Designation date: 07/12/2004 **Ramsar Site no. 1434**

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:

FOR OFFICE USE ONLY.

DD MM YY

Designation date Site Reference Number

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2. Date this sheet was completed/updated:

March 1, 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.

Bitahai Wetland

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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:

Compared with the previous RIS, the ecological character and the application of the Criteria of the Ramsar site remain 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.

Bitahai Wetland is located within the Bitahai Nature Reserve. It is composed of three major parts, including the sub-area near Pingduo Cattle Farm, the Bitahai sub-area and Dapingzi sub-area, and its boundary is almost the same as the wetlands in the three sub-areas.

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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.

The sub-area near Pingduo Cattle Farm:
Center: 27º52′37" N, 99º59′4" E
Extent: 27°51'0"-27°54'14" N; 99°57'52"-100°0'16" E

The Bitahai sub-area:
Center: 27º49′26" N, 99º58′43" E
Extent: 27°48'20"-27°50'31" N; 99°57'16"-100°0'10" E

The Dapingzi sub-area:
Center: 27º47′26" N, 100º0'41" E
Extent: 27°46'53"-27°47'59" N; 100°0'17"-100°1'5" E

[It appears that the notional centre point should be 27°50'33"N 099°59'10"E. (DCP, 3/12/12)]

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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.

Bitahai Wetland is located in Shangri La County, Yunnan Province, Southwest China. It is located approximately 30 km to the east of the capital of Shangri La County.

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

Average: 3,568 m;
Maximum: 4,159 m; Minimum: 2,380 m.

11. Area: (in hectares)

1,985 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.

Bitahai Wetland is located on the Yunnan-Guizhou Plateau, Southwest China. It is situated in the core zone of the biogeographical region of Hengduan Mountains, one of the three major diversity centers in China. Bitahai Wetland is a closed plateau freshwater lake wetland at low latitude, belonging to a unique type of alpine morainal wetland nourished by the alpine and sub-alpine cold-temperate coniferous forests. The wetland preserves rare plateau endemic fishes (such as *Ptychobarbus chungtienensis*), waterbirds (such as *Grus nigricollis*, *Ciconia nigra*, and *Grus grus*) and their habitats, as well as the original alpine and sub-alpine cold-temperate coniferous forest ecosystem.

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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:

Bitahai Wetland is situated in the core area of the biogeographic region of Szechwan Highlands Biogeographic Province, Palaearcitc Realm. As a unique closed plateau freshwater lake at low latitude, it is well preserved. The wetland and forest ecosystems around the lake were maintained with relative original status. The wetland is of great value of typical plateau wetlands, in terms of water resource conservation and biodiversity protection. The large amount of water storage comes from the surface runoffs in the surrounding mountainous areas that gather in this Ramsar site. Being isolated from the other hydro-systems by mountains, this site provides unique habitats for many wetland species.

Criterion 2:

Species Name	Latin Name	IUCN Category	CMS Appendix	CITES Appendix	National Protection Class
Birds					
Black-necked Crane	*Grus nigricollis*	VU	I/II	I/II	I
Plants					
-	*Picea brachytyla var. complanata*	VU	-	-	II

Criterion 3:

This Ramsar site is not only a hotspot of species richness, but also rich in endemic species in the biogeographic region of Szechwan Highlands Biogeographic Province, Palaearcitc Realm. For example, there are 280 vertebrate species and 2,275 spermatophyte species in this site. It plays an important role in maintaining regional biodiversity such as for endemic fish species, e.g. *Ptychobarbus chungtienensis*)

Criterion 4:

This Ramsar site is situated at the Central Asia and East Asian-Australasia Flyways of migratory birds, and forms an important wintering site and stopover for numerous rare and threatened wintering birds (such as *Grus nigricollis*, *Cygnus cygnus*, *Anas platyrhnchos* and *Tringa totanus*) and an important habitat for rare resident birds (such as *Bonasa sewerzowi* and *Ithaginis cruentus*).

Criterion 7:

Fish fauna in this Ramsar site is of high endemism. The site supports all life history stages of an endemic, independently evolved Schizothorax fish species, *Ptychobarbus chungtienensis*, which only exists in this site. *Ptychobarbus chungtienensis* usually lives in the lake bottom, and only can be found in the shore areas during the period from mid-June to late September.

