



# Ramsar Information Sheet

Published on 11 April 2023

## China

### Qinghai Longbaotan Wetlands



Designation date	28 October 2022
Site number	2503
Coordinates	33°11'20"N 96°32'25"E
Area	9 529,00 ha

## Color codes

Fields back-shaded in light blue relate to data and information required only for RIS updates.

Note that some fields concerning aspects of Part 3, the Ecological Character Description of the RIS (tinted in purple), are not expected to be completed as part of a standard RIS, but are included for completeness so as to provide the requested consistency between the RIS and the format of a 'full' Ecological Character Description, as adopted in Resolution X.15 (2008). If a Contracting Party does have information available that is relevant to these fields (for example from a national format Ecological Character Description) it may, if it wishes to, include information in these additional fields.

## 1 - Summary

### Summary

Qinghai Longbaotan Wetlands is located in Longbao Town, Yushu City, Qinghai Province. The Site lies the lowest part of the central basin of the transition zone from the alpine valleys of western Sichuan to the main plateau in the east of the Qinghai Tibet Plateau. The Site is surrounded by mountains, in the shape of a "concave". Rivers on the surrounding mountains converge to the lower part to form a long and narrow east-west lake, irregular puddles and marsh meadows, forming a typical alpine inland wetland and water ecosystem dominated by marshes and lakes. The site is very unique in the Qinghai Tibet Plateau and biogeographical region.

The Site is rich in wetland resources. From the surrounding to the centre of the Site, the habitats are snow mountains, bare rock, alpine meadows, swamp meadows, swamps and lakes. The climate in the area is cold and humid, with sufficient sunlight, rich food, few people, and good original state. There are threatened animals such as black-necked crane (*Grus nigricollis*), common pochard (*Aythya ferina*), steppe eagle (*Aquila nipalensis*), and white-lipped deer (*Przewalskium Albirostre*). The Site is known as the "hometown of black-necked cranes (*Grus nigricollis*)"; this area is the highest breeding ground of black-necked cranes in China, and also provides important food supply, resting ground and breeding ground for migratory birds on the western plateau of China. One of the endemic fish species, *Schizopygopsis malacanthus* distributed in the Site, has been found to have unique evolutionary changes which is important to maintain the genetic diversity of the Site .

The Site is the source of the Yiqu River, a primary tributary of the source of the Yangtze River, and an important part of the Sanjiangyuan wetland. It provides ecosystem services such as water conservation, soil conservation, carbon sequestration, and biodiversity maintenance for the region. It is also an important part of the cultural heritage of local Tibetan people.

## 2 - Data & location

### 2.1 - Formal data

#### 2.1.1 - Name and address of the compiler of this RIS

##### Responsible compiler

Institution/agency	Yushu Tibetan Autonomous Prefecture Longbao National Nature Reserve Management Station
Postal address	Administration Bureau of Yushu Prefecture Forestry and Grassland Xinjian Road 815099, Yushu City Qinghai Province P.R.China

##### National Ramsar Administrative Authority

Institution/agency	Ramsar Administrative Authority of the People's Republic of China
Postal address	No.18 Hepingli East Road Dongcheng District Beijing 100714 P.R. China

#### 2.1.2 - Period of collection of data and information used to compile the RIS

From year	2017
To year	2022

#### 2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Qinghai Longbaotan Wetlands
Unofficial name (optional)	Qinghai Longbaotan Wetlands

## 2.2 - Site location

### 2.2.1 - Defining the Site boundaries

b) Digital map/image  
<1 file(s) uploaded>

Former maps	0
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##### Boundaries description

The Site has the same boundary as the Qinghai Longbao National Nature Reserve. The boundary of the Site in the South is the northern slope of Cangzong Chayi Mountain and Yaqinyaqiong Mountain (at an altitude of about 4600 meters); in the north is the National Highway of G215; in the west is the junction of Keyong River and Yiqu River; in the east is the section of Longbao River nearest to National Highway G215 (at this place, Longbao River begins to flow southward).

