

Information Sheet on Ramsar Wetlands (RIS)

2006-2008 version

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX.22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.
3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

FOR OFFICE USE ONLY.

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DD	MM	YY

Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

August 26, 2007

3. Country:

The People's Republic of China

4. Name of the Ramsar site:

Hubei Honghu Wetlands

5. Designation of new Ramsar site or update of existing site:

This RIS is for (tick one box only):

- √ a) Designation of a new Ramsar site; or
b) Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area

The Ramsar site's boundary and area has not changed.

Or

If the site boundary has changed:

- i) the boundary has been delineated more accurately; or
ii) the boundary has been extended; or
iii) the boundary has been restricted**

If the site area has changed:

- i) the area has been measured more accurately; or
ii) the area has been extended; or
iii) the area has been reduced**

**** Important note:** If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site:

Refer to Annex III of the Explanatory Note and Guidelines, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

- i) **a hard copy** (required for inclusion of site in the Ramsar List):
ii) **an electronic format** (e.g. a JPEG or ArcView image)";

√iii) a GIS file providing geo-referenced site boundary vectors and attribute tables.

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park, etc.), or follows a catchment boundary, or follows a geopolitical boundary such as local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of waterbody, etc.

Boundary of Honghu Wetland is marked with dikes, which has a total length of 104.5 km and is the same as that of Honghu Wetland Nature Reserve.

8. Geographical coordinates (latitude/longitude, in degrees and minutes):

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.

Centre: 29°50'N, 113°19'E

Boundary: 29°49'-29°58'N, 113°12'-113°26'E

9. General location:

Include in which part of the country and which large administrative region(s) the site lies and the location of the nearest large town.

Honghu Wetland is located in the southeastern part of Hubei Province in China. Lying at the northern bank of middle Yangtze River, it is the lowest reach of Sihu lake catchment, Jiangnan Floodplain and is an interfluvium between the Yangtze River and the Dongjing River (a tributary of the Hanshui River).

It lies across Honghu County and Jianli County. Wuhan is about 170 km to the east, Three Gorges Dam about 300 km to the west, and East Dongting Lake (Ramsar site) or Yueyang City about 80 km to the south.

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

Average: 24.0 m / Maximum: 28.5 m / Minimum: 20.7 m

11. Area: (in hectares)

43,450 ha

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland

Honghu Wetland is located at the northern bank of middle Yangtze River. It is in the lowest reach of Sihu lake catchment (Chang Lake, San Lake, Bailu Lake, Honghu Lake), Jiangnan Floodplain and it is an interfluvium between the Yangtze River and the Dongjing River (a tributary of the Hanshui River). Under the control of regulating sluices, water can seasonally flow between

Honghu Lake and the Yangtze River. Honghu Lake is the seventh largest freshwater lake of China which conserves natural wetland ecosystems and has multiple functions including flood regulation, fishing, climate adjustment, water quality enhancement, tourism, scientific research and education, etc.

The annual average water depth of Honghu wetland is 1.35 meters with a small water level fall about 1 to 2 meters. Because of it the lake is quite appropriate for fishery. From shore to the centre of lake, four types of eco-communities have their distribution respectively: phreatophytes, emerging plant, floating plants, submerged plants. Wetland types include lake, fishing pounds, low-depth marsh and river channels. Honghu Wetland is rich in water plants, fishes and fresh water resources, thus plays an important role in the development of local economy and social stability.

Honghu Wetland is an important habitat for migratory birds to stop. It is also the gene bank of fresh water fish species living in the Yangtze river basin. In recent years, there are 138 species of birds, 62 species of fishes, 472 species of water plants and 21 variations recorded, 63 species of waterfowls among which were recorded with their individual amount more than 100,000. There are 6 species of birds under the first class of national protection and 13 species under the second class of national protection. From this point of view, Honghu Wetland is of great importance in biodiversity protection.

13. Ramsar Criteria:

Tick the box under each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11). All Criteria which apply should be ticked.

