



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

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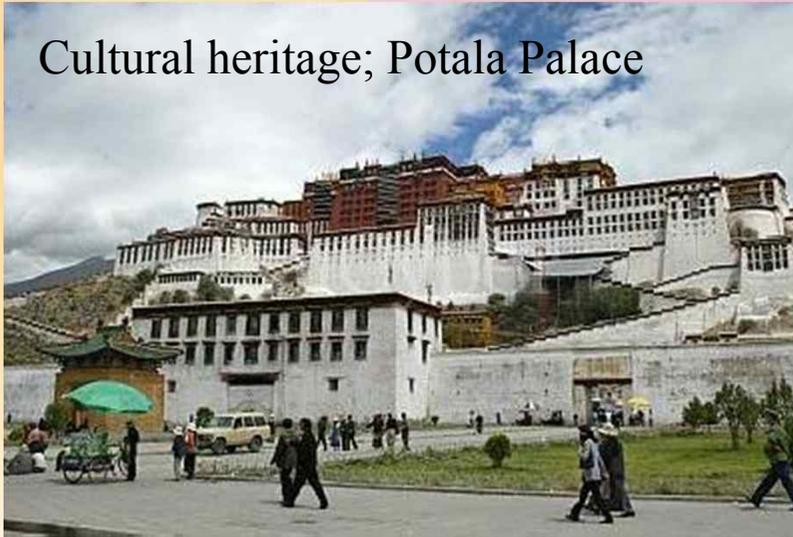
- What is a World Heritage?
- Location and scenic values
- Geological & ecological values
- Comparison with the Wadden Sea WH site
- Management plan
- Future plan for collaboration



2010, China Danxia

World Heritages

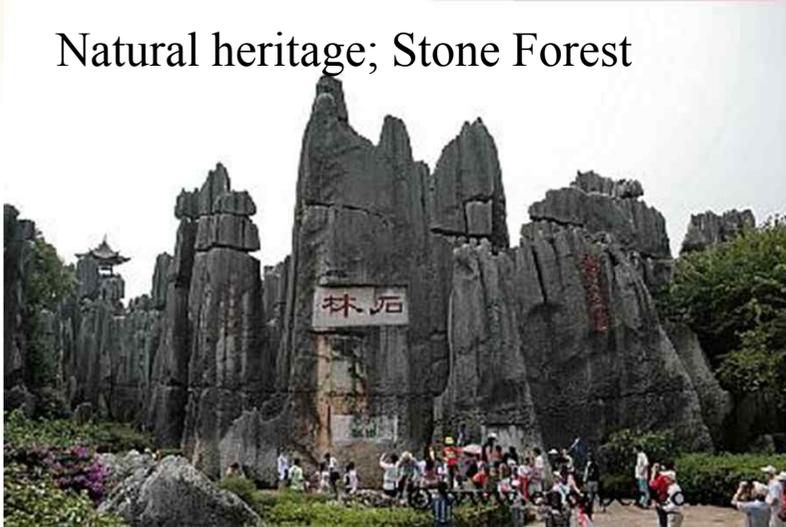
Cultural heritage; Potala Palace



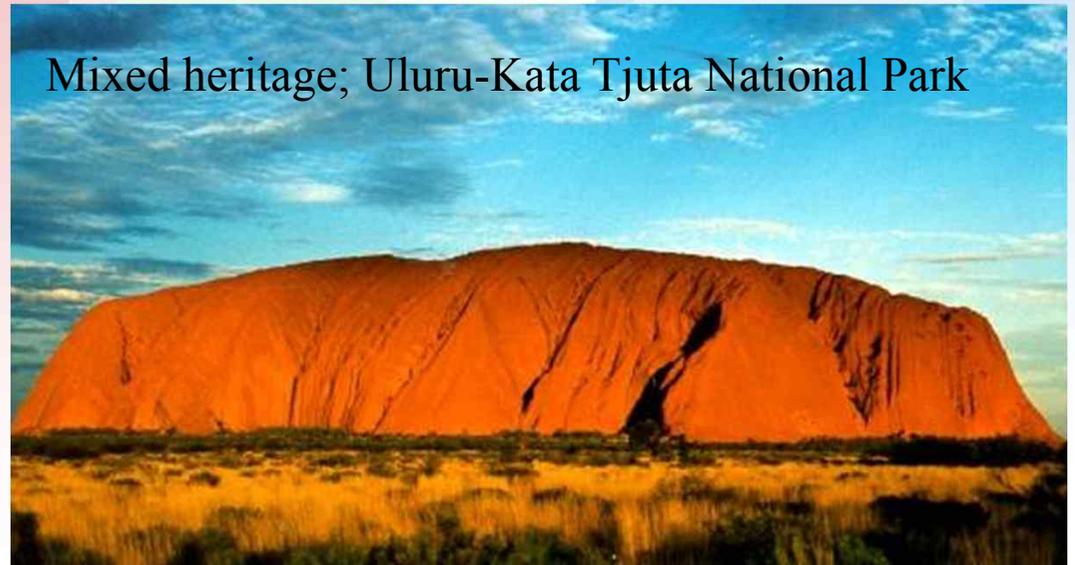
Cultural heritage; Changdeok Palace



Natural heritage; Stone Forest



Mixed heritage; Uluru-Kata Tjuta National Park





United Nations
Educational, Scientific and
Cultural Organization

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

Location of the Korean Island-type Tidal Flats





The only tidal flat WH site - The Wadden Sea



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Geological & Geomorphological Features

