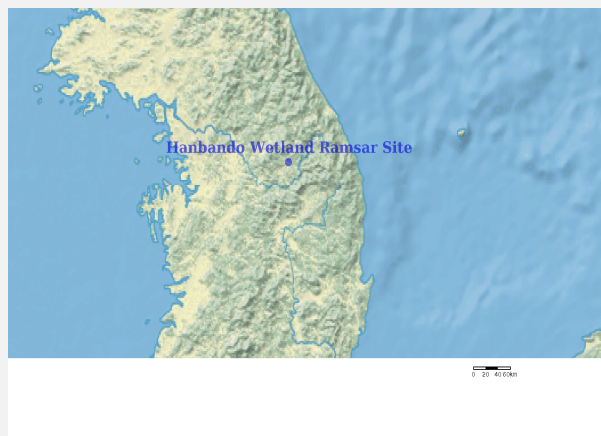




# Ramsar Information Sheet

Published on 21 May 2015

## Republic of Korea Hanbando Wetland Ramsar Site



Designation date: 13 May 2015  
Ramsar ID: 2226  
Coordinates: 37°13'16"N 128°20'14"E  
Official area (ha): 191,50  
Number of zones: 4

## 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 (This field is limited to 2500 characters)*

The Hanbando Wetland lies in a sand-gravel bar formed in an incised meander. The site is representative of natural riverine wetlands in the Republic of Korea. The site consists of various types of riffles and pools that retain high biodiversity value and provide habitats for numerous species including a number of endemic and nationally threatened species.

The surface is composed mostly of limestone through which groundwater aquifers are formed and recharged.

The water that flows through the Hanbando Wetland Ramsar Site is collected at a water harvesting plant located near the wetland that supplies the majority of drinking water for locals. Also, the wetland has long been supporting local agricultural industry.

The name 'Hanbando' signifies that the wetlands resembles the shape of the Korean Peninsular and increases its symbolic value.

## 2 - Data & location

### 2.1 - Formal data

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

Name

Institution/agency

Postal address *(This field is limited to 254 characters)*

E-mail

Phone

Fax

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

From year

To year

#### 2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)

Unofficial name (optional)

## 2.2 - Site location

### 2.2.1 - Defining the Site boundaries

b) Digital map/image

<1 file(s) uploaded>

Boundaries description (optional) *(This field is limited to 2500 characters)*

The boundary delineated is the boundary of the Hanbando Wetland Protection Area, designated by the Ministry of Environment of the Republic of Korea on August 30, 2012.

There is about 8 percent area difference between the official area indicated and the area automatically calculated by GIS shapefile. This difference derived from using two different area measuring systems. The Government of the Republic of Korea will hold an expert meeting before the end of this year to address the issue.

### 2.2.2 - General location

a) In which large administrative region does the site lie?

Gangwon-do (province)

b) What is the nearest town or population centre?

Hanbando-meyon (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): 191.5

Area, in hectares (ha) as calculated from GIS boundaries 207.91

## 2.2.5 - Biogeography

### Biogeographic regions

| Regionalisation scheme(s)                 | Biogeographic region   |
|---|--|
| Marine Ecoregions of the World (MEOW)     | Holarctic region, Palaearctic subregion, Oriental Deciduous Forest Province, Temperate Broad-leaf Forest Biome |
| Freshwater Ecoregions of the World (FEOW) | Eastern Yellow Sea Drainages   |

## 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 *(This field is limited to 3000 characters)*

Groundwater bodies are concentrically formed beneath the wetland bed, and are recharged as water from the rivers infiltrates through limestone. This means that a huge amount of the water that flows into the wetland, turns into groundwater replenishing groundwater aquifers. The water that flows through the Hanbando Wetland Ramsar Site is collected at a water harvesting plant located near the wetland that supplies the majority of drinking water for locals. Also, the wetland has long been supporting local agricultural industry.

Other reasons *(This field is limited to 3000 characters)*

The Hanbando Wetland is representative of natural riverine wetlands in Korea. The wetland lies in a sand-gravel bar formed in an incised meander and karst topography that features a variety of karst landforms including doline, kaen, and river cliff.

