Ramsar Information Sheet

Published on 3 July 2012
Update version, previously published on : 3 July 2012

Japan

Lower Maruyama River and the Surrounding Rice Paddies

Designation date	3 July 2012
Site number	2055
Coordinates	35°36'39"N 134°50'23"E
Area	1 094,00 ha

Color codes

Fields back-shaded in light blue relate to data and information required only for RIS updates.

Note that some fields concerning aspects of Part 3, the Ecological Character Description of the RIS (tinted in purple), are not expected to be completed as part of a standard RIS, but are included for completeness so as to provide the requested consistency between the RIS and the format of a 'full' Ecological Character Description, as adopted in Resolution X.15 (2008). If a Contracting Party does have information available that is relevant to these fields (for example from a national format Ecological Character Description) it may, if it wishes to, include information in these additional fields.

1 - Summary

Summary

Situated in Japan's northern Hyogo Prefecture, the site Lower Maruyama River and the surrounding rice paddies consists of various types of wetlands, including the tranquil Maruyama River, estuary with a brackishwater zone stretching for more than 16km upstream, the surrounding rice paddies that are managed by organic agricultural systems that support the endangered storks, a constructed wetland (Toshima Wetland for "Hachigoro (the name of the last wild Stork that stayed in this wetland)") with both freshwater and brackish water zones, and the Kaya Wetland that was constructed out of a natural-area restoration project. These wetlands form an important breeding site and foraging habitat for the Oriental White Stork (Ciconia boyciana, categorized as Endangered in the IUCN Red List).
The site also serves as a suitable habitat for the Black-spotted Pond Frog (Pelophylax nigromaculatus, classified as Near Threatened in the IUCN Red List) and the Japanese Weatherfish (Misgurnus anguillicaudatus), which serve as food resources for storks. The diverse mix of wetlands in the area serves as an ideal spawning and nursery habitat for a variety of fish, including threatened species such as the Northern Medaka (Oryzias sakaizumii, rated Vulnerable in the National Red List), the Fourspine Sculpin (Cottus kazika, rated Vulnerable in the National Red List) and the Kubo Goby (Gymnogobius scrobiculatus).
Furthermore, the site is an ideal habitat for other bird species such as the Peregrine Falcon (Falco peregrines) and the Little Tern (Sterna albifrons), have been observed in the area.
As such, the Lower Maruyama River and the surrounding rice paddies is an important example of a site that supports biological diversity involving a number of endangered species such as wild storks.

2 - Data & location

2.1 - Formal data

2.1.1 - Name and address of the compiler of this RIS

Compiler 1

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2.1.2 - Period of collection of data and information used to compile the RIS

From year	1998
To year	2017

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Lower Maruyama River and the Surrounding Rice Paddies

2.1.4 - Changes to the boundaries and area of the Site since its designation or earlier update

(Update) A. Changes to Site boundary	Yes ◉ No ○
(Update) The boundary has been delineated more accurately	☐
(Update) The boundary has been extended	☑
(Update) The boundary has been restricted	☐
(Update) B. Changes to Site area	the area has increased
(Update) The Site area has been calculated more accurately	☐
(Update) The Site has been delineated more accurately	☐
(Update) The Site area has increased because of a boundary extension	☑
(Update) The Site area has decreased because of a boundary restriction	☐

2.1.5 - Changes to the ecological character of the Site

(Update) 6b i. Has the ecological character of the Ramsar Site (including applicable Criteria) changed since the previous RIS?	No

(Update) Optional text box to provide further information

It has the extension of the similar landscape as before, with similar ecosystem.

2.2 - Site location

2.2.1 - Defining the Site boundaries

b) Digital map/image

<1 file(s) uploaded>

Former maps	0

Boundaries description

The boundary is based on that of the Lower Maruyama River National Wildlife Protection Area. The site includes the non-designated portion of the Maruyama River site and lies within the boundaries of the San'inkaigan National Park.

(Tai district)
The boundary is the same as that of the Tai district in the Lower Maruyama River Special Protection Zone, which lies within the Lower Maruyama River National Wildlife Protection Area.

(Kehi and Hatagami districts)
The boundary is the same as that of the Kehi and Hatagami districts in the Lower Maruyama River Special Protection Zone, which lie within the Lower Maruyama River National Wildlife Protection Area.

2.2.2 - General location

a) In which large administrative region does the site lie? Hyogo Prefecture

b) What is the nearest town or population centre? Toyooka City

2.2.3 - For wetlands on national boundaries only

a) Does the wetland extend onto the territory of one or more other countries? Yes ○ No ◉

b) Is the site adjacent to another designated Ramsar Site on the territory of another Contracting Party? Yes ○ No ◉

2.2.4 - Area of the Site

Official area, in hectares (ha): 1094

Area, in hectares (ha) as calculated from GIS boundaries: 1107.78

2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Udvardy's Biogeographical Provinces	2.14.5 Manchu Japanese mixed forest

3 - Why is the Site important?

3.1 - Ramsar Criteria and their justification

<no data available>

☑ Criterion 2 : Rare species and threatened ecological communities

☑ Criterion 8 : Fish spawning grounds, etc.

