Ramsar Information Sheet

Published on 11 April 2023

China

Guangxi Guilin Huixian Karst Wetlands

Designation date	28 October 2022
Site number	2516
Coordinates	25°06'07"N 110°12'44"E
Area	586,75 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

Guangxi Guilin Huixian Karst Wetlands is located in the Karst Peak Forest Plain in Guilin, Guangxi, South China, in the watershed area of Li River and Liu River in northeastern Guizhou. It is a wetland-farmland-forest complex ecosystem consisting of karst lakes, marshes, permanent rivers, karst underground rivers, reservoirs, artificial canals, rice fields, and karst scrub. Located in the center of karst distribution in East Asia, the Site has well-preserved caves and karst underground rivers, forming a unique double-layer structure of surface water and groundwater, which shows significant seasonal hydrological changes. The Site forms a relatively closed hydrological system and natural karst lakes in the watersheds of two rivers, which is rare worldwide.

The major vegetation types include terrestrial, hygrophytic, emergent, submerged, and floating which is typical of karst wetlands in the subtropical peak forest plain landscape area. The wetland types in the area are diverse which provide food and habitat for many plants and animals, which are of great significance to the biodiversity in the biogeographic region.

The Site is also an important pathway for migratory birds in the Xianggui Corridor and the migratory route between East Asia and Australia. It provides habitats for threatened species listed in IUCN Red List, such as yellow-breasted bunting (Emberiza aureola), big-headed turtle (Platysternon megacephalum), scaly-sided merganser (Mergus squamatus), and Chinese Soft-shelled Turtle (Pelodiscus sinensis). Overall, the Site plays an important role in water conservation, soil conservation, nutrient circulation, biodiversity maintenance, and protection of threatened species. It severs as an important area for protecting shallow lake wetlands in the global karst ecosystem, providing natural pathways for migratory birds, maintaining the stability of the Li River system, and preserving the remains of the ancient Gui Liu Canal which is integral to the regional cultural heritage.

2 - Data & location

2.1 - Formal data

2.1.1 - Name and address of the compiler of this RIS

Responsible compiler

Institution/agency: Conservation Center of Huixian National Wetland Park, Lingui District, Guilin City

Postal address:
Huixian Town 541103, Lingui District
Guilin City
Guangxi Zhuang Autonomous Region
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: 2012

To year: 2021

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish): Guangxi Guilin Huixian Karst Wetlands

2.2 - Site location

2.2.1 - Defining the Site boundaries

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

Former maps: 0

Boundaries description

The boundary of the Site is consistent with that of Guangxi Guilin Huixian Karst National Wetland Park and includes Suidong River, Suidong Lake, Fenshui Pond, Ancient Gui-Liu Canal and karst mountains such as Longtou Hill and Lion Rock. The Ancient Gui-Liu Canal runs through the Site from east to west.

The Site from the most eastern point starts from the Ancient Gui-Liu Canal. It extends to the east and north encompassing the areas such as Fenshui Pond, Lion Rock and Baxian Lake, where the northern side is bordered by Mamian Branch Canal. The Site continues to the west along the Ancient Gui-Liu Canal, south to Bingjia Village, north to Anlong Village and west to Gaoan New Road, comprising such areas as Laobajiang Pond, Xintangtou Pond, Longtou Hill, Suidong River, Suidong Lake. The Site is connected with the Huixian River in the southwest through the Ancient Gui-Liu Canal.

2.2.2 - General location

a) In which large administrative region does the site lie? Guilin City, Guangxi Zhuang Autonomous Region

