

Designation date: 16/10/2013 Ramsar Site no. 2184

Information Sheet on Ramsar Wetlands (RIS) – 2009-2014 version

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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 17, 4th edition).
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.

1. Name and address of the compiler of this form:

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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

May 7, 2013

3. Country:

The People's Republic of China

4. Name of the Ramsar site:

The precise name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. Alternative names, including in local language(s), should be given in parentheses after the precise name.

Hubei Chen Lake Wetland Nature Reserve

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 boundary and site area are unchanged:

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**

and/or

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 a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The boundary of the wetland is same as Chen Lake Wetland Nature Reserve, north to Nanbianhu Levee, Huangsihe Levee and Hongbei Forestry, east to Hongbei Forestry and Huangsi River, south to Gangzhouwaiyuan dyke, and west to the administrative boundary of Caidian district and Xiantao city.

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.

Center: 30°20'01"N, 113°49'34"E

Extent: 30°16'6"-30°25'6"N, 113°44'25"-113°55'39"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.

Located in the southwest of Caidian District, Wuhan city, Hubei province, PRC. It is about 45 km northeast away from the city center of Wuhan.

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

Average: 19.52 m

Maximum: 21 m

Minimum: 17.5m.

11. Area: (in hectares)

11,579 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.

Chen Lake Wetland Nature Reserve is located in the east boundary of Jiangnan Plain. As the largest typical freshwater lake marsh wetland of Jiangnan Plain, the wetland ecosystem is composed of continually shallow lakes, marshes and meadows. The main protection target is the typical wetland ecosystems, valuable endangered wildlife resources and their habitats. As one of the overwintering wetlands for a large amount of rare waterfowl in China, Chen Lake Wetland is called 'the gene pool of waterfowl' for its high biodiversity. Chen Lake Wetland is a representative wetland in the North Shore of Yangtze River, for its intact ecosystem structure, unique function, and rich wildlife resources. There are large areas of typical aquatic and hygrophyte plant community in Chen Lake Wetland. Three species of 2nd national key protection plants are recorded in the wetland. 11 globally threatened species including one Critically Endangered, one Endangered and six Vulnerable species have been recorded in the site. 26 species of birds of national protection can be found here, among which 8 species are listed in 1st level, and 18 species are 2nd level. In 2009, it has been designated as an Important Bird Area (IBA-CN352) by BirdLife International.

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.

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9

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:

Chen Lake Wetland is located in the confluence delta of the middle reaches of the Yangtze River, and Han River. It is one of the water regulating areas of Yangtze River and Han River. There are broad meadows in the wetland. As a typical freshwater marsh in the north shore of the Yangtze River, it is very important for water conservation, flood control, water quality and biodiversity.

Criterion 2:

Rare and endangered species distributed in Chen Lake Wetland and levels in related standards are listed as follows.

Species	Latin name	IUCN	CMS	CITES	National Protection Class
Bird Species					
Oriental Stork	<i>Ciconia boyciana</i>	EN	I	I	I
Swan Goose	<i>Anser cygnoides</i>	VU	I/II	—	—
Lesser White-fronted Goose	<i>Anser erythropus</i>	VU	I/II	—	—
Greater spotted Eagle	<i>Aquila clanga</i>	VU	I/II	—	II
Hooded Crane	<i>Grus monacha</i>	VU	I/II	I	I
Siberian Crane	<i>Leucogeranus leucogeranus</i>	CR	I/II	I	I
Streaked Reed-warbler	<i>Acrocephalus sorghophilus</i>	VU	I	—	—
Yellow-breasted Bunting	<i>Emberiza aureola</i>	VU	I	—	—
Mammal species					
Chinese Water Deer	<i>Hydropotes inermis</i>	VU	—	—	II

Criterion 4 :

Chen Lake Wetland is located in the bird migration routes along the East Asian and Australasian flyway. Various habitats such as lakes, rivers, and meadows make the wetland a good place for many birds to inhabit, forage and flourish. It is an important wintering ground, stopover site and breeding site for many birds. It plays an important role in the life cycle of various bird species. According to monitoring data in recent three years, the recorded bird species include: 60 species of wintering birds, such as *Anser fabalis*, *Grus grus*, *Grus leucogeranus*; 37 species of summering birds such as *Ardea bacchus*, *Chlidonias hybrid*, *Nettapus coromandelianus*, and 38 species of resident birds, such as *Podiceps cristatus*, *Ardea cinerea*, *Accipiter gentiles*. 5 species of passing migrant birds were also found during migration season, such as *Pelecanus crispus*. The total 140 bird species directory is list in appendix 1.

