

# Information Sheet on Ramsar Wetlands (RIS)

## 2009-2012 version

Available for download from [http://www.ramsar.org/ris/key\\_ris\\_index.htm](http://www.ramsar.org/ris/key_ris_index.htm).

*Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8<sup>th</sup> Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9<sup>th</sup> Conference of the Contracting Parties (2005).*

### Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 14, 3rd edition). A 4th edition of the Handbook is in preparation and will be available in 2009.
3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

### **1. Name and address of the compiler of this form:**

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(Liaison of MLTM ; Ministry of Land, Transport and Maritime Affairs)

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DD	MM	YY

Designation date

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Site Reference Number

### **2. Date this sheet was completed/updated:**

5 January 2010

### **3. Country:**

Republic of Korea

### **4. Name of the Ramsar site:**

The precise name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. Alternative names, including in local language(s), should be given in parentheses after the precise name.

Gochang & Buan Tidal Flats

### **5. Designation of new Ramsar site or update of existing site:**

**This RIS is for** (tick one box only):

- a) **Designation of a new Ramsar site** ; or  
b) **Updated information on an existing Ramsar site**

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**6. For RIS updates only, changes to the site since its designation or earlier update:**

**a) Site boundary and area**

The Ramsar site boundary and site area are unchanged:

or

**If the site boundary has changed:**

- i) the boundary has been delineated more accurately ; or
- ii) the boundary has been extended ; or
- iii) the boundary has been restricted\*\*

and/or

**If the site area has changed:**

- i) the area has been measured more accurately ; or
- ii) the area has been extended ; or
- iii) the area has been reduced\*\*

**\*\* Important note:** If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

**b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:**

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**7. Map of site:**

Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

**a) A map of the site, with clearly delineated boundaries, is included as:**

- i) a hard copy (required for inclusion of site in the Ramsar List):
- ii) an electronic format (e.g. a JPEG or ArcView image)
- iii) a GIS file providing geo-referenced site boundary vectors and attribute tables

**b) Describe briefly the type of boundary delineation applied:**

e.g. the boundary is the same as an existing protected area (nature reserve, national park, etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The Ramsar Site does not extend inland. It's limited to the high tide level and incorporates the boundary of protected areas as shown in the map.

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**8. Geographical coordinates** (latitude/longitude, in degrees and minutes):

Provide the coordinates of the approximate centre of the site and/or the limits of the site. If the site is composed of more than one separate area, provide coordinates for each of these areas.

35°33'44"N 126°35'11"E center of the site

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**9. General location:**

Include in which part of the country and which large administrative region(s) the site lies and the location of the nearest large town.

Gochang and Buan tidal flats is located in the south part of the Gomso Bay

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**10. Elevation:** (in metres: average and/or maximum & minimum)**10. Elevation:**

Average tidal range 3.6m MSL (Maximum 7.2m)

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**11. Area:** (in hectares)

4,550 ha (45.5 km<sup>2</sup>)

This area is made up by 490 ha (4.9km<sup>2</sup>) of Buan Julpo Bay Wetland Protected Area, 1040 ha (10.4km<sup>2</sup>) of Gochang Tidal Flat Wetland Protected Area by the Ministry of Land, Transport and Maritime Affairs, and also 3020 ha (30.2 km<sup>2</sup>) of tidal flat surrounding the Gochang Tidal Flat Wetland Protected Area.

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**12. General overview of the site:**

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

Gochang and Buan Tidal Flats, located in the Gomso Bay, is on the west coast of Korea. With relatively little tidal variation, the bay is not influenced much by fresh water. The north of the bay adjoins the Saemangeum coastal sea wall. The deposits on the tidal flat are composed of four types of sediment: sand, muddy sand, sandy silt and silt. There are 68 species of benthic animals, with an average of 421 individuals per square meter. 5 species of halophytes are present.

Birds use the Gomso Bay as their feeding, roosting and breeding sites, 77 species of 16,617 individuals have been observed from 1999 to 2005. (Ministry of Maritime Affairs and Fisheries, 2006; Gochang-gun, 2007; and National Fisheries Research and Development Institute, 2008)

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**13. Ramsar Criteria:**

Tick the box under each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11). All Criteria which apply should be ticked.