Justification

Due to its gradual riverbed slope and its wide brackishwater area, the Maruyama River area is an ideal habitat for various species of fish, such as migratory fish, primary freshwater fish, which spend all of their life in freshwater, and peripheral freshwater fish, which spends time in both brackish water and the sea. In addition, the site is one of the few water systems in Japan that keep an ecological network, in the absence of dams in the mainstream of the middle and lower reaches of the Maruyama River that can block the run-up of migratory fish. Furthermore, the extensive rice paddy environment along the main stream and tributaries of the Maruyama River lead to an environment in which the river and the surrounding rice paddies together serve as a nursery and spawning grounds for fish. Among the pure freshwater fish species found in this site are the Northern Medaka (Oryzias sakaizumii), the Torrent Reddish Bulhead (Liobagrus reinii, rated Vulnerable in the National Red List and the Yoshinobori Goby (Bandedfin type; Rhinogobius sp., rated Near Threatened in the National Red List), which is a landlocked fish species found for the first time in the Maruyama River. The migratory fish species found in this site include the Fourspine Sculpin (Cottus kazika, Vulnerable: National Red List), the Japanese Three-spined Stickleback (Gasterosteus nipponicus, Threatened Local Population: National Red List), and the Japanese Eel (Anguilla japonica, Endangered: National Red List), among others. As for brackish water fish and peripheral freshwater fish, a variety of fish species have been recorded, including gobies such as the Kubo Goby (Gymnogobius scrobiculatus, Endangered: National Red List) and the Edo Goby (Gymnogobius macrognathos, Vulnerable: National Red List), among others. The Tajima Region, where the proposed Ramsar site is located, is also a unique area in terms of biogeography. This is because of crossbreeding of two species of Medaka fish commonly observed in this area: the Northern Medaka (Oryzias sakaizumii) and the Southern Medaka (O. latipes). The population of Northern Medaka in this crossbreeding belt has been found with mtDNA of Southern Medaka, while the latter in the Maruyama River was found with the mtDNA of Northern Medaka (Sakaizumi, 1990). As such, the region can be considered important from the standpoint of research on speciation and ecology of freshwater fish species.

3.2 - Plant species whose presence relates to the international importance of the site

<no data available>

3.3 - Animal species whose presence relates to the international importance of the site

Phylum	Scientific name	Common name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
			2	4	6	9	3	5	7	8								
Birds																		
CHORDATA/ AVES	*Ciconia boyciana*	Oriental Stork; Oriental White Stork	☑	☐	☐	☐	☐	☐	☐	☐				EN	☑	☑	Critically Endangered (CR) in the National Red List, National endangered species	
Fish, Mollusc and Crustacea																		

Phylum	Scientific name	Common name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
			2	4	6	9	3	5	7	8								
CHORDATA/ ACTINOPTERYGII	*Anguilla japonica*	Japanese eel; Japanese eel; Japanese eel	☑	☐	☐	☐	☐	☐	☐	☑				EN	☐	☐	Endangered (EN) in the National Red List	A Report on the Monitoring Work of the Biota in the Maruyama River (May 2016)
CHORDATA/ ACTINOPTERYGII	*Cobitis minamorii*	Sanin Small Stripe Spined Loach	☑	☐	☐	☐	☐	☐	☐	☑					☐	☐	Endangered (EN) in the National Red List	Miyanishi M., Tokuda R., Sagawa S., Ezaki Y. and Hosoya K. (2016)
CHORDATA/ ACTINOPTERYGII	*Cottus kazika*	Fourspine sculpin	☑	☐	☐	☐	☐	☐	☐	☑					☐	☐	Vulnerable (VU) in the National Red List	A Report on the Monitoring Work of the Biota of the Maruyama River (May 2016), Support Business for Reintroduction of Ciconia boyciana (Oriental White Stork) 2010, (Overall evaluation survey of the Stork habitat in the lower Maruyama River) Report
CHORDATA/ ACTINOPTERYGII	*Eutaeniichthys gilli*	String Like Goby	☐	☐	☐	☐	☐	☐	☐	☑					☐	☐		National Red List NT. / Support Business for Reintroduction of Ciconia boyciana 2010 (Overall evaluation of the Stork habitat in the lower Maruyama River) Report
CHORDATA/ ACTINOPTERYGII	*Gymnogobius macrognathos*	Edo Goby	☑	☐	☐	☐	☐	☐	☐	☑					☐	☐	Vulnerable (VU) in the National Red List	A Report on the Monitoring Work of the Biota in the Maruyama River (May 2016)
CHORDATA/ ACTINOPTERYGII	*Gymnogobius scrobiculatus*	Kubo Goby	☑	☐	☐	☐	☐	☐	☐	☑					☐	☐	EN in the National Red List	Support Business for Reintroduction of Ciconia boyciana 2010 (Overall evaluation survey of the Stork habitat in the Lower Maruyama River) Report
CHORDATA/ CEPHALASPIDOMORPHI	*Lethenteron camtschaticum*	Southern Group of Japanese Brook Lamprey	☑	☐	☐	☐	☐	☐	☐	☑				LC	☐	☐	Vulnerable (VU) in the National Red List	A Report on the Monitoring Work of the Biota in the Maruyama River (May 2016)
CHORDATA/ ACTINOPTERYGII	*Leucopsarion petersii*	Ice goby	☑	☐	☐	☐	☐	☐	☐	☑					☐	☐	Vulnerable (VU) in the National Red List	'MW of Biota 2016', A Report on the Monitoring Survey Work of the River Environment of the Maruyama River - April 2012 ('Survey Work of River 2012'), 'MW of River 2015', 'Support Business 2010'
CHORDATA/ ACTINOPTERYGII	*Liobagrus reinii*	Torrent Reddish Bulhead	☑	☐	☐	☐	☐	☐	☐	☑					☐	☐	Vulnerable (VU) in the National Red List	A Report on the Monitoring Work of the Biota of the Maruyama River (May 2016)
CHORDATA/ ACTINOPTERYGII	*Misgurnus anguillicaudatus*	Weather loach; Weather loach	☐	☐	☐	☐	☐	☐	☐	☑				LC	☐	☐	NT in the National Red List	A report on the Monitoring Work of the Biota of the Maruyama River (May 2016), Reports on the Monitoring Survey Work of the Nature Restoration of the Maruyama River (April 2011, July 2013), Reports on the Monitoring Survey of the River Environment of the Maruyama River (April 2012, June 2015), Support Business for Reintroduction of Ciconia boyciana 2010, A Report on Biome Monitoring Work for Creating Stork Habitat, FY2015
CHORDATA/ ACTINOPTERYGII	*Oncorhynchus masou masou*	Yamame	☐	☐	☐	☐	☐	☐	☐	☑					☐	☐	National Red List NT.	A Report on the Monitoring Work of the River Environment of the Maruyama River (June 2015)
CHORDATA/ ACTINOPTERYGII	*Oryzias sakaizumii*	Northern Medaka	☑	☐	☐	☐	☐	☐	☐	☑					☐	☐	Vulnerable (VU) in the National Red List	Asai, T, H. Senou and K. Hosoya (2011)
CHORDATA/ ACTINOPTERYGII	*Sarcocheilichthys variegatus variegatus*	River Higai Gudgeon	☐	☐	☐	☐	☐	☐	☐	☑					☐	☐	National Red List NT	A Report on the Monitoring Work of the Biota in the Maruyama River (May 2016), Reports on the Monitoring Survey Work of the Nature Restoration of the Maruyama River (April 2011, July 2013), Reports on the Monitoring Survey Work of the River Environment of the Maruyama River (April 2012, June 2015), A Report on the Biome Monitoring Work for Creating Stork Habitat (FY2015)