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14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Criterion 1: Honghu Wetland is the seventh largest freshwater lake in China and is the type of large lake wetland at lower Yangtze River. It connects the Yangtze River and is an important part of the wetlands ecosystem in Yangtze River basin. It contributes multiple ecosystem functions, such as flood regulation, fishery, climate adjustment, water quality enhancement, tourism, scientific research and public education, etc. Honghu Wetland is not only an important habitat for migratory birds, but also of great importance in regulating regional climate, decreasing flood harm and maintaining regional ecological safety. It is an important guarantee for regional economy's sustainable development.

Criterion 2: There are 2 endangered and 5 vulnerable species of IUCN's Red List in the area. There are 19 species of birds under the first and second class of national protection together.

Besides, 38 species of birds are under provincial protection of Hubei Province. What's more, there are 2 species of fishes, 1 species of amphibian and 2 species of mammals under national key protection.

Species Latin name	Chinese name	Category in the IUCN Red List	Class of national protected animal	CITES Appendix	CMS Appendix
<i>Anser cygnoides</i>	Hongyan	EN			I
<i>Ciconia boyciana</i>	Dongfangbaiguan	EN		I	I
<i>Mergus squamatus</i>	Zhonghuaqiushaya	EN	I		
<i>Aythya baeri</i>	Qingtouqianya	VU			
<i>Anas Formosa</i>	Hualianya	VU		II	I
<i>Otis tarda</i>	Dabao	VU	I		I/II
<i>Anser erythropus</i>	Xiaobai'eyan	VU	II		I/II

The endangered flora from the site :

Species Latin name	Chinese name	Category in the IUCN Red List	Class of national protected animal	CITES Appendix	CMS Appendix
<i>Metasequoia glyptostroboides</i>	Dawn Redwood	CR			

Criterion 3: Honghu Wetland is an important part of total 238 ecological districts (appraised as one of the “Global top 200 ecological sites”) announced by World Wild Fund For Nature (WWF). Considering Honghu Wetland is a large herbaceous low-depth lake in the middle of the Yangtze River, it has the most typical characteristic of wetlands ecosystem in the Yangtze River Basin.

Honghu Wetland has an abundant biodiversity. This area is an important habitat not only for valuable waterfowls, but also for Yangtze River freshwater species. There are 231 species of vertebrates (138 species of waterbirds, 62 species of fishes, 6 species of amphibians, 12 species of reptiles, 13 species of mammals), 379 species of zooplanktons , 92 species of bottom-living animals, 472 species of vascular plants (21 species of variety included) and 280 species of phytoplanktons. This area is an important gene bank of freshwater fishes in China. Besides, it is also a major production site of Chinese freshwater fishery.

Criterion 5: Honghu Wetland is located in the “East Asian - Australasian” migratory route, an eastern route of global bird migration. According to investigations, more than 100,000 waterfowls migrate to Honghu in winter annually. From such monitoring in recent years, the numbers of winter migrants in 2004, 2005 and 2006 were 65 867, 94 375 and 130 483, respectively. The average was 96 908 individuals per year and the number is still under increasing.

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Criterion 6: According to 2006's investigation, all the 6 species of winter migratory waterfowls at Honghu Wetland (listed as below) exceeded 1% of their regional abundance.

Species Latin name	Chinese name	abundance	subspecies and population	1% of the regional population (WPE, 4 th Editon WI)
<i>Phalacrocorax carbo</i>	Luci	1 520	<i>sinensis, E, SE Asia</i>	1 000
<i>Podiceps cristatus</i>	Fengtoupiti	1 256	<i>cristatus, E Asia</i>	375
<i>Anser anser</i>	Huiyan	1 300	<i>rubrirostris, E Asia</i>	750
<i>Anser fabalis</i>	Douyan	1 536	<i>serrirostris</i>	700
<i>Anser albifrons</i>	Bai'eyan	2 694	<i>frontalis, E Asia</i>	1 800
<i>Platalea leucorodia</i>	Baipilu	147	<i>E Asia</i>	100

Criterion 7: Honghu Wetland is a nature breeding site for fishes. It is rich in fish and testacean species and also an important site for migrating fishes. There are 62 species of fishes in the site (of 18 families), including 34 species which could complete their life histories here (*Cyprinus carpio*, *Carassius auratus auratus*, *Pelteobagrus fulvidraco*, *Channa argus* etc. Also there are 78 species of crustaceans (cladocerans and copepoda animals included).

