



RIS Form created by RSIS V.0.9  
Wednesday the 15th Apr 2015

Ramsar ID: 2209  
Country: Republic of Korea  
Designation date: 10-Jul-2014  
Publication date: 15-Apr-2015  
Official Name: Songdo Tidal Flat  
Official area (ha): 611  
Coordinates: in progress  
Number of zones: 2  
Outlines:

Songdo Tidal Flat forms part of the larger area of intertidal mudflat along the coast of Incheon City that is internationally important for as a feeding and roosting site for waterbirds at different stages of their life cycle, e.g. for ducks during the winter, and for shorebirds during spring and autumn migration. A number of the waterbirds that occur are internationally threatened, such as the endangered Black-faced Spoonbills *Platalea minor*. Other waterbirds occur at

## 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

Songdo Tidal Flat forms part of the larger area of intertidal mudflat along the coast of Incheon City that is internationally important for as a feeding and roosting site for waterbirds at different stages of their life cycle, e.g. for ducks during the winter, and for shorebirds during spring and autumn migration. A number of the waterbirds that occur are internationally threatened, such as the endangered Black-faced Spoonbills *Platalea minor*. Other waterbirds occur at

## 2 - Data & location

### 2.1 - Formal data

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

|                    |  |
|--------------------|--|
| Name               | (1)Jeong In Park, Deputy Director; (2) Dr. Inseo HWANG, Senior Researcher  |
| Institution/agency | (1)Ministry of Oceans and Fisheries; (2)Korea Marine Environment Management Corporation  |
| Postal address     | (1)Marine Environment Policy Bureau,<br>Marine Ecology Division<br>Government Complex Sejong, 5-Dong, 94,<br>Dasom2-Ro Sejong-City, 339-012, Republic of Korea<br>(2)MPA Center / Marine Environment Cooperation Team,<br>Tel : +82-2-3498-8583,<br>ishwang@koem.or.kr |
| E-mail             | jhbin@korea.kr   |
| Phone              | +82-44-200-5313  |
| Fax                | +82-44-200-53  |

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

|           |  |
|-----------|--|
| From year |  |
| To year   |  |

<no data available>

#### 2.1.3 - Name of the Ramsar Site

|   |                   |
|---|-------------------|
| Official name (in English, French or Spanish) | Songdo Tidal Flat |
| 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)

The boundary for the designation of the new Ramsar Site is the same as the existing protected area (Songdo Tidal Flat Coastal Wetland Protected Area), which is located in central part of Gyeonggi Bay, Gyeonggi Province, Republic of Korea. The 0.611km<sup>2</sup> of coastal wetland protected area was designated by Incheon City on December 31st, 2009.

### 2.2.2 - General location

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

Incheon Metropolitan City

b) What is the nearest town or population centre?

Seoul

### 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):

611

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

614.75

### 2.2.5 - Biogeography

Biogeographic regions

| Regionalisation scheme(s)             | Biogeographic region             |
|---------------------------------------|----------------------------------|
| Marine Ecoregions of the World (MEOW) | Cold Temperate Northwest Pacific |

Other biogeographic regionalisation scheme

A large, empty rectangular box with a thin black border, intended for inputting a biogeographic regionalisation scheme.

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

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

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

&lt;no data available&gt;

### 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/AVES |  <i>Anas acuta</i>                | Northern Pintail      | <input 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"/>            |              | Wintering, resting and feeding area |
| CHORDATA/AVES |  <i>Anas platyrhynchos</i>        | Mallard               | <input type="checkbox"/>            | <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"/>            |              | Wintering, resting and feeding area |
| CHORDATA/AVES |  <i>Anas poecilorhyncha</i>       | Spot-billed Duck      | <input 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"/>            |              | Wintering, resting and feeding area |
| CHORDATA/AVES |  <i>Aythya ferina</i>             | Common Pochard        | <input 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"/>            |              | Wintering, resting and feeding area |
| CHORDATA/AVES |  <i>Calidris alpina</i>           | Dunlin                | <input 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"/>            |              | Wintering, resting and feeding area |
| CHORDATA/AVES |  <i>Calidris tenuirostris</i>     | Great Knot            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |           |                     |              | VU  | <input type="checkbox"/> | <input type="checkbox"/>            |              |                                     |
| CHORDATA/AVES |  <i>Numenius madagascariensis</i> | Far Eastern Curlew    | <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 type="checkbox"/> | <input checked="" type="checkbox"/> |              | Wintering, resting and feeding area |
| CHORDATA/AVES |  <i>Platalea minor</i>            | Black-faced Spoonbill | <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"/> |           |                     |              | EN  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |              | Wintering, resting and feeding area |

Criterion 2: *Saundersilarus saundersi*, Saunder's Gull - VU

Criterion 4: Eurasian Oystercatcher, *Haematopus ostralegus* - wintering, resting and feeding area

For the past 5 years, the Ministry of Environment of Korea performed Simultaneous Census Survey of birds in winter time, and the results showed a cumulative 22,471 birds of 65 species inhabited in Songdo Tidal Flat, with 1,220 of 37 species in January of 2009, 5,168 of 27 species in January of 2010, 11,160 of 17 species in January of 2011, 2,801 of 24 species in January of 2012, and 2,122 of 24 species in January of 2013 (Ministry of Environment, 2010; 2011; 2012; 2013).