Phylum	Scientific name	Common name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
			2	4	6	9	3	5	7	8								
CHORDATA / ACTINOPTERYGII	*Tanakia lanceolata*	Slender Bitterling	☐	☐	☐	☐	☐	☐	☐	☑					☐	☐	NT in the National Red List	A Report on the Monitoring Survey Work of River Environment in the Maruyama River (April 2012, June 2015), Support Business for Reimtroduction of Ciconia boyciana 2010 (habitat survey of the stork in the Lower Maruyama River) Report, A Report on Biome Monitoring Work for Creating Stork Habitat (FY2015)
Others																		
CHORDATA / ACTINOPTERYGII	*Gymnogobius castaneus*	Rosary Goby	☐	☐	☐	☐	☐	☐	☐	☑					☐	☐	NT in the National Red List	A Report on the Monitoring Work of the Biota in the Maruyama River (May 2016), A Report on the MOnitoring Survery Work of the Nature Restoration of the Maruyama River (April 2011), A Report on the Monitoring Work of the Environment of the Maruyama River (June 2015), Support Business for Reintroduction of Ciconia boyciana 2010 (Overall evaluation of the Stork habitat in the Lower Maruyama River) Report, A Report on Biome Monitoring Work for Creating Stork Habitat FY2015
ARTHROPODA / INSECTA	*Mortonagrion hirosei*	Four-spot Midget	☑	☐	☐	☐	☐	☐	☐	☐				NT	☐	☐	Endangered (EN) in the National Red List	

1) Percentage of the total biogeographic population at the site

Criteria 8:
1) CHORDATA/Osteichthyes, Gasterosteus nipponicus, Japanese Three-spined Stickleback, Nat'l Red List Threatened Local Population (LP).
2) CHORDATA/Osteichthyes, Cottus sp., Japanese Amphidromous Sculpin (Medium-sized egg type), Nat'l Red List EN, A Report on the Monitoring Work of the Biota of the Maruyama River (May 2016), Support Business for Reintroduction of Ciconia boyciana 2010 (Overall evaluation survey of the Atork habitat in the Lower Maruyama River) Report.
3) CHORDATA/Osteichthyes, Rhinogobius sp.BF, Yoshinobori Goby (Bandedfin type), Nat'l Red List NT, A Report on the Monitoring Work of the Biota of the Maruyama River (May 2016), A Report on the Monitoring Survey of the River Environment of the Maruyama River (April 2012), A Report on the MOnitoring Survey Work of the Nature Restoration of the Maruyama River (July 2013), A Report on the Monitoring Work of the River Environment of the Maruyama River (June 2015).

3.4 - Ecological communities whose presence relates to the international importance of the site

<no data available>

4 - What is the Site like? (Ecological character description)

4.1 - Ecological character

As a successful reintroduction site of the endangered Oriental White Stork, this site forms an environment with a diverse biota that supports the stork population.
The Lower Maruyama River is characterized by a gradual riverbed slope and a brackish water area that stretches approximately 16km from the estuary. This has brought about a wide variety of fish species, with 31 primary freshwater fish species, 22 migratory fish species and 27 brackish/sea water fish species (totalling 80 fish species including 4 alien and 1 breeding species) seen on record.
The Tai district is a community inspired by an observation of the endangered Oriental White Stork in April 2008, which spurred conservation efforts by the local community, non-profit organizations and the municipal government, resulting in the district's diverse biota of today. A diverse array of species adapted to forests, rivers as well as still water of the lowlands -- including 41 species of dragonflies -- has been observed in the area.
The Toshima Wetland for Hachigoro is a constructed wetland comprising of freshwater and brackish water zones. The connection of wetlands to the adjoining sea, rivers and rice paddies (2.5ha freshwater and 0.7ha brackish water wetland) has led to the creation of a diverse ecosystem. The site is recorded as home to 48 fish species including the Fourspine Sculpin (Cottus kazika) which is categorized as Vulnerable in the National Red List.
The Kaya Wetland is a large-scale wetland constructed as a result of a nature area restoration project, conducted by the Ministry of Land, Infrastructure, Transport and Tourism of Japan. Various types of wetlands have been constructed as a reproduction area for fish and foraging ground for storks.
An organic agricultural system that supports the endangered storks is widely employed in the rice paddies of districts of Tachino, Kajiwara, Yuruji, Kodani, Nakanotani district, Kurami, Izu and Yasura. These rice paddies are also home to a large number of organisms including fish such as the Northern Medaka (Oryzias sakaizumii, categorized as Vulnerable), and Slender Bitterling (Tanakia lanceolate, categorized as Near Threatened), which are found in the agricultural water channels.
Given these characteristics, the Ramsar site serves as an important habitat for birds, with 172 species observed in the area, including the endangered Oriental White Storks which have been reintroduced via local community efforts.