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

East hill-plain sub region, central China region, sino-India sub-division, Oriental realm.

b) biogeographic regionalisation scheme (include reference citation):

Zoogeography of China, Zhang Rongzu, 1999.

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Geology and geomorphology: Honghu Wetland is located at the lowest reach of Sihulake catchment. It belongs to the Jiangnan Floodplain subsidence zone, which is the second subsidence belt of the Neo-Cathaysian in east China, and is an inland faulted basin which has been formed since the Yanshan Movement. Both the geological structure and the rivers have exerted effects on the formation of its landform. Since Holocene Epoch, due to several times of Yangtze River and Hanshui River's breaching, some inter-channel depressions have been formed on the Jiangnan

Plain, among which one is today's Sihulake catchment. In the depression, the deposits of river, natural banks or artificial dikes are accumulated on the two sides, while in the middle low-lying land the water cannot be discharged smoothly and is silted into lakes thereby. Honghu is formed in such a situation.

Climate: Honghu Wetland nature reserve is located at the southern verge of the middle latitude in the warm northern subtropics, and is of moist monsoon climate type of the northern subtropics. It is cold and dry in winter here, but is hot and rainy in summer. The average temperature in July is highest, reaching up to 28.9°C. The average temperature in January is lowest, reaching below to 3.8°C, which is 5.5°C lower than other areas with the same latitude in the world. The annual average temperature is 15.9°C to 16.6°C. Influenced by the monsoon, the rainfall here is abundant and concentrated. The annual average rainfall is between 1000 mm and 1300 mm, the annual average transpiration is 1354 mm. Nevertheless, the rainfall varies greatly from year to year, and its unsteadiness often leads to drought or flood.

Hydrology: Honghu Wetland is located at the lowest reach of Sihulake catchment and is a main regulating lake. It has multiple functions including irrigation, fishery producing, shipping, etc. The catchment's total area is 3314km². The terrain here is smooth with a general altitude between 22.0m and 22.8m and is sloping from northwest to southeast. The rainfall here is abundant and is rich in water resources.

Water quality: Many years' monitoring result indicated that Honghu's water quality is good, with a transparency between 1.0 and 2.0. The average pH value is 7.4. The comprehensive water index achieves Level II by national surface water standard. The annual average water depth of Honghu is 1.35 meters. Generally, the water depth varies from 24.0m to 26.5m with an annual variation between 1m to 4m. In history the highest water level is 27.19m while the lowest is 22.87m.

Soil type: Honghu Wetland is a depression and marshland formed by water washing and deposit accumulation. Soil here could be divided into 3 groups: paddy soil, Chao soil and meadow soil. Further, it could be divided into 6 subgroups, 13 soil genuses. Among them the paddy soil and Chao soil has a broad distribution and covers a large area, while meadow soil only has a small distribution at shoaly lands. The pH value of the soil is 5.9-8.0 and mostly above 7.0, indicating alkalinity.

17. 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 of Honghu Wetland is broad, with a total area of 3,314 km². Its northwest part extends to the edge of Changhu Lake which lays in Jingzhou, while the north part expands to Fengkou and Laoxinkou. In the south, it stretches to Jingjiang River levee and Honghu Lake levee. The terrain within this area is smooth with a general altitude of 24-28m and is sloping slightly from northwest to southeast. The rainfall is rich, and the water quantity is very abundant.

The catchment of Honghu Wetland belongs to the Jiangnan subsidence zone, which is the second subsidence belt of the Neo-Cathaysian in east China, and is an inland faulted basin which has been formed from the Yanshan Movement. Its structure and framework are influenced by the northwest, northwest-west and northeast-north tectonic lines. Here the two groups of bedrocks formed after the Yanshan Movement ruptured the whole area into many fractures; the former

Quaternary Period is formed by the geological exogenetic force...

