the most isolated and inaccessible freshwater lakes in the world are in Oceania. Most of these lakes infill old volcanic craters.
- Oceania rivers contain high levels of endemic species, and these species exhibit behaviours and life-history traits that are fostered by a number of environmental factors, such as unmodified flows, free passage, natural vegetation cover, quality estuaries or the absence of introduced species.
- Freshwater ecosystem baseline assessment, mapping and classification is lacking. In many islands, more and better meteorological, hydrological, hydrogeological and water quality data are being gathered, but more are still needed to generate adequate water resource assessments.
- Assessment of inland wetlands in Oceania shows a reduction from 36 million to 28 million hectares between 1999 and 2004.
- Owing to ecological connectivity, cloud forest, riparian forest, groundwater systems and subterranean flows, forest, agricultural wetlands and estuaries are considered of critical importance for freshwater wetland management, and a 'mountain to the sea' approach to monitoring is required.
- Threats affecting river, lake and wetland systems are increasing rapidly and are

State, pressures and threats

Nauru has no significant surface water resources. The water resources and supplies are heavily reliant on rainfall, and fragile groundwater lenses are most vulnerable. Freshwater resources in Nauru are limited to a small brackish lake and a small groundwater lens that are both thought to be transient (Secretariat of the Pacific Islands (SPC) Applied Geoscience Commission 2011).

Note: The Republic of Nauru is said to be considering joining the Ramsar Convention on Wetlands. The press release states that four wetland sites around the island had potential to be listed as wetlands of international importance; these sites include subterranean freshwater lakes and caves (Jungblut 2013).



Bauda Lagoon
Photo credit: V. Jungblut

1.3 Coastal ecosystems

1.3.1 Coral reefs

Key points

- Coral reefs are vital to land protection and food security across Oceania. There are over 650,000 square kilometres of coral reefs within the Pacific. More than 60% of them are now at risk of environmental damage.
- Reefs are vulnerable to elevated sea temperature and acidity, cyclones, predation (by crown-of-thorns starfish [COTS], Drupella snails, etc.) and disease, increased water turbidity, overfishing and pollution as well as physical breakage from coastal developments.
- Most Pacific reefs have suffered some form of serious damaging event in the past decade, with climate change considered the major cause. Pacific reefs have shown strong recovery from many of these events, in part because levels of local threats from human activities are lower than in many other parts of the world.
- The extent of coral reef in the Oceania region is stable, but most reefs show declining quality around heavily populated areas.
- Although most coral reef fisheries have been sufficient for subsistence livelihoods, commercial exploitation has rarely been sustainable.
- As Pacific island populations and development levels increase, local man-made threats to reefs will increase unless policy makers take definitive actions to control them.
- By 2050, most reefs in the Pacific are predicted to be rated as threatened, with more than half rated at high, very high or critical levels as a result.

Background and relevance of indicator

Coral reefs and their associated ecosystems are fundamental to Pacific island life and cultural practices, providing goods and services such as food from fish, molluscs and algae, tourism benefits and shoreline protection. Oceania contains extensive coral reefs covering a huge

area, with a multitude of reef types, including fringing, barrier, double barrier, submerged barrier, platform, patch, oceanic ribbon, mid-ocean, atolls, oceanic atolls and near-atolls.

The world has lost an estimated 19% of productive reef area, with another 15% under immediate threat of loss. This indicator assesses the state of and threats to coral reefs across Nauru.

How the indicator was assessed

Data for the indicator were extracted predominantly from Reefs at Risk assessments and Global Coral Reef Monitoring Network (GCRMN) reports for the region and each specific country (Bryant et al. 1998, Peter 2000, Wilkinson 2008, Burke et al. 2011, Chin et al. 2011, Secretariat of the Pacific Regional Environment Programme (SPREP) 2013).

State

Nauru only has 10 square kilometres (1,000 hectares) of coral reef, forming a fringing coastal reef 300–1000 metres wide, dropping to waters 4,000 metres deep (Peter 2000). Even though Nauru’s reef area is very small, the reef and near-shore fisheries are extremely important for local subsistence nutrition (Chin et al. 2011).

Coral cover has been reported as high (44–78% in 2004), but coral diversity is low, with only certain species represented (see Table 4) (Wilkinson et al. 2008, Chin et al. 2011).

Monitoring has not been frequent or consistent, and information since 2004 is lacking (see Figure 2). A Biodiversity Rapid Assessment (BIORAP) conducted by SPREP recorded 280 species of reef fish not previously reported from Nauru (Secretariat of the Pacific Regional Environment Programme (SPREP) 2013, and full report due by end 2013).



Coral reef on Nauru
Photo credit: V. Jungblunt

Pressures and threats

Globally, the largest pressures on coral reefs are factors such as increasing water temperature, ocean acidification, outbreaks of crown-of-thorns sea stars (COTS), storms and cyclones. These factors all potentially affect Nauru’s reefs.

On a more local scale, overfishing around the entire island, mostly by local subsistence fishers since mine workers left in 2008, is affecting fish stocks and causing ecological changes to the reefs (Chin et al. 2011).

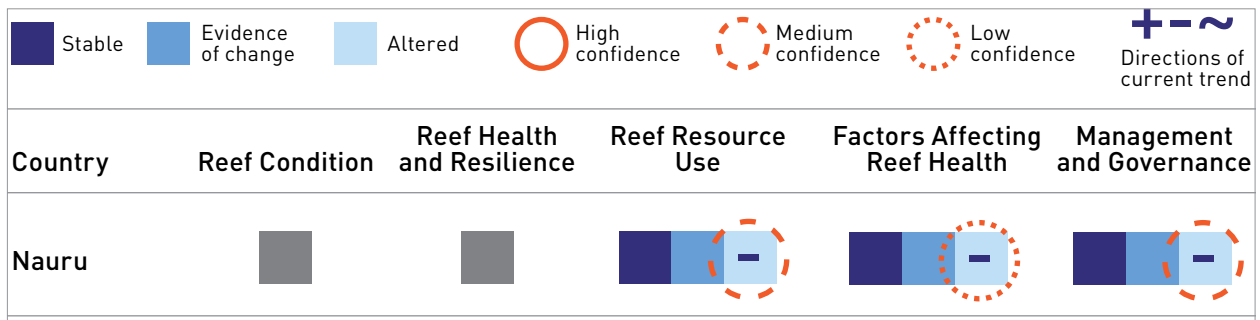
Although there are little data, it is thought that phosphate dust from previous mining has affected coral health, as well as sewage effluent and coastal development such as the airport and Anibare boat harbour (Burke et al. 2011).

With a growing population and very limited reef resources, all of Nauru’s reefs are already considered highly threatened. At present, 100% of Nauru’s reefs are considered to be at High to Very High threat level from local factors. Lack of attention to these local threats is likely to affect the coral reefs’ capability to resist and recover from global-level pressures and to put all of Nauru’s reefs at Very High or Critical Threat level by 2030 (Chin et al. 2011).

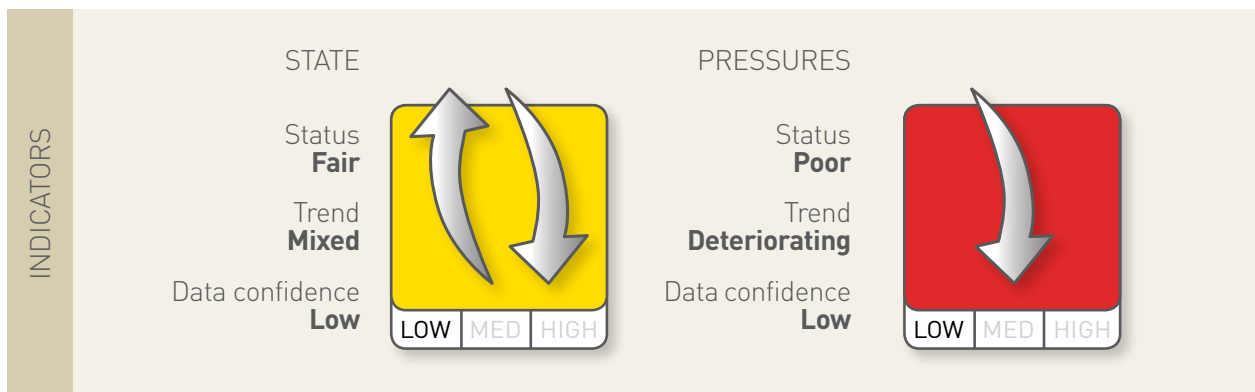
Table 3 State of Nauru’s coral reefs

Reef condition and trend	Data confidence	2000 reported coral cover	2008 reported coral cover	Most recent reported coral damaging events
Unknown	Low	50%	44–78%	Temperature-related bleaching 2003

Figure 2 Monitoring of Nauru’s reefs



The few survey data from Nauru suggest some differences in reefs around the island, but the information is insufficient to describe status or trends. Long-term monitoring started in 2004 and should be continued. Social and economic data show intensive use of reef resources, with increasing effort coupled with decreasing resources; there are anecdotal reports of over-exploitation. Nauru’s reefs have been damaged from previous phosphate mining and coastal development. Risk assessments identify Nauru as vulnerable to damage from climate change and population growth. Few management tools and logistic resources exist to address these issues; thus management needs to improve to ensure sustainable use of Nauru’s reefs.



1.3.2 Mangrove ecosystems

Key points

- The Pacific islands, while containing only 3.8% of the global mangrove area, support unique mangrove community structures and provide valuable site-specific services and products.
- Due to limited monitoring, there is little information available on pressure on mangroves or trends in the area and health of Pacific Island mangroves.
- Mangroves may experience serious problems due to rising sea level, and low-island mangroves may already be under stress. A reduction in area by 13% of the current 524,369 hectares of mangroves of the 16 Pacific island countries and territories where mangroves are indigenous is predicted using an Intergovernmental Panel on Climate Change (IPCC) upper projection for global sea level rise by the year 2100.

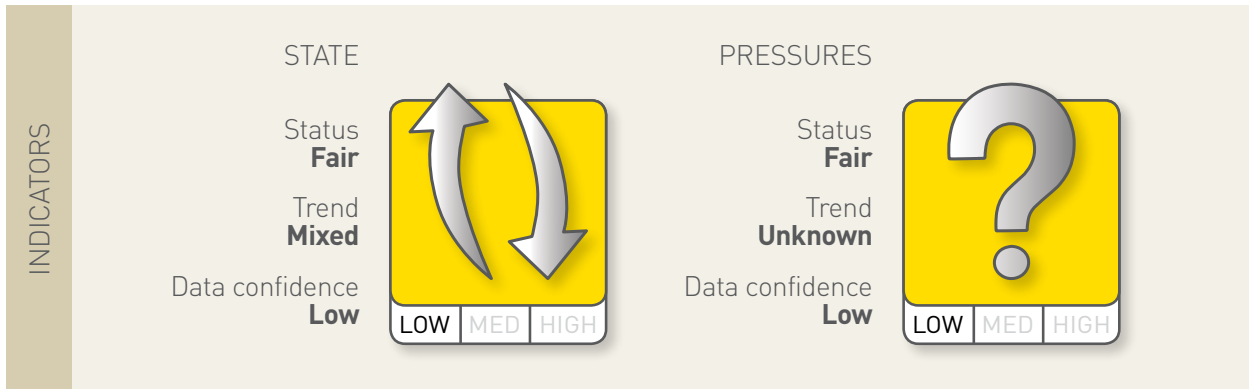
- In addition to climate change effects, mangroves and other coastal ecosystems face numerous other threats, ranging from filling for development to disease outbreaks.

Background and relevance of indicator

Mangroves are one of the vitally important coastal ecosystems of the region. Their complex root structures allow them to survive the roughest of weather and to protect coastal communities from coastal erosion. They also provide nursery and feeding grounds for fish and other marine animals that Pacific islanders rely on for food security and income. This indicator assesses key pressures and threats to mangrove ecosystems in Nauru.

How the indicator was assessed

Information on mangrove area, diversity and any threats was sourced from FAO country profiles (Food and Agriculture Organisation (FAO) 2003).