4.2 - What wetland type(s) are in the site?

Marine or coastal wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
E: Sand, shingle or pebble shores		2		
F: Estuarine waters		1		

Inland wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
Fresh water > Flowing water >> M: Permanent rivers/ streams/ creeks	The Maruyama River, The Izushi River	1	587	

Human-made wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
2: Ponds		2		
3: Irrigated land	Toshima Wetland, Kaya Wetland	1	18.2	

(ECD) Habitat connectivity	The Maruyama River, which has a brackish water zone that stretches more than 16km from the estuary, along with a gradual riverbed slope, is the water source of the Toshima Wetland for Hachigoro, Kaya Wetland, and its surrounding rice paddies.

4.3 - Biological components

4.3.1 - Plant species

Other noteworthy plant species

Scientific name	Common name	Position in range / endemism / other
Azolla filiculoides filiculoides		(Azolla japonica)
Monochoria korsakowii	Mizu-aoi	IUCN Red List LC, National Red List NT
Penthorum chinense	Chinese Penthorum	Near Threatened (NT) in the National Red List, The organism grows in moist habitats such as wetlands, marshes and fallow rice paddies throughout Japan and other parts of east Asia, Loss of habitats such as wetlands in the lower reaches of rivers/estuari
Persicaria erectominor trigonocarpa		Near Threatened (NT) in the National Red List, The organism grows in sunny/ moist grasslands to partially shaded wetland forests. Development in wetlands and natural succession can be drivers of population reduction.
Salvia plebeia		Near Threatened (NT) in the National Red List
Sparganium erectum		NT in the National Red List
Veronica undulata		Near Threatened (NT) in the National Red List

Invasive alien plant species

Scientific name	Common name	Impacts	Changes at RIS update
Coreopsis lanceolata	Lance-leaved Coreopsis	Actually (minor impacts)	No change
Myriophyllum aquaticum	Parrotfeather Watermilfoil / Parrot Feather	Actually (minor impacts)	No change
Sicyos angulatus	Burr Cucumber / Star-cucumber	Actually (minor impacts)	No change
Veronica anagallis-aquatica	Water speedwell	Actually (minor impacts)	No change

Optional text box to provide further information

** 'Persicaria erectominor trigonocarpa' is supposed to be 'Persicaria erectominor var. trigonocarpa'

4.3.2 - Animal species

Other noteworthy animal species

Phylum	Scientific name	Common name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
CHORDATA/AVES	*Pandion haliaetus*	Osprey				Near Threatened (NT) in the National Red List
MOLLUSCA/BIVALVIA	*Corbicula japonica*	Japanese Freshwater Clam				NT in the National Red List, The organism resides on gravel or sandy mud beds with gentle water flow in upper or middle reaches of estuaries with brackish water, in territory stretching from the northern island of Hokkaido to the southern island of Kyushu
CHORDATA/ACTINOPTERYGII	*Luciogobius guttatus*	Worm Goby				Amphydromous fish
CHORDATA/AVES	*Accipiter gentilis fujiyamae*	Northern Goshawk				Near Threatened (NT) in the National Red List
CHORDATA/AVES	*Accipiter nisus nisosimilis*	Eurasian Sparrowhawk				Near Threatened (NT) in the National Red List
CHORDATA/ACTINOPTERYGII	*Acheilognathus rhombeus*	Kanehira Bitterling				Rank B in the Red List of Hyogo Prefecture, Primary freshwater fish
ARTHROPODA/INSECTA	*Actias gnoma*					Near Threatened (NT) in the National Red List
CHORDATA/AVES	*Aix galericulata*	Mandarin Duck				IUCN Red List LC. National Red List Data Dificient (DD).
ARTHROPODA/INSECTA	*Asiagomphus pryeri*					Near Threatened (NT) in the National Red List
CHORDATA/AVES	*Calidris alpina*	Dunlin				IUCN Red List LC, National Red List NT. / Evaluation of Maruyama River Nature Restoration Projects (3) Work Report.
ARTHROPODA/INSECTA	*Calopteryx japonica*					Near Threatened (NT) in the National Red List
ARTHROPODA/INSECTA	*Carabus tuberculosus*					Near Threatened (NT) in the National Red List
MOLLUSCA/GASTROPODA	*Cipangopaludina japonica*	Japanese Mystery Snail				Near Threatened (NT) in the National Red List
ARTHROPODA/INSECTA	*Cybister brevis*					Near Threatened (NT) in the National Red List
ARTHROPODA/INSECTA	*Eilema fuscodorsalis*					Near Threatened (NT) in the National Red List
MOLLUSCA/GASTROPODA	*Fluviocingula elegantula*					Near Threatened (NT) in the National Red List
CHORDATA/ACTINOPTERYGII	*Gymnogobius urotaenia*	Floating Goby				Amphydromous fish
CHORDATA/ACTINOPTERYGII	*Lateolabrax japonicus*	Japanese Seabass				Amphydromous fish
CHORDATA/ACTINOPTERYGII	*Mugil cephalus*	Flathead Grey Mullet				Peripheral freshwater fish
ARTHROPODA/INSECTA	*Nicrophorus japonicus*					Near Threatened (NT) in the National Red List
CHORDATA/ACTINOPTERYGII	*Nuchequula nuchalis*	Spotnape Ponyfish				Peripheral freshwater fish
CHORDATA/ACTINOPTERYGII	*Omobranchus punctatus*	Japanese Blenny				Peripheral freshwater fish

