IUCN Conservation Outlook Assessment 2014 **(archived)**
Finalised on 26 May 2014

Please note: this is an archived Conservation Outlook Assessment for Phoenix Islands Protected Area. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

Phoenix Islands Protected Area

SITE INFORMATION

Country:
Kiribati
Inscribed in: 2010
Criteria:
(vii) (ix)

Site description:
The Phoenix Island Protected Area (PIPA) is a 408,250 sq.km expanse of marine and terrestrial habitats in the Southern Pacific Ocean. The property encompasses the Phoenix Island Group, one of three island groups in Kiribati, and is the largest designated Marine Protected Area in the world. PIPA conserves one of the world's largest intact oceanic coral archipelago ecosystems, together with 14 known underwater sea mounts (presumed to be extinct volcanoes) and other deep-sea habitats. The area contains approximately 800 known species of fauna, including about 200 coral species, 500 fish species, 18 marine mammals and 44 bird species. The structure and functioning of PIPA's ecosystems illustrates its pristine nature and importance as a migration route and reservoir. This is the first site in Kiribati to be inscribed on the World Heritage List. © UNESCO

SUMMARY

2014 Conservation Outlook

Good with some concerns

The overall conservation outlook for this extremely large and mostly intact property is very positive, with good protection and management tools in place. However, much of this is dependent on the development of a Trust Fund which will compensate Kiribati for the loss of fishing revenue and support the protection of its fish and other natural resources. Until this Trust Fund is in place with adequate resources to ensure future protection and management of the property, its long-term conservation cannot be assured. Currently external organisations (such as Conservation International and the New England Aquarium, and bilateral partners such as New Zealand, Australia and the USA) are very active in the region and their continued presence and support is important. The unknown effects of global warming could have a significant impact on the property although for the moment the property, thanks to its intact ecosystems, appears to be resilient and can serve as a model for studying adaptation to climate change elsewhere.

Current state and trend of VALUES

Good
Trend: Improving

No reports of damage. Successful Pacific Rat eradication on Birnie Island (SOC, 2012), eradications of rabbits from Rawaki and Asian Rat from McKean (PIPS-MC, 2010) have improved environmental quality. GEF 4 UNEP investment in PIPA (valued at $2,663,100 USD) has been fully approved and is now under implementation. This GEF investment focuses on support to implementing the PIPA 2010-2014 Management Plan (SOC, 2012).

Overall THREATS

Low Threat

The large size of this mostly intact and legally protected property (the size of the US state of California), composed mostly of open seawater, would indicate that threats should be very low. Historical problems such as introduction of rats, cats and rabbits to the atolls are being dealt with, but until these invasive species are eradicated the local seabird populations remain under high threat (although good progress has been made on the most important seabird islands). Deep-sea trawling should not, in theory, occur in the area; hence the threat of damage to sea mounts is low. Global temperature rise has already resulted in a coral bleaching event in 2002, but the corals are said to be resilient due to the relative intactness of the ecosystems. However, the potential of high and repeated increases in seawater temperature could cause coral bleaching, groundwater salinization and seawater acidification beyond what even the most resilient ecosystems can stand. In general, provided management is efficiently implemented and in particular that invasive species eradication and ongoing biosecurity programmes are successful (Pierce, R. 2011), and barring high temperature increases, the threats to the values and integrity of this site appear to be low.

Overall PROTECTION and MANAGEMENT

Mostly Effective

Significant concern at time of inscription about the state of development of the management system continues to be the case, and is dependent on the successful constitution of the Trust Fund. Currently GEF and other projects are filling the gap thus for the short-term, protection and management of the property appears to be adequate, with some important successes such as the eradication of some invasive species from the islands. However, progress on protection and management will need to be reviewed in the next few years.

FULL ASSESSMENT

Description of values

Values

World Heritage values

- **Exceptionally pristine oceanic wilderness**
  Criterion:(vii)

  Phoenix Islands Protected Area, an oceanic wilderness, is sufficiently remote and inhospitable to human colonisation as to be exceptional in terms of the minimal evidence of the impacts of human activities both on the atolls and in the adjacent seas. The Phoenix Islands Protected Area is a very large protected area, a vast wilderness domain where nature prevails and man is but an occasional visitor. The near pristine mid-ocean environment with its range of intact and functioning marine ecosystems from coral reefs, submerged reefs, seamounts to deep sea, in a remote and nearly uninhabited region, is exceptional. Its predator-dominated ecosystems; healthy fish, coral and sea turtle populations; and demonstrated resilience of its reefs to coral bleaching indicate the intact nature of the property (Nom., 2009; IUCN, 2010, SoOUV, 2011).

