



**Rongcheng Swan National Nature Reserve
People's Republic of China**

EAAF NETWORK SITE CODE FOR OFFICE USE ONLY:

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| E | A | A | F | 1 | 5 | 2 |
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**Site Information Sheet on
East Asian-Australasian Flyway Network Sites
(SIS) – 2017 version**

Available for download from <https://eaaflyway.net/about-us/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 Secretariat. Compilers should provide an electronic (MS Word) copy of the Information Sheet and, where possible, digital versions (e.g. shapefile) of all maps.

1. Name and contact details of the compiler of this form *:

Compiler 1

Full name:

Sun Yang

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Compiler 2

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2. Date this sheet was completed *:

DD/MM/YYYY

28/01/2022

3. Country *:

People's Republic of China

4. Name of the Flyway Network site *:

Accepted English transcription of the Site's name.

Rongcheng Swan National Nature Reserve

5. Map of site *:

The most up-to-date available and suitable map of the wetland should also 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.

37°20'4.07", 122° 33'53.20"

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

0

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.

The total area is 1675 hectares (668 hectares in the core area, 628 hectares in the buffer and 379 hectares in the experimental area)

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.

Since 2016, Rongcheng Whooper Swan National Nature Reserve has cooperated with the Beijing Forestry University, Shandong Normal University and other scientific research institutions to carry out bird resources survey. The coastal Reserve has one of the largest known concentrations of wintering Whooper Swan (*Cygnus cygnus*), a Class II protected animal in China. Over 6,000 Whooper Swans (*Cygnus cygnus*) regularly overwinter at the Reserve.

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.

- Criterion 6:** The site regularly supports >1% of the individuals in East Asia population of Whooper Swan (1% population threshold 600 individuals). The Reserve has one of the largest concentrations of wintering Whooper Swan, nationally listed as Class II National Key Protected Wild Animal List. In all five recent years (2016-2020) winter numbers considerably exceeded the 1% population threshold, with between 6,335 – 8,600 individuals counted. The five-year average count was 6,874 individuals (11.5% of the biogeographic population).

| Species | 1% threshold | Maximum count | Date |
|--|--------------|---------------|------------------|
| Whooper Swan (<i>Cygnus cygnus</i>) East Asia population | 600 | 6,605 | 20 November 2016 |
| | | 6,235 | 20 November 2017 |
| | | 6,370 | 19 November 2018 |
| | | 6,560 | 21 November 2019 |
| | | 8,600 | 6 December 2020 |

- It is anticipated that the site regularly supports several globally threatened waterbird species (Criterion 2), such as: one critically (CR) endangered species (*Aythya baeri*), five endangered (EN) species (Oriental Stork *Ciconia boyciana*, Black-faced Spoonbill *Platalea minor*, Scaly-sided Merganser *Mergus squamatus*, Far Eastern Curlew *Numenius madagascariensis* and Great Knot *Calidris tenuirostris*) and seven vulnerable (VU) species (Horned Grebe *Podiceps auritus*, Chinese Egret *Egretta eulophotes*, Swan Goose *Anser cygnoides*, Common Pochard *Aythya ferina*, Hooded Crane *Grus monacha*, Great Bustard *Otis tarda*, Relict Gull *Larus relictus*). Recent occurrence and numbers of each of these species is not currently available.
- It is anticipated that the site regularly supports over 20,000 migratory waterbirds (Criterion 5), however additional waterbird monitoring is needed for confirmation.

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.

Shallow water, beach, reed swamp, *Suaeda* marsh

12. Jurisdiction *:

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

Rongcheng Municipal People's Government

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.

Rongcheng Swan National Nature Reserve Management Office Address: North of No.6 village, Chengshan Town, Rongcheng City Director: Qin daozhan.
Tel: 0631-7573676

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.

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.

Geological and geomorphic features: many types of coastal wetland, such as lagoon, beach, estuary and shallow sea, are the main part of the natural landscape of the Reserve. The sand bar lagoon system is a typical geomorphic feature of the Reserve.

