

# 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:

Ms. Noriko MORIWAKE  
Wildlife Division, Nature Conservation Bureau,  
Ministry of the Environment  
1-2-2 Kasumigaseki, Chiyoda-ku,  
Tokyo 100-8975, JAPAN  
Phone: +81-3-5521-8284 Fax: +81-3-3581-7090  
Email: [wildlife@env.go.jp](mailto:wildlife@env.go.jp)

FOR OFFICE USE ONLY.

DD MM YY

--	--	--

Designation date

--	--	--	--	--	--

Site Reference Number

---

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

24 October , 2005

---

## 3. Country:

JAPAN

---

## 4. Name of the Ramsar site:

**Mikata-goko**

---

## 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):

Northeast corner: 35°36'54"N, 135°54'22"E

Southwest corner: 35°33'37"N, 135°52'26"E

---

## 7. General location: Fukui Prefecture/ Hokuriku 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 Wakasa-cho (population: c. 173,000, area: c.178.6 sq. km) facing Wakasa bay of Japan Sea and Mihama-cho (population: c. 11,600, area: c.152 sq. km), about 60km southwest of Fukui City (population: c. 250,000, area: 341 sq. km), the capital of Fukui Prefecture.

---

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

**0 m**

**9. Area:** (in hectares) **1,110 ha**

**10. Overview:**

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

Mikata-goko is a group of brackish lakes located along the rias coast of Wakasa bay facing Japan Sea. The site consists of five lakes which are named Mikata-ko, Suigetsu-ko, Suga-ko, Kugushi-ko, and Hiruga-ko. Though all lakes are connected, each lake has different salinity, size and depth, which harbours different kinds of fish species.

**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 7:** A lot of Japan's endemic fish species such as Field gudgeon *Gnathopogon elongatus elongates* and Striped bitterling *Acheilognathus cyanostigma* live in the site. Mikata-ko is one of the rare natural distribution areas of Piscivorous chub *Opsariichthys uncirostris uncirostris* and it has intermediate figure between the ones found in Eurasian continent and Biwa-ko. Crucian carp *Carassius auratus* subsp.1 (Japanese name: Nagabuna) found only in a dozen places in Japan, also live in the site.

**Criterion 8:** Japan's endemic fish species such as Field gudgeon *Gnathopogon elongatus elongates*, Crucian carp *Carassius auratus* subsp.1 (Japanese name: Nagabuna) and Striped bitterling *Acheilognathus cyanostigma* depend on and live in Mikata-goko. Variety of fish species including freshwater fish, brackish fish and migratory fish are found in the site due to the difference of salinity in each lake.

**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.

**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:** Palaeozoic and Mesozoic formation (mainly clayslate, sandstone, greenstone and chart) and granite

**Geomorphology:** rias coast, Hiruga-ko and Kugushi-ko are connected to the sea and Suigetsu-ko. Mikata-ko and Suga-ko are connected to Suigetsu-ko.

**Origins:** Natural. Those channels between Hiruga-ko and Suigetsu-ko, Kugushii-ko and Suigetsu-ko, Suga-ko and Mikata-ko were artificially developed for flood mitigation.

**Hydrology:** Hiruga-ko and Kugushi-ko are connected to the sea and Suigetsu-ko. Mikata-ko and Suga-ko are connected to Suigetsu-ko. Several rivers flow into Mikata-ko, Kugushi-ko and Suigetsu-ko.

**Water quality:**

**Mikata-ko:** freshwater lake

[west] pH8.5(7.4 ~ 9.3)(2003), DO 10(8.9 ~ 13)mg/l(2003), COD 5.4 (2.9 ~ 10 ) mg/l (2003), -N 0.82 (0.40 ~ 1.4) mg/l (2003 ), T-P 0.055(0.029 ~ 0.088) mg/l (2003), Chl-a 36(15 ~ 110)µg/L(2003),SS 10(3 ~ 21) mg/l (2003), NH<sub>4</sub>-N 0.02(<0.01 ~ 0.02) mg/l (2003), NO<sub>2</sub>-N <0.01mg/l (2003), NO<sub>3</sub>-N 0.05(<0.01 ~ 0.08) mg/l (2003)