b) What is the nearest town or population centre? Huixian Town, Lingui District

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): 586.75

Area, in hectares (ha) as calculated from GIS boundaries: 586.53

2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Udvardy's Biogeographical Provinces	Subtropical and temperate rain forests or woodlands, Chinese Subtropical Forest Biogeographic Province, Palaearcitc 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	The Guangxi Guilin Huixian Karst Wetlands belongs to the subtropical monsoon climate and is located in the central area of the distribution of karst in East Asia. It is a low-lying area on the watershed area of Gui River and Liu River, forming a relatively closed hydrological system. The Site has various types of wetlands such as permanent freshwater lakes, permanent rivers, karst cave wetlands, and herbaceous marshes. It's underground area has a large water storage capacity formed by the Huixian tectonic basin which recharges the groundwater. Water resources amount to 51.9 million cubic meters/year, which can meet the annual water demand of the Site. The groundwater flows to the middle of the basin to recharge the surface water of the Site, forming a two-layer hydrological structure. The central part of the Site receives recharge water from the surrounding surface water, karst groundwater, and numerous interlocking and interconnected rivers, lakes, ponds, and swamps. The Site also plays a role in flood and nutrient retention.
Other ecosystem services provided	The vegetation types of the Site are typical of Guangxi and karst forest plain landscape areas in China. The wetland vegetation community structure is composed of Form.Scirpus juncoides, Form.Oryza rufipogon, Form.Vallisneria denseserrulata, etc . They provide stable food and habitat for many threatened and native species and migratory birds during stopover, which overall helps to maintain the regional biodiversity. Natural karst wetlands such as springs, ditches, streams and caves intersect with the ponds and canals on which aboriginal farming persists. They provide irrigation for rice and vegetable cultivation, fish farming, and raw materials for local people. The Site also plays a role in regulating climate, purifying water quality, soil conservation, transportation, and the overall ecological security of the two river watersheds, Gui River and Liu River. This wetland complex is also part of the natural and cultural heritage of the region.
Other reasons	The Site also contains the core section of the ancient Gui-Liu Canal, which was dug in the Tang Dynasty, flowing eastward to the Xiangsi River in the southern suburbs of Guilin and entering the Li River. To the west, it bends at Yongfu River and the Luoqing River and finally merges into Liujiang River, with a total length of 15 kilometers, connecting the Li River and Liujiang River water system. This is an example of an ancient form of water conservation engineering. The Gui-Liu canal is one of the three major ancient water conservation projects in Guangxi. It reflects the knowledge of ancient engineering in using the low-lying terrain and hydrological networks of the Site.

☑ Criterion 2 : Rare species and threatened ecological communities

Optional text box to provide further information

Thirteen species are listed in the IUCN Red List from the Site, including two species of Critically Endangered (CR): big-headed turtle (Platysternon megacephalum) and yellow-breasted bunting (Emberiza aureola), five species of Endangered (EN): Japanese eel (Anguilla japonica), big-headed reeves' turtle (Mauremys reevesii), scaly-sided merganser (Mergus squamatus), collared crow (Corvus pectoralis) and pomona leaf-nosed Bat (Hipposideros pomona); six species of Vulnerable (VU): common carp (Cyprinus carpio), Chinese soft-shelled turtle (Pelodiscus sinensis), Chinese cobra (Naja atra) and beauty snake (Orthriophis taeniurus), rickett's big-footed myotis (Myotis ricketti), and schreibers's Long-fingered bat (Miniopterus schreibersii).

There are well preserved karst caves and karst underground rivers in the area, forming a unique double-layer structure of surface water and groundwater. The unique hydrological and ecological processes provide rich food and habitat for rare birds, such as yellow-breasted bunting (Emberiza aureola), collared crow (Corvus pectoralis), scaly-sided merganser (Mergus squamatus), and threatened reptiles, especially snakes. Many caves and crevices in the Site also provide good living conditions for small bats such as rickett's big-footed myotis (Myotis ricketti) and schreibers's Long-fingered bat (Miniopterus schreibersii).

☑ Criterion 3 : Biological diversity

Justification

The Guangxi Guilin Huixian Karst Wetlands is a relatively well-preserved typical subtropical karst wetland ecosystem with rich wetland animals and plants resources. There are 316 species of vascular plants, including 230 species of wetland vascular plants, such as Phragmites australis community, Typha angustata community, Cladium chinense community, Vallisneria natans community, Eurasian watermilfoil (Myriophyllum spicatum) community and Potamogeton malaianus community.