Phylum	Scientific name	Common name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
CHORDATA/ACTINOPTERYGII	*Oncorhynchus keta*	Chum Salmon				Data Deficient in the Red List of Hyogo Prefecture, Anadromous fish
CHORDATA/AMPHIBIA	*Pelophylax nigromaculatus*	Black Spotted Pond Frog				National Red List NT
CHORDATA/ACTINOPTERYGII	*Plecoglossus altivelis altivelis*	Ayu				Amphydromous fish
CHORDATA/ACTINOPTERYGII	*Redigobius bikolanus*	Dwarf Speckled Goby				Data Deficient in the Red List of Hyogo Prefecture, Suzuki and Tyon (1996), Amphydromous fish (seawater form)
CHORDATA/ACTINOPTERYGII	*Rhinogobius nagoyae*	Yoshinobori Goby (Cross band type)				Amphydromous fish
CHORDATA/ACTINOPTERYGII	*Rhinogobius similis*	Paradise Goby				Amphydromous fish
CHORDATA/ACTINOPTERYGII	*Rhynchopelates oxyrhynchus*	Sharpbeak Terapon				Peripheral freshwater fish
MOLLUSCA/GASTROPODA	*Stenothyra edogawensis*					Near Threatened (NT) in the National Red List. This species inhabits the shorelines of Mangoku-ura and Wakasa Bay, Miyagi, to Kyushu. It crawls on sandy/soft mud layers of tidal flats or in the middle/low intertidal zones in estuaries that flows into the
CHORDATA/ACTINOPTERYGII	*Takifugu poecilonotus*	Finepatterned Puffer				Peripheral freshwater fish
CHORDATA/AVES	*Vanellus cinereus*	Grey-headed Lapwing				IUCN Red List LC, National Red List DD. / Evaluation of Maruyama River Nature Restoration Projects (3) Work Report.

Invasive alien animal species

Phylum	Scientific name	Common name	Impacts	Changes at RIS update
CHORDATA/ACTINOPTERYGII	*Gambusia affinis*	Topminnow	Actually (minor impacts)	No change
CHORDATA/ACTINOPTERYGII	*Lepomis macrochirus*	Bluegill	Actually (minor impacts)	No change
CHORDATA/ACTINOPTERYGII	*Micropterus salmoides*	Largemouth Bass	Actually (minor impacts)	No change
CHORDATA/MAMMALIA	*Myocastor coypus*	Coypu/Nutria	Actually (minor impacts)	No change
CHORDATA/MAMMALIA	*Procyon lotor*	Common Raccoon	Actually (minor impacts)	No change

Optional text box to provide further information

The followings are other noteworthy animal species that are not found on dropdown list of Scientific name, or whose distributions in the wetland are not yet clear and requires further monitoring.
1) CHORDATA/Mammalia; Mustela sibirica coreana, Siberian Weasel, National Red List NT
2) CHORDATA/Osteichthyes; Eutaeniichthys gilli, String Like Goby, National Red List NT, Rank C in the Red List of Hyogo Prefecture.
3) ARTHOROPODA/Insecta; Prodaticus bowringii, National Red List NT. Helochares nipponicus, National Red List NT. Hydrochara affinis, National Red List Data Deficient (DD). Hydrophilus acuminatus, National Red List NT. Polistes Japonicus Japonicus, National Red List DD. Vespa crabro flavofasciata, Nat'l Red List DD. Appasus japonicus, Ferocious Water Bug, National Red List NT. Eurema laeta betheseba, Spotless Grass Yellow. Graphoderus adamsii.
4) MOLLUSCA/Gastropoda; Pyramidellidae gen. A. & sp. A, National Red List NT. Radix auricularia japonica, Pond Snail, National Red List NT. Stenothyra japonica.
5) MOLLUSCA/Bivalvia; Nitidotellina hokkaidoensis; National Red List NT. Trapezium liratum, Trapezium Clam, National Red List NT, The organism resides in brackish water of estuaries from the south of Tsugaru Paninsula towards the island of Taiwan and the mainland. Sinanodonta calipygos, National Red List NT.
6) CHORDATA/Eeptilia; Mauremys japonica, Japanese Pond Turtle, National Red List NT.
7) CHORDATA/Aves; Falco peregrinus japonensis, Peregrine Falcon. Pericrocotus divaricatus, Ashy Minivet. Sterna albifrons sinensis, Little Tern.

Below is 'Invasive alien animal species' that cannot be found in the dropdown list of Scientific name.
1) CHORDATA/Amphibia; Rana catesbeiana, Common Bullfrog, Impact: Actually (minor impacts)

4.4 - Physical components

4.4.1 - Climate

Climatic region	Subregion
C: Moist Mid-Latitude climate with mild winters	Cfa: Humid subtropical (Mild with no dry season, hot summer)

Because the site is located in a basin, it is hot and humid during the summer, while winters have heavy snowfall, with mostly cloudy, and frequently foggy, weather throughout the year (annual precipitation of 2,525mm, average temperature of 14.4°C, monthly mean temperature range of 3.5 to 27.4°C)

4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres): 0

a) Maximum elevation above sea level (in metres): 23

Entire river basin ☐
Upper part of river basin ☐
Middle part of river basin ☐
Lower part of river basin ☑
More than one river basin ☐
Not in river basin ☐
Coastal ☐

Please name the river basin or basins. If the site lies in a sub-basin, please also name the larger river basin. For a coastal/marine site, please name the sea or ocean.

Maruyama River water system

4.4.3 - Soil

Organic ☑

(Update) Changes at RIS update: No change ◉ Increase ○ Decrease ○ Unknown ○

No available information ☐

Are soil types subject to change as a result of changing hydrological conditions (e.g., increased salinity or acidification)? Yes ○ No ◉

Please provide further information on the soil (optional)

The soil in the plain consists of gravel, sand, silt and mud. The Maruyama River has extensive granite on the right bank and sedimentary rocks such as sandstone and conglomerate stone in the upper reaches as well as on the left bank.