[east] pH8.4(7.5 ~ 9.2)(2003), DO 10(8.8 ~ 11)mg/l(2003), COD 5.1 (2.8 ~ 8.2 ) mg/l (2003), T-N 0.74 (0.43 ~ 1.0) mg/l(2003 ), T-P 0.051(0.029 ~ 0.072) mg/l (2003), Chl-a 37(14 ~ 98)µg/L(2003), SS 10(5 ~ 16) mg/l (2003), NH<sub>4</sub>-N 0.02(<0.01 ~ 0.07) mg/l (2003), NO<sub>2</sub>-N 0.01(<0.01 ~ 0.01)mg/l (2003), NO<sub>3</sub>-N 0.17(<0.01 ~ 0.42) mg/l (2003)

[whole area] EC 557(493 ~ 606)µs/cm(1991), alkalinity: 0.6meq/L(1991), Cl- 127(116 ~ 147)ppm(1991), P04-P 0.016(0.014 ~ 0.018)ppm(1991)

#### **Suigetsu-ko:** semi-freshwater lake

[north] pH7.9(7.1 ~ 9.2)(2003), DO 7.7(3.8 ~ 12)mg/l(2003), COD 4.1 (3.2 ~ 5.1) mg/l (2003), T-N 0.56 (0.32 ~ 0.76) mg/l (2003 ), T-P 0.039(0.023 ~ 0.051) mg/l (2003), Chl-a 21(5.5 ~ 56)µg/L(2003), SS 4(2 ~ 9) mg/l (2003), NH<sub>4</sub>-N 0.03(0.02 ~ 0.04) mg/l (2003), NO<sub>2</sub>-N <0.01mg/l (2003), NO<sub>3</sub>-N 0.04(<0.01 ~ 0.06) mg/l (2003)

[south] pH8.0(7.0 ~ 9.2)(2003), DO 7.6(3.0 ~ 12)mg/l(2003), COD 4.0 (3.1 ~ 4.5) mg/l (2003), T-N 0.60 (0.33 ~ 0.85) mg/l (2003 ), T-P 0.042(0.022 ~ 0.067) mg/l (2003), Chl-a 18(5.7 ~ 42)µg/L(2003), SS 3(<1 ~ 7) mg/l (2003), NH<sub>4</sub>-N 0.07(0.01 ~ 0.22) mg/l (2003), NO<sub>2</sub>-N <0.01mg/l (2003), NO<sub>3</sub>-N 0.06(<0.01 ~ 0.17) mg/l (2003)

[whole area] EC 15.4(2.7 ~ 23.6)ms/cm(1991), alkalinity: 9.0(0.6 ~ 20.3)meq/L(1991), Cl- 1237(818 ~ 2070)ppm(1991), P04-P <0.001ppm(1991)

#### **Suga-ko:** semi-freshwater lake

pH8.0(7.1 ~ 9.4)(2003), DO 8.1(3.1 ~ 13)mg/l (2003), COD 5.2(4.0 ~ 9.3)mg/l (2003), T-N 0.62(0.32 ~ 0.97) mg/l (2003), T-P 0.051(0.021 ~ 0.12)mg/l (2003), Chl-a 29(4.8 ~ 100)µg/L(1991), SS 5(2 ~ 14) mg/l (2003), EC 9.1(2.6 ~ 18.3)ms/cm(1991), alkalinity 2.0(0.5 ~ 4.7)meq/L(1991), NH<sub>4</sub>-N <0.01ppm(1991), Cl- 745ppm(1991), NO<sub>2</sub>-N <0.01ppm(1991), NO<sub>3</sub>-N <0.01ppm(1991), P04-P <0.001ppm(1991)

#### **Kuguji-ko:** semi-freshwater lake

[north] pH8.2(7.9 ~ 8.6)(2003), DO 9.0(7.2 ~ 11)mg/l(2003), COD 3.7 (3.0 ~ 4.6) mg/l (2003), T-N 0.55 (0.40 ~ 0.73) mg/l (2003 ), T-P 0.036(0.029 ~ 0.041) mg/l (2003), Chl-a 14(3.3 ~ 32)µg/L(2003), SS 5(1 ~ 10) mg/l (2003)

[south] pH8.2(7.8 ~ 8.6)(2003), DO 8.6(6.2 ~ 11)mg/l(2003), COD 3.7 (2.9 ~ 4.4) mg/l (2003), T-N 0.58 (0.41 ~ 0.84) mg/l (2003 ), T-P 0.036(0.028 ~ 0.043) mg/l (2003), Chl-a 18(3.4 ~ 42)µg/L(2003), SS 6(<1 ~ 14) mg/l (2003), NH<sub>4</sub>-N 0.07mg/l (2003), NO<sub>2</sub>-N <0.01mg/l (2003), NO<sub>3</sub>-N <0.01mg/l (2003)