#### Criterion 2 : Rare species and threatened ecological communities

#### Criterion 3 : Biological diversity

Justification *(This field is limited to 3000 characters)*

Riffles and pools within the wetland provide natural habitats and spawning grounds for numerous aquatic species. In particular, many fish species legally protected in the Republic of Korea under the Wildlife Protection and Management Act as well as a number of Korean endemic fish species were found in large numbers in the wetland enhancing the conservation value of the wetland. The Wildlife Protection and Management Act provides the legal protection for wildlife in Korea, especially Endangered Wild Species that are currently classified into two categories: Endangered Wild Species Class I and II. The 'Endangered Wild Species - Class I' includes wild species whose numbers have drastically declined resulting from natural or anthropogenic factors. The 'Endangered Wild Species - Class II' includes wild species whose numbers have significantly declined and which face threat of extinction in the near future in the event where current threatening factors are not eliminated or alleviated. The species listed in both Level I and Level II are designated by the Ministry of Environment in agreement with the head of the administrative agency concerned.

#### Criterion 7 : Significant and representative fish

Justification *(This field is limited to 3000 characters)*

The Hanbando Wetland is home to many endemic fish species, and among them is *Gobiobotia brevibarba*, a species that is found only in Korea. The fast flow of water in the riverine wetland and gravel stones on its bed provide clean water and habitats for these native species, including *Zacco platypus*, *Zacco koreanus*, *Acheilognathus signifier*, *Acheilognathus yamatsutae*, *Acheilognathus rhombeus*, *Carassius auratus*, *Sarcocheilichthys varigatus wakiyae*, *Pungtungia herzi*,

*Coreoleuciscus splendidus*, *Squalidus gracilis majimae*, *Hemibarbus longistris* and *Hemibarbus mylodon*.



























## 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 | IUCN Red List   | CITES Appendix I                    | CMS Appendix I           | Other Status   | Justification   |
|---------------------------|---|--------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|-------------------------------------|--------------------------|-----------|---------------------|--------------|---|-------------------------------------|--------------------------|--|---|
|                           |   |                    | 2                                   | 4                        | 6                        | 9                        | 3                                   | 5                        | 7                                   | 8                        |           |                     |              |   |                                     |                          |  |   |
| CHORDATA / ACTINOPTERYGII | <i>Acheilognath signifer</i><br>       |                    | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |           |                     |              | <input type="checkbox"/>  | <input type="checkbox"/>            |                          | Class II Endangered Wildlife, Wildlife Protection and Management Act in Korea  | Endemic species   |
| CHORDATA / ACTINOPTERYGII | <i>Acheilognath yamatsutae</i><br>     |                    | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |           |                     |              | <input type="checkbox"/>  | <input type="checkbox"/>            |                          |  | Endemic species   |
| CHORDATA / ACTINOPTERYGII | <i>Coreoleucisc splendidus</i><br>     |                    | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |           |                     |              | <input type="checkbox"/>  | <input type="checkbox"/>            |                          |  | Endemic species   |
| CHORDATA / ACTINOPTERYGII | <i>Coreoperca herzi</i><br>            |                    | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |           |                     |              | <input type="checkbox"/>  | <input type="checkbox"/>            |                          |  | Endemic species   |
| CHORDATA / ACTINOPTERYGII | <i>Gobiobotia brevibarba</i><br>       |                    | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |           |                     |              | <input type="checkbox"/>  | <input type="checkbox"/>            |                          | National red list - VU Class II Endangered Wildspecies, Wildlife Protection and Management Act in the Republic of Korea. | Endemic species   |
| CHORDATA / ACTINOPTERYGII | <i>Hemibarbus mylodon</i><br>          |                    | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |           |                     |              | <input type="checkbox"/>  | <input type="checkbox"/>            |                          | National red list - VU   | Endemic species   |
| CHORDATA / MAMMALIA       | <i>Hydropotes inermis</i><br>          | Chinese water deer | <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"/> |  |   |
| CHORDATA / ACTINOPTERYGII | <i>Iksookimia koreensis</i><br>       |                    | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |           |                     |              | <input type="checkbox"/>  | <input type="checkbox"/>            |                          |  | Endemic species   |
| CHORDATA / ACTINOPTERYGII | <i>Koreocobitis rotundicauda</i><br> |                    | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |           |                     |              | <input type="checkbox"/>  | <input type="checkbox"/>            |                          |  | Endemic species   |
| CHORDATA / ACTINOPTERYGII | <i>Liobagrus andersoni</i><br>       |                    | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |           |                     |              | <input type="checkbox"/>  | <input type="checkbox"/>            |                          |  | Endemic species   |
| CHORDATA / MAMMALIA       | <i>Lutra lutra</i><br>               | European Otter     | <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 checked="" type="checkbox"/> | <input type="checkbox"/> |  | National red list - VU Class I Endangered Wildspecies, Wildlife Protection and Management Act in the Republic of Korea. |

