Information Sheet on EAA Flyway Network Sites (SIS) – 2017 version

Available for download from http://www.eaaflyway.net/about/the-flyway/flyway-site-network/

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. When there is a new nomination or an SIS update, the following sections with an asterisk (*), from Questions 1-14 and Question 30, must be filled or updated at least so that it can justify the international importance of the habitat for migratory waterbirds.

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*:

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EAAF SITE CODE FOR OFFICE USE ONLY:

E	A	A	F	0	8	1

2. Date this sheet was completed*:

DD/MM/YYYY

16/05/2004

3. Country*:

Japan

4. Name of the Flyway Network site*:

Accepted English transcription of the Site's name.

Kumagawa Estuary

5. Map of site*:

The most up-to-date available and suitable map of the wetland should be appended to the SIS (only in digital format and shape file). The map must clearly show the boundary of the site. Please refer to the "Digitising Site Boundaries in Google Earth" file linked here.

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.

Latittude 32°28' N, Longitude 130°33' E

(Dec. 32.46667, 130.56667)

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

Max DL 1 m

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.

180 ha (the right bank of Kumagawa river: 90 ha, the left bank of Kumagawa river: 90 ha)

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.

Kumagawa Estuary includes one of the largest ,natural tidal flat in Yatsushiro Sea (Bay), and supports around 90 species of wild bird, including shorebirds. Kumagawa Estuary was listed in "Wetland Inventory for Migration Area of shorebirds in Japan" (Ministry of Environment Japan 1997). Muddy tidal flat is dominant habitat type and stale. The vegetation is halophyte including Amamo (*Zostera marina*), Kaomamo (*Zostera nana*), etc. The river walls are protected by sea dykes and bird watching from the walls in possible. Marine products such as Anajako (*Upogebia major*) are gathered by local people at low 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).

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.

Kumagawa Estuary meets the Network Criteria in that:

Grey-tailed Tattler / KAISHI-SHIGI. (*Heteroscelus brevipes),* Terek-Sandpiper / SORIHASHI-SHIGI (*Xenus cinereus*) and Whimbrel / CHUSHAKU-SHIGI (*Numenius phaeopus*) have met the staging criteria on many occasions as follows: Species name (count number, date)

- **Grey-tailed Tattler / KIASHI-SHIGI (*Heteroscelus brevipes*) met the 0.25% Criteria: 100**
  - (104, 14 Aug. 1999) [S. Takano unpublished data], (120, 15 May 2000), (138, 6 Aug. 2000), (113, 7 Aug. 2001), (121, 11 Aug. 2001), (103, 7 May, 2002), (100, 21 May, 2002), (152, 25 May 2002), (127, 11 Aug. 2002), (116, 14 Aug. 2002) [Ministry of the Environment Japan 2000-2002]
- **Terek-Sandpiper / SORIHASHI-SHIGI (Xenus cinereus) met the 0.25% Criteria: 125**
  - (165, 11 Aug. 1999), (202, 14 Aug. 1999), (135, 19 Aug. 1999), (165, 27 Aug. 1999), 178, 29 Aug. 1999) [S. Takano unpublished data], (206, 6 Aug. 2000, (137, 19 Aug. 200), (145, 11 Aug. 2000), (214, 16 Aug. 2000), (151, 3 Sept. 2000), (145, 7 Aug. 2001), (176, 22 Aug. 2001), (139, 14 Aug. 2002) [Ministry of Environment Japan 2000-2002]
- **Whimbrel / CHUSYAKU-SHIGI (*Numenius Paeopus)* met the 0.25% Criteria: 138**
  - (161, 29 Apr. 1999), (198, 2 May. 1999), (161, 4 May. 1999), (180, 8 May 1999), (192, 14 May 1999), [S. Takano Unpublished data], (148,29 Apr. 2000), (170, 5 May 2000), (148, 7 May 2000), (191, 8 May 2000), (188, 12 May 2000), (140, 13 May 2000), (208, 15 May 2000), (255, 18 May 2000), (187, 24 Apr. 2001), (189, 7 May 2001), (165, 19 May 2001), (194, 6 May 2001), (155, 14 May 2001), (154, 25 Apr. 2002), (150, 27 Apr. 2002), (166, 28 Apr. 2002), (159, 29 Apr. 2002), (143, 4 May 2002), (156, 7 May 2002), (168, 10 May 2002), (181, 11 May, 2002), (146, 21 May 2002) [Ministry of the Environment Japan 2000-2002]

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.