4.4.4 - Water regime

Water permanence

Presence?	Changes at RIS update
Usually permanent water present	

Source of water that maintains character of the site

Presence?	Predominant water source	Changes at RIS update
Water inputs from surface water	☑	No change
Marine water	☐	No change
Water inputs from rainfall	☐	No change
Water inputs from groundwater	☐	No change

Water destination

Presence?	Changes at RIS update
Marine	No change

Stability of water regime

Presence?	Changes at RIS update
Water levels fluctuating (including tidal)	No change

Please add any comments on the water regime and its determinants (if relevant). Use this box to explain sites with complex hydrology.

Because of the gradual slope of the riverbed in the lower reaches of Maruyama River, the brackish water zone, mixed with fresh water and sea water, stretches approximately 16km from the estauary. As the water from the 130,000ha catchment basin drains from a single common outlet to the Sea of Japan, water levels of the river and rice paddies tend to fluctuate sharply from flooding caused by weather incidents such as typhoons, overflowing into the surrounding wetlands.

4.4.5 - Sediment regime

Sediment regime is highly variable, either seasonally or inter-annually ☑

(Update) Changes at RIS update: No change ◉ Increase ○ Decrease ○ Unknown ○

Sediment regime unknown ☐

Please provide further information on sediment (optional):

Sediment yield tends to fluctuate widely seasonally and interannually, due to large volumes of sand and silt carried into the riverbed and estuaries from floods caused by typhoons.

4.4.6 - Water pH

Circumneutral (pH: 5.5-7.4) ☑

(Update) Changes at RIS update: No change ◉ Increase ○ Decrease ○ Unknown ○

Alkaline (pH>7.4) ☑

(Update) Changes at RIS update: No change ◉ Increase ○ Decrease ○ Unknown ○

Unknown ☐

Please provide further information on pH (optional):

pH of Maruyama River from January 2012 to January 2018:
-Minato-oohashi (bridge -- 1.0 km upstream from the estuary: 7.5 – 8.2 (annual average 7.9)
-Yuuwa-bashi (bridge) -- 5.0 km upstream from the estuary: 7.4 – 8.3 (annual average 7.9)
-Tachino-oohashi (bridge) -- 13.0 km upstream from the estuary: 7.3 – 8.4 (annual average 7.7)

4.4.7 - Water salinity

Fresh (<0.5 g/l) ☑

(Update) Changes at RIS update: No change ◉ Increase ○ Decrease ○ Unknown ○

Mixohaline (brackish)/Mixosaline (0.5-30 g/l) ☑

(Update) Changes at RIS update: No change ◉ Increase ○ Decrease ○ Unknown ○

Unknown ☐

Please provide further information on salinity (optional):

Due to the gradual slope of the riverbed in the lower reaches, Maruyama River has approx. 16km long brackish water zone, composed of a mixture of fresh water and sea water, as measured from the estuary. The annual average salinity concentration at the 13km point from the estauary is about 11% of the sea concentration (about 32g/l). Between May and December each year, the salinity of the waters tends to rise, leading to the formation of brackish water zones in the area. However, salinity tends to decline between January and April, leading to mostly freshwater conditions, resulting in large seasonal variation in salinity in the area. Furthermore, more than 16km upstream from the estuary and in surrounding rice paddies, the environment tends to consist mostly of fresh water.
Salinity concentration of Maruyama River January 2012-January 2018:
- Minato-oohashi: 1km upstream from the estuary: 0.25-32.13g/l (annual avg. 17.1 g/l)
- Yuuwa-bashi: 5km upstream from the estuary: 0.06-32.3g/l (

4.4.8 - Dissolved or suspended nutrients in water

Unknown ☑

Please provide further information on dissolved or suspended nutrients (optional):

Total nitrogen measured (No environmental quality standard):
-Minato-oohashi: 1km upstream from the estuary: 0.17-0.78 mg/L (annual avg. 0.51 mg/L)
-Yuuwa-bashi: 5km upstream from the estuary: 0.25-0.85 mg/L (annual avg. 0.55 mg/L)
-Tachino-oohashi: 13km upstream from the estuary: 0.35-1.01 mg/L (annual avg. 0.66 mg/L)

Total phosphorus (No environmental quality standard):
-Minato-oohashi: 1km upstream from the estuary: 0.012-0.047 mg/L (annual avg. 0.034 mg/L)
-Yuuwa-bashi: 5km upstream from the estuary: 0.018-0.067 mg/L (annual avg. 0.044 mg/L)
-Tachino-oohashi: 13km upstream from the estuary: 0.019-0.10 mg/L (annual avg. 0.042 mg/L)

Biochemical oxygen demand (BOD) (Environmental quality standard class B: 3 mg/L or less):
-Minato-oohashi: 1km upstream from the estuary: 0.1-2.7 mg/L (annual avg. 1.2 mg/L)
-Yuuwa-bashi: 5km upstream from the estuary: 0.1-6.4 mg/L (annual avg. 1.9 mg/L)
-Tachino-oohashi: 13km upstream from the estuary: 0.1-7.0 mg/L (annual avg. 1.3 mg/L)

4.4.9 - Features of the surrounding area which may affect the Site

Please describe whether, and if so how, the landscape and ecological characteristics in the area surrounding the Ramsar Site differ from the site itself: i) broadly similar ○ ii) significantly different ◉

Surrounding area has greater urbanisation or development ☑

Surrounding area has higher human population density ☑

Surrounding area has more intensive agricultural use ☐

Surrounding area has significantly different land cover or habitat types ☑

Please describe other ways in which the surrounding area is different:

Maruyama River is surrounded by wetlands, rice paddies, sandbars and woodlands and hills along the river. Residential area has been developed in the plain fields surrounding the site.