Criterion 5 :

According to the bird surveys conducted by Wuhan University, Huazhong Normal University, Huazhong Agricultural University, Wuhan Birdwatching Society, World Wild Fund for Nature-Wuhan Programme Office and other relevant universities and social groups in recent years , the number of wintering birds in Chen Lake Wetland is always more than 20000, which is the minimum number required by criterion 5. From 2007-2013, total waterbirds counted were between 20,414 and 40,138. Total numbers counted are as follows and Specific data is listed in appendix 2.

Year	2007	2008	2009	2010	2011	2012	2013
Total	27092	20414	33436	26952	40138	31022	35905

Criterion 6 :

According to the Chen Lake Wetland waterfowl survey from 2007 to 2013, abundance of 8 species exceeded 1% of the global abundance by Ramsar were listed in the table below.

English name	Scientific name	Population							1% level
		2007	2008	2009	2010	2011	2012	2013	
Bean goose	<i>Anser fabalis</i>	18053	8070	17370	13680	15307	16720	18706	1100
Eurasian Spoonbill	<i>Platalea leucorodia</i>	547	436	242	492	892	673	512	110

Oriental Stork	<i>Ciconia boyciana</i>	31	37	82	41	59	42	38	30
Western Spot-billed Duck	<i>Anas poecilorhyncha</i>	529	1975	1640	1486	1758	946	1830	1000
Common Crane	<i>Grus grus</i>	232	153	284	186	269	184	274	150
Black Stork	<i>Ciconia nigra</i>	3	2	—	9	5	2	3	1
Dalmatian Pelican	<i>Pelecanus crispus</i>	—	—	2	—	3	2	2	1
Great Cormorant	<i>Phalacrocorax carbo</i>	264	1646	1730	780	1569	1639	2039	1000

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:

Evergreen sclerophyllous forests, scrubs or woodlands, Oriental Deciduous Forest Biogeographic Province, Palaearctic Realm

b) biogeographic regionalisation scheme (include reference citation):

A Classification of the Biogeographical Provinces of the World (Miklos D.F. Udvardy, 1975)

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.

Geological and geomorphology: In terms of geological settings, Chen Lake Wetland belongs to the smooth plain which was formed by the Yangtze River and the Han River's spill-over deposition. It is located at the low-lying confluence of the Yangtze River and the Han River. The elevation ranges from 17.5m to 21m. Chen Lake is the lowest pod among many dish shaped pits in this area. With Chen Lake as the center, the terrain increased radially and gradually. Alluvial plain and lacustrine plain are the primary topographical features; the lacustrine plain covers Zhangjia Great Lake, Chen Lake, the surrounding area of Wangjiashe Lake and Hongbei Polder; the alluvial plain mainly distributed around Qukou Polder.

Origin: Naturally originated

Soil: There are 3 types of soil: moisture soil, paddy soil and meadow soil in Chen Lake Wetland. Moisture soil is mainly distributed in the Xiaosi, Qukou and other lakeshore plains, paddy soil is mainly distributed in Xiaosi, and meadow soil is concentrated in Chen Lake, Zhangjia Great Lake, Wangjiashe Lake, Huangsihe spillway and the surrounding floodplains. The 3 types of soils can be divided into 8 subclasses, 12 soil genus and 24 soil species. Most types of soil are neutral or alkaline, with a high level of organic matter content and total nitrogen content. 40% area of soil contains more than 4% (first level) organic matter and total nitrogen, the other 60% area of soil contains 2-4 % (second to third level). The rapidly available phosphorus content is low in general, 80% area of soil contains less than 10 parts per million and nearly 80% of area with high content of rapidly available potassium has reached or exceed 100 part per million.

Hydrology: The main rivers in this site include Huangsi River, Xiliu River and Dongjin River. The main lakes in this site are Zhangjia Great Lake, Chen Lake, and Wangjiashe Lake. The wetland connects the Han River through Huangsi River in its upper part and connects Yangtze River through

Dongjin River in its lower part. The main supplemental water sources are surface runoff and precipitation.

Water depth: The average depth is about 3.5m during high water period and 0.5-1.0m during low water period.

