

# **Information Sheet on Ramsar Wetlands**

**(RIS)**

Name of the Site: Lashihai Wetland

# 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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Designation date    Site Reference Number

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

December, 21, 2003/ October 11, 2004

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**3. Country:**

The People's Republic of China

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**4. Name of the Ramsar site:**

Lashihai Wetland

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**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

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**6. Geographical coordinates (latitude/longitude):**

N 26°52' - 26°54', E 100°06' - 100°09'

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**7. General location:**

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

Lashihai Wetland is in Lashi Township, Lijiang County of Nansi Autonomous Prefecture in northwest Yunnan Province and is in the core of Hengduan Mountains, 8 km. to the town of Lijiang county.

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**8. Elevation:** (average and/or max. & min.)  
Max. elevation 3100m; Min. elevation 2440.75m

**9. Area:** (in hectares) 3560 hectares

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**10. Overview:**

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

Lashihai Wetland, situated on the upstream of Yangtse River, is an important component of Yunnan-Lijiang-Lashihai plateau wetland nature reserve. This wetland is enlisted in China's Wetland Protection Project since it is the habitat of many national Grade I and Grade II wildlife, e.g. *Mergus squamatus*, *Ciconia nigra*, *Grus nigricollis*, *G. grus*, *Cygnus Cygnus*,. It is a unique plateau freshwater lake composed of marsh, water surface and forest around the lake.

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**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

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**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:** It is a unique wetland performing important hydrological functions:

- The collection area of Jinsha River drainage basin at northwest Yunnan Province is plays a major role for conservation of both moisture and soil, and control of flood;
- The water outlet of the wetland is connected with Jinsha River which is important for the water balance and water level control of the middle and lower reaches of Yangtze River.

**Criterion 2:**

- Lashihai Wetland supports different stages of the life cycle, of globally and nationally protected species, including *Mergus squamatus* (globally endangered IUCN Red List 2004), *Ciconia nigra* and *Grus nigricollis* (national Grade I protection), and *Grus Grus*, *Cygnus cygnus*, (national Grade II protection) as well as *Anser indicus* that is unique to Tibetan Plateau.
- Lashihai Wetland is also valuable for protecting the threatened ecologic communities. The wetland shelters *Ottelia acuminata* communities that are unique to Yunnan-Guizhou Plateau. Lashihai Wetland is the upper limit of the distribution of *Ottelia acuminata*. The distribution area of *Ottelia acuminata*, listed as National Grade II protection, in Lashihai Wetland has declined dramatically.

**Criterion 3:**

- Lashihai Wetland is situated in a hotspot of biodiversity, and it is one of the three special plant zones in China;
- Lashihai Wetland shelters a few species of *Ottelia acuminata* that is unique to Yunnan-Guizhou plateau and nationally threatened apart from the threatened water birds listed above.

**Criterion 4:** Lashihai is the migration pathway of migratory birds. It is a roosting and wintering site for many rare and endangered migratory birds. The important species groups are wild goose and duck, including *Anas crecca*, *Fulica atra*, *Aythya fuligula*, etc.. The estimates of wintering birds in last three years are provided below.

**Criterion 5:** There are more than 20,000 water birds inhabit in the area. The estimates of birds during the wintering period are:

- In 2001-2002, there were 85,000 of 59 species,
- In 2002-2003, 92,000 of 67 species, and
- In 2003-2004, 86,000 of 76 species of wintering water birds in Lashihai Wetland.

**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:**

As to the biogeographic region, Lashihai is in Southwest China (V); Sichuan- Yunnan Plateau (39) and Sichuan-Southwest Mountains (39b); Hengduan Mountains in northwest Yunnan.

**b) biogeographic regionalisation scheme** (include reference citation):

The biogeographic zoning is done according to *China' Biogeographic Zoning* (Xie Yan, 2004) and *Yunnan Biogeographic Zoning* (Yang Yuming, 2003).