### 2.2.2 - General location

a) In which large administrative region does the site lie?	Yushu city, Yushu Tibetan Autonomous Prefecture, Qinghai Province, P.R. China
b) What is the nearest town or population centre?	Longbao Town

### 2.2.3 - For wetlands on national boundaries only

- a) Does the wetland extend onto the territory of one or more other countries? Yes  No
- b) Is the site adjacent to another designated Ramsar Site on the territory of another Contracting Party? Yes  No

### 2.2.4 - Area of the Site

Official area, in hectares (ha):	9529
Area, in hectares (ha) as calculated from GIS boundaries	9529.159

### 2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Udvardy's Biogeographical Provinces	Cold-winter (continental) deserts and semi-deserts, Tibetan Province, Palaearctic Realm

### 3 - Why is the Site important?

#### 3.1 - Ramsar Criteria and their justification

Criterion 1: Representative, rare or unique natural or near-natural wetland types

Hydrological services provided

Qinghai Longbaotan Wetlands is located in Qinghai-Tibet Plateau and has an average altitude of 4,200 m. Seven permanent rivers and six seasonal rivers in the area, including Xingyalong, Xiexionglong, Bomalayong, and Geganglong, flow into five connected small lakes, which do not dry up in all seasons and form a permanent freshwater lake. A large area of swamps and swampy meadows are distributed around the lake, accounting for 80% of the total area of the Site. The Site is an important water conservation area around the source of the Yangtze River. Dengeyongqu River and the outlet of LongbaoLake converge into Yiqu River, which is an important tributary of the Tongtian River, the main stream of the Yangtze River. The Site has a representative wetland ecosystem of the Qinghai-Tibet Plateau. It has strong water storage capacity and ability to reduce flood peaks and homogenize floods, and plays an important role in regulating regional microclimate, purifying water quality, and maintaining groundwater level.

Other ecosystem services provided

The soil and vegetation of the Longbaotan Wetlands are high in carbon density, showing a visible distribution of large peat resources. According to the peatland survey conducted in the Site, there are 15 peatlands meeting the international peatland classification standard, covering an area of 748.87 hectares, with a peat storage capacity of 1716,689.9 t. The total carbon pool is 277,061.1 t, including 22,476.0 t of plant biomass carbon pool and 254,585.1 t of soil carbon pool, making it the main peat wetland distribution area in Sanjiangyuan.

Criterion 2 : Rare species and threatened ecological communities

Optional text box to provide further information

The following threatened species are distributed in the Site: steppe eagle (*Aquila nipalensis*, EN), saker falcon (*Falco cherrug*, EN), common pochard (*Aythya ferina*, VU), and white-lipped deer (*Przewalskium albirostre*, VU). See also Chapter 3.3 for more information.

Criterion 4 : Support during critical life cycle stage or in adverse conditions

The Site has rich types and diverse habitats, including lakes, marshes, marsh meadows, rivers, alpine meadows, snow mountains and bare rocks. It supports 224 species of plants, 136 species of birds, 11 species of mammals, three species of amphibians, and three species of endemic fish on the plateau, providing a habitat for six species listed in the IUCN list above the vulnerable level to go through important life cycle.

Optional text box to provide further information

The Site has typical plateau wetland ecological characteristics and acts as an important breeding ground for birds in the Qinghai-Tibet Plateau region and stopover on their migration. 82 species of birds breed and roost in the Site, such as black-necked crane (*Grus nigricollis*), bar-headed goose (*Anser indicus*), common crane (*Grus grus*), ruddy shelduck (*Tadorna ferruginea*) and others. Among them, the number of black-necked cranes (*Grus nigricollis*) has increased from 22 at the beginning of construction to a stable number of more than 100 per year at present, and the nesting nests of bar-headed goose (*Anser indicus*) are about 2,000. The black-necked crane (*Grus nigricollis*) is a rare species among the 15 existing cranes in the world, and is the only crane that grows and breeds in plateau wetlands, mainly distributed in the Tibetan Plateau and the Yunnan-Guizhou Plateau in China. It is also known as the largest breeding ground for black-necked cranes in Qinghai Province, and has the reputation of "hometown of black necked cranes". The Site also provides good shelter for mammals such as White-lipped Deer (*Przewalskium albirostre*) and Tibetan gazelle (*Procapra picticaudata*), ect. Therefore, it is of great significance in maintaining regional biodiversity. See Appendix 1 of 6.1.2 for breeding bird species.

Criterion 6 : >1% waterbird population

Optional text box to provide further information

Based on bird monitoring data from 2018 to 2021, the number of bar-headed goose (*Anser indicus*) and black-necked cranes (*Grus nigricollis*) regularly roosting at Longbaotan Wetlands exceeded 1% of the individuals in one of their populations. See 3.3 for details.

Criterion 8 : Fish spawning grounds, etc.

