

Pulu Keeling National Park

1. Country: Australia

2. Date: 1995

3. Reference: 5AU046

4. Contact: Wetlands & Migratory Wildlife Unit, Australian Nature Conservation Agency, PO Box 636, Canberra ACT 2601, Australia

5. Name of Wetland: Pulu Keeling National Park (North Keeling Island)

6. Date of Ramsar Designation: 17/03/1996

7. Coordinates: 11°49'S 96°49'E

8. General Location: North Keeling part of the Cocos (Keeling) Islands. Indian Ocean, 3685 km west of Darwin (NT) and 2768 km north-west of Perth (WA); 24 km north of the southern atolls of the Cocos (Keeling) Islands. Australian waters geographic zone: North West Oceanic Zone (zone 15).

9. Area: North Keeling: 122ha

10. Wetland Type: *Marine and Coastal: 2, 3, 4, 5.*

11. Elevation: 0 - 5 m.a.s.l.

12. Overview: North Keeling represents a significant biological resource and is internationally important for the conservation of biodiversity. It represents an island atoll in its most natural state and supports colonies of internationally important seabirds (Woodroffe, 1994).

13. Physical Features: The Cocos (Keeling) Islands comprise 27 coral islands forming two atolls. North Keeling is a single, uninhabited, atoll 24km to the north. The atolls have developed on top of old volcanic seamounts, rising from a depth of 5000m in the north-eastern Indian Ocean (Anon, 1984; Anon, 1986; Bunce, 1988). North Keeling is almost continuous around the perimeter of a shallow lagoon which drains almost completely at low tide. Numerous patches of seagrass occur within the lagoon. A reef crest surrounds the majority of the island, except the north-west corner. A highly mobile broad sandy beach, rising 4m above sea level occurs on the northern shore of the island becoming more coarse with shingle to the west. The southern shore is a steep shingle beach, while the eastern shore is composed of a series of shingle berms (Woodroffe, 1994).

14. Ecological Features: Coral reefs protect the islands, which are low-lying with "soils"

of coral sand and rubble mixed with decayed vegetable matter. All the islands have steeper sand or shingle beaches to seaward and gentler sloping sand or muddy shorelines on the lagoon face (Bunce, 1988). The principle vegetation on the southern atoll is coconut palms (*Cocos nucifera*), reflecting the islands history as a copra plantation. A few clumps of Pandanus (*Pandanus tectorius*) can be found on the eastward-facing shores of the southern atoll and is considered an endemic subspecies (Anon, 1984; Bunce, 1988; Woodroffe, 1994). The natural ecological state of North Keeling has only been slightly modified and may represent the best example of the original vegetation typical to the island group. It is covered with tall forest of Pisonia (*Pisonia grandis*) and stands of coconut and Ironwood (*Cordia subcordata*). Along the lagoon shores a small tree, *Pemphis acidula*, occupies sandy spits, bars and reclaimed lagoonlets. This species forms a particularly thick cover along the southern sweep of the North Keeling lagoon. Coconuts predominate on the seaward edges of the island with Cabbage Bush (*Scaevola sericea*), Octopus Tree (*Argusia argentea*), Ironwood (*Cordia subcordata*) and *Pemphis acidula* of secondary importance depending on the exposure of the site.

15. Land Tenure: Site: North Keeling is owned under a Trust arrangement by the Cocos (Keeling) Islands Shire Council who have provided a long term lease to the Commonwealth of Australia for the establishment of a National Park.

Surrounding area: 95% of the land area is owned under Trust by the Cocos (Keeling) Islands Shire Council, the Territorial waters belong to the Commonwealth of Australia.

16. Conservation Measures: Strict rules and quotas apply to seabird hunting in the Territory. No birds at all can be taken from North Keeling. In 1984, the Commonwealth handed over the land of the Cocos (Keeling) Islands to the Shire Council to be held in trust. This trust deed stipulated that North Keeling was to be managed to conserve the unique flora and fauna of the island. In 1995 the Commonwealth signed a lease agreement with the Shire Council to create a National Park on North Keeling. The area was declared Pulu Keeling National Park on 20 December 1995. The area of the park includes all the land area and extends seawards to a distance of 1.5 km. Visits to Keeling is only possible in the company of the Government Conservator (Bunce, 1988; Woodroffe, 1994).

17. Conservation Measures Proposed: A Plan of Management for Pulu Keeling, incorporating community consultation, will be prepared during 1996 under the provisions of the *National Parks and Wildlife Conservation Act 1975*.

18. Land Use: Site: Conservation of wildlife (National Park).

Surrounding area: Only two of the southern atoll islands are permanently inhabited. The primary landuse on these islands used to be (until 1987) the production of copra through the cultivation of Cocos palms. The local community is now considering options for tourism development (Tranter, pers. comm.).

19. Possible Changes In Land Use: None known.

20. Disturbances and Threats: *Current*: Illegal hunting of seabirds.
Potential: Growing tourism impact, threat of introduced species.