RIS for Site no. 2226, Hanbando Wetland Ramsar Site, Republic of Korea

| Phylum                    | Scientific name  | Common name | Species qualifies under criterion   |                          |                          |                          | Species contributes under criterion |                          |                                     |                          | Pop. Size | Period of pop. Est. | % occurrence | IUCN Red List  | CITES Appendix I         | CMS Appendix I                      | Other Status   | Justification   |
|---------------------------|--|-------------|-------------------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|-------------------------------------|--------------------------|-----------|---------------------|--------------|--|--------------------------|-------------------------------------|--|-----------------|
|                           |  |             | 2                                   | 4                        | 6                        | 9                        | 3                                   | 5                        | 7                                   | 8                        |           |                     |              |  |                          |                                     |  |                 |
| CHORDATA / REPTILIA       | <i>Mauremys reevesii</i><br>                    |             | <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 checked="" type="checkbox"/> | National red list - VU   |                 |
| CHORDATA / ACTINOPTERYGII | <i>Microphysogyaluensis</i><br>                 |             | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |           |                     |              |  | <input type="checkbox"/> | <input type="checkbox"/>            |  | Endemic species |
| CHORDATA / ACTINOPTERYGII | <i>Nipponocypris koreanus</i><br>               |             | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |           |                     |              |  | <input type="checkbox"/> | <input type="checkbox"/>            |  | Endemic species |
| CHORDATA / ACTINOPTERYGII | <i>Odontobutis platycephala</i><br>             |             | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |           |                     |              |  | <input type="checkbox"/> | <input type="checkbox"/>            |  | Endemic species |
| CHORDATA / ACTINOPTERYGII | <i>Pseudobagrus koreanus</i><br>                |             | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |           |                     |              |  | <input type="checkbox"/> | <input type="checkbox"/>            |  | Endemic species |
| CHORDATA / ACTINOPTERYGII | <i>Pseudopungitenuicorpus</i><br>               |             | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |           |                     |              |  | <input type="checkbox"/> | <input type="checkbox"/>            | Class II Endangered Wildlife, Wildlife Protection and Management Act in Korea<br>Endemic species | Endemic species |
| CHORDATA / ACTINOPTERYGII | <i>Sarcocheilichthys variegatus wakiyae</i><br> |             | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |           |                     |              |  | <input type="checkbox"/> | <input type="checkbox"/>            |  | Endemic species |
| CHORDATA / ACTINOPTERYGII | <i>Squalidus gracilis majimae</i><br>           |             | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |           |                     |              |  | <input type="checkbox"/> | <input type="checkbox"/>            |  | Endemic species |

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

<no data available>

| Name of ecological community                   | Community qualifies under Criterion 2? | Description | Justification |
|--|--|-------------|---------------|
| Phragmites japonica community                  | <input type="checkbox"/>               |             |               |
| Salix nipponica community                      | <input type="checkbox"/>               |             |               |
| Salix koreensis community                      | <input type="checkbox"/>               |             |               |
| Potamogeton malaiius var. latifolius community | <input type="checkbox"/>               |             |               |
| Miscanthus sacchariflorus community            | <input type="checkbox"/>               |             |               |
| Hydrilla verticillata community                | <input type="checkbox"/>               |             |               |

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

### 4.1 - Ecological character

(This field is limited to 2500 characters)

The Hanbando Wetland is a riverine wetland that flows slower at its upstream confluence where the Pyeongchang River (mainstream) and Jucheoncheon River (its tributary) meet than at its mouth towards the mainstream. The slow flow regime upstream causes sediments flowing into the wetland to deposit and form a thick layer of sediments that purifies pollutants and retain nutrients. In performing these functions, the site improves water quality and provides habitats for various aquatic species.

A total of 230 species of 60 families of vascular plants were found in the Hanbando Wetland, with 16 species of 11 families in the low water channel, 60 species of 19 families on the shore, 150 species of 37 families on the flood channel, and 84 species of 30 families on the levee. The largest number of species was found on the flood channel, which is a common feature of riverine wetlands, and means that the land size of the flood channel is larger than that of the wetland. The biodiversity richness (the number of species per hectare) of the wetland is 3.46/?, 3.9 times higher than that of the Damyang Wetland (0.86/?), one of the other riverine wetlands designated as a Wetland Protection Area in Korea. The rich biodiversity of the wetland is due to plant propagules that have been provided in large numbers.