Justification

There are 3 species of fish in 1 order, 2 families in the site, which are endemic to the Qinghai-Tibet Plateau and indigenous fishes. In the center of the Site, there are five lakes with different sizes and water depths of 2-4 m, surrounded by irregular puddles and soft grass dunes, with stable water volume and clean water quality. It provides important food sources, spawning and nursery places for the representative fish *Mrenice brahmaputerska* (*Triplophysa stenura*) and *Mrenice vychodni* (*Triplophysa orientalis*) and also a migration channel for the third representative fish *Skrabalka vysokohorska* (*Schizopygopsis malacanthus*) of Longbaotan Wetlands. The Site is connected to Tongtian River (the model origin of *Schizopygopsis malacanthus*) by Yiqu. It has been studied at the molecular level to show that *Schizopygopsis malacanthus* differs significantly between different geographic groups and has its own mutation loci and haplotypes, and that the Longbaotan Wetlands branch is irreplaceable as a significant evolutionary unit in maintaining the genetic diversity of *Schizopygopsis malacanthus*.

### 3.2 - Plant species whose presence relates to the international importance of the site

<no data available>

### 3.3 - Animal species whose presence relates to the international importance of the site

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
<b>Others</b>																	
CHORDATA/ MAMMALIA	<i>Przewalskium albirostre</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				VU	<input type="checkbox"/>	<input type="checkbox"/>	National Protection Class I	Crit4:Living in this Site
<b>Fish, Mollusc and Crustacea</b>																	
CHORDATA/ ACTINOPTERYGII	<i>Schizopygopsis malacanthus</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>		Crit8: Migrating in the site, and are indigenous and endemic fish species
CHORDATA/ ACTINOPTERYGII	<i>Triplophysa orientalis</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		Crit8: indigenous and endemic fish species that forage, spawn and breed in the site
CHORDATA/ ACTINOPTERYGII	<i>Triplophysa stenura</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		Crit8: indigenous and endemic fish species that forage, spawn and breed in the site
<b>Birds</b>																	
CHORDATA/ AVES	<i>Anser indicus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8148	2018-2021	14.55	LC	<input type="checkbox"/>	<input type="checkbox"/>		Crit4:Breeding in this Site ; Crit6:1% threshold of the population of C, S & SE Asia is 560 as of 2002.
CHORDATA/ AVES	<i>Aquila nipalensis</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				EN	<input type="checkbox"/>	<input checked="" type="checkbox"/>	National Protection Class I	Crit 4:Breeding in this Site
CHORDATA/ AVES	<i>Aythya ferina</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				VU	<input type="checkbox"/>	<input type="checkbox"/>		Crit4:Breeding in this Site
CHORDATA/ AVES	<i>Falco cherrug</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				EN	<input type="checkbox"/>	<input checked="" type="checkbox"/>	National Protection Class I	Crit4:Living in this Site
CHORDATA/ AVES	<i>Grus nigricollis</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	120	2018-2021	1.2	NT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	National Protection Class I	Crit4:Breeding in this Site ; Crit6:1% threshold of C & S Asia is 100 as of 2012.
CHORDATA/ AVES	<i>Ichthyaelus relictus</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	National Protection Class I	Crit 4:Stopover in this Site
CHORDATA/ AVES	<i>Saxicola insignis</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				VU	<input type="checkbox"/>	<input type="checkbox"/>	National Protection Class II	Crit 4:Stopover in this Site

1) Percentage of the total biogeographic population at the site

### 3.4 - Ecological communities whose presence relates to the international importance of the site

<no data available>

## 4 - What is the Site like? (Ecological character description)

### 4.1 - Ecological character

Longbaotan Wetlands is located in the cold-winter (continental) deserts and semi-deserts biome of the Tibetan Biogeographic Province in the Palaearctic Realm. With a subarctic climate, the site is cold and dry in winter and cool in summer. The altitude is 4200~4300 m. The soil matrix is mainly alpine meadow soil and alpine swamp soil.

The Site is mainly composed of large areas of permanent freshwater herbaceous marshes, lakes and rivers, and the main wetland type is permanent freshwater herbaceous marshes, with major wetland plants of *Sparganium stoloniferum*, *Potamogeton distinctus* and *Eleocharis ovata*. The Site is one of the most important breeding and roosting grounds for waterbirds in the Tibetan Plateau hinterland.

The large difference in elevation in the Site creates a clear pattern of vertical zonation of vegetation. From low to high elevation, there are aquatic vegetations, marsh vegetations, swampy meadow vegetations, alpine meadow vegetations and cushion-like vegetations. In the lake and marsh areas, the vegetation is dominated by *Hippuris vulgaris*, *Potamogeton distinctus*, *Myriophyllum spicatum*, *Carex orbicularis*, and *Ranunculus tanguticus*, which provides feeding and breeding grounds for *Schizopygopsis malacanthus*, *Grus nigricollis* and *Mergus merganser*. In swamp meadow area, *Kobresia tibetica* and *Kobresia humilis* are the dominant species, providing important habitats for amphibians such as *Scutigera boulengeri* and *Rana kukunoris*. Above the alpine meadows, there are *Androsace tapete*, *Salix oritrepha*, provides shelter and food resources for animals such as *Ochotona curzoniae*, *Przewalskium albirostre* and *Canis lupus*.

