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*:

Full name: Li ChangYou, Director

Institution/agency: Bureau of Zhalong National Nature Reserve

Address: Heilongjiang Province

Telephone: 0452-2441348

Fax numbers:

E-mail address:

EAAF SITE CODE FOR OFFICE USE ONLY:

E	A	A	F	0	7	0

2. Date this sheet was completed*:

DD/MM/YYYY

30/06/2005

3. Country*:

People's Republic of China

4. Name of the Flyway Network site*:

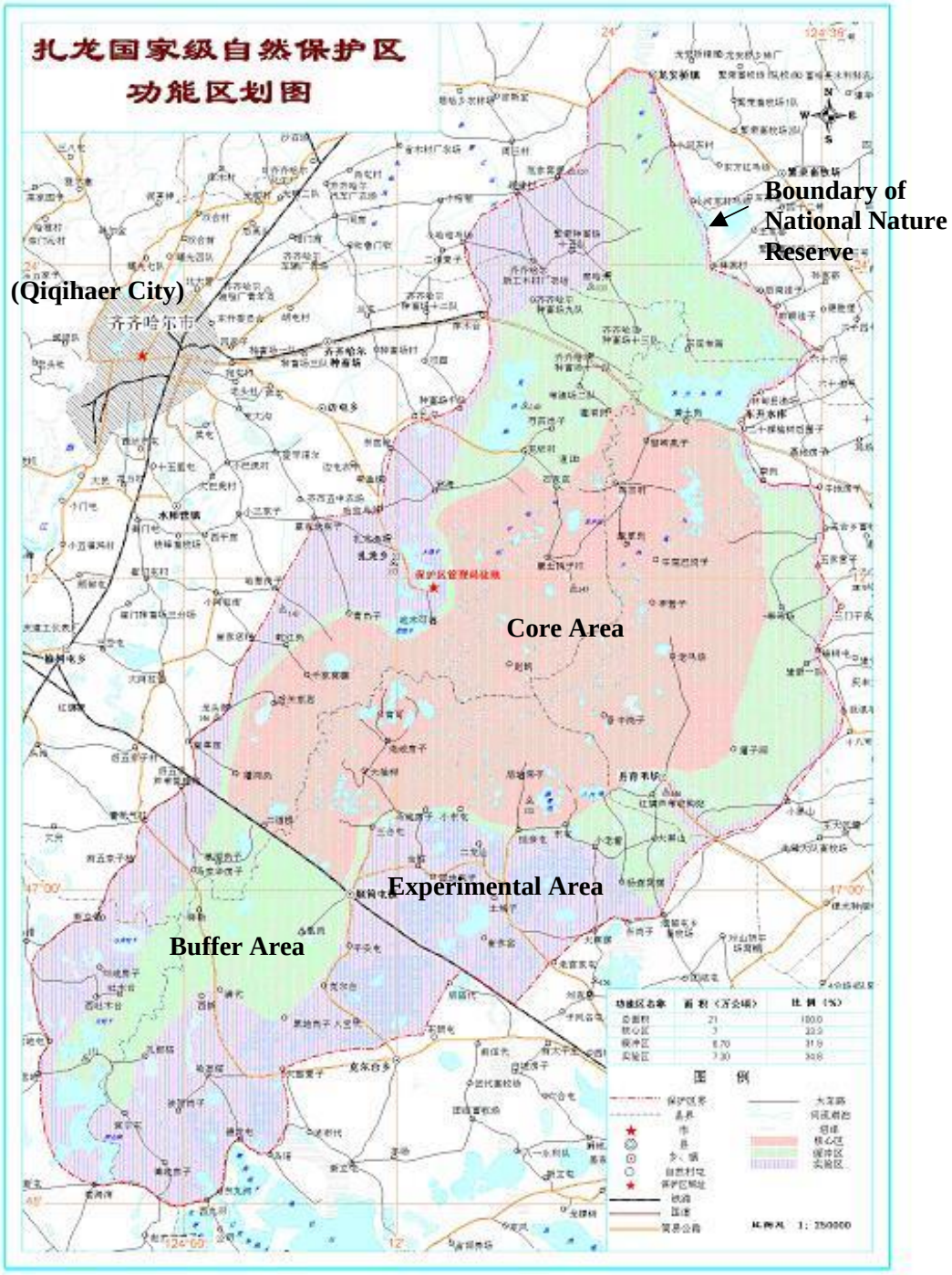
Accepted English transcription of the Site's name.