Water quality: The water quality of the rivers and lakes inside the reserve area attained Grade III of the national surface water standard of China. Water transparency is 0.75m. The monitoring data are as follows:

Items	Average value	Maximum	Minimum	Maximum/ minimum
pH	8.25	8.7	7.8	1.12
Dissolved Oxygen	7.24	9.3	5.2	1.79
Total Nitrogen	0.61	0.99	0.45	2.20
Total Phosphorus	0.12	0.41	0.02	20.50
Total Hardness	1.46	2.30	0.89	2.58

Climate: Chen Lake Wetland Nature Reserve is represented as northern subtropical continental monsoon climate. The average annual temperature is 16.5°C. The frostless period is about 270 days. The hottest month is July with the mean temperature of 28.9°C, and the coldest month is January with the mean temperature of 3.5°C. The relative humidity is 62~82%, and the dryness index is between 0.5 and 1.0. The average annual water temperature of lakes is about 13.5~15.2°C. In winter or at night, the temperature of the lake surface is higher than that of the land. The average annual precipitation is 1250mm, most of which falls in spring and summer. The prevailing wind direction in winter is north, northeast and northwest; the prevailing wind direction in summer is southerly.

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 main catchment area of Chen Lake Wetland is the Han River basin, the area of which is 151,000 square kilometers. The watershed terrain is high in northwest and low in southeast. The geological structure in the west is mainly fold ridges which form low mountains, and that in the east is mainly plains and hills. The lower reaches of Han River belong to the modern alluvial plain with rivers crisscrossed. The soil type is alluvial soil, the lands use is mainly farmland and fish ponds, with a small amount of forest land and wetland. Jiangnan Plain is represented as the north subtropical continental monsoon climate which is mild and humid, with annual precipitation of 1100~1300mm. Chen Lake Wetland is located in the confluence delta of the Yangtze River and the Han River. The wetland connects the Han River through Huangsi River (Hanjiang Dujiatai floodway) in its upper reaches and connects Yangtze River through Dongjin River in its lower reaches. The main water source of the wetland is flood from Yangtze River during summer flood season, which flow backward into Dongjin River through Huangling watergate and then into Chen Lake Wetland through Huangsi River.

18. Hydrological values:

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

Chen Lake Wetland plays an extremely important role in flood control, supplementing groundwater, water conservation, and water purification, etc. Chen Lake Wetland is a flood storage area of Eastern Jiangnan Plain, which is an important ecological protection barrier for Wuhan City. The wetland has a storage capacity of 93.32 million cubic meters. It regulates flood water of the Han River and the Yangtze River through Dujiatai floodway and Huangling Watergate every flood season. The wetland is very important in guaranteeing the safety of the lower reaches of Han River and the middle reaches of the Yangtze River. Chen Lake Wetland is important for supplementing

groundwater in the surroundings, providing water for living and agriculture. The vast amount of marshes in Chen Lake Wetland is also important for water conservation and water purification.

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)

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

Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

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.

Tp (3815.5 ha, 56.8%); O (1668.8 ha, 24.7%); 1 (676.4 ha, 10.1%); M (566.7 ha, 8.4%)

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.

Chen Lake Wetland Nature Reserve is located in the north shore of the Yangtze River, the south edge of the warm north subtropical climate. It belongs to the continental monsoon climate zone of China. There are various habitats in the wetland, such as lakes, shoals, meadows, marshes, rivers, farmland, woodland and other habitats in this area. The dominating vegetation of the reserve is natural wetland aquatic vegetation, and the less common is the artificial vegetation and sparse forest grass vegetation. The natural aquatic vegetation can be divided into emergent plant group, floating-leaved plant group, submerged plant group, and the dry season hygrophilous vegetation group based on life form. The rich habitat and vegetation resources provide breeding habitat for birds, mammals, amphibians and other animals. Chen Lake Wetland provides scientific research resources and places for universities and research institutions, provides abundant water products, reeds and other industrial raw materials for society, and also provides natural ecological barrier for Wuhan by regional climate regulation, water conservation and flood storage. It is very important for ecological balance in Jiangnan Plain and the middle reaches of the Yangtze River.

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 vegetation in Chen Lake Wetland include: emerging plants, dominated by *Phragmites communis* and *Zizania caduciflora*; floating plants, such as *Trapa pinosa*, *Trapa quadrispinosa*, *Nymphoideapeltatum*, *Nelumbonucifera*, *Euryale ferox*; and submerged plants, such as *Ceratophyllum demersum*, *Myriophyllum spicatum*, *Utricularia spp.*, *Potamogeton crispus*, etc.; During low water period, the lake shore turns to marsh and meadow, the vegetation is dominated by *Cyperaceae*, *Grainaceae*, *Cruciferae* and *Compositae*; xerophytes distribute in the surrounding forests, villages and farmland, such as *Salix matsudana*, *Morus alba*, *Broussonetia papyrifera*, *Sapium sebiferum* and other wood species. There are 65 species of phytoplankton (belongs to 7 phyla, 28 families and 50 genera, 315 species of vascular plants (belongs to 74 families and 198 genera). Among these plants, three

species are listed in the 2nd level of national protected wild plants, including *Ceratopteris thalictroide*, *Netumbo nucifera*, *Trapa incisa*.