The Site also plays a great role in water and soil conservation, climate regulation, groundwater supplement, and surface runoff mitigation.

### 4.2 - What wetland type(s) are in the site?

#### Inland wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
Fresh water > Flowing water >> M: Permanent rivers/ streams/ creeks		4	209.27	
Fresh water > Lakes and pools >> O: Permanent freshwater lakes		3	430.33	Representative
Fresh water > Marshes on inorganic soils >> Tp: Permanent freshwater marshes/ pools		1	1961.13	Unique
Fresh water > Marshes on peat soils >> U: Permanent Non-forested peatlands		2	747.87	Unique

#### Human-made wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type
2: Ponds		0	0.26

#### Other non-wetland habitat

Other non-wetland habitats within the site	Area (ha) if known
Farmland	0.82
Shrub	86.03
Grassland	6072.33
Bare land	2.8
Land for supporting facilities	17.85

### 4.3 - Biological components

#### 4.3.1 - Plant species

Other noteworthy plant species



Phylum	Scientific name	Position in range / endemism / other
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Androsace tapete</i>	Dominant species of the plateau meadow
TRACHEOPHYTALILIOPSIDA	<i>Carex alatauensis</i>	Dominant species of the swampy meadow
TRACHEOPHYTALILIOPSIDA	<i>Carex orbicularis</i>	Dominant species of the lake and marsh
TRACHEOPHYTALILIOPSIDA	<i>Carex tibetikobresia</i>	Dominant species of the swampy meadow
TRACHEOPHYTALILIOPSIDA	<i>Eleocharis ovata</i>	Dominant species
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Hippuris vulgaris</i>	Dominant species of the lake and marsh
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Myriophyllum spicatum</i>	Dominant species
TRACHEOPHYTALILIOPSIDA	<i>Potamogeton distinctus</i>	Dominant species of the lake and marsh
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Ranunculus tanguticus</i>	Dominant species of the lake and marsh
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Rhodiola tangutica</i>	National Protection Class II
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Salix oritrepha</i>	Dominant species of the plateau meadow
TRACHEOPHYTALILIOPSIDA	<i>Sparganium stoloniferum</i>	Dominant species

Optional text box to provide further information

There are four criteria for the selection of species in the List of Wild Plants under Key State Protection: 1, endangered species with very small number and narrow distribution range; 2, endangered and rare species with important economic, scientific and cultural values; 3, wild populations of important crops and related species with genetic value; 4, the species with important economic value, and resources are sharply reduced due to over-exploitation and utilization.

#### 4.3.2 - Animal species

Other noteworthy animal species

Phylum	Scientific name	Pop. size	Period of pop. est.	% occurrence	Position in range /endemism/other
CHORDATA/AVES	<i>Aegypius monachus</i>				National Protection Class I
CHORDATA/AVES	<i>Anthropoides virgo</i>				National Protection Class II
CHORDATA/AVES	<i>Aquila chrysaetos</i>				National Protection Class I
CHORDATA/AVES	<i>Asio flammeus</i>				National Protection Class II
CHORDATA/AVES	<i>Athene noctua</i>				National Protection Class II
CHORDATA/AVES	<i>Bubo bubo</i>				National Protection Class II
CHORDATA/AVES	<i>Buteo hemilasius</i>				National Protection Class II
CHORDATA/MAMMALIA	<i>Canis lupus</i>				National Protection Class II
CHORDATA/AVES	<i>Carpodacus roborowskii</i>				National Protection Class II
CHORDATA/AVES	<i>Ciconia nigra</i>				National Protection Class I
CHORDATA/AVES	<i>Circus cyaneus</i>				National Protection Class II
CHORDATA/AVES	<i>Cygnus cygnus</i>				National Protection Class II
CHORDATA/AVES	<i>Falco subbuteo</i>				National Protection Class II
CHORDATA/AVES	<i>Falco tinnunculus</i>				National Protection Class II
CHORDATA/AVES	<i>Grus grus</i>				National Protection Class II
CHORDATA/AVES	<i>Gypaetus barbatus</i>				National Protection Class I
CHORDATA/AVES	<i>Gyps himalayensis</i>				National Protection Class II
CHORDATA/AVES	<i>Haliaeetus albicilla</i>				National Protection Class I
CHORDATA/AVES	<i>Ibidorhyncha struthersii</i>				National Protection Class II
CHORDATA/AVES	<i>Mergus merganser</i>				Dominant species
CHORDATA/AVES	<i>Milvus migrans</i>				National Protection Class II
CHORDATA/AVES	<i>Podiceps nigricollis</i>				National Protection Class II
CHORDATA/AVES	<i>Poecile superciliosus</i>				National Protection Class II
CHORDATA/MAMMALIA	<i>Procapra picticaudata</i>				National Protection Class II
CHORDATA/AVES	<i>Tadorna ferruginea</i>				Dominant species
CHORDATA/AVES	<i>Tetraogallus tibetanus</i>				National Protection Class II
CHORDATA/MAMMALIA	<i>Vulpes ferrilata</i>				National Protection Class II
CHORDATA/MAMMALIA	<i>Vulpes vulpes</i>				National Protection Class II