Hydrogeology: the main rivers flowing through the Nature Reserve are Bailong River, Madao River, Shishui River, Huakuang River, etc. because they belong to the coastal edge water system, the catchment area is not large, most of them are seasonal intermittent rivers, with the characteristics of high source, short flow, rapid rise, great difference between dry and rich.

16. Physical features of the catchment area:

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

Geological and geomorphic features: sandbar lagoon system is a typical geological and geomorphic feature of the Reserve.

Soil type: the process of soil formation in the Nature Reserve is mainly cementation, and the zonal soil is brown soil. The leaching of soil is continuous, the soluble salt is mostly lost, the active Fe, Al and clay particles accumulate in the downward layer, the formation time of clay particles is long, and the layer of clay layer is deep. The base saturation is very high. The strong mineralization of organic matter and the influence of long-term human activities result in the low content of humus in the soil. There are four types of soil in the area: brown soil, tidal soil, aeolian sand soil and salt soil. There are eight sub types: brown soil, brown soil, tidal brown soil, albic brown soil, tidal soil, salinized tidal soil, coastal tidal salt soil and mobile aeolian sand soil. The sand loam, medium fine sand, loam and gravel bearing medium coarse sand deposited in the river are mainly distributed near the Bahe reservoir.

17. Hydrological values:

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

Rongcheng City is a coastal marginal water system, most of which are seasonal intermittent rivers, with high source, short flow, rapid rise and fall, which are easy to cause soil erosion. The main rivers include Guhe River, Xiaoluo River, Chedao River, Buliu River, Yatou River, Caiguan River, Bailong River, wanglian River, Madao River, Qishan River, etc. The underground water is the phreatic water of various sand loose sediments and bedrock fissure or confined water. The groundwater types in the loose sediment distribution area are mainly the phreatic water in the gravel layer of the valley plain and the phreatic water in the sand layer of the coastal plain. The groundwater types in bedrock area can be divided into bedrock fissure phreatic water and fracture, vein fissure phreatic water and confined water.

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.

The typical landform of Rongcheng Swan National Nature Reserve is sand bar lagoon system. The wetland vegetation types can be divided into 9 vegetation types and 35 formations. It is one of the areas with abundant flora in Jiaodong Peninsula and even Shandong Province. The geographical components of the flora permeate each other, which shows the complexity of the geographical components of the flora in this area.

19. Noteworthy flora:

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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)

In terms of the distribution types of families, pantropics accounts for a higher proportion, followed by the north temperate zone. As a coastal area of North China, the north temperate zone is a good embodiment of its natural attributes. At the same time, because it is close to the sea, the special habitat allows the distribution of tropical taxa such as *Lauraceae*, which shows a high tropical attribute in the floristic composition of the family.

According to the distribution types, its floristic composition is rich and complex, and its main trend is similar to the floristic composition of families, which fully shows the plant composition characteristics of its geographic latitude; secondly, as the habitat of coastal areas, it also shows the connection and transition with the tropical areas of the south.

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)

Shandong Rongcheng Swan National Nature Reserve is located in the northeast of Jiaodong Peninsula. According to the division of China's zoogeographical division, the fauna is mainly composed of Middle Paleozoic species, and a few Oriental species extend northward to this area.

Mammal fauna: 10 kinds of mammals; bird fauna: 203 kinds of birds; amphibious reptile fauna: 7 kinds.

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:

Social value: actively guide the surrounding community, make use of the advantages of Swan and other valuable ecological resources, vigorously develop tourism service projects, so that the masses can benefit from the achievements of ecological environment protection.

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)

The land is collective.

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 land belongs to the collective.

b) In the surrounding area:

23. Current land (including water) use:

a) Within the Flyway Network site:

The land in the Reserve belongs to collective land. According to the central policy, the land contract and management right remain unchanged.

b) In the surroundings/catchment:

The land belongs to the collective and the sea area belongs to the state.