**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 Gemorphology**

Lashihai is in the longitudinal valley of three rivers on Hengduan Mountains of Tibetan Plateau, and the geologic structure is the rock-bend of west Yunnan geosyncline with tertiary cemented gravel, limerock and basalt distributed. On limerock and basalt, quaternary ancient weathered crust is distributed.

Lashihai is a plateau lake in rifted-basin with complicated topographic forms, and it presents the features of relief types such as tectonization, glacial action, stream action, etc. and is a negative topography in the high mountain and valley region.

● **Origin**

Lashihai Wetland has a natural origin. Owing to large- scale uplift and unequal emergence, the ancient land was escalated and leaned to south, at the same time, the ancient zones of fracture in the north, south and southwest saw many new interceptions and ruptures, which resulted in the in fall of earth shell, and form faulted basins along with the accumulation of sediments of glaciers,

rivers and lakes. This caused formation of the present lake. However, the reservoirs in the artificial wetlands are man-made.

- **Hydrology**

The water supply of Lashihai depends on precipitation, surface runoff and more than 20 mountain streams and rivers. The annual water yield is  $7,680 \times 10^4 \text{m}^3$ . Before the completion of the works for connecting Lashihai to the up reach of Yangtze River, the lake water will be discharged to the underground river from the swallow hole before Fanzhiyun Temple and enter Jinsha River from there.

- **Water quality**

Presently, the water of Lashihai is clean. According to the data of Lijiang Municipal Hydrologic Monitoring Station, the water quality is national Grade II, the water pollution is light, heavy metal content is less than the national standard, the pH value is 7.80. Other indicators are as follows: DO 5.34mg/l, COD 2.26 mg/l, BOD5 2.74mg/l, As 0.007mg/l, Pb 0.04mg/l, Cd 0.0018mg/l, Tp 0.013mg/l, and there is no Cr, Hg, CN and volatized phenol detected.

- **Soil types and their chemical property**

The major soil type is bog soil with neutral but a little alkalinity (pH 7.00-8.0). The organic content is rich, the nutrient content is high, but the content of available nutrient, especially rapidly available phosphorus, is low.

- **Water depth, water depth fluctuation and constancy**

The relative volume of Lashihai is  $38-184 \times 10^5 \text{m}^3$ , the water elevation during the year is 2,440.75m, the lakebed elevation is 2,436.2m, the maximum water depth is 7.5m, the mean depth is 4.55m and the water area during the year is 933.4 hectares.

- **Catchment area**

Lashihai belongs to Jinsha River System, the catchment area is  $265.6 \text{km}^2$ , the runoff area is  $215.7 \text{km}^2$ , and Meiquan River, Luluokangsha River, Jizi Reservoir and many ravine streams enter the lake.

- **Climate**

Lashihai Wetland nature reserve is of the plateau climate and has two climate patterns, namely highland warm temperate zone and highland cold temperate zone. Mianshan is in the cold temperate zone, with the annual temperature being  $8.8^\circ\text{C}$ ,  $15.7^\circ\text{C}$  in July and  $1.4^\circ\text{C}$  in January, the accumulated temperature  $\geq 10^\circ\text{C}$  is  $2,254^\circ\text{C}$  and the frost period is 200 days. Lashihai Wetland is in the warm temperate zone with the annual average temperature being  $11.8^\circ\text{C}$ ,  $18^\circ\text{C}$  in July and  $3.0^\circ\text{C}$  in January, the accumulated temperature  $\geq 10^\circ\text{C}$  is  $3,470^\circ\text{C}$  and the frost period is 160 days. The dry season (November-May) is sharply separated from the wet season (May- October), the precipitation is mostly in June- September, the annual mean humidity is 63%, the yearly hours of sunshine are 2,500- 2,750h and the annual precipitation is 900-1200mm. The water surface evaporation is mostly in April- June, 33% of the evaporation capacity for the whole year that is 1,200mm, and the land evaporation is 500- 600mm.