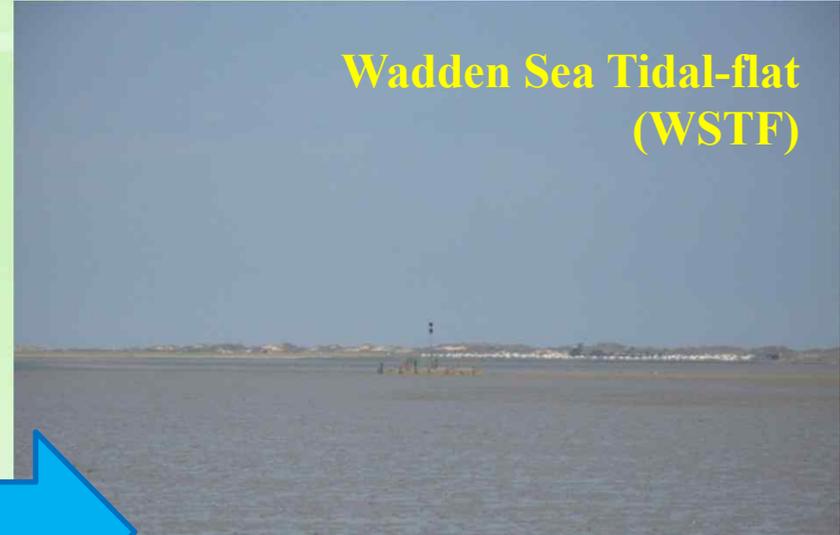
Island-type Tidal-flat (ITF)



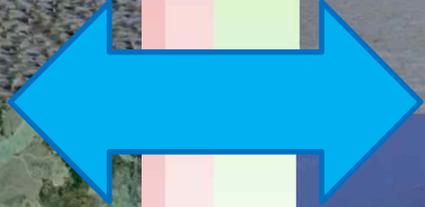
ITF

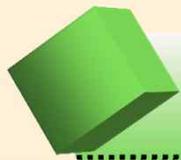


Wadden Sea Tidal-flat (WSTF)



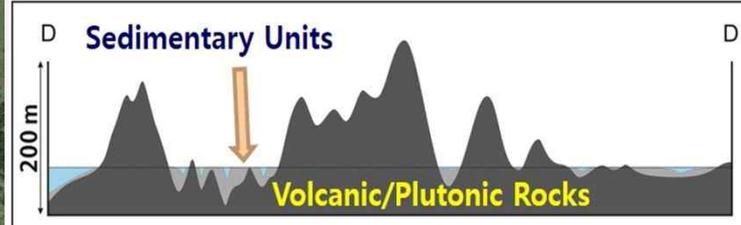
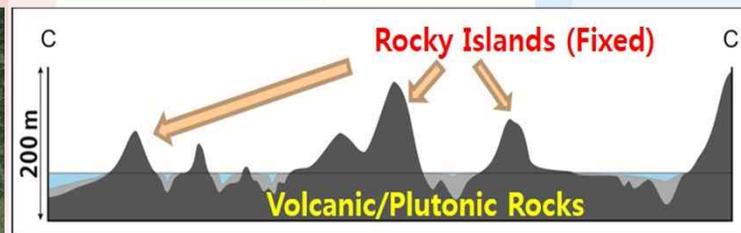
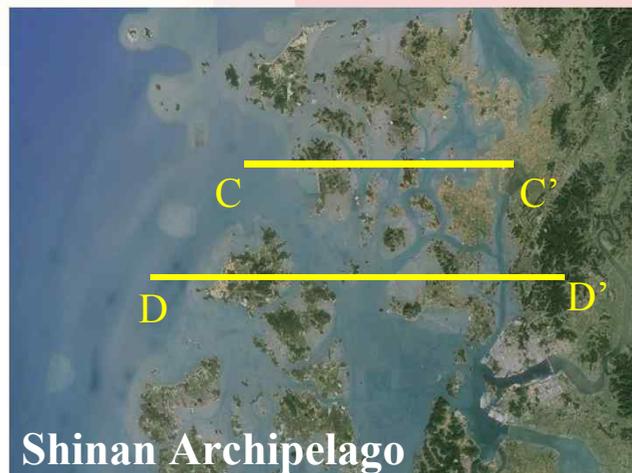
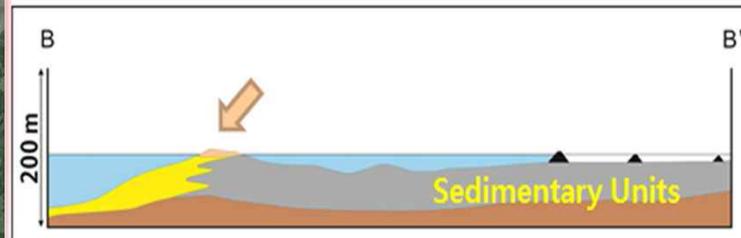
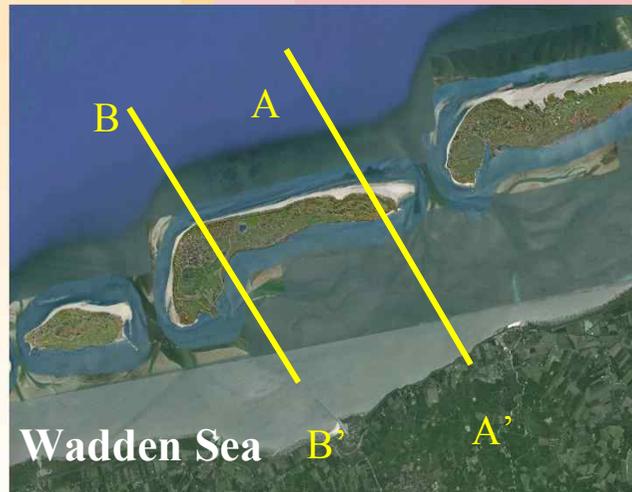
WSTF





