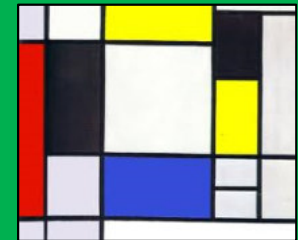
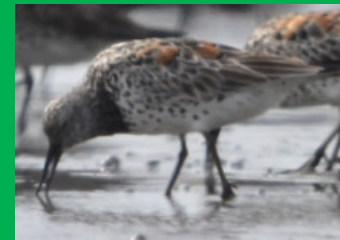


Korea's Contribution to Arctic Migratory Birds Initiative(AMBI) and Future Plans

2nd Arctic Biodiversity Congress
KNO7: Arctic biodiversity governance and Arctic Council biodiversity cooperation



Sung-Ryong Kang & Jihyun Yoon

(2018. 10. 12. / Rovaniemi, Finland)

National Institute of Ecology, Republic of Korea

Official Attendance for Arctic Migratory Birds Initiative

History

 **2016.04.05. AMBI Implementation Workshop(Texel, Netherlands)**

 **2016.09.06. CAFF Board Meeting (Longyearbyen, Norway)**

 **2016.10.07. 4th Arctic Circle Assembly(Reykjavik, Iceland)**

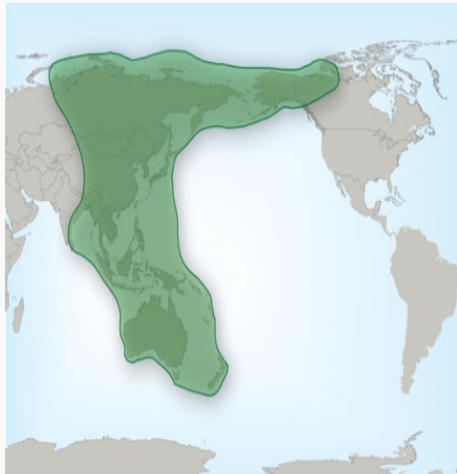
 **2017.01.07. AMBI Implementation Workshop(Singarpore)**

 **2018.10.07. AMBI 2.0 Planning workshop (Rovaniemi, Finland)**

 **2018.10.12. 2th Arctic Biodiversity Congress (Rovaniemi, Finland)**

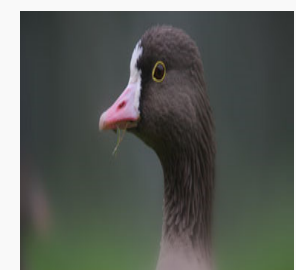
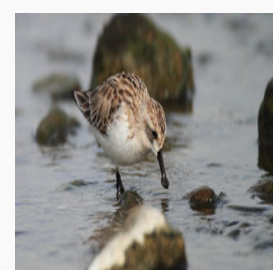
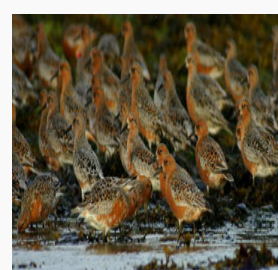
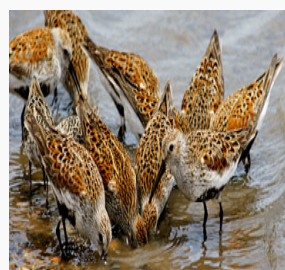
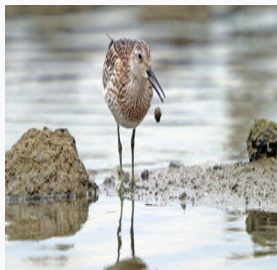
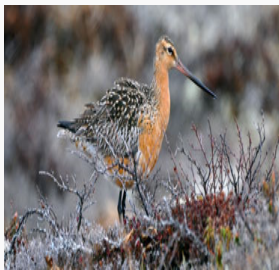


