

Designation date: 03/04/2013 Ramsar Site no. 2143

Information Sheet on Ramsar Wetlands (RIS) – 2009-2014 version

Available for download from http://www.ramsar.org/doc/ris/key_ris_e.doc and
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Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX.22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 17, 4th edition).
3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:

Nenenteiti Teariki-Ruatu
Acting Director
Environment & Conservation Division
Ministry of Environment, Lands & Agriculture
Development
PO Box 234
Bikenibeu, TARAWA
Kiribati
Email: nenenteitir@environment.gov.ki

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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

November 2012

3. Country:

Republic of Kiribati

4. Name of the Ramsar site:

The precise name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. Alternative names, including in local language(s), should be given in parentheses after the precise name.

Nooto – North Tarawa

5. Designation of new Ramsar site or update of existing site:

This RIS is for (tick one box only):

- a) Designation of a new Ramsar site; or
b) Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area

The Ramsar site boundary and site area are unchanged:

or

If the site boundary has changed:

- i) the boundary has been delineated more accurately ; or
- ii) the boundary has been extended ; or
- iii) the boundary has been restricted**

and/or

If the site area has changed:

- i) the area has been measured more accurately ; or
- ii) the area has been extended ; or
- iii) the area has been reduced**

**** Important note:** If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site:

Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

- i) a **hard copy** (required for inclusion of site in the Ramsar List): ;
- ii) an **electronic format** (e.g. a JPEG or ArcView image) ;
- iii) a **GIS file providing geo-referenced site boundary vectors and attribute tables** .

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park, etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The boundary of the site as delineated follows the boundaries set by local government jurisdiction (through the North Tarawa Island Council). This Council constitutes the decision-making body for North Tarawa as a whole.

8. Geographical coordinates (latitude/longitude, in degrees and minutes):

Provide the coordinates of the approximate centre of the site and/or the limits of the site. If the site is composed of more than one separate area, provide coordinates for each of these areas.

Nooto village - 173° 0'12.297E 1° 30'59.146N

Reef patch one - 172°58'25.006E 1°29'38.09N

Reef patch two - 172°57'32.978E 1°29'56.135N

Approximate centre of the site - 173° 0'8.144"E 1°31'9.211"N

9. General location:

Include in which part of the country and which large administrative region(s) the site lies and the location of the nearest large town.

The site lies at the northern part of the main atoll of Tarawa (North Tarawa). North Tarawa is considered as the rural area in relation to the southern part of the atoll (South Tarawa) where the capital and commercial centre of the country is located. The population of South Tarawa as of 2005 census was 17,394.

10. Elevation: (in metres: average and/or maximum & minimum)

No more than 3 metres above sea level

11. Area: (in hectares)

The total area of the site is 1,033 hectares

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

Nooto - North Tarawa contains patches of mangrove and intertidal mudflats on the shores of an atoll lagoon and is one of the few areas of mangroves found in the whole of Kiribati. These stands of mangrove are dominated by a single species – Te Tongo or Red Mangrove (*Rhizophora stylosa*). The area contains a wide range of coastal habitats and the adjacent lagoon, coral reefs and reef patches that support high biodiversity and are resource rich – includes a wide variety of finfish, turtles, crustaceans, seaweed and other plants.

13. Ramsar Criteria:

Tick the box under each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11). All Criteria which apply should be ticked.

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Criterion 1: A wetland should be considered internationally important if it contains a representative, rare or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.

The site contains relatively pristine and healthy ecosystems representative of wetland types found within the Marshall, Gilbert and Ellis Islands biogeographic region including coral reefs, reef patches, lagoons, inter-tidal mudflats and mangroves.

Criterion 2: A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.

| Scientific name | Local name | English name | IUCN status | CMS status | CITES status | National protection status |
|-----------------------|------------|--------------|-------------|------------|--------------|--------------------------------|
| <i>Chelonia mydas</i> | ‘Te On’ | Green turtle | EN | App. I | App. I | Protected (Fisheries Act 2010) |
| <i>Tridacna gigas</i> | ‘Neitoro’ | Giant clam | VU | - | App. II | |

Criterion 4: A wetland should be considered internationally important if it supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions.