Tidal flat at a river mouth

12. Jurisdiction*:

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

a) Location: Yatsushiro City, Kumamoto Pref.

b) Jurisdiction:

- Yatsushiro Office for River and National Road, Ministry of Land, Infrastructure and Transport

- Government of Kumamoto Prefecture

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.

- Yatsushiro Office for River and National Road, Ministry of Land, Infrastructure and Transport.
- Government of 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.

1) Ministry of the Environment Japan 2002. *Red List of threatened Wildlife of Japan,* Tokyo.
2) Kumamoto Pref. 1998. *RED DATA BOOK of Kumamoto Prefecture,* Kumamoto, Japan.
3) Ministry of Environment Japan1997. *Wetland Inventor for Migration Area of Shorebirds,* Tokyo.
4) Ministry of the Environment Japan 2000-2003. *The Annual Report of the Shorebirds Census in Japan* ed. By WWF Japan 1999-2002, Tokyo.

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 and geomorphology:	Tidal flat of river mouth. Both banks of Kumagawa river have been protected by hard bank walls.
Origins:	Natural
Soil type and chemistry:	Mud with tide pools, some sand
Water quality:	Temp.: 6.8~31.0°C pH: 7.6~8.5 DO: 6.8~11.7 mg/l BOD: 0.2~2.6 mg/l SS: 3.0~13.0 mg/l
Tidal variation:	Max. 4.3 m
Climate:	Annual mean temp.: 17.0°C Annual precipitation: 1,813 mm Average max. temp.: 26.8°C Average min. temp.: 8.0°C (Averages in Yatsushiro City from 1998 to 2002)

16. Physical features of the catchment area:

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

Brackish water area located at mouth of the Kuma river.

17. Hydrological values:

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

None.

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.

1) Benthos: NIHON-SUNAMOGURI (*Callianassa japonica*), ANA-JAKO (*Upogebia major*), ITO-GOKAI (*Notomastus* sp), etc.
2) Crabs: YAMATO-OSAGANI (*Macrophthalmus japonicus*), CHIGO-GANI (*Iyoplax pusilus*), KOMETSUKI-GANI (*Mictyris brevidactylus*),
3) Fish: Goby / TOBIHAZE (*Periophthalmus modestus*), etic.
4) Shellfish: Oyster community / MA-GAKI SHO (Crassostrea gigas), etc.

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)

AMAMO (*Zostera marina*), KOAMAMO (*Zostera nana*), KINOKUNISUGE (C*arex matsumurae*) [MoE RDB Category: Near Threatened (NT*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 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]

- Black-faced spoonbill / KUROTSURA-HERASAGI (*Platalea minor*) [MoE RDB Category: Critically Endangered (CR*1)]

- Hooded Crane / NABE-ZURU (*Grus monachal*) [MoE RDB Category: Endangered (EN*1)] White-naped Crane / MANA-ZURU (*Grus vipio*) [MoE RDB Category: Endangered (EN*1)]
- Saunders's Gull / ZUGURO-KAMOME (*Larus saundersi*) [MoE RDB Category: Vulnerable (VU*1)]
- Chinese Egret / KARA-SHIRASAGI (*Egretta eulophotes*) [MoE RDB Category: Data Deficient (DD*1)]
- Far Easter Curlew / HOROKU-SHIGI (*Numenius madagascariensis*) [MoE RDB Category: Endangered (EN*1)]
- Black-winged Stilt / SEITAKA-SHIGI (*Himantopus himantopus*) [MoE RDB Category: Endangered (EN*1)]
- Peregrine Falcon / HAYABUSA (*Falco peregrinus*) [MoE RDB Category: Endangered (EN*1)]
- Redshank / AKAASHI-SHIGI (*Tringa tetanus*) [MoE RDB Category: Vulnerable (VU*1)]
- Little Tern / KO-AJISASHI (*Sterna albifrons sinensis*) [MoE RDB Category: Vulnerable (VU*1)]
- Intermediate Egret / CHU-SAGI (*Egretta intermedia*) [MoE RDB Category: Near Threatened (NT*1)]
- Sparrowhawk / HAI-TAKA (*Accipiter nisus*) [MoE RDB Category: Near Threatened (NT*1)]
- Osprey / MISAGO (*Pandion hallaetus hallaetus*) [MoE RDB Category: Near Threatened (NT*1)]

[Others]

- SHIOMANEKI (*Uca arcuata*) [MoE RDB Category: Near Threatened (NT*1)
- HAKUSEN-SHIOMANEKI (Uca lacteal lacte) [MoE RDB Category: Near Threatened (NT*1)]
- OSA-GANI (*Macrophthalmus abbreviatus* Manning & Holthuis) [Vulnerable Species in RDB of Kumamoto Pref.]