The catchment of Honghu Wetland is just one part of Sihu lake catchment which lays on the the Jiangnan Plain and is mainly composed of Jiangnan lake groups. Sihu lake catchment is an important part of middle and lower Yangtze River's lake wetlands system. The catchment mainly consists of alluvial and lacustrine plains, covering approximately 67.9% of the total area (11,547.5 km²). Macroscopically, the whole landform is unitary, basically constituted by a series of inter-channel depressions, but the microcosmic landform is characterized by a great variance. The land use type within the catchment is primarily agricultural production. The farmland (including fish pond) occupies approximately 60%; the forest land accounts for 13%; the lakes and rivers cover 20%; the road takes about 3.5%; other types (cities and inhabited area) account for approximately 3.5%. This region is our country's important productive area of rice, cotton, oil, and fish.

The catchment is located at the southern verge of the middle latitude in the warm northern subtropics, and is of moist monsoon climate type of the northern subtropics. It is an area where Chinese monsoon climate is typical and the surface layer is controlled by the monsoon. Honghu Wetland is surrounded by low-lying lands and marshlands formed by water washing and deposit accumulation. The catchment contains altogether 5 soil groups, 10 subgroups, 22 soil genres and 155 soil species, and their distributions are influenced by the micro-landform and human activities. The embankment soil is mainly distributed in the pattern of concentric circle, and from the verge to the bottom of the embankment are soils as follows respectively: calcareous Chao soil, hydroaric paddy soil, gleyed paddy soil and swamp paddy soil.

18. Hydrological values:

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

Honghu wetland plays a vital role in regulating flood in middle Yangtze. It also has functions including irrigation, fishing, shipping and tourism. Ground water of Honghu wetland mainly flows into Honghu Lake through Sihu channels. Thereafter, the Yangtze River functions in form of water storing and regulating through sluices brakeing flood peaks. Because of its relatively large area, Honghu wetland has the function of water regulating through an entire year.

Annually, the average rainfall of the catchment is 1,000-1,300 mm, the average runoff of surface water is 19.1×10^8 m³, the average runoff passing through is 7.8×10^8 m³, the average quantity of water flowing into Honghu wetland is 19.6×10^8 m³, the average flow of water flowing into Honghu wetland is 513 m³/s, the maximum flow is 727 m³/s.

19. Wetland Types

a) presence:

Circle or underline the applicable codes for the wetland types of the Ramsar "Classification System for Wetland Type" present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

Marine/coastal:

A	B	C	D	E	F	G	H	I	J	K	Zk(a)
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Inland:

L	M	N	O	P	Q	R	Sp	Ss	Tp	Ts	U	Va	Vt	W	Xf	Xp	Y	Zg	Zk(b)
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Human-made:

1	2	3	4	5	6	7	8	9	Zk(c)
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b) dominance:

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

Major Wetland types in the Ramsar site	Area	Percentage of the total area of the Ramsar site	Description
Permanent freshwater lake	30 700 ha	71%	The main body of Honghu wetland
Permanent freshwater marshes	6 500 ha	15%	
aquiculture pond	2 300 ha	5%	
Canal and offtake	1 200 ha	3%	
Flood area	100 ha	2%	Include irrigating channels and some farmlands

Note that there are some dryland (below 4%) in the site, which is not included in the table above.

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

Honghu wetland is a typical inland freshwater lake wetland in China and is also a herbaceous low-depth lake wetland. It conserves relatively intact wetland ecosystems. The main body of this wetland consists of Honghu lakes, including lakes, permanent herbaceous marshes, ponds and river channels. The natural vegetations here mainly include gramineae, cyperaceae, polygonaceae, nymphaeaceae, potamogetonaceae, hydrocharitaceae, trapaceae, haloragaceae and salicaceae plants. Except land-based higher plants, from lake shore to the center of water, along with the change of habitat water grades, four ecological plant communities in order, which is hygrophytes, emerged plants, floating plants and submerged plants, respectively.