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



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

### 4.1 - Ecological character

Songdo Tidal Flat is the place for intermediate visit where the birds, which migrate along the route between East Asia and Australia, temporarily stay for rest and feeding while moving to the wintering area in Australia and New Zealand after breeding in Tundra area of Siberia and grass area of Mongolia. In spring and autumn, mainly Eurasian Oystercatcher (*Haematopus ostralegus*), Kentish Plover (*Charadrius alexandrinus*), Lesser Sand Plover (*Charadrius mongolus*), Bar-tailed Godwit (*Limosa lapponica*), Great Knot (*Calidris tenuirostris*), and Dunlin (*Calidris alpina*) were eating feeds or resting. The area of Songdo Tidal Flat has once been an immense mud flat with width of 6-7km with high biological varieties and primary and secondary production (Yoo, 1998). More than 200 species of macrobenthic animal lived in this habitat with total average biomass (wet weight) of about 300g/m<sup>2</sup> and maximum value as high as 2kg/m<sup>2</sup> has been recorded in the unit of investigation station (Yoo, 1998).

The upper zone of the tidal flat is brachyuran zone which, unlike Europe or America, is uniquely found in Asia, having high variety of crabs of *Macrophthalmus japonicus*, and *Ilyoplax pingi* inhabiting in the area with large portion of density and biomass in the community. These are known to be important prey species for water birds. The middle zone of the tidal flat is molluscan zone in which bivalves, *Solen strictus*, gastropods, *Umboonium thomasi* are dominant, the former being one of important industrial species. The lower zone of the tidal flat is holothurians zone which can be characterized by the habitat of sea cucumbers, *Protankyra bidentata*, with communities showing high variety of living organisms. These zonation patterns observed in Songdo Tidal Flat have been compared with intervals of about 10 years, which showed stable maintenance during the period (Hong and Yoo, 2001).

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

Marine or coastal wetlands

| Wetland types (code and name)         | Local name | Ranking of extent (1: greatest - 4: least) | Area (ha) of wetland type | Justification of Criterion 1 |
|---------------------------------------|------------|--|---------------------------|------------------------------|
| G: Intertidal mud, sand or salt flats |            | 1  |                           |                              |

Habitat connectivity

### 4.3 - Biological components

#### 4.3.1 - Plant species

Other noteworthy plant species

| Scientific name              | Common name | Position in range / endemism / other |
|------------------------------|-------------|--------------------------------------|
| <i>Calystegia soldanella</i> |             |                                      |
| <i>Plantago camtschatica</i> |             |                                      |
| <i>Spargularia salina</i>    |             |                                      |
| <i>Spinacia oleracea</i>     |             |                                      |
| <i>Suaeda maritima</i>       |             |                                      |

#### 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>Falco peregrinus</i>     | Peregrine Falcon    |           |                     |              |                                   |
| CHORDATA/AVES | <i>Haliaeetus albicilla</i> | White-tailed Eagle  |           |                     |              |                                   |
| CHORDATA/AVES | <i>Limosa limosa</i>        | Black-tailed Godwit |           |                     |              |                                   |
| CHORDATA/AVES | <i>Numenius arquata</i>     | Eurasian Curlew     |           |                     |              |                                   |

### 4.4 - Physical components

#### 4.4.1 - Climate

Average air temperature: 12.7 degrees C  
Annual precipitation: 1,303mm

#### 4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres) -1

a) Maximum elevation above sea level (in metres) 8

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.

#### 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)

Surface sediment of Songdo tidal flat is dominated by mud and silt. There are four types of sedimentary facies at the western part including silt (Z), sandy silt (sZ), sandy mud (sM) and muddy sand (mS). The proportion of gravel, sand, silt and mud content is 0.2%, 26.0%, 65.1% and 8.7%, respectively. At the eastern part, there are six types of sedimentary facies including silt (Z), sandy mud (sM), sandy silt (sZ), mud (M), slightly gravelly sandy mud ((g)mS) and gravelly muddy sand (gmS). The proportion of gravel, sand, silt and mud content is 1.0%, 19.3%, 60.7% and 19.0% respectively.