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Food for humans	Sustenance for humans (e.g., fish, molluscs, grains)	High
Fresh water	Water for irrigated agriculture	High
Biochemical products	Extraction of material from biota	Low

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Maintenance of hydrological regimes	Groundwater recharge and discharge	Low
Maintenance of hydrological regimes	Storage and delivery of water as part of water supply systems for agriculture and industry	High
Biological control of pests and disease	Support of predators of agricultural pests (e.g., birds feeding on locusts)	High
Hazard reduction	Flood control, flood storage	High

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Recreational hunting and fishing	Low
Recreation and tourism	Water sports and activities	Low
Recreation and tourism	Picnics, outings, touring	Low
Scientific and educational	Important knowledge systems, importance for research (scientific reference area or site)	Medium
Scientific and educational	Educational activities and opportunities	High

Supporting Services

Ecosystem service	Examples	Importance/Extent/Significance
Biodiversity	Supports a variety of all life forms including plants, animals and microorganizms, the genes they contain, and the ecosystems of which they form a part	High

Within the site: About 80,000

Outside the site: About 140,000

Have studies or assessments been made of the economic valuation of ecosystem services provided by this Ramsar Site? Yes ◉ No ○ Unknown ○

Where economic studies or assessments of economic valuation have been undertaken at the site, it would be helpful to provide information on where the results of such studies may be located (e.g. website links, citation of published literature):

https://ci.nii.ac.jp/naid/120005441121

4.5.2 - Social and cultural values

i) the site provides 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 ☑

Description if applicable

Since 2003, Toyooka City and Hyogo Prefecture, in partnership with entities such as the Japan Agricultural Cooperatives (JA), have been promoting an organic agricultural system that supports the endangered storks. The rice farming method aims to create a stork-friendly habitat by reducing the use of agricultural chemicals in order to spur growth of organisms in rice paddies. The method avoids applying agricultural chemicals (or reduces their use by 75%) and chemical fertilizers during the cultivation period, and involves purposefully delaying the mid-term drainage period from the typical late June to early July period (thereby encouraging the growth of frogs and dragonflies in the paddies by avoiding clashing with the period of frog metamorphoses from tadpoles and dragonflies turning from larvas) and flooding the rice paddies during winter or a month before planting (thereby encouraging the growth of tubifix worms and the accumulation of fine-grained mud, which controls the growth of weeds). This farming method has been employed in 407.1ha of rice paddies (approximately 14.6% of all) in the city, as of 2017.

ii) the site has exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland ☐

iii) the ecological character of the wetland depends on its interaction with local communities or indigenous peoples ☐

iv) 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 ☑

Description if applicable

Matsugo-no-Mizu (Water of the Last Moment) from the Toshima Wetland for “Hachigoro”
The Toshima Wetland for “Hachigoro” has a water spring that originates from the the local community as a sacred water source preserved for the “last moment” of a person’s life. The spring water also serves as an important spawning site for adjacent local woodlands and hillls. The water has historically been protected by migatory fish, such as the Japanese Three-spined Stickleback (Gasterosteus nipponicus).

4.6 - Ecological processes

<no data available>

5 - How is the Site managed? (Conservation and management)

5.1 - Land tenure and responsibilities (Managers)

5.1.1 - Land tenure/ownership

Public ownership

Category	Within the Ramsar Site	In the surrounding area
Local authority, municipality, (sub)district, etc.	☑	☑
National/Federal government	☑	☑
Provincial/region/state government	☑	☑

Private ownership

Category	Within the Ramsar Site	In the surrounding area
Other types of private/individual owner(s)	☑	☑
Cooperative/collective (e.g., farmers cooperative)	☐	☑

Provide further information on the land tenure / ownership regime (optional):

The Toshima Wetland for “Hachigoro”
The Area: Public water surface 587ha, National land 1ha, Public land 39ha, Private land 822ha

Territorial Jurisdiction:
-The Ministry of Land, Infrastructure, Transport and Tourism of Japan
(river area in the section designated by the Minister of Land, Infrastructure, Transport and Tourism)
-Hyogo Prefecture (prefectural roads)
-Toyooka City (The Toshima Wetland for “Hachigoro”)

Functional Jurisdiction:
-The Ministry of the Environment of Japan (national park, national wildlife protection area)
-The Ministry of Land, Infrastructure, Transport and Tourism of Japan
(river area in the section designated by the Minister of Land, Infrastructure, Transport and Tourism

5.1.2 - Management authority

Please list the local office / offices of any agency or organization responsible for managing the site: Kinki Regional Environment Office, Ministry of the Environment of Japan

Provide the name and title of the person or people with responsibility for the wetland: Akitoshi Kawamoto, Director General of Kinki Regional Environment Office

Postal address: 8F, OMM, 1-7-31 Otemae, Chuo-ku, Osaka-shi, Osaka Prefecture, 540-6591, JAPAN

E-mail address: reo-kinki@env.go.jp

5.2 - Ecological character threats and responses (Management)

5.2.1 - Factors (actual or likely) adversely affecting the Site’s ecological character

Transportation and service corridors

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Roads and railroads	Medium impact	Medium impact	☐	No change	☑	No change

Natural system modifications

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Dams and water management/use	Medium impact	Medium impact	☐	No change	☑	No change

Pollution

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Household sewage, urban waste water	Medium impact	Medium impact	☑	No change	☐	No change

Climate change and severe weather

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Storms and flooding	Medium impact	Medium impact	☑	No change	☐	No change

5.2.2 - Legal conservation status

Global legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Other global designation	San'in Kaigan Global Geopark	http://sanin-geo.jp/	whole

National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Class A River (Specified waterways of special importance protected by the government)	Maruyama River, Maruyama River Water System	https://www.kkr.mlit.go.jp/river/kasen/maruyamagawa.html	partly
National Park	San'inkaigan National Park	https://www.env.go.jp/park/sanin /	partly
National Wildlife Protection Area	Lower Maruyama River National Wildlife Protection Area		partly
Special Protection Zone of National Wildlife Protection Area	Lower Maruyama River Special Protection Zone		partly

