

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.

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

Full name: GERASIMOV Yuri

EAAF SITE CODE FOR OFFICE USE ONLY:

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Geographical Institute of Russian Academy of Science

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2. Date this sheet was completed *:

DD/MM/YYYY

27/12/2016

3. Country *:

Russia

4. Name of the Flyway Network site *:

Accepted English transcription of the Site's name.

Moroshechnaya River 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.

56.830 N; 167.170 E

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

0–10

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.

10,000 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 brackish water estuary (lagoon) separated from the Sea of Okhotsk by sand spit. Important staging site for more than 100,000 waders during both – northward and southward migrations.

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.

Most significant investigation was conducted in 1975–1990 (Gerasimov, Gerasimov, 1997; 1998; 1999; 2000; Huettmann, Gerasimov, 2002). Latest count of shorebirds was made 9–20 August 2004 by international team. It demonstrated that the site meets the criteria of the Flyway Site Network for some wader species (Schuckard et al., 2006).

Table. Maximum numbers of the common shorebird species of Moroshechnaya Estuary 9–20 August 2004. In bold, numbers according the 1% and 0.25% criteria to access if sites are of International Importance.

Species	Maximum count	EAAF 1% Flyway Population Threshold	EAAF 0.25% Flyway Population Threshold
Lesser Sand Plover	751	130	33
Great Knot	1198	2900	725
Spoon-billed Sandpiper	2	2	1
Red-necked Stint	1205	3150	788
Dunlin	9161	6500	1625
Whimbrel	3490	550	138
Bar-tailed Godwit	1867	1460	365
Eurasian Oystercatcher	51	110	28
Shorebirds (all species)	14612	20000	5000

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.

A; E; F; G; H; J; M; Q; Tp; U; Vt; W.

12. Jurisdiction *:

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

Territorial: Government of Kamchatskiy Kray (Lenin sq., 1, Kamchatskiy Kray, 683040, Russia).

Functional: Ministry of Natural Resources and Ecology of the Russian Federation for Environmental Protection (4/6 Bolshaya Gruzinskaya Street, Moscow 123812, Russia).

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.

Ministry Nature Resources and Ecology of Kamchatskiy Krai, Leningradskaya str., 118, Petropavlovsk-Kamchatskiy, 683003 Russia. tel.: +7-415-242-01-74; Fax.: +7-415-220-12-06; E-mail: priroda@kamgov.ru

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.

Gerasimov N.N., Gerasimov Yu.N., 1997. Shorebirds Use of Moroshechnaya Estuary // Shorebirds Conservation in the Asia-Pacific Region. Australia: 138–140.

Gerasimov N.N., Gerasimov Yu.N. 1998. The international significance of wetland habitats in lower Moroshechnaya river (West Kamchatka, Russia) for waders // International Wader Studies 10: 237–242.

Gerasimov Yu. N., Gerasimov N.N. 1999. A Register of important waterfowl wetlands in Kamchatka // Биология и охрана птиц Камчатки 1. М.: 37–46.

Gerasimov Yu. N., Gerasimov N. N. 2000. The Importance of the Moroshechnaya River Estuary as a Staging Site for Shorebirds // The Stilt 36 (2000): 20–25

Huettmann F., Gerasimov Yu. 2002. Using Sampling to obtain density estimates for Whimbrels (*Numenius phaeopus*) and other birds in the coastal tundra of the Moroshechnaya River Spit, Sea of Okhotsk, during fall migration // Avian Ecol. Behav. 8: 49–69.

Schuckard R., Huettmann F., Gosbell K., Geale J., Kendal S., Gerasimov Yu., Matsina E., Geeves W. 2006. Shorebird and Gull Census at Moroshechnaya Estuary, Kamchatka, Far East Russia, During August 2004 // Stilt 50 (2006). 34–46

<https://rsis.ramsar.org/ris/695>

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.

The Moroshechnaya Estuary is located on the west side of the Kamchatka Peninsula in the Russian Far East. The Moroshechnaya River, one of the largest rivers in the region, flows westward across the Kamchatka plain from the Sredinny Mountain Range to the Sea of Okhotsk. The river is 270 km long and its watershed covers 5,450 km². Tidal flows at the river mouth created a 20 km long by 2 km wide estuary. The estuary is separated from the Sea of Okhotsk by a 1.5 to 2 km wide shingle spit with an area of 30 km². Tides range up to 5.7 m and influence the estuary for tens of kilometers inland. At low tide, large sandy beaches and mudflats are exposed, creating important feeding areas for substantial numbers of the shorebirds during migration. The biggest tidal flat area is situated to northeast of this spit.