22. Noteworthy fauna:

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

The animals in this site are divided into terrestrial animal group, amphibious animal group, hygrophilous animal group and aquatic animal group based on their habitats. According to survey data, in this reserve there are 73 species of benthic animal belonging to 3 phyla, 5 classes, 12 orders and 29 families; 55 species of fishes belonging to 6 orders and 13 families; 10 species of amphibians belonging to 1 order, 4 families and 4 genera; 28 species of reptiles belonging to 2 orders, 8 families and 22 genera; 153 species of birds belonging to 15 orders and 38 families in the oriental flora, including 84 species of wetland waterfowls; there are 26 species of mammals belonging to 6 orders, 12 families and 23 genera, 4 widely distributed species, 13 Oriental species, 9 Palaearctic species.

Besides the rare species listed in Criteria 2, the other rare species recorded in the wetland include: 1 species of bird (*Aquila chrysaetos*) listed in the 1st level of national protected wild animal; 9 species of bird listed in the 2nd level of national protected wild animal, namely *Anser albifron*, *Falco subbuteo*, *Falco tinnunculus*, *Grus grus*, *Centropus sinensis*, *Otus scop*, *Bubo bubo*, *Cygnus columbianus* and *Aix galericulata*.

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:

Chen Lake Wetland has great social and cultural values, such as groundwater recharge, environmental education, material resources, and ecological tourism. It is an important flood storage area in the middle reaches of the Yangtze River, with a total capacity of 93.23 million cubic meters. Chen Lake Wetland is rich in natural resources with an annual output of fish and other aquatic products of about 2000 tons, and 9000 tons of reeds. Chen Lake Wetland has various well-preserved wetland types and the natural scenery is beautiful, which makes it a great place for environmental education and ecological tourism.

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?

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:

24. Land tenure/ownership:

- a) within the Ramsar site:

In the reserve, 5704.5 hectares (49.3%) of the land is state-owned land, and the remaining 5974.6 hectares (50.7%) of the land is collective land. Chen Lake Wetland Nature Reserve Administration has unified management rights.

- b) in the surrounding area:

State ownership; the local government has the tenure of land use.

25. Current land (including water) use:

- a) within the Ramsar site:

Land use status within the reserve is as follows:

Wetland, 6727.5 ha , accounted for 58.1% of the total area, mainly are lakes, meadows and rivers.

Forest land, 503.0 ha , accounted for 4.4% of the total area.

Farmland, 4060.0 ha , accounted for 35.0% of the total area.

Land for other uses, 294.4 ha , accounted for 2,5% of the total area, mainly are villages and roads.

- b) in the surroundings/catchment:

Most of the lands are agricultural land, and the rest are wetland and forest land.

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:

There is no industry in the surroundings of Chen Lake Wetland Nature Reserve. The core area is protected by levee so that it is hardly disturbed by human activities. Most of the experiment areas are farmland and forest land. The living sewage and the agricultural non-point source pollution have impacts on the ecosystem, so do natural disasters such as flood and drought, as well as ecological tourism.

- b) in the surrounding area:

The surrounding agricultural activities may have certain impact on the ecosystem.

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.

The reserve was set up in 1994. In the year of 2006, it was promoted to provincial nature reserve.

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?:

'The Master Plan of Hubei Chen Lake Wetland Provincial Nature Reserve' has been permitted by the government of Hubei province, and is being implemented now.

d) Describe any other current management practices:

According to 'Law of the People's Republic of China on the Protection of Wild Life' (1988), 'Regulations of the People's Republic of China on the Nature Reserve' (1994), 'Regulations of Wuhan city on Wetland Reserve' (2010), exploitation of the wetland is rigidly restricted, illegal activities such as encroachment, destroying wetland, and hunting animals is severely punished. 11 basic stations in the reserve are in charge of management, protection, monitoring and patrolling conducted by the Chen Lake Wetland Administration and Districtive Sub-bureau of Public Security for Forest patrol daily in the reserve in winter. Wetland protecting and monitoring system and 3 monitoring towers are utilized for a real-time and round-the-clock monitoring of the reserve. At least 4 publicity activities were held annually.

28. Conservation measures proposed but not yet implemented:

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

Establish ecological compensation mechanism to alleviate the conflict between ecological protection and local agriculture.

Set up Chen Lake Wetland Police Station to strengthen law enforcing work at grass-root level.

29. Current scientific research and facilities:

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

The present research projects:

- (1) The impact of fishery on the wetland protection which evaluate the negative effect of excessive artificial cultivation in the wetland.
- (2) Dynamics of water quality in recent years and the effects on wetland.
- (3) The succession and protection measurement of the national protected plants in Chen Lake Wetland.
- (4) Quantitative study on the population development rare waterfowl in Chen Lake Wetland.
- (5) Study on the connections in the rivers and lakes as well as the eco-hydrology process in Chen Lake Wetland.