1 •	2 •	3 •	4 •	5 •	6 •	7	8 •	9
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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**14. Justification for the application of each Criterion listed in 13 above:**

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

**■ Criterion 2: A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.**

The site supports globally endangered species such as the Oriental white stork (*Ciconia boyciana*) and vulnerable species such as the Saunders's gull (*Larus saundersi*).

The table shows the Level 1<sup>1</sup> and Level 2 threatened species identified by the Ministry of Environment of Korea with other recognised international status. Peregrine Falcon (*Falco peregrinus*) was found in January 2007 and 2009. Oriental white stork (*Ciconia boyciana*), Mute swan (*Cygnus olor*) and Eurasian spoonbill (*Platalea leucorodia*) was recorded in January 2009. Among the Level 2 species, Whooper swan (*Cygnus cygnus*) was found in January 2007, Bean goose (*Anser fabalis*), Eurasian oystercatcher (*Haematopus ostralegus osculans*), Eastern curlew (*Numenius madagascariensis*), Saunders's gull (*Larus saundersi*), Hen harrier (*Circus cyaneus*) and Common buzzard (*Buteo buteo*) have regularly been observed during wintering season.

<sup>1</sup> There are levels to grade the degree of vulnerability of species protected by the Ministry of Environment. Level I is more threatened than Level II.

Common Name	Scientific Name	IUCN Status	CMS Appendix	National legislation
			Engangered	
Oriental white stork	<i>Ciconia boyciana</i>	Endangered	I	Level I
Saunders's gull	<i>Larus saundersi</i>	Vulnerable A3c	I	Level II
Mute swan	<i>Cygnus olor</i>	Least concern	II	Level I
Whooper swan	<i>Cygnus cygnus</i>	Least concern	II	Level II
Eurasian spoonbill	<i>Platalea leucorodia</i>	Least concern	II	Level I
Bean goose	<i>Anser fabalis</i>	Least concern	II	Level II
Eurasian oystercatcher	<i>Haematopus ostralegus</i>	Least concern	-	Level II
Eastern curlew	<i>Numenius madagascariensis</i>	Least concern	-	Level II
Black-tailed Godwit	<i>Limosa limosa</i>	Near threatened	II	
Common buzzard	<i>Buteo buteo</i>	Least concern	II	Level II
Chinese sparrow hawk	<i>Accipiter soloensis</i>	Least concern	II	-
Eurasian sparrow hawk	<i>Accipiter nisus</i>	Least concern	II	-
Peregrine Falcon	<i>Falco peregrinus</i>	Least concern	II	Level I
Hen harrier	<i>Circus cyaneus</i>	Least concern	II	Level II
Common kestrel	<i>Falco tinnunculus</i>	Least concern	II	-

■ Criterion 3: A wetland should be considered internationally important if it supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region.

High biodiversity is found here: 68 species of macro benthic fauna, including shellfish (e.g. Surf clam-*Mactra veneriformis*) crustaceans (e.g. Penicillate shore crab-*Hemigrapsus penicillatus*) and polychaetas; 22 species of halophytes including reeds such as *Suaeda japonica* and *Suaeda asparagooides*. 77 species of birds, including Common buzzard (*Buteo buteo*) and Kestrel (*Falco tinnunculus*). The tidal flat support large amount of shorebirds including Dunlins (*Calidris alpina*), Red-necked stint (*Calidris ruficollis*), Grey plover (*Pluvialis squatarola*) etc.

■ Criterion 4: A wetland should be considered internationally important if it supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions.

Over 1% (5,000 individuals) (National Institute of Biological Resources, 2009) of the Korean population of Mallards (*Anas platyrhynchos*) is found at the Gomso Bay. 5,216 individual's in 1999 and 8,982 individuals in 2000. Usually visiting in the winter, Mallards stay around the tidal flat and back swamp as well as the farming tracts in the Gomso Bay because these areas provide feeding sites for birds. Eurasian curlew (*Numenius arquata*), Eastern curlew (*Numenius madagascariensis*) and Dunlin (*Calidris alpina*), with over 1% (1,000 individuals) of the Korean population, obtain their food here.

