

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

Available for download from [http://www.ramsar.org/ris/key\\_ris\\_index.htm](http://www.ramsar.org/ris/key_ris_index.htm).

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

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Site Reference Number

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### 2. Date this sheet was completed/updated:

June 18, 2012

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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.

Zhaling Lake

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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

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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:**

After the implementation of some conservation projects such as *Prohibiting Grazing and Resettlement in the Core Area*, *Prohibiting Fishing in the Lake Wetland*, *Wetland Vegetation Restoration* and *Returning Pasture to Grassland* and other effective protection measures, the ecological environment of the wetland has been becoming more stable. According to the survey for Zhaling Lake and Eling Lake (These two Ramsar sites are neighbouring wetlands which belong to the core area of the Sanjiangyuan Nature Reserve), the amount of the main protected species maintains about 200 *Larus ichthyaetus*, 50 *Larus brunnicephalus*, 45 *Phalacrocorax carbo*, 450 *Tadorna ferruginea*, and 12 migratory *Grus nigricollis* (the average amount during 2004-2009).

Compared with the previous RIS, the Ramsar Criterion remains unchanged.

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**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 site has roughly the same boundary with Zhaling Lake, which is located within the core area of Sanjingyuan 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: 97°16'29"E, 34°54'429"N

Extent: 97°2'47"-97°30'3"E, 34°45'42"-35°1'334"N.

**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 wetland is located in the central south of Qinghai Province, Northwest China, about 70 km west of Maduo County.

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

Average: 4,273 m;

Maximum: 4,500 m;

Minimum: 4,200 m.

**11. Area:** (in hectares)

64,920 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.

Zhaling Lake is a tectonic lake formed by fault basin and is the second largest lake in the source area of the Yellow River. It's a main water resource harvesting area in the upstream Yellow River and a natural reservoir that regulates the runoffs. Zhaling Lake is a typical plateau freshwater lake wetland ecosystem. With unique natural environment, abundant water resource and productive grasslands, this site provides a good environment for plateau animals and waterfowls to inhabit and breed here. Zhaling Lake wetland is an important habitat for plateau wildlife. According to the survey, there are about 80 bird species inhabiting in the wetland, including some rare species, such as *Grus nigricollis*, *Gypaetus barbatus*, *Cygnus Cygnus*, etc.

**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
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input type="checkbox"/>

**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 wetland is a typical plateau freshwater lake wetland in Tibetan Biogeographic Province, Palaearctic Realm. This site is unique in this biogeographic region because the headwater source of Yellow River, the largest river in this biogeographic region and the fifth largest river in the world. It is rich in water resources, and is important in sediment retention, purifying water, flood control and storing water as well as regulating the local climate.

**Criterion 2:**

English Name	Latin Name	IUCN Category	CMS Appendix	CITES Appendix	Class of National Protection
Saker Falcon	<i>Falco cherrug</i>	EN	-I	II	II
Black-necked Crane	<i>Grus nigricollis</i>	VU	I/II	I/II	I
Pallas's Fish-eagle	<i>Haliaeetus leucoryphus</i>	VU	II	II	-
White-lipped Deer	<i>Przewalskium albirostris</i>	VU	-	-	I
Wild Yak	<i>Bos mutus</i>	VU	-	I	I

**Criterion 3:**

This Ramsar site is one of the hotspots of biodiversity in Tibetan Biogeographic Province, Palaearctic Realm. Since 2001, multiple scientific surveys led by Chinese Academy of Forestry have been conducted on Sanjiangyuan Nature Reserve. The survey results show that this area is among the most species-rich areas in this biogeographic region, with plant species up to 2,300, mammal species up to 85, bird species up to 238, and fish species up to 40 (Liu et al., 2005). Zhaling Lake is a core of this reserve and provides perching and breeding places for many birds, such as *Tadorna ferruginea*, *Larus brunnicephalus*, *Larus ichthyaetus*, *Phalacrocorax carbo*, *Anser indicus*, *Grus nigricollis*. The lake is rich in fish (such as *Gymnocypris eckloni* and *Platypharodon extremus*). Many species in this site are endemic species of Qinghai-Tibet Plateau or Central Asia, such as such as *Equus kiang*, *Procapra picticaudata*, and *Marmota himalayana*.

**Criterion 7:**

In Zhaling Lake, there are 8 endemic fish species of Qinghai-Tibet Plateau or Central Asia, such as *Gymnocypris eckloni*, *Platypharodon extremus*, *Chuanchia labiosa* and *Gymnodiptychus pachycheilu*.

**Criterion 8:**

This wetland is an important food base, spawning and nursing site for the abovementioned endemic fish species. As these endemic species only use water bodies with large area as their habitats, Zhaling Lake is among the few suitable habitats in this biogeographic region.

**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:**

Cold-winter (continental) deserts and semideserts, Tibetan 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.

