

# Information Sheet on EAA Flyway Network Sites (SIS)– 2013 version

Available for download from <http://www.eaaflyway.net/information-sites-maps.php#japan>

*Categories approved by Second Meeting of the Partners of the East Asian-Australasian Flyway Partnership in Beijing, China 13-14 November 2007 - Report (Minutes) Agenda Item 3.13*

## Notes for compilers:

1. The management body intending to nominate a site for inclusion in the East Asian - Australasian Flyway Site Network is requested to complete a Site Information Sheet. The Site Information Sheet will provide the basic information of the site and detail how the site meets the criteria for inclusion in the Flyway Site Network.
  2. The Site Information Sheet is based on the Ramsar Information Sheet. If the site proposed for the Flyway Site Network is an existing Ramsar site then the documentation process can be simplified.
  3. Once completed, the Site Information Sheet (and accompanying map(s)) should be submitted to the Flyway Partnership Secretariat. Compilers should provide an electronic (MS Word) copy of the Information Sheet and, where possible, digital versions (e.g. shapefile) of all maps.
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## 1. Name and contact details of the compiler of this form:

Arao City Hall, Environmental Preservation Section

390 Kunaideme, Arao City, Kumamoto Prefecture

TEL: 0968-63-1386

FAX: 0968-63-1376

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EAAF SITE CODE FOR OFFICE USE ONLY:

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## 2. Date this sheet was completed:

February 21, 2013

## 3. Country:

Japan

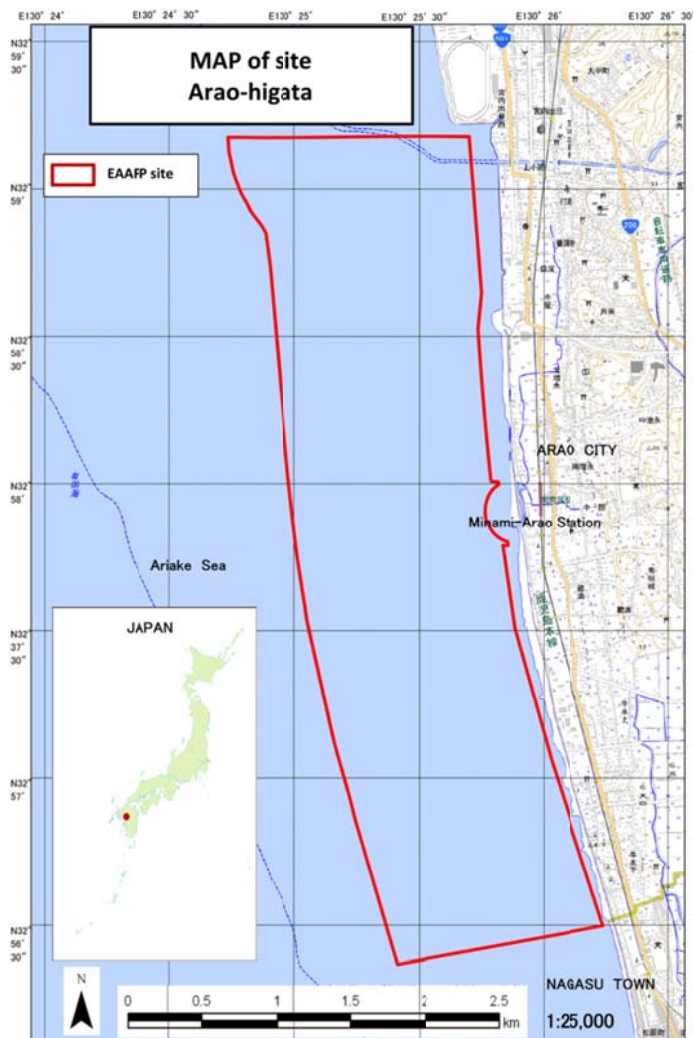
**4. Name of the Flyway Network site:**

The most up-to-date available version of the site in digital format. The map should have coordinates and must clearly show the boundary of the site.