Criterion 8:

Bitahai Wetland is the only habitat for the narrowly distributed, national class-I protected endemic species *Ptychobarbus chungtienensis*, which has a considerable stock.

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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:

Mixed Mountain and Highland Systems with Complex Zonation, Szechwan Highlands Biogeographic Province, Palaearcitc 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: Bitahai Wetland is located in the eastern region of the three great parallel rivers of the Hengduan Mountains in the southeastern edge of the Qinghai-Tibet Plateau. It is inlaid in the incised faults of the gorges in the Hengduan Mountains. The bedrocks of the mountains are composed of sandstones, slates, phyllites and basalts. Bitahai wetland is all surrounded by mountains covered by dense and lush forests. The lake basin stretches 2.8 km from the east to the west and 0.8 km from the north to the south, forming a closed alpine lake wetland ecosystem.

Origin: The wetlands in this site are naturally originated. It is a compensatory plateau lake basin developed from multitudinous impacts of glaciers, incision encroachment and deposition.

Soil: The main soil types of Bitahai are bog soil and peat soil. As a result of low-rated decomposition of organic matters under cold climate and anaerobic conditions, the content of organic matters in the soils is maintained at a very high level. Mean pH: 5.09; mean concentration of organic matter: 14.86%; mean concentration of total nitrogen 0.67%; mean concentration of total phosphorus: 0.05%; mean concentration of potassium: 0.39%.

Hydrology: The wetland in this site belongs to the hydrological system of Jinsha River. The water sources of the Bitahai Lake mainly come from rainfalls and snows. Another important water sources are the streams that flow into the lake from the west coast. Annual water amount produced from the wetland is 1.08×10^7 m^3. As a result of stable supply of water sources, the variation of the water level of the lake is relatively small, representing approximately 160 ha of lake area. The outlet of the lake is located in the east, which is a small stream that flows 500 m to the east and drops into the underground limestone cave. The flow then runs into Luoji River through an underground river and converges with Jinsha River through the Niru River.

Water quality: Water quality of the wetland in this site is at the Class-I level of national standard (the highest level presenting the best water quality). The mean pH is 8.35; the mean DO is 4.19 mg/L at the depth of *ca* 2 m; the mean conductivity is 82.5 us/cm

Water depth: According to the measurement by Southwest Forestry College in 2001, the average depth of the wetland ranges between 8 and 9 meters. Water source is stable with little variability in water surface area, and the water depth remains basically constant.

Water level: The elevation of the lake surface is 3,568 m.

Climate: This site is represented by a typical western monsoon climate. Southerly and southwesterly winds prevail throughout the year. Distinct dry/wet seasons are represented in this site. Typical plateau climate features are shown in this site. Annual temperature difference is insignificant whereas daily variation is great. Mean annual temperature is 3.3 ℃. The snowpack period is 5 months every year. Mean annual precipitation is 1,100 mm, a large portion of which occurs in early June. Due to the regulation effect from the lake and adjacent forests, it is warmer and more humid than the areas with similar altitude in this region.

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 geological and geomorphological features and climate type of the catchment are described as in Section 16. The catchment area is 2,000 ha. The catchment is covered by dense alpine primary forests. The main soil types are brown soil, dark brown soil, brown coniferous-forest soil and sub-alpine meadow soil. Organic matter content in the topsoil is high. The pH value of most soil types ranges between 5 and 6, except for the brown coniferous-forest soil which has a pH value<5. The main land use types include timberland and pasture.

18. Hydrological values:

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

Bitahai Lake is a well-preserved closed plateau fresh water lake. It is one of the cradle regions of the Yangtze River. It captures runoffs from melting snow and rainfall which present stable supply of water sources. It plays an important role in controlling flood and maintaining water balance in the middle and lower reaches of the Yangtze River. Also, it is of great importance in regulating regional climate and recharging groundwater.

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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, Xp, O, U

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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.

Bitahai Wetland is composed of primary alpine/sub-alpine temperate coniferous forest, alpine/sub-alpine meadows and plateau lakes. Great elevation difference in this site led to high speciation and endemism. Six vegetation types in this site include alpine meadow, lake aquatic vegetation, hard-leaved evergreen broadleaved forest, deciduous broadleaved forest, temperate coniferous forest and shrub, which can be further categorized into 34 formations and 49 associations.

