

Establishing The Link: The ROK & USA



Alaskan Bar-tailed Godwit, Geum Estuary, ROK, April 2006, Jan van de Kam / Birds Korea



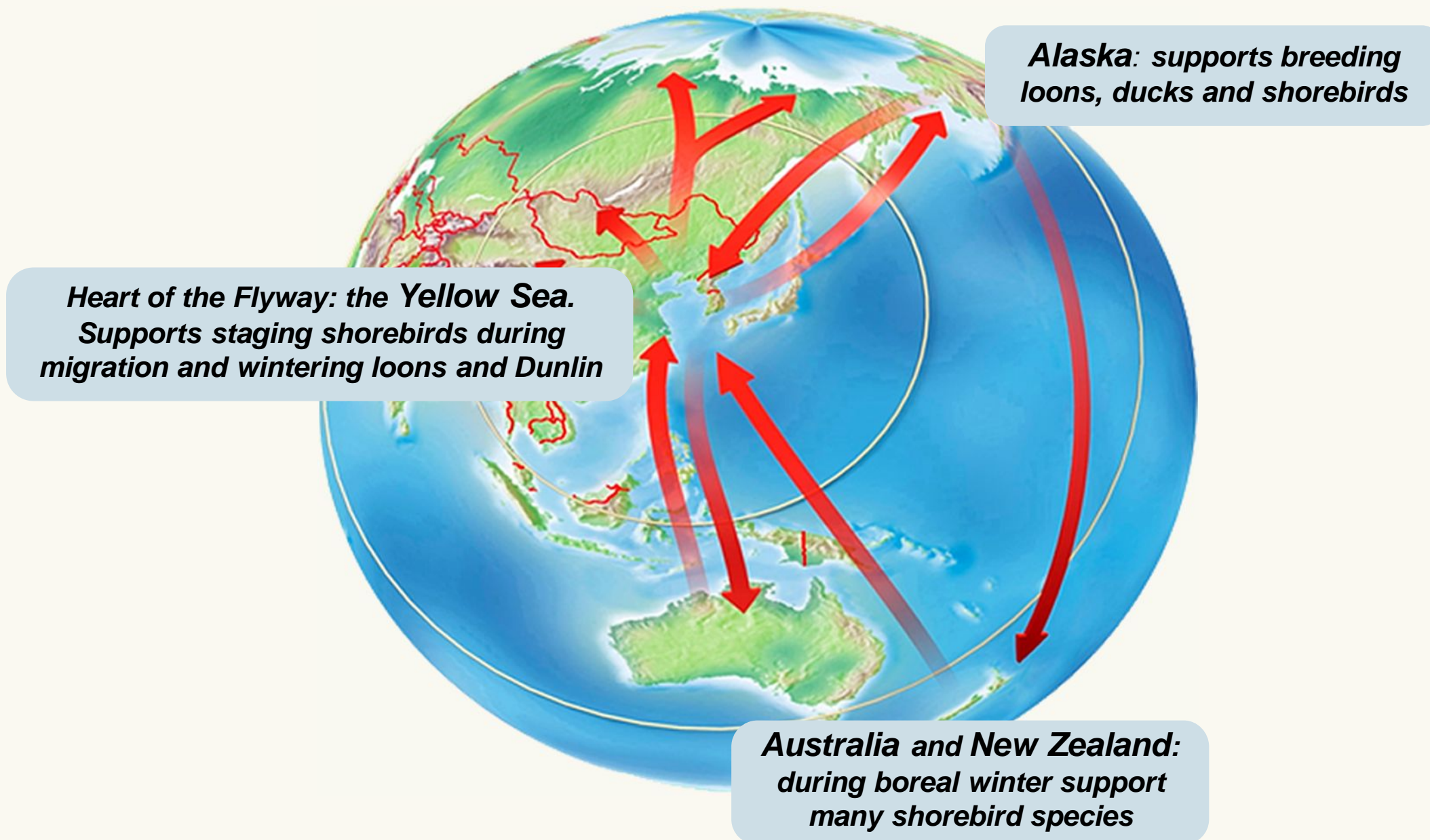
Number of Shared Species

- ▮ **149+ species out of total 189 listed in USA-Japan migratory bird protection convention * (1972) recorded in the Republic of Korea (ROK)**
- ▮ **119 of these 149 are regularly-occurring in the ROK**
- ▮ **Probably ~19 species actually migrate regularly between ROK and Alaska**
- ▮ **These 19 species provide the best focus for discussion and future collaborative conservation work**