Black-tailed godwit (*Limosa limosa*) and Bar-tailed godwit (*Limosa lapponica*) use tidal flat as well as nearby rice paddies as their roosting and feeding ground especially during their northern migration. Those habitats are crucial for shorebirds as providing enough energy to fly to their breeding site and enough nutrients for laying fertile eggs.

■ Criterion 8: A wetland should be considered internationally important if it is an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend.

This site is important for fish as spawning and nursery grounds, including shellfish and 68 species of macro benthic fauna

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**15. Biogeography** (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

**a) biogeographic region:**

Temperate Northern Pacific

**b) biogeographic regionalisation scheme** (include reference citation):

Yellow Sea LME. 2006. Large Marine Ecosystems: information portal. (1 December 2006; [www.lme.noaa.gov](http://www.lme.noaa.gov))

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**16. Physical features of the site:**

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

**Geomorphology and Origins**

Gochang and Buan Tidal Flats are located in the Gomso Bay of the West Coast in Korea. They are naturally formed semi enclosed tidal flats.

**Soil Type**

The deposits are composed of four levels: sand, muddy sand, sandy silt and silt. In the content ratio of the deposits, sand and silt take up a higher volume than clay.

**Water quality**

The salinity fluctuates between 16.8 and 32.4 psu, with an average of 29.1 psu. Dissolved oxygen varies from 7.6 to 14.3 mg/L with an average of 12.1mg/L. The value of chemical oxygen demand is between 1.0 to 4.2 mg/L and averages at 2.4mg/L. The hydrogen ion concentration (pH) ranges from 7.5 to 8.5 with an average of 8.1 pH.

**Tidal variations**

The maximum tidal variation is 589.3 centimeters, and the velocity of current is at 130 centimeters per second at the rising tide and 380 centimeters per second at the ebb tide. The tidal frequency is 12 hours 50 minutes.

**Downstream area**

The streams that flow into the tidal flats are usually short and of small volume of water. Thus, the fresh water from land exerts no significant effect.

**General climate**

The annual average temperature from 1995 to 2004 varied from  $12.4^{\circ}\text{C}$ ~ $13.8^{\circ}\text{C}$  with an average of  $13.0 \pm 0.4^{\circ}\text{C}$ . The monthly average observed during the years from 1999 to 2004 was  $26.2^{\circ}\text{C}$  in August and  $-1.3^{\circ}\text{C}$  in January. The annual average precipitation is  $1,269 \pm 301.1$  mm, much of which is concentrated in the summer season (June through August). The wind blows at an average velocity of  $19.8 \pm 2.8\text{m/s}$ , with a northwesterly wind dominant in the winter and a southern wind in the summer.

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**17. Physical features of the catchment area:**

Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).

**Geomorphology**

Gochang and Buan Tidal Flats is a semi enclosed bay with its width extending 7 to 9 kilometers and 20 kilometers in length. At the southern entry point of the Bay, the chenier which parallels with the coastal line curves toward the direction of the land in the form of a bow. The topography of the Bay is a pointed-shape overall with an acute angle on the north, and is formed by middle and lower intertidal zones without a high intertidal zone. Nearby the average surface of the sea, tidal creek is well developed. A number of littoral reefs are developed in the lower part of the middle intertidal zone. In the lower littoral zone numerous tidal channels are developed so the topography is quite diversely formed with many changing features.

## **General soil types**

The deposits are composed of four levels: sand, muddy sand, sandy silt and silt. In the content ratio of the deposits, sand and silt take up a higher volume than clay.

## **Climate type**

The average annual temperature is  $13.0 \pm 0.4^{\circ}\text{C}$ , with the highest reaching  $26.2^{\circ}\text{C}$  in August and the lowest -  $1.3^{\circ}\text{C}$  in January.

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## **18. Hydrological values:**

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

The main current of Gochang and Buan Tidal Flats (the Gomso Bay) follows through the northern border and flows into the Julpo Bay. Most of the tidal flat is concentrated in the southern part, where a relatively small-sized stream- Jujin Stream-flows in, but the volume of the inflow is insignificant, resulting in little effect from the fresh water. It forms a stable environment for benthic ecosystem.

