Information Sheet on Ramsar Wetlands

(RIS)

Name of the Site: Mapangyong Cuo

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7, as amended by Resolution VIII.13 of the Conference of the Contracting Parties.

Note 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. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Bureau. Compilers are strongly urged to provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of 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

2. Date this sheet was completed/updated:
October 12, 2004

3. Country:
The People's Republic of China

4. Name of the Ramsar site:
Mapangyong Cuo

5. Map of site included:
Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps.

a) hard copy (required for inclusion of site in the Ramsar List): *yes* √ -or- *no* □

b) digital (electronic) format (optional): *yes* √ -or- *no* □

6. Geographical Coordinates (latitude/longitude):
30°44′ N, 81°19′E

7. General location:
Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Mapangyong Cuo Wetland is situated in Ngari Purang County. Purang County is in the southwest of Ngari, with Zhongba County of Shigatse to the east, Gertse County to the northeast, Gar County and Tsada County to the northwest, India to the southwest and Nepal in the south over Himalayas, and it is one of the 12 counties that have a common boundary with 3 countries. The total area of the county is 12,500 square kilometers. The county is situated by the Peacock River

at an elevation of 3,936 meters. The wetland is under the administration of Bargar and Hall Townships in north of Purang County. The total population of Purang County is 7,891.

8. Elevation: (average and/or max. & min.)
The mean sea level: 4,700 meters;
max. elevation: 6,500 meters; min. elevation: 4,500 meters.

9. Area: (in hectares)
73,782 hectares

10. Overview:
Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

Mapangyong Cuo wetland is one of the highest elevation fresh water wetland in the world and a typical wetland in Tibetan plateau, as well as unique type of plateau wetland in China. The total area covers Mapangyong Cuo and Laang Lake with surrounding swamps and rivers. The conservation targets of the wetland include Grade I national protected species *Grus nigricollis* and its habitat, and Tibetan plateau endemic species such as *Schizopygopsis microcephalus* and *Pantholops hodgsoni*. It is an important fresh water wetland down streaming to Nepal and at the sources of Yalu Tsangpo River. The site is also considered as a holy place of mountain and lake. However, the wetland is faced with the menace of excessive exploitation of resources caused by the human activities.

11. Ramsar Criteria:
Circle or underline 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).

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8

12. Justification for the application of each Criterion listed in 11. 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: Mapangyong Cuo is one of the great lakes with the highest elevation in the world and a typical wetland in Tibetan Plateau. It is a fault basin between Kangdese Mountains and Himalayas Mountain Range.

Criterion 2: It is a spawning and survival habitat for *Schizopygopsis microcephalus* and *Triplophysa stewarti*, an endemic fish species distribution only in the lake. The wetland is crucial for this extremely endangered fish species. Mapangyong Cuo wetland possesses high values in preserving other threatened species in the region. The wetland environs are critical in supporting the National Grade I and II protected species of *Pantholops hodgsoni*, *Gypaetus barbatus, Grus nigricollis*, *Ursus arctos*, *Lutra lutra*, *Felis lynx*, *Procapra picticaudata*, *Pseudois nayaur*, *Milrus korschun, Buteo hemilasius*, *Gyps himalayensis, Falco cherrug, Falco tinnunculus, Tetraogallus tibetanus*, etc..

Criterion 3: Mapangyong Cuo is significant in maintaining the biological diversity in the biogeographical region, which accommodates the large population of the endemic species such as Black-necked Crane *Grus nigricollis*, and Tibetan Antelope *Pantholops hodgsoni*.

Criterion 4: As a fresh water wetland in dry west of Tibet, Mapangyong Cuo is critical for the breeding and migration of large amount of water birds as mentioned below. It is also an important migration passage and breeding habitat for *Pantholops hodgsoni.*

Criterion 5: There are more than 20,000 water birds inhabit at the site regularly. There were about 30,000 water birds of 9 species in 2001 ~ 2002; 25,000 of 7 species in 2002 ~ 2003; and 28,000 of 9 species in 2003 ~ 2004. The important species groups are wild geese and ducks, including *Grus nigricollis, Ithaginis cruentus, Cypaetus barbatus*, *Tadorna ferruginea, Anser indicus, Falco tinnunculus*.

