Information Sheet on Ramsar Wetlands (RIS) – 2009-2012 version

Available for download from http://www.ramsar.org/ris/key_ris_index.htm.

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 14, 3rd edition). A 4th edition of the Handbook is in preparation and will be available in 2009.

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.

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

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DD MM YY

Designation date | Site Reference Number

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2. Date this sheet was completed/updated:
August 25, 2011

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3. Country:
The People's Republic of China

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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.

Gansu Gahai Wetlands Nature Reserve

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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.

This Ramsar Site has the same boundary with the Gansu Gahai-Zecha National 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.

Center: 34°16′40″N, 102°26′53″E
Extent: 33°58′20″-34°32′32″N, 102°05′09″-102°47′35″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.

This Ramsar Site is located within the administrative area of Luqu County, Gannan Tibetan Autonomous Prefecture, Gansu Province, Northwest China. Luqu County has a total population of 32000. This site is 30 kilometers south of the downtown area of the Luqu County.

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

Average: 3,450 m; Maximum: 3,757 m; Minimum: 3,000 m

11. Area: (in hectares)

247,431 ha.

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12. General overview of the site:
Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

Gansu Gahai wetlands are typical inland alpine wetlands. This Ramsar Site is located at the northeast fringe of the Tibetan Plateau. There are diverse wetlands in this site, including herb marshes, peat bogs, lakes, rivers, etc. It provides important habitats for many wildlife species, and is an important stopover for many migratory birds. There are 90 plant species and 94 bird species taking the wetlands as their habitats, including several endangered species. The wetlands play a crucial role in maintaining regional biodiversity. Moreover, the wetlands present the significant functions of regulating micro-climate, water storage, flood control and carbon storage. It is the important water pool in the headwater area of the Yellow River, the second longest river of China. Dominated by alpine humid climate, large areas of peatlands with an average peat depth of 2 m, are developed in this Ramsar Site. It is an extremely important high-density carbon pool of this region, thus is of great significance for carbon cycle and global warming. Influenced by the Tibetan culture, wetland conservation and wildlife protection is a tradition of local residents. The wetlands in this site are now presenting a well-preserved natural status.

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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
☑	☑	☑	☑	☑	☑	❑	❑	❑

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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:

The well-preserved natural wetlands in this Ramsar Site are a typical representative of alpine wetlands in the world. This site is a part of the largest alpine peat marsh area in the world, and is in proximity (about 60 km) to Sichuan Ruoergai Wetland National Nature Reserve (another Ramsar Site in China). In addition, the wetlands exhibit flora and fauna features of two plateau areas, since this site is located in the transition zone of Loess Plateau and Tibetan Plateau. Such features are rarely seen in the world.

Criterion 2:

Latin name	English name	IUCN category	CMS Appendix	CITES Appendix	National Protection Class
Avian species					
Grus nigricollis	Black-necked Crane	VU	I	I	I
Saxicola insignis	White-throated Bushchat	VU	-	-	-
Aythya nyroca	Ferruginous Duck	NT	I	-	-
Ciconia nigra	Black Stork	LC	II	II	I
Grus grus	Common Crane	LC	II	II	II
Ardea purpurea	Purple Heron	LC	II	-	-
Egretta alba	Great Egret	LC	II	-	-
Ciconia nigra	Black Stork	LC	II	II	I
Fulica atra	Common Coot	LC	II	-	-
Larus ichthyaetus	Pallas's Gull	LC	II	-	-
Sterna hirundo	Common Tern	LC	II	-	-
Amphibian species					
Batrachuperus tibetanus	Alpine Stream Salamander	VU	-	-	-
Mammal species					
Lutra lutra	Eurasian Otter	NT	II	I	II
Prionailurus bengalensis	Leopard Cat	LC	-	I	-
Canis lupus	Gray Wolf	LC	-	I	-

Criterion 3:

This Ramsar Site is of high biodiversity. There are 529 species of seed plants and 145 bird species. It is a regional hotspot of species diversity. In addition, this site is possessed of many endemic species of the Tibetan biogeographic region. Nine fish species, i.e., *Gymnodiptychus pachycheilus, Schizopygopsis pylzovi*, *Gymnocypris eckloni*, *Triplophysa dalaica, Triplophysa orientalis*, *Triplophysa brevicauda*, *Triplophysa obscura*, *Triplophysa scleroptera* and *Triplophysa pseudoscleroptera*, are recognized as endemic species of the Tibetan biogeographic region. *Triplophysa obscura* is the endemic species of this site. Also, there are 4 endemic amphibian species, i.e., *Bufo minshanicus, Scutiger boulenger, Batrachuperus tibetanus*, and *Scincella potanini*. These fish species are important foods for the waterbirds such as Black-necked Cranes. This site presents various, large-scale alpine wetlands; such feature is unique in the biogeographic region; and its habitat diversity plays an important role in maintaining regional biodiversity.