#### 4.4.4 - Water regime

Water permanence

| Presence?   | Changes at RIS update |
|---|-----------------------|
| Usually seasonal, ephemeral or intermittent water present | No change             |

Source of water that maintains character of the site

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

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

Seunggicheon River flows across northwest area of Songdo Tidal Flat, the river water flows into the tidal flat through Namdong retarding basin. The aggregate length of all the tributaries as well as the river Seunggicheon is 10.33km with adjacent area of 26.08km<sup>2</sup>.

Connectivity of surface waters and of groundwater

Stratification and mixing regime

#### 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

Please provide further information on sediment (optional):

The sources of sediment are the Han River and adjacent water

Water turbidity and colour

Light - reaching wetland

Water temperature

#### 4.4.6 - Water pH

Acid (pH

Circumneutral (pH: 5.5-7.4 )

Alkaline (pH>7.4)

Unknown

Please provide further information on pH (optional):

#### 4.4.7 - Water salinity

- Fresh (  )
- Mixohaline (brackish)/Mixosaline (0.5-30 g/l)
- Euhaline/Eusaline (30-40 g/l)
- Hyperhaline/Hypersaline (>40 g/l)
- Unknown

Please provide further information on salinity (optional):

Salinity (psu): 24.1±1.7 (mean 29.8)

Dissolved gases in water

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

- Eutrophic
- Mesotrophic
- Oligotrophic
- Dystrophic
- Unknown

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

Dissolved Oxygen (mg/L): 6.4±5.4 (mean 9.4)  
Chemical Oxygen Demand – COD (mg/L): 1.2±3.8 (mean 1.75)  
Suspended Solids – SS (mg/L): 3.3±0.0 (mean 18.1)  
Chl.a (µg/L): 0.2±4.9 (mean 7.5)

Dissolved organic carbon

Redox potential of water and sediments

Water conductivity

#### 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:

The coast of Incheon, in which Songdo Tidal Flat is located, is a river mouth of coastal plain with a complicated shoreline, and about 170 large and small islands scattered including Ganghwado, Seokmodo and Yeongjongdo. Large scale intertidal zones are developed around the islands due to tides, and immense mud flats extend by deposits of fine sediments from the land and ocean.

In the northeast, Mt. Cheongryang (150m) and Mt. Munhak (213m) are developed without specific orientations with local hills, and in the east area, unnamed low hills are developed to the north and south direction centering around Mt. Obong (105m).

Regarding macroscopic geological characteristics of Songdo Tidal Flat, there are metamorphic rocks of precambrian era, igneous rocks of Jurassic Period of Mesozoic era, volcanic rocks of Cretaceous period, and alluvium layers of the 4th period.

Direction of winds varies a lot locally. Monsoons blow from the southwest in summer and from the north in winter.

## 4.5 - Ecosystem services

### 4.5.1 - Ecosystem services/benefits

#### Provisioning Services

| Ecosystem service | Examples   | Importance/Extent/Significance |
|-------------------|--|--------------------------------|
| Food for humans   | Sustenance for humans (e.g., fish, molluscs, grains) | Low                            |

#### Regulating Services

| Ecosystem service  | Examples                              | Importance/Extent/Significance |
|--------------------|---------------------------------------|--------------------------------|
| Erosion protection | Soil, sediment and nutrient retention | High                           |

#### Cultural Services

| Ecosystem service           | Examples                  | Importance/Extent/Significance |
|-----------------------------|---------------------------|--------------------------------|
| Spiritual and inspirational | Inspiration               | Medium                         |
| Scientific and educational  | Long-term monitoring site | Low                            |

Other ecosystem service(s) not included above:

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
- 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

|   |                      |
|---|----------------------|
| Primary production  | <input type="text"/> |
| Nutrient cycling  | <input type="text"/> |
| Carbon cycling  | <input type="text"/> |
| Animal reproductive productivity  | <input type="text"/> |
| Vegetational productivity, pollination, regeneration processes, succession, role of fire, etc.  | <input type="text"/> |
| Notable species interactions, including grazing, predation, competition, diseases and pathogens | <input type="text"/> |

Notable aspects concerning animal and plant dispersal

Notable aspects concerning migration

Pressures and trends concerning any of the above, and/or concerning ecosystem integrity



## 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"/>            |
| Provincial/region/state government | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

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

#### 5.1.2 - Management authority

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

Marine and Islands Policy Division

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

Inkuen HWANG, Deputy Director

Postal address: 29, Jeonggak-ro, Namdong-gu, Incheon, Republic of Korea (ZIP: 405-750)

E-mail address:

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

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

## Agriculture and aquaculture

| Factors adversely affecting site  | Actual threat | Potential threat | Within the site | In the surrounding area |
|-----------------------------------|---------------|------------------|-----------------|-------------------------|
| Marine and freshwater aquaculture |               | Low impact       | No change       | No change               |