A total of 9 species of 8 families of 4 orders of mammals were observed in the Hanbando Wetland. A total of 35 avian species were found. Seasonally, on average, 26 species during summer and 20 species during fall were observed. About 51.4% of the total number of the birds in the wetland is endemic species. A total of 24 fish species were observed in the wetland, and around 62% of them or, 15 species, were endemic species. The wetland lies at the confluence, consisting of many riffles and pools that provide habitats and spawning grounds for fish. Other animals inhabiting the site include 4 species of 2 families of 1 order of amphibian, and 3 species of 2 families of 1 order of reptile.

A total of 69 species of 31 families of 9 orders of land insects were observed, with 19 grasshopper species and 14 dragonfly species being the two dominant insect species in the wetland. A total of 24 species of 17 families of 11 orders of benthic invertebrate were also found, including *Semisulcospira amurensis*, *Uracanthella rufa* and *Cheumatopsyche brevilineata* were recorded as the two dominant aquatic species at the site.

### 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 |
|--------------------------------------|------------|--|---------------------------|------------------------------|
| M: Permanent rivers/ streams/ creeks |            | 1  | 191.5                     | Representative               |



## 4.3 - Biological components

### 4.3.1 - Plant species

Other noteworthy plant species



| Scientific name                  | Common name                               | Position in range / endemism / other   |
|----------------------------------|---|--|
| <i>Artemisia princeps</i>        |   |  |
| <i>Cnidium monnieri monnieri</i> |   |  |
| <i>Festuca arundinacea</i>       |   |  |
| <i>Hydrilla verticillata</i>     |   |  |
| <i>Miscanthus sacchariflorus</i> |   |  |
| <i>Monochoria korsakowii</i>     |   |  |
| <i>Phragmites karka</i>          |   |  |
| <i>Polygonatum stenophyllum</i>  |   | Class II Endangered Wildspecies,<br>Wildlife Protection and Management<br>Act in the Republic of Korea |
| <i>Potamogeton nodosus</i>       |   |  |
| <i>Pueraria montana lobata</i>   |   |  |
| <i>Quercus mongolica</i>         |   |  |
| <i>Robinia pseudoacacia</i>      | False-acacia;False Acacia;Black<br>Locust |  |
| <i>Salix gracilistyla</i>        |   |  |
| <i>Salix koreensis</i>           |   |  |
| <i>Salix koriyanagi</i>          |   |  |
| <i>Salix rorida</i>              |   |  |
| <i>Salix subfragilis</i>         |   |  |
| <i>Selaginella stauntoniana</i>  |   |  |

Invasive alien plant species

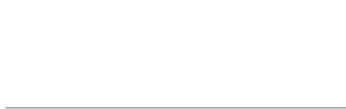
| Scientific name                | Common name | Impacts     |
|--------------------------------|-------------|-------------|
| <i>Ambrosia artemisiifolia</i> |             | Potentially |
| <i>Ambrosia trifida</i>        |             | Potentially |
| <i>Cerastium glomeratum</i>    |             | No impacts  |
| <i>Fallopia dumetorum</i>      |             | No impacts  |
| <i>Phytolacca americana</i>    |             | No impacts  |
| <i>Rumex crispus</i>           |             | No impacts  |
| <i>Silene armeria</i>          |             | No impacts  |
| <i>Solanum carolinense</i>     |             | Potentially |
| <i>Xanthium strumarium</i>     |             | No impacts  |