Criterion 4:

Black-necked Cranes (*Grus nigricollis*) and Black Storks (*Ciconia nigra*) are summer migratory birds in this site. Every year, they come here during late March to early April, and leave during late October to November. The Swan Lake in this site covers an area of 244 ha; the lake water does not freeze during winter as the water source comes from springs with relatively high temperature. This lake provides a suitable wintering place for Whooper Swans (*Cygnus cygnus*), over 300 individuals of which winter in this lake during December to February each year.

Criterion 5:

This Ramsar Site is an important stopover for the migratory birds, and is a suitable breeding place for many bird species. According to the monitoring records of recent years, the total individual number of the water birds that perch, breed, rest or winter in this site can reach over 21,000 each year.

English name	Scientific name	Individual number (survey year)			
		2007	**2008**	**2009**	**2010**
Whooper Swan	*Cygnus cygnus*	200	300	300	123
Greylag Goose	*Anser anser*	400	400	800	400
Bar-headed Goose	*Anser indicus*	2200	2300	2000	2500
Ruddy Shelduck	*Tadorna ferruginea*	2950	3100	3450	2950
Cotton Pygmy-goose	*Nettapus coromandelianus*	-	-	1	-
Gadwall	*Anas strepera*	1650	1550	1650	1450
Falcated Duck	*Anas falcata*	20	20	200	20
Mallard	*Anas platyrhynchos*	2750	2700	3500	3150
Spot-billed Duck	*Anas poecilorhyncha*	20	20	20	20
Northern Shoveler	*Anas clypeata*	-	-	5	7
Northern Pintail	*Anas acuta*	1950	2100	2000	1750
Common Teal	*Anas crecca*	2800	2700	2950	2850
Ferruginous Duck	*Aythya nyroca*	200	200	800	200
Common Goldeneye	*Bucephala clangula*	-	-	14	16
Red-crested Pochard	*Netta rufina*	80	80	100	80
Common Merganser	*Mergus merganser*	500	500	500	500
Common Pochard	*Aythya ferina*	100	100	100	100
Common Kingfisher	*Alcedo atthis*	-	-	1	-
Common Crane	*Grus grus*	-	-	23	-
Black-necked Crane	*Grus nigricollis*	107	85	113	89
Water Rail	*Rallus aquaticus*	-	-	1	-
Common Coot	*Fulica atra*	2100	1900	2100	1750
Pintail Snipe	*Capella stenura*	-	-	23	-
Fantai Snipe	*Capella gallinago*	-	-	17	-
Common Redshank	*Tringa totanus*	300	300	300	300
Common Greenshank	*Tringa nebularia*	100	100	100	100
Green Sandpiper	*Tringa ochropus*	200	200	250	200
Common Sandpiper	*Tringa hypoleucos*	2	-	-	-
Black-winged Stilt	*Himantopus himantopus*	-	-	1	-
Kentish Plover	*Charadrius alexandrinus*	3	-	-	-
Northern Lapwing	*Vanellus vanellus*	-	-	1	-
Pallas's Gull	*Larus ichthyaetus*	-	11	13	11
Brown-headed Gull	*Larus brunnicephalus*	900	950	800	900
Common Tern	*Sterna hirundo*	1300	1200	1250	1400
Great Crested Grebe	*Podiceps cristatus*	150	150	200	150
Great Cormorant	*Phalacrocorax carbo*	50	50	150	50
Grey Heron	*Ardea cinerea*	2	3	1	2
Purple Heron	*Ardea purpurea*		2	1	-

Intermediate Egret	*Mesophoyx intermedia*	2	2	2	2
Cattle Egret	*Bubulcus ibis*	4	4	2	2
Chinese Pond-heron	*Ardeola bacchus*	3	2	3	-
Little Egret	*Egretta garzetta*	4	4	15	3
Black Stork	*Ciconia nigra*	10	47	319	139
Eurasian Spoonbill	*Platalea leucorodia*	5	-	6	-
Total	-	**21062**	**21080**	**24082**	**21214**

Criterion 6:

English name	**Scientific name**	**Individual number (survey year)**				**1% level**
		2007	**2008**	**2009**	**2010**	
Bar-headed Goose	*Anser indicus*	2200	2300	2000	2500	560
Ruddy Shelduck	*Tadorna ferruginea*	2950	3100	3450	2950	750
Black-necked Crane	*Grus nigricollis*	107	85	113	89	80
Black Stork	*Ciconia nigra*	10	47	319	139	5

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:

Tibetan Region, Central Asia Sub-realm, Palearctic Realm

b) biogeographic regionalisation scheme (include reference citation):

Zoogeography of China, (Rongzu Zhang, 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: This Ramsar Site is part of the Paleozoic folds of west Qinling Mountains in terms of tectonic setting. Sandstones and shales are the main rock types. The main geomorphologic types are represented as intermontane lowland and basin. The intermontane lowlands mostly have elevations above 3400 m; and are distributed in the Shaiyintan, Yematan and Bohai areas. Basins are commonly seen in Gahaitan, Guomaotan and Gaerniang areas.

Origin: Naturally originated.

Hydrology: Water supply in this Ramsar Site mostly comes from precipitation and groundwater. The amount of surface and groundwater is abundant. Tao River is the largest river in this site. The mainstream of the Tao River flows through the northwest part of this site, and its annual runoff accounts for 1.74 billion m^3. The main branches of the Tao River include Rewuqu River (also called Kuohequ or Shibadaowan River), Hekuburiguo River (also called Zecha River) and Zhouke River. Rewuqu River and Hekuburiguo River are originated from the Bohai wetland, and they join at Gongquhu, presenting annual runoff of 2.2×10^8 m^3. Zhoukou River is originated from the Gahai wetland, with an annual runoff of 290 million m^3. Gaihai Lake is the largest alpine freshwater lake in Gansu Province, presenting the total water storage of 4.8×10^7 m^3. Over 10 rivers (such as Qiongmuqiequ River, Wengniqu River, Dongcaiqu River, Zhongqu River, Geqiongkuhu River and

Geqingkuhu River) flow into the lake. Most water of Gaihai Lake ultimately flows into Tao River via Zhoukou River and subsurface runoff. There are many spring mouths in this site, with flow rate ranging from hundreds of milliliters to over 1 liter per second.

Soil type: The main soil types in this site include dark meadow soil, bog soil, peat soil, etc. The mineral matters are mostly represented as $CaCO_3$. The dark meadow soils are distributed in the areas with relatively shallow water table, and present mean organic matter content of 10.40%, total N of 0.550, total P of 0.089%, total K of 2.04%, available P of 5 ppm, available K of 180 ppm and pH of 7.5. The bog soils are mostly distributed in the areas of Gaerniang, Gahaitan and Guomaotan and present mean organic matter content of 25.20%, total N of 1.017%, total P of 0.077%, total K of 1.62%, available P of 8 ppm, available K of 141 ppm and pH of 7.2. The peat soils are commonly seen in the areas of Yematan, Gahaitan and Shaiyintan with elevations between 3,480 and 3,590 m, and present organic matter content of 35.57% total N of 1.411%, total P of 0.070%, total K of 1.52%, available P of 5 ppm, available K of 153 ppm and pH of 5.5.

Water quality: Water quality is good in this site. The mineralization degree is less than 0.5 g/L. The water in this site can be used for drinking and production. There is no industrial pollutant in this site. Also, no evident water pollution from residential areas occurs since population density is very low in this site (5.3 individuals per km^2). The concentration of N≤0.2 mg/L, P≤0.02 mg/L, COD≤15 mg/L.

Water depth: Water depth of the Gahai Lake and Swan Lake is stable at 2 m with slight temporal variation.

Sediment: The sediments in this site are dominated by fluvial and Lacustrine facies. The efflorescences from various sources are moved by wind and flood, and then intercepted by the wetland plants, developing the soils of the marshes and bogs.

Climate: This Ramsar Site is located in the alpine humid climate zone of Tibetan Plateau. The mean annual temperature is 1.2 °C. January is the coldest month with a mean temperature of -9.1 °C. No absolute frost-free period occurs throughout a year. Influenced by the westerly circulation and the alpine topography, precipitation is abundant in this site. The mean annual precipitation is 781.8 mm and the mean annual evaporation is 1,150.5 mm. Most rainfall takes place during July-September, accounting for 56.2% of total annual precipitation. Annual snow-pack period lasts about 80 days, with a depth of 5-6 cm. Annual accumulative solar radiation is 51,983.9 J/cm^2. Annual sunshine duration is 2,351.8h. The weather is variable. Hail is common during April-September, presenting a frequency of 2-3 times per month. Besides, thunderstorm, rainstorm, heavy snow, spring cold wave and drought are the main disasters in this site.