State

Mangroves in Nauru occur very rarely. Only two species of mangroves can be found on the island: *Bruguiera gymnorrhiza* and *Rhizophora stylosa*. *B. gymnorrhiza* are localised in a system of brackish lakes or lagoons near base of escarpment in Meneng, Anabar and Anetan District. They also occur near Buada Lagoon. *R. stylosa* are localised in a small population in the inner part of a system of brackish lakes or lagoons near the base of an escarpment in Ijuw. Mangroves in Nauru are found in small patches of very limited extent. *R. apiculata* was recorded in the past; however, its current presence is uncertain.

Pressures and threats

No significant changes seem to have occurred over the last 10 years since 2005.

Ecosystems in Nauru are threatened by the aftermath effects of phosphate mining, which has left barren wastelands with scattered coral pinnacles. Mangroves are used for house construction, and pre-germinated seeds (fruit) are consumed as a Nauruan delicacy. The skin of the seed is used in the production of traditional skirts.

1.3.3 Seagrasses

Key points

- Seagrass beds are important marine habitats and nursery and feeding grounds.
- They also have important sediment-stabilising and water-quality regulating functions.

- Species richness is greatest in the western Pacific, declining to the east, with no seagrass found in the far east of the region.
- Detailed data are available in some countries, but many have no or extremely limited data on location or state of seagrass beds.
- Many seagrass beds have been destroyed or severely affected by localised coastal development, but there are few data on large-scale state.

Background and relevance of indicator

The shallow subtidal and intertidal zones around the coasts of Pacific island countries and territories often support large areas of seagrass, extending long distances away from the shoreline in lagoons and sheltered bays and often adjoining coral reefs. Seagrasses are of special interest to coastal fisheries worldwide because of the role they play in providing nursery areas for commonly harvested fish and invertebrates.

In addition to their roles as nursery areas, seagrasses provide feeding habitats for many species of fish as well as endangered sea turtles. In some countries and territories of Oceania, such as Palau and the Solomon Islands, seagrass beds are vital feeding grounds for the endangered marine mammal, the dugong.

Seagrasses and intertidal flats are also permanent habitats for several species of sea cucumbers, the main group of invertebrates targeted as an export commodity in the region, and for a wide range of molluscs gleaned for subsistence. Movement of nutrients, detritus, prey and consumers between mangrove, seagrass and intertidal habitats can have major effects on the structure and productivity of food

webs, with nutrients and detritus increasing primary and secondary productivity both directly and indirectly. Both mangroves and seagrasses improve water quality by trapping sediments, nutrients and other pollutants.

Most seagrasses in the tropical Pacific are found in waters shallower than 10 metres and usually close to island shores. Their growth and health is limited by several factors, including water clarity, nutrient availability and exposure to wave action. Changes in these factors, whether caused by climate change or local human activities, may quickly destroy seagrass beds. Seagrass is also the favoured food of the dugong, and changes in its availability are likely to impact on dugong populations.

How the indicator was assessed

Data for the indicator were extracted from a recent report (Waycott et al. 2011) as well as from a literature search of relevant papers and reports (Ellison et al. 1999, Coles et al. 2011).

State, pressures and threats

Nauru does not have any recorded seagrass beds, although this may be due to a lack of surveys of deeper areas (Ellison 2009, Waycott et al. 2011, Coles et al. 2011).

INDICATORS	STATE, PRESSURES & THREATS
	Status Not applicable
	Trend Not applicable
	Data confidence Not applicable

1.4 Marine ecosystems

1.4.1 Ocean health

Key points

- Oceania supports the world’s largest tuna fisheries, yet stocks of the major species are declining or are overfished. Bigeye tuna stock is in a critical condition with fishing mortality well in excess of its Maximum Sustainable Yield level; yellowfin is also overfished.
- Six marine turtle species feed and migrate through Oceania, and the Pacific region supports the world’s largest remaining nesting populations of green and hawksbill turtles.
- Over-exploitation has reduced many fish stocks throughout the Pacific, limited fish catches and caused ecological shifts that reduce biodiversity and productivity. By-catch during commercial fishing activities and live capture and harvesting for the aquarium trade contribute to these impacts.
- The biggest threats to ocean health are climate change, particularly through effects of rising sea temperatures, acidification and de-oxygenation, and over-exploitation, mainly over-fishing.
- The Pacific small island developing states are amongst the most vulnerable countries to climate change, especially to sea level rise and climate perturbation. Changes in oceanic circulation and precipitation patterns are already evident.
- Evidence is accumulating that ocean oxygen levels are declining while acidification is increasing.
- Habitat destruction, extractive activities, pollution and invasive species are also serious threats.
- Seabed mining has the potential to damage large areas of benthos, but detailed impacts are currently undetermined.
- Any further deterioration of the ocean could have a significant impact on the economic well-being of Pacific Islanders, primarily those residing in or near coastal areas.

Background and relevance of indicator

The Pacific Ocean covers half of the world's surface and is the largest ecosystem in the world. The coastal and marine environments of Oceania sustain numerous activities that fuel local, national and international economies and provide livelihoods and food security for millions of people. Evidence is mounting that this unique ecosystem is being adversely affected by overfishing, habitat destruction, pollution, and climate change. Fishing of large predators (such as sharks, tunas and billfish) has a particularly negative effect on the ocean by, for example, allowing an increase in the abundance of their prey or influencing prey species by causing behavioural changes to their habitat use, activity level and diet.

Oceanic megafauna populations cannot support the massively increased fishing pressure to which they are currently subjected: for example, more than 5,645 commercial vessels alone were actively fishing in the Pacific Ocean in 2011.

The oceans are fundamental to the Earth's carbon cycle, climate and weather patterns, which ultimately maintain all life on the planet. Although generally described as separate oceans, with the Pacific being the largest at about 46% of the total hydrosphere, they are all interconnected, and ocean boundaries are arbitrary. Migratory species frequently cross these ocean boundaries. While ocean ecosystems are relatively low-production areas, their vast size means that their contribution to global production is relatively large.

The Pacific Ocean is larger than the Earth's total land mass. The vast size also correlates with high biodiversity resources, although much of it is under-explored and relatively unknown, particularly the deeper ocean systems.

How the indicator was assessed

Much of this information came from IUCN Oceania report 2010 (Siedel and Lal 2010, Chassot et al. 2012), with additional information from other sources (SPREP 2007, Herr and Galland 2009, Morgan et al. 2009, Harley et al. 2012, Miller and Prideaux 2013).

Key findings from the recent International Program on State of the Ocean (IPSO) Center

for Ocean Solutions reports (International Programme on the State of the Ocean 2013, Rogers and Laffoley 2013) and scientific papers and reports were used to identify key threats to ocean health.

State, pressures and threats

Global factors

A recent assessment of global factors affecting ocean health (Rogers and Laffoley 2013) identified the greatest causes for concern as acidification, warming and reduced oxygen levels.

These three factors will interactively affect ocean health and have cascading consequences for marine biology, including altered food web dynamics and increases in pathogen impacts.

Tables 5 details data published in the Pacific Climate Change Science Program Countries Report showing projected change in the annual mean climate conditions and oceanic conditions for Nauru under low, medium and high greenhouse gas emissions scenarios (IPCC emissions scenarios B1, A1B and A2). The projections discussed are not specific to a city or state; they refer to an average change over the geographic region of the country of interest and the surrounding ocean.

Acidification

If current levels of greenhouse gas release continue, extremely serious consequences are predicted for ocean life and, in turn, for food and coastal protection. At CO₂ concentrations projected for 2030–2050, erosion will exceed calcification in the coral reef-building process, resulting in the extinction of some coral species, significant effects on coral reefs and declines in biodiversity overall.

Ocean acidification is measured using aragonite saturation. Aragonite is a form of calcium carbonate used by marine animals to build structures and shells. Aragonite saturation is a ratio that compares the amount of aragonite present with the total amount that the water could hold if it were completely saturated. The more negative the change in aragonite saturation, the larger the decrease in aragonite available in the water, and the harder it is

for marine organisms to produce skeletons and shells.

Warming

The ocean is undergoing significant warming, with direct and well-documented physical and biogeochemical consequences. The impacts of continued warming in the decades to 2050 are predicted to include increasing stratification of ocean layers leading to oxygen depletion and increased incidence of anoxic and hypoxic (low oxygen) events, although the significance of these effects in the Pacific is unclear.

Reduced oxygen levels

There is increasing evidence that, in addition to the coastal hypoxia events that have increased in frequency globally due to eutrophication, there is a general trend for reduced oxygen levels in tropical oceans over the last 50 years (Pitcher and Cheung 2013). This is due to a number of climate change-related processes, principally increased sea surface temperatures. Estimates indicate a decline in the total mass oxygen

content of the oceans of between 1 and 7% by 2100 (Pitcher and Cheung 2013).

Local factors

Utilised species

Continued overfishing is further undermining the resilience of ocean systems, and in many cases, fisheries management is failing to halt the decline of key species and damage to marine ecosystems. A recent FAO report (Food and Agriculture Organisation of the United Nations (FAO) 2012) indicated that 70% of world fish populations are exploited unsustainably, of which 30% show population declines to less than 10% of unfished levels. A recent global assessment of compliance with Article 7 (fishery management) of the 1995 FAO Code of Conduct for Responsible Fisheries (Pitcher and Cheung 2013) awarded 60% of countries a 'fail' grade and saw no country identified as being overall 'good'. See below for an assessment of utilised species in the Nauru.

Table 4 Data published in the Pacific Climate Change Science Program Countries Report showing projected change in the annual mean climate conditions and oceanic conditions for Nauru under low, medium and high greenhouse gas emissions scenarios

Variable	Emission scenario	2030	2055	2090	Confidence
Surface air temperature (°C)	Low	+0.7 ± 0.5	+1.3 ± 0.6	+1.7 ± 0.8	Moderate
	Moderate	+0.8 ± 0.6	+1.6 ± 0.7	+2.6 ± 0.9	
	High	+0.8 ± 0.5	+1.6 ± 0.6	+3.0 ± 0.8	
Total rainfall (%)	Low	+13 ± 25	+11 ± 30	+27 ± 38	Low
	Moderate	+10 ± 24	+25 ± 33	+43 ± 64	
	High	+11 ± 26	+25 ± 41	+45 ± 71	
Sea-surface temperature (°C)	Low	+0.7 ± 0.6	+1.2 ± 0.7	+1.6 ± 0.9	Moderate
	Moderate	+0.7 ± 0.6	+1.5 ± 0.7	+2.5 ± 1.1	
	High	+0.8 ± 0.7	+1.5 ± 0.8	+2.9 ± 1.1	
Aragonite saturation state (Ωar)	Low	+3.5 ± 0.2	+3.2 ± 0.2	+3.1 ± 0.2	Moderate
	Moderate	+3.4 ± 0.2	+3.1 ± 0.2	+2.7 ± 0.2	
	High	+3.4 ± 0.2	+3.1 ± 0.1	+2.5 ± 0.2	
Mean sea level (cm)	Low	+8 (4–13)	+17 (9–25)	+31 (17–45)	Moderate
	Moderate	+9 (4–14)	+20 (10–30)	+39 (20–57)	
	High	+9 (4–14)	+19 (10–29)	+40 (21–60)	

Marine pollution

Human activities that change the marine environment by altering water quality, such as sedimentation from mining or agricultural practices, may make it unsuitable for marine animals with precise environmental requirements. Other than oil and gas extraction, most pollution in the ocean originates from industry, agriculture or domestic sources on land. Deep-sea mineral extraction is a potential future threat.

While ocean systems are generally less exposed to land-based sources of pollution, and the vast bulk of the oceans means that dilution is extreme, there are accumulations of persistent pollutants in the oceanic gyres, such as the South Pacific Subtropical Gyre (Eriksen et al. 2013). The most visible of these is plastic litter, but persistent organic pollutants have also been shown to accumulate in the gyres and may be bio-concentrated in the fish food chain (Gassel et al. 2013).

Marine bioinvasions

Marine ecosystems are also significantly threatened by invasive species. Shipping transports marine species and their larvae over huge distances and introduces them as invaders into new ecosystems. This transport can happen deliberately (for example, when ballast water taken aboard a ship in one region is dumped in another) or accidentally.