The Honghu Lake commands a broad surface with the limpid water and blue sky merging into one whole. Plant species distributed here mainly include *Trapa incisa* Sieb, *Euryale ferox*

Salisb., *Trapa bispinosa* Roxb., and *P. maackianus* A. Bennett.. The coverage of aquatic plants reaches to approximately 70%. Water depth here generally varies between 2-4m which means it is a suitable habitat for birds such as ducks and gulls.

Herbaceous marshes mainly have their distributions at peripheral regions of Honghu wetland, where plant communities mainly include *Zizania caduciflora* (Turcz) Hand, *Trapa incisa* Sieb and *Phragmites communis* Trin. Herbaceous marshes are suitable for wild geese, ducks, snipes and other wading birds to live. They are also important breeding habitats for gulls and corncrakes.

Ponds mainly have distributions at the verge of Honghu wetland. They originated from past manual work. Vegetation types in ponds are relatively unitary, generally including *P. maackianus* A. Bennett, *Zizania caduciflora* (Turcz) Hand, *Trapa incisa* Sieb, etc, which are determined by pond fishing breeds and forms. Fishery production is the dominating form in ponds with fishing breeds of 4 domestic fish species and *Eriocheir sinensis* Milne. The water level could be manually controlled to benefit aquaculture. After fishes and crabs have been harvested, ponds become places for wading birds such as umbrette, storks and snipes, to search for food.

River channels mainly have distributions at west and north verge of Honghu wetland. At west there locates Jianli off take which connects the Yangtze River in the south and has several brakes to Honghu in middle parts such as Hekou brake and Tongzi Lake brake. At north the trunk channel of Sihui, which is the main water coming channel of upper Honghu wetland, directly connects to Honghu wetland. River channels have great importance in storing water, irrigation, wetland water supply, shipping, etc.

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, Justification for the application of the Criteria) 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 RIS.***

The flora of Honghu Wetland belongs to East China district, Sino-Japan forest plant subregion, North Pole floristic area. In the Hubei vegetation flora system, it is recognized as aquatic maple, poplar, and willow vegetation region along the lakeside or hillside on Jiangnan Plain, cultivated and aquatic vegetation district on Jiangnan Plain, middle subtropical evergreen broad-leaf forest area.

Totally, there are 472 species, 21 varieties, 1 forms of plants that belong to 116 families' 303 genus, among which there are 158 species (5 varieties included, of 44 families' 91 genus) of hydrophytic vascular bundle plants and 280 species of floating plants.

Some plant species in this region include: *Ginkgo biloba* that is peculiar to the Chinese, *Glycine soja* Sieb, *Semiliquidambar cathayensis*.

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically

important, etc., including count data. **Do not include here taxonomic lists of species present - these may be supplied as supplementary information to the RIS.**

Fishes: According to the historical records of Honghu Wetland, there used to be 114 species of freshwater fishes, but current records support only 57 species including national protected species of *Myxocyprinus asiaticus* and *Anguilla japonica*. The fauna of Honghu fishes consist of common families and genus appearing in alluvial plain lakes with dominating species of Jiangnan Plain fauna compound and southern tropic fauna compounds. Most of the fish species belong to the carp family with a rate of 58.5%.

Birds: According to the historic record of Honghu Wetland, there used to be 167 species of birds, but current record presents only 138 species which belong to 16 orders' 38 families. The migrating types of Honghu Wetland bird species consist of 39%'s winter migratory birds, 24%'s summer migratory birds, 23%'s resident birds and 11%'s passing birds. Currently, the ecological group of Honghu Wetland birds is mainly constituted by winter migratory waterfowls coming from the North. The fauna of wetland birds here belongs to both Oriental realm and Palaearctic realm. It has a characteristic that both southern and northern species are included but with Oriental-realm species of relatively domination.

There are 6 bird species under the first class of national protection: *Ciconia boyciana*, *Ciconia nigra*, *Mergus squamatus*, *Halicetus albicilla*, *Aquila heliaca* and *Otis tarda*. Besides, there are 13 bird species under the second class of national protection including *Platalea leucorodia*, *Anser albifrons*, *Cygnus cygnus*, *Cygnus columbianus*, *Aix galerculata*, *Buteo hemilasius*, etc. There are an additional 38 bird species under provincial protection of Hubei.

