Upo Wetland

Republic of Korea

EAAF NETWORK SITE CODE FOR OFFICE USE ONLY:

E	A	A	F	0	9	6

Site Information Sheet on East Asian-Australasian 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 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:

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2. Date this sheet was completed *:

DD/MM/YYYY

05/03/2018

3. Country *:

Republic of Korea

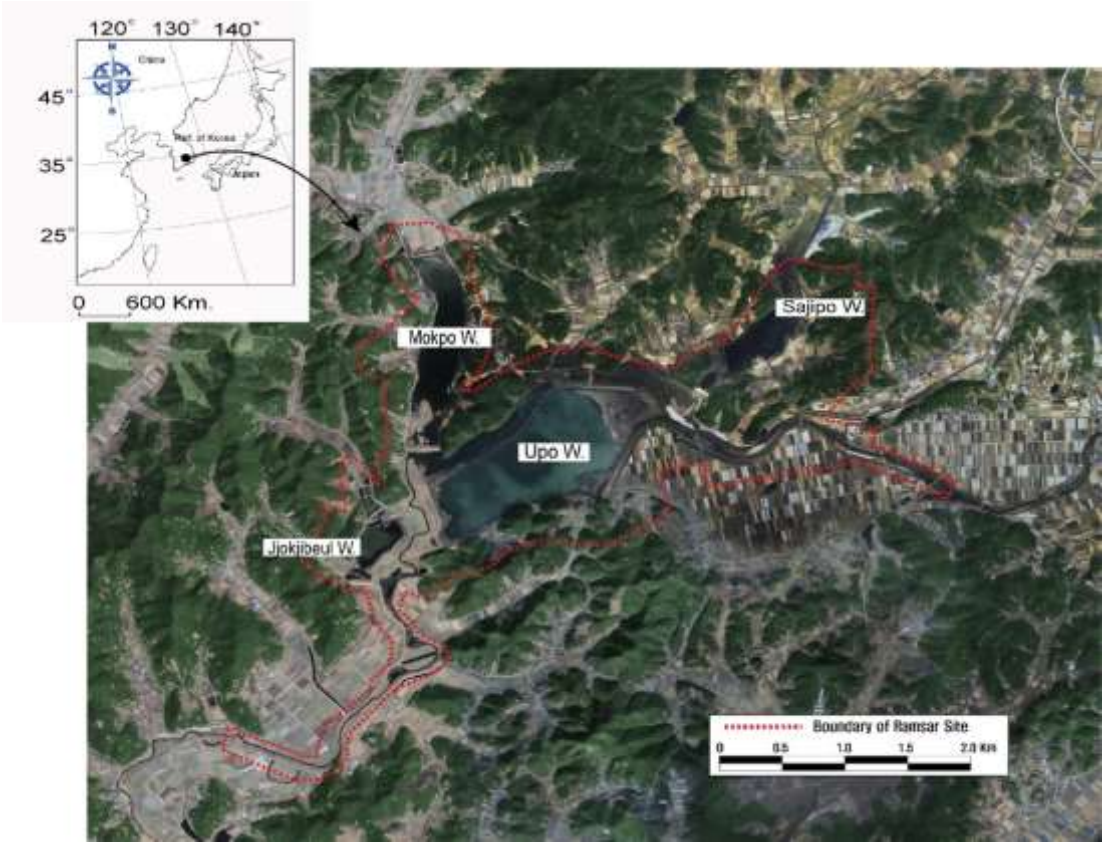
4. Name of the Flyway Network site *:

Accepted English transcription of the Site's name.

Upo Wetland

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.

- Upo Wetland: 35°33'9.97"N / 128°24'53.35"E
- Sajipo Wetland: 35°33'43.07"N / 128°26'7.32"E
- Mokpo Wetland: 35°33'37.39"N / 128°24'20.18"E
- Jjokjibeol Wetland: 35°32'40.72"N / 128°23'58.92"E

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

Average 10m

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.

231ha (total Wetland Pretection Area: 854ha)
- Upo Wetland: 128 ha
- Sajipo Wetland: 36 ha
- Mokpo Wetland: 53 ha

- Jjokjibeol Wetland: 14 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.

Upo Wetland is typical natural riverine wetland which is located at the lower part of Topyeng stream and is largely influenced by flooding from concentration of heavy rains in summer season. Diverse species of flora and fauna inhabit the wetland. Also local people live based on this wetland.
Nakdong River Basin is very important habitat of waterbirds. In particularly, the 3 birds visiting sites (Upo Wetland, Junam Reservoir, and Nakdong River Estuary) are designated as EAAFP site. The 3 birds visiting sites are recognized as one waterbirds habitat from migratory birds. Therefore we need integrated management on these 3 sites.

