



Ramsar Information Sheet

Published on 20 May 2021

Republic of Korea Janghang Wetland



Designation date	21 May 2021
Site number	2448
Coordinates	37°38'01"N 126°45'35"E
Area	595,84 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

Janghang Wetland is situated in Goyang City in GyeongGi-Do Province. It is part of the National Wetland Protection Areas of the Han River estuary. It is the starting point of the estuary in Han River downstream and Korea's representative intertidal zone and wetland with woody plants.

It is an estuarine wetland teeming with a stretch of *Salix koreensis* (Korean willows) rarely seen in other brackish water zones of Korea. *Salix koreensis* community has not only a symbiotic relationship with benthos, including *Chiromantes dehaani*, *Sesarmops intermedius*, *Ilyoplax deschampsii*, which are indicator species of a blackish water zone, but also plays a role in regulating temperature of the urban area, decreasing carbon, and protecting the margins of the river.

It serves as an important stopover site for more than 30,000 birds each year, providing habitat and food for winter visitors such as *Platalea minor*, *Grus monacha*, *Grus vipio*, and *Anser fabalis*. As many as about 100 *Grus vipios*, accounting for more than 1% of the entire species have visited the wetland each year, with the number of its individuals found to exceed 100 in 2017.

In addition, it is home to a variety of endangered species of wild fauna and flora, including *Neophocaena asiaorientalis*, *Prionailurus bengalensis*, and *Hyla suweonensis*. It is rich in biodiversity with a total of approximately 400 species of plants and animals.

2 - Data & location

2.1 - Formal data

2.1.1 - Name and address of the compiler of this RIS

Responsible compiler

Institution/agency	Nature and Ecology Policy Division, Ministry of Environment
Postal address	Government Complex Sejong Wing 6, Doum 6 Ro-11, Sejong Special Self-Governing City

National Ramsar Administrative Authority

Institution/agency	Nature and Ecology Policy Division, Ministry of Environment
Postal address	Government Complex Sejong Wing 6, Doum 6 Ro-11, Sejong Special Self-Governing City

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

From year	2015
To year	2019

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Janghang Wetland
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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

Janghang Wetland is part of the Han River estuary, an area of 5.9 km². The Han River estuary is located in the 3 city (Goyang, Ilsan, and Paju), and Janghang Wetland is situated in Goyang City in GyeongGi-Do Province. Han River estuary is governed by the regulations on the National Protection Areas set by the nation's wetland management authorities, the boundary was determined by the Ministry of Environment based on their survey of the ecological importance of wetland.

2.2.2 - General location

a) In which large administrative region does the site lie?	GyeongGi-Do Province
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b) What is the nearest town or population centre?	Shinpyeong-Dong, Deokyang-Gu, Goyang City
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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): 595.837

Area, in hectares (ha) as calculated from GIS boundaries 602.122

2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Udvardy's Biogeographical Provinces	Temperate Northern Pacific

3 - Why is the Site important?

3.1 - Ramsar Criteria and their justification

<no data available>

Criterion 2 : Rare species and threatened ecological communities

Criterion 3 : Biological diversity

Justification

The intensive survey on Janghang Wetland conducted in 2016 showed the presence of a total of 404 species of biota: 158 species of flora, 32 species of benthic invertebrates, 141 species of terrestrial insects, 4 species of amphibians and reptiles, 4 species of mammals, 55 species of birds, and 10 species of fishes.

The survey by Gyoyang Citizens Monitoring Group conducted from 2017 to 2019 showed the presence of a total of 947 species of biota, including 391 species of flora, 146 species of birds, 11 species of mammals, 17 species of amphibians and reptiles, 63 species of benthic macroinvertebrates, 43 species of fishes, and 69 species of terrestrial insects and arachnid.

In particular, the large community of *Salix triandra* subsp. in Janghang Wetland has formed a symbiotic relationship with benthos, including *Chiromantes dehaani*, *Sesarmops intermedius*, and *Ilyoplax deschampsii*.