#### 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 soloensis</i>         | Chinese Sparrowhawk;Gray Frog-Hawk      |           |                     |              | National Red List - VU            |
| CHORDATA/ACTINOPTERYGII | <i>Acheilognathus rhombeus</i>     |   |           |                     |              |                                   |
| CHORDATA/MAMMALIA       | <i>Apodemus agrarius</i>           |   |           |                     |              |                                   |
| CHORDATA/ACTINOPTERYGII | <i>Carassius auratus</i>           |   |           |                     |              |                                   |
| CHORDATA/AVES           | <i>Charadrius placidus</i>         | Long-billed Plover                      |           |                     |              | National Red List - VU            |
| ARTHROPODA/INSECTA      | <i>Cheumatopsyche brevilineata</i> |   |           |                     |              |                                   |
| CHORDATA/MAMMALIA       | <i>Crocidura lasiura</i>           | Ussuri Shrew;Ussuri White-toothed Shrew |           |                     |              |                                   |
| CHORDATA/REPTILIA       | <i>Elaphe schrenckii</i>           |   |           |                     |              | National Red List - EN            |
| CHORDATA/AVES           | <i>Falco tinnunculus</i>           | Common Kestrel;Eurasian Kestrel         |           |                     |              | National Red List - VU            |
| CHORDATA/ACTINOPTERYGII | <i>Koreocobitis naktongensis</i>   |   |           |                     |              |                                   |
| CHORDATA/MAMMALIA       | <i>Mogera wogura robusta</i>       |   |           |                     |              |                                   |
| CHORDATA/MAMMALIA       | <i>Mustela sibirica</i>            | Siberian Weasel                         |           |                     |              |                                   |
| CHORDATA/MAMMALIA       | <i>Nyctereutes procyonoides</i>    | Raccoon dog                             |           |                     |              |                                   |
| CHORDATA/MAMMALIA       |                                    |   |           |                     |              |                                   |

*Prionailurus bengalensis*



Leopard Cat

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|--|--|--|--|

Endangered Wild Species  
Class II



| Phylum                  | Scientific name                  | Common name           | Pop. size | Period of pop. est. | % occurrence | Position in range /endemism/other |
|-------------------------|----------------------------------|-----------------------|-----------|---------------------|--------------|-----------------------------------|
| CHORDATA/ACTINOPTERYGII | <i>Pungtungia herzi</i>          |                       |           |                     |              |                                   |
| CHORDATA/ACTINOPTERYGII | <i>Rhinogobius brunneus</i>      |                       |           |                     |              |                                   |
| CHORDATA/MAMMALIA       | <i>Sciurus vulgaris</i>          | Eurasian Red Squirrel |           |                     |              |                                   |
| MOLLUSCA/GASTROPODA     | <i>Semisulcospira cancellata</i> |                       |           |                     |              |                                   |
| CHORDATA/ACTINOPTERYGII | <i>Siniperca scherzeri</i>       |                       |           |                     |              |                                   |
| CHORDATA/MAMMALIA       | <i>Sus scrofa</i>                | wild boar             |           |                     |              |                                   |
| CHORDATA/ACTINOPTERYGII | <i>Zacco platypus</i>            |                       |           |                     |              |                                   |

## 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) |

*(This field is limited to 1000 characters)*

The average annual temperature of Hanbando Wetland is 10.8?. The average annual wind velocity is 1.5 ?. The average annual relative humidity is 69.1%. The average annual amount of cloud cover is 5.3. The average annual duration of sunshine is 2,109.5 hours. From April to October, the average monthly temperature exceeds the annual average. The hottest and coldest months of the year is August and January respectively, with the average monthly temperature estimated at 23.8? and 3.9? respectively. The annual temperature range is 27.9?, meaning that the wetland has a typical continental climate. The monsoon season lasts between June and September, with the average monthly precipitation exceeding 100 ?.

### 4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres)

a) Maximum elevation above sea level (in metres)

More than one river basin

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.  
(This field is limited to 1000 characters)

The Hanbando Wetland lies at the confluence of the Pyeongchang River (the main stream) and the Jucheoncheon River (its tributary). The river valley that stretches through the site becomes broader towards the upstream of the confluence and narrower towards the downstream. The Jucheoncheon River flows through a limestone area and meets other tributaries flowing through a granite area in the region, which causes a sand-gravel bar to form within the wetland and maintain a favourable environment for vegetation. The wetland bed is composed of unconsolidated sediments, Cambrian-Ordovician limestone, Jurassic Daebo granite, Cambrianmetamorphic rocks, and clastic sedimentary rocks with medium grain size. The geological structure of the wetland is the Choson Supergroup of Yeongwol Type that consists of the Sambangsan Formation from its bottom, the Machari Formation, the Wagok Formation, the Mugok Formation, and the Yeongheung Formation to the top.

#### 4.4.3 - Soil

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) (This field is limited to 1000 characters)

The soils in and around the Hanbando Wetland are unconsolidated sediments, Cambrian-Ordovician limestone rocks, Jurassic Daebo granites, Cambrian metamorphic rocks and clastic sedimentary rocks in medium grain size.