Arao-higata

**5. Map of site:**

The most up-to-date available and suitable map of the wetland should be appended to the SIS (in hardcopy and, if possible, also in digital format). The map must clearly show the boundary of the site.



**6. Geographical coordinates (latitude/longitude, in decimal degrees):**

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

32°58'10"N, 130°25'30"E

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

0m

**8. Area:**

The total area of the site, in hectares. If the areas of discrete site units are known, please also list each of these together with the names (or labels) used to identify and differentiate these units.

754ha

**9. General overview of the site:**

A brief (two sentences) summary of the site, mentioning principal physical and ecological functions, and its importance for migratory waterbirds.

Arao-higata is located on the eastern side of the central part of the Sea of Ariake which is surrounded by Kumakoto, Fukuoka, Saga, and Nagasaki prefectures in the northwestern Kyusyu Island. The distance from north to south is 9.1 km, the maximum width from east to west is 3.2 km and the area covers 1,656 ha, one of the largest single tidal flats within Japan. The Sea of Ariake, developed from a shallow tidal flat, is an inland sea with the greatest tidal range in Japan. Arao-higata support a rich benthic fauna, including polychaete worms, crabs and shellfish. Many migratory waterbirds fly to this area to feed on these rich and productive tidal flats. Shorebirds are roosting on the beach at high tide.

**10. Justification of Flyway Site Network criteria:**

Please provide waterbird count information (with year of latest count) that demonstrates that the site meets the criteria of the Flyway Site Network (Annex 1). That is:

- it regularly supports > 20 000 migratory waterbirds; or,
- it regularly supports > 1 % of the individuals in a population of one species or subspecies of migratory waterbird; or,
- it supports appreciable numbers of an endangered or vulnerable population of migratory waterbird
- it is a “staging site” supporting > 5 000 waterbirds, or > 0.25% of a population stage at the site.

A listing of the populations of migratory waterbirds covered by the East Asian – Australasian Flyway Partnership and the 1% thresholds is attached (Annex 3).

Species (Scientific name)	The number of individual 1% basis		Census Survey				
	World	Flyway	2007	2008	2009	2010	2011
Black-faced Spoonbill ( <i>Platalea minor</i> ) Over Winter	15	15	6	4	5	4	5
Saunders's Gull ( <i>Larus saundersi</i> ) Over Winter	85	71	138	103	142	98	183

The “staging site” criterion is particularly difficult to apply and application of this should be discussed with the Secretariat. Also note that some species have several populations that are very difficult to distinguish in the field.

a2. Following two species listed in IUCN Red List of Threatened species inhabit Arao-higata. Both Species covered by the Species Conservation Law of Japan.

Species (Scientific name)	IUCNstatus <sup>1</sup>	Japan Red List <sup>2</sup>
Black-faced Spoonbill( <i>Platalea minor</i> )	EN	EN
Saunders's Gull ( <i>Larus saundersi</i> )	VU	VU

x

a6. Arao-higata regularly supports 1% of the individuals in a population of following species

Species (Scientific name)	The number of individual 1% basis		Census Survey				
	World	Flyway	2007	2008	2009	2010	2011
Saunders's Gull ( <i>Larus saundersi</i> ) Over Winter	85	71	138	103	142	98	183
Grey-tailed Tattler ( <i>Heteroscelus brevipes</i> ) Southward migration	400	400	/	975	307	182	181

bi. Arao-higata regularly supports more than 0.25% of the following population during migration.