Field workstation conditions: The reserve has a staff of 10 members, managing 3 ecology monitoring stations and 1 bird refuge, taking charge of monitoring, scientific research and birds rescue. The staff is equipped with 10 telescopes, 3 digital cameras, 2 patrol cars, 10 motorbikes, 1 speed boat, 2 wooden boat etc. Working and management system has been established. Now, there are 10 monitoring line and 10 monitoring plots. The wildlife resources investigation of the reserve has been completed after several years of efforts.

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.

Chen Lake Wetland Nature Reserve Administration Bureau has issued a number of sets of popular science materials (brochures) about wetland, opened up an exhibition room and a herbarium. Wetland protection education is carried out by means of TV, broadcasting station, newspapers, automotive advertising and delivering propaganda materials during National Wetland Day, bird-loving week and the Law Publicity Month, 2 popular science parks, a bird watching corridor of 2100 meters long and a bird-watching hide have been built as a wetland education site in the experiment area. At present, the environmental educational project 'nature school' is underway.

31. Current recreation and tourism:

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

Yes, the 'Ecological Tourism Plan (2009-2020) of Chen Lake Wetland, Hubei Province' has been approved by Hubei Forestry Department. At present, Ecological tourism in Chen Lake Wetland is boosted in a scientific, legal and sequential way. About 20,000 tourists visit Chen Lake Wetland annually in recent years.

32. Jurisdiction:

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

Regional: Caidian District, Wuhan City, Hubei Province

Functional: Wuhan Caidian Forestry and Tourist Bureau, Hubei Province

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.

Definition: Bureau of Wuhan Caidian District, Chenhu Wetland Nature Reserve

General Director: Jun CHEN

Address: 225# Lianhuahu Avenue, Caidian District, Wuhan city, Hubei Province

Post: 430100

Office Tel: +86-(0)27-69819100

Email: hbchsd@sina.com

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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Appendix 1 : Directory of wintering, summering, resident, and migrating birds recorded in recent three years

NO	Species	Latin Name	Monitoring Year
Wintering birds (60 species)			
01	Purple Heron	<i>Ardea purpurea</i>	2012
02	Intermediate Egret	<i>Mesophoyx intermedia</i>	2012
03	Great Bittern	<i>Botaurus stellaris</i>	2011
04	Oriental Stork	<i>Ciconia boyciana</i>	2012
05	Black Stork	<i>Ciconia nigra</i>	2011
06	Eurasian Spoonbill	<i>Platalea leucorodia</i>	2012
07	Swan Goose	<i>Anser cygnoides</i>	2012
08	Bean goose	<i>Anser fabalis</i>	2012
09	Greater White-fronted Goose	<i>Anser albifrons</i>	2012
10	Lesser White-fronted Goose	<i>Anser erythropus</i>	2012
11	Greylag Goose	<i>Anser anser</i>	2012
12	Bar-headed Goose	<i>Anser indicus</i>	2012
13	Northern Pintail	<i>Anas acuta</i>	2012
14	Common Teal	<i>Anas crecca</i>	2012
15	Falcated Duck	<i>Anas falcata</i>	2012
16	Mallard	<i>Anas platyrhynchos</i>	2012
17	Gadwall	<i>Anas strepera</i>	2012
18	Eurasian Wigeon	<i>Anas penelope</i>	2011
19	Northern Shoveler	<i>Anas clypeata</i>	2012
20	Ruddy Shelduck	<i>Tadorna ferruginea</i>	2012
21	Tundra Swan	<i>Cygnus columbianus</i>	2012
22	Smew	<i>Mergellus albellus</i>	2012
23	Common Merganser	<i>Mergus merganser</i>	2012
24	Common Shelduck	<i>Tadorna tadorna</i>	2012
25	Northern Harrier	<i>Circus cyaneus</i>	2012
26	Pied Harrier	<i>Circus melanoleucos</i>	2012