Arctic Migratory Birds Initiative – East Asian-Australasian Flyway



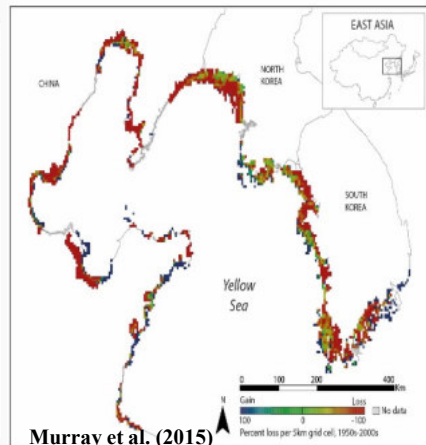
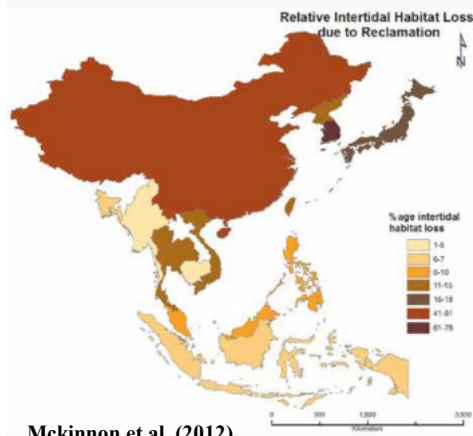
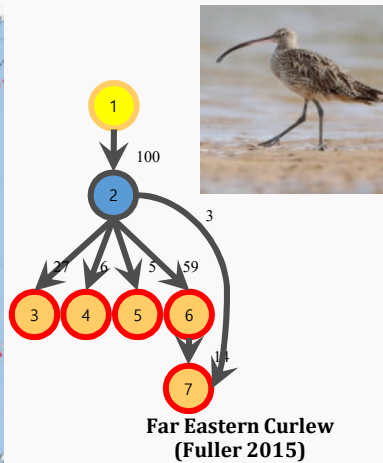
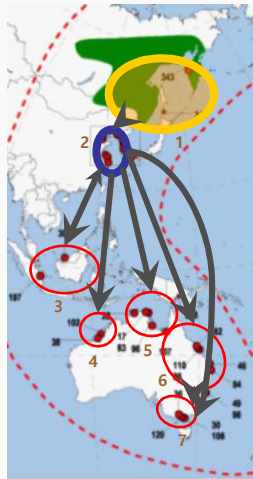
Priority conservation issues and actions

1. **Secure important breeding and staging habitats of key AMBI-EAAF migratory bird species in Arctic Russia and Alaska, with a focus on Spoon-billed Sandpiper, Bar-tailed Godwit and Dunlin**
2. **Secure intertidal and associated habitat for Arctic waders at key staging and wintering sites in the EAAF**
3. **Prevent illegal harvest and regulate unsustainable legal harvest of Arctic migratory birds, with a focus on Spoon-billed Sandpiper, Lesser White-fronted Goose, Bar-tailed Godwit, and other priority species**



Reference website: <http://www.caff.is/arctic-migratory-birds-initiative-ambi/east-asian-australasian-flyway>

Important Habitat for Waterbirds in Republic of Korea!!



EAAFP

ABOUT ▾ MIGRATORY WATERBIRDS ▾ NEWS & EVENTS ▾ ACTIVITIES ▾ RESOURCES ▾

CONTACTS ▾ FAQ

Seocheon and Chongming Dongtan selected for the global flyway project of UNWTO

🕒 April 8, 2014 📁 News, Partnership News 📍 Destination flyways, Dongtan nature reserve, Flyway Site Network, Seocheon tidal flat, UNWTO 👤 eaafp

Seocheon Tidal Flat in Korea and Chongming Dongtan Nature Reserve in China have been selected by United Nations World Tourism Organisation (UNWTO) as two of the eight global project sites under the “Destination Flyways” project, for development of sustainable tourism and the livelihoods of local communities to support sites to be destinations for migratory birds. Funding support for the ongoing preliminary phase is from the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety of Germany. The project will focus on the protection of migratory birds and their valuable habitats and developing biodiversity-related tourism products in selected sites of migratory bird flyways. EAAFP is an Advisor to the project.