Non-statutory designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Other non-statutory designation	500 Important Wetlands in Japan "Lower Maruyama River and the surrounding rice paddies"	http://www.env.go.jp/nature/important_wetland/wetland/w349.html	partly

5.2.3 - IUCN protected areas categories (2008)

Ia Strict Nature Reserve ☐

Ib Wilderness Area: protected area managed mainly for wilderness protection ☐

II National Park: protected area managed mainly for ecosystem protection and recreation ☐

III Natural Monument: protected area managed mainly for conservation of specific natural features ☐

IV Habitat/Species Management Area: protected area managed mainly for conservation through management intervention ☑

V Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation ☑

VI Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems ☑

5.2.4 - Key conservation measures

Legal protection

Measures	Status
Legal protection	Implemented

Species

Measures	Status
Threatened/rare species management programmes	Implemented
Reintroductions	Implemented
Control of invasive alien plants	Implemented
Control of invasive alien animals	Implemented

Human Activities

Measures	Status
Research	Partially implemented
Communication, education, and participation and awareness activities	Implemented
Harvest controls/poaching enforcement	Implemented
Fisheries management/regulation	Implemented
Regulation/management of wastes	Implemented
Management of water abstraction/takes	Implemented

5.2.5 - Management planning

Is there a site-specific management plan for the site? Yes

Has a management effectiveness assessment been undertaken for the site? Yes ◉ No ○

If the site is a formal transboundary site as indicated in section Data and location > Site location, are there shared management planning processes with another Contracting Party? Yes ○ No ◉

Please indicate if a Ramsar centre, other educational or visitor facility, or an educational or visitor programme is associated with the site:

Facilities Established for Research Purposes
Toshima Wetland for “Hachigoro”: The center was constructed by Toyooka City in 2008 to conduct wetland management and operations, environmental education and interpretation for visitors.
Other Educational Activities
Activities in and around the wetland:
1. Volunteering work to help maintain robust wetland habitats for storks (40 activities a year, for approximately 320 people).
2. For children in/ out of the city, provide hands-on learning experience on the environment, regarding storks and wetland conservation (Held 31 times a year for approximately 860 people).
3. Created biotope rice paddies out of fallow rice fields --- now actively used for childrens’ monitoring organisms.

URL of site-related webpage (if relevant): http://www.ramsarsite.jp/jp_39a.html

5.2.6 - Planning for restoration

Is there a site-specific restoration plan? No need identified

5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Animal species (please specify)	Implemented
Water regime monitoring	Implemented
Birds	Implemented

-Scientific Study: Analysis of ecology and behaviour of Ciconia boyciana (Oriental White Stork) (Hyogo Park of the Oriental White Stork)

-Survey of the behaviour of Ciconia boyciana (Oriental White Stork) (Ministry of the Environment)

-Survey of the habitats of Ciconia boyciana (Oriental White Stork) (Ministry of the Environment)

-Monitoring survey of biota for the creation of habitats of Ciconia boyciana (Oriental White Stork) (Toyooka City)

-Field patrol in the Lower Maruyama River National Wildlife Protection Area (Ministry of the Environment): Conducted monitoring of mainly birds in the protected area

-Monitoring survey based on the nature restoration plan of the Maruyama River water system (Ministry of Land, Infrastructure, Transport and Tourism of Japan)
Implementation of focused monitoring program following the creation of wetlands (survey of biota: flora, fish, benthos, birds, and the survey of the physical environment : water quality, topography) and the national census of water basins

6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references

Hyogo Prefecture (2017), Red List by Hyogo Prefecture 2017 (mammals, amphibians, fish and spiders)
Kinki Regional Environment Office, Ministry of the Environment of Japan:
1) Reports on the Support Business for Reintroduction of Ciconia Boyciana (2007, 2008, 2009, 2010, and 2009 versions)
2) A Report on the Works of Biome Monitoring and Zoning Map Compilation for the Lower Maruyama River National Wildlife Protection Area and for the Additional Site Proposed for the Ramsar Registration, FY2016
Ministry of Land, Infrastructure, Transport and Tourism of Japan:
1) Ministry of Land Infrastructure, Transport and Tourism, River environment database, (National census of water basin) (1998, 2001, 2002, 2004 and 2005 versions)
Ministry of the Environment (2018), National Red List, 2018
Toyooka Office of Rivers and National Highways, Kinki Regional Development Bureau, Ministry of Land, Infrastructure, Transport and Tourism of Japan:
1) Evaluation of Maruyama River Nature Restoration Projects (3) Work Report
2) Reports on the Evaluation of Maruyama River Nature Restoration Project Work (2006, 2007, 2008, 2009 versions)
3) A Report on the Monitoring Survey Work of River Environment in the Maruyama River (2006, 2007, 2008, 2009 versions)
Toyooka City:
1) A Report on Evaluation Work on the Habitat of the Oriental White Stork, FY2010
2) Reports on Biome Monitoring Work for Creating Oriental White Stork Habitats (2013, 2015 and 2016 versions)

6.1.2 - Additional reports and documents

i. taxonomic lists of plant and animal species occurring in the site (see section 4.3)
<no file available>

ii. a detailed Ecological Character Description (ECD) (in a national format)
<no file available>

iii. a description of the site in a national or regional wetland inventory
<no file available>

iv. relevant Article 3.2 reports
<no file available>

v. site management plan
<no file available>

vi. other published literature
<1 file(s) uploaded>

6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:

A landscape of Lower Maruyama River taken from Toyooka Bridge located in the site "Lower Maruyama River and the surrounding rice paddies" (*Toyooka City, 12-07-2012*)

6.1.4 - Designation letter and related data

Designation letter
<1 file(s) uploaded>

Date of Designation	2012-07-03