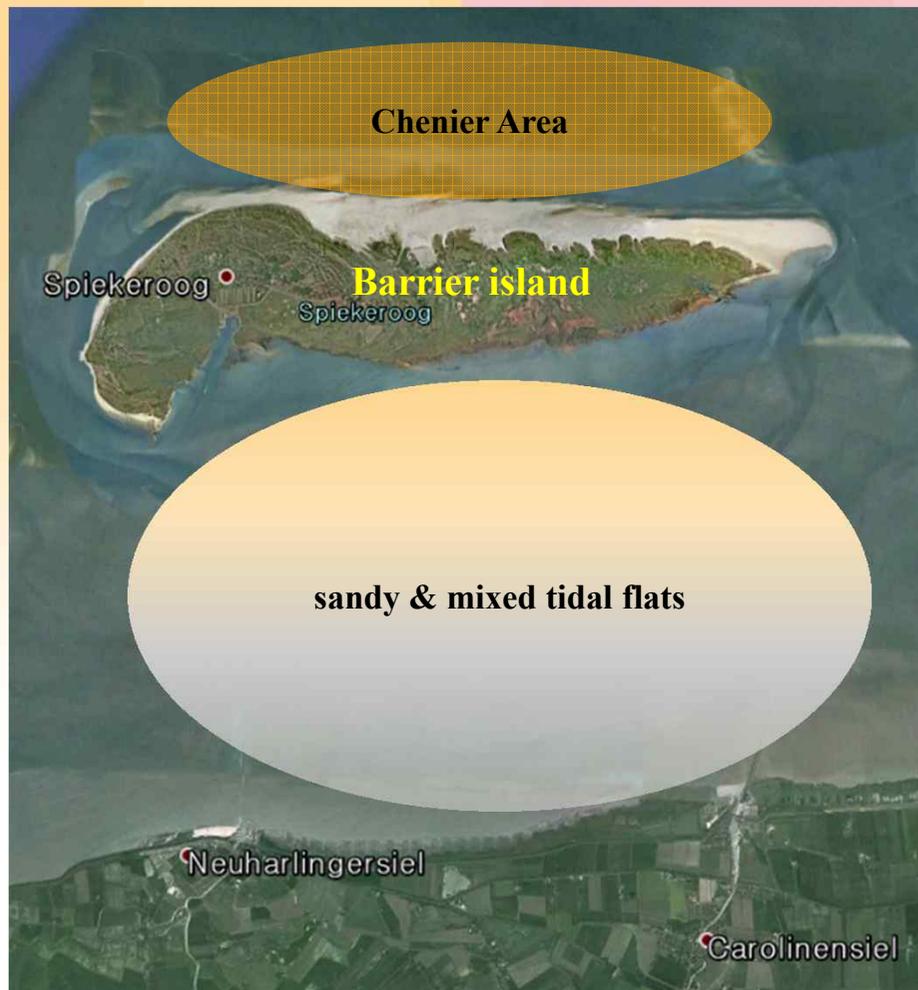
Geological & Geomorphological Features

Comparison of sedimentary facies

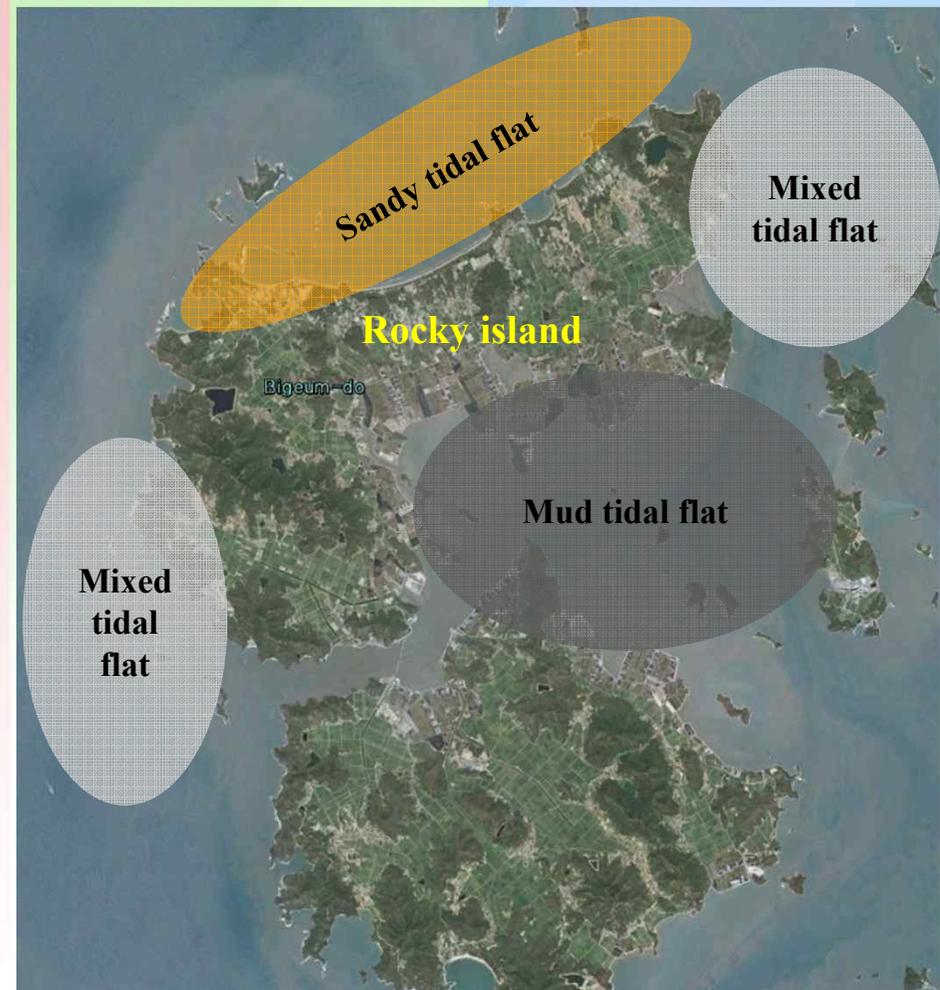


Comparison of Sedimentation Form

Wadden Sea Tidal-flat (WSTF)