Seocheon tidal flat by KHT

Habitat Management for Endangered Migratory Waterbirds in Estuary Ecosystem

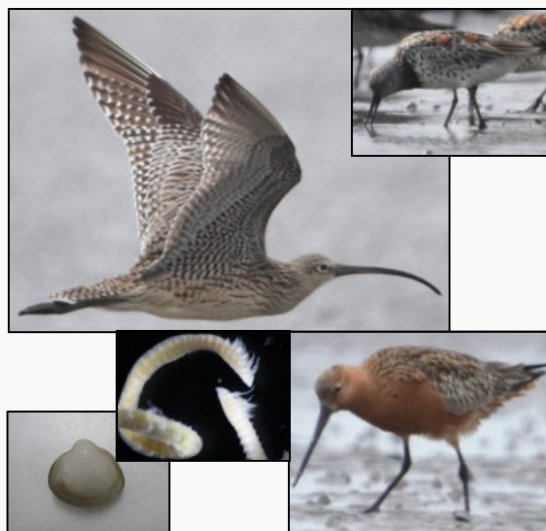
1. Study Area

- Geum River Estuary
- Nakdong River Estuary



2. Target species

- Great Knot
- Bar-Tailed Godwit
- Far Eastern Curlew

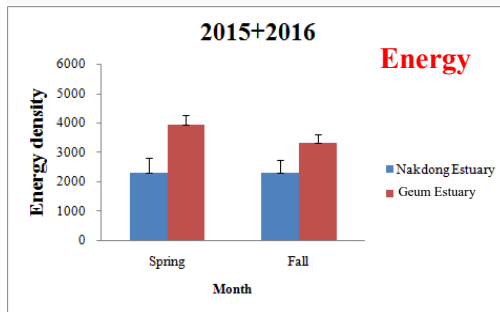
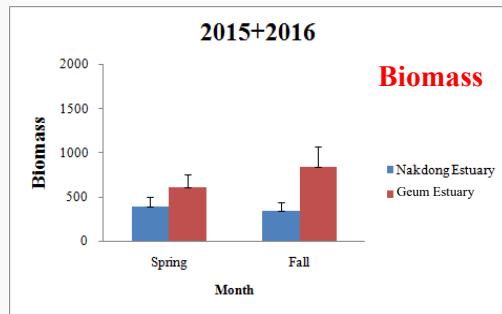
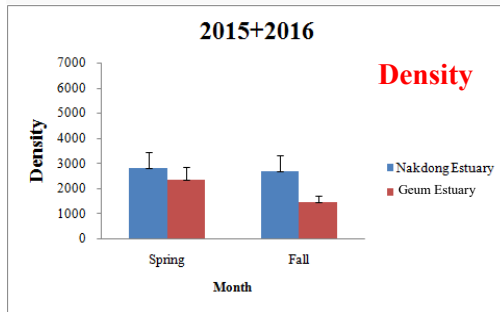


3. Method

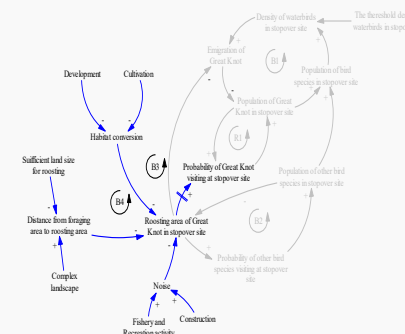
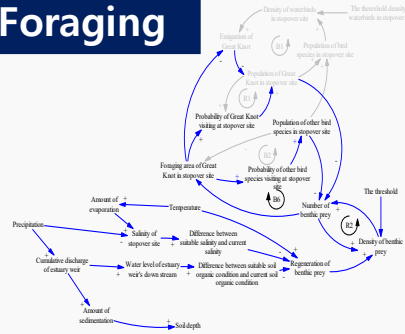
- Bird monitoring (6 weeks / stopover periods)
- Prey sampling (2 times per season)
- Environmental variables (water and soil)



4. Prey Density, Biomass, Energy in Geum and Nakdong River Estuaries during 2015 & 2016

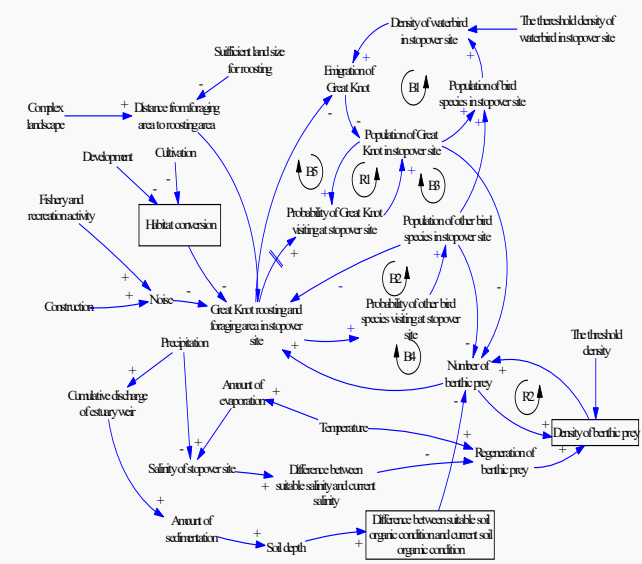


Foraging



Roosting

Integrated



5. Causal loop Diagram of Habitat Management for Great Knot

6. Habitat Carrying Capacity

Estimation of Energy Requirement(Bar-tailed Godwit)

