



# Ramsar Information Sheet

Published on 27 August 2019

Update version, previously published on : 2 February 2008

## China

### Guangxi Beilun Estuary National Nature Reserve



Designation date	2 February 2008
Site number	1728
Coordinates	21°35'27"N 108°09'24"E
Area	3 000,00 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

Guangxi Beilun Estuary National Nature Reserve is a coastal wetland with mangrove forest, intertidal mudflats and seagrass beds located within the East Asian Australasian Flyway. Situated in the north of Beilun River, a transboundary river between Vietnam and China, this Ramsar Site represents the largest contiguous stretch of mangrove forest dominated by *Bruguiera gymnorhiza* and *Acanthus ilicifolius* in coastal China. The mangrove forest help resist and alleviate the impacts of hazards and also protect the coast from shoreline erosion. The Site supports 10 true mangrove species and five semi-mangrove species. The sea grass community is dominated by *Zostera marina* in the mangrove's periphery in the low tidal regions. This wetland is the only area where *Heritiera littoralis* forest grows on a coastal region. Besides, the Site provides habitat to 155 species of large zoobenthos, 27 fishes, 213 birds and over 1400 species of higher plants. Of these are some globally threatened species such as the critically endangered Baer's pochard (*Aythya baeri*) and spoon-billed sandpiper (*Eurynorhynchus pygmeus*); the endangered black-faced spoonbill (*Platalea minor*); and the vulnerable Chinese egret (*Egretta eulophotes*) and fairy pitta (*Pitta nympha*).

## 2 - Data & location

### 2.1 - Formal data

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

##### Compiler 1

Name	Xiong Liu, Jialiang Liang, Xiaopeng Zeng
Institution/agency	Guangxi Beilun Estuary National Nature Reserve Management
Postal address	Fenghuang Road 1 Jiangshan Peninsula District, 538038 Fangchenggang City Guangxi Zhuang Autonomous Region P.R China
E-mail	gxblhk@163.com
Phone	+86 770 3392089
Fax	+86-770-3392080

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

From year	2008
To year	2014

#### 2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Guangxi Beilun Estuary National Nature Reserve
---	--

#### 2.1.4 - Changes to the boundaries and area of the Site since its designation or earlier update

(Update) A. Changes to Site boundary Yes  No

(Update) B. Changes to Site area No change to area

#### 2.1.5 - Changes to the ecological character of the Site

(Update) 6b i. Has the ecological character of the Ramsar Site (including applicable Criteria) changed since the previous RIS? No

## 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 Ramsar site is almost the same as the existing reserve, including core area, part of buffer area and experiment area.

### 2.2.2 - General location

a) In which large administrative region does the site lie?	Fangchenggang City
b) What is the nearest town or population centre?	Pingjiang 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):

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

#### 2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Udvardy's Biogeographical Provinces	Tropical humid forests, South Chinese Rainforest Biogeographic Province, Indomalayan 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 mangrove ecosystems in this Ramsar Site can resist the impingement of waves, tides and floods, also it can effectively alleviate the damage caused by typhoons, violent tides and tsunamis. Besides, it has functions in protecting coastlines and reclaiming lands from the sea.

Other ecosystem services provided

This Ramsar site presents the largest contiguously stretched mangrove forest dominated by (*Bruguiera gymnorhiza*) and (*Acanthus ilicifolius*) in coastal China. There are 10 true mangrove species and 5 semi-mangrove species in this Ramsar Site. It is rare that in Pearl Bay there are many mangrove plants growing on the tidal flat under average sea level, while in the periphery low tide region, there grows *Zostera marina* sea grass community. Also the reserve is the only site where (*Heritiera littoralis*) forest grows on the coastal region.

- Criterion 2 : Rare species and threatened ecological communities

- Criterion 3 : Biological diversity

Justification

This Ramsar site is a regional hotspot of biodiversity. It holds 155 species of large zoobenthos and 213 species of birds. Also, there are more than 1400 species of higher plants along the coastal areas.

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

- Criterion 8 : Fish spawning grounds, etc.

Justification

This Ramsar site is a significant place for the reproduction, migration, foraging, breeding and inhabiting of many marine species. There are 27 fish species belonging to 3 orders and 19 families, including *Leiognathus brevirostris*, *Harengula ovalis* and *Ctenogobius gymnauchen*. The mangrove's tidal creeks are vital places for female *limulus* to reproduce, while infants of *limulus* scatter on mangrove's tidal flats. The ancient relic species *Lingula anatina* can be found frequently on bare beach at the edge of mangroves.