There are 382 species of vertebrates, including 50 species of fish, 13 species of amphibians, 32 species of reptiles, 254 species of birds and 33 species of mammals. As an important waterway connecting Li River and Liujiang River, 23 species of endemic Chinese fishes live in the Site, such as ostropysk kreyenberguv (Acrossocheilus kreyenbergii), horavka jihocinska (Acheilognathus meridianus), hrouzek losansky (Microphysogobio kiatingensis), and Guilini salebootsia (Leptobotia guilinensis). There are 22 species of snakes, accounting for 68.75% of the number of reptile species, which is a major feature of inland wetlands in South China. As an important part of the East Asia-Australasia international migratory bird route, the species and number of birds are abundant, including threatened species such as yellow-breasted bunting (Emberiza aureola) and scaly-sided merganser (Mergus squamatus). The caves and crevices in the karst mountains of the Site provide good habitat conditions for small bats. The mammals are mainly small bat species of Pteropoda, with as many as 15 species, accounting for 45.45% of the mammal species. Therefore, the Site has important biodiversity support functions in the biogeographic area and is important for maintaining regional biodiversity.

☑ Criterion 7 : Significant and representative fish

Justification	Fifty species of fish have been found in the Site, including most of the native fish species and threatened species such as Japanese eel (Anguilla japonica) (EN) and common carp (Cyprinus carpio) (VU), as well as 23 endemic species in China such as ostropysk kreyenberguv (Acrossocheilus kreyenbergii), horavka jihocinska (Acheilognathus meridianus), hrouzek losansky (Microphysogobio kiatingensis), Guilini salebootsia (Leptobotia guilinensis) and Odontobutis sinensis. Various stages of the life cycle and the interspecific or interpopulation interactions of these fishes reflect the characteristics of the karst wetlands located in the watershed of the Li and Liu rivers. For example, Guilini salebootsia (Leptobotia guilinensis) is an endemic fish of Li River inhabiting the bottom layer and Odontobutis sinensis and Hong Kong Catfish (Clarias fuscus) inhabit the outlet of underground rivers. Hrouzek losansky (Microphysogobio kiatingensis) and Chinese Barb (Barbodes semifasciolatus) are common indigenous fish species in the Site. These fishes are important food web links of the Site and have close trophic and functional associations with plankton, wetland plants, benthic animals and waterbirds at all stages of their life histories, which play an important role in maintaining the biodiversity of the Site.

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								
Others																	
CHORDATA / MAMMALIA	*Hipposideros pomona*	☑	☐	☐	☐	☑	☐	☐	☐				EN	☐	☐		Crit3: Rare species;
CHORDATA / REPTILIA	*Mauremys reevesii*	☑	☐	☐	☐	☑	☐	☐	☐				EN	☐	☐	National Protection Class II	Crit3: Rare species;
CHORDATA / MAMMALIA	*Miniopterus schreibersii*	☑	☐	☐	☐	☑	☐	☐	☐				VU	☐	☐		Crit3: Rare species;
CHORDATA / MAMMALIA	*Myotis ricketti*	☑	☐	☐	☐	☑	☐	☐	☐				VU	☐	☐		Crit3: Rare species;
CHORDATA / REPTILIA	*Naja atra*	☑	☐	☐	☐	☑	☐	☐	☐				VU	☐	☐		Crit3: Rare species;
CHORDATA / REPTILIA	*Orthriophis taeniurus*	☑	☐	☐	☐	☑	☐	☐	☐				VU	☐	☐		Crit3: Rare species;
CHORDATA / REPTILIA	*Pelodiscus sinensis*	☑	☐	☐	☐	☑	☐	☐	☐				VU	☐	☐		Crit3: Rare species;
CHORDATA / REPTILIA	*Platysternon megacephalum*	☑	☐	☐	☐	☑	☐	☐	☐				CR	☑	☐	National Protection Class II	Crit3: Rare species;
Fish, Mollusc and Crustacea																	
CHORDATA / ACTINOPTERYGII	*Acheilognathus meridianus*	☐	☐	☐	☐	☑	☐	☐	☐				DD	☐	☐		Crit3: Endemic species;
CHORDATA / ACTINOPTERYGII	*Acrossocheilus kreyenbergii*	☐	☐	☐	☐	☑	☐	☐	☐				DD	☐	☐		Crit3: Endemic species;
CHORDATA / ACTINOPTERYGII	*Anguilla japonica*	☑	☐	☐	☐	☑	☐	☑	☐				EN	☐	☐		Crit3 & Crit7: Rare species;
CHORDATA / ACTINOPTERYGII	*Barbodes semifasciolatus*	☐	☐	☐	☐	☐	☐	☑	☐				LC	☐	☐		Crit7:Chinese endemic species
CHORDATA / ACTINOPTERYGII	*Clarias fuscus*	☐	☐	☐	☐	☐	☐	☑	☐				LC	☐	☐		Crit7:Chinese endemic species
CHORDATA / ACTINOPTERYGII	*Cyprinus carpio*	☑	☐	☐	☐	☑	☐	☑	☐				VU	☐	☐		Crit3 & Crit7: Rare species;
CHORDATA / ACTINOPTERYGII	*Leptobotia guilinensis*	☐	☐	☐	☐	☑	☐	☑	☐				LC	☐	☐		Crit3: Endemic species;Crit7:Chinese endemic species
CHORDATA / ACTINOPTERYGII	*Microphysogobio kiatingensis*	☐	☐	☐	☐	☑	☐	☑	☐				LC	☐	☐		Crit3: Endemic species;Crit7:Chinese endemic species
CHORDATA / ACTINOPTERYGII	*Odontobutis sinensis*	☐	☐	☐	☐	☑	☐	☑	☐					☐	☐		Crit3: Endemic species;Crit7:Chinese endemic species
Birds																	
CHORDATA / AVES	*Corvus pectoralis*	☑	☐	☐	☐	☑	☐	☐	☐				EN	☐	☐		Crit3: Rare species;
CHORDATA / AVES	*Emberiza aureola*	☑	☐	☐	☐	☑	☐	☐	☐				CR	☐	☑	National Protection Class I	Crit3: Rare species;
CHORDATA / AVES	*Mergus squamatus*	☑	☐	☐	☐	☑	☐	☐	☐				EN	☐	☐	National Protection Class I	Crit3: Rare species;