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

Criterion 6 : >1% waterbird population

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

Phylum	Scientific name	Criterion 2	Criterion 3	Criterion 4	IUCN Red List	CITES Appendix I	Other status	Justification
Plantae								
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Koeleria paniculata</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LC	<input type="checkbox"/>	National Red list - LC	indigenous species
TRACHEOPHYTA/LILIOPSIDA	<i>Phragmites australis</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LC	<input type="checkbox"/>		provide habitat to other species
TRACHEOPHYTA/LILIOPSIDA	<i>Schoenoplectus triquetus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LC	<input type="checkbox"/>		provide habitat to other species

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/REPTILIA	<i>Elaphe schrenckii</i>	<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"/>					<input type="checkbox"/>	<input type="checkbox"/>	National Red List - VU / Endangered Wildlife II	

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								
CHORDATA/ AMPHIBIA	<i>Hyla sumeonensis</i>	<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"/>					<input type="checkbox"/>	<input type="checkbox"/>	National Red List - EN / Endangered Wildlife I	
CHORDATA/ AMPHIBIA	<i>Kaloula borealis</i>	<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"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - LC / Endangered Wildlife II	
CHORDATA/ MAMMALIA	<i>Neophocaena phocaenoides</i>	<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 type="checkbox"/>	National Red List - VU	
CHORDATA/ AMPHIBIA	<i>Pelophylax chosonicus</i>	<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"/>	National Red List - VU / Endangered Wildlife II	
CHORDATA/ MAMMALIA	<i>Phoca largha</i>	<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"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - LC Endangered Wildlife II	
CHORDATA/ MAMMALIA	<i>Prionailurus bengalensis</i>	<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"/>				LC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	National Red List - LC Endangered Wildlife II	
Birds																	
CHORDATA/ AVES	<i>Accipiter soloensis</i>	<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"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - VU / Endangered Wildlife II	
CHORDATA/ AVES	<i>Aegypius monachus</i>	<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"/>				NT	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - VU / Endangered Wildlife II	
CHORDATA/ AVES	<i>Anas formosa</i>	<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"/>					<input type="checkbox"/>	<input type="checkbox"/>	National Red List - VU	
CHORDATA/ AVES	<i>Anser cygnoides</i>	<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"/>					<input type="checkbox"/>	<input type="checkbox"/>	National Red List - VU / Endangered Wildlife II	
CHORDATA/ AVES	<i>Anser fabalis</i>	<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"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - VU / Endangered Wildlife II	
CHORDATA/ AVES	<i>Buteo hemilasius</i>	<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"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - LC / Endangered Wildlife II	
CHORDATA/ AVES	<i>Charadrius placidus</i>	<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"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - VU / Endangered Wildlife II	
CHORDATA/ AVES	<i>Cygnus cygnus</i>	<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"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - VU / Endangered Wildlife II	
CHORDATA/ AVES	<i>Egretta eulophotes</i>	<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 Red List - VU / Endangered Wildlife II	
CHORDATA/ AVES	<i>Emberiza aureola</i>	<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"/>				CR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	National Red List - VU / Endangered Wildlife II	
CHORDATA/ AVES	<i>Falco subbuteo</i>	<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"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - LC / Endangered Wildlife II	
CHORDATA/ AVES	<i>Gallinago cinerea</i>	<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"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - VU / Endangered Wildlife II	
CHORDATA/ AVES	<i>Grus grus</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"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - LC / Endangered Wildlife II	Janghang wetland is Korea's wintering site for <i>Grus grus</i>
CHORDATA/ AVES	<i>Grus monacha</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 checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	National Red List - VU	Janghang wetland is Korea's wintering site for <i>Grus monacha</i>
CHORDATA/ AVES	<i>Grus vipio</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	100	2017-2019	2.2	VU	<input checked="" type="checkbox"/>	<input type="checkbox"/>	National Red List - VU Endangered Wildlife II	Janghang wetland is Korea's wintering site for <i>Grus vipio</i>
CHORDATA/ AVES	<i>Haliaeetus albicilla</i>	<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"/>				LC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	National Red List - LC / Endangered Wildlife I	
CHORDATA/ AVES	<i>Haliaeetus pelagicus</i>	<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 Red List - VU	
CHORDATA/ AVES	<i>Ixobrychus eurhythmus</i>	<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"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - LC / Endangered Wildlife II	
CHORDATA/ AVES	<i>Milvus migrans</i>	<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"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - VU / Endangered Wildlife II	