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## **19. Wetland Types**

### **a) presence:**

Circle or underline the applicable codes for the wetland types of the Ramsar “Classification System for Wetland Type” present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

**Marine/coastal:** A • B • C • D • E • F • **G** • **H** • I • J • K • Zk(a)

**Inland:** L • M • N • O • P • Q • R • Sp • Ss • Tp • Ts • U • Va •  
Vt • W • Xf • Xp • Y • Zg • Zk(b)

**Human-made:** 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

### **b) dominance:**

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

G, H

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## **20. General ecological features:**

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The volume of fresh water inflow is minuscule as a result, the changes in the salinity level are insignificant, causing little stress on the benthic animals and thereby forming a stable benthic ecosystem.

A diverse group of halophyte colonies are present. The upper part of the littoral zone is rich in *Suaeda japonica* community, and common reeds are spread throughout the inner part of the bank where fresh water flows in from the inner area of the bay of the Julpo Tidal Flat. The benthic animals on the Bay are an important source of food for birds, while the halophytes provide resting areas for them. The ecosystem is quite stable in the tidal flat. Among the 68 inhabiting species of large benthic animals, 13 animal species are of high value in the marine product industry and these include Manila clam (*Tapes philippinarum*) and Corb shell (*Cyclina sinensis*)

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## **21. Noteworthy flora:**

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Tidal marshes are colonized by halophytic vegetation, i.e. Common reed (*Phragmites communis*) and Na-mun-je (*Suaeda japonica*) community inhabiting the Julpo Tidal Flat offer not only beautiful scenery but also function as a visiting site for migratory birds. Along the coastal line of the Gomso Bay inhabit various types of plants

including reeds, Chil-myun-cho (*Suaeda japonica*), Na-mun-je (*Suaeda asparagoides*), Marshfire glasswort (*Salicornia herbacea*), Hae-hong-na-mul (*Suaeda maritima*), Get-jil-gyeong (*Plantago camtschatica*), Chwi-myeong-a-ju (*Chenopodium glaucum*), Get-gang-a-ji-pul (*Setaria viridis* var. *pachystachys*). In the back swamp of the artificial bank of the Julpo Tidal Flat, Common reed (*Phragmites communis*), Cattail (*Typha orientalis*), Tabernaemontanus Bulrush (*Scirpus tabernaemontani*), Sae-seom-mae-ja-gi (*Scirpus planiculmis*), sand sedge (*Carex pumila*) are found, with common reeds being the dominant plant species in the area. Na-mun-je (*Suaeda asparagoides*) is used as a medical plant. It is an effective demulcent and expectorant herb. Marshfire glasswort (*Salicornia herbacea*) is used as a medical plant, it contains essential amino acids.

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## 22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

There are nine species of natural monument species<sup>2</sup> designated by the Korean Cultural Heritage Administration. This includes the Oriental white stork (*Ciconia boyciana*), Mute swan (*Cygnus olor*), Whooper swan (*Cygnus cygnus*), Eurasian spoonbill (*Platalea leucorodia*), Chinese sparrow hawk (*Accipiter soloensis*), Eurasian sparrow hawk (*Accipiter nisus*), Hen harrier (*Circus cyaneus*), Peregrine falcon (*Falco peregrinus*) and Kestrel (*Falco tinnunculus*).

In the months of October and November 2006, 1,500 to 1,700 individuals of Kentish plover (*Charadrius alexandrinus*) which is over 1% (750) of the individuals, were observed in the Gomso Bay. Once more data is available to show that the site regularly supports more than 1% of the individuals in a population, then the site can also be designated under criteria 6.

Shellfish and crustaceans such as Manila clam (*Tapes philippinarum*) and Corb shell (*Cyclina sinensis*) with high commercial value provide important source of food not only for humans but also for many water birds, including Kentish plover (*Charadrius alexandrinus*).