Species (Scientific name)	The number of individual 0.25% basis		Census Survey				
	World	Flyway	2007	2008	2009	2010	2011
Kentish Plover ( <i>Charadrius alexandrinus</i> ) Northward migration, Breeding	250	250	/	182	47	352	160
Lesser Sand Plover ( <i>Charadrius mongolus</i> ) Northward migration	50	50	96	113	119	87	93
Grey Plover ( <i>Pluvialis squatarola</i> ) Northward migration	325	313	378	531	654	234	345
Ruddy Turnstone ( <i>Arenaria interpres</i> ) Northward migration	250	63	138	176	155	45	162
Dunlin ( <i>Calidris alpina</i> ) Northward migration	2500	2125	1631	3767	2499	2613	2474
Grey-tailed Tattler ( <i>Heteroscelus brevipes</i> ) Southward migration	100	100	116	975	307	182	181
Terek Sandpiper ( <i>Xenus cinereus</i> ) Southward migration	125	125	80	189	54	135	168
Bar-tailed Godwit ( <i>Limosa lapponica</i> ) Northward migration	425	388	419	416	715	126	289

Whimbrel ( <i>Numenius phaeopus</i> ) Northward migration	138	138	295	335	165	236	435
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"/" Is the year doesn't exceed the threshold.

<sup>1</sup> = IUCN Red List of Threatened Species

<sup>2</sup> = Red List of Threatened Wildlife in Japan. Ministry of the Environment.

<sup>3</sup> = Designated under the Law for Conservation of Endangered Species of Wild Fauna and Flora (Species Conservation Law)

(Abbreviations: CR = critically endangered; EN = Endangered; VU = Vulnerable; Yes = noted as a Domestic Endangered Species)

### 11. Wetland Types:

List the wetland types present (see Annex 2). List the wetland types in order of their area in the Flyway Network site, starting with the wetland type with the largest area.

Marine/coastal wetlands: G -- **Intertidal mud, sand or salt flats**

#### 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.

Marine/coastal wetland: G

### 12. Jurisdiction:

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

[Territorial]

Municipal land: Arao city

[Functional]

Ministry of the Environment (protection area of national wildlife protection area)

### **13. 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 and the title and/or name and email address/phone number of the person or persons in this office with direct responsibility for managing the wetland.

Mr Kazuaki Hoshino

Kyusyu Regional Environment Office, Ministry of the Environment

1-6-22 Onoue, Higashi-ku,

Kumamoto City, Kumamoto Prefecture 862-0913

JAPAN

(Fishery Rights)

(1) Arao Fishery Cooperative: 27 Arao, Arao City, Kumamoto Prefecture

(2) North Kumamoto Fishery Cooperative Association: 3328-20 OoazaNagasu, Nagasu Town, Tamana Country, Kumamoto Prefecture

### **14. Bibliographical references:**

A list of key technical references relevant to the wetland, including management plans, major scientific reports, and bibliographies, if such exist. Please list Web site addresses dedicated to the site or which prominently feature the site, and include the date that the Web site was most recently updated. When a large body of published material is available about the site, only the most important references need be cited, with priority being given to recent literature containing extensive bibliographies.

- 2012, [http://www.env.go.jp/en/nature/npr/ramsar\\_wetland/pamph/ramsarpamphen/arao.pdf](http://www.env.go.jp/en/nature/npr/ramsar_wetland/pamph/ramsarpamphen/arao.pdf)
- 2002, Nature Conservation Bureau, Ministry of the Environment, "500 important wetlands in Japan"
- 2002 (revision), Ministry of the Environment, "Threatened wildlife of Japan, Red data book 2, Birds"
- Ministry of the Environment, "Monitoring site 1000, survey on shorebirds"
- History of Arao city (on environment folklore)
- 1994, The Environment Agency, "The fourth basic surveys on nature conservation, report on the investigation on marine biota" (surveys on tidal flat, seaweed beds, and coral reefs)

### **15. 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:**

The deposits of alluvial stratum on the old Tertiary are seen.

**Geomorphology:**

The sandbank is formed by sandy deposits near the low tide line

**Soil type:**

Sand layer containing a number of shells.

**Origins:**

It is formed on the basement rocks, by the deposits of sediment and shells, carried by the tide flow.