Optional text box to provide further information

Wild animals have important ecological value. The State Council of the People's Republic of China has approved and issued the list of rare and endangered wild animals under national key protection, and the protection of these wild animals has been raised to the legal level.

## 4.4 - Physical components

### 4.4.1 - Climate

Climatic region	Subregion
D: Moist Mid-Latitude climate with cold winters	Dwc: Subarctic (Severe, dry winter, cool summer)

### 4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres)

a) Maximum elevation above sea level (in metres)

- Entire river basin
- Upper part of river basin
- Middle part of river basin
- Lower part of river basin
- More than one river basin
- Not in river basin
- Coastal

Please name the river basin or basins. If the site lies in a sub-basin, please also name the larger river basin. For a coastal/marine site, please name the sea or ocean.

Yangtze River Basin

### 4.4.3 - Soil

- Mineral
- Organic
- No available information

Are soil types subject to change as a result of changing hydrological conditions (e.g., increased salinity or acidification)? Yes  No

Please provide further information on the soil (optional)

The soil in the Site has an obvious vertical zonal distribution pattern, with the soil types from high to low altitude being alpine cold soil, alpine meadow soil, alpine swamp soil and alpine grassland soil in order, with alpine meadow soil and alpine swamp soil being the main ones. Soil thickness is 30-60 cm. According to the soil monitoring results in 2019-2021:

1. Soil pH varied from 6.67-8.67, of which 52% is neutral and 48% is alkaline, and the alkalinity of the soil increases with increasing soil depth.
2. Soil carbon content varies from 1.67% to 34.36% in the 0-30 cm soil layer; soil organic carbon content varies from 0.77% to 29.2% in the 0-30 cm soil layer.
3. The total phosphorus content of the soil is rich, with a range of 0.59-1.69 g/kg of total phosphorus, 5.87-35.7 g/kg of total potassium and 1.67-18.4 g/kg of total nitrogen in the surface.

### 4.4.4 - Water regime

Water permanence

Presence?	
Usually permanent water present	No change

Source of water that maintains character of the site

Presence?	Predominant water source	
Water inputs from precipitation	<input type="checkbox"/>	No change
Water inputs from surface water	<input checked="" type="checkbox"/>	No change

Water destination

Presence?	
To downstream catchment	No change

Stability of water regime

Presence?	
Water levels largely stable	No change

Please add any comments on the water regime and its determinants (if relevant). Use this box to explain sites with complex hydrology.

The Site is surrounded by mountains, distributed with seven permanent rivers and six seasonal rivers including Xingya Long, Xiexiong Long, Bomala Yong, Gegang Long and Niedaguo Shang. The rivers converge into lakes and swampy areas at lower elevations, then flow out of the lake area via the Longbao River, converges with the Yiqu and eventually flow into the core area of the Tongtian River in the Sanjiangyuan National Nature Reserve.

The maximum river flow in the last five years is between July and October, the period of maximum rainfall and concentration of precipitation in the Longbao area, which is relatively humidity, with the maximum value rising from 3.91 m<sup>3</sup>/s in 2017 to 12.9 m<sup>3</sup>/s in 2020, with a downward trend in 2021, when the flow is 6.34 m<sup>3</sup>/s; the minimum river flow period is January, when the river freezes.

#### 4.4.5 - Sediment regime

- Significant erosion of sediments occurs on the site
- Significant accretion or deposition of sediments occurs on the site
- Significant transportation of sediments occurs on or through the site
- Sediment regime is highly variable, either seasonally or inter-annually
- Sediment regime unknown

#### 4.4.6 - Water pH

- Acid (pH<5.5)
- Circumneutral (pH: 5.5-7.4)
- Alkaline (pH>7.4)
- Unknown

Please provide further information on pH (optional):

According to the water quality monitoring data in November 2017, the average pH of the water bodies in this Site was 8.85.