1.4.2 Utilised species

Key points

- Oceania waters provide food and livelihoods for peoples both within and outside the region. Fishing activities range from subsistence reef food gathering to foreign fishing vessels licensed to fish in national waters under quota, the fees secured providing valuable revenue for nations.
- In Oceania, 70–80% of the catch from inshore fisheries is used for subsistence purposes, with around 20% going to markets.
- Overfishing and the loss of marine biodiversity are negatively affecting coastal ecosystems throughout Oceania.

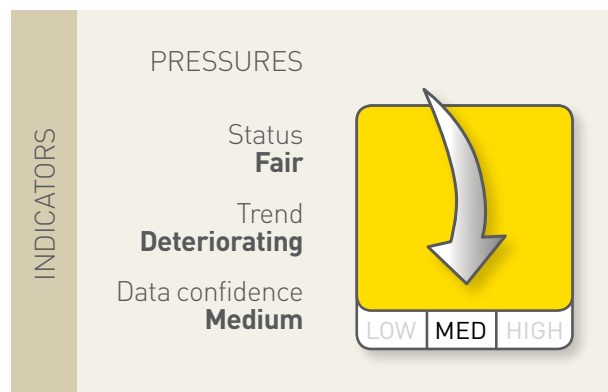
- Pelagic fish stocks are monitored to try to assure sustainability; however, each year, illegal fishing activity is detected.
- Locally managed marine areas have the potential to improve reef ecosystems, restore marine biodiversity and reverse the effects of overfishing on fish stocks.
- The main aquaculture industries in Oceania are pearls in French Polynesia and the Cook Islands, prawns in New Caledonia and seaweed in Kiribati.
- International markets for bêche-de-mer, trochus, live coral and live reef fish, coupled with the aquarium trade, in conjunction with fishing pressure from increasing human populations have reduced stocks of marine species generally in Oceania.

Background and relevance of indicator

Oceania waters provide food and livelihoods for peoples both within and outside the region. Fishing activities range from subsistence reef food gathering to foreign fishing vessels licensed to fish in national waters under quota, the fees secured providing valuable revenue for nations.

How the indicator was assessed

Information for this indicator was sourced from several publications and reports (Pacific Regional Coastal Fisheries Development Programme (Cofish) 2005, Forum Fisheries Agency (FFA) 2007, Unisea 2007, Gillett 2009, 2011, Pratchett et al.



2011, Anon 2013, Western and Central Pacific Fisheries Commission (WCPFC) 2013).

State, pressures and threats

Coastal fisheries

Although Nauru has only a very shallow lagoon, much of which dries at low tide, and a narrow fringing reef, the food produced by fishing in these coastal areas is very important in the Nauru diet. The catch obtained from fishing in these shallow waters is landed all around Nauru, wherever the fishers swim, wade or walk ashore. Most of the catch from fishing further offshore from canoes and skiffs is landed at a few man-made channels through the fringing reef. Grabab Channel at the southwest of the island is used during the prevailing easterly winds, while Anibare Bay is used during winds from the northwest.

In 2008, an Asian Development Bank project examined a large number of studies on coastal fishing in the country and made annual catch estimates for Nauru.

- The annual coastal commercial production in the mid-2000s was estimated to be 200 tonnes, worth USD 840,336.
- The annual coastal subsistence fisheries production in the mid-2000s was estimated to be 450 tonnes, worth USD 661,345.

A study by the Secretariat of the Pacific Community in 2010 partitioned the above coastal catches into categories: demersal fish 47.7%, nearshore pelagics 47.7%, and invertebrates 4.6%.

Some of the main trends and issues in Nauru's coastal fisheries are:

- an increasing reliance on coastal resources for food security and employment, together with the limitations of those resources;
- a recent increase in capacity of the government fisheries agency in fisheries management and development; and
- the rapid changes in inshore fishing brought about by the economic downturn

With respect to coastal and inshore fisheries management, there has been in the past little government intervention in the inshore fisheries. Because of the declining state of resources coupled with the increasing overdependence of the population on reef and inshore species, there is an urgent need to strengthen management capabilities.

Offshore fisheries

According to information supplied by Nauru to the Western and Central Pacific Fisheries Commission, in 2012, there were 198 foreign tuna fishing vessels licensed to operate in Nauru's exclusive economic zone. Except for 7 Japanese longliners, all of these vessels were purse seiners. Catches in recent years ranged from 60,000 to 106,000 tonnes of tuna, about three-quarters of which was skipjack. The largest catches were made by the Taiwanese fleet.

Catches from the offshore fishery are not offloaded in Nauru. Depending on the flag of the vessel, caught tunas are either trans-shipped for transport to a cannery (seiners from Taiwan and Korea), delivered directly to Pago Pago (USA vessels) or delivered to a port in Japan (Japanese vessels). Some vessels may make direct deliveries to canneries in the Philippines.

An important point about tuna fishing in Nauru concerns the oceanographic conditions and their effect on tuna purse seining. During El Niño periods, the favourable fishing areas for seining shift from Papua New Guinea and the Federated States of Micronesia eastward toward the Kiribati zone.

The main trends and issues in Nauru's offshore fisheries include:

- an increase in enthusiasm for tuna management and development arrangements with neighbouring Pacific Island countries;
- reconciling the costs and benefits of institutionalising a grouping of countries within the Forum Fisheries Agency, known as the Parties to the Nauru Agreement (those countries in which most of the tuna resources are found);
- an increasing reliance by the Nauru Government on offshore fishery licensing fees; and
- the desire to progress from simply licensing foreign fishing vessels to a situation in which the country is benefiting from catching and processing, capitalising on the fact that the Nauru EEZ is one of the most favourable for tuna purse seining.

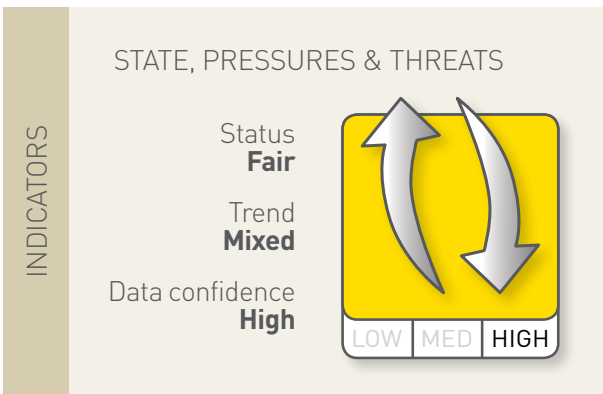
From an historical perspective, most national offshore fishery management efforts have been focused on the objective of generating revenue for the Nauru Government through licensing foreign

fishing vessels. The license fees received from foreign fishing make up an average of a quarter of total government revenue.

There has been a large amount of regional cooperation in the management of offshore fisheries. This has been exercised primarily through the Parties to the Nauru Agreement (PNA), in which Nauru is an important member. The PNA has implemented a number of management arrangements. These include a set of non-negotiable minimum terms and conditions for foreign fishing vessel access and a limit on the number of purse seine vessels operating in the region under bilateral licensing arrangements. Currently, the PNA countries (including Nauru) are implementing a limitation on purse seine effort based on the number of vessel days.

Because the tuna are a regional resource, their assessment is most appropriately carried out across the western and central Pacific Ocean. Recent assessments by the Secretariat of the Pacific Community indicate concern over tuna stock condition of bigeye and to a lesser degree yellowfin. Numerous attempts in recent years within the Western and Central Pacific Fisheries Commission to prevent an increase in bigeye and yellowfin catches have not been successful. The total catch of bigeye in the region in 2012 was 161,679 metric tons, which was a 7% increase over the average of 2007–2011. The yellowfin catch in 2012 was 655,668 metric tons, which was a 22% increase over 2007–2011.

The three types of offshore fishing in result in by-catch, with longlining producing the most and pole and line fishing the least. Some data are available on the by-catch in the Nauru zone (through logsheet data and [for purse seining] observers) but are not published. On a regional basis, there is concern over the condition of some shark species taken as by-catch, most notably the silky shark and the oceanic whitetip shark.



2 Native species

Much of biodiversity conservation in the countries and territories of the SPREP region is focused on individual species. This set of indicators focuses on pressures on individual species using three different measures. First, pressures on those species currently classified as 'Threatened' in the IUCN Red List of Threatened Species (International Union for Conservation of Nature (IUCN) 2013) are assessed. Second, because of their additional vulnerability, pressures on species found only in one of the countries and territories (single-country endemic species) are assessed. Third, recognising that over half of the world's known species of cetaceans are found in the region along with the world's largest remaining populations of dugong and green, hawksbill and loggerhead turtles, the pressures those species face are assessed.

2.1 Threatened species

Key points

- Of the 3,166 threatened species (2013) in the 22 Pacific Island nations assessed in the State of Conservation in Oceania 2013 report, most occur in the marine (59%) biome, followed by the terrestrial biome (33%).
- Invasive species have the greatest impact on the largest numbers of terrestrial threatened endemic and non-endemic species and Critically Endangered species, followed by impacts of land-use change due to agriculture, farming and forestry activities and exploitation.

Background and relevance of indicator

Extinction rates are disproportionately high on islands, with approximately 80% of all known species extinctions occurring on islands. This indicator focuses on the pressures on endemic and non-endemic species that face the highest risk of extinction: those species classified as 'Threatened' (species belonging to the top three classifications of Critically Endangered, Endangered and Vulnerable: CR+EN+VU) on the IUCN Red List of Threatened Species. Cnidaria

(such as corals, jellyfish and sea anemones) were excluded from the much of the analysis because specific threats are not identified in the Red List database. Non-coral marine species that were retained and analysed included sharks, rays and skates, sea birds, shore fish, marine mammals, sea turtles and sea snakes.

How the indicator was assessed

Data for this indicator were compiled from the IUCN Red List of Threatened Species online public database (Version 2013.1). Information was extracted from the text by identifying threat categories that were relevant in the assessment and interpreting the absolute estimated threat level. For each species, a High/Medium, Low or Potential threat level was assigned to each threat category. Threats were categorised as follows: Residential and commercial development and transport (Development); Agriculture, farming and forestry (Agriculture); Energy production and mining (Mining); Biological resource use (Exploitation); Anthropogenic otherwise uncategorised habitat loss/degradation (Habitat loss); Invasive species (Invasives); Genetic (hybridisation/inbreeding) (Genetic); Pollution; Geological events; Extreme weather and climate change (Climate); Fire, unclear whether natural or anthropogenic (Fires); and Other, such as disease (Other). Only the ten worst threats were graphed.

State, pressures and threats

As of August 2013, 669 species in Nauru were assessed according to the IUCN Red List Categories and Criteria for inclusion in the Red List of Threatened Species. Table 5 provides a summary of these species, and Figure 3 shows the assessed species by Category. Whilst the majority of assessed species are found

in marine habitats, a greater percentage of terrestrial species are threatened. This pattern can be explained by the more restricted range of many terrestrial species.

There are no known species extinctions in Nauru. Of the 80 threatened flora and fauna (CR, EN or VU; IUCN 2013) of Nauru, 62 species (78%) are corals (Phylum: Cnidaria), the majority

Table 5 Species in Nauru included on the IUCN Red List

Taxonomic group	Sub-group	Number of species assessed (Threatened)	No. of species assessed as Threatened (CR, EN, VU)	No. of species assessed as Data Deficient	Estimated number of species described*
Plants	Bryophytes	0			0
	Ferns and allies	0			0
	Cycads	0			0
	Conifers	0			0
	Magnoliopsida (Dicotyledons)	5	0	0	6
	Liliopsida (Monocotyledons)	5	0	0	13
	Algae	0			0
Vertebrates	Birds	19	2	0	19
	Mammals	16	1	8	16
	Reptiles	2	0	0	2
	Amphibians	0			0
	Bony fish (freshwater and marine)	188	5	11	188
	Cartilaginous fish	7	4	0	7
Invertebrates	Insects	0			0
	Arachnids	0			0
	Hard corals (Anthozoa)	330	62	9	330
	Molluscs (gastropods)	63	0	0	unknown
	Crustaceans	2	0	1	unknown
	Hydrozoa	2	0	0	unknown
	Holothuroidea (sea cucumbers)	30	6	9	unknown
Other invertebrates	0			unknown	
Fungi		0			16
Totals		669	80	38	597

of which are in the order Scleractinia. These species have been excluded from the following threat analysis and are discussed separately in the regional section of this report.