27	Greater spotted eagle	<i>Aquila clanga</i>	2012
28	Peregrine Falcon	<i>Falco peregrinus</i>	2012
29	Eurasian Hobby	<i>Falco subbuteo</i>	2012
30	Common Quail	<i>Coturnix coturnix</i>	2012
31	Common Crane	<i>Grus grus</i>	2012
32	White-naped Crane	<i>Grus vipio</i>	2011
33	Hooded Crane	<i>Grus monacha</i>	2010
34	Siberian Crane	<i>Leucogeranus leucogeranus</i>	2012
35	Northern Lapwing	<i>Vanellus vanellus</i>	2012
36	Kentish Plover	<i>Charadrius alexandrinus</i>	2012
37	Little Ringed Plover	<i>Charadrius dubius</i>	2012
38	Common Ringed Plover	<i>Charadrius hiaticula</i>	2012
39	Spotted Redshank	<i>Tringa erythropus</i>	2012
40	Common Greenshank	<i>Tringa nebularia</i>	2012
41	Green Sandpiper	<i>Tringa ochropus</i>	2012
42	Common Sandpiper	<i>Actitis hypoleucos</i>	2012
43	Wood Sandpiper	<i>Tringa glareola</i>	2012
44	Common Snipe	<i>Gallinago gallinago</i>	2012
45	Pied Avocet	<i>Recurvirostra avosetta</i>	2012
46	Black-tailed Gull	<i>Larus crassirostris</i>	2010
47	Herring Gull	<i>Larus argentatus</i>	2012
48	Black-headed Gull	<i>Larus ridibundus</i>	2012
49	Grey Wagtail	<i>Motacilla cinerea</i>	2012
50	Water Pipit	<i>Anthus spinoletta</i>	2012
51	White-cheeked Starling	<i>Sturnus cineraceus</i>	2012
52	Daurian Jackdaw	<i>Corvus dauuricus</i>	2012
53	Dusky Thrush	<i>Turdus naumanni</i>	2012
54	Brambling	<i>Fringilla montifringilla</i>	2012
55	Japanese Grosbeak	<i>Eophona personata</i>	2012
56	Yellow-throated Bunting	<i>Emberiza elegans</i>	2012
57	Rustic Bunting	<i>Emberiza rustica</i>	2012
58	Little Bunting	<i>Emberiza pusilla</i>	2012
59	Yellow-breasted Bunting	<i>Emberiza aureola</i>	2012
60	Pallas's Bunting	<i>Emberiza pallasi</i>	2012
Resident birds (38 species)			
01	Little Grebe	<i>Tachybaptus ruficollis</i>	2012
02	Great Crested Grebe	<i>Podiceps cristatus</i>	2012
03	Great Cormorant	<i>Phalacrocorax carbo</i>	2012
04	Great Egret	<i>Casmerodius albus</i>	2012
05	Grey Heron	<i>Ardea cinerea</i>	2012
06	Little Egret	<i>Egretta garzetta</i>	2012
07	Western Spot-billed Duck	<i>Anas poecilorhyncha</i>	2012
08	Blake Kite	<i>Milvus korschus</i>	2011

09	Northern Goshawk	<i>Accipiter gentilis</i>	2012
10	Common Kestrel	<i>Falco tinnunculus</i>	2012
11	Common Pheasant	<i>Phasianus colchicus</i>	2012
12	Common Coot	<i>Fulica atra</i>	2010
13	Grey-headed Lapwing	<i>Vanellus cinereus</i>	2012
14	Oriental Turtle-dove	<i>Streptopelia orientalis</i>	2012
15	Spotted-necked dove	<i>Streptopelia chinensis</i>	2012
16	Common Scops Owl	<i>Otus scops</i>	2012
17	Eurasian Eagle-owl	<i>Bubo bubo</i>	2012
18	Common Kingfisher	<i>Alcedo atthis</i>	2012
19	Pied Kingfisher	<i>Ceryle rudis</i>	2012
20	Rufous-bellied Woodpecker	<i>Dendrocopos hyperythrus</i>	2012
21	Oriental Skylark	<i>Alauda gulgula</i>	2012
22	White Wagtail	<i>Motacilla alba</i>	2012
23	Light-vented Bulbul	<i>Pycnonotus sinensis</i>	2012
24	Long-tailed Shrike	<i>Lanius schach</i>	2012
25	Crested Myna	<i>Acridotheres cristatellus</i>	2012
26	Garrulus glandarius	<i>Eurasian Jay</i>	2012
27	Azure-winged Magpie	<i>Cyanopica cyana</i>	2012
28	Black-billed Magpie	<i>Pica pica</i>	2012
29	Large-billed Crow	<i>Corvus macrorhynchos</i>	2012
30	Oriental Magpie-robin	<i>Copsychus saularis</i>	2012
31	Daurian Redstart	<i>Phoenicurus aureoreus</i>	2012
32	Eurasian Blackbird	<i>Turdus merula</i>	2012
33	Great Tit	<i>Parus major</i>	2012
34	Eurasian Tree Sparrow	<i>Passer montanus</i>	2012
35	White-rumped Munia	<i>Lonchura striata</i>	2012
36	Grey-capped Greenfinch	<i>Carduelis sinica</i>	2012
37	Yellow-billed Grosbeak	<i>Eophona migratoria</i>	2012
38	Brown Crake	<i>Amaurornis akool</i>	2012
Migrating birds (11species)			
01	Dalmatian Pelican	<i>Pelecanus crispus</i>	2012
02	Grey Plover	<i>Pluvialis squatarola</i>	2012
03	Dunlin	<i>Calidris alpina</i>	2012
04	Black-tailed Godwit	<i>Limosa limosa</i>	2012
05	Black-winged Stilt	<i>Himantopus himantopus</i>	2012
06	Crested Lark	<i>Galerida cristata</i>	2012
07	Richard's Pipit	<i>Anthus richardi</i>	2012
08	Streaked Reed-warbler	<i>Acrocephalus sorghophilus</i>	2012
09	White-capped Water-redstart	<i>Chaimarrornis leucocephalus</i>	2012
10	Demoiselle Crane	<i>Anthropoides virgo</i>	2011
11	Amur Falcon	<i>Falco amurebsis</i>	2012
Summering birds (37 species)			