Amphibians and reptiles: Amphibians of Honghu Wetland holds 6 species of 3 families, 1 order, among which *Hoplobatrachus rugulosus* is the only batrachian which is under national key protection in China. Reptiles of Honghu Wetland belong to 12 species, 7 families, 2 orders, among which *Elaphe carinata* and *Elaphe taeniura* are under key protection in Hubei Province.

Mammals: Mammals of Honghu Wetland are recorded as 13 species, 7 families, 6 orders, among which *Muntiacus reevesi* and *Hydropterus inermis* are under national protection. Besides, *Lepus sinensis*, *Arotonyx collaris* and *Meles m.leptorhinus* are under provincial key protection of Hubei Province.

23. Social and cultural values:

a) Describe if the site has any general social 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:

Honghu Wetland and its surroundings is an important productive base for aquatic products. According to an investigation, the total yield of aquatic products (fishes, shrimps, crabs, shellfishes, etc) of this area reaches up to 1.37 million tones, covering more than 10% of the total yield in whole Hubei province. Due to the high water quality, Honghu Wetland aquatic products is well known all over the country.

Qingshui fort, which locates at the center of Honghu Wetland, is the relic of Wenquan County in history. The relic of Wuling is 20 km east to the reserve, it is a famous ancient battlefield. This place is also the headstream of Jing-chu culture, with an history of more than 2000 years.

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?

Yes.

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:

Before 1985, Honghu Wetland was basically used for traditional fish and shrimp harvesting. After 1996's establishment of nature reserve, hunting was banned within the whole reserve. Currently, the way people take use of Honghu Wetland mainly includes freshwater fish, shrimp and crab harvesting, and a small scale of tourism.

ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

Local opera "Waves of Honghu Lake" has been well known in the world and thus makes Honghu famous. It is widely known as "land flowing with milk and honey and heaven in the world".

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

There is a close intereaction between local communities and ecological characteristics of Honghu Wetland. On one hand, population density of local communities is high and water way transportation is busy. Without proper management, human activities could cause certain influences on animals living in Honghu Wetland. Because of abundant wetland resources in Honghu, people might concentrate only on short-term benefits to over-exploit and utilize natural resources, which might result in the change of Honghu Wetland's ecological environment. On the other hand, this ecological environment change might have important influence on local communities. The deterioration of Honghu Wetland's ecological environment would have a negative effect on the development of local economy. Directly, it would reduce the wetland's ability to regulate flood, decrease the abundance of wildlife resources, decline the stocking benefit and the shipping capability, and even harm tourism industry.

In order to promote public awareness of protecting Honghu Wetland, Protection Association of Honghu Lake has been established. Several counties have founded joint-defense force on resource protection. These measures have played important roles in Honghu Wetland resource protection.

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: ✓

Though Honghu Wetland has no non-material value like a religious site, it is called “Mother Lake” by local residents, which has a close connection with the conservation of Honghu Wetland’s ecological value.

24. Land tenure/ownership:

a) within the Ramsar site:

State ownership.

b) in the surrounding area:

In the surrounding area, 60% of land belongs to the collectivity while 40% of land belongs to the nation.

25. Current land (including water) use:

a) within the Ramsar site:

All the land within the Ramsar site belongs to the nature reserve. There are four land use types here: water surface (i.e. water area), approximately taking up 71% of the total area and is the main body of the reserve, mostly for birds and fishes’ living and breeding and allows limited fishing during closed fishing seasons; marsh, occupying about 15% of the total, maintains its nature state for migratory birds’ inhabitation and is absolutely protected; pond, approximately accounting for 5%, mainly used for fishery cultivation; other land use types, covering about 5%, mainly consist of river channels and a few residents’ homes. To manage the wetland effectively, the nature reserve is divided into three function areas listed as below:

Core region: 8,000 ha, covering 18% of the total reserve. It is firmly protected area. No productive activity and human disturbance is allowed.

Buffer region: 3,749 ha, covering 9% of the total reserve. Only scientific monitoring is allowed.

