Outstanding Universal Values of the Island-type Tidal-flats of Korea: Their potential to be nominated as a World Heritage site

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Secretary-General / The World Heritage Promotion Team of Korea Tidal Flats
Contents

• What is a World Heritage?
• Location and scenic values
• Geological & ecological values
• Comparison with the Wadden Sea WH site
• Management plan
• Future plan for collaboration
World Heritages

Cultural heritage; Potala Palace

Cultural heritage; Changdeok Palace

Natural heritage; Stone Forest

Mixed heritage; Uluru-Kata Tjuta National Park
World Heritage Site

• Outstanding Universal Value (OUV)
• The best of the best
• Integrity
  – Natural integrity
  – Integrity for conservation
• Ongoing management and management plan
• WH sites in danger!

Suncheon Tidal Flat
Criteria to be inscribed…

- Criterion (vii): Superlative natural phenomena or natural beauty and aesthetic importance (beautiful)
- Criterion (viii): Earth’s history and geological features
- Criterion (ix): Ecological processes
- Criterion (x): Biodiversity and presence of threatened species
How is an ‘OUV’ evaluated?

• By thorough comparative analysis..
• Comparison with present world heritage sites
• Also with other sites with similar geological and/or geomorphological characteristics

• What is new?
• What is better?
• Justification as a World Heritage
Yuboodo Island
(appx. 78㎢)

Gochang Area
(appx. 80㎢)

Shinan Archipelago
(appx. 1,023㎢)

Diversity of Island-type Tidal-flats
- Archipelago Type: Shinan
- Estuary Type: Yubooioo
- Bay Type: Gochang, Boseong, Suncheon

Boseong-Suncheon Area
Boseong: appx. 38㎢
Suncheon: appx. 37㎢

Location of the Korean Island-type Tidal Flats
Breathtaking Landscapes of ITF
The only tidal flat WH site
- The Wadden Sea
Geological & Geomorphological Features

Island-type Tidal-flat (ITF)

Wadden Sea Tidal-flat (WSTF)
Comparison of sedimentary facies

Wadden Sea

Shinan Archipelago
Comparison of Sedimentation Form

Wadden Sea Tidal-flat (WSTF)

Island-type Tidal-flat (ITF)

Chenier Area

Barrier island

sandy & mixed tidal flats

Sandy tidal flat

Mixed tidal flat

Rocky island

Mixed tidal flat

Mud tidal flat
Comparison of Oxidized Layer

Wadden Sea Tidal-flat (WSTF) vs. Island-type Tidal-flat (ITF)
Comparison of Biodiversity

**Primary Production**
- **Wadden Sea tidal flat**
  - Wadden Sea MPB production: 200 g C m⁻² yr⁻¹
- **Island-type tidal flat**
  - a daily productivity of ca. 1 000 mg C m⁻² d⁻¹ from a mudflat in the Gyeonggi Bay (Kwon et al., 2014)
  - An annual microphytobenthos production of 546.15 g C m⁻² yr⁻¹ from a sand flat in Nakdong estuary (Du and Chung, 2009)
  - the top levels of MPBs primary production in the world

**Microphytobenthos**
- 260 species of microphytobenthos
- 371 taxa and 23 *Amphora* species with new records of 3 species in the Saemangeum tidal flat (Park and Koh, 2012)
- Park et al. (2012, 2013) established a new diatom genus, *Moreneis*, together with description of four new *Fogedia* species indicating a hidden floral diversity of the Korean tidal flat

**Macrozoobenthos**
- 400 macrobenthic species
- a total of 624 species for macrozoobenthos species in the West Sea (Park et al., 2014)
Korean tidal flats
Flyways and Migratory Birds

- Euro-African Flyway
- East Asian-Australasian Flyway

Migratory Bird in ITF

- Shinan Archipelago: 377 species / 300,000 birds per year
- Yuboodo Island: 56 species / 40,000 birds per year
- Boseong-Suncheon: 166 species / 140,000 birds per year
Endangered Migratory Birds

IUCN RED LIST

CR: Spoon-billed Sandpiper

EN: Black-faced Spoonbill
Nordmann’s Greenshank

VU: Chinese Egret
Saunders’s Gull
Hooded Crane

Legally Protected Species

- Grey Plover
- Lesser Sand Plover
- Greater Sand Plover
- Eurasian Curlew
- Eastern Curlew
- Terek Sandpiper
- Gray-tailed Tattler
- Ruddy Turnstone
- Red Knot
- Great Knot
- Curlew Sandpiper
- Bar-tailed Godwit

Extinction
## Types of Tidal Flats

Coastal wetland of Korean coastal line mostly consists of tidal flats and the tidal flats would best represent the coastal wetland in Korea.

<table>
<thead>
<tr>
<th>Sand Flat</th>
<th>Mud Flat</th>
<th>Mixed Flat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand dune or/and sea grass bed</td>
<td>Salt marsh</td>
<td>High Production</td>
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</table>

(After Je, J. G.)
Korean tidal flats
- Substrate control

- Different fauna & flora
- Different migratory birds
Korean tidal flats

Seocheon sandy tidal flats

Shinan muddy tidal flats

Black faced spoonbill
*(Platalea minor)*

Dunlin (*Calidris alpina*)
Criteria to be nominated

- Criterion (vii): Superlative natural phenomena or natural beauty and aesthetic importance (?)
- Criterion (viii): Earth’s history and geological features
- Criterion (ix): Ecological processes
- Criterion (x): Biodiversity and presence of threatened species
Management Plan

- Protection and management structure
- Science research plan
- Monitoring of the sites
- Education facilities and programs
- Promotion
- Rehabilitation plan
Protection

- Cultural Heritage Protection Act
- Wetland Protection Act
Monitoring

- Ecological monitoring
  - Migratory birds
  - Invertebrates and vegetation
  - Economic balance with fishery
- Geological monitoring
- Monitoring of infrastructure
- Monitoring of visitor pressure
- Development of monitoring indicators
Development of educational tourism

Separate educational programs should be developed for individual, guided and mass tourism
World Heritage Tidal Flat Center

• Tourist information
• Scientific research and monitoring
• Management of educational tourism
• Interactive display
• Souvenir shop for sustainable local development

• 40 million US dollars!
World heritage center and visitor centers

Tidal Flat World Heritage Center

- Sinan Visitor Center
  - Visitor Point
- Seocheon Visitor Center
  - Visitor Point
- Gochang Visitor Center
  - Visitor Point
- Yeojaman Visitor Center
  - Visitor Point

Visitor Point
Education for local residents
Promotion through international meetings
Other promotion measures

• Pamphlets
• Films
• Homepage
Harmony between ‘nature and people’
A Model of Geo-Bio-Cultural Diversity

Human activities have become a part of nature during the past 2,000 years!
Future plans for Republic of Korea

• Justification of OUV’s and more comparative analysis by December 2016
• Establishment of site protection measures by Oct. 2016
• Establishment of management plan by 2016
• The draft for nomination dossier by Dec. 2016
• Revision of the draft by Dec. 2017
• Submission to UNESCO by Feb. 2018
• Collaboration with China and N. Korea from 2017
Future collaboration in Yellow Sea

Phase I: Nomination of the tidal flats in South Korea and China
Phase II: North Korea
Future collaboration in Yellow Sea

Phase I: Nomination of South Korea’s tidal flats
Phase II: China
Phase III: North Korea
Positive Effects

- Better conservation of the tidal flats in Yellow Sea
- Better conservation of significant portion of the habitats for migratory birds
- Decrease in development pressure in China and Korea, e.g., buildings, wind turbines, etc.
- Better political situation between South and North Korea?
Thank you!