The site is important for providing a breeding area for different marine species. The beach on the seaward side of the Nooto is an important nesting and foraging site for the endangered Green Turtle (*Chelonia mydas*) and the existing reef patches within the Nooto village lagoon are important breeding sites for the near threatened bonefish (*Albula vulpes*). The site has healthy marine ecosystems with corresponding populations of reef fish and associated invertebrates. This includes Coconut crabs (*Birgus latro*), mangrove crabs (*Scylla serrata*), trochus (*Trochus niloticus*) - a marine snail, sea cucumbers (*Holothuria atra*), and a variety of reef fish, sharks, and four species of giant clams (*Tridacna spp.*), including the vulnerable *Tridacna gigas*.

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region: Marshall, Gilbert and Ellis Islands

b) biogeographic regionalisation scheme (include reference citation):

Spalding M.D., Fox H.E., Allen G.R., Davidson N., Ferdaña Z.A., Finlayson M., Halpern B.S., Jorge M.A., Lombana A., Lourie S.A., Martin K.D., McManus E., Molnar J., Recchia C.A. & Robertson J. (2007) *Marine Ecoregions of the World: a bioregionalization of coast and shelf areas*. *BioScience*, 57, 573-583

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

On the ocean side of the site there is an uplifted fringing limestone reef in the wave zone, and is covered by a sandy beach. This runs up to a raised rampart or shingle ridge of wave-washed boulders and coral fragments deposited during storms. This ridge is the highest portion of the site, which is no more than 3 m above mean sea level. Inland of the rampart and extending towards the lagoon is an area of windblown sand and debris.

On the lagoon side of the site, there is a narrow to very wide intertidal or foreshore area of fine sand which is exposed at low tide. This area constitutes one of the most important fishing grounds for "reef gleaning", mainly for a wide range of shellfish. Farther from shore, the bottom drops off to the deeper parts of Tarawa Lagoon. On the ocean side of the fringing limestone reef is an intertidal fringing reef that gradually drops off into the ocean. This is also an important fishing and gleaning area, with many fisherman diving or taking their boats and canoes over the reef edge into the open ocean or to dive on the outer edge of the reef or on the reef slope.

The only permanent freshwater resource of the site is groundwater in the form of a "lens" of often slightly brackish freshwater, is often limited in supply. The freshwater lens hydrostatically "floats" on the higher-density saltwater beneath the island. This is due to the flat topography and very porous nature of the soils.

The soils of the site are very infertile, being young, shallow, alkaline, coarse-textured and of carbonatic mineralogy. Because of their immaturity, they vary little from the original coral-limestone parent material overlaying the limestone platform. They range from 25 cm to 1 m or deeper, with some accumulation of clays and H₂S near the centre of site near the water table. Potassium levels are often extremely low, and pH values of up to 8.2 to 8.9 and high CaCO₃ levels make scarce trace elements, particularly iron (Fe), manganese (Mn), copper (Cu) and zinc (Zn), unavailable to plants. Activity of soil micro-organisms is limited, soil

water-holding capacity is very low because of coarse texture, and ground water is often saline. Fertility is highly dependent on organic matter to lower soil pH, to capture and recycle plant nutrients, and to retain soil water. These characteristics make conventional agriculture, as practiced on other larger Pacific islands, almost impossible at the site, and Kiribati as a whole.

Although the level of organic matter can be relatively high in undisturbed soils under natural vegetation, it can decrease dramatically as a result of clearance by fire or replacement by coconut plantations or other introduced plants.

Kiribati is located in the dry belt of the equatorial oceanic climate zone. Hence, mean daily temperatures at the site range from 26 to 32°C, with the recorded highs and lows being 22 and 37°C. Annual rainfall is extremely variable, with an annual average rainfall of 1,550 mm.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).

Not applicable.

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

The mangrove stands within the site are considered important. Their value for preventing coastal erosion, shoreline stabilization, reducing the impact of storm surge and ocean salt spray on the community is significant in light of the fragile physical nature of these atoll islands.