**Geology and Geomorphology:** Zhaling Lake is a tectonic lake formed by faulted basin in Pleistocene, and the edge of the basin is represented as lake terraces, front-mountain mesa and alluvial fan. Burhan Budai Mountains and the branch, Buqing Mountains, are located to the north of the site. Bayankala

Mountains are located to the south. The elevation of the surrounding mountains is above 4,600m with broad Palaeo-basin.

**Origins:** Naturally originated.

**Hydrology:** The Yellow River is originated from Peacock River to the west of Zhaling Lake, and numerous rivers from both sides of the mountainous areas flow into Zhaling Lake. The lake water is mostly from surface runoff and precipitation. The mean annual runoff into the lake is  $11.84 \times 10^8 \text{ m}^3$ , the precipitation intercepted by the lake surface is  $1.6 \times 10^8 \text{ m}^3$ , the annual runoff discharged from the lake is  $6.48 \times 10^8 \text{ m}^3$ . The evaporation is  $6.95 \times 10^8 \text{ m}^3$ . The hydrological budget is basically balanced.

**Water quality:** The transparency of the lake water is 1.0-3.0 m, the mineralization is 480.0 mg/L, and the pH value is 9.4, COD (Mn): 1.8 mg/L.

**Water depth:** The maximum water depth is 13.1 m; the mean depth is 8.9 m with small fluctuation

**Soil type:** The soil types are mainly peat soil, peat bog soil and meadow bog soil.

**Climate:** The climate in the site is typical inland climate, with little rainfall and many winds. Local microclimate with more night rains and warm-wet summer and autumn is shown in the near-lake areas.

The mean annual temperate is  $-4.1 \text{ }^\circ\text{C}$ . July is the hottest month with an average temperature of  $7.4 \text{ }^\circ\text{C}$ .

January is the coldest month with an average temperature of  $-16.9 \text{ }^\circ\text{C}$ . The mean annual precipitation is 298.5 mm and the mean annual evaporation is 1,208.06 mm. There is no absolute frostless period. The general climate features in this region are represented as long sunshine, great temperature difference between day and night, higher evaporation than rainfall, windy and many sandstorms. The rains often come with high temperature. The spring and winter is cold and dry with many snowstorms.

#### 17. Physical features of the catchment area:

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

The catchment area covers about  $8,161 \text{ km}^2$ . The overall topography of the catchment area inclines from the northwest to the southeast, and is generally flat and open. The soil types mainly include peat soil, peat bog soil and meadow bog soil. The climate is typical inland climate with little rain.

#### 18. Hydrological values:

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

Zhaling Lake is the second largest lake in the source area of the Yellow River. It receives water from 8 important branches of the upstream Yellow River. With a storage capacity of 4.67 billion  $\text{m}^3$ , it plays an important role in flood prevention, water storage, water resource regulation, water purification, local climate regulation and maintenance of biodiversity. The topography of the lake basin can benefit sediment retention and maintains good water quality for the surroundings and the downstream areas.

#### 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 • Q • 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 (94.7%), M(5.3%).

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## 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.

In the delta of the Yellow River inlet, there are abundant aquatic plants and the dominant species include *Batrachium foeniculaceum*, *Myriophyllum verticillatum*, *Nymphoides peltatum*, *Potamogeton pectinatus*, etc. Around the lake, there is alpine swamp meadow vegetation, including cold-tolerant mesophyte or vivacious hemicryptophyta or geophyte communities. There are more than 50 species of common herbage species, and the dominant species are *Kobresia tibetica*, *Carex moorcroftii* and *Carex atrofusca*. The vegetation coverage is up to 85%-90%. The swamp areas are perching and breeding places for gulls, wild geese, ducks and cranes. Many waterbirds have been found in this site, such as *Tadorna ferruginea*, *Larus brunnicephalus*, *Larus ichthyaetus*, *cormorant*, *Anser indicus* and *Grus nigricollis*.

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## 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.*

There are three types of flora in relation to wetlands under the conditions of high altitude and cold climate. The vegetation coverage is 60-90%.

Aquatic vegetation dominated by *Batrachium trichophyllum*, *Myriophyllum verticillatum*, *Nymphoides peltatum*, *Potamogeton pectinatus*.

Alpine swamp meadow dominated by *Kobresia tibetica*, *Blysmus sinocompressus*, *Triglochin maritimum*, etc. The sub-dominant species are *Carex moorcroftii*, *Carex atrofusca*.

Steppe meadow dominated *Kobresia pygmaea* and *Stipa purpurea*.

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## 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.*

There are 76 vertebrate species in this site. Of those, there are 8 fish species, 1 reptile species, 3 amphibian species, 46 bird species and 18 mammal species. The mammal species belong to 6 orders. Besides those listed in Section 14, Kiang (*Equus kiang*) is a first-class national protected species; Steppe cat (*Felis manul*), Wolf (*Canis lupus*) and Brown bear (*Ursus arctos*) are second-class national protected species. The birds in this site belong to 10 genera, including 4 species under the first-class of national protection and 6 species under the second-class of national protection. The dominant fish species in this site are *Gymnocypris ecklonii* and *Platypharodon extremus*, which are endemic species of Qinghai-Tibet plateau or Central Asia with high scientific and conservation value.