Note: *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:

Mt. Oo-Souzouyama (43.9 m above sea level) and Mt. Ko-Souzouyama (35.8 m above sea level) are located on the right bank of Kumagawa-river, and both mountains have ancient tombs

located there. In particular, the ancient tomb group of Mr. Oo-Souzouyama has been designated as an historic relic of Kumamoto Pref.

Mizusima-isle, which consists of limestones and is historicall worthy is located on the left side Kumagawa- river.

There are some fishing ports. Traditional fishing using several tools such as a prawns drift net, a crab gill net, a crab pot, a cuttlefish gill net, a cuttlefish pot, a Haze-ami, a pound net, etc. are being conducted. Green laver is cultivated upstream a few hundred meters from the estuary.

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 surface

b) In the surrounding area:

23. Current land (including water) use:

a) Within the Flyway Network site:

Fisheries area especially for shellfish, such as Hard clam / HAMAGURI (*Meretrix lusoria*), Asari clam / ASARI (*Tape philippinarum*), etc.

b) In the surroundings/catchment:

Paddy field, rush / IGUSA (*Juncus effuses car. Decipiens*) field, etc.

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:

b) In the surrounding area:

Possibility of water pollution by living and agricultural waste water from undeveloped sewage service areas around the Kumagawa basin. A withdraw plan (after 2010) of the Arase damn which locate on 10 km upper stream from the site and gathering sea sand on left side of the estuary (now being not conducted) are suspected to affect the environment. Periodically repairs of banks are expected.

25. Conservation measures taken:

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

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.

None.

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?

d) Describe any other current management practices:

26. Conservation measures proposed but not yet implemented:

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

Yatsushiro city is planning to enact a byelaw for the wildlife protection including conservation of tidal flats and ecosystem.

27. Current scientific research and facilities:

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

From the winter of 1999, a Shorebird Population Monitoring Census (conducted by Ministry of the Environment Japan) commenced.

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.

From 2000, bird watching events for Kids have been held each winter by the Secretariat of Yatsushiro City Eco-club for Kids. Participants number about 30, including school children and their parents. Furthermore, bird watching events and tidal-flat observation events were held two or three times per year for school children as on seminar in the Environment program.

29. Current recreation and tourism:

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

Regular bird watching is held twice per year by the Yatsushiro Wild Bird Watching Group, and recreation events for traditional fishing methods are conducted from April to November by the local fishers.

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
Residential and commercial development			
housing and urban areas	☐	☐	☐
commercial and industrial areas	☐	☐	☐
tourism and recreation areas	☐	☐	☐
Agriculture and aquaculture			
annual and perennial non-timber crops	☐	☐	☐
wood and pulp plantations	☐	☐	☐
livestock farming and ranching	☐	☐	☐
marine and freshwater aquaculture	☐	☐	☐
Energy production and mining			
oil and gas drilling	☐	☐	☐

mining and quarrying	☐	☐	☐
renewable energy	☐	☐	☐
Transportation and service corridors			
roads and railroads	☐	☐	☐
utility and service lines	☐	☐	☐
shipping lanes	☐	☐	☐
flight paths	☐	☐	☐
Biological resource use			
hunting and collecting terrestrial animals	☐	☐	☐
gathering terrestrial plants	☐	☐	☐
logging and wood harvesting	☐	☐	☐
fishing and harvesting aquatic resources	☐	☐	☐
Human intrusions and disturbance			
recreational activities	☐	☐	☐
war, civil unrest and military exercises	☐	☐	☐
work and other activities	☐	☐	☐
Natural system modifications			
fire and fire suppression	☐	☐	☐
dams and water management/use	☐	☐	☐
other ecosystem modifications	☐	☐	☐
Invasive and other problematic species and genes			
invasive non-native/alien species	☐	☐	☐
problematic native species	☐	☐	☐
introduced genetic material	☐	☐	☐
Pollution			
household sewage and urban waste water	☐	☐	☐
industrial and military effluents	☐	☐	☐
agricultural and forestry effluents	☐	☐	☐
garbage and solid waste	☐	☐	☐
air-borne pollutants	☐	☐	☐

excess energy	☐	☐	☐
Geological events			
volcanoes	☐	☐	☐
earthquakes/tsunamis	☐	☐	☐
avalanches/landslides	☐	☐	☐
Climate change and severe weather			
habitat shifting and alteration	☐	☐	☐
droughts	☐	☐	☐
temperature extremes	☐	☐	☐
storms and flooding	☐	☐	☐

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 charcter 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

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