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17. Physical features of the catchment area:

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

This site belongs to the Tao River Basin, Hei River Basin in the Yellow River Basin, and Bailongjiang River Basin in the Yangtze River Basin. As this site is located across three basins the data of these catchment area are not available. Low grade metamorphic and unmetamorphic rocks dominate this site. The major mountains in the catchment include Dougelabu Mountains (located between the Gahai and Gaerniang area), Xiqing Mountains (the border of Luqu County with Maqu County and Qinghai Province) and Laerma Mountains (the border of Luqu County with Sichuan Province). These mountains have bare, steep peaks with elevations above 4 000 m. The bottomlands are mostly wetlands, the water sources of which are the rivers and streams in the mountain valleys. In some valleys with relatively flat topography, peat bogs with depths of about 2 m are often developed. The main soil types in the catchment include sub-alpine meadow soil, dark meadow soil, peat soil, etc.

There is no land use except grazing. The catchment is located in the alpine humid climate zone of Tibetan Plateau, thus has the similar climatic feature with this site.

18. Hydrological values:

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

This Ramsar Site is the headwater area of Tao River, the largest branch of Yellow River. The wetlands in this site can store water resource of 0.56 billion m^3 including 0.41 billion m^3 of surface water and 0.15 billion m^3 of groundwater. The wetlands have significant function of flood control. In this site, the peat layer generally presents a depth of 2 m, which can hold precipitation of 60 million m^3; the Gahai Lake can store water of 50 million m^3; the marshes and wet meadows can also store considerable amount of water. As a result, flood disaster is very rare in this site.

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.

Va: alpine marshes covering 14,882 ha;
Ts: Seasonal/intermittent herb-dominated marshes covering 12,281 ha;
U: permanent herb-dominated marshes on peatlands covering 10,429 ha;
O: permanent freshwater lakes (including the Gahai Lake and Swan Lake) covering 2,513 ha;
Tp: permanent herb-dominated marshes on inorganic soils covering 2,870 ha;
M: permanent rivers and streams covering 201 ha.

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.

Governed by alpine humid climate, the vegetations in this Ramsar Site are mostly composed of cold-temperate hygrophytes and mesophytes. The terrestrial vegetation types include cold desert vegetation, meadow, shrub land and meadow grassland, etc. The wetland vegetation types include marsh vegetation, marsh meadow, alpine meadow, etc. This Ramsar site presents ecotones of grasslands, wetlands and forests, thus there are diverse, spatially heterogeneous habitats for wildlife. Consequently, wetland animals present high diversity in this site, including 9 fish species, 7 amphibian and reptile species, 145 bird species (of those, 94 species are waterbirds) and 38 mammal species.

The wetlands in this site play an important role in regulating micro-climate, water storage, flood control and biodiversity conservation, which are crucial for the catchment and surrounding areas. It is particularly noteworthy that the peat layer in this site has a mean depth of about 2 m and covers 10,429 ha. The total amount of the peats accounts for 202 million m3. The content of dry matter of

the peat bogs can reach 93 million tons; the organic carbon content can reach 17.75 million tons. Therefore, it is a very important carbon pool.

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*.

This Ramsar Site belongs to Hengduan Mountain flora. There are 529 higher plant species in 213 genera of 61 families in the area. Of those, there are 11 gymnosperm species in 5 genera of 3 families, and 518 angiosperm species in 208 genera of 58 families. There are 77 woody plants and 452 herb plants. Endemic plant species in China account for 284 species. *Pedicularis xiqingshanensis* is the endemic species of this area. Meadow is the common vegetation type in this site, including the types of alpine meadow and marsh meadow. Alpine meadows are distributed in the areas with elevations between 3,300 and 4,200 m, and are dominated by *Kobresia* spp., *Polygonum macrophyllum*, etc. The marsh meadows are distributed in the floodplain and lake areas where elevation is below 3,850 m, and are dominated by *Stipa* spp., *Kobresia* spp., etc. The main shrub species include Ericaceae species (such as *Rhododendron capitatum*), *Salix* spp., *Potentilla fruticosa*, *Spiraea alpine*, *Sibiraea angustata*, *Hippopae* spp., etc. The marsh vegetations are distributed in the areas where soils are very moist with shallow water cover and peats. The marsh plants are mostly represented as herb species growing in the mud, and are dominated by *Hippuris vulgaris*, *Stuckenia pectinata* and *Potamogeton pusillus*, in association with *Batrachium bungei*, *Myriophyllum verticillatum*, *Callitriche palustris*, etc.