#### 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	Common 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>Birds</b>																		
CHORDATA/AVES	<i>Anser erythropus</i>	Lesser White-fronted Goose	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>		wintering bird
CHORDATA/AVES	<i>Aquila heliaca</i>	Asian Imperial Eagle; Eastern Imperial Eagle	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				VU	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	National Protection Class: I	
CHORDATA/AVES	<i>Aythya baeri</i>	Baer's Pochard	<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"/>				CR	<input type="checkbox"/>	<input type="checkbox"/>		wintering bird
CHORDATA/AVES	<i>Egretta eulophotes</i>	Chinese Egret	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	National Protection Class: II	
CHORDATA/AVES	<i>Eurynorhynchus pygmeus</i>	Spoon-billed Sandpiper	<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"/>				CR	<input type="checkbox"/>	<input checked="" type="checkbox"/>		wintering bird
CHORDATA/AVES	<i>Pitta nympha</i>	Fairy Pitta	<input checked="" type="checkbox"/>	<input 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"/>		
CHORDATA/AVES	<i>Platalea minor</i>	Black-faced Spoonbill	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	National Protection Class: II	wintering bird
<b>Fish, Mollusc and Crustacea</b>																		
CHORDATA/ACTINOPTERYGII	<i>Herklotsichthys ovalis</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"/>		Crit 8: Spawning in the site
CHORDATA/ACTINOPTERYGII	<i>Leiognathus brevirostris</i>	Shorthead slipmouth	<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"/>		Crit 8: Spawning in the site

1) Percentage of the total biogeographic population at the site

**Criterion 4:**  
 Located on the East Asian - Australasian Flyway for migratory birds, the site is a significant breeding ground for waterbirds. In this wetland, 96 of the 227 migrant bird species protected by the agreement signed between China and Japan stopover; while 38 of 81 migrant bird species protected by the agreement signed between China and Australia stopover here.

### 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

This Ramsar Site is located in the tropical monsoon climate region with a mean annual temperature of 22.3 °C and a mean annual precipitation of 2500 mm. The coastal areas are mainly composed of sandy and humid-thermo ferrallitic soils with low nutrient content. The mangrove forest represents the main vegetation type of the Site. The mangrove species together with the inhabiting birds, planktons, zoobenthos, fishes and insects characterize the biological community of the Site. The wetland plays a significant role in reducing the impacts of hazards and protecting the coastline from erosion. This estuarine system supports a wide variety of life forms and provide opportunities for scientific and educational studies.

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

Marine or coastal wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
G: Intertidal mud, sand or salt flats		2	660	
I: Intertidal forested wetlands		1	1299	Representative

### 4.3 - Biological components

#### 4.3.1 - Plant species

Other noteworthy plant species

Scientific name	Common name	Position in range / endemism / other
<i>Acanthus ilicifolius</i>	Holly Mangrove	
<i>Acrostichum aureum</i>	Golden Leatherferm	
<i>Aegiceras corniculatum</i>		
<i>Avicennia marina</i>	Gray Mangrove	
<i>Cerbera manghas</i>	Reva	
<i>Excoecaria agallocha</i>	Hai Qi	
<i>Heritiera littoralis</i>	Looking Glass Tree	