Six species of 1% or more of the Korean population were been found: 8,982 individuals of Mallard (*Anas platyrhynchos*) appeared in January 2000; 1,000 individuals of Dunlin (*Calidris alpina*) in each month of November and December 2006; 122 individuals of Whooper swan (*Cygnus cygnus*) in January; 200 individuals of Temminck's cormorant (*Phalacrocorax capillatus*) in November 2007; 273 individuals of Gray heron (*Ardea cinerea*), and 326 individuals of Large egret (*Egretta alba modesta*). (Ministry of Maritime Affairs and Fisheries, 2006; Ministry of Maritime Affairs and Fisheries and Gochang-gun, 2007; and National Fisheries Research and Development Institute, 2008)

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## 23. Social and cultural values:

a) Describe if the site has any general social and/or cultural values e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values:

The combined population of Gochang and Buan is 132,441 (52,998 households), 2,383 households of which are in the fishing industry. Tourism is developed in the area of Julpo, Gyukpo Port and Gomso Port, beache in the area are visited by many.

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?

If Yes, tick the box  and describe this importance under one or more of the following categories:

- i) sites which provide 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:

<sup>2</sup> Certain species are designated by the Korean Heritage Administration as monumental species. These species are identified as having some natural heritage value. The Korean Heritage Administration recognises these species as legally protected "natural monuments". As a consequence of this, the public is better drawn to join the efforts to conserve these species.

- ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland;
  - iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples;
  - iv) sites where 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;
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#### **24. Land tenure/ownership:**

a) within the Ramsar site:

The government of the Republic of Korea

b) in the surrounding area:

Buan-gun and Gochang-gun, Jeollabuk-do

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#### **25. Current land (including water) use:**

a) within the Ramsar site:

1) Gochang Tidal Flat: total number of people reported fishing is 3,139, all of which engage in bare-hand fishing in the 3 nearby villages of the Gochang Tidal Flat Wetland Protected Area. Seafood farming includes, farming of (*Porphyra tenera*), Manila clam (*Tapes philippinarum*), and Corb shell (*Cyclina sinensis*).

2) Buan Tidal Flat: the main activity is bare-hand fishing. No use of boats for fishing. There are 11 households

b) in the surroundings/catchment:

1) Gochang Tidal Flat: the total population in Gochang-gun is 63,999 people with 26,158 households. As for the land use, 93.9 km<sup>2</sup> of the land is used for farming fields, 145.3 km<sup>2</sup> for paddy fields and 270.1 km<sup>2</sup> of forestry.

2) Buan Tidal Flat: the total population in Buan Julpo-myun was 3,784 in 2006. As for the land use, 8.1 km<sup>2</sup> of the land is used for farming fields, 7.9 km<sup>2</sup> for paddy fields and 93.9 km<sup>2</sup> of forestry.

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#### **26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:**

a) within the Ramsar site:

None.

b) in the surrounding area:

1) Gochang Tidal Flat: development projects are currently under way for a Wind Park (2008 – 2010), the Restoration of the Ecology at the Gochang Tidal Flat (2008 – 2012), and an Islands Development Project (2008 – 2017).

2) Buan Tidal Flat: the Buan-gun Environment Center for the landfill located on the northern part of the Julpo Tidal Flat completed its filling of 170,000 m<sup>3</sup> on July 30, 2006. It has increased the waste volume to 186,000 m<sup>3</sup> with the filling period extended for 11 years until 2017. Any oversight in the treatment of liquid leakage from the landfill will likely flow into the tidal flat, and thus it requires continuous management.

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#### **27. Conservation measures taken:**

a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:

In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.

1) The Ministry of Land, Transport and Maritime Affairs designated the Gochang Tidal Flat as a wetland protected area in December 2007 in recognition its retained state of nature and abundant biodiversity in the area and its high conservation value as a natural habitat for benthic life and marine life, as well as the fact that it has some threatened species, including Saunders's gull (*Larus saundersi*), Far eastern curlew (*Numenius madagascariensis*) and Whooper swan (*Cygnus cygnus*), and a host of other birds. The tidal flat is under the Ministry's management.

2) The Ministry of Land, Transport and Maritime Affairs designated the Buan Julpo Bay Tidal Flat as a Wetland Protected Area in December 2006 in recognition of its retained state of nature and its high conservation value as a natural habitat for halophytes such as reeds, *Suaeda japonica* and *Suaeda asparagoides*, as well as snipe (Scolopacidae), Red-crowned crane and White heron (Ardeidae). The Tidal Flat is under the Ministry's management.