Sub-alpine meadows and sub-alpine swamp meadows are the common vegetation types, which are dominated by *Blysmus sinocompressus*, *Eleocharis liouana*, *Deschampsia caespitosa*, *Sanguisorba filiformis* and *Pedicularis longiflora* var. tubiformis. The aquatic vegetations in shallow waters are dominated by *Hippuris vulgaris*, *Nymphoides peltatum*, etc. And the submerge vegetations are dominated by *Myriophyllum spicatum*, *Potamogeton lucens*, *Potamogeton maackianus*, *Batrachium bungei*, etc. *Salix occidentali-sinensis* is the dominant species in lake-around shrub communities, while *Abies georgei*, *Picea likiangensis*, *Picea brachytyla* var. complanata and *Abies forrestii* are the dominant species in the forests around the lake.

No invasive species has been found in the wetland.

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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*.

Flora in this Ramsar site is dominated by temperate elements (362 genera). Worldwide species such as *Potamogeton lucens*, *Scirpus tabernaemontani* and *Phragmites communis*, are found in this site as the upper limit of distribution, whereas *Hippuris vulgaris* which is distributed in very high mountains, are found in this site as the lower limit of distribution. The genera distributed in the China-

Himalayas Region are the secondary ones in this site, representing the close relationship between this Ramsar site and the Himalayas. Another noteworthy feature of this site is high concentration of endemic species. There are 21 Chinese endemic genera distributed in this site, accounting for 8.64% of the total in China. Especially, *Skapanthus* spp., the endemic genus, is only distributed in this site. Overall, there are 1,232 endemic species in this site. Totally, there are 5 plant species (*Torreya yunnanensis*, *Fagopyrum dibotrys*, *Psammosilene tunicodes*, *Tricholoma matsutake*, *Cordyceps sinensis*) under national Class-II protection.

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 some endemic species in this site. Of those, some endemic species have very narrow distribution. Vertebrate species are characterized by small population size and amount. Lots of them are endangered and protected species. There are 2 species under national Class-I and 14 mammal species under Class-II protection, respectively.

The lake is the habitat of the rare endemic fishes such as *Ptychobarbus chungtienensis*. The surrounding forests are the perching sites for migratory birds; while the shoreline swamps are the important feeding grounds for *Grus nigricollis* and many other important waterbirds. Various wildlife species live here and form a stable ecosystem.

Amongst the most important fauna in Bitahai Wetland, birds and fishes take a noteworthy position. A noteworthy feature of fauna of birds and fishes is that there are many unique and endemic species of the Hengduan Mountains. Besides the species listed in Criterion 2 of Section 14, there are many rare birds such as *Podiceps ruficollis*, *Gallinago stenura*, *Scolopax rusticola*, *Psittacula derbiana*, *Prunella strophiata*, *Phoenicurus schisticeps*, *Phoenicurus auroreus*, *Garrulax maximus*, *Phylloscopus pulcher*, *Aegithalos bonvalotis* and *Phylloscopus proregulus*. Many endemic, independently evolved Schizothorax fish species (such as *Ptychobarbus chungtienensis*) spend their whole life history here.

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:

Tibetans living around the wetland have traditional ecological ethics and religions, such as respecting nature and appreciating life (do not kill wildlife or eat fish). This is the important reason why Bitahai Wetland maintains its ecological features, and it has great contribution to wildlife protection.

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; Bitahai Nature Reserve has the tenure of land use.

b) in the surrounding area:

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

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25. Current land (including water) use:

a) within the Ramsar site:

Current land uses include conservation and ecotourism.

b) in the surroundings/catchment:

The surroundings are covered by forests and grasslands. The meadows around the lake are used for grazing and tourism. People living around the site are mainly engaged in farming and stocking, as well as tourism service.

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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:

There is no development project currently. However, tourism activities have been carried out in this Ramsar site, which could have some potential disturbances on the riparian vegetation. Therefore, human density and tourism areas are strictly limited at present, and no significant negative impact has been observed.

b) in the surrounding area:

The tourism activities in Shangri La County might have some indirect influences on regional vegetation.

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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.

The reserve has been approved by the People's Government of Yunnan Province as a provincial nature reserve since 1984. The whole reserve was designated as a Ramsar site in 2004.