* CONVENTION BETWEEN THE GOVERNMENT OF JAPAN AND THE GOVERNMENT OF THE UNITED STATES OF AMERICA FOR THE PROTECTION OF MIGRATORY BIRDS AND BIRDS IN DANGER OF EXTINCTION, AND THEIR ENVIRONMENT (1972)



East Asian-Australasian Flyway: Bird Migration Linking Nations





USA-ROK Shared Bird Species

Some freshwater ducks – however, majority of c.19 main shared migratory bird species are Seabirds and Shorebirds

In ROK ecologically dependent on:

- 1. Inshore and Marine waters**
- 2. Intertidal wetlands**

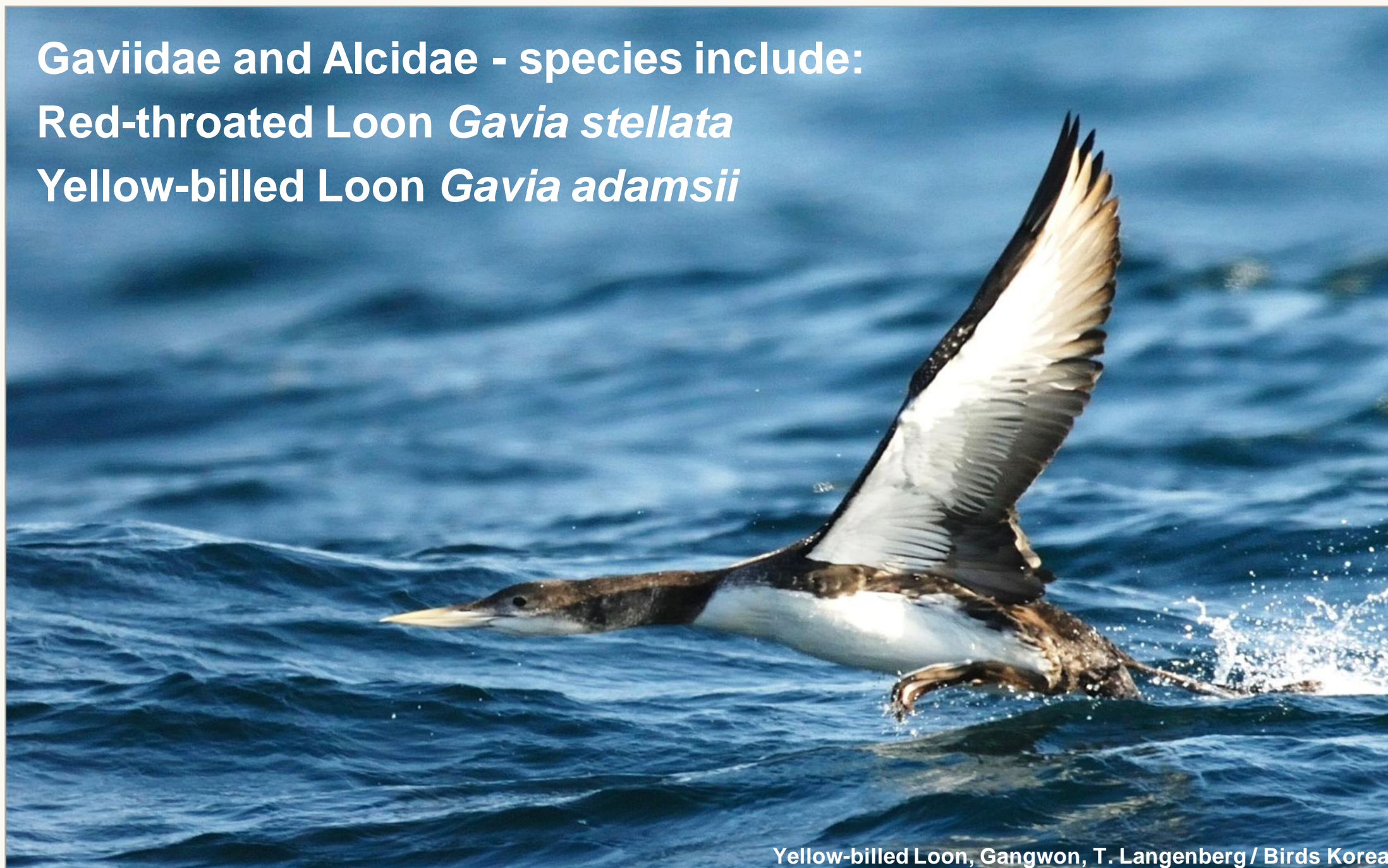


Inshore and Marine Species

Gaviidae and Alcidae - species include:

Red-throated Loon *Gavia stellata*

Yellow-billed Loon *Gavia adamsii*



Yellow-billed Loon, Gangwon, T. Langenberg / Birds Korea



Loon Migration



Red-throated Loon Migration (Alaska-Kamchatka-Korea)

Satellite-tracked 24 Red-throated Loons captured at 4 different breeding areas in Alaska

All 5 that bred on Alaska's north slope migrated along the east Asian coastline

**North Slope Population has shown steep declines
(Schmutz *et al.* 2009)**



Loon Migration

Yellow-billed Loon Migration (Alaska-Kamchatka-Korea)

Satellite-tracked 11 breeding
Yellow-billed Loons on Alaska's
north slope; all 11 migrated
along the east Asian coastline