#### 4.4.7 - Water salinity

- Fresh (<0.5 g/l)
- Mixohaline (brackish)/Mixosaline (0.5-30 g/l)
- Euhaline/Eusaline (30-40 g/l)
- Hyperhaline/Hypersaline (>40 g/l)
- Unknown

Please provide further information on salinity (optional):

According to the water quality monitoring data in November 2017, the water salinity was 6.68 mg/L in this Site.

#### 4.4.8 - Dissolved or suspended nutrients in water

- Eutrophic
- Mesotrophic
- Oligotrophic
- Dystrophic
- Unknown

Please provide further information on dissolved or suspended nutrients (optional):

According to the water quality monitoring results in November 2017, the average temperature of the water body was 9.3°C, turbidity was 16.53 NTU, electrical conductivity was 384.95 µs/m, ORP was 97.42 mv, and coliform group was 65.39 per/L. Dissolved oxygen was 96.83 mg/L, COD was 20.01 mg/L, BOD5 was 6.13 mg/L, ammonia nitrogen was 0.28 mg/L, total nitrogen was 0.68 mg/L and total phosphorus was 0.059 mg/L.

#### 4.4.9 - Features of the surrounding area which may affect the Site

Please describe whether, and if so how, the landscape and ecological characteristics in the area surrounding the Ramsar Site differ from the site itself:   
 i) broadly similar  ii) significantly different

### 4.5 - Ecosystem services

#### 4.5.1 - Ecosystem services/benefits

##### Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Fresh water	Drinking water for humans and/or livestock	High

##### Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Maintenance of hydrological regimes	Groundwater recharge and discharge	High
Erosion protection	Soil, sediment and nutrient retention	Medium
Pollution control and detoxification	Water purification/waste treatment or dilution	Medium
Climate regulation	Local climate regulation/buffering of change	High
Climate regulation	Regulation of greenhouse gases, temperature, precipitation and other climactic processes	High
Hazard reduction	Flood control, flood storage	Medium

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Nature observation and nature-based tourism	Low
Spiritual and inspirational	Inspiration	High
Spiritual and inspirational	Aesthetic and sense of place values	High
Scientific and educational	Educational activities and opportunities	High
Scientific and educational	Long-term monitoring site	High

Supporting Services

Ecosystem service	Examples	Importance/Extent/Significance
Biodiversity	Supports a variety of all life forms including plants, animals and microorganisms, the genes they contain, and the ecosystems of which they form a part	High
Soil formation	Sediment retention	Medium
Soil formation	Accumulation of organic matter	Medium

Within the site:

Outside the site:

Have studies or assessments been made of the economic valuation of ecosystem services provided by this Ramsar Site? Yes  No  Unknown

4.5.2 - Social and cultural values

i) the site provides 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

Description if applicable

The Tibetan herdsmen living around the Site are mostly Buddhist, and for hundreds of years they have adhered to the ecological values of "all things are one and coexist in harmony", abided by the ecological ethics of "fearing nature and respecting life", and practiced the ecological culture of "sacred mountains, sacred lakes and sacred places of nature". They have made full use of traditional Tibetan ecological knowledge and native wisdom to make reasonable and controlled use of wetland resources under the premise of protecting wetlands, such as adopting seasonal and regional nomadic and rotational grazing methods for production activities, and have concluded that "they do not eat summer grass in winter and vice versa", "first put far away, then put near, first eat shady slopes, then eat sunny slopes, first put flat rivers, then put mountain depressions" and other grazing experience used different grasslands, different seasons and climates.

ii) the site has exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland

Description if applicable

Tibetans have a reverent and respectful belief in all life, and believe that the wetlands have the existence of a 'water god', they maintain a high level of reverence for the wetlands and the plants and animals in them, and strictly adhere to the commandment not to kill. The herdsmen living around the Site have a tradition that sacrificed by simmering cypress daily to express their reverence for the sacred lake and the water gods, and this reverence is the basis for protecting the ecology and maintaining the ecological character of the wetlands.

iii) the ecological character of the wetland depends on its interaction with local communities or indigenous peoples

iv) 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

4.6 - Ecological processes

<no data available>

## 5 - How is the Site managed? (Conservation and management)

### 5.1 - Land tenure and responsibilities (Managers)

#### 5.1.1 - Land tenure/ownership

##### Public ownership

Category	Within the Ramsar Site	In the surrounding area
National/Federal government	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

##### Private ownership

Category	Within the Ramsar Site	In the surrounding area
Cooperative/collective (e.g., farmers cooperative)	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 5.1.2 - Management authority

Please list the local office / offices of any agency or organization responsible for managing the site:

Yushu Prefecture Longbao National Nature Reserve Management Station

Provide the name and/or title of the person or people with responsibility for the wetland:

Basang Cairen, Director

Postal address:

Administration Bureau of Yushu Forestry and Grassland  
Xinjian Road 815099  
Yushu City  
Yushu Prefecture  
Qinghai Province  
P.R.China

E-mail address:

1027093801@qq.com

### 5.2 - Ecological character threats and responses (Management)

#### 5.2.1 - Factors (actual or likely) adversely affecting the Site's ecological character

##### Human settlements (non agricultural)

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Tourism and recreation areas	Low impact		<input checked="" type="checkbox"/>	<input type="checkbox"/>

##### Agriculture and aquaculture

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Livestock farming and ranching	Medium impact		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

##### Transportation and service corridors

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Roads and railroads	Low impact		<input type="checkbox"/>	<input checked="" type="checkbox"/>

##### Human intrusions and disturbance

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Recreational and tourism activities	Low impact		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

##### Natural system modifications

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Dams and water management/use	Low impact		<input type="checkbox"/>	<input checked="" type="checkbox"/>

##### Geological events

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Earthquakes/tsunamis	Low impact		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

#### 5.2.2 - Legal conservation status

##### National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
National nature reserve	Qinghai Longbao National Nature Reserve		whole

## 5.2.3 - IUCN protected areas categories (2008)

- Ia Strict Nature Reserve
- Ib Wilderness Area: protected area managed mainly for wilderness protection
- II National Park: protected area managed mainly for ecosystem protection and recreation
- III Natural Monument: protected area managed mainly for conservation of specific natural features
- IV Habitat/Species Management Area: protected area managed mainly for conservation through management intervention
- V Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation
- VI Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems

## 5.2.4 - Key conservation measures

## Legal protection

Measures	Status
Legal protection	Implemented

## Habitat

Measures	Status
Catchment management initiatives/controls	Implemented
Improvement of water quality	Implemented
Re-vegetation	Implemented
Faunal corridors/passage	Implemented

## Species

Measures	Status
Threatened/rare species management programmes	Implemented
Control of invasive alien plants	Implemented
Control of invasive alien animals	Implemented

## Human Activities

Measures	Status
Regulation/management of wastes	Implemented
Livestock management/exclusion (excluding fisheries)	Partially implemented
Fisheries management/regulation	Implemented
Harvest controls/poaching enforcement	Implemented
Regulation/management of recreational activities	Implemented
Communication, education, and participation and awareness activities	Implemented
Research	Implemented

Other:

Longbao provincial reserve was established in 1984, and promoted to national nature reserve in 1986. Completed the approval of the nature reserve scope boundaries and the survey and establishment of boundary markers, setting up a total of four large boundary markers, 30 small boundary markers, 100 boundary pillars and 150 functional area markers. In 2019, the research team from Qinghai Normal University jointly set up the first monitoring stations for alpine wetland ecosystems and conservation at the source of the Yangtze River in Longbaotan, and jointly developed the Longbaotan Wetlands Ecological Monitoring Programme, setting up four bird monitoring sample lines (32 points), 25 vegetation monitoring sample plots and ten amphibian sample lines. Built an information sharing platform for wild animal alien disease monitoring system in alpine regions in collaboration with China Animal Health and Epidemiology Center, Qinghai Provincial Animal Disease Prevention and Control Centre. Built two stations, including meteorological observation system, eddy observation system, solid precipitation observation system and soil observation system in cooperation with the Provincial Institute of Meteorological Science. Built three water environment, three soil and one hydrological automatic monitoring stations in 2022. Entrusted professional units to continuously monitor vegetation types, birds, amphibians, reptiles, fish, mammals, etc. since 2018, and obtained detailed biodiversity monitoring data. Completed the construction of a 1,057.39 m<sup>2</sup> nature and ecology science and education center and carried out a number of education activities; established cooperation with WWF, Shanshui Nature Conservation Centre and Alashan SEE and conducted a series of public welfare publicity activities; Established a cooperative conservation mechanism with national nature reserves such as Hunan Dongdongting Lake, Sichuan Yajiangge, Jiangxi Poyang Lake, Yunnan Huize, Dashanbao and Qinghai Lake, and jointly improved the protection and construction of biodiversity in nature reserves. Employed ten wardens for wetlands to carry out regular patrols of the reserve and taking the lead in implementing a wetland warden system in nature reserves across the province. Completed the construction of digital reserves such as operation environment, database construction, comprehensive geographical information service platform, intelligent patrol system, public education and multimedia enquiry system, all-round probe monitoring system and species monitoring system.