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

Guangxi Guilin Huixian Karst Wetlands is located in the subtropical and temperate rain forests or woodlands biome of the Chinese Subtropical Forest Biogeographic Province in the Palaearcitc Realm. The site has a humid subtropical climate with mild climate, abundant rainfall, dry season and hot summer. The altitude is 147~292m. The base of the wetland is the weathered residual clay layer of limestone. Located in the center of karst distribution in East Asia, the Site is the largest of lake wetlands in Guangxiis and the largest karst wetland in the world at low and middle latitudes. The wetland types are diverse, including permanent freshwater marshes/pools, permanent freshwater lakes, permanent rivers, and inland karst and underground cave water systems. The wetland area is 493.59 hectares, accounting for 84% of the national wetland park area.

The main wetland plant communities in the lake and river habitats include Phragmites australis, Typha angustata, Cladium chinense and Vallisneria natans. They form the main habitat for mandarin duck (Aix galericulata), Chinese sand ducks (Mergus squamatus), little grebe (Tachybaptus ruficollis), and other wading birds. It provides natural and high-quality habitat for freshwater indigenous fish communities represented of endemic Chinese species such as the Guilini salebootsia (Leptobotia guilinensis). In the caves, the fish communities are represented by Guilini soorhuul (Sinocyclocheilus guilinensis) and Chinese barb (Barbodes semifasciolatus) which are important part of the Huixian Karst Wetland ecosystem. Representative plants in the marsh and farmland habitats include Scirpus juncoides and red rice (Oryza rufipogon), which provide foraging grounds for herons and rice skippers. The ecosystem services of the Site are water supply, water purification, erosion control and soil protection, climate regulation, protection and conservation of biodiversity.

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	16.12	
Fresh water > Lakes and pools >> O: Permanent freshwater lakes		4	25.85	Representative
Fresh water > Marshes on inorganic soils >> Tp: Permanent freshwater marshes/ pools		3	58.65	Representative
Fresh, saline, brackish or alkaline water > Subterranean >> Zk(b): Karst and other subterranean hydrological systems		0	0.86	Unique

Human-made wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type
1: Aquaculture ponds		1	276.45
3: Irrigated land		2	100.67
9: Canals and drainage channels or ditches		4	14.99

Other non-wetland habitat

Other non-wetland habitats within the site	Area (ha) if known
shrubland	
grassland	