Island-type Tidal-flat (ITF)



Comparison of Oxidized Layer

Wadden Sea Tidal-flat (WSTF)



Island-type Tidal-flat (ITF)



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Ecological Features

Comparison of Biodiversity

Wadden Sea tidal flat

Primary Production

Wadden Sea MPB production:
200 g C m⁻² yr⁻¹

Microphytobenthos

260 species of
microphytobenthos

Macrozoobenthos

400 macrobenthic species

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**

- **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

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**
- **Yubodo 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

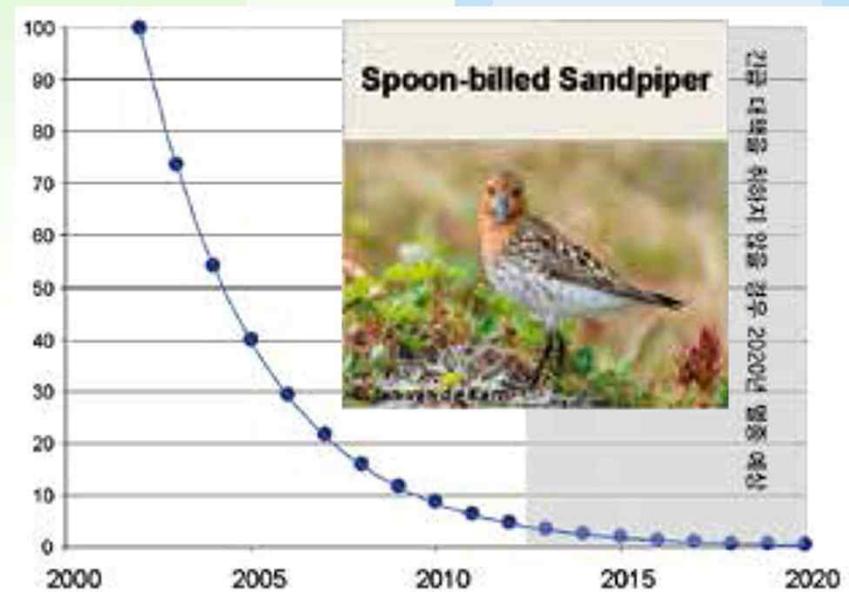
EN : Black-faced Spoonbill
Nordmann's Greenshank

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

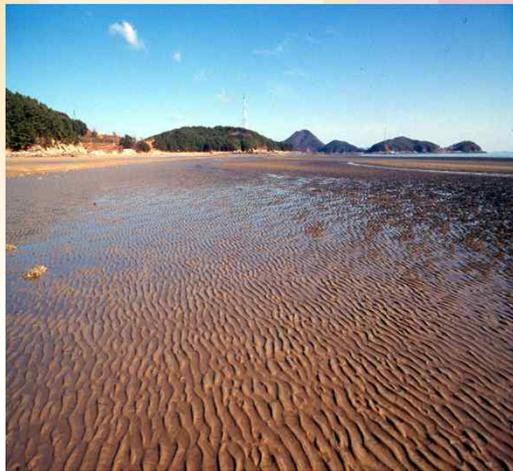


Extinction

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.

Sand Flat



Sand dune or/and
sea grass bed

Mud Flat



Salt marsh

Mixed Flat



High
Production

(After Je, J. G.)

Korean tidal flats

- Substrate control

- Different fauna & flora



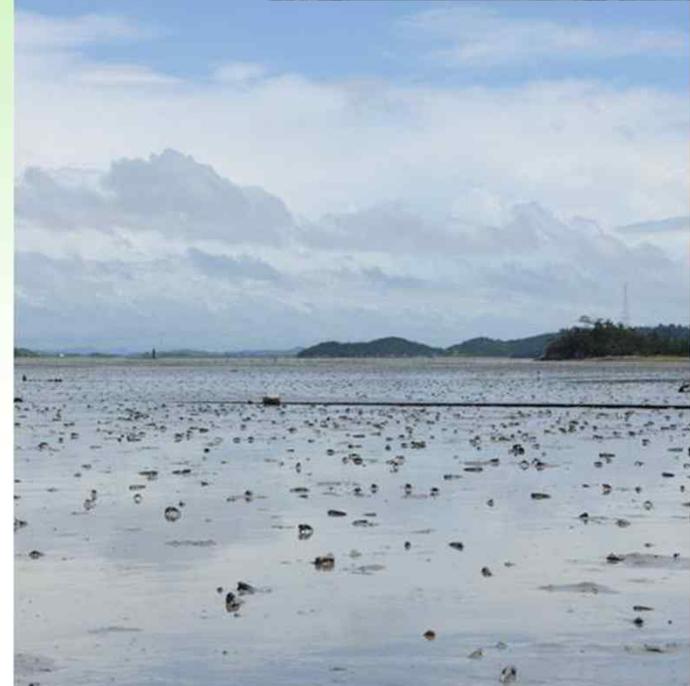
- Different migratory birds



Korean tidal flats



Seocheon tidal flats
Sandy tidal flat



Shinan tidal flats
Muddy tidal flat

Korean tidal flats

Seocheon sandy tidal flats



Black faced spoonbill
(Platalea minor)