[whole area] EC 14.7(8.6 ~ 26.8)ms/cm(1991), alkalinity: 0.9(0.7 ~ 1.4)meq/L(1991), Cl- 5047(2790 ~ 9040)ppm(1991), P04-P <0.001 ~ 0.002ppm (1991)

#### **Hiruga-ko:** salt water lake

[north] pH8.1(8.0 ~ 8.1)(2003), DO 7.7(6.4 ~ 9.3)mg/l(2003), COD 1.9 (1.6 ~ 2.3) mg/l (2003), T-N 0.23 (0.15 ~ 0.34) mg/l (2003), T-P 0.029(0.017 ~ 0.051) mg/l (2003), Chl-a 4.2(1.1 ~ 6.0)µg/L(2003), SS 2(<1 ~ 4) mg/l (2003)

[south] pH8.1(8.0 ~ 8.1)(2003), DO 7.6(6.6 ~ 9.3)mg/l(2003), COD 1.9 (0.9 ~ 3.1) mg/l (2003), T-N 0.20 (0.13 ~ 0.32) mg/l (2003 ), T-P 0.024(0.015 ~ 0.052) mg/l (2003), Chl-a 2.9(0.3 ~ 5.8)µg/L(2003), SS 2(<1 ~ 4) mg/l (2003)

[whole area] EC 46.5(44.5 ~ 47.1)ms/cm(1991), alkalinity: 2.9(2.0 ~ 4.8)meq/L(1991), Cl- 16300ppm(1991), NH<sub>4</sub>-N <0.01 ~ 0.03ppm(1991), NO<sub>2</sub>-N 0.01ppm(1991), NO<sub>3</sub>-N <0.01ppm(1991), P04-P 0.03ppm(1991)

**Water depth:** Mikata-ko: 1.3 m on average, 5.8 m at maximum

Suigetsu-ko: 34.0 m at maximum  
 Suga-ko: 13.0 m at maximum  
 Kuguji-ko: 1.8 m on average, 2.5 m at maximum  
 Hiruga-ko: 14.3 m on average, 38.5 m at maximum

**Climate:** Relatively mild, oceanic climate. Annual precipitation: 2,068mm, annual mean temperature: 14.6 degrees Celsius, fluctuation of mean temperature in each month: +4.3- +26.4 degrees Celsius (average 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).

**Surface area:** c. 94 sq. km

**General geology and geomorphological features:** rias coast, Geology is Palaeozonic and Mesozoic formation (mainly clayslate, sandstone, greenstone and chart) and granite.

**General soil types:**

(Forest) brown forest soil, reddish-brown forest soil  
 (Agricultural land) small-grained gley soil, medium-to-coarse-grained gley soil

**General land use:** rice paddies, fruit orchards, planted forests and residential districts

**Climate:** Relatively mild, oceanic climate. Annual precipitation: 2,068mm, annual mean temperature: 14.6 degrees Celsius, fluctuation of mean temperature in each month: +4.3- +26.4 degrees Celsius (average from 1979 to 2000)

### 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 • Q • 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.

**Q, O**

### 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 vegetation of freshwater area is an aquatic and hygrophyte plant communities which are mainly composed of *Phragmites australis* (reed) - *Zizania latifolia* (wildrice) community and *Trapa japonica* (water chestnut) - *Potamogeton distinctus* community.

Freshwater fish such as *Opsariichthys uncirostris* (Piscivorous chub) and *Carassius auratus* (Crucian carp) live in Mikata-ko. The proportion of brackish fish and saltwater fish increase in the order of Suigetsu-ko, Suga-ko and Kugushi-ko, as the lake's salinity increase. There are saltwater fishes such as *Etrumeus teres* (Big-eye sardine) and *Hemiramphus sajori* (Half beak) in Hiruga-ko.

These lakes, except Hiruga-ko, are wintering site for waterfowls including more than 10 thousand wild ducks. Hunting of *Pandion haliaetus* (Osprey) is also observed in the site.

### 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.*

*Trapella sinensis* [critically endangered species (CR)\*1]  
*Potamogeton cristatus* [endangered species (EN)\*1]  
*Eriocaulon parvum* [endangered species (EN)\*1]  
*Azolla japonica* [vulnerable species (VU)\*1]  
*Salvinia natans* (floating watermoss) [vulnerable species (VU)\*1]  
*Marsilea quadrifolia* (Water clover) [vulnerable species (VU)\*1]  
*Monochoria korsakowii* [vulnerable species (VU)\*1]

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

### 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.*

[Fish]

*Acheilognathus cyanostigma* (Striped bitterling) [endangered species (EN)\*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.