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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 geology and physiognomy characteristics of the catchment area of Lashihai Wetland are the same as that in Section 14, and there are brown soil, dark brown soil, red soil, sub-alpine meadow soil as well as alluvial soil and paddy soil around the lake; alluvial soil and paddy soil present are neutral and slight acid reaction, the alpine soil reacts acid, there is unsaturated base and low quantity of cation substitution. There are lands for fishery, pasture and forest. The catchment area is in cold temperate zone, with the annual temperature being 8.8 °C, 15.7°C in July and 1.4°C in January, the accumulated temperature $\geq 10^{\circ}\text{C}$  is 2,254°C and the frost period is 200 days.

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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.

Lashihai takes up the runoff of surrounding ravine streams and precipitation, and the lake water is more than  $380 \times 10^4 \text{m}^3$ . Besides, supplementing the underground water and providing domestic water and farm production water, it can effectively control floods by slow release of the lake water through the obstruction of water plants and the accumulation and dispersion of waterflow. On the other hand, about  $4\text{-}5 \times 10^4 \text{m}^3$  silt will enter Lashihai lake yearly along with surface runoff, which is important for regulating and control the floods on the middle and lower reaches of Yangtze River.

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#### **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.

Va, O, 6

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#### **18. General ecological features:**

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

Lashihai Wetland Nature Reserve is in the northwest Yunnan Province and is a wetland ecosystem composed of lake and surrounding forest cover. There are 2 vegetation types in Lashihai Wetland, namely meadow vegetation and aquatic vegetation, 6 subtypes, namely sub-alpine meadow, sub-alpine swamp meadow, emerging plants, mire vegetation, errantia, floating leaf plant community and sub-merged plant community, and 11 biomes. The common plants include rush marsh, *Ottelia acuminata*, *Rhizoma calami*, *Azolla imbricata*, and *Salvinia natans*. The dominant species on the rush marsh meadow is *Juncus allioides*, the dominant species of

aquatic vegetation are *Potamogeton tepperi*, *Myriophyllum spicatum*, *Schoenoplectus tabernaemontani*, *Potamogeton malaianus*, *P. pectinatus*, *Polygonum hydropiper*, *Acorus calamus*, etc. The natural plant communities around are mainly *Castanopsis delavayi*, *C. hystrix* and *Lithocarpus dealbata*. The communities are of a multi-layer structure with rich species, and *Quercus* spp. and *Rhododendrom* spp. are common in the shrub layer. Lashihai Wetland is a primitive ecosystem with no allochthonous species and invader species, and most animals live in the habitat facing the mountains. In addition, Lashihai Wetland is rich in hydrobiont, such as snail, clam, shell fish, etc, which are food for birds, thus this region becomes a breeding and wintering place of many birds with its stable food chain.

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### **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.*

Lashihai is in the warm temperate zone with wide-spread *Phyllanthus oxyphyllus* Miq., *Schoenoplectus tabernaemontani*, silk grass, and reed communities, north temperate zone communities, such as *Acorus calamus*, *Myriophyllum spicatum*, etc., *East Asia Potamogeton tepperi* as well as *Ottelia acuminata* that is unique to Yunnan-Guizhou Plateau.

*Ottelia acuminata* has special significance for Lashihai Wetland, which is unique to Yunnan-Guizhou Plateau and is a national Grade II plant for protection. Lijiang is its upper limit of distribution, it is featured in margin and vulnerability, and the reduction or disappearance of *Ottelia acuminata* means the deterioration of the lake water quality and the regression of wetland. The *Ottelia acuminata* is of far-reaching importance for the biodiversity of the plateau lake wetland.