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 2: Supports internationally important species.
- EN (Endangered): *Ciconia boyciana, Platalea minor, Nipponia nippon* (Restoration)
- VU (Vulnerable): *Anser cygnoides, Aythya ferina, Antigone vipio, Vanellus vanellus*

Criterion 5: Regularly supports about 40,000 migratory waterbirds.
Criterion 6: Regularly supports 1% of the individuals in a population of one species.
- Regularly supports about 2.6% of world population of *Mareca falcate* (NT).
- Regularly supports about 1.3% of world population of *Aegypius monachus* (NT).

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 -- Permanent freshwater marshes/pools

12. Jurisdiction *:

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

- Legal Jurisdiction: Ministry of Environment (MoE)
- Administrative Jurisdiction: Changnyeong County

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.

- Upo Wetland Management Office
  - · Address: 232-1, Sejin-ri, Yueo-myeon, Changnyeong-gun, Gyeongsangnam-do, Republic of Korea.
  - · Phone Number: +82-55-533-1550
  - · The person in charge: Gwangwhan SOON (Chief of the Office)
- Nakdong River Basin Environmental Office
  - · Address: 250-5, Jungdaero, Uichanggu, Changwon-city, Gyeongsangnam-do, S. Korea.
  - · Phone Number: +82-055-211-1630
  - · The person in charge: Gihyun Rho (Chief of the Natural Environmental Division)

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.

- Gyeongnam Ramsar Environmental Foundation. 2013~2017. Simultaneous monitoring on migratory waterbird habitats in Kyeongsangnam-do S. Korea.
- Ministry of Environment. 2010~2016. Winter Waterbird Census of Korea.
- Nakdong River Basin Environmental Office. 2016. Management plane for Upo Wetland.

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.

Bedrock of this area built up during the Cretaceous. Therefore about 140 million years past of dinosaur's footprint fossils were discovered around this wetland. Upo Wetland located at the lower part of Topyeng steam. Riverhead of the stream is Hwawang Mountain (758m) and flow down to Nakdong River. Upo Wetland characterized by the alluvial soil, water depth about 0.7m, permanent wetland type, overflow in monsoon season.

16. Physical features of the catchment area:

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

Surface area of Topyeng stream is 123.97 ㎢ and the length is reached 29.57 ㎞. The general stream geology of the east is high and the river water flows down to the west. The river bed slope of downstream on its west is 1/2,680 to 1/2,330. The special climate feature is heavy precipitation concentration in summer season influenced by typhoon and summer monsoon.

17. Hydrological values:

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

Upo Wetland is hydrologically important of its functions on water supply for agricultural rice paddies, preventing floods and supplement of underground 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.

It provides wintering site, breeding place and stopover site for the migratory birds. The dominants vegetation type is aquatic plant. As designated as national wetland conservation site, fishing is restricted thus it provides resting and feeding place for waterbirds. Upo wetland is home for the various wildlife and people.

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)

Prickly water lily forms a colony, which is designated as 2nd endangered species from MOE. Except this, there are lots of nationally designated endangered plants. The colony of willow trees naturally grows on the edge of the wetland bank area and provides wonderful scenic view

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)

It is critical habitat for endemic speices such as *Macropodus ocellatus*, *Rhodeus uyekii* etc. and endangered mammal spices such as *Prionailurus bengalensis euptilurus, Lutra lutra, Martes melampus* designated as nationally endangered spices. Generally, it provided shelter for various animals with full of biodiversity.

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:

Traditionally, local residents consider Upo wetland as holy area. Additionally Upo wetland is precious place for its local people to have fishing and agriculture benefit. It can be found some archaeological evidence of the cretaceous period. Adjacent high land area of Upo wetland was ancient Gaya Kingdom thus it remains various and unique culture heritages.

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:

National Land

b) In the surrounding area:

Private Land

23. Current land (including water) use:

a) Within the Flyway Network site:

Fishery Activity

b) In the surroundings/catchment:

Agriculture (rice, garlic, onion etc.)

24. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

a) Within the Flyway Network site:

Fishing activities and water level adjustment can cause conflict to provide migratory bird habitat.

b) In the surrounding area:

Wintering migratory birds are using adjacent rice paddy area as feeding site, last 10 years, the scale of feeding rice paddies dramatically decreased by garlic and onion cultivations in rice paddies.

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.

Natural Monument (524) Area, Nation Wetland Protection Area, Ramsar Site

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?:

Conservation Management Plan was set and implemented from national and local level as National Wetland Conservation area and Cultural Asset Conservation area.

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

d) Describe any other current management practices:

According to the Crested Ibis Rehabilitation Project, It is expanded the feeding and resting site.

26. Conservation measures proposed but not yet implemented:

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

Currently, there is no publicly registered management master plan.

27. Current scientific research and facilities:

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

Since 2001, The Bird individual survey has completed for 10 years organized by MOE. Currently, GREF has been implemented migratory birds counting and monitoring. And sometimes, other research institutes do some survey.

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.

There are visit centre and educational facilities around the wetland and enhanced to increase the public awareness.

29. Current recreation and tourism:

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

Supposed to gradually increase the number of visitors by promoting ecotourism.

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 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 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.