- Prey biomass per meter square X Energy gross per 1 gram = Energy Density
 $\Rightarrow 714.6 \text{ g/m}^2 \times 3.6 \text{ Kcal/g} = 2,577.6 \text{ Kcal/m}^2$
- Distance of Migratory / Flight distance per hour X Energy consumption of flight per hour = Energy requirement during migration
 $\Rightarrow 7,280 \text{ km} / 75 \text{ km} \times 13.1 \text{ Kcal} = 1,271.6 \text{ Kcal}$
 - Non-breeding area-Yellow sea: 10,280 km / Yellow sea-Breeding area: 7,280 km / Total: 17,560 km
 - 4 days migration for 7,280 km, Daily Energy Expenditure = 318 Kcal
- Energy requirement during migration X Population density = Energy requirement for Migratory population
 $\Rightarrow 1,271.6 \text{ Kcal} \times 36,829 \text{ Individuals} = 46,831,756 \text{ Kcal}$
- Energy requirement for Migratory population / Energy Density = Habitat area for migratory population
 $\Rightarrow 46,831,756 \text{ Kcal} / 2,577.6 \text{ Kcal/m}^2 = 18.2 \text{ km}^2$ (but unequal amount of energy in stopover areas!)

Education & Public Awareness

Habitat Management and Conservation for Arctic Migratory Birds

■ Campaign (With EAAFP) ■



■ Education(Ecotour Program in ROK) ■



Future Plans

Management & Conservation

Potential Application of Moist-soil Management Wetland as Migratory Waterbird Habitat