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								
CHORDATA/ AVES	<i>Pandion haliaetus</i>	<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"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - VU / Endangered Wildlife II	
CHORDATA/ AVES	<i>Platalea leucorodia</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"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>	National Red List - VU / Endangered Wildlife II	Janghang wetland is Korea's summering site for Platalea leucorodia
CHORDATA/ AVES	<i>Platalea minor</i>	<input checked="" 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"/>	26	2017-2019	1.3	EN	<input type="checkbox"/>	<input checked="" type="checkbox"/>	National Red List - EN / Endangered Wildlife I	Janghang wetland is Korea's summering site for Platalea minor

1) Percentage of the total biogeographic population at the site

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

Name of ecological community	Community qualifies under Criterion 2?	Description	Justification
Tidal freshwater Salix subfragilis community	<input type="checkbox"/>	Salix subfragilis-Chiromantes dehaani temperate psudeo-Mangrove Ecosystem	Animal Cells and Systems, 16:2, 162-171(2012)

Optional text box to provide further information

It is an estuarine wetland teeming with a stretch of Salix koreensis (Korean willows) rarely seen in other brackish water zones of Korea. Salix triandra subsp. community, the dominant species in the tidal forest benefits from the cultivation effect of the crustaceans inhabiting the roots of Salix koreensis. This promotes the cycle of material, and Salix koreensis, in turn, forms a symbiotic relationship with benthos and crustacea, including Chiromantes dehaani, offering an ideal ecosystem in terms of their habitat, breeding, and hatching.

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

4.1 - Ecological character

As it comprises the upper brackish water zone, Janghang Wetland is more influenced by the river than by the marine environment. A combination of rice paddies, meadow, and tidal flats, it is an ideal habitat for benthic macroinvertebrates. Its lower part is regularly submerged during high tide.

Salix triandra subsp. community, the dominant species in a tidal forest benefit from the cultivation effect by the crustacean inhabiting the roots of Salix koreensis, which promotes the cycle of material, and Salix koreensis, in turn, forms a symbiotic relationship with benthos and crustacea, including Chiromantes dehaani, offering an ideal ecosystem in terms of their habitat, breeding, and hatching.

The wetland is not only serving as a breeding ground for migratory birds, including herons, but also playing a role in regulating temperature, reducing carbon, and protecting river margins. In particular, benthos and Cyperaceae Juss, endangered species globally, and indigenous to a tidal flat and woody vegetation, are the source of food for Grus vipio and Anser fabalis, which spend winter in Korea.

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
F: Estuarine waters		2		
I: Intertidal forested wetlands		2		

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
Saline, brackish or alkaline water > Marshes & pools >> Sp: Permanent saline/brackish/alkaline marshes/pools		2		
Fresh water > Marshes on inorganic soils >> Xf: Freshwater, tree-dominated wetlands		2		

Human-made wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type
3: Irrigated land	장항습지 논	2	

4.3 - Biological components

4.3.1 - Plant species

Other noteworthy plant species

Phylum	Scientific name	Position in range / endemism / other
TRACHEOPHYTA/LILIOPSIDA	<i>Bolboschoenus fluviatilis</i>	Provides food for wild birds such as Anser cygnoids
TRACHEOPHYTA/LILIOPSIDA	<i>Bolboschoenus planiculmis</i>	Wild bird sustenance to species such as Anser cygnoids
TRACHEOPHYTA/LILIOPSIDA	<i>Carex dimorpholepis</i>	Wild bird sustenance to species such as Anser cygnoids

Invasive alien plant species

Phylum	Scientific name	Impacts
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Ambrosia artemisiifolia elatior</i>	Potential
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Ambrosia trifida</i>	Potential
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Lepidium apetalum</i>	Potential
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Potentilla supina paradoxa</i>	Potential
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Rumex crispus crispus</i>	Potential
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Scyos angulatus</i>	Potential

4.3.2 - Animal species

Other noteworthy animal species

Phylum	Scientific name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
ARTHROPODA/INSECTA	<i>Oxya sinuosa</i>				Endemic Species (as per National List/Category)

4.4 - Physical components

4.4.1 - Climate

Climatic region	Subregion
D: Moist Mid-Latitude climate with cold winters	Dwa: Humid continental (Humid with severe, dry winter, hot summer)

The Han River estuary, situated at the mouth of Han River and including Janghang Wetland, has a temperate oceanic climate with four distinct seasons and is subject to the temperature interaction between the coastal water and the coastal land. Its average annual temperature ranges from 11.0 °C to 12.5 °C with the highest temperature in August at 29.5 °C and the lowest in January at -6.1 °C. The average temperature for 30 years (1981 to 2010) stood at 12.7 °C, placing it in a temperate zone (10-20 °C). It has been shown that its average annual temperature rises by 0.02-0.03 °C each year, more remarkably in winter season than in summer. Its average annual rainfall (1981-2010) stood at 1450.5 mm, with 758.6 mm (52.3%) concentrated in summer (July and August).