### 5.2.5 - Management planning

Is there a site-specific management plan for the site? No

Has a management effectiveness assessment been undertaken for the site? Yes  No

If the site is a formal transboundary site as indicated in section Data and location > Site location, are there shared management planning processes with another Contracting Party? Yes  No

### 5.2.6 - Planning for restoration

Is there a site-specific restoration plan? No, but a plan is being prepared

### 5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Water regime monitoring	Implemented
Water quality	Implemented
Soil quality	Implemented
Plant community	Implemented
Plant species	Implemented
Animal community	Implemented
Animal species (please specify)	Implemented
Birds	Implemented

There are two Alpine Wetland Ecological Meteorological Field Experiment Station, the North Station and the South Station:

- The North Station was built in 2011 at an altitude of 4167 m. The observation field covers an area of 225 m<sup>2</sup> and contains micro-meteorological observation system, snow depth and solid precipitation observation system, eddy motion observation system and permafrost observation system, etc. The observation elements including humidity, air pressure, wind speed, wind direction, precipitation, snow depth, total radiation, net radiation, reflected radiation, soil temperature and humidity, soil salinity, soil heat flux, surface infrared temperature, CO<sub>2</sub> flux, CH<sub>4</sub> flux, H<sub>2</sub>O flux, etc.
- The South Station was built in 2020 at an altitude of 4167 m. The observation field covers an area of 900 m<sup>2</sup> with a 35 m ecological meteorological monitoring tower. It mainly equips with meteorological observation system, eddy observation system, solid precipitation observation system and soil observation system. The observation elements include wind speed and direction (8 levels), air temperature and humidity (8 levels), air pressure, precipitation, snow depth, total radiation, net radiation, sunshine hours, photosynthetic effective radiation, reflected radiation, soil temperature and humidity, soil salinity, soil heat flux, surface infrared temperature, soil respiration, soil oxygen, CO<sub>2</sub> flux, CH<sub>4</sub> flux, H<sub>2</sub>O flux, CO<sub>2</sub> water vapour profile, etc.



## 6 - Additional material

### 6.1 - Additional reports and documents

#### 6.1.1 - Bibliographical references

State Forestry Administration Survey and Planning Design Institute, College of Nature Reserve, Beijing Forestry University,ect. 2017. Master Plan for Qinghai Longbao National Nature Reserve (2017-2026)

Qinghai Duomei Ecological and Environmental Protection Technology Company. 2022. Ecological Monitoring Report of Qinghai Longbao National Nature Reserve (2021).

Northwest Plateau Biology Research Institute, Chinese Academy of Sciences. (1996) Flora of Qinghai (vol.1–4). Qinghai 162 People's Publishing House, Xining. (in Chinese).

Kuang F L, Cangjue Z M, Li J C, et al. Nest site characteristics and foraging habitat selection of breeding Black-necked Cranes in Bange, Tibet Autonomous Region, China [J]. Journal of Northeast Forestry University, 2010, 38(11): 89-92. DOI:10.13759/j.cnki.dlxb.2010.11.004.

Zheng Na, 2016. Research on characteristics of plant community in Longbao lake wetland ecosystem belonged to Sanjiangyuan region [D]. Qinghai University

Wang Ye,2020. Migration patterns, habitat use of two Black-necked crane (*Grus nigricollis*) populations revealed by satellite tracking [D]. Beijing Forestry University, DOI:10.26949/d.cnki.gblyu.2020.000711.

Yang C J, Gao Q, Liu D, et al. Genetic diversity of *Schizopygopsis malacanthus* based on partial sequence of mtDNA D-loop [J]. Sichuan Journal of Zoology, 2022, 41(4):398 – 405.

Udvardy M. 1975. Classification of the Biogeographical Provinces of the World. IUCN Occasional Paper No. 18.

#### 6.1.2 - Additional reports and documents

i. taxonomic lists of plant and animal species occurring in the site (see section 4.3)

<2 file(s) uploaded>

ii. a detailed Ecological Character Description (ECD) (in a national format)

<no file available>

iii. a description of the site in a national or regional wetland inventory

<no file available>

iv. relevant Article 3.2 reports

<no file available>

v. site management plan

<no file available>

vi. other published literature

<no file available>

#### 6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:



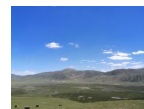
Black-necked cranes (*Grus nigricollis*) and common crane (*Grus grus*) ( Yang Fang, 28-10-2020 )



Longbaotan Wetlands, Summer ( Yang Fang, 27-07-2019 )



Longbaotan Wetlands, Summer ( Nature Reserve, 07-08-2019 )



Longbaotan Wetlands landscape ( Yang Fang, 06-07-2022 )



Bird habitat ( Yang Fang, 28-05-2021 )

#### 6.1.4 - Designation letter and related data

Designation letter

<1 file(s) uploaded>

Date of Designation