#### 4.4.4 - Water regime

Water permanence

| Presence?                       |
|---------------------------------|
| Usually permanent water present |

Source of water that maintains character of the site

| Presence?                       | Predominant water source            |
|---------------------------------|-------------------------------------|
| Water inputs from rainfall      | <input type="checkbox"/>            |
| Water inputs from surface water | <input checked="" type="checkbox"/> |
| Water inputs from groundwater   | <input type="checkbox"/>            |

#### Water destination

##### Presence?

To downstream catchment

#### Stability of water regime

##### Presence?

Water levels largely stable

Please add any comments on the water regime and its determinants (if relevant). Use this box to explain sites with complex hydrology: *(This field is limited to 1000 characters)*

Groundwater bodies are concentrically formed beneath the wetland bed, and are recharged as water from the rivers infiltrate through limestone. The main catchments that drains into the Hanbando Wetland are the Pyungchang River and the Jucheoncheon River. The average elevation and inclination of the river are respectively 539.2 meters above sea level and 33.2% respectively. Due to the average inclination of the river basin that is more than 30%, water flows fast into the river from the slopes of its surrounding areas, especially during Horton overland flows, and the water stored in the limestone rocks beneath the wetland flows into the river. The average flow rate of Pyungchang River the river is 3.31 cubic meter per second, or cms. The average flow rate of Jucheoncheon River is 8.33 cms. Taking into consideration the average flow rate of the two rivers, the average flow rate of the Hanbando Wetland is calculated at 11.6 cms.

#### 4.4.5 - Sediment regime

Significant transportation of sediments occurs on or through the site

Please provide further information on sediment (optional): *(This field is limited to 1000 characters)*

The thick layer of sediments deposited beneath Hanbando Wetland purifies water flowing into it from the rivers, enhancing the self-purification capability of the wetland. The riffles and pools of different sizes within the wetland boundary provide habitats and spawning grounds for fish species, making the site a favourable environment for numerous aquatic species. The types of rocks found in the wetland are diorite, granitic gravel, and phyllite.

#### 4.4.6 - Water pH

Acid (pH<5.5)

#### 4.4.7 - Water salinity

Fresh (<0.5 g/l)

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

<no data available>

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

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

### 4.5 - Ecosystem services

#### 4.5.1 - Ecosystem services/benefits

##### Provisioning Services

| Ecosystem service | Examples                                   | Importance/Extent/Significance |
|-------------------|--|--------------------------------|
| Fresh water       | Drinking water for humans and/or livestock | Medium                         |
| Fresh water       | Water for irrigated agriculture            | Medium                         |

##### Regulating Services

| Ecosystem service                   | Examples   | Importance/Extent/Significance |
|-------------------------------------|--|--------------------------------|
| Maintenance of hydrological regimes | Groundwater recharge and discharge   | Medium                         |
| Maintenance of hydrological regimes | Storage and delivery of water as part of water supply systems for agriculture and industry | Medium                         |
| Erosion protection                  | Soil, sediment and nutrient retention  | Medium                         |
| Hazard reduction                    | Flood control, flood storage   | Medium                         |

##### Cultural Services

| Ecosystem service      | Examples                                    | Importance/Extent/Significance |
|------------------------|---|--------------------------------|
| Recreation and tourism | Picnics, outings, touring                   | Medium                         |
| Recreation and tourism | Nature observation and nature-based tourism | Medium                         |

##### 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 | Medium                         |
| Soil formation    | Sediment retention  | Medium                         |

Other ecosystem service(s) not included above: *(This field is limited to 1000 characters)*

The site hosts about 1,400,000 visitors annually.

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

<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"/> |
| Local authority, municipality, (sub)district, etc. | <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 checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Provide further information on the land tenure / ownership regime (optional): *(This field is limited to 1000 characters)*

Land ownership within the site is divided between the Ministry of Land, Infrastructure and Transport, the Ministry of Strategy and Finance, the Korea Forest Service, the Ministry of Environment and the Government of Yeongwol-gun. Some small patches of private lands located within the boundary have been purchased by the Land Purchase Programme under the Conservation Plan for the Hanbando Wetland Protected Area (Ministry of Environment). Small parts of mountainous area surrounding the site are owned by the Korea Forest Service, and the most of the surrounding land is privately owned. Under the Wetland Conservation Act, some parts of the government-owned and private land were identified as Managed Wetland Surrounding Area (WSA), and activities within the WSA are restricted and governed by the Act.