01	Chinese Pond-heron	<i>Ardeola bacchus</i>	2012
02	Little Heron	<i>Butorides striatus</i>	2012
03	Cattle Egret	<i>Bubulcus ibis</i>	2012
04	Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>	2012
05	Schrenck's Bittern	<i>Ixobrychus eurhythmus</i>	2012
06	Ixobrychus sinensis	<i>Ixobrychus sinensis</i>	2012
07	Black-crowned Night-heron	<i>Nycticorax nycticorax</i>	2012
08	Cotton Pygmy-goose	<i>Nettapus coromandelianus</i>	2012
09	Water Rail	<i>Rallus aquaticus</i>	2012
10	Slaty-breasted Rail	<i>Gallirallus striatus</i>	2012
11	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	2012
12	Watercock	<i>Gallixrex cinerea</i>	2011
13	Common Moorhen	<i>Gallinula chloropus</i>	2012
14	Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>	2012
15	Pintail Snipe	<i>Gallinago stenura</i>	2012
16	Oriental Pratincole	<i>Glareola maldivarum</i>	2012
17	Whiskered Tern	<i>Chlidonias hybrida</i>	2012
18	White-winged Tern	<i>Chlidonias leucopterus</i>	2012
19	Common Tern	<i>Sterna hirundo</i>	2012
20	Little Tern	<i>Sterna albifrons</i>	2012
21	Red Collared-dove	<i>Streptopelia tranquebarica</i>	2012
22	Indian Cuckoo	<i>Cuculus micropterus</i>	2012
23	Common Cuckoo	<i>Cuculus canorus</i>	2012
24	Greater Coucal	<i>Centropus sinensis</i>	2012
25	Black-capped Kingfisher	<i>Halcyon pileata</i>	2012
26	Eurasian Hoopoe	<i>Upupa epops</i>	2012
27	Sand Martin	<i>Riparia riparia</i>	2012
28	Barn Swallow	<i>Hirundo rustica</i>	2012
29	Red-rumped Swallow	<i>Hirundo daurica</i>	2012
30	Brown Shrike	<i>Lanius cristatus</i>	2012
31	Black-naped Oriole	<i>Oriolus chinensis</i>	2012
32	Black Drongo	<i>Dicrurus macrocercus</i>	2012
33	Red-billed Starling	<i>Sturnus sericeus</i>	2012
34	Brownish-flanked Bush-warbler	<i>Cettia fortipes</i>	2012
35	Great Reed-warbler	<i>Acrocephalus arundinaceus</i>	2012
36	Black-browed Reed-warbler	<i>Acrocephalus bistrigiceps</i>	2012
37	Eurasian Reed-warbler	<i>Acrocephalus scirpaceus</i>	2012

Appendix 2 :

Scientific name	English name	2007	2008	2009	2010	2011	2012	2013
<i>Podiceps ruficollis</i>	Little grebe	133	109	28	25	58	16	12
<i>Podiceps cristatus</i>	Great crested grebe	4	130	70	90	172	126	43
<i>Pelecanus crispus</i>	Dalmatian Pelican			2		3	2	2
<i>Phalacrocorax</i>	Great Cormorant	264	1646	1730	780	1569	1639	2039