4.3 - Biological components

4.3.1 - Plant species

Other noteworthy plant species

Phylum	Scientific name	Position in range / endemism / other
TRACHEOPHYTA/POLYPODIOPSIDA	*Ceratopteris thalictroides*	National Protection Class II
TRACHEOPHYTA/LILIOPSIDA	*Cladium mariscus mariscus*	dominant species
TRACHEOPHYTA/LILIOPSIDA	*Oryza rufipogon*	National Protection Class II
TRACHEOPHYTA/LILIOPSIDA	*Phragmites australis*	dominant species
TRACHEOPHYTA/LILIOPSIDA	*Schoenoplectiella juncoides*	Representative plants
TRACHEOPHYTA/LILIOPSIDA	*Typha domingensis*	dominant species
TRACHEOPHYTA/LILIOPSIDA	*Vallisneria natans*	dominant species

Invasive alien plant species

Phylum	Scientific name	Impacts
TRACHEOPHYTA/MAGNOLIOPSIDA	*Alternanthera philoxeroides*	Actual (minor impacts)
TRACHEOPHYTA/LILIOPSIDA	*Eichhornia crassipes*	Actual (minor impacts)
TRACHEOPHYTA/MAGNOLIOPSIDA	*Myriophyllum aquaticum*	Potential

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	*Accipiter gentilis*				National Protection Class II
CHORDATA/AVES	*Accipiter gularis*				National Protection Class II
CHORDATA/AVES	*Accipiter nisus*				National Protection Class II
CHORDATA/AVES	*Accipiter soloensis*				National Protection Class II
CHORDATA/AVES	*Accipiter trivirgatus*				National Protection Class II
CHORDATA/AVES	*Accipiter virgatus*				National Protection Class II
CHORDATA/AVES	*Aix galericulata*				National Protection Class II
CHORDATA/AVES	*Alauda arvensis*				National Protection Class II
CHORDATA/AVES	*Anas formosa*				National Protection Class II
CHORDATA/AVES	*Aquila fasciata*				National Protection Class II
CHORDATA/AVES	*Aviceda jerdoni*				National Protection Class II
CHORDATA/AVES	*Aviceda leuphotes*				National Protection Class II
CHORDATA/AVES	*Butastur indicus*				National Protection Class II
CHORDATA/AVES	*Buteo japonicus*				National Protection Class II
CHORDATA/AVES	*Centropus bengalensis*				National Protection Class II

Phylum	Scientific name	Pop. size	Period of pop. est.	% occurrence	Position in range /endemism/other
CHORDATA/AVES	*Centropus sinensis*				National Protection Class II
CHORDATA/AVES	*Circus spilonotus*				National Protection Class II
CHORDATA/REPTILIA	*Coelognathus radiatus*				National Protection Class II
CHORDATA/AVES	*Elanus caeruleus*				National Protection Class II
CHORDATA/AVES	*Falco amurensis*				National Protection Class II
CHORDATA/AVES	*Falco columbarius*				National Protection Class II
CHORDATA/AVES	*Falco peregrinus*				National Protection Class II
CHORDATA/AVES	*Falco subbuteo*				National Protection Class II
CHORDATA/AVES	*Falco tinnunculus*				National Protection Class II
CHORDATA/AVES	*Garrulax canorus*				National Protection Class II
CHORDATA/AVES	*Glaucidium brodiei*				National Protection Class II
CHORDATA/AVES	*Glaucidium cuculoides*				National Protection Class II
CHORDATA/AVES	*Halcyon smyrnensis*				National Protection Class II
CHORDATA/AMPHIBIA	*Hoplobatrachus rugulosus*				National Protection Class II
CHORDATA/AVES	*Hydrophasianus chirurgus*				National Protection Class II
CHORDATA/AVES	*Leiothrix lutea*				National Protection Class II
CHORDATA/AVES	*Luscinia calliope*				National Protection Class II
CHORDATA/AVES	*Luscinia svecica*				National Protection Class II
CHORDATA/AVES	*Milvus migrans*				National Protection Class II
CHORDATA/AVES	*Numenius arquata*				National Protection Class II
CHORDATA/AVES	*Otus lettia*				National Protection Class II
CHORDATA/MAMMALIA	*Prionailurus bengalensis*				National Protection Class II
CHORDATA/MAMMALIA	*Prionodon pardicolor*				National Protection Class II
CHORDATA/ACTINOPTERYGII	*Sinocyclocheilus guilinensis*				Representative fish
CHORDATA/AVES	*Spilornis cheela*				National Protection Class II
CHORDATA/AVES	*Tachybaptus ruficollis*				dominant species
CHORDATA/AVES	*Tyto longimembris*				National Protection Class II
CHORDATA/AVES	*Zosterops erythropleurus*				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
C: Moist Mid-Latitude climate with mild winters	Cwa: Humid subtropical (Mild with dry winter, hot summer)