- **Exceptional horizontal and vertical scale of the property and number of intact seamounts**
  Criterion:(vii)

  One of the very few large marine protected areas in the world that contains numerous intact seamounts, and the only such one in the tropics. A total of 14 large seamounts have been confirmed within the boundaries of the Phoenix Islands Protected Area (PIPA) and doubtless other smaller seamounts will be discovered as bathymetric exploration of the ‘inner space’ of deep

ocean continues. The property has a larger maximum and average water depth than any existing World Heritage property (Nom., 2009; IUCN, 2010; SoOUV, 2011).

► An exceptional site for on-going evolutionary processes

Criterion:(ix)

Local endemicity and distinctive species assemblages associated with seamounts demonstrate excellent examples of on-going in situ evolution of marine ecosystems and communities of plants and animals. The remoteness and excellent state of preservation allows the property to serve as a scientific global benchmark for identifying and monitoring the processes of sea level change, growth rates and age of reefs and reef builders (both geologically and historically,) and in evaluating effects from climate change and coral bleaching events without the confounding factors of pollution or resource extraction (Nom., 2009; IUCN, 2010, SoOUV, 2011).

Other important biodiversity values

► Seabirds

The property provides critical habitat for important seabird populations and includes 19 species of breeding seabirds. The Phoenix Petrel (EN) and White-throated (Polynesian) Storm Petrel (EN) breed in the property. Rawaki and Enderbury are important islands for large concentrations of breeding and migratory species including terns, frigates, petrels, shearwaters, boobies, plover and curlew. Migratory species passing through the property include Cook’s Petrel, Pycroft’s Petrel, and Buller’s Shearwater, all assessed as VU (Nom., 2009; Birdlife, 2013).

► Fish

High abundance and size of fish including apex predators (sharks, tuna, swordfish) and spawning ground for the commercially important Skipjack Tuna. Fish diversity of seamounts is unknown but expected to have high levels of endemism. Large concentrations of parrotfish and wrasse with threatened species including Bumphead Parrotfish Bolbometopon muricatum

(VU) and Humphead Wrasse Cheilinus undulatus (EN) (Nom., 2009).

▶ **Marine mammals**

Important refuge for marine mammals such as Long-snouted Spinner Dolphins (Stenella longirostrus) and Bottlenose Dolphins (Tursiops truncatus) (Nom., 2009). In the early 19th century many thousands of Sperm Whales were taken from Phoenix Islands waters by the American whaling fleet, although during more recent expeditions no sperm whales have been observed (PIPA-MC, 2010).

▶ **Sea turtles**

Kanton, Rawaki and Enderbury atolls have important nesting beaches for Green Turtle (EN) (among one of the most important nesting sites in the Central Pacific) and possibly Hawksbill Turtle (CR) (Nom., 2009).

▶ **Invertebrates**

Spectacular Giant Clams (Tridacna maxima and T. squamosa) in sizes rarely seen elsewhere in the world. More than 200 coral species known but undoubtedly many more deep water coral species associated to seamounts remain unidentified. Significant populations of sponges and crabs, particularly Coconut Crabs (Nom., 2009).

Assessment information

Threats

Current Threats

Low Threat

The large size of this mostly intact and legally protected property (the size of the US state of California), composed mostly of open seawater, would indicate that threats should be very low. Historical problems such as introduction of

rats, cats and rabbits to the atolls are being dealt with, but until these invasive species are eradicated and biosecurity programmes in place, the local seabird populations remain under high threat. Deep-sea trawling should not, in theory, occur in the area; hence the threat of damage to sea mounts is low. Global temperature rise has already resulted in a coral bleaching event in 2002, but the corals are said to be resilient due to the relative intactness of the ecosystem.

▶ Temperature changes

High Threat
Inside site

Coral bleaching occurred in 2002 but coral reefs are slowly recovering; the pristine nature of the ecosystem is said to increase resilience to coral bleaching (Nom., 2009).