Exploitation is the top threat impacting threatened (CR, EN or VU) species in Nauru (see Table 6), followed by invasive species and land-use change to agriculture. Sixteen of 18 species (89%) of all IUCN Threatened species in Nauru are impacted by this threat type; the only two species that are not hunted or exploited are bird species (Class: Aves).

All sharks (Chonrichthyes) are impacted by fisheries pressure, including the Vulnerable whitetip oceanic shark (*Carcharhinus longimanus*), shortfin mako (*Isurus oxyrinchus*), longfin mako (*I. paucus*) and whale shark (*Rhincodon typus*). The majority of echinoderms (sea cucumbers in the class Holothuroidea) are threatened by collection throughout their range in the Pacific. Finally, the Vulnerable sperm whale (*Physeter macrocephalus*) is subject to a low level of hunting across its range (compared

Figure 3 Number of assessed species in each category for Nauru

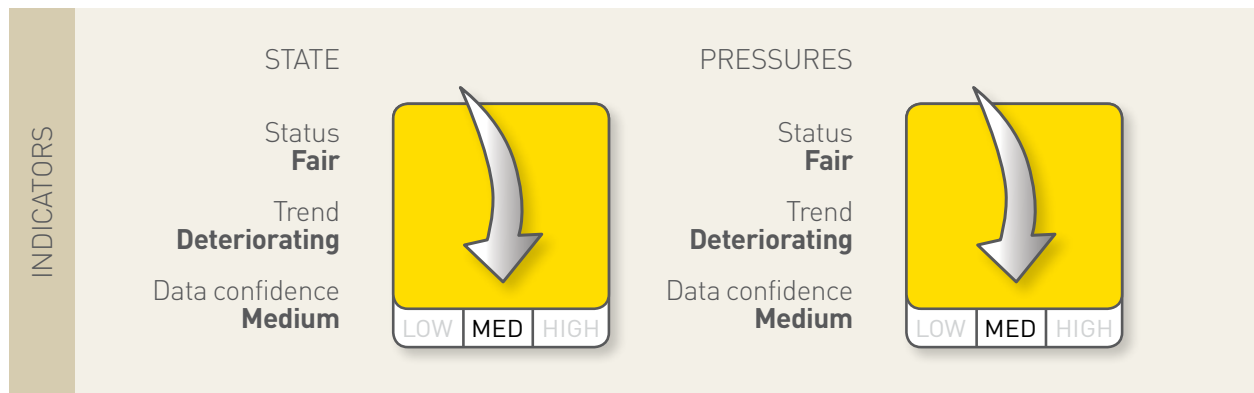
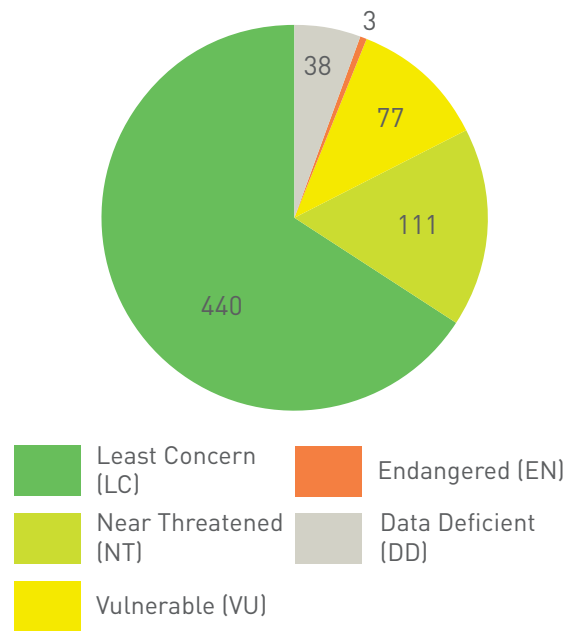


Table 6 Total number and percentage of endemic and non-endemic extant IUCN Red List threatened (CR/EN/VU) (excluding Cnidarian species) in Nauru facing or potentially facing each threat type** with relative ranking given

Relative ranking	Threat type	No. of species	% of species
1	Exploitation	16	89
2	Invasives	2	11
3	Agriculture	1	6
3	Climate	1	6
3	Mining	1	6

** "Agriculture" refers to agriculture, farming and forestry. "Mining" includes energy production. "Climate" refers to extreme weather and climate change

to historical levels); however, while hunting has reduced, recruitment remains low.

The bristle-tailed curlew, one of the only two non-marine IUCN Threatened species in Nauru, faces a moderate level of loss and degradation of its habitat through clearance (including for coconut plantations). It is also subject to predation from cats (*Felis catus*), rats and perhaps pigs (*Sus scrofa*).

2.2 Endemic species

Key points

- Of the 2,189 single-country endemic species recorded across Oceania, 115 (5.3%) are already extinct, and 12 (0.5%) now exist only in captivity.
- At present, 930 of the 2,062 extant single-country endemic species (nearly 45%) are at a risk of extinction.
- Land-use change due to agriculture, the spread of invasive species, fires, habitat degradation and alteration, mining activities and over-exploitation are the main threats to all single-country endemic species.
- The biggest threats to single-country endemic species classified as Threatened are the spread of invasive species followed by land-use change due to agriculture, fires, and habitat loss.

Background and relevance of indicator

Endemic species once extinct are lost forever. Endemic species found only on one island or group of islands in Oceania are particularly vulnerable to the consequences of increasing human activity. This indicator identifies the key pressures and threats to single-country endemic species and the extent to which these species have already been impacted. Most of these species are terrestrial, as information about marine endemic species is lacking generally. Species extinction or species decline disrupt ecological processes and may also lead to cascading and catastrophic co-extinctions.

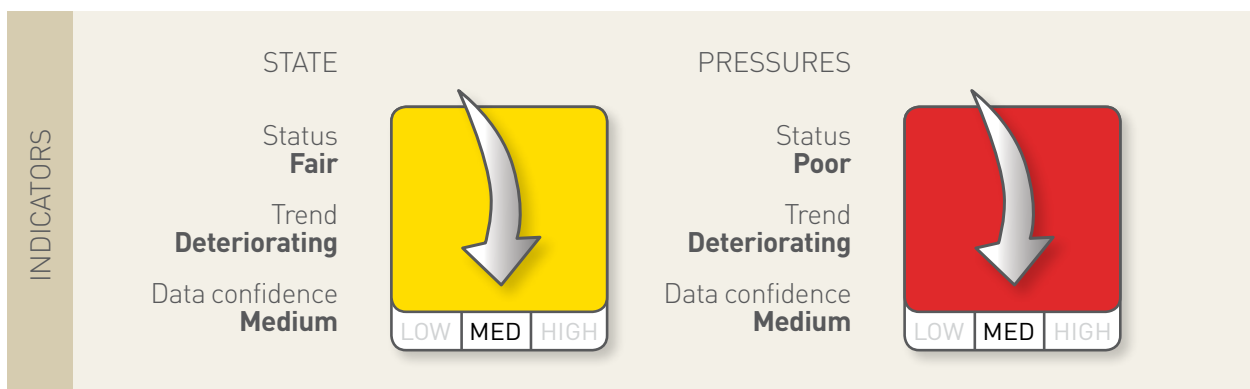
How the indicator was assessed

Data for the indicator were extracted from the IUCN Red List of Threatened Species Version 2013.11.

A High/Medium, Low or Potential threat level was assigned to each pressure in order to compare actual and potential threats as well as their relative estimated level of severity. The relative importance of different pressures was also analysed in relation to current conservation status using the IUCN Red List categories (CR/EN/VU = Critically Endangered/Endangered/Vulnerable; LR/LC/NT = Low Risk/Least Concern/Near Threatened; DD = Data Deficient).

State

There is one single-country endemic recorded for Nauru: the Vulnerable Nauru reed-warbler (*Acrocephalus rehsei*).



Pressures and threats

The Vulnerable (VU) Nauru reed-warbler (*Acrocephalus rehsei*) faces multiple threats, including mining (historical damage to habitat) and potential predation by rats (*Rattus* sp.). It also may be subject to adverse stochastic events such as cyclones and the damage they cause due to its restricted range.

2.3 Threatened migratory marine species

Key points

- The key threats to cetaceans are from fisheries operations, boat strikes, habitat degradation and pollution, anthropogenic noise, climate change and unregulated tourism.
- The major threat to marine turtle populations remains the direct harvest and illegal poaching of eggs and adults of all species. Climate change is predicted to be an increasing threat.
- The population status of many species of cetaceans is poorly known. The ability to quantify and address threats is hampered by the absence of regular research and monitoring of species distributions and abundance globally and in the Pacific region.

Background and relevance of indicator

Over half of the world's known species of cetaceans are found in the Pacific region, and the Pacific also supports the world's largest

remaining populations of dugong and green, hawksbill and loggerhead turtles. These species are vulnerable to a wide range of threats including fisheries by-catch; human harvest; habitat loss and degradation from coastal development; pollution and pathogens; and climate change.

How the indicator was assessed

Data for the indicator were extracted from the IUCN Red List of Threatened Species (International Union for Conservation of Nature (IUCN) 2013) for dugong, migratory marine turtles and cetaceans. Key sources of information on population status and threats to marine species included species assessments, peer-reviewed journal articles and regional and global reports on marine species (Marsh et al. 2002, Miller 2007, Garrigue et al. 2008, International Union for Conservation of Nature (IUCN) 2008, Polidoro et al. 2011, Wallace et al. 2011, Coral Reef Research Foundation 2012, Secretariat of the Pacific Regional Environmental Programme (SPREP) 2013b).

Threats were ranked from 0 (data deficient) to 3, with threat levels of 1 (low), 2 (medium) and 3 (high).

State

Cetaceans

As at March 2011, Nauru was not a signatory to the Pacific Cetaceans MoU, which aims to conserve cetaceans and their habitats in the Pacific islands region with full protection of species listed in CMS Appendix 1.

There are limited records of cetacean in the marine area surrounding Nauru (see Table 7).

Table 7 Marine species of conservation concern in Nauru, confirmed sightings

Species	Common name	IUCN Red List status 2008	Population trend worldwide	Nauru population
<i>Physeter macrocephalus</i>	Sperm whale	VU A1d	Unknown	Unknown
<i>Lagenodelphis hosei</i>	Fraser's dolphin	LC	Unknown	Unknown
<i>Peponocephala electra</i>	Melon-headed whale	LC	Unknown	Unknown
<i>Balaenoptera</i> sp.	Bryde's whale complex	DD	Unknown	Unknown

Marine Turtles

There are no confirmed records of marine turtles in Nauru.

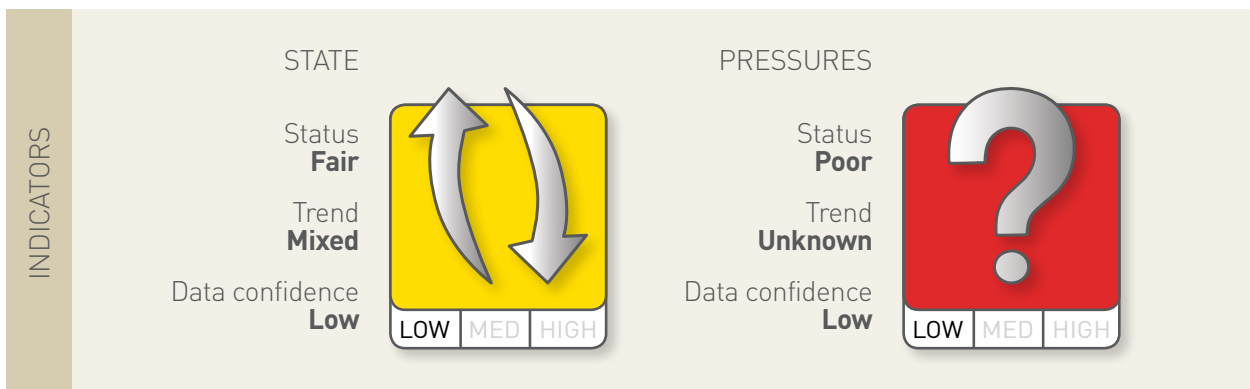
Pressures and threats

Cetaceans

There are limited data on population status and threats to cetaceans in Nauru.