Zhalong National Nature Reserve, Heilongjiang Province

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.

District map of Zhalong



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.

123°47'-124°37'E 46°52'-47°32'N (47.00000, 124.21667)

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

138-162m

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.

210 000 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.

The reserve lies in the Songnen Plain, which is a marsh and lakes wetland made by overflow run-off from the Wuyuer River away from its main course. The flat geography, adequate headwaters and dense reed marshes support abundant fishes, shrimps and amphibians. The reserve is an important site for the breeding and migration of rare waterbirds (including the Red-crowned Crane) and their wetland eco-system. Four species of shorebird meet the 1 percent criteria for the East Asian-Australasian Shorebird Site Network. A major reed harvest industry exists in the reserve. Villagers in the reserve also fish and hunt wildlife across the reserve, and a waterfowl hunting area is established on one of the large lakes/ The Zhalong National Nature Reserve is classified as IUCN Management Category VI (Managed Nature Reserve), is on the "List of Wetlands of International Importance" (Ramsar Convention), and is a participant in the Crane Site Network.

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.

Counts have been conducted at the Reserve during northward migration over the past five years. Due to the size and habitat variability only small areas (20% of available habitat) within the Reserve have been counted. The Zhalong National Nature Reserve holds the waterbird count information. Within these counts, four species have been recorded in numbers >1%:

Black-winged Stilt *Himantopus himantopus*	905	(Northward, 2003)
Northern Lapwing *Vanellus vanellus*	1737	(Northward, 2004)
Marsh Sandpiper *Tringa stagnatilis*	1483	(Northward, 2003)
Oriental Pratincole *Glareola maldivarum*	768	(Northward, 2001)

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.

Tp – Fresh water herbage marsh

12. Jurisdiction*:

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

Jurisdiction is shared by two authorities:

A: Qiqihaer City Government, Heilongjiang Province

B: Bureau of Forestry, Heilongjiang Province

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.

A: The government of Qiqihaer City

Address: No. 27th Xinming Street, Jianhua District, Qiqihaer City, Heilongjiang Province, P.R. of China

B: Bureau of Forestry, Heilongjiang Province

Address: No.10, Hengshan Road, Xiangfang District, Harbin, Heilongjiang province, P.R. of China

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.

Management Plan of the Zhalong National Nature Reserve.

The Research on protecting strategies of Wetland Eco-system in Zhalong Reserve.

The Report on Comprehensive Science Investigator and Regionalization in Zhalong Nature Reserve.

McKinnon, J. and Phillipps, K. (2000). A Field Guide to the Birds of China. Oxford University Press. 572pp.

Scott, D.A. (ed.) 1989. A Directory of Asian Wetlands. IUCN, Gland, Switzerland and Cambridge, U.K. xiv + 1181pp., 33 maps.

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.

A. Geology and geomorphology: Songnen Plain is a large hollow basin formed since the late Mesozoic Era.

B. Origins (physical wetland): the Zhalong marsh was formed after the Wuyuer River separated? from the Nenjing river, since the Pleistocene Epoch.

C. Hydrology: Headwaters feeding the reserve are from the Wuyuer River, the Shuangyang River, the Xinnenjiang Canal and the “Bayi” Canal. The Wuyuer River is the dominant influence forming and maintaining the marsh eco-system character of the reserve.

D. Soil condition: The soil is thick, of a sticky quality and weak permeability, so surface run-off is high and the soil surface is often lacking in water content.

E. Water quality: Ground water in the reserve has been recorded at environment quality standard of “ground water V”; the main pollution type is organic matter.

F. Climate: The Zhalong reserve belongs to medium temperate zone continent monsoon climate. The mean annual temperature is 3.2^{o}C (January mean –20^{o}C, minimum –39.5^{o}C; July mean 23^{o}C, maximum 37.5^{o}C). The average annual rainfall is 420mm and average annual evaporation is 1489mm. Spring is noted for its strong winds, and average annual wind speed is 3.5m/s. There are 144-157 days of frost each year, and snow patches can linger until end of April (in Scott 1989).