#### 4.3.2 - Animal species

Other noteworthy animal species

Phylum	Scientific name	Common name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
CHORDATA/AVES	<i>Accipiter nisus</i>	Eurasian Sparrowhawk				National Protection Class: II
CHORDATA/AVES	<i>Accipiter soloensis</i>	Chinese Sparrowhawk; Gray Frog-Hawk				National Protection Class: II
CHORDATA/AVES	<i>Accipiter trivirgatus</i>	Crested Goshawk				National Protection Class: II
CHORDATA/AVES	<i>Accipiter virgatus</i>	Besra				National Protection Class: II
CHORDATA/AVES	<i>Aviceda leuphotes</i>	Black Baza				National Protection Class: II
CHORDATA/AVES	<i>Butastur indicus</i>	Grey-faced Buzzard				National Protection Class: II
CHORDATA/AVES	<i>Buteo buteo</i>	Common Buzzard				National Protection Class: II
CHORDATA/AVES	<i>Centropus sinensis</i>	Greater Coucal				National Protection Class: II
CHORDATA/AVES	<i>Centropus toulou</i>	Malagasy Coucal				National Protection Class: II
CHORDATA/AVES	<i>Circus aeruginosus</i>	Western Marsh Harrier				National Protection Class: II
CHORDATA/AVES	<i>Circus spilonotus</i>	Eastern Marsh Harrier				National Protection Class: II
CHORDATA/AVES	<i>Egretta sacra</i>	Pacific Reef Heron				National Protection Class: II
CHORDATA/AVES	<i>Elanus caeruleus</i>	Black-winged Kite				National Protection Class: II
CHORDATA/AVES	<i>Falco peregrinus</i>	Peregrine Falcon				National Protection Class: II
CHORDATA/AVES	<i>Falco subbuteo</i>	Eurasian Hobby; Northern Hobby				National Protection Class: II
CHORDATA/AVES	<i>Falco tinnunculus</i>	Common Kestrel; Eurasian Kestrel				National Protection Class: II
CHORDATA/AVES	<i>Metopidius indicus</i>	Bronze-winged Jacana				National Protection Class: II
CHORDATA/AVES	<i>Mivus migrans</i>	Black Kite				National Protection Class: II
CHORDATA/AVES	<i>Ninox scutulata</i>	Brown Hawk-Owl				National Protection Class: II
CHORDATA/AVES	<i>Numenius minutus</i>	Little Curlew				National Protection Class: II
CHORDATA/AVES	<i>Otus bakkamoena</i>	Collared Scops Owl				National Protection Class: II
CHORDATA/AVES	<i>Otus scops</i>	Common Scops-owl				National Protection Class: II
CHORDATA/AVES	<i>Pandion haliaetus</i>	Osprey; Western Osprey				National Protection Class: II
CHORDATA/AVES	<i>Pelecanus philippensis</i>	Spot-billed Pelican				National Protection Class: II
CHORDATA/AVES	<i>Phalacrocorax pelagicus</i>	Pelagic Cormorant				National Protection Class: II
CHORDATA/AVES	<i>Platalea leucorodia</i>	Eurasian Spoonbill				National Protection Class: II
CHORDATA/AVES	<i>Porzana bicolor</i>	Black-tailed Crane				National Protection Class: II

## 4.4 - Physical components

### 4.4.1 - Climate



Climatic region	Subregion
C: Moist Mid-Latitude climate with mild winters	Cwa: Humid subtropical (Mid with dry winter, hot summer)

This Ramsar site is located in tropical monsoon maritime climate region. Mean annual temperature: 22.3 ℃; Mean July (the hottest month) temperature: 28.6 ℃; Mean January (the coldest month) temperature: 14.1 ℃; Extremely low temperature: 2.8 ℃; Mean annual precipitation: 2500 mm. Mean rainy days per year: 147.5 (mostly falling between May and September). Mean annual evaporation: 1400 mm. Prevailing wind: NNE and SSW; Mean wind speed: 5.1 m/s.

#### 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.

the north of Beibu Gulf in China

#### 4.4.3 - Soil

Mineral

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

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 coastal areas are mostly consisted of sandy soils and humid-thermo ferralitic (depth of 1-1.5 m, pH value of 5-6) developed by sand shale. The mangrove marshes are mostly consisted of salting bog soils. Fine sand is the main sediment type, with 71.8%~97.9% sediment concentration. Nutrient contents in the mangrove soils are not high, for example, the total nitrogen is merely 0.693 g/kg, while the average contents of total phosphorus and total potassium are 0.226 g/kg and 9.724 g/kg, respectively.

#### 4.4.4 - Water regime

Water permanence

Presence?	Changes at RIS update
Usually permanent water present	

Source of water that maintains character of the site

Presence?	Predominant water source	Changes at RIS update
Water inputs from surface water	<input type="checkbox"/>	No change
Water inputs from rainfall	<input type="checkbox"/>	No change
Marine water	<input checked="" type="checkbox"/>	No change

Water destination

Presence?	Changes at RIS update
Marine	No change

Stability of water regime

Presence?	Changes at RIS update
Water levels fluctuating (including tidal)	No change

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

This Ramsar site presents typical estuarine hydrological characteristics, with many small rivers flowing into the bay.

#### 4.4.5 - Sediment regime

Significant accretion or deposition of sediments occurs on the site

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Sediment regime unknown

Please provide further information on sediment (optional):

Much of sediments belong to marine deposits of Holocene. Fine sand is the main sediment type, with 71.8%~97.9% sediment concentration.

