

# 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.

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

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Designation date

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Site Reference Number

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## 2. Date this sheet was completed/updated:

24 October, 2005

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## 3. Country:

JAPAN

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## 4. Name of the Ramsar site:

**Imuta-ike**

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## 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*

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## 6. Geographical coordinates (latitude/longitude):

31°49'5"N, 130°28'1"E

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## 7. General location: Kagoshima prefecture/ Kyushu region

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

It is located in Satsuma-sendai City (population: c. 110,000, area: c. 683 sq. km), approximately 25 km northwest of Kagoshima City (the capital of Kagoshima Prefecture, population: c.610,000, area: c. 547 sq. km).

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## 8. Elevation: (average and/or max. & min.)

296 m asl.

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## 9. Area: (in hectares) **60 ha**

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## 10. Overview:

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

Imuta-ike is a crater lake located in the north-western part of Kagoshima Prefecture. Low moor is distributed at the north-western part of the lake where *Phragmites japonica* and *Zizania latifolia* (Manchurian wild rice) grow. Many dragonfly species including *Libellula angelina* inhabit the site.

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### 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

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### 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 2:** *Libellula angelina* [endangered species (EN)\*1, critically endangered species (CR)\*2, Domestic Endangered Species\*3] inhabit the site.

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

\*2 IUCN Red List of Threatened Animals (2004)

\*3 Designated under the Law for Conservation of Endangered Species of Wild Fauna and Flora (Species Conservation Law)

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### 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:

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.

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### 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:** Western one-third of the Imuta-ike has become a marshland consisting of peat forming plant community, where numerous turfy floating islands exist. These islands are formed by dead plants, imperfect decomposed matter, and peat.

**Geomorphology:** The lake is a crater lake and surrounded by a group of small volcanoes (elevation: 450-500 m).

**Soil type:** north-western part of the lake is peat soil.

**Origins:** Natural. It was formed by eruption of Iimori-yama which dammed water at the crater.

**Hydrology:** No inflow stream, 1 outflow stream

**Water quality:** pH6.9(6.8 ~ 7.0)(1991), DO 7.6ppm(1991), EC 33.1(32.5 ~ 33.4)µs/cm(1991), alkalinity 0.057(0.056 ~ 0.060)meq/L(1991), COD 7.3(7.2 ~ 7.5)ppm(1991), T-N 0.4ppm(1991), T-P 0.023(0.022 ~ 0.025)ppm(1991), Chl-a 10.9(8.8 ~ 12.0)µg/L(1991), BOD 1.4(1.3 ~ 1.5)ppm(1991), SS 4(3

~ 4)ppm(1991), Cl<sup>-</sup> 3.4(3.3 ~ 3.6)ppm(1991), NH<sub>4</sub>-N <0.002 ~ 0.003ppm(1991), NO<sub>2</sub>-N <0.002ppm(1991), NO<sub>3</sub>-N <0.002ppm(1991), PO<sub>4</sub>-P <0.002ppm(1991).

**Water level fluctuation:** fluctuation by intake for agricultural use.

**Water depth:** 0.8 m on average, 2.7 m at maximum.

**Climate:** Mild climate with abundant rainfall. Annual precipitation: 2,316 mm, annual mean temperature: 16.8 degrees Celsius, fluctuation of mean temperature in each month: +6.5-+27.2 degrees Celsius (average of Sendai from 1979 to 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).

Imuta-ike is a crater lake created by the eruption of Imori-yama, which has become a shallow pond by the inflow of sediment. The water of the pond is fed by surface water of caldera and groundwater.

### 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.

O, U

### 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 marsh is covered with emergent plants such as *Phragmites japonica*, *Zizania latifolia* (Manchurian wild rice) and *Scirpus tabernaemontani*. Floating-leaved plants such as *Brasenia schreberi* (water shield) and *Nymphaea tetragona* (pygmy water lily) can be seen on the lake.

Not only the endangered dragonfly *Libellula Angelina*, but also many dragonfly species such as *Cervion calamorum*, *C. melanurum*, and *Ischnura asiatica* are living in the lake.

Also variety of freshwater fish, such as *Oryzias latipes* (Medaka ricefish), *Zacco platypus* (Pale chub), *Z. temminckii* (Dark Chub), and *Odontobutis obscura* inhabit the lake.

The lake is a breeding site of *Anas poecolorhyncha* (Spot-billed duck). Other waterfowls such as *A. platyrhynchos* (Mallard), *Phalacrocorax carbo* (Cormorant) and *Tachybaptus ruficollis* (Little grebe) are also normally observed in the lake.

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#### 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.*

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#### 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.*

Rare species inhabit the site such as a dragonfly species *Libellula angelina* [endangered species (EN)\*1] among the other insects, and *Oryzias latipes* (Medaka ricefish) [vulnerable species (VU)\*1] among other freshwater fish.