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### **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.*

The animals in Lashihai Wetland give priority to species in Oriental region, especially the southwest Oriental region, and there are many rare and endangered species, including 7 national Grade I birds for protection, such as *Ciconia nigra*, *Grus nigricollis* and *Mergus squamatus*, 24 national Grade II birds for protection, such as *Grus grus*, *Cygnus Cygnus*, *Circus aeruginosus*, *Falco tinnunculus*, *Buteo buteo*, etc, and *Anser indicus* that is unique to Tibetan Plateau. Such rare birds are quite important for Lashihai Wetland as they are closely linked with the wetland. The reduction of quantity or disappearance of birds means the deterioration of the wetland, which will threaten the survival of such species vice versa. *Grus nigricollis* is unique to plateau and the quantity is only about 30, which may build up to 80 when the climate at Napahai changes. Of the 190 bird species at Lashihai, more than 100,000 in 76 species are swimming birds and wading birds that cannot get away from the wetland, which shows that Lashihai Wetland is an important wintering and breeding place for water birds and migratory birds.

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### **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.

Lashihai Wetland is one of the 173 major wetlands in China, one of the 15 major wetlands in southwest China, and the first nature reserve that is named after the wetland in Yunnan Province. This reserve has a relatively integrated wetland ecosystem with rich wetland biotic resources, and it is also the habitat of numerous wetland water birds. Like other plateau wetlands in Yunnan, the wetlands are isolated and dispersed, and there is no waterway between them. They are of a small area and suffer great artificial interference, and the ecosystem is fragile and unstable, therefore, they have special ecological significance and scientific research value. The study of the ecological environment of Lashihai Wetland is of great importance for maintaining the wetland course, maintaining the ecologic equilibrium, protecting the biodiversity and keeping the sustainable development of wetland, meanwhile, it is also to carry out the “China Wetlands Protection Program”.

Lashihai Wetland is in the central part of Lashi Township, Yulong County of Lijiang City with rich cultural heritages, and the ecotourism developed in recent years has brought along huge economic benefits and social benefits to the local people. Local people have realized that the economic development can be guaranteed only through protecting the wetland natural resources because the ecotourism is based on protection of Lashihai Wetland ecosystem.

On the other hand, Lashihai Wetland is in an ecologically sensitive area on the upper stream of Yangtze River. It receives and regulates the surface runoff and water flow, controls soil erosion, and plays a vital role for regulating the water level of the lower reach and keeping the water balance. It also provides complicated and complete habitat for plants and animals; it is provided with double features of water and land and provides a habitat for rare and endangered species; it provides rich natural resources to the subsistence of local people and is of a high social value.

The people living in Lashihai are mainly of the Nansi nationality, and Nansi culture is playing a special and major role during the nature conservation, especially the protection of wild life. In the traditional culture of Nansi, there are many traditions and customs of showing concern to the nature and getting on well with the nature. From the old age, the local Nansi people regarded cranes as lucky and fortunate symbols, therefore, such animals have been well protected instead of being hunted, which maintains the ecological balance and shows the harmonious coexistence between people and nature.

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## **22. Land tenure/ownership:**

(a) within the Ramsar site:

The area of Lashihai Wetland is 1,443.46 hectares, including Wenhai of 287.07 hectares, Lashihai of 800.39 hectares, Jizi of 356 hectares, and the Nature Reserve Administration has the ownership, management rights and use rights of all lands within the wetland scope.

(b) in the surrounding area:

There is forest and farm lands around Lashihai Wetland, and they are owned by the collectives.

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## **23. Current land (including water) use:**

(a) within the Ramsar site:

The wetland water surface, including 300 hectares of artificial water area, is the habitat of water birds and the fishing region of local people. Currently, seasonal fishing prohibition is exercised to

protect the water resources. During the low flow season, the local people make use of the shallow water for grazing, but it does not go beyond the environmental capacity.

(b) in the surroundings/catchment:

There is farm land around the wetland and mixed broadleaf-conifer forest at the catchments facing the mountains, including Burma pine, China Armand pine coniferous forest and Likiang spruce, hemlock, etc., which has been listed into the wild-wood protection project and is vital for conserving the moisture and soil, source of water, maintaining the hydrological condition of Lashihai Wetland and keeping the environmental balance.