Tidal flushing is important for the health of the mangroves at the site, especially for the reproductive lifecycles of animal species that are found there.

The long term sustainability of the groundwater lens is critical to ensure the continued provision of freshwater supply to the community, however this lens is very vulnerable to overuse and contamination, making its protection and management vital. The lack of adequate water resource infrastructure results in a variety of serious issues such as pollution and contamination, wasting water resources and poor resource use.

19. Wetland Types

a) presence:

Circle or underline the applicable codes for the wetland types of the Ramsar "Classification System for Wetland Type" present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

Marine/coastal: A • B • C • D • E • F • G • H • I • J • K • Zk(a)

Inland: L • M • N • O • P • Q • R • Sp • Ss • Tp • Ts • U • Va •
Vt • W • Xf • Xp • Y • Zg • Zk(b)

Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

b) dominance:

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

J, C,A,B,E,G,I

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The site contains a wide range of relatively pristine and healthy ecosystems, including coral reefs, lagoons, coastal swamps, intertidal mudflats and mangroves all of which provide site-specific ecosystem services and benefits for the local community such as flood and storm surge mitigation, preventing coastal erosion, food and income from near shore marine species, maintenance of traditional practices and sources of construction materials.

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

The site contains 27 hectares of mangrove forest dominated by 4 species, predominantly *Rhizophora mucronata*, with some *Bruguiera gymnorhiza*, *Lumnitzera racemosa* and *Sonneratia alba*. They are unique due to their isolation occurring here at the extreme edge of their distribution in the central Pacific.

Notable plant species found at the site with multiple cultural uses are the coconut palm (*Cocos nucifera*), beach hibiscus (*Hibiscus tiliaceus*), screw pine (*Pandanus tectorius*), Alexandrian laurel (*Calophyllum inophyllum*), cordia (*Cordia subcordata*), beach gardenia (*Guetarda speciosa*), beach cabbage (*Scaevola sericea*), pemphis (*Pemphis acidula*), portia tree (*Thespesia populnea*), *Rhizophora* spp., tree heliotrope (*Tournefortia argentea*), ironwood (*Casuarina equisetifolia*), *Premna serratifolia*, noni (*Morinda citrifolia*), native mulberry (*Pipturus argenteus*), tropical almond (*Terminalia catappa*), dye fig (*Ficus tinctoria*) and Pacific banyan (*Ficus prolixa*).

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

The site provides a breeding habitat for the globally endangered green turtle (*Chelonia mydas*) and the globally vulnerable giant clam (*Tridacna gigas*). There are also coconut crabs (*Birgus latro*) and mangrove crabs (*Scylla serrata*), which contribute significantly to the local diet. Also present is the topshell, or trochus, (*Trochus niloticus*), which is a marine snail that was introduced to Kiribati in 1937 from Palau. It is believed that trochus may become a lucrative export commodity in the near future.

23. Social and cultural values:

a) Describe if the site has any general social and/or cultural values e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values:

Ethnically, the indigenous peoples of the site are Micronesians who have probably inhabited the islands for 3000 years or more. The I-Kiribati (people of Kiribati), share a common culture, a common language, and a common resource-use tradition. The people of Nooto - North Tarawa are almost exclusively I-Kiribati.

Fishing continues to be an important commercial and subsistence activity for the local community at the site, although some resources are under increasing pressure from outside commercial fishermen, especially from South Tarawa. Subsistence fishing, including fishing by men for finfish in the lagoon and, less commonly, in the open ocean, and reef gleaning, mainly by women and children on the expansive intertidal reef flats and fringing reef, mainly for shellfish, is a daily activity at the site.

The plants of the site possess great cultural value, being used for medicine, general construction, body ornamentation, fuelwood, ceremony and ritual, cultivated or ornamental plants, toolmaking, food, boat or canoe making, dyes or pigments, magic and sorcery, fishing equipment, cordage and fibre, games or toys, perfumes and scenting coconut oil, fertilizer and mulching, woodcarving, weapons or traps, food parcelization, subjects of legends, mythology, songs, riddles, and proverbs, domesticated and wild animal feed, handicrafts, cooking equipment, clothing, fish poisons, items for export of local sale, adhesives or caulking, and musical instruments.