Shinan muddy tidal flats



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

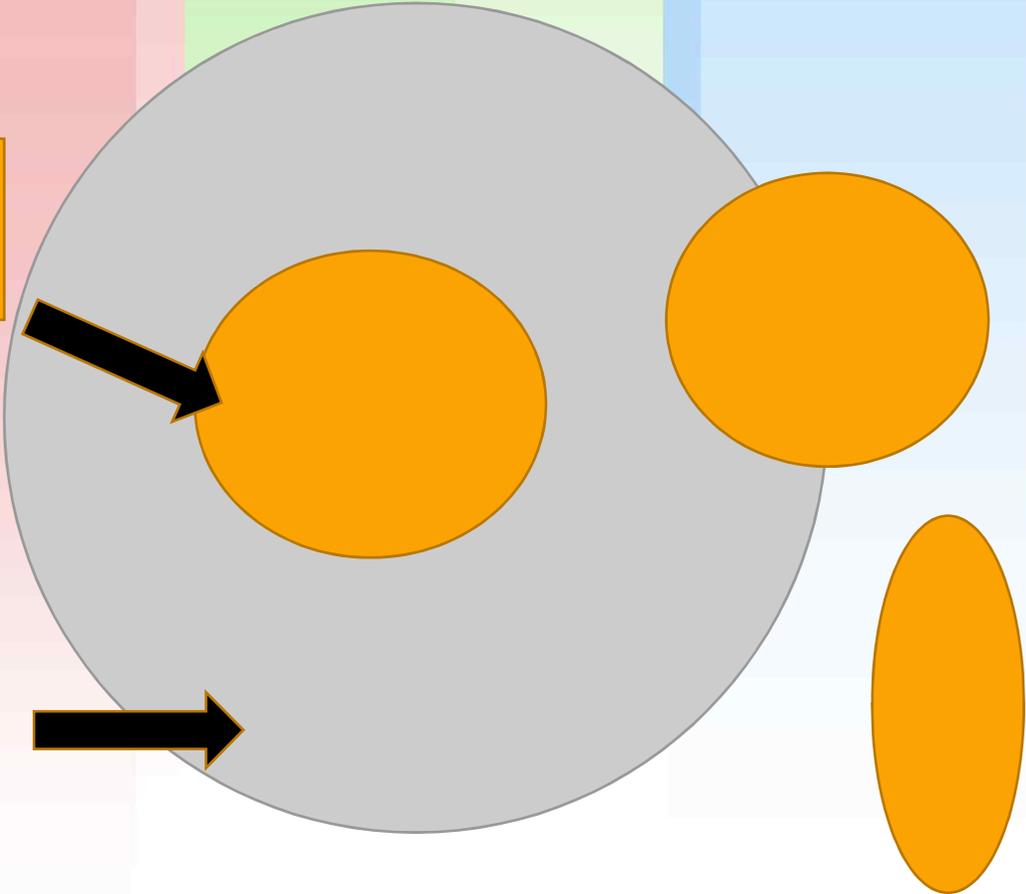


Protection

- Cultural Heritage Protection Act
- Wetland Protection Act

Core zone

Buffer zone



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



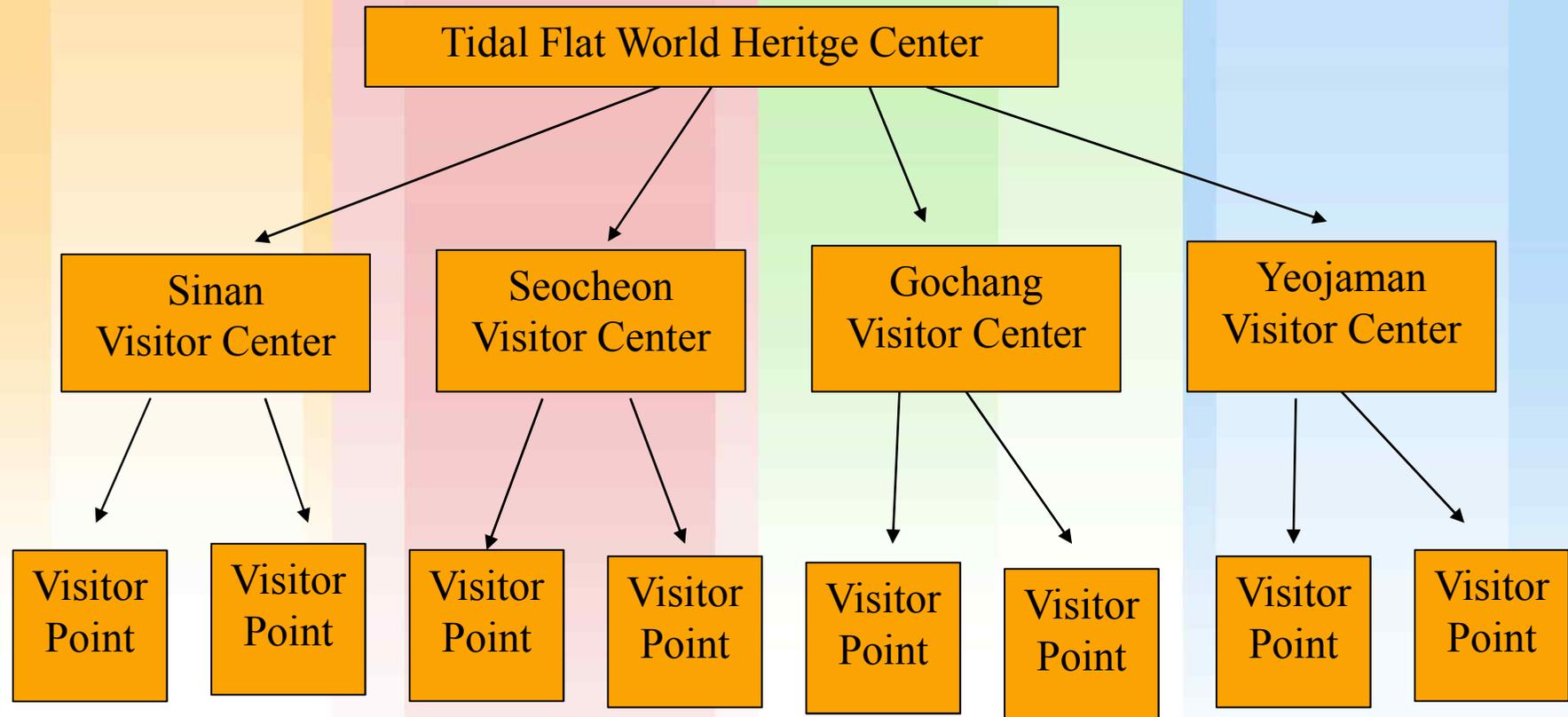
Separate educational programs should be developed for individual, guided and mass tourism