21. Hydrological and Biophysical Values: The Cocos (Keeling) Islands experience about a 1.2m tide. At low tide, beaches approximately 5-15m wide are exposed around the islands. Cyclones occur frequently in the area and some generate large swell and storm surges affecting the island communities. The south-east tradewinds that predominate are important to the ecology of the lagoons as the corals and algae depend on these winds to flush new seawater through the lagoon. Mean daily temperature ranges from 26°C in August to 28°C in March. There is no fresh surface water on the islands, with all freshwater coming from rain or from groundwater held in freshwater lenses on islands of sufficient size (Anon, 1986; Bunce, 1988; Woodroffe, 1994).

22. Social and Cultural Values: The Cocos (Keeling) Islands were the only coral islands visited by Charles Darwin in 1836, and were a key feature in his development of a theory of atoll formation. The flora and fauna observed by him on the southern atoll is now found only on North Keeling. The islands of the Cocos group have a long history of ownership by the Clunies-Ross family who ran a coconut plantation for the production of Copra. The islands played a significant role during WWII as a base for Australian forces and North Keeling was the site of the grounding of the German battleship Emden after its confrontation with the HMAS Sydney during the First World War (Bunce, 1988). The wreck of the SMS Emden is protected under the *Historic Shipwrecks Act 1976* (Woodroffe, 1994).

23. Noteworthy Fauna: North Keeling supports a substantial seabird rookery compared to the southern atoll which is almost devoid of birdlife (Woodroffe, 1994). Internationally, is one of the few remaining islands where rats have not been introduced. Of nineteen recorded bird species, thirteen are listed under the Japan-Australia and China-Australia Migratory Bird Agreements (JAMBA/CAMBA). Eleven seabirds use the atoll for nesting (Woodroffe, 1994). North Keeling is one of the few significant rookeries left in the world for the Red-footed Booby (*Sula sula*) (Lindford, 1990). Other species include White Tern (*Gygis alba*), Sooty Tern (*Sterna fuscata*), Masked Booby (*Sula dactylatra*), Brown Booby (*Sula leucogaster*), Least Frigatebird (*Fregata ariel*), Great Frigatebird (*Fregata minor*), Common Noddy (*Anous stolidus*), Red-tailed Tropicbird (*Phaethon rubricauda*) and White-tailed Tropicbird (*Phaethon lepturus*). The only endemic bird, the Cocos Buff-banded Rail (*Rallus philippensis andrewsi*), is restricted to North Keeling (Bunce, 1988; Woodroffe, 1994). An action plan to assist the recovery of this endangered species has been proposed by Garnett (1992). Land crabs (*Cardisoma carnifex*) are found over the islands and are the principle fauna in the disposal of leaf litter. The giant Robber Crab (*Birgus latro*) inhabits the Pisonia forest floor of North Keeling and is not a common crab on the southern atolls due to clearance of all native vegetation for coconut plantations and hunting by the local Cocos Malay community. Both the Green (*Chelonia mydas*) and Hawksbill (*Eretmochelys imbricata*) turtles are listed as vulnerable in the *Endangered Species Protection Act 1992*, inhabit the Cocos (Keeling) Islands. Nesting of the Green Turtle is confined largely to the northwestern and southern beaches of North Keeling (Bunce, 1988; Tranter, pers. comm.). Some 525 fish species are

recorded from the Cocos islands, of which 175 are lagoon species. One species, the Angelfish (*Centropyge jocularis*), has only been recorded from these islands and Christmas Island, its nearest neighbour (Woodroffe, 1994).

24. Noteworthy Flora: North Keeling's forests provide an example of the original vegetation for the region with many of the plant species no longer found on the other 26 islands in the Cocos group (Woodroffe 1994). The island still has extensive stands Ironwood (*Cordia subcordata*), which apparently once formed extensive stands of forest on the southern atoll but has now been reduced to a few small clumps because its wood was sought after for building (Bunce, 1988). The Cocos sub-species of Pandanus (*Pandanus tectorius*), which is only localised in occurrence, is considered endemic (Williams, 1990).

25. Scientific Research and Facilities: The Australian Nature Conservation Agency Conservator management and monitoring programs on the island.

26. Conservation Education: No information.

27. Recreation and Tourism: The islands of Cocos (Keeling) are likely to become a more popular tourist destination in the future. The islands council are keen to develop tourism as a part of the islands economic base.

28. Management Authority: The *Cocos (Keeling) Islands Act 1955* and the *Territories Law Reform Act 1992* are the basis of the Territory's administrative, legislative and judicial systems. The Cocos (Keeling) Islands Shire Council established in 1992 provides local government administration.

29. Jurisdiction: Commonwealth of Australia - Minister for Environment, Sport and Territories.

30. References

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Lindford, P. (1990). *Cocos Islands*. Unpublished report, sole distributor, Canberra.

Tranter, G. (1995). *Cocos (Keeling) Islands - government conservator*. Personal communication.

Williams, D.G. (1990). An annotated bibliography of the natural history of the Cocos (Keeling) Islands, Indian Ocean. *Atoll Res. Bull.*, 331: 1-17.

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31. Criteria For Inclusion: 1A, 1D, 2A, 2B, 2C.

32. Site Map: See map attached.