**Hydrology:**

There are no inflows of rivers to "Maehama" (tidal flat by the deposits of sand and soil carried out by the rivers etc to the foreshore facing the sea)

**Water quality:**

In the Sea of Ariake, the sediment which contains large amount of organic matter, is carried from a number of rivers, and by repeating drying and submergence, the sediment is agitated violently and flung upward, the floating mud in big quantity being mixed with the sea water to make the sea of Ariake suspended.

COD 1.9-5.99 mg/L

PH 8.0-8.5

DO 4.6-9.8 mg/L

**Water depth:**

About 2m

**Tidal variations:**

Difference in tidal range is large, causing the appearance of a vast tidal flat at low tide.

(Hightide: 4.56m, low tide: 1.8m, average: 3.18m) observation point: Miike.

**General climate:**

The site experiences a temperate climate with small amount of snowfall with annual rainfall of about 1.900m, average temperature of 17 degrees Celsius.

**16. Physical features of the catchment area:**

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

As there are no inflows of rivers to Arao tidal flat, the sediment and shells carried by the tide flow are accumulated on the basement rocks, forming the sand bank near the low tide line by the sand deposits.

### 17. Hydrological values:

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

This place is considered as an area of collecting nutrients together with a large amount of sediment.

### 18. General ecological features:

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

As large amount of organic matter is constantly carried to Arao tidal flat by the tide, there are abundant benthos such as *Polychaeta* and bivalves. The benthos is very important for the site because of its role in nutrient recycling which prevents the site from red tide and provides food for fish and birds like shorebirds such as *Calidris alpina* (Dunlin), *Tringa brevipes* (Grey-tailed Tattler), *Limosa lapponica* (Bar-tailed Godwit), *Pluvialis squatarola* (Grey Plover), *Charadrius alexandrinus* (Kentish Plover) and *Charadrius mongolus* (Mongolian Plover).

### 19. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy 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 SIS.*

(Please add here the species which do not come under sec no 14)

None.

### 20. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 10. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the SIS.*

(Please add here the species which do not come under sec no 14)

#### Birds

*Ardea intermedia* (Intermediate Egret) NT\*1

*Branta bernicla* (Brant Goose), VU\*1

*Tadorna tadorna* (Common Shelduck), EN\*1

*Pandion haliaetus* (Osprey), NT\*1

*Circus aeruginosus* (Marsh Harrier), EN\*1

*Falco peregrinus* (Peregrine Falcon) VU\*1

*Eurynohynchus pygmeus* (Spoon-billed Sandpiper) CR\*1

2004 year Southward migration.

*Sterna albifrons* (Little Tern) VU\*1



## Fish

*Boleophthalmus pectinirostris* (Bluespotted Mud Hopper) EN\*1

\*1 Red list of threatened wildlife of Japan, Ministry of the Environment

### 21. Social, economic and cultural values:

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

Regarding the *Ruditapes philippinarum* (Japanese little neck) at Arao tidal flat, as the organic matter is constantly carried into the area, the site is considered as ideal for the growth of shellfish species. In addition, the laver (seaweed) culture at the sea of Ariake is important, the laver being dried at the low tide, taking advantage of the difference in tidal water levels in order to improve the flavour of laver. Nets for laver culture are supported by poles.

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? (Double-click the checkbox to check and choose "Checked" under "Default Value" from "Check Box Form Field Options" window)

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

- i) Sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:
- ii) Sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
- iii) Sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
- iv) Sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

### 22. Land tenure/ownership:

a) Within the Flyway Network site:

Public water : 754 ha

b) In the surrounding area:

Private land consists of mostly housing areas dotted with broad leaved forests and coniferous forests along the coast of the Sea of Ariake. Oshima district in the north region is the industrial area but mostly vacant land. In the southern part, there are steel manufacture companies, rest being cemetery and wasteland.