Global warming and the increase in extreme weather, short periods of concentrated rainfall bring rising water in the Site. The sudden increase in the duration of the dry season and the decrease in rainfall have caused fluctuations in the above-ground and below-ground water cycles and a break in the water balance of the site, affecting the development of the wetland ecosystem. The average annual temperature around the wetland park has increased rapidly since 1990, while the average annual precipitation has gradually decreased since 2000, showing a trend of increasing drought.

4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres): 147

a) Maximum elevation above sea level (in metres): 292

- 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.

Pearl 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 Site is located in red soil zone, and the soil-forming parent rocks are mainly limestone and sand shale. The natural soil types are hilly red soil, yellow red soil and brown limestone soil. The substrate of the Site is the clay layer of limestone weathering residual accumulation, with a thickness of one to four meter, which plays a very critical role in plugging holes, preventing seepage and retaining water for karst, and is also an important geological soil foundation for the formation of the Site.

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	☑	No change
Water inputs from surface water	☑	No change
Water inputs from groundwater	☑	No change

Water destination

Presence?	
Feeds groundwater	No change
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 hydrological system type of the Site is complex, and the main hydrological systems include surface rivers, ditches (canals), lakes (ponds), marshes and reservoirs, as well as underground lakes and underground rivers. Various hydrological systems are spatially interwoven, and the boundary of hydrological information system is influenced by regional rainfall and human activities, possessing the hydrological characteristics of seasonal changes. The main water source is the shallow buried groundwater and the flood seasonal replenishment of Li River and Liujiang River, and the main water consumption is evaporation, rural domestic water, irrigation water of farmland and fishery water. The amount of water resources throughout the year is greater than the water demand of the Site, but the water demand during the dry period is much greater than the amount of water resources during the dry period, and there is a seasonal water shortage.
The main water bodies in the Site are the ancient Guiliu Canal, the Suidong River and Suidong Lake, and the Fenshui Pond. The Guguiliu Canal is injected into the Huixian River to the west, which is a first-class tributary of the Xiangsi River, with a total length of 56 kilometers and a rain catchment area of over 100 square kilometers. The Guguiliu Canal is injected into the Liangfeng River to the east, which is a first-class tributary of the Li River, with a total length of 58 kilometers and a rain catchment area of 504 square kilometers. The Suidong River refers to the joint section of the Xiangsi River and Suidong Lake, with a total length of only about 4 kilometers and a gentle flow. Suidong Lake, located in the middle section of the ancient Guiliu Canal, is the flattest section of the canal and is the core area of the Site. It has an area of about 22.26 hectares and is composed of more than 1,000 large and small pond branches connected by a normal water level of 148.5 meters.

4.4.5 - Sediment regime

- [ ] Significant erosion of sediments occurs on the site
- [x] 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)
- [x] Alkaline (pH>7.4)
- [ ] Unknown

Please provide further information on pH (optional):

The pH value of the Site varies seasonally, with 8.24 measured in March and 7.59 measured in November, both showing alkalinity, which is related to the input of groundwater from the karst landscape.

4.4.7 - Water salinity

- [x] 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

4.4.8 - Dissolved or suspended nutrients in water

- [ ] Eutrophic
- [ ] Mesotrophic
- [x] Oligotrophic
- [ ] Dystrophic
- [ ] Unknown

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
Food for humans	Sustenance for humans (e.g., fish, molluscs, grains)	Low
Fresh water	Drinking water for humans and/or livestock	High
Fresh water	Water for irrigated agriculture	High

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Maintenance of hydrological regimes	Groundwater recharge and discharge	High
Maintenance of hydrological regimes	Storage and delivery of water as part of water supply systems for agriculture and industry	High
Erosion protection	Soil, sediment and nutrient retention	High
Pollution control and detoxification	Water purification/waste treatment or dilution	High
Climate regulation	Local climate regulation/buffering of change	High
Climate regulation	Regulation of greenhouse gases, temperature, precipitation and other climactic processes	High
Biological control of pests and disease	Support of predators of agricultural pests (e.g., birds feeding on locusts)	High
Hazard reduction	Flood control, flood storage	High