▶ Invasive Non-Native/ Alien Species

High Threat
Inside site

Invasive species (rats, rabbits, cats) on terrestrial habitats that have reduced vegetation/shade cover and nesting bird numbers on some of the islands (Nom., 2009). Successful Pacific Rat eradication on Birnie Island (SOC, 2012) and eradications of rabbits from Rawaki and Asian Rat from McKean (PIPA-MC, 2010) are very important steps forward. Other invasive alien species (such as some ant species) could pose long-term threats, and are being monitored (PIPA-MC, 2010).

▶ Fishing / Harvesting Aquatic Resources

Low Threat
Inside site
Outside site

Potential over-fishing by DWFN (Distant Water Fishing Nations) for tuna resources and illegal shark finning (Nom., 2009). Although currently the no-take zone of the property totals only 3.12% of PIPA’s overall area, it amounts to more than 83% of complete protection of the priority threatened habits of atoll reef islands, lagoons and coral reefs (SOC, 2012). Measures underway to develop increased protection zonation whilst securing the local subsistence

needs of the government caretaker community based on Kanton. An increase of 25% no-take fishing zone has been agreed for implementation no later than end of 2014, although this is linked to securing the endowment for the PIPA Trust Fund (SOC, 2012).

► Mining/ Quarrying

Very Low Threat
Inside site

The State Party indicates that due to the property's remoteness, seamounts have escaped deep sea trawling to date (SOC, 2012). Potential mining for manganese nodules is unlikely as they are reported to be of low grade and appear to have no economic value for commercial harvest in the foreseeable future (Nom., 2009).

► Tourism/ visitors/ recreation

High Threat
Inside site

Unregulated visitors pose threats through disposal of sewage and wastes, illegal collection and harvest of terrestrial and marine resources, potential introduction of invasive species (which would be disastrous and seriously undermine the restoration goals for the PIPA) and disturbance of bird populations (PIPA-MC, 2010).

Potential Threats

Low Threat

Extreme temperature rise could cause extensive coral bleaching, groundwater salinization and ocean acidification from which even the most resilient ecosystem may not be able to recover. Potential ship groundings could cause extreme local damage but would be unlikely to damage the entire property. The introduction of invasive species from grounded ships could devastate bird populations. Increased over-fishing of tuna and shark, if not managed, could cause major biodiversity loss.

► Shipping Lanes

Very Low Threat
Inside site

Outside site

Ship groundings have occurred in the past and could occur in the future, causing pollution (Nom., 2009) and potentially lead to the arrival of invasive species.

► Chemical changes in oceanic waters

Low Threat
Inside site

Terrestrial vegetation and seabird populations are vulnerable to salinization of groundwater due to sea level rise and inundation. There is also concern at the impacts of increasing ocean acidification on coral reefs and other species (PIPA-MC, 2010).

► Industrial/ Military Effluents

Very Low Threat
Inside site

Persistent Organic Pollutants (POP) originating from WWII installations were removed from Kanton in 2006 (Nom., 2009).

Protection and management

Assessing Protection and Management

► Education and interpretation programs

Mostly Effective

In progress. There is a need for education and awareness programmes for the Kiribati people concerning the special features of the property and progress in managing this area (PIPA-MC, 2010).

► Relationships with local people

Highly Effective

N.A. Currently the only inhabited island is Kanton with 50 people (either government employees or their families) assigned to the Phoenix Islands for

a fixed period of time (circa 3 years) (Nom., 2009).

▶ Legal framework and enforcement

Highly Effective

Highly protected area fully legally established under the PIPA Regulations 2008 (SOC, 2012).

▶ Integration into regional and national planning systems

Highly Effective

Appears adequate (Nom., 2009).

▶ Sustainable finance

Some Concern

A phased approach to building an endowment Trust Fund is in place, envisaging a capital of $13.5M USD before the end of 2014. This is linked to closing an additional 25% of the PIPA EEZ with the fund covering potential loss of DWFN fees. Anticipated that the Trust will also support core management costs at approximately $300,000 USD per annum. CI has committed $2.5 million to the Trust subject to match (SOC, 2012). It was remarked that the Trust Fund may need to be larger to cover financial requirements (Anon., 2012).

▶ Staff training and development

Mostly Effective

Several initiatives with NGO’s, SPREP and bilateral partners (NZ, Australia and USA) in place (SOC, 2012).

▶ Sustainable use

Mostly Effective

GEF project to undertake a Sustainable Resource Use assessment is expected to result in balancing increased protection zonation whilst securing the local subsistence needs of the government caretaker community based on Kanton. Timeline: before mid-2013 (SOC, 2012).

