

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7, as amended by Resolution VIII.13 of the Conference of the Contracting Parties.

Note 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. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Bureau. Compilers are strongly urged to provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of maps.

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

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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

24 November, 2005

3. Country:

JAPAN

4. Name of the Ramsar site:

Kerama-shoto Coral Reefs

5. Map of site included:

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

a) **hard copy** (required for inclusion of site in the Ramsar List): *yes* -or- *no*

b) **digital (electronic) format** (optional): *yes* -or- *no*

6. Geographical coordinates (latitude/longitude):

[Around of Zamami island] 26°12'58"N, 127°16'56"E

[Around of Tokashiki island] 26°10'34"N, 127°20'25"E

7. General location: Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Around Kerama-shoto/ Okinawa prefecture/ Okinawa, Kyushu region

It is located around Kerama-shoto (Zamami-mura and Tokashiki-mura) that is approximately 20-40 km west from Naha City (population: c.310,000; the capital of Okinawa Prefecture), the main island of Okinawa.

8. Elevation: (average and/or max. & min.) **0 m**

9. Area: (in hectares) **353 ha** (Zamami: 233 ha , Tokashiki: 120 ha)

10. Overview:

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

Kerama-shoto Coral Reef is located in the coastal water of Kerama-shoto that consists of 30 islands with different sizes, approximately 20-40 km west of the main island of Okinawa. The site mainly consists of well-developed fringing reefs. Tabular, branching, horn-shaped, mound, and sheet reef-building corals are densely distributed in the water. Also, colorful fish such as *Chromis notata* (Coral fish), *Chaetodontidae* (Angel fish), and *Labridae* (Cunner tribe) that are typical in coral reefs, are abundant in the site.

11. Ramsar Criteria:

Circle or underline 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).

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8

12. Justification for the application of each Criterion listed in 11. 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: The fringing reefs are specifically well-developed and it is one of Japan's representative coral reefs of high naturalness.

Criterion 3: It is an important sea area as supply sources of larva corals to surrounding area including the coastal sea area of main island of Okinawa. This area also supports rich ichthyofauna including *Pomatomidae* species (damsel fish), *Chaetodontidae* species (butterfly fish), and *Labridae* species (gilthead).

13. 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: (Criteria 1 and 3)

Japan

b) biogeographic regionalisation scheme (include reference citation):

Japan is recognized as single biogeographic region, because Japan is an island country which has unique and rich biota with many endemic species.

14. 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.

Geology: mainly phyllite and sandstone in Palaeozoic and Mesozoic Era

Geomorphology: Fringing reefs are well-developed around the islands with rias coast.

Origins: Natural

Water quality: Seawater temperature is lowest in February to March, but annual mean seawater temperature does not go below 20 degrees Celsius. In July to August, seawater temperature becomes the highest between 27.1 and 29.6 degrees Celsius. The water transparency is relatively high compared with other areas in the world.

Water depth: 59 m at maximum

Water level fluctuation: fluctuate

Climate: Mild weather all around the year, any typhoons strike the area from summer to fall. Annual precipitation: 2,122 mm, annual mean temperature: 21.0 degrees Celsius, fluctuation of mean temperature in each month: +15.0- +26.6 degrees Celsius (average in Tokashiki 1979-2000)

15. Physical features of the catchment area:

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

No catchments

16. Hydrological values:

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

17. 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.

C

18. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site.

The variety of hermatypic corals in Kerama shoto is considerably rich, with 248 species of hermatypic corals out of 400 species that are observed in Japan being present in the site. The tabular and arborescent *Acropora* species are dominant in the area west of Tokashiki Island, where coral coverage is over 90 percent in some parts.

There are 360 species of fish, 1,640 species of invertebrates and 220 species of seaweeds are observed in the site. The site is also an important supply source of fry for the colorful fish such as *Chromis notata* (Coral fish), *Chaetodontidae* (Angel fish) and *Labridae* (Cunner tribe) that are typical in coral reefs.

19. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. 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.*

None

20. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. 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 tabular *Acropora* is especially observed in various places, although its degree of dominance varies. The area around Agenashiku Island is dominated by branching *Acropora*. The community dominated by the hybrid of branching and tabular *Acropora* or *Porites cylindrica* can be seen around Gahi Island. The branching *Acropora* dominated area and the community consisting of many species can be seen on the west shore of Tokashiki Island. Although it is not often, the following rare species can be seen in the site.

Caretta caretta (loggerhead turtle) [vulnerable species (VU)*1]

Chelonia mydas (green turtle) [vulnerable species (VU)*1]

Eretmochelys imbricate (hawksbill turtle) [vulnerable species (VU)*1]

Note: *1 Red List of Threatened Wildlife of Japan. Ministry of the Environment

21. Social and 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.

Fishery: Fishing is not so active and most of fish catch is consumed within the islands.