**b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):**

Ia ; Ib ; II ; III ; IV ; V ; VI

**c) Does an officially approved management plan exist; and is it being implemented?**

The Conservation Plan for the Wetland Protected Area of the Buan Julpo Bay Tidal Flat (Gunsan Maritime Affairs and Fisheries Agency, 2007) and the Conservation Plan for the Wetland Protected Area of the Gochang Tidal Flat (Gunsan Maritime Affairs and Fisheries Agency, 2008) are established. The plans outline forming of a consultation council for the protected areas; installing information boards for the protected areas; appointing honorary wetland guides and other educational and publicity programs; monitoring of the ecosystems in the tidal flats; establishing a restoration plan for the ecology in the Gochang Tidal Flat; removal of wastes; appointing honorary watchpersons for marine pollution; and installing and operating a treatment facility for waste/polluted water.

**d) Describe any other current management practices:**

The Gunsan Maritime Affairs and Fisheries Agency undertook a monitoring program for citizens of the wetland protected area of both the Julpo Bay and Gochang Tidal Flats in 2007.

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**28. Conservation measures proposed but not yet implemented:**

e.g. management plan in preparation; official proposal as a legally protected area, etc.

Buan-gun plans to form a body of council consisting of experts on the subject for the conservation of Julpo Bay Tidal Flat.

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**29. Current scientific research and facilities:**

e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

The Ministry of Land, Transport and Maritime Affairs has selected Gochang Tidal Flat for a pilot project of restoration of tidal flat ecology, and the research project is currently underway.

Kim, Nam Won,  
Deputy Director, Marine Ecology Division, Marine Policy Bureau, Ministry of Land, Transport and Maritime Affairs  
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**30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:**

e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

The program of citizens' monitoring of the wetland protected area is currently underway, and it shall be carried out continuously.

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**31. Current recreation and tourism:**

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

280,000 visitors in 2009 and 230,000 visitors in 2010

Historic sites

- Mountain, cave trail course
- Exhibition halls and museums
- Gushipo and Dongho Beaches
- Watermelon Festival, Bokbunja Festival, Seafood Festival, etc.
- Hands-On Experience sites

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### **32. Jurisdiction:**

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

Gochang-gun (county) office and Buan-gun(county) office, share its jurisdiction

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### **33. Management authority:**

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland.  
Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

1) Management jurisdiction of Julpo Wetland Protected Area: Buan-gun, Jeollabuk-do

- Kim, Hosu
- Title: Gun Governor
- Address: Jeollabuk-do, Buan-gun, Buan-eup, Dongjung-ri 222-1, Republic of Korea
- Telephone: +82-63-580-4191
- Fax: +82-63-580-4565

2) Management jurisdiction of Gochang Wetland Protected Area: Gochang-gun, Jeollabuk-do

- Lee, Kangsu
- Title: Gun Governor
- Address: Jeollabuk-do, Gochang-gun, Gochang-eup, Jungang-ro 245, Republic of Korea
- Telephone: +82-63-564-2121
- Fax: +82-63-564-9977

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### **34. Bibliographical references:**

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

Buan-gun, 2006. Plan for Designation of Julpo Wetland Protected Area, p. 109, TR-2006-ME-005

Gochang-gun, 2007. Plan for Designation of Gochang Wetland Protected Area (Draft), p. 268

Gunsan Maritime Affairs and Fisheries Agency, 2007. Conservation Plan for the Buan Julpo Tidal Flat Wetland Protected Area

Gunsan Maritime Affairs and Fisheries Agency, 2007. The Monitoring of Marine Protected Area: Buan Julpo Bay Tidal Flat Wetland Protected Area, p. 185,

Gunsan Maritime Affairs and Fisheries Agency, 2008. Citizen's Monitoring of the Marine Protected Area, p. 188.