16. Physical features of the catchment area:

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

17. Hydrological values:

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

The Zhalong wetlands play important roles in regulation and storage of floodwaters, buffering and release of underground water, assimilation of pollutants, regulation of local climate and maintaining water quality.

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.

Key habitats in the reserve include:

- Marsh vegetations
- Dry meadows, wet meadows
- Meadow plain
- Aquatic plants

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)

Phragmites communis Trin., *Typha orientalis* Presl., *Sparganium stoioniferum* Buch.-Ham, *Carex duriiuscula* C.A.Mey, *Cyperus glomeratus* L., *P.chinensis* Ser., *Scirpus tabernaemontani* Gmel., *Alisma orientale* (Sam.) Juzepiz., *Menyanthes trifolia* L., *Trapa maximowiczii* Korsh., *Puccinellia tenniflora* (Turcz.)Sribn.et.Merr.*, Aneurollepidium chinenese* (Thunb)Kitag, *Nymphaea tetragona* Georgi.

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: In the reserve, there are over 269 bird species recorded, mainly including 6 species of cranes Red-crowned Crane (*Grus japonensis*), Purple Heron (*Ardea purpurea*), White Spoonbill (*Platalea*

leucorodia), Swan Goose (*Anser cygnoides*), Greylag Goose (*Anser anser*), Common Shelduck (*Tadorna tadorna*), Falcated Teal (*Anas falcata*) and many woodcocks (*Scolopacidae*) and gulls (*Laridae*).

The rare and endangered birds of national first and second rank include:
Cygnus olor, Cygnus cygnus, Cygnus columbianus, Anser anser, Anser cygnoides, Anser fabalis, Aix galericulata, Podiceps auritus, Casmerodius albus, Milvus lineatus, Accipiter gularis, Accipiter nisus, Buteo hemilasius, Accipiter virgatus, Buteo buteo, Buteo lagopus, Aquila nipalensis, Aquila clanga, Circus melanoleucos, Circus spilonotus, Falco tinnunculus, Falco vespertinus, Falco columbarius, Ciconia ciconia, Ciconia nigra, Threskionis melanocephalus, Platalea leucorodia, Grus leucogeranus, Grus monachal, Grus grus, Grus japonensis, Grus vipio.

Maximun counts of other shorebirds (which do not meet the 1% criteria) are: *Recurvirostra avosetta (*220), *Limosa limosa (*92), *Tringa erythropus* (171), *Limnodromus semipalmatus (*49), *Charadrius dubius (*290), *Venellus cinereus (*45), *Numenius minutus (*30), *Gallinago stenura (*652), *Scolopax rusticola (*126), *Tringa ochropus (*279), *Numenius madagascariensis (*31), *Calidris canutus (*426), *Gallinago gallinago (*74), *Charadrius mong*olus (62) and *Pluvialis fulva (*15).
Note: Only a small proportion (20% of available shorebird habitats) of the Nature Reserve has been covered in the counts**.**

The breeding shorebirds are *Himantopus himantopus, Tringa ochropus, Numenius arquata, Tringa stagnatilis*, *Vanellus vanelllus, V.cinereus*, *Charadrius dubius, and Glareola maldivarum.*

Mammals: There are 21 mammal species in the reserve, which belong to 5 orders and 8 families:
Erinaceus europaeus, *Canis lupus ,Vulpes vulpes ,Nyctereutes procyonoids, Mustela altaica, Mustela siberica, Mustela eversmanni, Meles meles, Lepus capensis, Citellus dauricus, Dipus sagitta, Allactaga siberica, Cricetulus barabensis, Rattus norvegicus, Mus musculus, Apodemus agrarius, Myospalax aspalax, Micromys minutes, Micromys arvalis, Ondatra zibethica, Capreolus capreolus*

Other species:

Within Zhalong National Nature Reserve, Amphibians belong to 2 orders, 4 families and 6 species; Retiles include 2 orders, 2 families and 2 species; Fishes are from 9 families and 46 species; Insects in 11 orders, 65 families and 277 species; plankton include 13 divisions, 42 families and 60 genus; and other benthos include 12 families and 15 species.