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## 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:

Zhaling Lake and the surrounding areas have become important livestock breeding places in Qinghai Province. Due to suitable climate and flourish vegetation, the grasslands in this area have the ability to support considerable livestock. The majority of the residents in this site and the surrounding areas are local Tibetans. Influenced by Tibetan Buddhism, Tibetans take fish as the god symbol and have a custom of not eating fish. Also, they live in harmony with wild animals. For example, they consider the birds (such as

Black-necked cranes) as the symbol of good luck. All these produce important effects on the protection of local wetland ecosystems.

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?

No.

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:

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**24. Land tenure/ownership:**

(a) within the Ramsar site:

State ownership.

(b) in the surrounding area:

State ownership. The surrounding grasslands have been contracted to local herdsmen.

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**25. Current land (including water) use:**

a) within the Ramsar site:

Conservation is the only land use type in this site.

b) in the surroundings/catchment:

The land uses include conservation, grazing with low intensity and human settlements.

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**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:

Glacier retreat and the rise of snowline caused by climate change are reducing water supply of the wetland.

b) in the surrounding area:

The drought of the grasslands could produce some negative impacts on the wetlands.

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**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.

Qinghai Sanjiangyuan Provincial Nature Reserve was established in 2000, it was then promoted by the State Council to a National Nature Reserve in 2003. To strengthen the protection of wetland resources, the Sanjiangyuan Nature Reserve is divided into 8 cores zones of wetland ecosystems. This site belongs to one of the core zones, the Zhaling-Eling Lake Core Zone.

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 management plans being implemented include *Monitoring System Construction and Protection of Zhaling Lake Wetland in Qinghai* and *Master Plan of Qinghai Sanjiangyuan Nature Reserve*. According to these plans, during 2007-2010, the meadows of 7,300 ha have been enclosed and restored; and additional meadows of 6,700 ha will be protected and restored during 2011-2012.

d) Describe any other current management practices:

Since the formal establishment of the reserve, the organization of the bureau was set up orderly. Particularly, targeting the important wetland areas, 2 base stations and 4 protection points were established to carry out regular conservation activities. Also, some measures were taken for the wetland protection, including prohibiting grazing and fishing, resettlement project in the core areas, prevention and control of desertification, vegetation restoration and returning pasture to grassland. In addition, the reserve has carried out wetland monitoring on an annual basis (including water quality, biodiversity, etc.).

## 28. Conservation measures proposed but not yet implemented:

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

The project of “*Construction Demonstration of the Zhaling-Eling Lake Key Functional Area of Qinghai Sanjiangyuan National Nature Reserve*” is in preparation. “*Protection Ordinance for the ecological environment of the Qinghai Sanjiangyuan National Nature Reserve*” has been drafted. The authority plans to promulgate it as soon as possible after amending.

## 29. Current scientific research and facilities:

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

Zhaling Lake and the surrounding marshes as well as lakeside beaches are typical plateau freshwater lake wetland ecosystems, which have high scientific research value. With the full support of Qinghai Provincial Forestry Bureau, State Forestry Administration, in collaboration with Chinese Academy of Forestry Sciences, the reserve carried out a series of scientific investigations which covered geology, climate, soil, vegetation, water resources, wetland ecosystems, wildlife formations and socio-economic conditions in the Sanjiangyuan area. Based on these investigations, the book *Sanjiangyuan Biodiversity* has been published. Now, the researches on this area have become the focus of many scientists and many scientific institutes and colleges have carried out a series of monitoring and research work.

## 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.

Some staffs of the reserve participated in the technical training on wetland survey and monitoring organized by the State Forestry Administration. The reserve also carries out some propaganda activities on wetland protection, such as “Bird-Loving Week” in each May and “Wildlife-protection Month” in each October.

## 31. Current recreation and tourism:

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



There is no large-scale tourism activity at present and only a small amount of tourists in summer. The tourism is mostly represented as sight-seeing. There is no established tourism facility in this site at present.

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### 32. Jurisdiction:

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

#### Territorial:

Maduo County Government of Qinghai Province.

#### Functional:

Qinghai Provincial Bureau of Forestry and Qinghai Provincial Department of Agriculture and Stock Raising.

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### 33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

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### 34. Bibliographical references:

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

Li, Diqiang, Li, Jianwen. 2002. *Sanjiangyuan Biodiversity*. Beijing: China Science and Technology Press.

Li, Wanshou, Fen, Ling, Sun, Shengli. 2001. *Influence of Zaling and Eling Lake on the annual discharge of the Yellow River source area*. *Acta Geographica Sinica*. 56(1): 75-82

Liu, Minchao., Li, Diqiang., Wen, Yanmao. 2005. The protection of biological diversity in the Sanjiangyuan Nature Reserve. *Journal of Arid Land Resources and Environment* 19: 49-53.

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Wang, Sumin, Dou, Hongshen. 1998. *China's Lake Records*. Beijing: Science Press.

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