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?

If Yes, tick the box and describe this importance under one or more of the following categories:

i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

The conservation ethic is strong at the site, where the wide range of conservation practices still in use indicates that I-Kiribati traditionally attempted to manage their marine resources on a sustainable basis. Their management was based on an extensive knowledge of fish, fishing technology, and the sea. Some of the main mechanisms included secrecy about fishing grounds and techniques, temporary or seasonal taboos or bans on species or fishing grounds, restrictions on the consumption of certain species (e.g., some species such as turtles or giant clams were reserved for chiefs or priests), fines or penalties for resource abuses, and clan tenure or limited access to reef and lagoon areas.

ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

a) within the Ramsar site:

All land (including the lagoon) within the boundaries of the Ramsar site are owned by the indigenous community. A small portion of land within the site is owned by the Catholic church.

b) in the surrounding area:

Under the Foreshore and Land Reclamation Ordinance, the general position is that the State owns the foreshore and the seabed, subject to public right of navigation, fishing and passing over the foreshore, as well as any private rights that may exist. Foreshore in this case includes areas affected by tidal movement and not areas of seabed permanently covered by water. It is stressed by Pulea and Farrier (1994), in their *Kiribati Environmental Legislation Review* that the legislation does not seek to override customary rights in marine areas, which under the *Laws of Kiribati Act 1989* apply to: 1) the ownership by custom of rights in, over, or in connection with any sea or lagoon area, inland waters or foreshore or reef, or in or on the seabed, including rights of navigation and fishing; and , 2) the ownership by custom of water, or of rights in, over or to water. Under the Foreshore and Land Reclamation Ordinance, foreshore can also be declared "designated

foreshore", under which a licence is required from the Chief Lands Officer for the removal of sand, gravel, reef mud, coral, rock and any similar substances. It also stipulates that landowners who "may be affected thereby" must be consulted.

Also relevant to the issue of marine tenure and resource use are the Fisheries Ordinances of 1977 and amendments and the Fisheries Act of 1984, which emphasise the Minister's role in "developing the fisheries of Kiribati by taking appropriate measures to ensure that fisheries resources are "exploited to the full for the benefit of the country". As stressed by Pulea and Farrier (1994:52), there are specific references to the President's power, with the advice of Cabinet, to make regulations relating to: 1) the conservation and protection of species of fish; 2) the establishment of closed seasons; 3) the designation of prohibited areas; 4) limits on size and quantity caught; 5) prohibitions on fishing practices and equipment likely to damage fish stocks; and, 6) the taking of coral and seaweed. Under this legislation immature and egg-bearing female lobsters (*Panulirus* spp.) are protected, the taking of coral has reportedly also been banned on Tarawa although this may have no legal basis.

25. Current land (including water) use:

a) within the Ramsar site:

village settlement with small-scale agricultural gardens and domesticated livestock breeding (pigs and chickens), small-scale coconut plantations, fishing and reef gleaning for both commercial and subsistence.

b) in the surroundings/catchment:

Same as above.

26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

a) within the Ramsar site:

- Inadequate resource-management mechanisms, including lack of control over inshore marine resources by other locals who are not from Nooto village;
- Limited enforcement of the Environment Act 1999 (as amended) in North Tarawa;
- Coastal soil erosion and saltwater incursion;
- Overexploitation of inshore fisheries resources, including turtles, giant clams, beche-de-mer, ark shell (bun), bonefish (ikarii), goat fish (maebo), baitfish (tarabuti), large demersal species, some sharks and other commercially-important target species, especially by commercial fishermen from South Tarawa, who employ unsustainable fishing methods
- Poor sanitation;
- Water shortages and poor water quality;
- Poor soils and limited agricultural potential;
- Increased generation of non-biodegradable wastes;
- Limited awareness and public knowledge on Ramsar designation and its significance & factors that have adverse effects on the site's ecological character;

b) in the surrounding area:

- Interruption of lagoon circulation by causeway construction between atoll islets, which seems to have affected the spawning cycles and behaviour of a wide range of marine organisms.