Global threats to cetacean populations include:

- fisheries impacts via by-catch mortality, habitat destruction and food web impacts. Some cetacean species are threatened by over-fishing of prey species;
- harvest, including scientific whaling, drive hunts and capture for captivity for cetaceans;
- habitat degradation via coastal development, seafloor dredging, vessel traffic and marine construction;
- pollution and pathogens, including plastics and other marine debris affecting cetaceans;
- boat strikes and ecotourism;
- anthropogenic noise from sonar and seismic activity, which has been associated with mass strandings of certain cetacean species;
- global climate change, which may affect cetaceans by changing prey distribution and abundance. While the impacts of climate change on cetaceans are mainly speculative (Miller 2009), the effects can be (1) direct when, for example, a species changes its geographic distribution as a result of an oceanographic shift and (2) indirect, such as the implications for reproductive success when prey distribution, abundance or composition is altered (Miller 2009).





Coastal strand tree *Tournefortia argentea*. Valuable tree for coastal and beach protection and one of the most important medicinal and multipurpose plants on Nauru.
Photo credit: E. Edwards.

RESPONSE

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Responses to protect and conserve Oceania's terrestrial and aquatic biodiversity must be built on a sound platform of national and international legislation and traditional governance mechanisms. The establishment of protected areas is a key component of national biodiversity programmes, as is direct action to mitigate impacts of invasive species, over-exploitation, habitat loss and climate change guided by appropriate national action plans, such as National Biodiversity Strategy and Action Plans.

This section examines the extent of protected areas, participation in and national implementation of international biodiversity agreements and specific policy and management actions to deal with invasive species.

3 Environmental governance

3.1 Multilateral Environment Agreements

Key points

- Most of the Pacific island countries have made commitments to the main biodiversity Multilateral Environmental Agreements (MEAs), in particular the Convention on Biological Diversity.
- Pacific island territories of France, New Zealand, the United Kingdom and the United States are non-parties to MEAs but have, to various degrees, delegated authority for environmental governance, and some may be party to regional agreements.

Background and relevance of indicator

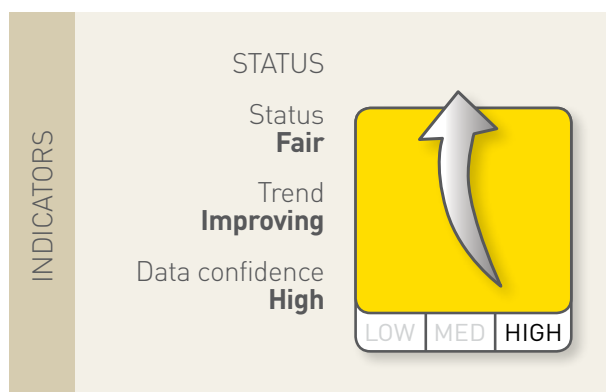
This indicator identifies the status of ratification of environment-related MEAs for Nauru and shows the extent of commitment of Nauru to international cooperation for the good of all mankind and its natural habitats. The MEAs considered in this assessment include:

- (a) Cartagena Protocol on Biosafety
- (b) Convention on Biological Diversity (CBD)
- (c) Convention on the Conservation of Migratory Species of Wild Animals (CMS) and relevant Memoranda of Understanding

- i. The Memorandum of Understanding on the Conservation and Management of Dugongs and their Habitats throughout their Range (Dugong MoU)
 - ii. The Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia (IOSEA Marine Turtle MOU)
 - iii. Pacific Islands Cetaceans
 - iv. The Memorandum of Understanding (MoU) on the Conservation of Migratory Sharks
- (d) Convention on Wetlands of International Importance (Ramsar)
 - (e) Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
 - (f) Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (Nagoya Protocol)
 - (g) United Nations Convention on the Law of the Sea (UNCLOS)
 - (h) United Nations Framework Convention on Climate Change (UNFCCC)
 - (i) Convention Concerning the Protection of the World Cultural and Natural Heritage (WHC)

How the indicator was assessed

The data for each Pacific island country's status of commitment to the MEAs were extracted from the InforMEA country profile and relevant MEA Country profiles (InforMEA 2014).



State

Nauru is a self-governing State that is free to enter into international or regional Multilateral Environmental Agreements (MEAs). Nauru has signed, ratified, accepted, adhered to or acceded to the some of the main biodiversity MEAs (see Table 9). Although not a Party to the CMS, Nauru has signed the Memorandum of Understanding relating to sharks.

Appendix A below indicates which biodiversity conservation MEAs Nauru has ratified and has become a Party to and the scope at which these MEAs are implemented at the national and sub-subnational level. The table reflects the commitment that the Government of Nauru has to integrating its international commitments at the national level through national policies and legislations.

Table 8 Nauru and MEAs

Cartagena Protocol on Biosafety	
Convention on Biological Diversity (CBD)	✓
Convention on the Conservation of Migratory Species of Wild Animals (CMS) and relevant Memoranda of Understanding	
The Memorandum of Understanding on the Conservation and Management of Dugongs and their Habitats throughout their Range (Dugong MoU)	
The Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia (IOSEA Marine Turtle MOU)	
Pacific Islands Cetaceans	
The Memorandum of Understanding (MoU) on the Conservation of Migratory Sharks	✓
Convention on Wetlands of International Importance (Ramsar)	
Convention on International Trade in in Endangered Species of Wild Fauna and Flora (CITES)	
Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (Nagoya Protocol)	
United Nations Convention on the Law of the Sea (UNCLOS)	✓
United Nations Framework Convention on Climate Change (UNFCCC)	✓
Convention Concerning the Protection of the World Cultural and Natural Heritage (WHC)	

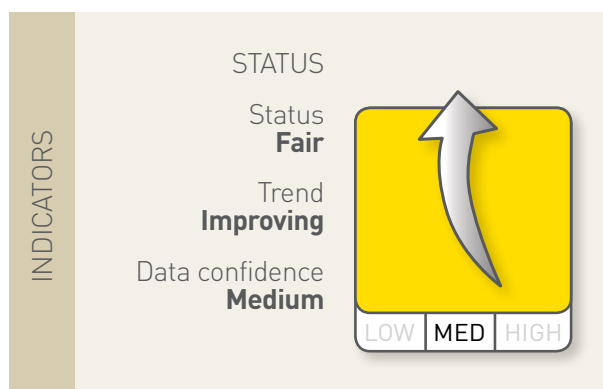
3.2 National policies and legislation

Key points

- Most Pacific island countries have enacted legislation relating to environmental protection or have enacted sectoral legislation containing environmental protection provisions.
- Also, most Pacific island countries have not enacted specific or comprehensive legislation to address the obligations of State parties under the MEAs.
- Updating environmental legislation is urgently needed in the region but is hindered by the lack of capacity and resources to develop, monitor and enforce environmental legislation and is delayed by bureaucratic processes.

Background and relevance of indicator

This indicator identifies the status of national implementation of the biodiversity conservation MEAs that Nauru has signed or ratified. It focuses on identifying the specific legislations that Nauru has developed and enforced. For the purpose of this report, 'legislation' refers to statutory law enacted by legislature or a governing body in the Pacific island countries and territories. Where no specific legislation is available, the indicator focuses on related legislation that has aspects relevant to the objectives of the biodiversity conservation MEAs.



How the indicator was assessed

The data for Nauru's status of national implementation commitment to the MEAs were assessed through research and extracted from various sources (ECOLEX 2013, Pacific Islands Legal Information Institute (PACLII) 2013, Secretariat of the Pacific Regional Environmental Programme (SPREP) 2013a) and relevant government websites, published reports and various articles. Whilst every endeavour was made to obtain the current legislation, policies, strategies and action plans, consultation with relevant government departments is needed to ensure more recent developments have been considered.

State

Effective institutional arrangements or regimes are important for environmental management and conservation, especially for the implementation and enforcement of national legislations and policies that support the conservation of biodiversity. Appendix B indicates both government and inter-governmental institutions set up in Nauru to govern the conservation and management of terrestrial and marine ecosystems.

With the increase in developments, habitats and species are increasingly threatened with extinction. Threats to ecosystems and the species they contain may be mitigated through better land-use planning, proper environmental impact-assessment processes, proper management of waste and pollution, sustainable forestry and mining activities and better mitigation of climate change and disaster impacts. Appendix C outlines the specific legal frameworks, institutional arrangements and strategies or action plans by which these mitigating factors are governed.

3.3 Traditional governance

Key points

- Traditional governance has an essential role in land and natural resources management in Pacific island countries and territories.
- The majority of land in the Pacific islands is customarily owned and is held in customary tenure. State lands or freehold lands represent only a comparatively small percentage of lands.
- Customary definition of land in most of the Pacific islands extends to the foreshore and inshore waters, although in some countries, the national law vests ownership of foreshore lands to the State, while recognising customary rights of access and use by traditional landowners.

Background and relevance of indicator

This indicator assesses the recognition of customary land ownership and customary rights of access and use of land and marine resource in each country. It identifies the percentage of land owned customarily and whether customary land ownership extends to foreshores and beyond. It also briefly covers the impact of customary ownership on environmental governance.

How the indicator was assessed

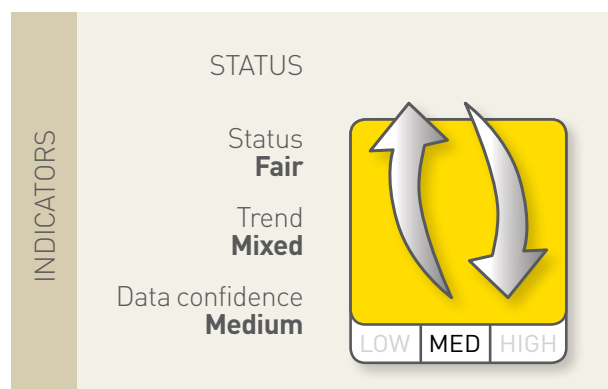
The data for Nauru's status of traditional governance were assessed through desktop research and extracted from the country profile on the Pacific Environment Information Network (PIEN) website (Secretariat of the Pacific Regional Environmental Programme (SPREP) 2013a), government websites, published reports and various articles (Clarke et al. 2008).

State

After the Second World War, Nauru became a UN trust territory until it achieved independence in 1968. Despite or because of this chequered history, national identity remains very strong. All Nauruans are registered at birth under their mother's clan. Failure to register a child as Nauruan eliminates that person from the entitlements of being Nauruan, particularly access to land rights and to shares in phosphate revenue.

All land in Nauru is customarily owned under traditional ownership with access only allowable if registered under the maternal lineage. Even prior to the discovery and working of the phosphate deposits, ownership of land was an all-important matter. Since the late 1920s, land ownership has been determined by the Nauru Lands Committee, although this body was only given legislative backing in 1956. The determination of land ownership before the creation of the committee was undertaken by the Chiefs whose decision could be appealed to the colonial Administrator.

Today, land is governed under the Lands Act 1976. Under the Customs and Adopted Laws Act, customary law is part of the law of Nauru but is subordinate to legislation. Informal social control is still maintained within Nauruan families, but formal control rests with the Nauru police force and the judiciary.



3.4 National Biodiversity Strategy and Action Plans and national reporting to the Convention on Biological Diversity

Key points

- Fourteen of the countries of the SPREP region are Parties to the Convention on Biological Diversity (CBD), and 12 have National Biodiversity Strategies and Action Plans (NBSAPs).
- National reporting to the CBD includes submission of national reports and thematic reports on various themes such as Alien Species, Protected Areas, etc. Parties to the CBD have also submitted Action Plans for Implementing the Convention on Biological Diversity's Programme of Work on Protected Areas, known as PoWPA Action Plans.

Background and relevance of indicator

NBSAPs are the principal instruments for implementing the CBD at the national level. The Convention requires parties to prepare a National Biodiversity Strategy (or equivalent instrument) and to ensure that this strategy is mainstreamed into the planning and activities of all those sectors whose activities may have an impact (positive and negative) on biodiversity.

How the indicator was assessed

Note: The Strategic Plan on Biodiversity 2011–2020 and the Aichi Biodiversity Targets were adopted by the Parties to the CBD during the Tenth Conference of the Parties (COP10) in Nagoya, Japan.