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 which are being implemented are as follows: *Master Plan for Bitahai Nature Reserve* (2002), *Master Plan for Yunnan Bitahai Nature Reserve* (2004), *Master Plan for the Ecological Tourism Development in Bitahai Provincial Nature Reserve* (2004).

d) Describe any other current management practices:

The Management Office of Bitahai Wetland Nature Reserve formulated clear management goals, covering various aspects as the follows: baseline resources inventory, formulation of the master plan, building institutional structures, as well as developing the management plan of the nature reserve. These plans have been approved by the government of Yunnan Province. Meanwhile, a number of large scale activities have been conducted to track and punish illegal hunting and fishing. Management efforts and patrolling frequencies are intensified, which contributed to better regulated nature reserve management.

28. Conservation measures proposed but not yet implemented:
e.g. management plan in preparation; official proposal as a legally protected area, etc.

Currently, there is no other proposed measure.

29. Current scientific research and facilities:
e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

The reserve has established cooperative relationships with a number of research institutes, building the base of research and education. For example, the reserve collaborated with Southwest Forestry College to carry out comprehensive scientific surveys of the wetland and formulate a series of conservation plans; the reserve collaborated with Kunming Institute of Zoology of Chinese Academy of Sciences to carry out the research on the effective protection and wise use of *Ptychobarbus chungtienensis*. Moreover, GEF-funded small research project entitled Study on the environmental impacts of tourism in the nature reserve and the behavior of *Ptychobarbus chungtienensis* which had been carried out in this site since 2000. The reserve is equipped with some basic patrolling and observing equipments, but lack of specialized personnel and equipments.

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.

During the past 3 years, the reserve sent 6 staffs to participate in the training courses on reserve management, laws and regulations and forestry economic. Fifteen staffs were sent to the training courses on biodiversity conservation, forestry, and of computer skills.

Since the founding of the nature reserve, the management agencies conducted various forms of publicity and education activities. The TV and radio network is used to publicize relevant laws, regulations and policies on nature conservation. The reserve organized education and propaganda activities for protecting birds on the "Bird-Loving Day" each year. Efforts were also made to publish weeklies on wetland conservation, such as *Ecology and Tourism* and *Green Home*. Over 10,000 booklets and posters were printed and distributed.

In accordance with the Management Plan, the management agencies have implemented public awareness education of the relevant laws and regulations, including the *Forest Law*, *Pasture Law*, *Wildlife Protection Law*, *Nature Reserve Management Regulations*, *Wild Plant Protection Regulations*, etc.

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

Ecotourism is carried out in this site. The annual tourist number in this site is over 50 thousand, but it decreased year by year due to strict protection. The activities of ecotourism are mostly represented as sight-seeing. No permanent tourism facility has been established in this site.

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

Territorial Jurisdiction:
Yunnan Diqing Tibetan Autonomous Prefecture Shangri La County government.

Functional Jurisdiction:
Yunnan Shangri La County Forestry Bureau.

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

Principal: Wendong Ding (Director)
Institution: The Management Office of Bitahai Nature Reserve
Address: Shangri La County 674400, Diqing Prefecture, Yunnan Province
Telephone: +86-887-8225079

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

Planning and Design Institute of the State Forestry Administration. 2002. *The Master Plan of Bitahai Nature Reserve Inventory.*

Southwest Forestry University. 2002. *Report of the Multidisciplinary Comprehensive Inventory of Bitahai Nature Reserve*.

Southwest Forestry University. 2004. *The Master Plan of Bitahai Provincial Nature Reserve*.

Southwest Forestry University. 2004. *The Master Plan for Ecotourism Development of Bitahai Provincial Nature Reserve*.

Yang, L. 1990. Analysis of the Status Quo of the Distribution of Crane Species and Habitats in Yunnan Province. *International Crane Protection and Research*, edited by Heilongjiang Provincial Forestry Department. Beijing: China Forestry Publishing House, pp: 15~88.

Wen, XJ., Yang, L., and Yang, XJ. 1995. Distribution of Water Birds in Plateau Wetlands of Yunnan. *China Wetland Research*, Edited by Yiyu Chen.Changchun: Jilin Science and Technology Publishing House, pp: 248~255.

Yin, WY. Study on the Vegetation of Bitahai Nature Reserve. *Journal of Southwest Forestry College*, 2002, 22(3): 16~19.