► Management system

Some Concern

Management Plan 2010-2014 adequate for the short-term, but needs further development (IUCN, 2010). State of development of the human and financial resources was a concern in 2010 (IUCN, 2010) and to date there are few no indications that this has significantly changed (SOC, 2012).

► Management effectiveness

Some Concern

Major challenges in surveillance due to extreme remoteness and large size of the property (SOC, 2012). The property is reported to have just 2-3 staff on-site with no motorboat (Anon., 2012). 100% on-board surveillance of fishing vessels said to be obligatory although how this is implemented not apparent (SOC, 2012).

► Implementation of Committee decisions and recommendations

Highly Effective

Incorporating Committee decision recommendations into management plan and submitted a report in 2012 as requested (SOC, 2012).

► Boundaries

Highly Effective

Boundaries clearly defined, with all the land and sea owned by the Government of Kiribati (IUCN, 2010).

► Tourism and interpretation

Mostly Effective

Currently very few visitors with no regular tourism, just occasional visitors from ocean-going yachts, special boat charters for recreational divers and various researchers. There may be a number of unregulated visitors (Nom., 2009; PIPA-MC, 2010) and there does not appear to be an adequate biosecurity mechanism in place to prevent careless introduction of invasive species.

► Monitoring

Mostly Effective

Better and more standardised monitoring is required (PIPA-MC, 2010).

► Research

Mostly Effective

Research reports need to be made more widely available (PIPA-MC, 2010).

Overall assessment of protection and management

Mostly Effective

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► Assessment of the effectiveness of protection and management in addressing threats outside the site

Some Concern

A major threat from outside the site is posed by deep-sea fishing vessels. Given the size of the property this is very difficult to regulate and control. Management to adapt effectively to climate change is also extremely hard if not impossible.

State and trend of values

Assessing the current state and trend of values

World Heritage values

► Exceptionally pristine oceanic wilderness

Good
Trend:Improving

No reports of damage. Successful Pacific Rat eradication on Birnie Island (SOC, 2012), eradications of rabbits from Rawaki and Asian Rat from McKean (PIPS-MC, 2010) have improved environmental quality.

► Exceptional horizontal and vertical scale of the property and number of intact seamounts

Good
Trend:Stable

No reports of damage (SOC, 2012)

► An exceptional site for on-going evolutionary processes

Good
Trend:Stable

No reports of damage. Successful Pacific Rat eradication on Birnie Island (SOC, 2012), eradications of rabbits from Rawaki and Asian Rat from McKean (PIPS-MC, 2010) have improved environmental quality. GEF 4 UNEP investment in PIPA (valued at $2,663,100 USD) has been fully approved and is now under implementation. This GEF investment focuses on support to implementing the PIPA 2010-2014 Management Plan (SOC, 2012).

Other important biodiversity values

► Seabirds

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► Fish

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► Marine mammals

Important refuge for marine mammals such as Long-snouted Spinner Dolphins (Stenella longirostrus) and Bottlenose Dolphins (Tursiops truncatus) (Nom., 2009). In the early 19th century many thousands of Sperm Whales were taken from Phoenix Islands waters by the American whaling fleet, although during more recent expeditions no sperm whales have been observed (PIPA-MC, 2010).

► Sea turtles

Kanton, Rawaki and Enderbury atolls have important nesting beaches for Green Turtle (EN) (among one of the most important nesting sites in the Central Pacific) and possibly Hawksbill Turtle (CR) (Nom., 2009).

► Invertebrates

Spectacular Giant Clams (Tridacna maxima and T. squamosa) in sizes rarely seen elsewhere in the world. More than 200 coral species known but undoubtedly many more deep water coral species associated to seamounts remain unidentified. Significant populations of sponges and crabs, particularly Coconut Crabs (Nom., 2009).

Summary of the Values

► Assessment of the current state and trend of World Heritage values

Good

Trend: Improving

No reports of damage. Successful Pacific Rat eradication on Birnie Island (SOC, 2012), eradications of rabbits from Rawaki and Asian Rat from McKean (PIPS-MC, 2010) have improved environmental quality. GEF 4 UNEP investment in PIPA (valued at $2,663,100 USD) has been fully approved and is now under implementation. This GEF investment focuses on support to implementing the PIPA 2010-2014 Management Plan (SOC, 2012).