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

a) Within the Flyway Network site:

Fisheries such as laver cultures, fishing short-net clams.

b) In the surroundings/catchment:

Housing, farmland

As for the farmland, there are private vegetable gardens but there are not those of occupational. In Urakaw district, rice cultivation is carried out and in the eastern part of Arao city, oranges and pears are cultivated.

**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 Flyway Network site:

**Past:**

Large-scale land reclamation works etc. have been conducted.

Shoreline protection in concrete reduced the supply of gravel.

**Present:**

None.

b) In the surrounding area:

**Past:**

Agricultural land development was conducted. Waterways in concrete reduced the supply of gravel.

**25. Conservation measures taken:**

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

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

Special protection area of national wildlife protection area : 754 ha (wildlife protection and appropriate hunting law) from June 1, 2012 is being implemented. Capture of wildlife is in principle prohibited in the area. It is required to obtain permission from the minister if the environment when installation of artificial structure, reclamation of the water body and tree felling.

**b)** If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate, see Annex 3):

Ia ; Ib ; II ; III ; IV ; V ; VI ; N/A

**c)** Does an officially approved management plan exist; and is it being implemented?:

If yes, is it being implemented?: If no, is one being planned?

Special protection area of national wildlife protection area : 754 ha (wildlife protection and appropriate hunting law) from June 1, 2012 is being implemented.

Capture of wildlife is in principle prohibited in the area. It is required to obtain permission from the Minister of the Environment when installation of artificial structure, reclamation of the water body and tree felling.

**d)** Describe any other current management practices:

Arao Fishermen's association and northern Kumamoto fishermen's association carry out the management practice for tillage and sand supply with the subsidy.

**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]

Ministry of the Environment, "Monitoring site 1000, Survey on shorebirds" (three times a year since 2004 <http://www.biodic.go.jp/moni1000/index.html> (in Japanese)).

Year	Spring	Autumn	Winter
2007	3,799	710	1,928
2008	6,492	1,773	2,152
2009	4,601	703	2,140
2010	3,389	1,665	1,738
2011	4,361	878	

[Facilities established for research]

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

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

Beach cleaning activities of waste materials drifted ashore by local communities, and bird watching meetings are held in collaboration with the Kumamoto branch office of the Wild Bird society of Japan, and collecting long-armed octopus is carried out. In addition, "Sea Museum" is open on the wall along the beach with the pictures of school children.

### 29. Current recreation and tourism:

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

In July every year "Japanese mud shrimp (*Upogebia major*) fishing event" is held by Arao city with the participation of more than 500 people. "Seaside Course" is a monitoring tour to provide information about the Arao city. (Programme: collecting long armed octopus, tasting seafood of the Sea of Ariake, visiting seaweed (laver) factory)

### 30. Threats

Which of the following threats is present historically – when the threat stopped but the effects are still there (H), currently (C) or potentially (P)?

	Historically	Currently	Potentially
<b>Residential and commercial development</b>			
housing and urban areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
commercial and industrial areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
tourism and recreation areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Agriculture and aquaculture</b>			
annual and perennial non-timber crops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
wood and pulp plantations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
livestock farming and ranching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
marine and freshwater aquaculture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Energy production and mining</b>			
oil and gas drilling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
mining and quarrying	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
renewable energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Transportation and service corridors</b>			
roads and railroads	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
utility and service lines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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shipping lanes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
flight paths	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Biological resource use</b>			
hunting and collecting terrestrial animals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
gathering terrestrial plants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
logging and wood harvesting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
fishing and harvesting aquatic resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Human intrusions and disturbance</b>			
recreational activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
war, civil unrest and military exercises	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
work and other activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Natural system modifications</b>			
fire and fire suppression	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
dams and water management/use	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
other ecosystem modifications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Invasive and other problematic species and genes</b>			
invasive non-native/alien species	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
problematic native species	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
introduced genetic material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Pollution</b>			
household sewage and urban waste water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
industrial and military effluents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
agricultural and forestry effluents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
garbage and solid waste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
air-borne pollutants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
excess energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Geological events</b>			
volcanoes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
earthquakes/tsunamis	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
avalanches/landslides	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Climate change and severe weather**

habitat shifting and alteration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
droughts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
temperature extremes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
storms and flooding	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Please write here any additional threats and comments/queries you have on the threats.**