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Nature observation and nature-based tourism	High
Spiritual and inspirational	Cultural heritage (historical and archaeological)	High
Spiritual and inspirational	Inspiration	High
Spiritual and inspirational	Contemporary cultural significance, including for arts and creative inspiration, and including existence values	High
Spiritual and inspirational	Aesthetic and sense of place values	High
Scientific and educational	Educational activities and opportunities	High
Scientific and educational	Important knowledge systems, importance for research (scientific reference area or site)	High
Scientific and educational	Long-term monitoring site	High
Scientific and educational	Major scientific study site	High

Supporting Services

Ecosystem service	Examples	Importance/Extent/Significance
Biodiversity	Supports a variety of all life forms including plants, animals and microorganizms, the genes they contain, and the ecosystems of which they form a part	High
Soil formation	Sediment retention	High
Soil formation	Accumulation of organic matter	High
Nutrient cycling	Storage, recycling, processing and acquisition of nutrients	High
Nutrient cycling	Carbon storage/sequestration	High
Pollination	Support for pollinators	High

Within the site: 20000

Outside the site: 150000

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 ☐

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

Description if applicable

The Ancient Guiliu Canal was dug in the Tang Dynasty (more than 1300 years ago) and is located in the heart of the Site. It is 15 kilometers long, with more than 20 existing cultural relics of steep gates, stone bridges and tablet inscription. The ancient Guiliu Canal, which connects the Li River with the Luoqing River (Liujiang), is one of the wonders of ancient China's Lingnan Canal and has now become a Guangxi Autonomous Region-level cultural relics protection unit. The district will implement a national demonstration project for the protection and restoration of the Site and the ancient Gui Liu Canal.

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	☑	☑

Private ownership

Category	Within the Ramsar Site	In the surrounding area
Cooperative/collective (e.g., farmers cooperative)	☑	☑

5.1.2 - Management authority

Please list the local office / offices of any agency or organization responsible for managing the site:	Huixian National Wetland Park Conservation Center, Lingui District, Guilin City
Provide the name and/or title of the person or people with responsibility for the wetland:	Jinfu Qin, Director
Postal address:	Huixian Town 541103 Lingui District Guilin City Guangxi Province P.R.China
E-mail address:	lgxsdj5222189@163.com

5.2 - Ecological character threats and responses (Management)

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

Water regulation

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Drainage		Low impact	☐	☑
Water abstraction		Low impact	☐	☑
Dredging		Low impact	☐	☑

Agriculture and aquaculture

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Annual and perennial non-timber crops		Low impact	☑	☑

Biological resource use

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Fishing and harvesting aquatic resources	Low impact		☑	☑

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		☑	☑

Invasive and other problematic species and genes

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Invasive non-native/ alien species	Low impact		☑	☐

Climate change and severe weather

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Droughts	Low impact		☑	☑
Temperature extremes	Low impact		☑	☑
Storms and flooding	Low impact		☑	☑

5.2.2 - Legal conservation status

National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
National Wetland Park	Guangxi Guilin Huixian Karst Wetlands Park		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	Partially implemented
Improvement of water quality	Partially implemented
Habitat manipulation/enhancement	Partially implemented
Hydrology management/restoration	Partially implemented
Re-vegetation	Proposed
Soil management	Proposed
Land conversion controls	Implemented
Faunal corridors/passage	Partially implemented

Species

Measures	Status
Threatened/rare species management programmes	Partially implemented
Reintroductions	Proposed
Control of invasive alien plants	Partially implemented
Control of invasive alien animals	Partially implemented

Human Activities

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

Other:

Since the Site was approved as a pilot national wetland park by the State Forestry Administration in 2012, the Administration Bureau of Guilin Lingui District Huixian Wetland Park, as the unit in charge of the wetland park, has clarified land ownership and management rights through agreement entrusted management, leasing and expropriation, formulated and promulgated the Management Measures of Guilin Huixian Karst National Wetland Park, established the Maojia Dock Central Protection station and three management stations (Dulong, Steep Gate and Lion Rock). Relying on the Guangxi Guilin Huixian Karst National Wetland Park Protection and Restoration Project, wetland park protection (boundary markers and boundary pillars) facilities were established, equipped with electric vehicles, six patrol and monitoring boats, law enforcement recorders and other equipments.
A wetland science and education center was established, including three exhibition halls and a wetland school, with about 215 various types of science and education display boards. A complete interpretation system was configured, three sets of picture books were produced, and one book was published. Through the WeChat platform, a total of about 100 items of various types of the Site protection, wetland landscape and wetland propaganda activities have been pushed out, and the total number of readers has reached millions of times. The annual science popularization campaign covers nearly 10,000 people.