4.4.6 - Water pH

Circumneutral (pH: 5.5-7.4)

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Unknown

4.4.7 - Water salinity

Mxohaline (brackish)/Mxosaline (0.5-30 g/l)

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Unknown

4.4.8 - Dissolved or suspended nutrients in water

Unknown

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

The water in this Ramsar Site represents class III of National Standard of China in 2013. The pH values range between 6.78 and 8.40 with an average of 7.99. Mean DO: 7.12 mg/L; Mean COD: 1.41 mg/L; Mean TP: 0.035 mg/L; Mean labile phosphate: 0.011 mg/L; Mean TN: 0.399 mg/L; Mean nitrite: 0.152 mg/L; Mean ammonia nitrogen: 0.101 mg/L; Mean inorganic nitrogen: 0.282 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 i) broadly similar  ii) significantly different  site itself.

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Wetland non-food products	Other	

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Erosion protection	Soil, sediment and nutrient retention	High
Hazard reduction	Flood control, flood storage	High
Hazard reduction	Coastal shoreline and river bank stabilization and storm protection	High

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Scientific and educational	Educational activities and opportunities	Medium
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 microorganisms, the genes they contain, and the ecosystems of which they form a part	High
Soil formation	Sediment retention	Medium

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
- 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

<no data available>

#### 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"/>

Provide further information on the land tenure / ownership regime (optional):

The local government and the reserve have the tenure of land use within the Ramsar Site.  
The local government has the tenure of land use in the surrounding area.

#### 5.1.2 - Management authority

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

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

Postal address:

E-mail address:

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

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

Agriculture and aquaculture

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Marine and freshwater aquaculture			<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	Guangxi Beilun Estuary National Nature Reserve		partly

### 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
Habitat manipulation/enhancement	Partially implemented

Species

Measures	Status
Threatened/rare species management programmes	Proposed

Human Activities

Measures	Status
Harvest controls/poaching enforcement	Implemented
Regulation/management of recreational activities	Partially implemented
Communication, education, and participation and awareness activities	Implemented
Research	Implemented

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
Plant community	Implemented
Plant species	Implemented
Animal community	Implemented
Animal species (please specify)	Implemented
Birds	Implemented

## 6 - Additional material

### 6.1 - Additional reports and documents

#### 6.1.1 - Bibliographical references

Department of Nature and Ecology Conservation, State Environmental Protection Administration. 1992. Management conference of nature reserves. Beijing: China Environmental Science Press.

Guangxi Mangrove Research Center. 1997. Resource investigation and comprehensive report Of Beilun Estuary National Nature Reserve.

Liang Shichu, Liu Jingfa, Liang Mingzhong. 2004. Ecological Study on the mangrove communities in Beilun Estuary National Nature Reserve. Journal of Guangxi Normal University, 22(2): 70-76.

Liu Jingfa. 2002. Walk into the mangrove—Guangxi Beilun Estuary National Nature Reserve, China. Beijing: Ocean Press.

Ministry of Forestry in the People's Republic of China. 1988. The overall design standards of nature reserve construction. Beijing.

Song Chaoyu, et al. 1988. Nature reserve work Manual. Beijing: China Forestry Publishing.

State Environmental Protection Administration, et al. 1993. State Standard of the People's Republic of China—Principle for categories and grades of nature reserves. Beijing: China Standards Press.

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

Wang Menghu, et al. 1990. Nature reserve work Manual. Beijing: China Forestry Publishing.

Wang Xianbo, et al. 1989. Theory and Practice of Nature Reserve. Beijing: China Environmental Science Press.

Writing committee of China Action Plan for Biodiversity Conservation. 1993. China Action Plan for Biodiversity Conservation. Beijing: China Environmental Science Press.

Writing committee of Chinese programme for natural protection. 1990. The corpus of China's natural protection. Beijing: China Environmental Science Press.

#### 6.1.2 - Additional reports and documents

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

<no file available>

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>

<no data available>

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

Please provide at least one photograph of the site:



population of *Larus ridibundus* in the site ( *the reserve, 02-07-2014* )



landscape of mangrove forest ( *the reserve, 02-07-2014* )



the Inverted reflection of mangrove forest ( *the reserve, 02-07-2014* )

#### 6.1.4 - Designation letter and related data

Designation letter

<1 file(s) uploaded>

Date of Designation