- Loss of ethno-biological and environmental knowledge among the young.

27. Conservation measures taken:

a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:

In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia ; Ib ; II ; III ; IV ; V ; VI

c) Does an officially approved management plan exist; and is it being implemented?: No

d) Describe any other current management practices:

Island By-laws currently exist on the islands that look into sustainable management of terrestrial and marine natural resources. One of the existing by-laws in Nooto is the prohibition of unsustainable traditional fishing methods such as “Te Ororo” which is the practice that involves the use of fishing nets and crow bars to frighten and drive the fishes into the net.

The constraint is the ineffectiveness of this particular by-law. The Eutan Tarawa Council (Island Council for North Tarawa) is currently working towards amending the By-law.

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

A management plan in place is the existing by-law but which like aforementioned in 27(d) above is in need of some improvements and amendments.

The Nooto site has been officially declared by the Nooto Community together with the Mayor of North Tarawa to be designated both as a protected area and as a Ramsar Site. A signed consent letter confirming this has been obtained and is vital evidence of community support for Kiribati’s acceding to the Ramsar Convention.

29. Current scientific research and facilities:

e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

There has been several projects or research carried out at Nooto, several of which were carried out by staff of the Environment and Conservation Division. These include: i) mangrove planting trials to see which sites in Nooto’s lagoon area are most suitable for mangrove habitation; ii) Turtle nesting monitoring (as part of SPREP’s Marine Turtle Tagging Project) was initially trialled in Nooto and remains an ongoing activity to date; iii) Data collection and survey on the biological diversity found in Nooto and their cultural, ecological and economic importance were documented.

Another scientific study conducted at the site was on phaeitic fish coordinated by Eco-Care research.

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitors’ centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

MELAD through ECD is directly involved in all communications, education and public awareness activities related to or benefiting the site. ECD through the Media and Public Awareness Unit (MPAU) staff are working closely with Nooto community, Nooto primary school, North Tarawa Junior Secondary

School and North Tarawa Island Council, in terms of information sharing that focus on promoting Nooto village as Kiribati's first Ramsar Site.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Visits to the wetland for recreation or tourism purposes have been very minimal. The only recorded visit to the site for such purposes was a visit by school students from Japan to see the mangroves in Nooto.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

Eutan Tarawa Council

Contact: Mr. Bwereata Teatu, Mayor (Nooto, North Tarawa).

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

The site will be directly managed by Eutan Tarawa Council (the local government of North Tarawa) with technical assistance from MELAD. This is also the first co-management initiative between Nooto village as the country's first Ramsar Site and the Government of Kiribati.

Contact for Eutan Tarawa Council:

Mr Bwereata Teatu
Mayor
Nooto, North Tarawa

Contact for MELAD

Mr Manikaoti Timeon
Secretary
Ministry of Environment, Lands and
Agriculture Development (MELAD)
P.O. Box 234
Bikenibeu, Tarawa
KIRIBATI
Email: manikaotitimeon@gmail.com
Phone: + 686 28211, + 686 28507
Fax: + 686 28334

Ms Nenenteiti Teariki-Ruatu
Acting Director
Environment & Conservation Division
MELAD
P.O. Box 234
Bikenibeu, Tarawa
KIRIBATI
Email: neneteitir@environment.gov.ki,
nteariki@gmail.com
Phone: 00686 28425; 28000; 28211
Fax: + 686 28334

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

Pulea, M. and Farrier, D. 1994. *Environmental legislation review - Kiribati: 1993*. South Pacific Regional Environment Programme, Apia.

Spalding M.D., Fox H.E., Allen G.R., Davidson N., Ferdaña Z.A., Finlayson M., Halpern B.S., Jorge M.A., Lombana A., Lourie S.A., Martin K.D., McManus E., Molnar J., Recchia C.A. & Robertson J. (2007) *Marine Ecoregions of the World: a bioregionalization of coast and shelf areas*. *BioScience*, 57, 573-583

Please return to: **Ramsar Convention Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**
Telephone: +41 22 999 0170 • Fax: +41 22 999 0169 • e-mail: ramsar@ramsar.org