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:

Ecological tourism:

Rich resources of waterfowl attract large numbers of visitors for bird watching. In 2002 the reserve was assessed as "AAAA" grade tour region by the National Tour Bureau, China. Over the past ten years the reserve has received approximately 80 000 tourists annually from China and abroad, which is important income for the reserve.

Popularization of science education:

The reserve has been used in the "National Education on Disperse Science Base", "Environmental Education Base in Heilongjiang Province" and "Patriotism Education Base in Qiqihaer City". Primary and junior high school students from local and city areas visit the reserve, to study various issues around nature conservation.

Science research:

The Reserve has cooperative arrangements with 6 government departments and has carried out 8 research topics Two projects have won the National Science and Technology Prize - including the projects "White Siberia Crane GEF" and "Utilizing the Flood Resources and Managing the Wetland Ecological Environment in the Songnen Plain".

Cultural values:

The Zhalong wetland, as the biggest wild Red-crowned Crane breeding site in China, carries a reputation as the "Homeland of Red-crowned Crane", and is valued by many experts and specialists for its numerous rare cranes and waterfowls. Reeds are harvested in winter to produce paper, which has been a traditional source of income for the communities in the reserve.

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:

The reserve is under state and collective ownership. The Qiqihaer City government and the Forestry Bureau of Heilongjiang Province share ownership over the land area and resources, and cooperate in reserve management**.**

b) In the surrounding area:

23. Current land (including water) use:

a) Within the Flyway Network site:

In the reserve area there are about 3800 people who engage in livestock breeding, fishing, reed harvesting, cultivating, farming marine products and so on.

b) In the surroundings/catchment:

There are about 36 000 people in 14 villages, 4 counties and 1 city within the reserve. They engage in livestock husbandry, fishing, planting crops, farming products and making deckle (metal frames for containing paper pulp during paper-making)

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:

Local communities in the reserve have increased capacity for exploitation of natural resources, with a range of adverse impacts on the hydrology, flora and fauna. The Ramsar Information Sheet for the site lists the main adverse factors as: enclosure of land for cultivation, wetland reduction, overgrazing in meadow marshland, overfishing leading to reduction in fish stocks, development of production activities and an increase in disturbance caused by human activities

b) In the surrounding area:

In the surrounding area, enlargement of land for agricultural purposes, discharge of industrial waste-water into the upper reaches of Wuyu'er River, an increase in large scale production and development activities, overfishing and overgrazing, also affect the site.

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.

In 1992 the reserve was recognised on the “List of Wetlands of International Importance” (Ramsar Convention). The Zhalong National Nature Reserve is classified as IUCN Management Category VI (Managed Nature Reserve). Since 1982, the reserve management bureau has implemented a range of works to protect resources, attract and tame rare birds, assist recovery of rare birds, and conserve protected cranes, other rare waterfowls and the wetland ecosystem.

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.

A. Implement relocation of residents out of the reserve core zone.
B. Draw up the Zhalong Reserve Management regulations.
C. Establish a long-term plan for water supply to Zhalong Reserve.
D. Implement the Second Stage Total Construction Engineering

27. Current scientific research and facilities:

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

The reserve has participated in the project “Research on Utilizing the Flood Resources and Managing the Wetland Ecological Environment in the Songnen Plain” and “Development of a

Wetland Site and Flyway Network for Conservation of the Siberian Crane and Other Migratory Waterbirds in Asia" (Project of Siberia Crane GEF). Existing facilities in the reserve include: 1 weather station, 4 motorcycles, handheld telescope, high-time telescope, portable computer, GPS, full-automatic weather instruments and so on.

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.

A. Events such as "World Wetlands Day" and "Love Birds Week" are conducted to promote the importance of protecting rare birds and wetlands.
B. In the peripheral communities and schools, we promote the importance of protecting marsh waterfowls.
C. Through video and slide shows, we promote knowledge of projecting marsh rare birds.
D. Funds from the EU-CHINA "Educational Project of Ecological Environment on Zhalong National Reserve", used to provide training in the environmental education teaching framework at local primary and junior high schools.

29. Current recreation and tourism:

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

Three Routes for Watching Birds, Farm for Breeding Cranes, Site for Releasing Rare Birds, Building for Watching Cranes, Audio-visual Projection Hall and Eco-specimen Exhibiting Hall, etc. Between 80 000 and 100 000 tourists, primary and high school students visit the reserve each year.

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.