5.2.5 - Management planning

Is there a site-specific management plan for the site?	In preparation
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 restoration is needed

5.2.7 - Monitoring implemented or proposed

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

The Site cooperates with research and monitoring institutions such as the Institute of Karst Geology, Guangxi Normal University and Lingui District Environmental Protection Bureau to regularly carry out scientific research and monitoring of the hydrology, biology and environment. The Site Carried out survey and monitoring of plants and animals in 2016, and obtained basic information, which provided a basis for wetland biodiversity protection. Monitoring of groundwater was carried out in 2020, and the trends and patterns of groundwater changes in the wetland were grasped.

6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references

Shangming Liang. 2010. Saving the "Kidney of Guilin - Huixian Karst Wetland". Contemporary Guangxi.
Fengfeng Yao, Xiaowei Tong. 2009. Spatial Variation of Soil Organic Matter in Huixian Karst Wetland, Guilin. Enterprise Science and Technology and Development
Shijie Li, Desuo Cai, ect. 2009. Environmental Changes Record Derived from Sediment Cores in Huixian Karst Wetlands, Guilin, China. Journal of Guangxi Normal University: Natural Science Edition.
Master Plan of Guangxi Huixian Karst National Wetland Park (2012-2020).
Jisu Tang, Xianzhong Chen (Photograph). 2006. Cherishing rare karst wetlands and guarding the magical ecological Guilin. Journal of the Party School of Guilin Municipal Committee of the Communist Party of China.
State Forestry Administration Wetland Convention Compliance Office. 2001. Wetland Convention Compliance Guide. Beijing. China Forestry Press.
Shichu Liang. Wetland Plants of Guangxi. 2011. Beijing. Science Press.
Shichu Liang, Huahua Tian, ect. 2016. Wetland plants and wetland vegetation of the Li River. Beijing. Science Press.
Wetland Resources of China (General Volume). 2015. Beijing: China Forestry Publishing House.
Zhengyi Wu. et al. 2006. Types of seed plant ranges and their origins and differentiation. Yunnan Science and Technology Press.
Sizhong Li. 1981. Distribution of freshwater fishes in China. Beijing. Science Press.
Rongzu Zhang. 1999. Zoogeography of China. Science Press.
Guangxi Zhuang Autonomous Region Forestry Department. 2011. Survey report on wetland resources in Guangxi Zhuang Autonomous Region.
State Forestry Administration. 2015. Wetland Resources of China (Guangxi Volume). China Forestry Press.
Deshao Cai, Zulu Ma, etc. 2012. Study of Huixian Karst Wetland Ecosystem. Geology Press
Udvardy M. 1975. Classification of the Biogeographical Provinces of the World. IUCN Occasional Paper No. 18
Catalog of Wildlife under Key State Protection. 2021. http://www.gov.cn/xinwen/2021-02/09/content_5586227.htm.
List of Wild Plants under Key State Protection. 2021. http://www.gov.cn/zhengce/zhengceku/2021-09/09/content_5636409.htm.

6.1.2 - Additional reports and documents

i. taxonomic lists of plant and animal species occurring in the site (see section 4.3)
<1 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:


Ancient Guiliu Canal (*Jiliang Zhao, 22-02-2018*)


Huixian permanent freshwater lake wetland (*Wetland Park, 27-04-2017*)


Karst Wetland (*Wetland Park, 07-06-2017*)


White-breasted Emerald (*Jiuhui Pan, 17-04-2021*)


Black Kite (*Jiuhui Pan, 14-12-2021*)


Grey-headed Wheat Chicken (*Mengjun Li, 09-07-2021*)

6.1.4 - Designation letter and related data

Designation letter
<1 file(s) uploaded>

Date of Designation: 2022-10-28