The fifth national report (scheduled for submission in early 2014) is to provide a mid-term review of progress towards the implementation of the Strategic Plan for Biodiversity 2011–2020 and progress towards the Aichi Biodiversity Targets. The fifth national report has not been considered for this assessment.

State

Nauru is yet to develop a National Biodiversity Strategy and Action Plan.

INDICATORS	Status N/A
	Trend N/A
	Data confidence N/A

4 Conservation initiatives

4.1 Protected areas

Key points

- Coverage of the land and seas of Oceania by protected areas is low. Only four countries appear to have met the Aichi Target 11 commitment made through the CBD for terrestrial coverage, and just one has met the commitment for marine coverage.
- There are no protected areas in international waters within the region.
- Locally Managed Marine Areas (LMMAs) contribute to biodiversity conservation, and their implementation by over 500 communities represents a unique achievement.
- Across Oceania, protection of both terrestrial and marine Important Bird Areas (IBAs) is very poor, with only 10% of the area of marine IBAs and 20% of the area of terrestrial IBAs encompassed within protected areas.
- Similarly, of the Alliance for Zero Extinction sites (AZE), which hold the last remaining populations of Critically Endangered or Endangered species, only three (8.1%) are completely protected, and eight (22%) are partially protected by inclusion in protected areas.

Background and relevance of indicator

Protected areas are a key mechanism for conserving biodiversity. This indicator assesses the extent to which nationally designated protected areas, including Locally Managed Marine Community Areas (LMMAs), and other

sites of global significance for the conservation of biodiversity, such as Important Bird Areas (IBAs), Endemic Bird Areas (EBAs), Key Biodiversity Areas (KBAs) and Alliance of Zero Extinction Sites (AZE), provide terrestrial and marine coverage.

Note: Gaps in information and listing of protected areas have been noted in the WDPA.

How the indicator was assessed

The analysis presented here relies on the official data supplied by the Government of Nauru and held in the World Database on Protected Areas (World Database on Protected Areas (WDPA) 2013), Birdlife International database (BirdLife International 2013a) and Alliance for Zero Extinction Sites database (Alliance for Zero Extinction Sites (AZE) 2013, Integrated Biodiversity Assessment Tool (IBAT) 2013).

State

Terrestrial Protected Areas

No terrestrial protected areas have been established in Nauru (Integrated Biodiversity Assessment Tool (IBAT) 2013).

Marine Protected Areas

There are no Marine Protected Areas in Nauru, but the government has plans for their future development with assistance from the Global Environment Facility (GEF).



Community Conserved Areas, such as LMMAs

There are no declared Community Conserved Areas in Nauru.

Important Bird Areas (IBAs) and Endemic Bird Areas (EBAs)

Important Bird Areas (IBAs) are sites of global biodiversity conservation importance that are chosen using internationally agreed, objective, quantitative and scientifically defensible criteria. IBAs are selected because they may hold threatened birds, birds restricted to particular regions or biomes or significantly large populations of congregatory water birds. Through this process, sites directly important for bird conservation are identified and prioritised for conservation actions. In addition, birds have been shown to be extremely good indicators of overall biodiversity, and throughout the world, IBAs themselves protect a high percentage of many nations' total biodiversity (Stattersfield et al. 1998).

There are currently no IBAs in Nauru.

Over 2,500 bird species are restricted to an area smaller than 50,000 square kilometres, and they are said to be endemic to it. BirdLife has identified regions of the world where the distributions of two or more of these restricted-range species overlap to form Endemic Bird Areas (EBAs).

Nauru has been declared an endemic bird area (EBA203) for the protection of the endemic Vulnerable Nauru reed-warbler (*Acrocephalus rehsei*).

Alliance for Zero Extinction Sites (AZEs)

There are currently no AZE sites in Nauru.

Key Biodiversity Areas (KBAs)

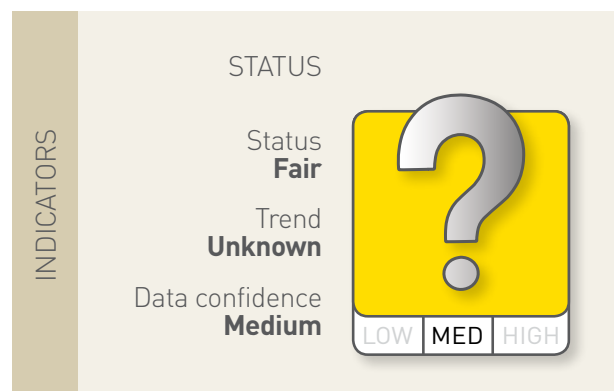
The KBA approach builds on and complements other conservation priority setting approaches by extending to all taxonomic groups the methodology employed by Bird Life International and Plant life International to identify Important Bird Areas (IBAs) and Important Plant Areas (IPAs), respectively. KBAs can be used as a tool by governments, inter-governmental organisations, NGOs, the private sector and other stakeholders to expand protected area networks and, more generally, for targeting conservation action. Additionally, KBAs provide the building blocks for landscape-level conservation planning and for maintaining effective ecological networks aimed at preventing biodiversity loss. In the Pacific, KBAs have been identified in three biodiversity hotspots, namely the Polynesia-Micronesia hotspot, the East Melanesia Islands hotspot, and the New Caledonia hotspot, which collectively include all Pacific island countries and territories, except for mainland PNG.

There are currently no declared KBAs in Nauru.

Ecologically or Biologically Significant Areas

Ecologically or Biologically Significant Areas (EBSAs) in the global marine realm are classified based on seven scientific criteria: 1. Uniqueness or rarity, 2. Special importance for life history of species, 3. Importance for threatened, endangered or declining species and/or habitats, 4. Vulnerability, fragility, sensitivity and/or slow recovery (fragile), 5. Biological productivity, 6. Biological diversity, and 7. Naturalness.

There are currently no declared EBSAs in Nauru.



4.2 Conservation initiatives

Participation in non-governmental conservation initiatives

Non-governmental and inter-governmental organisations play a vital role in the conservation of biodiversity in the region, and Governments are to be commended for allowing these organisations to play such a role. The Republic of Nauru is one such country whose biodiversity has been immensely depleted due to phosphate mining, and organisations such as IUCN work in partnership with the Government of Nauru to address sustainable development issues. Appendix D below outlines initiatives by non-government and inter-governmental organisations in Nauru.

Conservation of species and sites

Appendix E below outlines the current legal framework that assists in the conservation of species in Nauru.

Invasive Alien Species Management

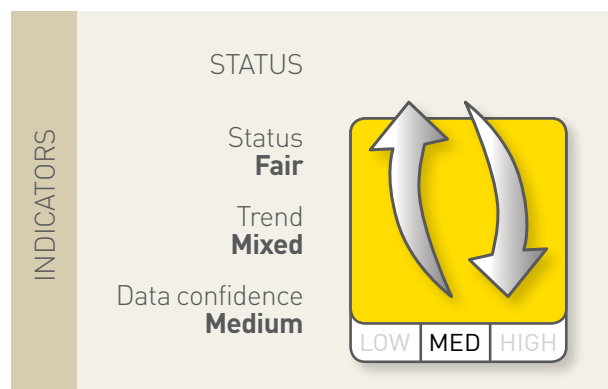
The SPREP Guidelines for Invasive Species Management (Secretariat of the Pacific Regional Environmental Programme (SPREP) 2009) in the Pacific provides a sound framework for countries to use in developing invasive species management programmes.

The National Biodiversity Strategy and Action Plan includes invasive species under Theme B. Invasive species management, with one goal for natural heritage (Reduce the adverse impacts of invasive species on indigenous species and ecosystems, and prevent new invasions) and another for production systems (Reduce the adverse impacts of invasive species on agricultural species and ecosystems, and prevent new invasions). The National Sustainable Development Plan 2011–2015 talks of “stepping up efforts to actively control invasive species” in Section 6. Protect our Biodiversity and Ecosystems.

Nauru acceded to the CBD in 2003 but has not yet prepared a National Biodiversity Strategy and Action Plan or a National Invasive Species Strategy and Action Plan. The Programme of Work on Protected Areas (PoWPA) Action Plan submitted by Nauru does not mention invasive species. The National Environmental Management Strategy and National Environmental Action Plan of 1996 states that 88% of Nauru’s flora were introduced plants and lists pests and diseases as threats, but does not recommend actions.

The lack of quarantine regulations and facilities in Nauru received comment, and a recommendation that quarantine regulations be strengthened and strictly enforced to ensure that unwanted pests and weeds are not introduced into the country was made. A Rapid Biological Survey (BIORAP) project was completed in 2013 and found 125 introduced species. Information from the BIORAP can be used to update this section when the report is completed. Based on an analysis undertaken for this assessment, over 150 alien species of conservation interest (potentially invasive and invasive species) are listed for Nauru, and close to 40% of these species are known to be invasive (IUCN-SSC Invasive Species Specialist Group (ISSG) 2013).

A National Invasive Species Strategy and Action Plan with clear priorities, measurable targets and a resource plan for implementation (including skilled staff and the infrastructure to support the work) and a national commitment to take action against invasive species are critical for Nauru to meet *Aichi Biodiversity Target 9 (By 2020, invasive alien species and pathways are identified and prioritised, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment)*.





Anibare Bay dolomatised limestone pinnacles in the tidal zone.
Photo credit: E. Edwards

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5 Summary and conclusions

Summary of Indicator Assessments

Table 6.1 Summary of indicator assessments at the regional level for the Pacific islands of Oceania
a. State, pressure and threats

Topic	Section	Indicator	Status		Trend		Data Quality	
			State	Pressures and threats	State	Pressures and threats	State	Pressures and threats
ECOSYSTEMS								
Terrestrial	1.1	Forest cover	Poor	Poor	Mixed	Mixed	Medium	Medium
Freshwater	1.2	Freshwater ecosystems	Poor	Poor	Unknown	Unknown	Low	Low
Coastal	1.3.1	Coral reef	Fair	Poor	Mixed	Deteriorating	Low	Low
	1.3.2	Mangrove ecosystem	Fair	Fair	Mixed	Unknown	Low	Low
	1.3.3	Seagrass beds	N/A	N/A	N/A	N/A	N/A	N/A
Marine	1.4.1	Ocean health	Fair	Fair	Deteriorating	Deteriorating	Medium	Medium
	1.4.5	Utilised species	Fair	Fair	Mixed	Mixed	High	High
SPECIES								
Native species	2.1	Threatened species	Fair	Fair	Deteriorating	Deteriorating	Medium	Medium
	2.2	Endemic species	Fair	Poor	Deteriorating	Deteriorating	Medium	Medium
	2.3	Threatened migratory marine species	Fair	Fair	Mixed	Unknown	Low	Low

b. Response

Topic	Section	Indicator	Status	Trend	Data Quality
Governance	3.1	Multilateral Environmental Agreements	Poor	Unknown	Medium
	3.2	National policies and legislation	Fair	Improving	Medium
	3.3	Traditional governance	Good	Improving	Medium
	3.4	National Biodiversity Strategy and Action Plans	N/A	N/A	N/A
Conservation initiatives	4.1	Protected area coverage	Fair	Mixed	Medium
	4.2	Conservation initiatives	Fair	Improving	Medium

Mapping of Aichi Biodiversity targets with indicators in this assessment

Aichi Biodiversity Target	Target #	Indicator
By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.	5	Terrestrial ecosystems: Forest cover
By 2020, all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem-based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.	6	Marine ecosystems: Ocean health and Utilised species Coastal ecosystems: Coral reefs, Mangrove ecosystems and Seagrass beds
By 2020, areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	7	Terrestrial ecosystems: Forest cover Freshwater ecosystems
By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.	8	Marine ecosystems: Ocean health and Utilised species Freshwater ecosystems
By 2020, invasive alien species and pathways are identified and prioritised, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.	9	Conservation initiatives: Invasive alien species management
By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimised, so as to maintain their integrity and functioning.	10	Marine ecosystems: Ocean health and Utilised species Coastal ecosystems: Coral reefs, Mangrove ecosystems and Seagrass beds

continued

Aichi Biodiversity Target	Target #	Indicator
By 2020, at least 17% of terrestrial and inland water and 10% of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures and are integrated into the wider landscapes and seascapes.	11	Conservation initiatives: Protected area coverage
By 2020, the extinction of known threatened species has been prevented, and their conservation status, particularly of those most in decline, has been improved and sustained.	12	Native species: Threatened species, Endemic species, Endangered marine migratory species
By 2020, ecosystems that provide essential services, including services related to water, and that contribute to health, livelihoods and well-being are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	14	Terrestrial ecosystems Freshwater ecosystems Marine ecosystems: Ocean health and Utilised species Coastal ecosystems: Coral reefs, Mangrove ecosystems and Seagrass beds
By 2015, each Party has developed, adopted as a policy instrument and commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.	17	Environmental governance: National Biodiversity Strategy and Action Plans
By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.	18	Environmental governance: Traditional governance