► Assessment of the current state and trend of other important biodiversity values

Good

Trend: Improving

Successful rodent eradications on Birnie and McKean Islands and eradication of rabbits from Rawaki have undoubtedly led to an improvement of seabird and invertebrate populations on these islands. While data on trends in fish, marine mammal and sea turtle populations are not available, increased implementation of the management plan should result in positive trends for these biodiversity values as well. An increase of 25% no take fishing zone has been agreed for implementation no later than end of 2014 and is linked to securing the endowment for PIPA. Kiribati (a party to the Nauru Agreement) has instituted stricter fisheries management measures which include the Ocean Management Zone of PIPA. These include100% observer coverage on DWFN vessels and restrictions on use of Fish Aggregation Devices. Although the Fisheries Act allows domestic commercial fishing licenses for Kiribati vessels larger than 7 meters, no license has been issued to date and commercial fishing is prohibited in the PIPA, meaning no more shark fishing licenses issued since the PIPA was established. Through the Kanton Island Sustainable Use plan, impacts by subsistence fishing and/or by vessels under the size limit for permits will be assessed (SOC, 2012).

Additional information

Key conservation issues

▶ Invasive alien species

Regional

Invasive alien species (principally rats, rabbits, cats although invasive ants and plants may also be issues) still occur on some of the atolls and require eradication. An effective biosecurity programme is required to consolidate gains made by eradications.

▶ Over-fishing

Regional

Over-fishing (particularly of top predators including sharks and tuna) negatively affect entire ecosystems.

▶ Climate change

Global

Sea-water warming causes coral bleaching and acidification; sea-level rise causes salinization of terrestrial aquifers.

▶ Visitor management

Local

Unregulated visitors may potentially have catastrophic effects by introducing alien species such as rats to, or back to, islands. They may also impact the islands through pollution and unsustainable use.

Benefits

Understanding Benefits

▶ Is the protected area valued for its nature conservation?

Unregulated visitors may potentially have catastrophic effects by introducing alien species such as rats to, or back to, islands. They may also impact the islands through pollution and unsustainable use.

▶

Does management of the site provide jobs (e.g. for managers or rangers)?

Although minimal at this time, there is potential.

▶ **Sacred natural sites or landscapes**

A nearly pristine area the size of the US state of California.

▶ **Fishing areas and conservation of fish stocks**

Well-protected sanctuary zones have a demonstrated positive impact on fish populations elsewhere.

▶ **Importance for research**

An important area for marine research without the confounding effects of human habitation, pollution and resource extraction.

▶ **Outdoor recreation and tourism**

Some recreational diving charters but currently almost no tourism. Potential for tourism benefits (as well as problems).

▶ **History and tradition**

Relicts of archaeological Micronesian and Polynesian settlements. Historical guano mining and whaling ships from the 19th / early 20th centuries; relicts of World War II activity; possible site for crash of Amelia Earhart.

Summary of benefits

The property benefits the local and global community for protecting wildlife and wilderness values, and providing environmental services. Its no-fish sanctuary zones provide a nursery for fisheries outside of the property, and potential tourism benefits. An important resource for scientific studies, with more study it could provide increasing benefit in cultural and historic knowledge. The islands are said to harbour species of plants used medicinally elsewhere which have become rare due to over-use.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	UNEP/GEF/PIPA		UNEP/GEF Phoenix Islands Protected Area project 2011-2014.
2	Pacific Invasives Initiative		Pacific Invasives Initiative. Funded by donors. Island rat, rabbit and cat eradications. Capacity development.
3	Conservation International		The CI support for PIPA is part of the Coral Reef Initiative in the South Pacific (CRISP).
4	SPREP		SPREP’s Coastal Management, Marine Species and Invasive Species programmes. Networking.
5	http://es.www.sidsnet.org/node/23414		Various capacity-building and research programmes

Compilation of potential site needs

№	Site need title	Brief description of potential site needs	Support needed for following years
1	PIPA	Completion of ecological surveys and invasive species eradication projects according to Management Plan (PIPA-MC, 2010).	

REFERENCES

№	References
1	BirdLife International (2013). IUCN Red List for birds. Downloaded from http://www.birdlife.org on 15/06/2013.
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6	Pierce, R. 2011. Biosecurity Guidelines for the Phoenix Islands Protected Area, Kiribati. Conservation International, Apia, Samoa.
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9	SoOUV (2011). Phoenix Islands Protected Area (Kiribati) Statement of Outstanding Universal Value. http://whc.unesco.org/en/list/1325/documents/