## Transportation and service corridors

| Factors adversely affecting site | Actual threat | Potential threat | Within the site | In the surrounding area |
|----------------------------------|---------------|------------------|-----------------|-------------------------|
| Roads and railroads              |               | Medium impact    | No change       | No change               |

## Natural system modifications

| Factors adversely affecting site | Actual threat | Potential threat | Within the site | In the surrounding area |
|----------------------------------|---------------|------------------|-----------------|-------------------------|
| Unspecified/others               |               | Medium impact    | No change       | No change               |

Please describe any other threats (optional):

Planned for deposits for spoil soils, and fishing licenses have been requested by fishermen of Yeonsu-gu. The coastal fishing license is permitted for people lives in their area by the local government base on ' Public Waters Management Act ' and ' Fisheries Law ' .

## 5.2.2 - Legal conservation status

## National legal designations

| Designation type               | Name of area                                     | Online information url | Overlap with Ramsar Site |
|--------------------------------|--|------------------------|--------------------------|
| Coastal Wetland Protected Area | Songdo Tidal Flat Coastal Wetland Protected Area |                        | whole                    |

## 5.2.3 - IUCN protected areas categories (2008)

Ia Strict Nature Reserve

Ib Wilderness Area: protected area managed mainly for wilderness protection

II National Park: protected area managed mainly for ecosystem protection and recreation

III Natural Monument: protected area managed mainly for conservation of specific natural features

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

V Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation

VI Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems

### 5.2.4 - Key conservation measures

Legal protection

| Measures         | Status      |
|------------------|-------------|
| Legal protection | Implemented |

Other:

### 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

Please indicate if a Ramsar centre, other educational or visitor facility, or an educational or visitor programme is associated with the site:

URL of site-related webpage (if relevant):

### 5.2.6 - Planning for restoration

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

<no data available>

### 5.2.7 - Monitoring implemented or proposed

## 6 - Additional material

### 6.1 - Additional reports and documents

#### 6.1.1 - Bibliographical references

Baird, D., P. R. Evans, H. Milne and M. W. Pienkowski, 1985. Utilization by shorebirds of benthic invertebrates production in intertidal areas. *Oceanogr. Mar. Biol. Ann. Rev.*, 23: 573-597.

Frey, R.W., J. S., Hong, J. D. Howard, B. K., Park and S. J. Han, 1987. Zonation of benthos on a macrotidal flat, Incheon, Korea. *Senckenbergiana marit.*, 19: 295 - 329.

Hong, J. S. and J. W. Yoo, 2001. A revisit on zonal macrobenthic communities in Chokchon tidal flat, Incheon, Korea, after the survey in 1986. *J. Korean Soc. Oceanogr.*, 36: 83-92.

Incheon City, 2008. Prior review of environmental impact of reclamation of public waters in 11th construction area of Songdo.

Incheon City, 2009. Notification of designation for wetland preservation area of Songdo Tidal Flat.

Incheon Free Economic Zone Authority, 2009. Study for establishing alternative habitats for preserving habitat environment of wild birds, p 289.

Kim, Y. S., 1983. A textural study of the intertidal flat sediments along the Southern Incheon Coast. *Proceedings of College of education in Kongju Nat. Univ.*, 21: 113-122.

Koh, C. H. and H. C. Shin, 1988. Environmental characteristics and distribution of macrobenthos in a mudflat of the west coast of Korea (Yellow Sea). *Neth. Jour. Sea Res.*, 22: 279-290.

KORDI, 1981. Coastal marine environments (marine geology of the Bay of Gyunggi). BSPE00029-52-5, Korean Ocean Research and Development Institute, 226 pp. (in Korean)

Kuifpers, B. R., P. A. W. J. de Wilde and F. Creutzberg, 1981. Energy flow in a tidal flat ecosystem. *Mar. Ecol. Prog. Ser.*, 5: 215-221.

MLTM, 2009. Annual Report on Marine Environment Monitoring in Korea 2009.

MLTM, 2010. Annual Report on Marine Environment Monitoring in Korea 2010.

MLTM, 2011. Annual Report on Marine Environment Monitoring in Korea 2011.

MLTM, 2012. Annual Report on Marine Environment Monitoring in Korea 2012.

MOE, 2009. Simultaneous Census of birds in winter time, Ministry of Environment.

MOE, 2010. Simultaneous Census of birds in winter time, Ministry of Environment.

Complete list of references can be found under the document: [KRIit1502](#)

#### 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

<1 file(s) uploaded>

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

Please provide at least one photograph of the site:



Default picture ( Ramsar,  
01.01.1900)

### 6.1.4 - Designation letter and related data

Designation letter

<1 file(s) uploaded>

Date of Designation