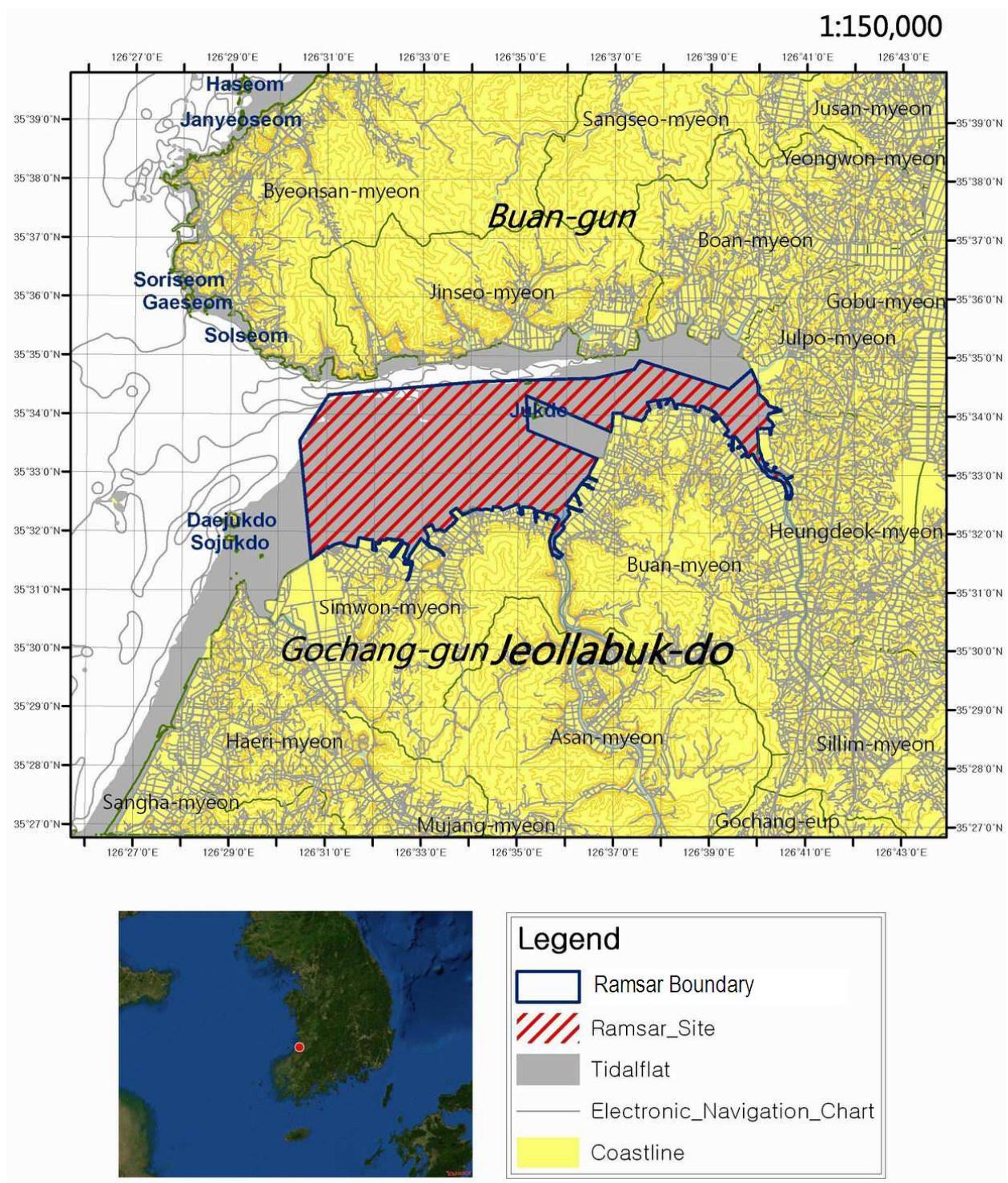
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Ministry of Land, Transport and Maritime Affairs, 2006. Research on the Tidal Flat Ecology Monitoring, p. 212, 11-1520661-000008-01.

National Institute of Biological Resources, 2009. Wintering Birds Census, pp.209-212.

Wetlands International (2006) Waterbird Population Estimates 4<sup>th</sup> edition.

**Figure 1. Gochang & Buan Tidal Flats**



**Figure 2.** Buan Julpo Bay Wetland Protected Area (green area) and Gochang Tidal Flat Wetland Protected Area (blue area) situated in the Gochang & Buan Tidal Flats Ramsar Site boundary (red hatched area)