Criterion 7: Mapangyong Cuo is the only habitat for the fish *Schizopygopsis microcephalus* in the region.

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13. 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:
Mapangyong Cuo Wetland is situated at the sub-alpine desert and grassland in the southwest of Ngari. It starts from Mayoumula Pass in the east, the watershed of Kangdese- Ayila Ri'gyu Mountains in the north, and west Himalayas in the south and west, and it is a narrow and long region declining from northwest to southeast.

The sub-alpine desert and grassland in the southwest of Ngari can be divided into three sub-zones, namely Mapam YumCuo-Laang, Purang and Zanda. Mapangyong Cuo Wetland is in Mapam Yumco-Laang, which is at the south-east end of the sub-alpine desert and grassland and is an endorheic lake basin with Mapangyong Cuo-Laang Lake in the core. There are high mountains at south and north side and there are lake basins and flood alluvial plains that are 8-15 kilometers wide between. It is connected with the high mountains and broad valleys on the upstream of Brahmaputra in the east via the mild Mayoumula Pass, and enters broad valley in Menshi in the north-west via the mild saddle-shaped highland. It is the highest and coldest zone locally. The sea level height of the torrential plain is 4600 ~ 4700 meters and the mean annual temperature is about 0ºC, which gives a harsh climate in the region.

b) biogeographic regionalisation scheme (include reference citation):
The above zoning is from "Tibetan Vegetation" (Tibetan Plateau Integrated Scientific Expedition of CAS, 1988, Science Press).

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14. 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

Mapangyong Cuo Wetland is situated at the core region of Brahmaputra-Gar Zangbo depressed fault valley. This fracture zone is thought to be a deep rupture cutting the crust and the seam between the Indian plate and the Asia-Europe Plate. Historically, Mapangyong Cuo and Laang

Lake were once integrated and were the source of Langqincangbu, and they have direct or indirect influence on several famous rivers in this region, such as Brahmaputra, Senggecangbu and Peacock River. The Eocene gravel layers at KangRinpoche and the surrounding mountains are rare horizontal strata physiognomy in Tibet.

Hydrology

The lake surface is 412 square kilometres, and the catchment area is 4,560 square kilometers. Mapangyong Cuo is an inland fresh water lake, the degree of mineralization is 400 mg per liter, lake water is clear, water colour at the center is No. 3 and diaphaneity is 14 meters. The mean depth of the lake is 46 meters with water storage capacity is about 20 billion cubic meters.

Laang Lake is 268 square kilometers. The water temperature is about 2℃, the annual precipitation is 150- 200 millimetres, the catchment area is 2551.5 square kilometers, and the supply coefficient is 9.5. The lake water is mainly from Nakchu. Nakchu is about 58 kilometers long, the source elevation is over 6,000 meters, and the water flow is high in summer. The pH value of the lake water is 8.6, the degree of mineralization is 1.02, and it is moderate carbonate brackish water.

Soil

The soil types of Mapangyong Cuo Wetland mainly include alpine steppe soil, alpine frozen soil, alpine swamp meadow soil and alpine frost desert soil. The alpine steppe soil is the zonal soil of this region.

Climate

The climate here is sub-frigid arid climate, the mean annual temperature is 0℃, mean hours of sunshine is more than 2800 hours, frostless season is 130 days and precipitation is 172.8 millimetres. The natural disasters include snow, earthquake, flood, debris flow, hailstone, etc. The wetland and surrounding area are fit for living due to the microclimate.

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15. Physical features of the catchment area:
Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

The catchment area is about 8,000 square kilometers, wholly in Mapangyong Cuo-Laang Lake basin. The southern border of the catchment area is the second highest peak of Himalayas, namely Naimonanyi that is 7694 m above sea level, and the northern border is the main peak of Kangdese mountains, namely KangRinpoche that is 6,656 m high. Mapangyong Cuo wetland and Laang Lake form an integrated internal lake system and diversified widespread wetland ecosystems.