## **Annex 1: Criteria for the inclusion of sites in the Flyway Site Network**

(From the Partnership Text)

To be considered for inclusion in the Flyway Site Network, this Partnership adopts the following criteria:

- a. Convention on Wetlands (Ramsar, Iran, 1971) criteria for internationally important sites for migratory waterbirds. That is:

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

Criterion 5: A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds.

Criterion 6: A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.

- b. The staging criteria as applied under the Asia- Pacific Migratory Waterbird Conservation Strategy.

That is:

i. A staging site should be considered internationally important if it regularly supports 0.25% of individuals in a population of one species or subspecies of waterbirds on migration.

ii. A staging site should be considered internationally important if it regularly supports 5,000 or more waterbirds at one time during migration.

- c. Under exceptional circumstances a site can be nominated if it supports migratory waterbirds at a level or stage of their life cycle important to the maintenance of flyway populations. Justification of such nominations will be considered by the Partnership on a case by case basis.

## Annex 2: Ramsar Classification System for Wetland Type

The codes are based upon the Ramsar Classification System for Wetland Type as approved by Recommendation 4.7 and amended by Resolutions VI.5 and VII.11 of the Conference of the Contracting Parties. The categories listed herein are intended to provide only a very broad framework to aid rapid identification of the main wetland habitats represented at each site.

To assist in identification of the correct Wetland Types to list in section 19 of the RIS, the Secretariat has provided below tabulations for Marine/Coastal Wetlands and Inland Wetlands of some of the characteristics of each Wetland Type.

### Marine/Coastal Wetlands

- A -- **Permanent shallow marine waters** in most cases less than six metres deep at low tide; includes sea bays and straits.
- B -- **Marine subtidal aquatic beds**; includes kelp beds, sea-grass beds, tropical marine meadows.
- C -- **Coral reefs.**
- D -- **Rocky marine shores**; includes rocky offshore islands, sea cliffs.
- E -- **Sand, shingle or pebble shores**; includes sand bars, spits and sandy islets; includes dune systems and humid dune slacks.
- F -- **Estuarine waters**; permanent water of estuaries and estuarine systems of deltas.
- G -- **Intertidal mud, sand or salt flats.**
- H -- **Intertidal marshes**; includes salt marshes, salt meadows, saltings, raised salt marshes; includes tidal brackish and freshwater marshes.
- I -- **Intertidal forested wetlands**; includes mangrove swamps, nipah swamps and tidal freshwater swamp forests.
- J -- **Coastal brackish/saline lagoons**; brackish to saline lagoons with at least one relatively narrow connection to the sea.
- K -- **Coastal freshwater lagoons**; includes freshwater delta lagoons.
- Zk(a) – **Karst and other subterranean hydrological systems**, marine/coastal

### Inland Wetlands

- L -- **Permanent inland deltas.**
- M -- **Permanent rivers/streams/creeks**; includes waterfalls.
- N -- **Seasonal/intermittent/irregular rivers/streams/creeks.**
- O -- **Permanent freshwater lakes** (over 8 ha); includes large oxbow lakes.
- P -- **Seasonal/intermittent freshwater lakes** (over 8 ha); includes floodplain lakes.
- Q -- **Permanent saline/brackish/alkaline lakes.**
- R -- **Seasonal/intermittent saline/brackish/alkaline lakes and flats.**