Tourism: There are many diving spots in the area and diving industry dependant on rich coral reefs is prosperous. 80 percent of the residents are engaged in tourism as mentioned in No.29.

22. Land tenure/ownership:

(a) within the Ramsar site:
Publicly-owned water body

(b) in the surrounding area:
National land, public land, private land

23. Current land (including water) use:

(a) within the Ramsar site:
No resident, used for fisheries, tourism and researches

(b) in the surroundings/catchment:
Population in Zamami-mura: 597, in Tokashiki-mura: 730

24. 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:
Coral reefs are damaged by the outbreak of crown-of-thorns starfish (*Acanthaster planci*), coral bleaching and destruction by divers.
The outbreak of crown-of-thorns starfish (*Acanthaster planci*) occurred in 1970's and also from autumn 2001. Less than 10 individuals or only feed marks were observed by manta-method towing survey (1994). In July 1998, severe coral bleaching was observed.

(b) in the surrounding area:
Coral reefs are damaged by the outbreak of crown-of-thorns starfish (*Acanthaster planci*), coral bleaching and destruction by divers. The outbreak of crown-of-thorns starfish (*Acanthaster planci*) occurred in 1970's and also from autumn 2001. Less than 10 individuals or only feed marks were observed by manta-method towing survey. More than 10 individuals were observed in some study areas, north-east of Tokashiki island and north of Zamami island. In July 1998, severe coral bleaching was observed. At 4 out of 15 research points (in inner bay or moats) in Kerama-shoto coral reefs, more than 90 % of the coral colonies were found bleached during the survey conducted in September, 1999.

25. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Quasi-national Park Marine Park Zone: 353 ha (The Natural Parks Law)- From December 9, 1978.

In the marine park zone, such activities as erecting structures, reclamation, mining minerals, collecting soil and stone, reforming seabed, mooring and draining sewage water by using drain facility require permission from the prefectural governor.

Extermination of crown-of-thorns starfish (*Acanthaster planci*) have been conducted from 2001 by local diving operators mainly at the conservation areas designated by Okinawa Prefecture (south of Gabi-jima island, Tokashiki-jima Ariga, Tokashiki-jima Awaren-oki. Two additional points are designated in the surrounding area).

26. Conservation measures proposed but not yet implemented:

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

None

27. Current scientific research and facilities:

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

[Scientific researches]

- National Survey on the Natural Environment (Ministry of Environment): collection of basic data including survey on distribution of hermatypic corals are conducted about every five years.
- Report on coral reef monitoring in Okinawa Kaigan Quasi-National Park (in Okinawa Island and Kerama Islands), in FY 2001 (Nature Conservation Division, Okinawa Prefecture and Tim Tuelassa Ltd.): The researches on distribution of corals and generation status of crown-of-thorns starfish (*Acanthaster planci*) in the sea area in the Quasi-national Park, mainly in Kerama islands waters are conducted.
- Okinawa Kaigan Marine Park Zone Landscape Conservation Survey, in FY 2003 (Nature Conservation Division, Okinawa Prefecture and Meio University Institute for general research): The researches concerning actual and previous condition of undersea scenery in the park were conducted, and conservation and restoration measures of the scenery were considered.

[Facilities established for research]

- Akajima Marine Science Laboratory: Ecological and genetical researches on hermatypic corals, researches on conservation of coral reefs, researches on breeding of invertebrate in tropical and subtropical zone and researches on sea-floor mapping activities are implemented.

28. Current conservation education:

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

None

29. Current recreation and tourism:

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

Diving, whale watching, sea kayaking, snorkelling, grass-bottomed boat and others

There are 57 diving shops and 74 accommodations around the area. (as of March, 2004)

30. Jurisdiction:

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

[Territorial]

Publicly-owned water body

[Functional]

Okinawa Prefecture (Okinawa Kaigan Quasi-National Park)

31. 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

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32. Bibliographical references:

scientific/technical references only. If biogeographic regionalisation scheme applied (see 13 above), list full reference citation for the scheme.

- Environment Agency 1991 Park Plan of Okinawa Kaigan Quasi-National Park
- Ministry of the Environment, Nature Conservation Bureau 2002 “500 Important Wetlands in Japan”
- Ministry of the Environment, Japanese Coral Reef Society 2004 “Coral Reefs of Japan”
- Environment Agency of Japan 2000 “Threatened Wildlife of Japan –Red Data Book 2nd ed.- Volume3, Reptilia/ Amphibia
- SHIMADAS

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