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:

The Reserve is located in a densely populated area, and some villages and farmlands are within the scope of the Reserve.

b) In the surrounding area:

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 April 2007, it was promoted to a National Nature Reserve upon approval of the State Council (GBF [2007] No. 20).

Relationship: Part of Rongcheng wetland, national wetland of importance in China.

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?:

Master plan of Rongcheng Swan National Nature Reserve (2021-2030).

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

d) Describe any other current management practices:

Rongcheng Swan National Nature Reserve Management Office is independent and responsible for the daily management of the Reserve.

26. Conservation measures proposed but not yet implemented:

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

The original master plan of the Reserve (2011-2020) has expired, and National Forestry and Grassland Administration is engaged to investigate, plan and Design Institute to prepare the new master plan (2021-2030).

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: actively cooperate with the national environmental records center and Beijing Forestry University and other scientific research institutions, focusing on the investigation of the population number and habitat space of whooper swan and other corresponding wintering migratory birds. Since 2016, the global satellite positioning system has been set up for 60 Whooper Swans, and the migration rules and routes of Whooper Swan have been figured out in detail, providing a scientific basis for cross-regional protection.

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.

Exchange: in December 2010, it was awarded the title of "hometown of Chinese swan" by China Wildlife Association. On July 15-17, 2019, relevant personnel of the Management Office of the Reserve visited Henan Yellow River Wetland National Nature Reserve for special study, and successively studied in Yellow River Delta wetland, Qilian Mountain and other places. From November 21 to 23, 2019, the Swan International Academic exchange meeting was held in Rongcheng.

Education: Swan Science Museum provides popular science knowledge for citizens and tourists, and the Management Office of the Reserve constructs a publicity and education corridor.

Public awareness activities: Rongcheng Swan National Nature Reserve Management Office signed a joint construction and sharing agreement with surrounding communities and villages in the Reserve. Under the premise of complying with the relevant laws and regulations of the state, in the Swan season, in order to avoid disturbing the over wintering swans, the villages are forbidden to set off firecrackers and drones; refuse to dump garbage, sewage and other harmful substances into the Reserve; the communities and villages assist the Reserve to jointly monitor, manage and protect the birds such as swans, prevent and control the epidemic focus and environmental sanitation; once it occurs, it is forbidden to set off firecrackers and drones The existing illegal behaviors of injured or injured swans shall be reported to the Reserve in time for treatment or treatment; the boundary monument, boundary stake, warning sign, fence, fence and other facilities of the Reserve shall be maintained together.

29. Current recreation and tourism:

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

The Reserve mainly protects rare birds such as swans and the wetland ecosystem on which they depend. At present, the national forestry and grass Administration Survey Planning and Design Institute is being employed to re prepare the master plan of the Reserve, which will moderately develop ecotourism in the experimental area.

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 | <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"/> |
| Agriculture and aquaculture | | | |
| 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 checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Energy production and mining | | | |
| 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"/> |
| Transportation and service corridors | | | |
| 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"/> |
| shipping lanes | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| flight paths | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Biological resource use | | | |
| 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"/> |
| Human intrusions and disturbance | | | |
| 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"/> |

Natural system modifications

| | | | |
|-------------------------------|--------------------------|--------------------------|--------------------------|
| 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 type="checkbox"/> |
| other ecosystem modifications | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Invasive and other problematic species and genes

| | | | |
|-----------------------------------|--------------------------|--------------------------|--------------------------|
| 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"/> |

Pollution

| | | | |
|--|-------------------------------------|--------------------------|-------------------------------------|
| 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 checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" 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"/> |

Geological events

| | | | |
|-----------------------|--------------------------|--------------------------|--------------------------|
| volcanoes | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| earthquakes/tsunamis | <input type="checkbox"/> | <input type="checkbox"/> | <input 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 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 recognized 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

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