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.

Han-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 rhizosphere of the wetland is silt loam with silt accounting for more than 60% of the total soil composition. The sedimentary layer is composed of pebbles and sand sediments, especially mudflat sediments. The bottom rhizosphere has been found to be sandy loam with sand making up 70% of the layer.

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	
Marine water	<input type="checkbox"/>	No change
Water inputs from surface water	<input checked="" type="checkbox"/>	No change

Water destination

Presence?	
To downstream catchment	No change
Marine	No change

Stability of water regime

Presence?	
Water levels largely stable	No change

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

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

4.4.8 - Dissolved or suspended nutrients in water

- Eutrophic
- Mesotrophic
- 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

- Surrounding area has greater urbanisation or development
- Surrounding area has higher human population density
- Surrounding area has more intensive agricultural use
- Surrounding area has significantly different land cover or habitat types

Please describe other ways in which the surrounding area is different:

Fishing is conducted around Janghang Wetland, relying on fishing boats. *Anguilla japonica* is caught in *Salix koreensis* forests using pound nets. Rice paddies larger than 0.3km² in the wetland are cultivated. In the sites vicinity are Gimpo City and Paju City as well as Seoul, the capital city of the Republic of Korea. The surrounding cities are expanding owing to new town developments and other projects.

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)	Medium

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Pollution control and detoxification	Water purification/waste treatment or dilution	Medium
Hazard reduction	Flood control, flood storage	Medium
Hazard reduction	Coastal shoreline and river bank stabilization and storm protection	not relevant for site

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Nature observation and nature-based tourism	Low
Scientific and educational	Important knowledge systems, importance for research (scientific reference area or site)	Medium
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

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
- 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

Description if applicable

The total population of Goyang City, part of which is the wetland, is 1,040,000. The farmers number 17,000, with 40 fishing boats engaged. The value of sea products deriving from the wetland is estimated at 500 million to 600 million won annually.

Anguilla japonica fishing in the Salix triandra subsp. community is essential not only as a means of livelihood for the fishermen but also as a way to prevent the spread of the Salix triandra subsp. community, thereby increasing biodiversity. Major tourist attractions nearby include Ilsan Lake Park, Bukhansan National Park, Goyang West Three Royal Tombs, and KINTEX (Korea International Exhibition Center).

- 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

(ECD) Primary production	The Gross Primary Productivity of Salix triandra subsp. community is 4,477 g DW m ⁻² yr ⁻¹ (dry weight), higher than the highest gross primary productivity of land-based local natural forest and artificial forest.
(ECD) Nutrient cycling	The high gross primary productivity of Salix triandra subsp. community plays a vital role in circulating nutrition in the estuary and that is estimated to constitute the mainstay of the nutrition produced during the non-submersion period
(ECD) Carbon cycling	The carbon storage of the Salix triandra subsp. community in temperate monsoon climate was estimated at 208gC/m ² /yr, that is equivalent to 30% (693 gC/m ² /yr) of that of mangroves in tropical or subtropical climate.
(ECD) Animal reproductive productivity	The secondary productivity of Chiromantes dehaani was found to be higher, with about 100.2 g FW (fresh weight) m ⁻² yr ⁻¹ (1680 kJ m ⁻² yr ⁻¹), than that of either Zostera marina community (1381 kJ m ⁻² yr ⁻¹) and Zostera marina community (611 kJ m ⁻² yr ⁻¹).
(ECD) Vegetational productivity, pollination, regeneration processes, succession, role of fire, etc.	The annual growth rate of Salix triandra subsp. community was found to range from 0.25 cm yr ⁻¹ to 4 cm yr ⁻¹ . (stem: 4356 g DW m ⁻² yr ⁻¹ (54%), branches: 336 g DW m ⁻² yr ⁻¹ (30%), leaves: 85 g DW m ⁻² yr ⁻¹ (17%).)