Bibliography

- Alliance for Zero Extinction Sites (AZE). 2013. Alliance for Zero Extinction Sites.
- Anon. 2013. Nauru Annual Report to the Commission - Part 1: Information on Fisheries, Research, and Commission, Pohnpei.
- BirdLife International. 2013. BirdLife Datazone.
- Bryant D., Burke L., McManus L. and Spalding M. 1998. Reefs at Risk: A Map-Based Indicator of Threats to the World's Coral Reefs. A joint publication by World Resources Institute (WRI), International Center for Living Aquatic Resources Management (ICLARM), World Conservation Monitoring Centre (WCMC), United Nations Environment Programme (UNEP). World Resources Institute.
- Burke L., Reynter K., Spalding M. and Perry A. 2012. Reefs at Risk Revisited in the Coral Triangle Copyright 2012 World Resources Institute. ISBN 978-1-56973-791-0. Library of Congress Control Number: 2012941340.
- Chassot E., Dubroca L., Delgado de Molina A., Assan C., Soto M., Floch L. and Fonteneau A. 2012. Decomposing Purse Seine CPUEs to Estimate an Abundance Index for Yellowfin Free-swimming Schools in the Indian Ocean during 1981–2011. Victoria: IOTC.
- Chin A., Lison De Loma T., Reynter K., Planes S., Gerhardt K., Clua E., Burke L. and Wilkinson C. 2011. Status of Coral Reefs of the Pacific and Outlook: 2011. Global Coral Reef Monitoring Network.
- Clarke P., Millar I. and Sollberger K. 2008. Capacity Building for Environmental Law in the South Pacific. Gland, Switzerland: IUCN.
- Coles R., Grech A., Rasheed M., McKenzie L., Unsworth R. and Short F. 2011. Seagrass Ecology and Threats in the Tropical Indo-Pacific Bioregion, Chapter 9. In: Pirog R (ed) Seagrass: Ecology, Uses and Threats. ISBN 978-1-612761-987-8.
- Coral Reef Research Foundation. 2012. Palau *Dugong dugon* Awareness Campaign 2010-2011.
- Duburiya T. and Jeremiah T. 2012. First Workshop on Forest Financing in Small Island Developing States 23-27 April, Port of Spain, Trinidad and Tobago.
- ECOLEX. 2013. The Gateway to Environmental Law. Available at <http://www.ecolex.org>.
- Ellison A.M., Farnsworth E.J. and Merkt R.E. 1999. Origins of Mangrove Ecosystems and the Mangrove Biodiversity Anomaly. *Global Ecology and Biogeography* 8:95-115.
- Eriksen M., Maximenko N., Thiel M., Cummins A., Lattin G., Wilson S., Hafner J., Zellers A. and Rifman S. 2013. Plastic Pollution in the South Pacific Subtropical Gyre. *Marine Pollution Bulletin* 68:71-76.
- Food and Agriculture Organisation (FAO). 2003. Status and trends in mangrove area extent worldwide. In: Wilkie M.L. and Fortuna S. Forest Resources Assessment Working Paper No. 63. Forest Resources Division. Rome: FAO. (Unpublished).
- Food and Agriculture Organisation of the United Nations (FAO). 2010. Global Forest Resources Assessment FAO Forestry Paper 163. Rome: FAO.
- Food and Agriculture Organisation of the United Nations (FAO). 2012. The state of world fisheries and aquaculture. Rome: FAO.
- Forum Fisheries Agency (FFA). 2007. Nauru Fisheries and Marine Resources Authority, Coastal Fisheries Department. Working Paper 3, Institutional Strengthening Project, Forum Fisheries Agency, Honiara.
- Garrigue C., Patenaude N. and Marsh H. 2008. Distribution and Abundance of the Dugong in New Caledonia, Southwest Pacific. *Marine Mammal Science* 24:81-90.
- Gassel M., Harwani S., Park J.-S. and Jahn A. 2013. Detection of Nonylphenol and Persistent



Organic Pollutants in Fish from the North Pacific Central Gyre. *Marine Pollution Bulletin* 73:231-242.

Gillett R. 2009. Fisheries in the Economies of Pacific Island Countries and Territories. Pacific Studies Series, Asian Development Bank, World Bank, Forum Fisheries Agency, Secretariat of the Pacific Community, and Australian Agency for International Development.

Gillett R. 2011. Fisheries of the Pacific Islands: Regional and National Information. Bangkok, Thailand: FAO Regional Office for Asia and the Pacific. RAP Publication 2011/01.290.

Harley S.J., Berger A.M., Pilling G.M., Davies N. and Hampton J. 2012. Evaluation of Stock Status of South Pacific Albacore, Bigeye, Skipjack and Yellowfin Tunas and Southwest Pacific Striped Marlin against Potential Limit RPs. MOW1-IP-04. WCPFC Management Objectives Workshop report.

Herr D. and Galland G.R. 2009. The Ocean and Climate Change. Tools and Guidelines for Action. Gland, Switzerland: IUCN.

InforMEA. 2014. United Nations Information Portal on Multilateral Environmental Agreements (MEAs).

Integrated Biodiversity Assessment Tool (IBAT). 2013. Protected Area and Key Biodiversity Area data downloaded from the Integrated Biodiversity Assessment Tool (IBAT) (<http://www.ibatforbusiness.org>). Provided by BirdLife International, Conservation International, IUCN and UNEP-WCMC. Please contact ibat@birdlife.org for further information.

International Programme on the State of the Ocean. 2013. The State of the Ocean 2013: Perils, Prognoses and Proposals. Gland, Switzerland: IUCN.

International Union for Conservation of Nature (IUCN). 2008. Summary of species on the 2008 IUCN Red List - Oceania. Gland, Switzerland: IUCN.

International Union for Conservation of Nature (IUCN). 2013. IUCN Red List of Threatened Species. Gland, Switzerland: IUCN.

IUCN-SSC Invasive Species Specialist Group (ISSG). 2013. Analysis of Alien Species

(Potentially Invasive and Known Invasive Species) undertaken for the State of Conservation in Oceania 2013. Gland, Switzerland: IUCN.

Jungblut V. 2013. The Republic of Nauru Considers Joining the Ramsar Convention on Wetlands, Report and photos by Vai Junblut, Ramsar Officer for Oceania (ROO).

Marsh H., Penrose H., Eros C. and Hugues J. 2002. Dugong Status Report and Action Plans for Countries and Territories. United Nations Environment Programme Division of Early Warning and Assessment.

Miller C. 2007. Current Knowledge of Cetacean Threats, Diversity and Habitats in the Pacific Islands Region. Whale and Dolphin Conservation Society Australasia. 98p.

Miller C. and Prideaux M. 2013. Proactive Cetacean Conservation in the Midst of "Data Deficiency": Knowledge of Cetacean Threats, Diversity and Habitat in the Pacific Islands Region. Progress of the Convention on Migratory Species Cetacean Agreement in the Pacific Islands. Second Meeting of the Signatories, Auckland, NZ 28–29 July 2009. UN Doc. UNEP/CMS/PIC2/Inf.6-01 (15 July 2009).

Morgan A., Carlson J., Ford T., Siceloff L., Hale L., Allen M.S. and Burgess G. 2009. Temporal and Spatial Distribution of Fish Bycatch in the US Atlantic Bottom Longline Shark Fishery. *Marine Fisheries Review* 72:34-38.

Pacific Islands Legal Information Institute (PACLI). 2013. Available at www.pacii.org.

Pacific Regional Coastal Fisheries Development Programme (Cofish). 2005. Nauru Country Report: Profile and Results From In-Country Survey Work. Pacific Regional Coastal Fisheries Development Programme (Cofish). Noumea, New Caledonia: Secretariat of the Pacific Community.

Peter J. 2000. The Status of Marine Resources and Coral Reefs of Nauru. Unpublished status report by the SW Pacific node of the Global Coral Reef Monitoring Network (GCRMN).

Pitcher T.J. and Cheung W.W.L. 2013. Fisheries: Hope or Despair. *Marine Pollution Bulletin* 74:505-516.

- Polidoro B.A., Elfes C.T., Sanciangco J.C., Pippard H. and Carpenter K.E. 2011. Conservation Status of Marine Biodiversity in Oceania: An Analysis of Marine Species on the IUCN Red List of Threatened Species. *Journal of Marine Biology* 2011:247030.
- Pratchett M.S., Munday P.L., Graham N.A.J., Kronen M., Pinca S., Friedman K., Brewer T.D., Bell J.D., Wilson S.K., Cinner J.E., Kinch J.P., Lawton R.J., Williams A.J., Chapman L., Magron F. and Webb A. 2011. Vulnerability of Coastal Fisheries in the Tropical Pacific to Climate Change. In: Bell J.D., Johnson J.E. and Hobday A.J. (eds). *Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change*, p. 493–576. Noumea, New Caledonia: Secretariat of the Pacific Community.
- Rogers A.D. and Laffoley D. 2013. Introduction to the Special Issue; Interactions between Stresses, Impacts and Some Potential Solutions. Synthesis papers from the International Programme on the State of the Ocean 2011 and 2012 workshops. *Marine Pollution Bulletin* 74:491-494.
- Secretariat of the Pacific Islands (SPC) Applied Geoscience Commission. 2011. *Freshwater under Threat: Pacific Islands*, United Nations Environment Programme, Bangkok.
- Secretariat of the Pacific Regional Environment programme (SPREP). 2007. Secretariat of the Pacific Regional Environment programme: Pacific Islands Regional Marine Species Programme 2008-2012. Apia, Samoa: SPREP. 48p.
- Secretariat of the Pacific Regional Environment Programme (SPREP). 2013. *New Biodiversity Discoveries on Nauru (2013) SPREP News 4* October 2013. Apia, Samoa: SPREP.
- Secretariat of the Pacific Regional Environmental Programme (SPREP). 2009. *Guidelines for Invasive Species Management in the Pacific: a Pacific strategy for managing pests, weeds and other invasive species*. Apia, Samoa: SPREP.
- Secretariat of the Pacific Regional Environmental Programme (SPREP). 2013a. *Pacific Environment Information Network (PEIN): Country Profiles- Nauru*. Apia, Samoa: SPREP.
- Secretariat of the Pacific Regional Environmental Programme (SPREP). 2013b. *Pacific Islands Regional Marine Species Programme 2013-2017*. Apia, Samoa: SPREP.
- Siedel H. and Lal P.N. 2010. *Economic Value of the Pacific Ocean to the Pacific Island Countries and Territories*. IUCN Oceania, July 2010.
- Stattersfield A., Crosby M.J., Long A.J. and Wege D.C. 1998. *Endemic Bird Areas of the World: Priorities for Biodiversity Conservation*. Cambridge, UK: BirdLife International.
- Vunisea A. 2007. *Fishing to Sustain Livelihoods in Nauru*. Women in Fisheries Information Bulletin #16 Noumea, New Caledonia: Secretariat of the Pacific Community.
- Wallace B.P., DiMatteo A.D., Bolten A.B., Chaloupka M.Y., Hutchinson B.J., Abreu-Grobois F.A., Mortimer J.A., Seminoff J.A., Amorocho D., Bjorndal K.A., Bourjea J., Bowen B.W., Dueñas R.B., Casale P., Choudhury B.C., Costa A., Dutton P.H., Fallabrino A., Finkbeiner E.M., Girard A., Girondot M., Hamann M., Hurley B.J., López-Mendilaharsu M., Marcovaldi M.A., Musick J.A., Nel R., Pilcher N.J., Troëng S., Witherington B. and Mast R.B. 2011. *Global Conservation Priorities for Marine Turtles*. *PLoS ONE* 6:e24510.
- Waycott M., McKenzie L.J., Mellors J.E., Ellison J.C., Sheaves M.T., Collier C., Schwarz A.M., Webb A., Johnson J.E. and Payri C.E. 2011. *Vulnerability of Mangroves, Seagrasses and Intertidal Flats in the Tropical Pacific to Climate Change*. In: Bell J.D., Johnson J.E., Hobday A.J. (Eds.) *Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change*. Noumea, New Caledonia: Secretariat of the Pacific Community.
- Western and Central Pacific Fisheries Commission (WCPFC). 2013. *Summary Report. Scientific Committee, Ninth Regular Session, Western and Central Pacific Fisheries Commission, Pohnpei*.
- Wilkinson C. 2008. *Status of Coral Reefs of the World*. Global Coral Reef Monitoring Network and Reef and Rainforest Research Centre, Townsville, Australia. Global Coral Reef Monitoring Network.
- World Database on Protected Areas (WDPA). 2013. *Protected Planet*.