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 alpine wetland animals are living in the Gahai Lake and its surrounding wetlands with elevations between 3,400 m and 3,600 m. The birds that breed in this site include *Grus nigricollis* (Black-necked crane, the only crane species that breeds in alpine areas), *Ciconia nigra*, *Anser indicus*, *Tadorna ferruginea*, etc. is the only bird species that winters in this site. There are many animals that live in the meadows and grasslands. Of those, *Ochotona curzoniae*, *Myospalax frontanieri*, *Marmota himalayana* and *Lepus oiostolus* are the representative mammal species, and *Prunella fulvescens*, *Montifringilla adamsi*, *Pseudopodoces humilis*, *Carduelis flavirostris* are the representative bird species. Amphibians and reptiles are rarely seen in the grasslands and meadows, where the predators such as *Vulpes ferrilata* and *Lynx lynx*, and raptors are actively present. In these areas, the animals are mostly live in holes or underground, even some bird species tend to live in the holes. For example, *Phoenicurus ochruros*, *Petronia petronia*, *Pseudopodoces humilis* and *Montifringilla adamsi* nest in rat holes, forming a rare phenomenon of "rats and birds living in the same hole". Such bird species as *Eremophila alpestris*, *Carduelis flavirostris* and *Alauda arvensis* nest in the grasses and shrubs. In adaptation to the windy condition and hole-lifestyle, flying ability of *Montifringilla adamsi* and *Pseudopodoces humilis* tends to be reduced. There are 283 insect species from 59 families in 10 orders. Of those, there are 100 butterfly/moth species from 9 families, which have great ornamental value. Many rare butterfly species are distributed in the Xiqing Mountains in the south of this site, including *Parnassius stubbendorfii*, *Parnassius glacialis*, *Parnassius bremeri*, *Parnassius nomion*, *Parnassius nomion theagenes*, *Parnassius nomion tsinlingensis*, *Parnassius epaphus*, *Parnassius szechenyii*, *Parnassius imperator*, *Parnassius choui*, etc.

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:

The wetlands, with the Gahai Lake as the core area, provide important water resource for the local herdsmen to carry out grazing activities. In the drought seasons, the lake water is reduced, the marshes shrink, and the grasslands become dry. Consequently, the grazing activities are substantially influenced. The herdsmen take the Gahai Lake as their sacred lake, and they pray for water coming out of the springs and rise of lake water during the drought seasons. This is the main reason that wetland protection is spontaneously implemented by local people.

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: ☑

Local Tibetan people advocate nature protection as their tradition in history. They are not involved in the activities including fishing, bird hunting and destroying peat bogs.

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: ☑

Local Tibetan people believe in Tibetan Buddhism and believe in the Gahai Lake as their sacred lake. They have religious feelings on the wetlands and within wildlife.

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24. Land tenure/ownership:

a) within the Ramsar site:

State ownership. Gansu Gahai-Zecha National Nature Reserve has the tenure of land use for the Gahai Lake and the surrounding wetlands. Local herdsmen have a long-term collective contraction of the other lands in this area.

b) in the surrounding area:

Local herdsmen have a long-term collective contraction.

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25. Current land (including water) use:

a) within the Ramsar site:

No land use activities except light grazing.

b) in the surrounding area:

No land use activities except light grazing.

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:

The major adverse factors include climate warming and associated precipitation reduction. Such influences appear slight at present.

b) in the surrounding area:

Climate warming and associated precipitation reduction.

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.

Gansu Gahai-Zecha National Nature Reserve was established in August, 1998.

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?:

Master Plan of Gansu Gahai-Zecha National Nature Reserve was approved by the Forestry Administration of Gansu Province in December 2000. According to this plan, the First-Stage Project was carried out in 2003-2004, including the conservation project, scientific research and propaganda project, and infrastructure construction project. The Second-Stage Project, which has been planned in 2005, is being implemented.

d) Describe any other current management practices:

Wetland Conservation Project of Gansu Gahai-Zecha National Nature Reserve has been implemented since 2006. This project, as invested by the states, accounted for 14.55 million Yuan. At present, all items of the project have been accomplished and the ecological benefits have come into being. In addition, ecological migration was carried out by the government of Luqu County. The residents and office buildings nearby the Gahai Lake were moved to reduce human disturbance to the wildlife. Water recharge for ecological uses was carried out, and peat bogs of 218.2 ha were restored. The reserve has established Gahai Protection Station, where 6 staff members and 2 volunteers are engaged in wetland conservation and wildlife protection.