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**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 adverse factors that affect the ecological environment of Lashihai Wetland mainly include destructive fishing, water plant harvesting, reclamation and planting, pond enclosure and construction, disordered tourism as well as lack of scientific research and managerial experience. The fishing during the wintering period of water birds and with unadvisable fishing mode disturbs mostly water birds.

(b) in the surrounding area:

The surface water level begins to fall slowly after the dry season starts. From February to April, the shallows-tidal-flat area is dried up gradually along with the recession of water level, and the farming of local people extends from surroundings to the core space. A lot of farmers gather at the region near the water surface, which affects the wintering water birds and reduces the area of feeding and playing. On the other hand, the growing need for resources and wood along with the population expansion resulting severe damage of forest cover on the catchment slope of Lashihai. Lashihai is deprived of the function of water conservation, the soil erosion becomes more serious and the ecology of Lashihai Wetland is being threatened.

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**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.

Approved by Yunnan Provincial People's Government, Yunnan Lijiang Lashihai Provincial Nature reserve was founded in 1998, and a Control Station for the Reserve was established in October of the same year, governing an area of 6,523 hectares. To construct and manage the nature reserve well, Lashihai nature reserve established well-defined management objectives, including the resource background survey and master plan of the reserve, organizational structure and infrastructure construction as well as the management plan for the reserve, which have been approved by Yunnan Provincial People's Government. Propaganda & education on "Forest Law", "Wild Life Protection Law", "Nature Reserve Regulations" and "Wild Life Protection Regulations" are made in order to promote the protection consciousness of the local people. Meanwhile, illegal hunting is stricken, the management force is strengthened, the protection and management works of the reserve are brought to the right path, and destructive fishing and hunting is terminated. Since the foundation of the reserve, many measures have been taken to protect the habitats.

- "Protection and Management Regulations for Lashihai Wetland in Nassi Autonomous County of Yulong City, Yunnan Province" was established;
- The destructive fishing net was banned and forcibly torn down by the government in December, 2001 after two inspections;

- In 1999, fishing was prohibited for one month in Lashihai, which guarantees both the source of food for migratory birds and the spawning and breeding of fishes;
- Various methods are combined to strike the illegal vendors, such as propaganda & education, patrolling on the sea and blocking on the highway, and *Ottelia acuminata* is well protected in Lashihai;
- Through propaganda & education, the sea grass is no longer used as forage grass, which protects the ecosystem of Lashihai Wetland.

Through years of management practice, the fragile wetland ecosystem and rare species have been protected effectively, illegal hunting has been terminated, the wetland destruction is checked and the ecology is somewhat restored.

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#### **26. Conservation measures proposed but not yet implemented:**

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

Positioned monitoring of the ecology of Lashihai Wetland is planned for development, including the research on the ecological succession process of mesophytia communities. However, some construction projects listed in the "management program" have not been completed.

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#### **27. Current scientific research and facilities:**

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

Multidisciplinary research activities, the social and economic development are practical. In 2000, the national wetland conference was held in Lijiang, which promoted the research on biodiversity protection in Lashihai Wetland, and the projects developed are as follows:

- (1 ) GEF scientific research fund, *Research on the Joint Administration of Lashihai Wetland Nature Reserve by Communities*
- (2 ) Ecotourism Projects at the Drainage Basin of Lashihai sponsored by TNC;
- (3) Community Poverty Alleviation Project of Oxfam America, Research on substitute energy and farming structural adjustment;
- (4) Petty loans for women in the reserve provided by American Oxfam;
- (5) Survey of Lashihai Wetland Nature Reserve by the Forest Survey and Design Institute of Yunnan Province;
- (6) Planning and design made up by the Forest Survey and Design Institute of Yunnan Province for Lashihai Wetland Nature Reserve;
- (7 ) The bird fauna survey conducted by Kunming Institute of Zoology, CAS in 1999;
- (8) Survey of the Biodiversity of Wenhai by Kunming Institute of Zoology, CAS in 2001;
- (9 ) The background survey of fish stocks of Lashihai drainage basin by Kunming Institute of Zoology, CAS in 2001;
- (10) The investigation and study of rhododendron at the nature reserve and peripheral localities conducted by TNC Lijiang Office in recent years;
- (11 ) Investigation of the plant resources at Wenhai and surroundings done by Lijiang Alpine Economic Plants Research Institute of Yunnan Academy of Agricultural Sciences in 2000;
- (12) Compilation of the "*Management Program*" for Lashihai Nature Reserve sponsored by WWF in 2002.