Appendix A:

National frameworks, policies and legislation in Nauru

(next page)



International/Multilateral Environment Agreement/Convention	Protocol	Regional Agreement	National Policy	National Strategy and/or Action Plan	National Legislation	Subsidiary Legislation
Convention on Biological Diversity (CBD) Signed 05.06.1992; Ratified 11.11.1993	Cartagena Protocol on Biosafety Acceded 12.11.2001	Forum Fisheries Agency Convention for the prohibition of fishing with long drift nets in the South Pacific Waigani Convention	National Energy Policy Framework	National Environmental Management Strategy 1996 National Environment Action Plan 1996 National Sustainable Development Strategy 2005-2025 Sustainable Land Management Milestones 2010 NBSAP (Awaiting Cabinet endorsement)	Lands Act 1976, Animals Act 1982, AQA 1999, Wildbirds Protection Act 1937, RONPHOS Act 2005, Fisheries Act 1997, Marine Resources Act 1978	Animals Amendment Regulations 2008
The United Nations Convention to Combat Desertification (UNCCD) Acceded 22.09.1998				National Environmental Management Strategy 1996 National Environment Action Plan 1996 National Sustainable Development Strategy 2005-2025 Sustainable Land Management Milestones 2010	Lands Act 1976	

continued

Appendix B:

National Governance - Governance of terrestrial and marine ecosystems in Nauru

Institutional Arrangement	Framework that sets up the Institutional Arrangement	Function of the Institutional Arrangement and Status of
National Environment Coordinating Committee [NECC]	Set up in 2002 through the Ministry of Economic Development and Environment and RONPhos Corp.	To coordinate environmental issues at national, regional and international level.
CIE Projects Steering Committee	Established through the Ministry of CIE	Developing and monitoring key policy and planning documents related to climate change, providing input into development of national and sectorial policies and plans, reporting on international climate change agreements and providing advice on climate change issues. Also responsible for implementation of climate change-related activities in the water, energy and environment sectors.
National Fisheries and Marine Resources Authority [NFMRA]	Set up and followed as a result of the National Fisheries Development Strategy 1996–2001	The general objectives are sustainable utilisation of the fisheries and marine resources of Nauru to achieve economic growth, improved social standards, improved nutritional standards, human resource development, increased employment and a sound ecological balance.
National Development Committee [NDC]	Established by government	It is the policy and advisory arm of Cabinet on national and sectorial development, including climate change issues. It is also responsible for reporting to Cabinet on progress in implementation of the Nauru NSDS.
PICCAP committee	Established in 1999 through SPREP	To consult with the community and organisations on its response to climate change. Helps conduct and develop through scholarships, workshops and promotes climate change materials.
RONPhos Corporation	Established under the RONPhos Act 2005	As per Part II, Division 2, sections 9 and 10.



Institutional Arrangement	Framework that sets up the Institutional Arrangement	Function of the Institutional Arrangement and Status of
Nauru Rehabilitation Corporation Land Use Planning Committee	Established under the NRC Act 1997	As per Part II Section 4 of the Act.
National Committee on Climate Change [NCCC]	Established in Feb 1998 under PICCAP and coordinated by SPREP	The NCCC is responsible for matters relating to climate change in Nauru including the reporting of Nauru’s commitments under the UNFCCC. It was responsible for compiling the National Communication Reports to the UNFCCC.

Appendix C:

How key threats to habitats are addressed in Nauru

Threats	Legal Framework, Institutional Arrangements, and Strategy/Plans/Comments
Land use and land-use change.	<p>During the open cast mining era of Nauru, there were many changes to land use and fauna. The vegetative or agricultural aspect has also deteriorated, resulting in increased levels of CO₂. However, rehabilitation processes are progressing to stimulate proper land use through replanting, practicing good management and minimising mining. These developments are brought about under the NEMS, NEAP, Agricultural Quarantine Act and the Nauru Rehabilitation Corporation Act 1997, to name a few.</p> <p>It was reported in the Millennium Development Goals Nauru Progress Report 2009–2011 that “<i>Land-use planning is otherwise still weak, with little local capacity, weak integration into other development plans, and little public education</i>”.</p> <p>Nauru “<i>has commenced a project aimed at maintaining and improving ecosystem stability, integrity, functions and services while enhancing sustainable livelihoods. This will be done by building Nauru’s capacity to implement a comprehensive regime for sustainable land management and to ensure that SLM is mainstreamed into all levels of decision-making. By the end of the project, land degradation issues should be fully recognised in National Development Plans and sector Action Plans, such as those for urban development, transport, agriculture and biodiversity. SLM should also be integrated into relevant policy, laws and educational/training programs, using integrated land use planning to underpin such initiatives</i>”.</p>
Environment Impact of developments and activities	<p>Nauru does not have a legal framework for the implementation of environment impact assessments of developments. A draft Environment Management Bill has been prepared but requires further work before being presented to Parliament.</p>
Pollution and Waste Management	<p>The main areas of concern are solid waste management, water pollution and sewage treatments. Because there is no proper waste-management procedure and facility, the majority of solid waste, oils and toxics are disposed of at sea or at home. The authorities are aware that waste management is an utterly important factor and as such are working towards achieving that according to the NEAP to develop an Integrated Waste Management Plan and to establish a Waste Management Authority, under the projects JPRISM and AFD/SPREP Regional Solid Waste Management Initiative. Water sanitation is also addressed through projects for integrated water resource management, making clean water more sustainable through proper water reservoirs, reserves and sewage sanitation. This effort is under the GEF Pacific IWRM project. These are all part of the NEAP, Litter Prohibition Act 1983 and the National Water, Sanitation and Hygiene Policy.</p>

continued



Threats	Legal Framework, Institutional Arrangements, and Strategy/Plans/Comments
<p>Deforestation and mining</p>	<p>Forest on Nauru has been almost completely destroyed by phosphate mining over the last 100 years. Restoration and protection of the country’s forests and trees is now a commitment to which Nauru will have to be true to ensure a sustainable future for Nauru. There are three strategies that will address land rehabilitation in Nauru: a) National Sustainable Development Strategy (2005–2025); b) Nauru Rehabilitation Corporation’s Five Year Strategy (2007–2012); and c) Sustainable Land Management Milestones. The National Sustainable Development Strategy has broad goals in areas such as land use, environment and agriculture.</p> <p>The Government of Nauru enacted a legislation in 2005 called the RONPHOS Act that establishes a corporation called the RONPHOS Corporation that is empowered under the Act to:</p> <ul style="list-style-type: none"> (1) maintain and operate the phosphate industry on Nauru in a safe, efficient and profitable manner; (2) establish, maintain and operate such activities as are or may be ancillary to the maintenance and operation of the phosphate industry on Nauru; and (3) establish, maintain and operate such other activities, including those recommended to the Executive Committee by the Minister, as the Executive Committee shall, with the approval of the Cabinet, from time to time determine. <p>The Corporation has powers that include rehabilitating and developing lands, including through the removal of materials, scrap and structures used for the mining of phosphate, in line with environmental laws.</p>
<p>Climate change and disaster impacts</p>	<p>Key threats, such as being prone to natural disasters like intense flooding, storms, droughts, cyclones, coastal erosion, etc., are a reality for Nauru. The already degraded land, flora and fauna will be unimaginably worsened if disasters gradually become frequent. Cessation of phosphate mining and continued implementation of the NEAP and the Rehabilitation Master Land-use Plan along with other sustainable development objectives are positive steps forward for Nauru. Failure to implement these would result in continued breakdown of the physical environment of Nauru as well as of the social and economic well-being of the people through continued exploitation of remaining resources. Again, the NEAP, NEMS and Rehabilitation policies govern this aspect.</p> <p>A threat for Nauru comes from the atmospheric radiation from clouds and rainfall. Through a station setup in Nauru equipped with the relevant equipment, the atmosphere is measured, recorded and monitored for any radiation or increased gases. This category falls in the scope of Nauru’s Climate Change Response - First national communication 1999 and the United States Atmospheric Radiation Measurement (ARM) programme.</p> <p>In climate change, Nauru will be preparing its Second National Communication (SYNC) to the Conference of the Parties of the UN Framework Convention on Climate Change.</p>

Appendix D:

Participation in Non-governmental conservation initiatives

Initiative name	Type (for example, NGO project, intergovernmental regional initiative, etc.)	Brief description	Status
Nauru Development Forum or Presidents Forum on Development, Society and Environment	Leadership, Green Growth and Sustainable Initiative [LEGGASI – IUCN Oceania]	In August 2013, the President of Nauru personally expressed his interest in seeing the Nauru Development Forum concept model further developed. The President is keen to see where and how this model could be put to good use to better serve the people of Nauru. IUCN's involvement in this initiative is through the LEGGASI team, whose aim is to hold discussions in-country on sustainable development issues concerning Nauru and involving the environment, social and economic sectors.	The LEGGASI team is yet to identify critical key leaders at the sectoral level (Government, CSO and Private Sector) in Nauru that would provide the support for Development Forum. The LEGGASI team are planning for its first in-country visit to identify the various key sectoral leaders and to set the date of the first President's/ Nauru Development Forum in 2014.



Appendix E:

Species conservation legislation – legal frameworks, institutional arrangements and strategies in place related to species conservation

Legal Framework, Institutional Arrangements, and Strategy/Plans/Comments	
Endangered species	Due to the loss of forests and trees in Nauru as a result of phosphate mining, species in these habitats were either depleted or lost in the process, resulting in most of the species becoming endangered species. These endangered species are not specifically protected under current related legislations, including Wild Birds Preservation Act 1937 and Fisheries Act 1997, but are protected to some degree.
Invasive species	There are no legislations governing the issue of invasive species in Nauru; however, there is a Pacific Invasive Partnership (PIP) that services the islands in the Pacific and attempts to meet the management needs of the Pacific for invasive species. PIP is the umbrella regional coordinating body for organisations working on invasive species in more than one country of the Pacific. PIP is the Invasive Species Working Group of the Roundtable for Nature Conservation in the Pacific Islands. PIP is also dedicated to ensuring the success of the Guidelines for Invasive Species Management in the Pacific, which was endorsed by SPREP and SPC (for publication in 2009).
Genetic resources	Nauru is not a party to the Nagoya Protocol. However, the Government of Republic of Nauru recognises the increase in threats from climate change and variability, sea-level rise, loss of biodiversity and the current economic situation in Nauru. In the recent Regional Consultation Workshop on Forest Genetic Resources in the Pacific countries held in Fiji in 2012, the Government of the Republic of Nauru revealed the critical need for a three-pronged program to ensure sustainability of ecology and cultural benefits. The three components of this program are: 1. Coastal and inland forest protection and conservation; 2. Coastal planting and household agroforestry; and 3. Rehabilitation, replanting and resettlement of the mined-out lands on Topside.
Biosafety	Nauru is a Party to the Cartagena Protocol on Biosafety but does not have any legal, administrative or other measures for the implementation of the Protocol. A draft environment bill that encompasses biosafety regulation has been prepared but is waiting parliamentary endorsement. Alternatively, there are other laws, regulations or guidelines that indirectly apply to biosafety.