The large volume of fresh water flowing down the Moroshechnaya River, in conjunction with strong sea currents and large tidal flux, result in a complex area of marine and riverine sediments in and near the estuary. The western shores of the spit are a predominantly coarse, sandy substrate exposed to the Sea of Okhotsk. The beach is dynamic with changing coastlines and habitats. The tidal zone in front of the beach appears to be very productive. The substrate along the river is small pea-gravel. The river carries fine silt sediment from the mountains which settle in to mudflats when the water flow decreases in the estuary. At the river mouth there is a combination of coarser material along the channels and muddy substrate in flats.

Permanent freshwater marshes with creeks and small lakes are adjacent to estuary from inland side.

16. Physical features of the catchment area:

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

The catchment area (official Ramsar site "Moroshechnaya River") comprises the step-like valley of the Moroshechnaya River and a saline lagoon of the Sea of Okhotsk. This wetland complex contains a mixture of various lakes and oxbow-lakes over peat and peat-gley soils. The valley is composed from the Neogene loose rocks, overlain by the Upper Pleistocene and Holocene marine sediments. The mean air temperature of the hottest month (July) is between +8° and +12°C. The warm period, when the temperature is above zero, lasts for over 100 days.

17. Hydrological values:

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

No data

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 vegetation is primarily represented by the floodplain tundra, mire and meadow communities. From July to the end of October, the coastal tundra has large quantities of different kinds of berries: *Rubus chamaemorus*, *Rubus arcticus*, *Vaccinium uliginosum*, *Lonicera kamtschatica*, *Empetrum sibiricum*, *Vaccinium vitisedaea*, *Oxycoccus palustris*, *Chamaepericlymenum suecicum*.

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)

List of rare plants from Red Data Book of Russia includes one species *Rhodiola rosea*

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)

The estuary of the Moroshechnaya River comprises important habitats for migrating waterbirds. Tens thousand of ducks use the estuary during northward and southward migrations.

Breeding species of waders include Eurasian Oystercatcher, Wood Sandpiper, Greenshank, Red-necked Phalarope, Long-toed Stint, Dunlin, Eastern Curlew, Black-tailed Godwit, also various ducks, jaegers, gulls and terns. In August – September up to 5 thousand Bean Geese *Anser fabalis* concentrate in upper part of the estuary before migration.

Species listed in the Russian Red Data Book, which occur at the site, include Steller's sea eagle *Haliaeetus pelagicus*, white-tailed eagle *H. albicilla* and gyrfalcon *Falco gyrfalcon*.

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:

People working seasonally at the fishing settlement near the mouth of Moroshechnaya River

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:
Hunting area. Lend belongs to Federal governments

- b) In the surrounding area:
Hunting area. Lend belongs to Federal governments

23. Current land (including water) use:

- a) Within the Flyway Network site:
Reindeer wintering area.

- b) In the surroundings/catchment:
Reindeer breeding and wintering area.

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:
Possible pollution by oil owing to an oil exploring on the shelf of the Sea of Okhotsk.

- b) In the surrounding area:
Development of coastal infrastructure including pipelines of oil and gas exploring industry on sea shelf.

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.

“Moroshechnaya River” was officially designated as Ramsar site in 1996. It was Strict Nature Reserve (Game Refuge) in 1975–2002; reserved land for Strict Nature Reserve – 2002–2009; no any protect status by Russian legislation from 2009.

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?:

Management plan was prepared in 2000 but not been implemented.

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

d) Describe any other current management practices:

None

26. Conservation measures proposed but not yet implemented:

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

None

27. Current scientific research and facilities:

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

No current research

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

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

None

29. Current recreation and tourism:

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

None

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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Energy production and mining			
oil and gas drilling	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/>
Human intrusions and disturbance			

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- | | | | |
|--|--------------------------|--------------------------|--------------------------|
| 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 type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| air-borne pollutants | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| excess energy | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

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 recognised by international bodies such as the United Nations and by many national governments as the global standard for defining and recording protected areas and as such are increasingly being incorporated into government legislation.

Ia Strict Nature Reserve

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

Ib Wilderness Area

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

II National Park

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

III Natural Monument or Feature

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

IV Habitat/Species Management Area

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

V Protected Landscape/ Seascape

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

VI Protected area with sustainable use of natural resources

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