Experimental region: 31,700 ha, covering 73% of the total reserve. Limited ecotourism activities and fishery production are allowed.

b) in the surroundings/catchment:

Land use type in the surroundings (within the drainage basin) is mainly agricultural land, among which farmland (include fish pond) covers about 60%, forest land covers 13%, lakes and rivers cover 20%, roads cover 4.5%, other types (town and resident area) cover 2.5%. This region is our country’s important productive area of rice, cotton, oil, and fish.

26. 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 Ramsar site:

In the past, negative factors affecting Honghu Wetland mainly include the following aspects: Firstly, with the construction of the Yangtze River levee, Honghu lake was separated from the Yangtze River and remained only seasonal links; Secondly, last 50 s' construction of Honghu dike had led to reclaiming the land from the lake, the effect of which resulted in the wetland area decline from 760 km² to current 414 km² and the function degradation of Honghu Wetland; Thirdly, due to aquaculture development in Honghu Wetland since the 1980s, the net-circled cultivation area has reached to 251 km² and thus resulted in the overuse of water grass resource. As a consequence, water grass abundance declined and the water quality declined. ; Finally, traditional hunting activities before 1996 had led to a heavy damage to waterfowl resources.

Since the establishment of the reserve in 1996, the terrible situation has been basically reversed while currently there are still existing a few illegal hunting activities, which to some extent threaten waterfowl and fish resources.

b) in the surrounding area:

The surrounding area is densely-populated with frequent production activities. It highly relies on Honghu Wetland resources. Surrounding communities primarily live on fishery cultivation.

27. Conservation measures taken:

a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar 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.

Honghu Wetland Nature Reserve was set up in 1996 by Jinzhou government, and was upgraded to provincial nature reserve in December, 2000, covering an area of 41,412 ha.

Honghu Wetland has been put in China's Important Wetlands List, and is a preferential program of both China National Wetland Conservation Action Plan and China National Wetland Conservation Project Planning. As an important freshwater-lake wetland in middle and low Yangtze River and Hubei's largest natural lake, all levels of governments place great emphasis on its protection work. Since 2002, The State Forestry Administration took Honghu Wetland as one of the first five national wetland demonstration sites of protection and restoration, and has totally invested 27.07 million Yuan. In 2004 the WWF took Honghu as a pilot site of the project "Set up Contact Mechanism between the Lake and the Yangtze River, Return the Yangtze River Life Energy". At the same time, the Hubei Provincial government and Jingzhou city government started the rescue protection work towards Honghu Wetland, and had invested a total of 70 million RMB (approximately 11.6 million Swiss Francs) for its ecological restoration. Primary effect has been achieved.

Now, the Chinese government is planning a long-term project towards Honghu Wetland, which includes the following aspects: water conservancy construction, schistosomiasis control, the

establishment of the connection system between Honghu Wetland and the Yangtze River, aquaculture limitation, vegetation restoration, etc. Plans such as The Integrated planning of Honghu Wetland Nature Reserve and The Outline Program of the Development of Honghu Wetland Nature Reserve have been set up.

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia; Ib; II; III; IV; V; VI

c) Does an officially approved management plan exist; and is it being implemented?:

Founded by WWF, Honghu Wetland Nature Reserve Management Administration established the Management Plan for Honghu Wetland Nature Reserve (2003-2007) which was approved by the government and has been implemented well. The new Management Plan for Honghu Wetland Nature Reserve (2008-2012) is under development.

d) Describe any other current management practices:

Since the reserve's establishment in 1996, several protection measures have been adopted: :

1. Strengthen resource monitoring. Wetlands Institute was set up for daily monitoring of wetland resources, especially on birds, fishes and aquatic plants.

2. Strengthen law enforcement management. The provincial government has granted the reserve management administration the right to administrative penalties. The administration enjoys integrated management rights on wildlife protection, fishery administration, tourism management, shipping management, etc.

3. Strengthen publicity and education. In order to increase local residents' awareness of wetland protection, the reserve has promoted various publicity and education activities. Such activities include: 5000 copies of annually printed brochures, more than 20 big advertising boards and signing boards, the establishment of Honghu Wetland Website, the compiling of teaching book I love the Mother Lake for first and second school students, and hundreds of reports through media platforms.