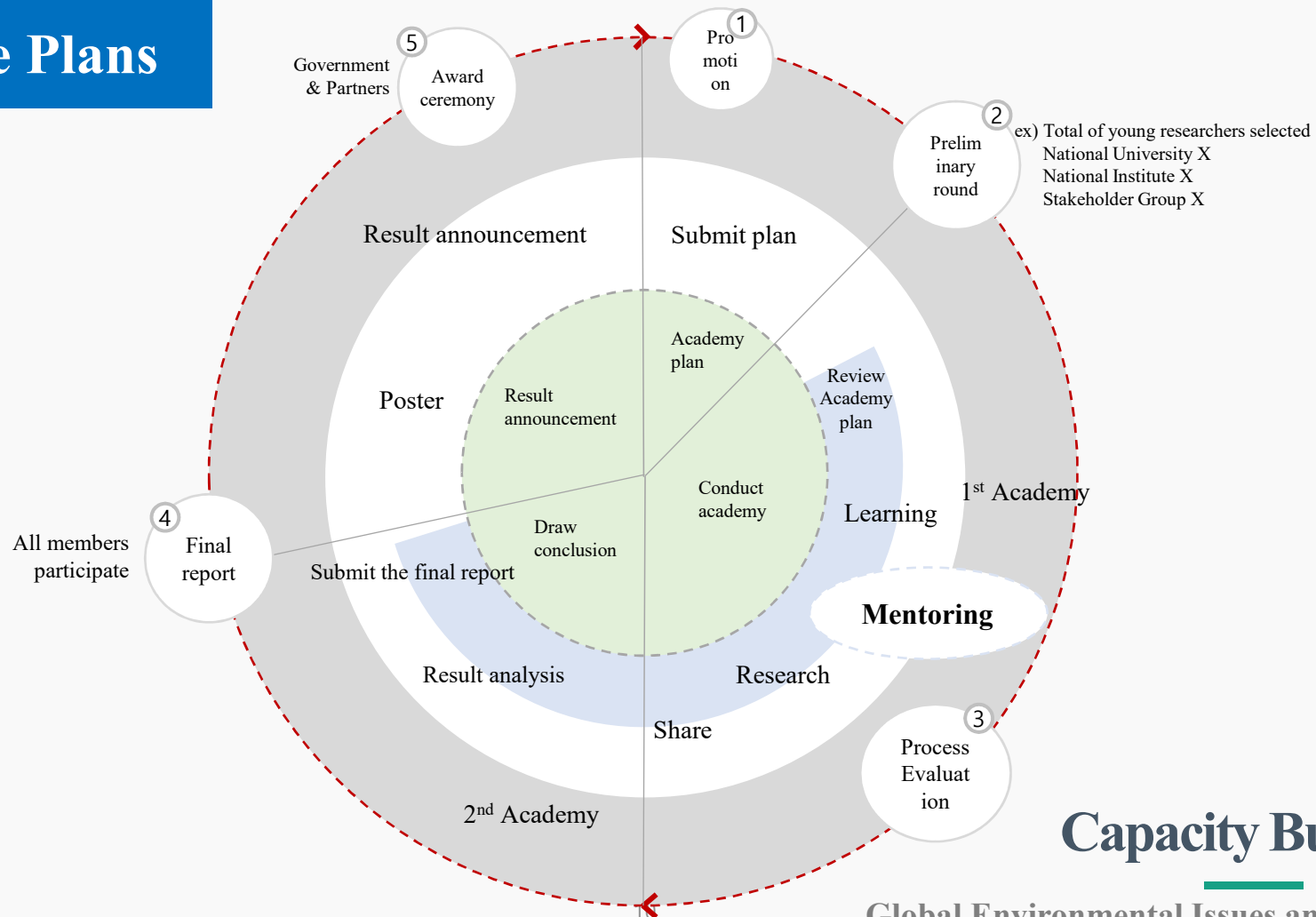


Water impoundment design with river water source(yellow), water transport canals(red), and water control structures (orange). Water flow is indicated by blue arrows



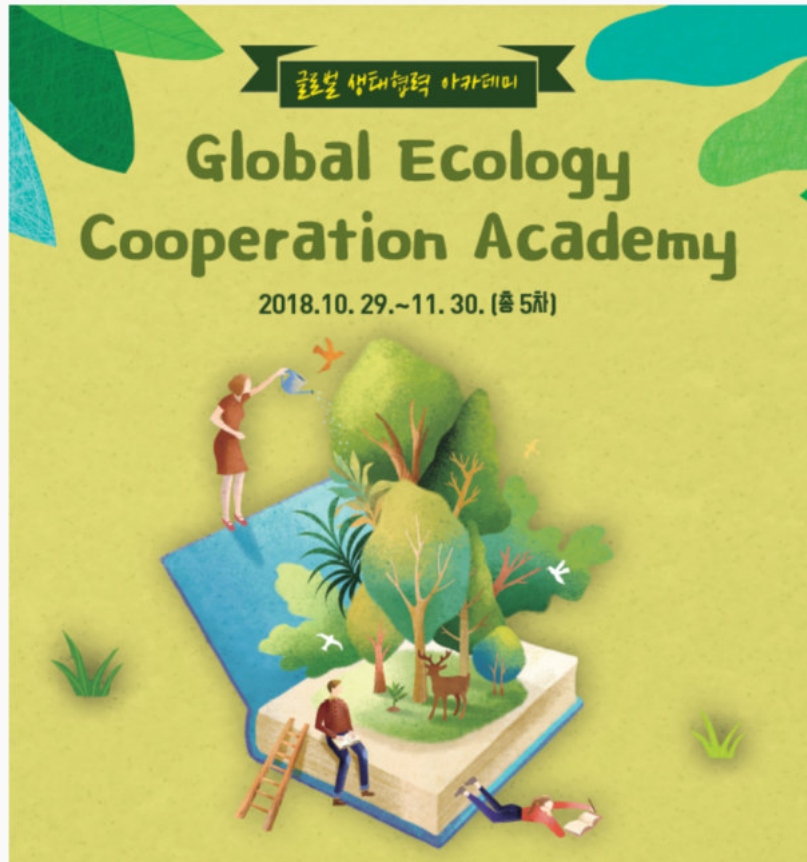
Potential experimental site(red) adjacent to the Geum Estuary, Republic of Korea

Future Plans



Future Plans

Capacity Building



► The National Institute of Ecology is planning to organize the “Global Ecology Cooperation Academy” for young researchers, postdoctoral fellow, and doctoral students interested in the international cooperation and globally collaborative research in areas of environment and ecology.

► The academy aims to broaden the participants’ understanding of current issues and major trends in environment & ecology-related international agreements and organizations such as CBD, Ramsar, IPBES, and CAFF; to foster the younger researchers, fellows, and students by providing them a wide range of special lectures from research institutes, international experts and academia.

Date	Topic
Fist Week	- Planning & Methodology of research cooperation
Second Week	- Status of the national institute’s environment ecology-related international co operation
Third Week	- Understanding environment & ecology-related international agreements and organizations (e.g., CBD, Ramsar, IPBES, CAFF)
Forth Week	- Special lectures for international cooperation by NIE, MABIK, and NNIBR presidents
Fifth Week	- Special lectures for international cooperation by international organization, university, and institute - Writing research(project) proposal & group presentations - Closing ceremony



Thank you!