28. Conservation measures proposed but not yet implemented:

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

Management Regulation of Gansu Gahai-Zecha National Nature Reserve has been reported to the People's congress of Gansu Province.

29. Current scientific research and facilities:

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

Two automatic meteorological stations were set up at Gahai and Zecha. They are in normal operation for 4 years, and have provided many first-hand data for scientific researches. Two protection stations were established at Gahai and Zecha. These stations played an important role in

wildlife conservation during the past 7 years. A field base for wild animal studies was established and used for scientific research and education practices. Many scholars and interns from Wuhan University, Lanzhou University, Gansu Agricultural University and Chinese Academy of Science came here to engage in biodiversity conservation and wetland studies. A protection and rescue station was established nearby the Swan Lake. Using this station, bird monitoring and rescue of hurt bird was carried out. A rescue center of wild animals was established at Gahai. Since then, many hurt individuals of birds were rescued, including two black-necked cranes, one swan, etc. A scientific and office building was established in the reserve, and the scientific staffs carried out a series of survey on animals, plants, peat bogs and wetlands. A project sponsored by GEF was implemented in 2000-2003. Some monitoring equipments were purchased. The international organizations helped the reserve to carry out a series of training on ecotourism, wetland patrol and protection, community co-management, environmental economics and computer applications. In July, 2007, an ECBP project was carried out by Wetland International in this site. A series of propaganda and training activities was implemented.

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.

Color-printed brochures entitled "Gahai-Zecha National Nature Reserve" were produced in 2004 and 2009. Ten scientific papers on the wetlands of this site were published. Nearly one hundred reports were broadcasted through newspapers and other media. Two issues of *Gahai Lake* magazine were published in 2003 and 2005. A Color-printed book (with 165 pages) entitled "Gansu Gahai Wetlands" was published. The website of the Gahai wetlands is under preparation; and the third issue of *Gahai Lake* magazine is being compiled. Propaganda activities on wetland conservation and wildlife protection were carried out through public media on the Wetland Day, Earth Day and Environment Day every year. Speech contests on wetland conservation and wildlife protection were held in two primary schools of Luqu County.

31. Current recreation and tourism:

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

No recreation or tourism activity is being implemented in this Ramsar Site.

32. Jurisdiction:

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

Territorial: Government of Luqu County, Gannan Tibetan Autonomous Prefecture, Gansu Province.

Functional: Forestry Administration of Gansu 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.

Principal: Fengxiao Yuan (Director)
Institution: Bureau of Gansu Gahai-Zecha National Nature Reserve
Address: 9 Le'erduo Eastern Road, Luqu County 747200, Gansu Province, China.

34. Bibliographical references:

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

Chen, Y. 1995. Research on China's Wetlands. Changchun: Jilin Science and Technology Press.

Chen, Y., Li, J. (2004). Preliminary evaluation of ecological benefits of Gahai wetland restoration project. Wetland Communication 11: 12-13.

Li, J., Liu, Z. (2006). Thoughts on the development of Gansu Gahai-Zecha National Nature Reserve. In: Exploration and Practice of Sustainable Forest Management, pp337-340. Beijing: China Forestry Publishing House.

Li, J., Liu, Z., Yang, W. (2006). Preliminary investigation of peatland resources in Gansu Gahai. Wetland Communication 4: 22-23.

Liu, N., Ma, C. (1997). Gahai-Zecha Nature Reserve. Beijing: China Forestry Publishing House.

Liu, Y., Li, J., et al. (1997). Forestry Records of Gannan Tibetan Autonomous Prefecture. Langzhou: Gansu Ethnic Publishing House.

Ma, M., Wei, S., Xu, F., Yin, S. (2006). Black Stork Ciconia nigra in Xinjiang, China. Biota 7: 1-2.

Ma, P. (2004). Characteristics of natural resources in Gahai Zecha National Nature Reserve." Forestry of Gausu 5: 38-40.

Soil survey team Luqu unit in Gannan Tibetan Autonomous. (1987). Gansu Province Luqu County general soil survey report.

Yao, C., Li, J., Tan, K., et al. (2006). The primary survey of peat resources in Gansu Gahai Wetlands. Journal of Gansu Forestry Science and Technology 3: 30-32.

Zhang, R. 1999. Zoogeography of China. Beijing: Science Press.