4. Under the confirmation of nature reserve administration, reasonably take use of Honghu Wetland resources including aquatic plants, fishes and natural landscapes. Thus reasonable use could not only meet fishermen's productive needs, but also control Honghu Wetland to develop into marshes.

5. In order to restore and increase Honghu Wetland's fish resources, each year a period of time is specialized to ban fishing by the reserve, which is from April 1 to July 31. What's more, each February in spring and each May in summer is specialized to breed native fish species including *Hypophthalmichthys molitrix*, *Siniperca spp*, *Ctenopharyngodon idellus*, *Aristichthys mobilis* and *Mylopharyngodon piceus* in order to increase the abundance of fish resources and benefit freshmen in fishing during closed fishing periods to increase their income.

6. Establish the link between Honghu Wetland and the Yangtze River. In order to restore natural fish resources of Honghu Wetland, the regulator lock between the Yangtze River and Honghu Lake would be opened for several times in a year. Thus, these two water bodies could

exchange water and fishes which would help to increase fish abundance of Honghu Wetland and to restore the biodiversity here.

28. Conservation measures proposed but not yet implemented:

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

To establish all-weather optical monitoring systems to comprehensively monitor the activities of human and wild animals within the reserve.

29. Current scientific research and facilities:

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

1. In 2005, wetland Institute including Yangchai Lake monitoring sites was established, with related monitoring equipments such as telescopes. Besides, daily monitoring system was set up.

2. From 1999 to 2000, survey of wetland resources of Honghu Wetland was carried out which provided basic data for scientific expeditions; Since 2006, funded by WWF, biodiversity monitoring towards birds, fish, aquatic plants and animals was carried out.

3. From 2004 to 2005 ,WWF organized a synchronous investigation of winter migratory waterfowls in middle and lower Yangtze River.

4. In 2005, a land wild animal disease monitoring site was built, related facilities were bought.

5. Since 2003, by cooperating with Institute of Geodesy and Geophysics (IGG) , Wuhan Institute of Hydrobiology (IHB), Wuhan University and Nanjing Institute of geography and Limnology (NIGLAS), investigations towards water quality and sediment were carried out. The information of water quality's dynamic changes was obtained.

6. cooperating with IGG, field ecological experiment site was built in Xiaogang. This site was built for studying the influence of Honghu lake's water level to surrounding underground water, climate observation and ecological change monitoring.

The reserve lacks scientific facilities. Current facilities and equipments include a car, two boats, two digital cameras, a video camera, a fax machine, two handheld GPS, two binoculars , two computers , a laboratory of 20 m².

30. 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.

Since the establishment of the nature reserve, in order to enhance people's awareness of wetland protection and bird protection, the reserve administration promoted broad out communication and diverse, multi-dimensional publicity and education activities. The reserve have printed up to 30000 volumes of introductive brochures and bird cards, produced a TV feature of "Walk into Honghu Wetland", established Honghu Wetland Website (www.wetlands.net.cn), compiled a environmental education textbook "I Love the Mother Lake" , built more than 20 advertising boards, organized more than 30 times of publicizing vehicles (boats) to communities

within and surround the reserve, been reported by the media (TV, radio, etc) for more than 500 times. In addition, a bird watching cabin has been built within Yangcai Lake demonstration area with a bird watching foodpath of 1250 m and a publicizing boat. All the above forms of publication have greatly contributed to the public's awareness about environment protection.

31. Current recreation and tourism:

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

Honghu Wetland tourism development started only recently and has a small scale. The major tourism site, Lantian scenic area was constructed since 1997, and was approved to be the state AAAA-class scenic area in 2004. Besides, there have Tea Altar eco-tourism spot and Donggangzi eco-tourism spot. Since 1997, the average tourist reception is approximately 80,000 annually.

32. Jurisdiction:

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

Territorial: Jingzhou City People's government

Functions jurisdiction: The State Forestry Administration

Functions guidance departments: Hubei Provincial Forestry Bureau, Hubei Provincial Aquatic Bureau

33. 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. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

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34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

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