<i>carbo</i>								
<i>Ardea cinerea</i>	Grey heron	1562	465	828	1148	1372	737	743
<i>Egretta alba</i>	Great egret	225	59	72	61	306	42	132
<i>Egretta intermedia</i>	Intermediate egret	51						
<i>Egretta garzetta</i>	Little egret	57	116	130	231	474	168	147
<i>Nycticorax nycticorax</i>	Black-crowned Night Heron			10	110	263	182	
<i>Botaurus stellaris</i>	Great bittern	1	3		2	3		1
<i>Ciconia nigra</i>	Black Stork	3	2		9	5	2	3
<i>Ciconia boyciana</i>	Oriental Stork	31	37	82	41	59	42	38
<i>Platalea leucorodia</i>	Eurasian spoonbill	547	436	242	492	892	673	512
<i>Cygnus columbianus</i>	Tundra swan	1	6		9	6	3	7
<i>Anser cygnoides</i>	Swan goose		67		42	153		
<i>Anser fabalis</i>	Bean goose	18053	8070	1737	1368	1530	16720	18706
<i>Anser albifrons</i>	Greater white-fronted goose	7		30	26	93	26	36
<i>Anser erythropus</i>	Lesser white-fronted goose		28	36	71	142	51	3
<i>Anser anser</i>	Greylag goose	52	70	130	484	830	202	120
<i>Tadorna ferruginea</i>	Ruddy shelduck	32	115	17	38	241	27	37
<i>Tadorna tadorna</i>	Common shelduck	8	1	1	11	13	7	9
<i>Anas falcata</i>	Falcated duck	5	614	540	157	368	157	269
<i>Anas strepera</i>	Eurasian wigeon			1	2	8		
<i>Anas crecca</i>	Common teal	891	1673	2380	940	2374	530	2683
<i>Anas platyrhynchos</i>	Mallard	34	832	733	72	258	84	46
<i>Anas poecilorhyncha</i>	Spot-billed duck	529	1975	1640	1486	1758	946	1830
<i>Anas acuta</i>	Northern pintail		25	3	6	8	8	8
<i>Anas clypeata</i>	Northern shoveler	1			14	62	63	6
<i>Aythya fuligula</i>	Tufted duck	38	2					
<i>Bucephala clangula</i>	Common goldeneye		20					
<i>Mergus albellus</i>	Smew					2	2	2
<i>Mergus merganser</i>	Common merganser		36		2	8		
<i>Leucogeranus leucogeranus</i>	Siberian crane		2				2	3
<i>Grus vipio</i>	White-naped crane			12	7	1		
<i>Grus grus</i>	Common crane	232	153	284	186	269	184	274
<i>Grus monacha</i>	Hooded crane		3	3		2		
<i>Rallus aquaticus</i>	Water rail		1		1	3		
<i>Amaurornis akool</i>	Brown crake				2	2	2	3
<i>Amaurornis phoenicurus</i>	White-breasted waterhen		3	3				
<i>Gallinula chloropus</i>	Common moorhen		126	37	62	74	31	13
<i>Fulica atra</i>	Common coot		16	2		2		
<i>Himantopus mexicanus</i>	Black-winged stilt	1	5					
<i>Recurvirostra avosetta</i>	Pied avocet	200	183	156	42	163	44	148
<i>Vanellus vanellus</i>	Northern lapwing	724	817	684	840	1582	538	1063
<i>Vanellus cinereus</i>	Grey-headed lapwing		40	70				

<i>Pluvialis squatarola</i>	Crey plover							
<i>Charadrius dubius</i>	Little ringed plover		230	20	40	180	12	6
<i>Charadrius alexandrinus</i>	Kentish plover	14	45	330	128	330	49	59
<i>Gallinago gallinago</i>	Common snipe	12	3	25	27	27	27	13
<i>Limosa limosa</i>	Black-tailed godwit					6	3	2
<i>Numenius arquata</i>	Eurasian curlew	2		7		8		2
<i>Tringa erythropus</i>	Spotted redshank	33	72	30	26	56	16	47
<i>Tringa glareola</i>	Wood sandpiper	1		3	2			
<i>Tringa nebularia</i>	Common greenshank	225	5	5	18	7	9	7
<i>Tringa ochropus</i>	Green sandpiper	3	1					3
<i>Tringa hypoleucos</i>	Common sandpiper		4	4	24	124		16
<i>Calidris alpina</i>	Dunlin	1870	2060	5480	5370	9610	7390	6538
<i>Larus crassirostris</i>	Black-tailed gull	5						
<i>Larus canus</i>	Mew gull		8	2	2	4	6	
<i>Larus argentatus</i>	Herring gull	139	48	56	64	196	65	39
<i>Larus ridibundus</i>	Common blacked-headed gull	1100	49	142	69	674	184	234
<i>Ceryle rudis</i>	Pied Kingfisher		2	2	2	4	2	
<i>Alcedo atthis</i>	River kingfisher	2	1	4	11	7	3	1