<p>(ECD) Notable species interactions, including grazing, predation, competition, diseases and pathogens</p>	<p>Janghang Wetland shows an ecologically distinct mutualism between <i>Salix triandra</i> subsp. and <i>Chiromantes dehaani</i>. Organic matter abundant in the tidal flats and woody vegetation are responsible for high productivity of benthos and herbaceous plants.</p>
<p>(ECD) Notable aspects concerning animal and plant dispersal</p>	<p><i>Salix pierotii</i> serves as a host plant for <i>Apatura metis</i> Freyer. <i>Sericinus montela</i> lays eggs on <i>Aristolochia contorta</i>, <i>Lycaena dispar</i> on <i>Rumex crispus</i> and <i>Papilio Machaon</i> on <i>Cnidium monnieri</i> of Umbelliferae.</p>
<p>(ECD) Notable aspects concerning migration</p>	<p>Janghang Wetland is an important stopover site for <i>Grus vipi</i> departs in the winter. <i>Platalea minor</i> breed in the estuary during summer and <i>Anser cygnoides</i> stops over in the spring and fall to find food (<i>Bolboschoenus planiculmis</i>).</p>
<p>(ECD) Pressures and trends concerning any of the above, and/or concerning ecosystem integrity</p>	<p>There is a concern about turning the buffer zone of the wetland into bicycle lanes and river parks as eco-tourism project. Also military protection areas of the wetland have been reduced and there is a plan for utilizing barracks as visitor center.</p>

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 type="checkbox"/>

Private ownership

Category	Within the Ramsar Site	In the surrounding area
Other types of private/individual owner(s)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5.1.2 - Management authority

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

Division of Natural Environment, Office of Han River Basin Environment, Ministry of Environment

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

Desk officer DoHyun Cha (Division of Natural Environment, Office of Han River Basin Environment, Ministry of Environment)

Postal address: 229 Misa Gangbyeon Hangang-Ro, Hanam City, GyeongGi-Do Province

E-mail address: happy71@korea.kr

5.2 - Ecological character threats and responses (Management)

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

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		<input checked="" type="checkbox"/>	<input 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	Low impact	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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	Medium impact	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Pollution

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Garbage and solid waste	Low impact	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
Wetland Protected Area	한강하구습지보호지역 (Han River Wetland Protection Area)		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
Control of invasive alien animals	Partially implemented

Human Activities

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

5.2.5 - Management planning

Is there a site-specific management plan for the site? Yes

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	Proposed
Water quality	Proposed
Plant community	Proposed
Plant species	Proposed
Animal community	Implemented

6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references

- Report on Research on the Establishment of a Development Strategy for Janghang Wetland of Goyang City (Goyang City, 2018)
- Report on the Citizens Habitat Monitoring on Janghang Wetland (Goyang City, 2018)
- 2015 Monitoring on the Han River Estuary Wetland Protection Areas (Office of Han River Basin Environment, 2015)
- The Establishment of the 3rd Preservation Plan for the Han River Estuary Wetland Protection Areas (Office of Han River Basin Environment, 2019)
- 2016 Intensive Survey on the Wetland Protection Areas (National Wetlands Center, 2016)
- Dong Wook Han et al., The Gross Primary Productivity of aboveground *Salix triandra* subsp. and the secondary productivity of *Chiromantes dehaani* In Janghang Wetland of Han River Estuary (Korea Journal of Ecology and Environment, 2010)
- Dong Woo Yang et al., Intraspecific diet shifts of the sesamid crab, *Sesarma dehaani*, in three wetlands in the Han River estuary, South Korea (Journal of Ecology and Environment, 2019)
- Dong Wook Han et al., Food web structure in a *Salix subfragilis* dominated wetland in Hangang estuary using stable isotopes and fatty acid biomarkers (ACS(Animal cell and systematics), 2012)

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

<1 file(s) uploaded>

vi. other published literature

<7 file(s) uploaded>

6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:



Janghang at high tide (Dongwook Han, 01-07-2019)



A group of bean geese (Dongwook Han, 01-10-2019)



Red-foot Crab (Dongwook Han, 01-07-2019)



Red-foot Crab (Dongwook Han, 01-07-2019)



A group of black-faced spoonbill (Dongwook Han, 01-10-2019)



A colony of *Scirpus planiculmis* (Dongwook Han, 01-09-2019)

6.1.4 - Designation letter and related data

Designation letter

<1 file(s) uploaded>

Date of Designation