There is little research equipment in Lashihai and only simple observation devices are used to observe the daily activities of birds, and some in-depth scientific researches, for instance the habitat environmental change, the biological property of rare species, cannot be conducted.

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**28. Current conservation education:**

e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

Leaders of the county bureau of forestry, the nature reserve and the employees of Lashihai Control House have developed propaganda & education plan based on the importance and necessity of protecting wildlife and wetland in accessible language, as well as explained related laws and regulations, such as "wild life protection law", " wild plant conservation regulations", "Nature reserve regulations", "forest law", etc. They explain in detail articles related to the benefit of the local people and make them know the importance of the nature reserve. In this way, the protection awareness is promoted, and illegal hunting and wetland destruction are terminated.

The propaganda & education campaign has resulted in good effect, and the protection awareness is promoted, which lay a good foundation for the following works. While it is difficult to develop propaganda & education in a large scale due to the hard working conditions, backward economy and culture, lack of facilities, big coverage, low quality of managerial personnel, and hard tasks, especially propaganda & education aiming at tourists and visitors. In addition, the disordered tourism and ever-increasing visitors in recent years pose a pressure on the reserve, and no extra capital can be allocated to educate visitors. Thus, the ecology has been interfered and damaged to a certain degree, and habitat of rare birds has been threatened. In order to protect the reserve well, to make people understand and accept the nature conservation undertaking, and to bring the biodiversity and wetland functions into full play, the content, mode and the effect of propaganda & education are important. The support and assistance of social institutions and the public can be won awareness campaigns & environmental education to protect the Lashihai Nature Reserve.

TNC is the major co-partner of the reserve, and it once conducted environmental education aiming at students in middle schools and primary schools in the reserve. Curretnly, the environmental education has been conducted in the middle and primary schools in Lashihai and Wenhai for the past two years.

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**29. Current recreation and tourism:**

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

The tourism items now mainly include sightseeing by sitting on a horse and bird observation in winter, and the number of visitor is 200-300 daily.

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**30. Jurisdiction:**

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

(a)Territorially, Lashihai Wetland Nature Reserve is managed by Yunnan Provincial Government, Lijiang Municipal Government and Yulong Nassi Autonomous County Government.

(b) The management functions are controlled by the State Forestry Administration, Yunnan Provincial Forestry Department and the Bureau of Forestry of Nassi Autonomous County of Yulong City.

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**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.

The administrative agency is Lijiang Lashihai Wetland Nature Reserve Administration. Add: Lashi Township, Nassi Autonomous County, Lijiang City. Director: Huang Tingfa, who is in charge of the current management of Lashihai Wetland.

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**32. Bibliographical references:**

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

(1) ) The Survey and Design Institute of the State Forestry Administration, "*Master Plan for Bitahai Nature Reserve*", March, 2002;

(2) Xinan Forestry College, et al., "*Bitahai Nature Reserve Integrated Scientific Expedition Reports*", February, 2002;

(3) Peng Guihong and Huang Tingfa, *Lashihai Nature Reserve Management Plan*, 2003;

(4) Yan Xie, Study on Biographical Division of China. *Biodiversity and Conservation*, 13:1391-1471.

(5) Yang Yuming, *Yunnan Biogeographic Zoning* ( doctorate dissertation).

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