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

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#### 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.

- Peat forming plant community is designated as a national natural monument “Peat forming plant community in Imuta-ike” in 1921 based on the Law for the Protection of Cultural Properties.
  - The area around Imuta-ike is used as rice paddies and croplands. Accommodation facilities and camping grounds are also developed in the area.
  - The water of the lake is used for paddy cultivation in the downstream area.
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#### 22. Land tenure/ownership:

(a) within the Ramsar site:

City-owned land (Satsuma-sendai City)

(b) in the surrounding area:

City-owned land (Satsuma-sendai City), private land

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#### 23. Current land (including water) use:

(a) within the Ramsar site:

no resident; no fishery rights granted; water is utilized as agricultural water in downstream area.

(b) in the surroundings/catchment:

planted forests(conifer forests), partly evergreen broadleaf forests and bamboo forests

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#### 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:

Most of the fish species currently inhabit Imuta-ike are considered to prey on the dragonfly larvae and/or the adults including those of *Libellula Angelina*. Especially, there is a high possibility of *Lepomis macrochirus* (bluegill) preying on *Libellula Angelina* larvae considering the large population and the feeding habit of *Lepomis macrochirus*.

(b) in the surrounding area:

Willow species are recognized around Imuta-ike. These vital species regenerate even from a twig, and thus affecting the management of agricultural operation and the harvest in the surrounding area. Weeds that grow in the agricultural field before the annual cultivation are utilized as resting area by *Libellula Angelina*. Thus proper management of the agricultural field is desirable so as to maintain the favourable environment for *Libellula Angelina* and keep away the willows to start growing.

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**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.

Management zone of Natural Habitat Conservation Area: 60 ha (From June 3, 1996)

In this area, such activities as erecting structures, change land category such as housing development, mining minerals, reclamation of land and water surface, change water level and volume, felling trees and bamboos require permission from the Minister of the Environment.

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**26. Conservation measures proposed but not yet implemented:**

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

None

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**27. Current scientific research and facilities:**

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

**Scientific research:**

National Survey on the Natural Environment (Ministry of the Environment)

**Facilities established for research:** None

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**28. Current conservation education:**

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

Ecosystem Preservation Museum (managed by the City government)

- This museum introduces *Libellula Angelina* that inhabits Imuta-ike and its surroundings which are prefectural natural park, and fauna and flora of Kedouin-cho such as the peat forming plant community which is a natural monument, using interpretive panels, models, and visual images. It also aims to raise the awareness of local residents and visitors regarding natural environment through the training sessions on natural environment and ecosystem.

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**29. Current recreation and tourism:**

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

Sightseeing, fishing, rowing/ approximately 30,000- 40,000 people visit annually.

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**30. Jurisdiction:**

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

Satsuma-sendai City (city-owned land): 60 ha

Ministry of the Environment (Natural Habitat Conservation Area): 60 ha

Agency for Cultural Affairs ( National Natural Monument 'Imuta-ike Peatland forming Plant Communities' marshy part of the lake

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**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

Kyushu Regional Environment Office,  
Ministry of the Environment  
1-6-22 Onoue, Kumamoto city,  
Kumamoto prefecture, 862-0913 JAPAN  
Tel: +81-96-214-0311  
Fax: +81-96-214-0354

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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 1993 “The Fourth National Surveys on the Natural Environment Report on Lake and Marsh Survey”
- Ministry of the Environment Nature Conservation Bureau 2002 “500 Important Wetlands in Japan”
- Ministry of the Environment, Nature Conservation Bureau ”Statistics on number of visitors to Natural Parks”
- Summary of Natural Habitat Conservation Area
- Ministry of the Environment 2000 “Report on the habitat protection project of *Libellula Angelina* in Imuta-ike”
- Material from the Wildlife Division of Nature Conservation Council
- Material from the commission on investigating the conservation measures for *Libellula Angelina* in Imuta-ike.
- Kagoshima Prefecture, “Introduction of the Ecosystem Preservation Museum”
- HEIBONSYA “WILD FLOWERS OF JAPAN HERBACEOUS PLANTS”
- HEIBONSYA “FERNS AND FERN ALLIES OF JAPAN”
- Environment Agency of Japan 2000 “Threatened Wildlife of Japan -Red Data Book 2nd ed.- Volume 9, Bryophytes, Algae, Lichens, Fungi”
- Ministry of the Environment 2003 “Threatened Wildlife of Japan -Red Data Book 2nd ed.- Volume4, Pisces-Brackish and Fresh Water Fishes”
- Environment Agency of Japan 2000 “Red List of Japan, Invertebrate”
- The Ornithological Society of Japan 2000 “Check-list of Japanese Birds Sixth Revised Edition”
- Environmental Agency of Japan 1987 "Check-list of Plants"
- Japan Wildlife Research Center "Checklist of Species of Wildlife of Japan"

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