Commercial fisheries and aquacultures are conducted in all lakes. Fish catches are decreasing. Approximately 45 tons of carps, crucian carps, shrimps and others are released annually and pond smelts are also released.

Other socio-economic and cultural values include:

- Fishing (all lakes)
- Sightseeing (Hiruga-ko)
- Cruising/Pleasure boats (Mikata-ko, Suigetsu-ko and Suga-ko)
- Motor boats (Suigetsu-ko, Suga-ko and Kugushi-ko)
- Sailboats (Kugushi-ko)

### 22. Land tenure/ownership:

(a) within the Ramsar site:

Publicly-owned water body (Ministry of Land, Infrastructure and Transport): 1,110 ha

(b) in the surrounding area:

Prefectural land (Fukui Prefecture), town-owned land (Wakasa-cho, Mihama-cho), private land

---

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

(a) within the Ramsar site:

No resident. Commercial fishing, tourism and recreation.

(b) in the surroundings/catchment:

Agriculture (paddy fields, fruit orchards), forestry (planted forests), residential districts

---

**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:

Eutrophication (Mikata-ko and Suigetsu-ko)

(b) in the surrounding area:

---

**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, class 2 special zone: 1,110 ha (The Natural Parks Law)

In the special zone, activities such as erecting structures, felling trees, mining minerals, and reclamation require permission from the prefectural governor.

---

**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 research:**

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

Freshwater organisms in Fukui Prefecture (Fukui Prefecture)

Inventory of amphibians, reptiles, and terrestrial molluscs (Fukui Prefecture)

**Facilities established for research:** None

---

**28. Current conservation education:**

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

Seaside Nature Center of Fukui Prefecture, located in Sekumi, Wakasa-cho, operates "Mikata-goko Nature School" in conjunction with local organizations.

(Curriculum)

- Observing natural life forms in the rice paddies around Mikata-goko (June)
  - Observing fish species in Mikata-ko and Hasu River, and searching of Piscivorus chub (July)
  - Observing waterfowls and other wildbirds (November to March)
- 

**29. Current recreation and tourism:**

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

Fishing (approximately 2,500 visitors per year), cruising boat, motor boat, sailboat, and scenery observation

---

**30. Jurisdiction:**

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

### **Territorial**

Ministry of Land, Infrastructure and Transport (publicly-owned water body)

### **Functional**

Ministry of the Environment (Quasi-National Park)

Fukui Prefecture (Quasi-National Park)

Agency of Cultural Affairs (scenic spot)

---

### **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

Chubu Regional Environment Office, Ministry of the Environment

3-4-6, Nishiki, Naka-ku, Nagoya City, Aichi 460-0003 JAPAN

Tel: +81-52-955-2130

Fax: +81-52-951-8889

---

### **32. Bibliographical references:**

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

- Statistics and Information Division, Ministry of Agriculture, Forestry and Fisheries 2000 " the 7th Report on 10th Fishery census "
  - Agricultural Management, Structure and Statistics Division, Statistics and Information Center, Hokuriku Regional Agricultural Administration 1958-2002 "Trend of Fishery in Fukui Prefecture", Association of Agriculture and Forestry Statistics Fukui
  - Board of education Mikata-cho 1988 "Report on establishment of preservation and management plan of senic spot "Mikata-goko""
  - 2004 BIRDER (18) BUN-ICHI SOGO SHUPPAN
  - Mikta-cho 1980 "Living at the lake side of Mikata, Life history of Saga Tunnel and river improvement"
  - Fukui Prefecture 2003 "Report on public water area and measurement of ground water quality"
  - Environment Agency 1993 "The Fourth National Surveys on the Natural Environment Report on Lake and Marsh Survey"
  - NACS-J/ WWF Japan 1996 "RED DATA BOOK of PLANT COMMUNITIES IN JAPAN"
  - The Ornithological Society of Japan 2000 "Check-list of Japanese Birds Sixth Revised Edition"
  - Ichthyological Society of Japan "DICTIONALY OF JAPANESE FISH NAMES AND THEIR FOREIGN EQUIVALENTS"
  - Ministry of the Environment 2003 "Threatened Wildlife of Japan -Red Data Book 2nd ed.- Volume 4, Pisces-Brackish and Fresh Water Fishes"
  - Environment Agency of Japan 2000 "Threatened Wildlife of Japan -Red Data Book 2nd ed. - Volume 8, Vascular Plants
-

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