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!**



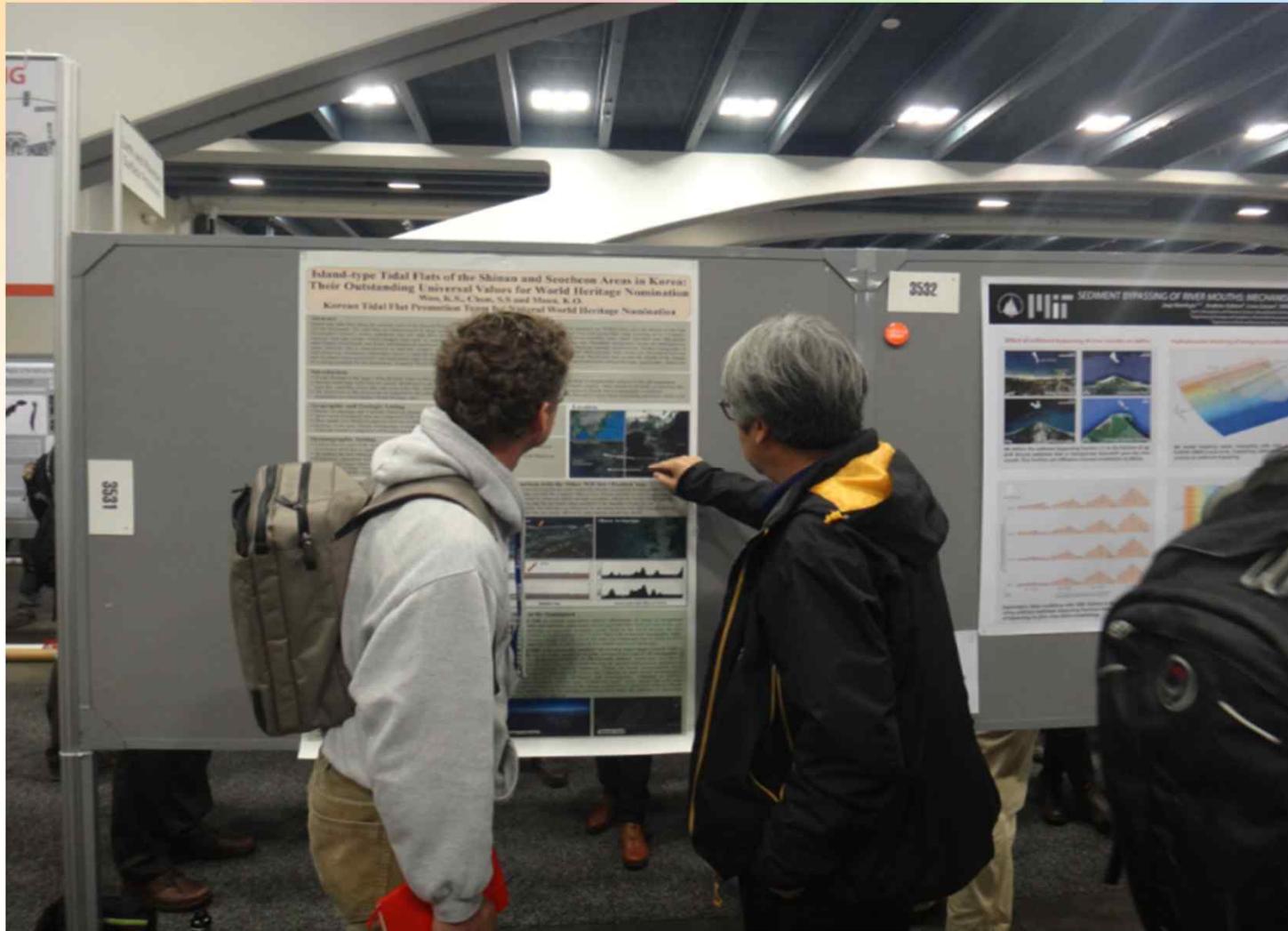
World heritage center and visitor centers