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

Mapangyong Cuo captures water from melting snow, ice and runoff from rainfall. The large amount of water (more than 200×10^8 m^3) accumulated in the lake at the depth of 46m that sustains underground water and plays an important role in effective flood control and maintaining

the equilibrium in water volume in the middle and lower reaches of the Yalu Tsangpo River. It is also important in regulating and stabilizing regional climate changes. It nurtures special and intact habitats for endemic fish in the region, especially for *Schizopygopsis microcephalu*. The wetland is a water storage area for the peripheral localities has a direct role in local stock raising. Besides this, the highest elevation makes it as a holy place with deep religious values. Clear and good water quality augmented in spectacular landscape of the plateau lake that possesses very high values for appreciation.

17. 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.

O – Permanent freshwater lakes, Va- Alpine wetlands, W- Shrub-dominated wetlands, Tp- Permanent freshwater marshes/pools, Zg- Geothermal wetlands, Vt- Tundra wetlands, Sp- Permanent saline/brackish/alkaline marshes/pools.

18. General ecological features:
Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site.

Although the wetland lies in the higher elevation, the vertically distributed vegetation is simple. Below 4700 m asl, sub-alpine desert grassland is distributed. Dominant species in the sub-alpine desert grassland is *Stipa glareosa.* The alpine meadow is another vegetation type composed of *Stipa purpurea*, *Carex moorcroftii, Poa annua* and *Caragana versicolor* distributed between 4700~5000 m asl. Its dominant species is *Stipa purpurea*. The species of *Caragana versicolor* in the alpine meadow locally becomes dominant species accompanied with *Potentilla arbuscula* var. *pumila* and other plants.

19. Noteworthy flora:
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. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Mapangyong Cuo Wetland has rich vegetation resources and diversified species. According to surveys and related bibliographic information, there are 140 species in 87 genera of 34 families, including 7 species of bryophyte in 4 genera of 3 families, 2 species of gymnosperm in 1 genes of

1 family and 131 species of angiosperm in 82 genera of 30 families. As compared with Tibet Autonomous Region, the bryophyte families are 12.9% of that of Tibet, the genera are 4.3%, and the species are 1.6%; the Pteridophyte families are 15.9% of that of Tibet, the genera are 6.3%, and the species are 3.4%; the gymnosperm families are 28.6% of that of Tibet, the genera are 18.8% and the species are 15.5%; the angiosperm families are 38.1%, the genera are 18.7% and the species are 11.7%.

The bryophyte belongs to 3 families respectively and the Pottiaceae and Bryaceae have the most number of species. The seed plants have 31 families, wherein the Gramineae has 18 species, followed by Asteraceae and Leguminosae plants, 15 species and 10 species respectively.

20. 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.*

In total, 99 species of animals have been recorded, of which 8 are in the national Grade-I list for protection, such as *Panthera uncia*, *Gypaetus barbatus, Grus nigricollis*, and 16 are in the national Grade II list for protection, such as *Ursus arctos*, *Lutra lutra*, *Felis lynx*, *Procapra picticaudata*, *Pseudois nayaur*, *Milrus korschun, Buteo hemilasius*, *Gyps himalayensis, Falco cherrug, Falco tinnunculus, Tetraogallus tibetanus*, etc., 16.2% of the total number of spinal animals. At least 9 species, such as *Ursus arctos, Lutra lutra, Panthera uncia*, and *Grus nigricollis* are in the list of the Annex I of CITES, and 12 species, such as *Felis lynx, Falco cherrug, Aquila chrysaetos, Gypaetus barbatus, Aquila rapax, Aegypius monachus, Gyps hinalayensis, Buteo hemilasius, Falco cherrug*, and *Falco tinnunculus* are in the list of CITIES Annex II.

21. Social and 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.

There are 7 species of fishes in 2 families in the lake, mainly including *Schizopygopsis microcephalus, Triplophysa stewarti*, etc., and the stock of fish is high for fishing is not allowed in Mapangyong Cuo and there is no custom for eating fish in the region.