- Sp -- **Permanent saline/brackish/alkaline marshes/pools.**
- Ss -- **Seasonal/intermittent saline/brackish/alkaline marshes/pools.**
- Tp -- **Permanent freshwater marshes/pools;** ponds (below 8 ha), marshes and swamps on inorganic soils; with emergent vegetation water-logged for at least most of the growing season.
- Ts -- **Seasonal/intermittent freshwater marshes/pools on inorganic soils;** includes sloughs, potholes, seasonally flooded meadows, sedge marshes.
- U -- **Non-forested peatlands;** includes shrub or open bogs, swamps, fens.
- Va -- **Alpine wetlands;** includes alpine meadows, temporary waters from snowmelt.
- Vt -- **Tundra wetlands;** includes tundra pools, temporary waters from snowmelt.
- W -- **Shrub-dominated wetlands;** shrub swamps, shrub-dominated freshwater marshes, shrub carr, alder thicket on inorganic soils.
- Xf -- **Freshwater, tree-dominated wetlands;** includes freshwater swamp forests, seasonally flooded forests, wooded swamps on inorganic soils.
- Xp -- **Forested peatlands;** peatswamp forests.
- Y -- **Freshwater springs; oases.**
- Zg -- **Geothermal wetlands**
- Zk(b) – **Karst and other subterranean hydrological systems, inland**

Note: “**floodplain**” is a broad term used to refer to one or more wetland types, which may include examples from the R, Ss, Ts, W, Xf, Xp, or other wetland types. Some examples of floodplain wetlands are seasonally inundated grassland (including natural wet meadows), shrublands, woodlands and forests. Floodplain wetlands are not listed as a specific wetland type herein.

#### **Human-made wetlands**

- 1 -- **Aquaculture** (e.g., fish/shrimp) **ponds**
- 2 -- **Ponds;** includes farm ponds, stock ponds, small tanks; (generally below 8 ha).
- 3 -- **Irrigated land;** includes irrigation channels and rice fields.
- 4 -- **Seasonally flooded agricultural land** (including intensively managed or grazed wet meadow or pasture).
- 5 -- **Salt exploitation sites;** salt pans, salines, etc.
- 6 -- **Water storage areas;** reservoirs/barrages/dams/impoundments (generally over 8 ha).
- 7 -- **Excavations;** gravel/brick/clay pits; borrow pits, mining pools.
- 8 -- **Wastewater treatment areas;** sewage farms, settling ponds, oxidation basins, etc.
- 9 -- **Canals and drainage channels, ditches.**
- Zk(c) -- **Karst and other subterranean hydrological systems, human-made**

## **Annex 3: IUCN Protected Areas Categories System**

IUCN protected area management categories classify protected areas according to their management objectives. The categories are recognised by international bodies such as the United Nations and by many national governments as the global standard for defining and recording protected areas and as such are increasingly being incorporated into government legislation.

### **Ia Strict Nature Reserve**

Category Ia are strictly protected areas set aside to protect biodiversity and also possibly geological/geomorphical features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values.

### **Ib Wilderness Area**

Category Ib protected areas are usually large unmodified or slightly modified areas, retaining their natural character and influence without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition.

### **II National Park**

Category II protected areas are large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible, spiritual, scientific, educational, recreational, and visitor opportunities.

### **III Natural Monument or Feature**

Category III protected areas are set aside to protect a specific natural monument, which can be a landform, sea mount, submarine cavern, geological feature such as a cave or even a living feature such as an ancient grove. They are generally quite small protected areas and often have high visitor value.

### **IV Habitat/Species Management Area**

Category IV protected areas aim to protect particular species or habitats and management reflects this priority. Many Category IV protected areas will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of the category.

### **V Protected Landscape/ Seascape**

A protected area where the interaction of people and nature over time has produced an area of distinct character with significant, ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.

### **VI Protected area with sustainable use of natural resources**

## Information Sheet on EAA Flyway Network Sites

Category VI protected areas conserve ecosystems and habitats together with associated cultural values and traditional natural resource management systems.