Education for local residents



Promotion through international meetings



Other promotion measures

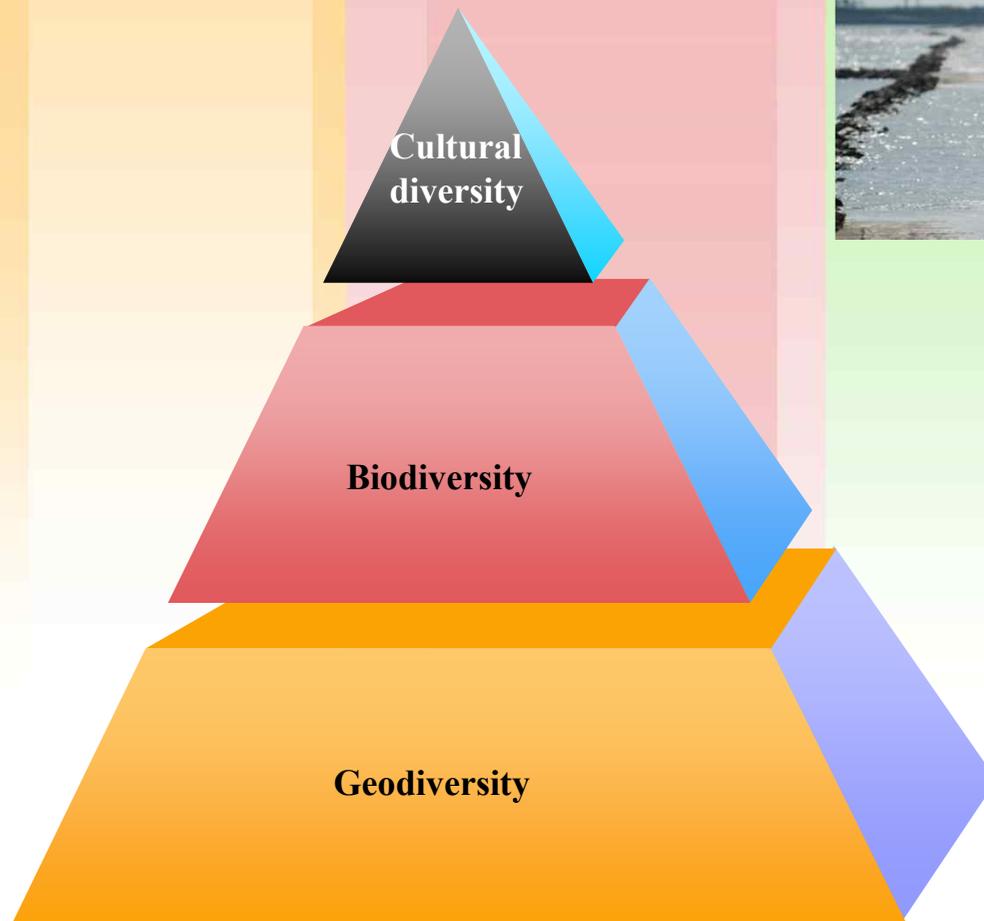
- Pamphlets
- Films
- Homepage



Harmony between 'nature and people'



A Model of Geo-Bio-Cultural Diversity

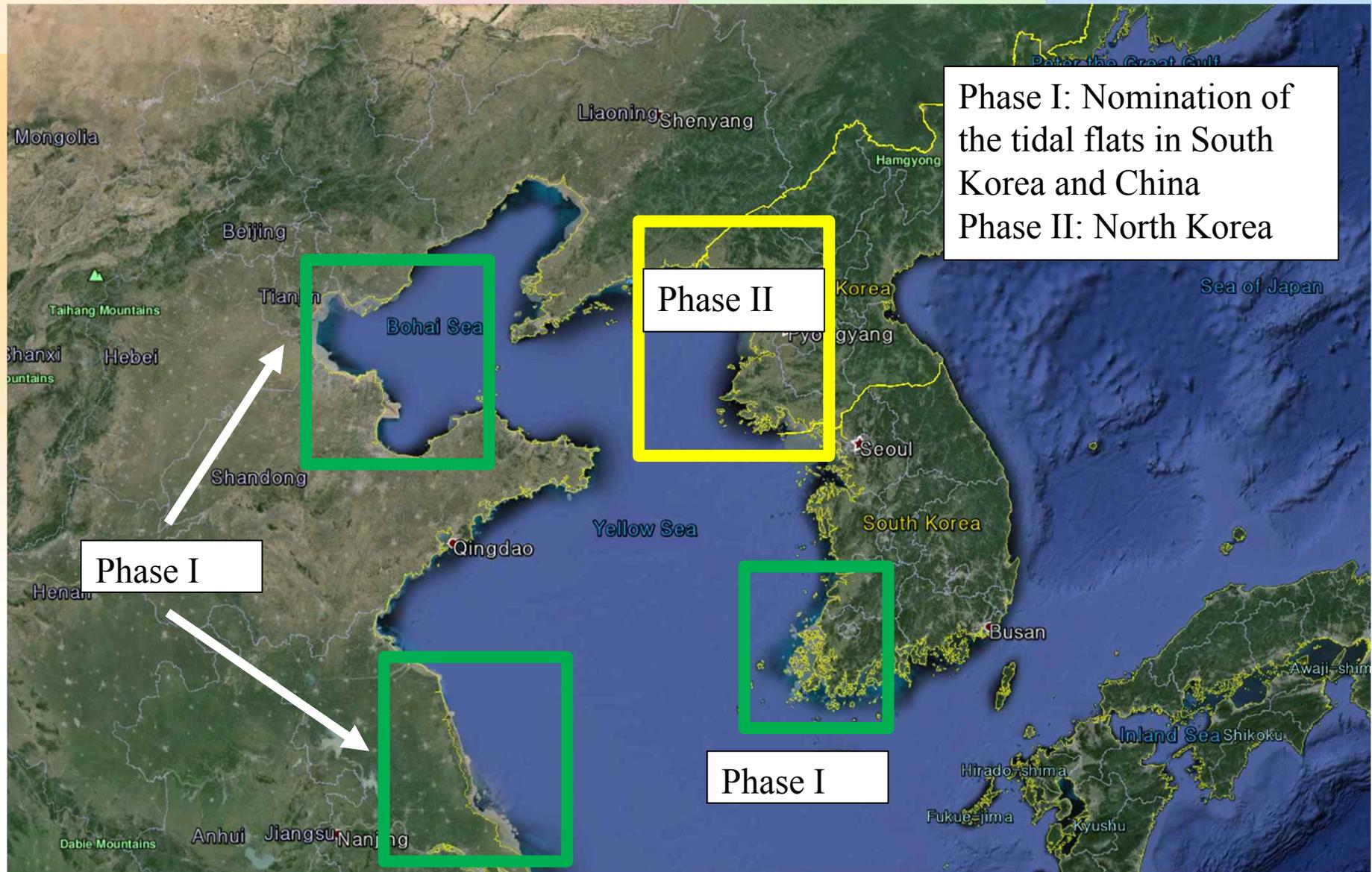


Human activities have become **a part of nature** during **the past 2,000 years!**