The zone is composed of KangRinpoche, Naimonanyi, Mapangyong Cuo and Laang Lake and called as place of holy mountain and lake. KangRinpoche and Mapangyong Cuo are regarded to be holy mountain and lake by the Buddhism, Hinduism, Jainism and Black Buddhism. They are regarded to be the centre of the world by the Buddhism and Black Buddhism. In the ancient books and sutra, the Xumi Mountain and the abode of fairy god mother just refer to this place. This exalted Status in religion and culture making Mapangyong Cuo and KangRinpoche world famous and attracting believers and cultural enthusiasts.

22. Land tenure/ownership:

(a) within the Ramsar site:
State-owned.

(b) in the surrounding area:

It is state-owned, while the system for contacted responsibility is exercised for the grassland.

23. Current land (including water) use:

(a) within the Ramsar site:
The lake has not been developed.

(b) in the surroundings/catchment:
The surrounding wetlands are used for grazing by local herdsman.

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

(a) within the Ramsar site:
The negative factors of the wetland itself are those related to physical geography. The descending trend of lake surface is hard of being turned due to the macroclimate influence. Meanwhile, the pollutants resulted from traffic and tourism nearby can enter into the lake and cause internal water pollution since it is an internal flow region.

(b) in the surrounding area:
Gold mines were once exploited nearby the site before 2003 and the firewood (mainly the species of *Caragana versicolor*) was over harvested by the local communities which resulted in the damage of vegetation causing erosion and degradation of wetland.

25. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Mapangyong Cuo wetland is not a provincial level nature reserve (has been applied in 2003 but failed). It has no management plan and management practices.

26. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.
The Bureau of Forestry of Tibet Autonomous Region has established the protection and management plan and is applying for National Forest Park. Unfortunately, it has not been carried into execution.

27. Current scientific research and facilities:

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

In the 1960's -1980's, the Chinese Academy of Sciences, once organized concerned scientific expeditions and research projects, but there is no scientific research and expedition developed for this wetland specially.

There is no field station.

28. Current conservation education:

e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.
No.

29. Current recreation and tourism:

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

The surrounding area of the wetland is a key destination of the Tibetan tour, and about 10,000 people visit this place yearly. For the moment, the environment is not badly damaged but efficient management is not exercised.

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

Territorially, it is managed by the Purang County People's Government of Tibet Autonomous Region, while functional management is under the Bureau of Forestry of Tibet Autonomous Region.

31. 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.

Currently, the administrative organization of Mapangyong Cuo Forest Park is being prepared.
Wetland Administrative Organization of Tibet Autonomous Region: 25 Linkuo North Road, Lhasa, Wild Life Preservation Section of the Bureau of Forestry of Tibet Autonomous Region, **Section Chief: Zholma Yangtseong.**

32. Bibliographical references:
scientific/technical references only. If biogeographic regionalisation scheme applied (see 13 above), list full reference citation for the scheme.

1. Tibetan Plateau Integrated Scientific Expedition of CAS, *Tibet Rivers and Lakes.* Beijing: Science Press, 1984.
2. Tibetan Plateau Integrated Scientific Expedition of CAS, *Tibet Climate.* Beijing: Science Press, 1985.
3. Tibetan Plateau Integrated Scientific Expedition of CAS, *Tibet Mammalia.* Beijing: Science Press, 1986.
4. Wu Yunfei and Wu Cuizhen, *Tibetan Plateau Fishes.* Chengdu: Sichuan Science and Technology Press, 1991.
5. Tibetan Plateau Integrated Scientific Expedition of CAS, *Tibet Avifauna.* Beijing: Science Press, 1983.
6. Tibetan Plateau Integrated Scientific Expedition of CAS, *Tibet Soils.* Beijing: Science Press, 1985.
7. Tibetna Plateau Integrated Scientific Expedition of CAS, *Tibet Strata*. Beijing: Science Press, 1984.
8. Tibetan Plateau Integrated Scientific Expedition of CAS, *Tibet Vegetation*. Beijing: Science Press, 1988.
9. Bureau of Marine Products of Tibet Autonomous Region, *Tibet Fishes and Resources.* Beijing: China Agriculture Press.
10. Lu Jianjian, et al., *China's Wetlands*, East China Normal University Press.