#### 5.1.2 - Management authority

Please list the local office / offices of any agency or organization responsible for managing the site: *(This field is limited to 1000 characters)*

Wonju Regional Environmental office, an affiliated office to the Ministry of Environment

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

Gye-Yeong Hwang, Head of Wonju Regional Environmental Office

Postal address: *(This field is limited to 254 characters)*

171 Dangu-ro, Myeongryun-dong, Wonju-si, Gangwon-do, Republic of Korea  
Tel. 82-33-764-0981/Fax. 82-31-764-0987

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

#### Human settlements (non agricultural)

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

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

#### Transportation and service corridors

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

#### Human intrusions and disturbance

| Factors adversely affecting site    | Actual threat | Potential threat | Within the site                     | In the surrounding area             |
|-------------------------------------|---------------|------------------|-------------------------------------|-------------------------------------|
| Recreational and tourism activities | Low impact    | Low impact       | <input checked="" type="checkbox"/> | <input checked="" 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 |               | Medium 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 |
|------------------|-------------------------------|------------------------|--------------------------|
| Protected Area   | HanbandoWetlandProtectionArea |                        | whole                    |

## 5.2.3 - IUCN protected areas categories (2008)

Ia Strict Nature Reserve

IV Habitat/Species Management Area: protected area managed mainly for conservation through management intervention

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 | Proposed |

Species

| Measures                         | Status   |
|----------------------------------|----------|
| Control of invasive alien plants | Proposed |

Human Activities



| Measures   | Status      |
|--|-------------|
| Communication, education, and participation and awareness activities | Implemented |
| Research   | Implemented |

Other: (This field is limited to 2500 characters)

Under the Hanbando Wetland Conservation Plan, the Ministry of Environment has bought in patches of the land within and surrounding the site. The ministry then established a restoration programme to bring the lands purchased, especially those destroyed, damaged or degraded, back to its original and natural state.

### 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

Please indicate if a Ramsar centre, other educational or visitor facility, or an educational or visitor programme is associated with the site: (This field is limited to 1000 characters)

There is no Ramsar centre at Hanbando. But Wonju Regional Environmental Office, local governments, and NGOs are jointly implementing public education programs and activities to increase public awareness on wetland conservation.

### 5.2.6 - Planning for restoration

Is there a site-specific restoration plan? Please select a value

### 5.2.7 - Monitoring implemented or proposed

| Monitoring       | Status      |
|------------------|-------------|
| Plant community  | Implemented |
| Animal community | Implemented |
| Birds            | Implemented |

(This field is limited to 2500 characters)

**Other monitoring activities:**

- Intensive Survey on Wetland Protected Area (once in every 5 years, by the National Wetlands Center). Survey covers 11 areas including geomorphology, hydrology, vegetation, avian fauna, mammal fauna, flora, insects and invasive species etc.
- Wetland Protected Area Monitoring (once in every year, by Wonju Regional Environmental Office) covers vegetation, flora and fauna.

## 6 - Additional material

### 6.1 - Additional reports and documents

#### 6.1.1 - Bibliographical references

*(This field is limited to 2500 characters)*

Ministry of Environment of the Republic of Korea & UNDP/GEF, 2009. Report on the Intensive Survey on National Inland Wetland, by UNDP/GEF National Wetland Conservation Project Control Group.

Wonju Regional Environmental Office, 2012. Study on Establishing Management and Conservation Plan for Hanbando Wetland Protected Area;

Wonju Regional Environmental Office, 2012. Management and Conservation Plan for Hanbando Wetland Protected Area;

Udvardy, 1975. A Classification of the Biogeographical Province of the World, Freshwater Ecoregions of the world ([www.feow.org](http://www.feow.org)).

#### 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>

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

Please provide at least one photograph of the site:



Upstream, north to the Pyeongchang River ( *Ministry of Environment, 01-09-2009* )



Middle part, west to the edge of the Ramsar Site boundary ( *Ministry of Environment, 20-05-2014* )



Downstream, south to the Pyeongchang River ( *Ministry of Environment, 20-05-2014* )

## 6.1.4 - Designation letter and related data

### Designation letter

<1 file(s) uploaded>

Date of Designation