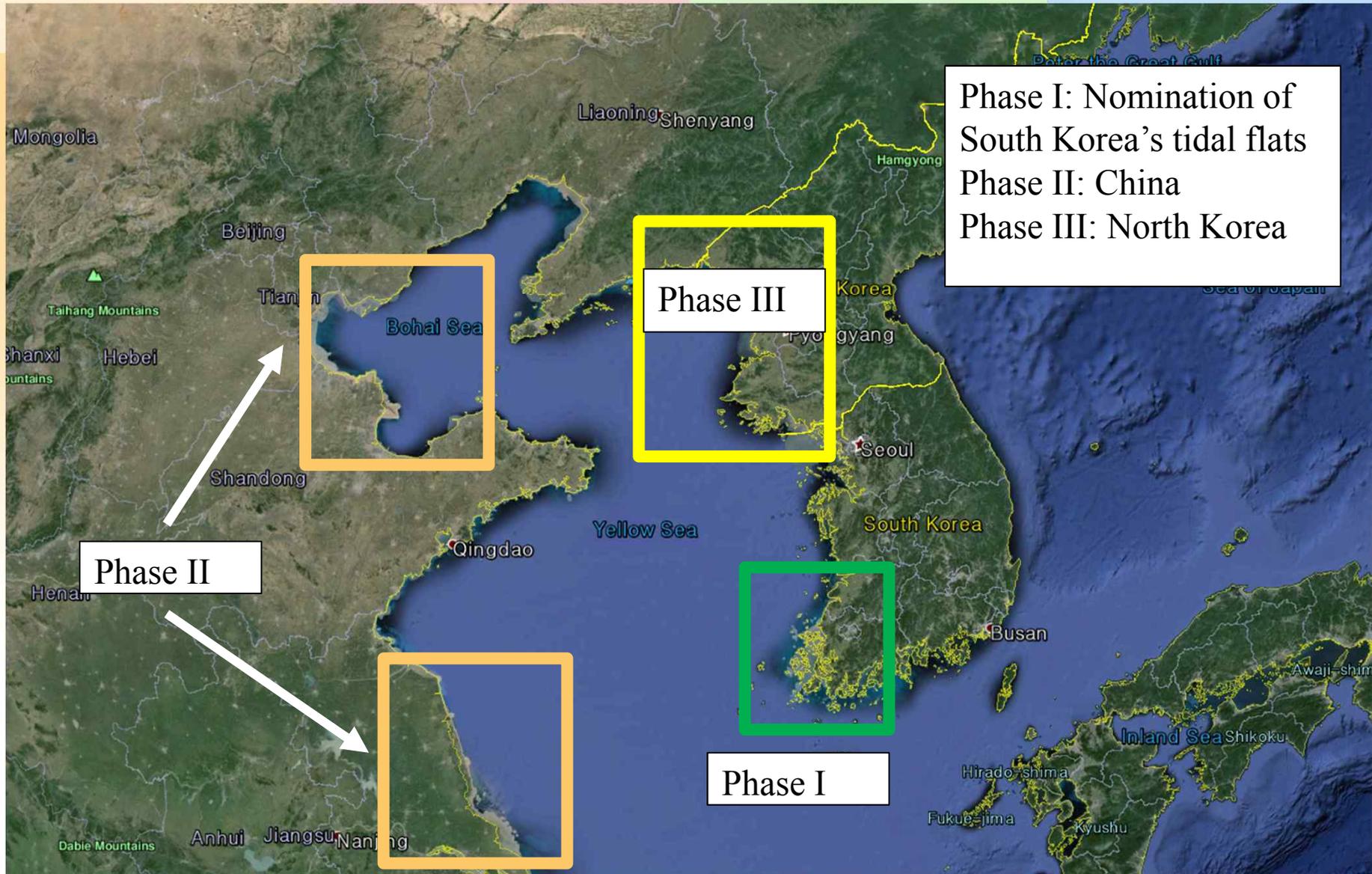
Future plans for Republic of Korea

- 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

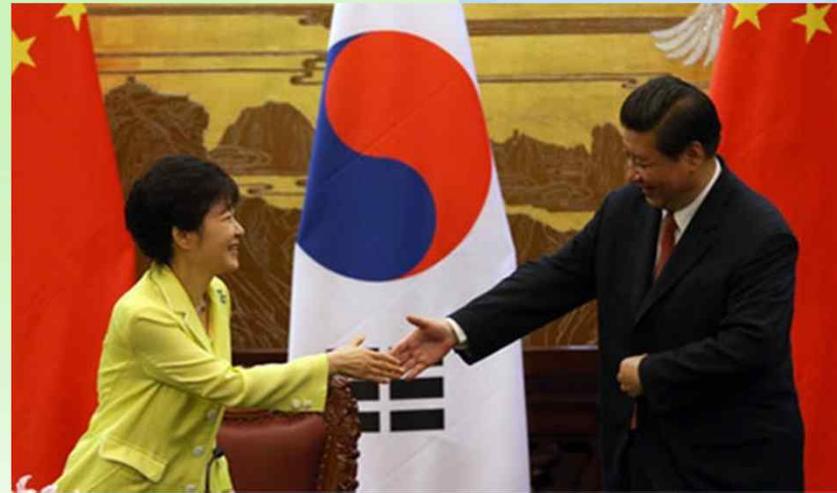


Future collaboration in Yellow Sea



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!