Some wintered near Hokkaido,
remainder in Yellow Sea

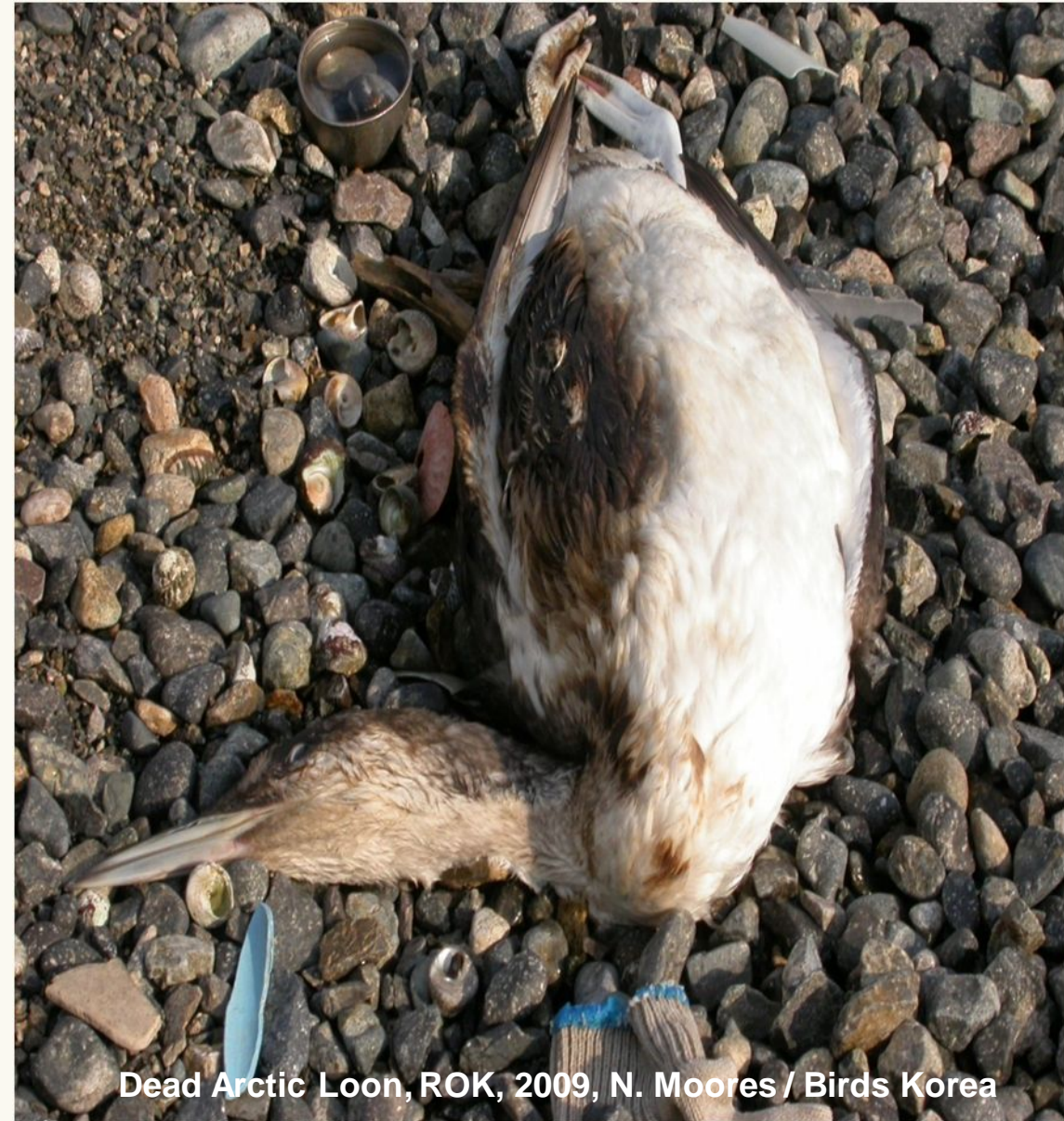


USGS Findings

1. Proven migration route linking Alaska and East Asia
2. High rate of decline of Red-throated Loon
3. Thirty-five different PCB congeners found in eggs from loons breeding in northern Alaska and wintering in East Asia absent in eggs from loons from other areas
4. Documented greater occurrence of dieldrin, DDT, and HCB in eggs of loons from the north slope

Advise need for:

- Monitoring of beached & oiled loons
- Analysis of tissues
- Research on loons' winter ecology



Dead Arctic Loon, ROK, 2009, N. Moores / Birds Korea



Species of Intertidal Areas

Shorebirds (Plovers and Sandpipers)

E.g. Dunlin *Calidris alpina*
Bar-tailed Godwit *Limosa lapponica*
Ruddy Turnstone *Arenaria interpres*
Sharp-tailed Sandpiper *Calidris acuminata*



Dunlin

Presently most numerous shorebird in intertidal areas in ROK; declining in ROK and along Flyway

Estimated Numbers

- 150,000 during Northward Migration**
- 70,000 during Southward Migration**
- 30,000 in boreal winter**
- Two subspecies regular in ROK, including *articola* which breeds in Alaska**



Dunlin

**Photographed at Aphae (ROK)
in April 2012**

This particular Dunlin was:

- | **First banded in Barrow, Alaska, in June 2003, and caught there a further five times**
- | **Resighted each year in Barrow (except 2008)**
- | **Successful as a breeder at least five times**
- | **Blood-tested to determine sex (he is male)**
- | **Tested in three different years for Highly Pathogenic Avian Influenza (he was healthy)**
- | **Included in several doctoral and master's research programs**



Alaskan Dunlin (AUE), Aphae Island, April 8th 2012,
Andreas Kim / Birds Korea



Bar-tailed Godwit

One of more numerous shorebirds during Northward Migration; considered to be decreasing over the longer term in the ROK

Estimated Numbers

- ▮ **35,000 during Northward Migration**
- ▮ **10,000 during Southward Migration**

Two subspecies:

- ▮ **Alaska-breeding *baueri***
- ▮ **Siberian-breeding *menzbieri***



Bar-tailed Godwit *Limosa lapponica baueri*

Focus of intensive,
collaborative international
research

- Spends non-breeding season in NZ and East Australia
- Stages in the Yellow Sea during Northward Migration
- Breeds in Alaska
- Migrates during Southward Migration direct and non-stop from Alaska to New Zealand
- Successful migration depends on intact staging sites

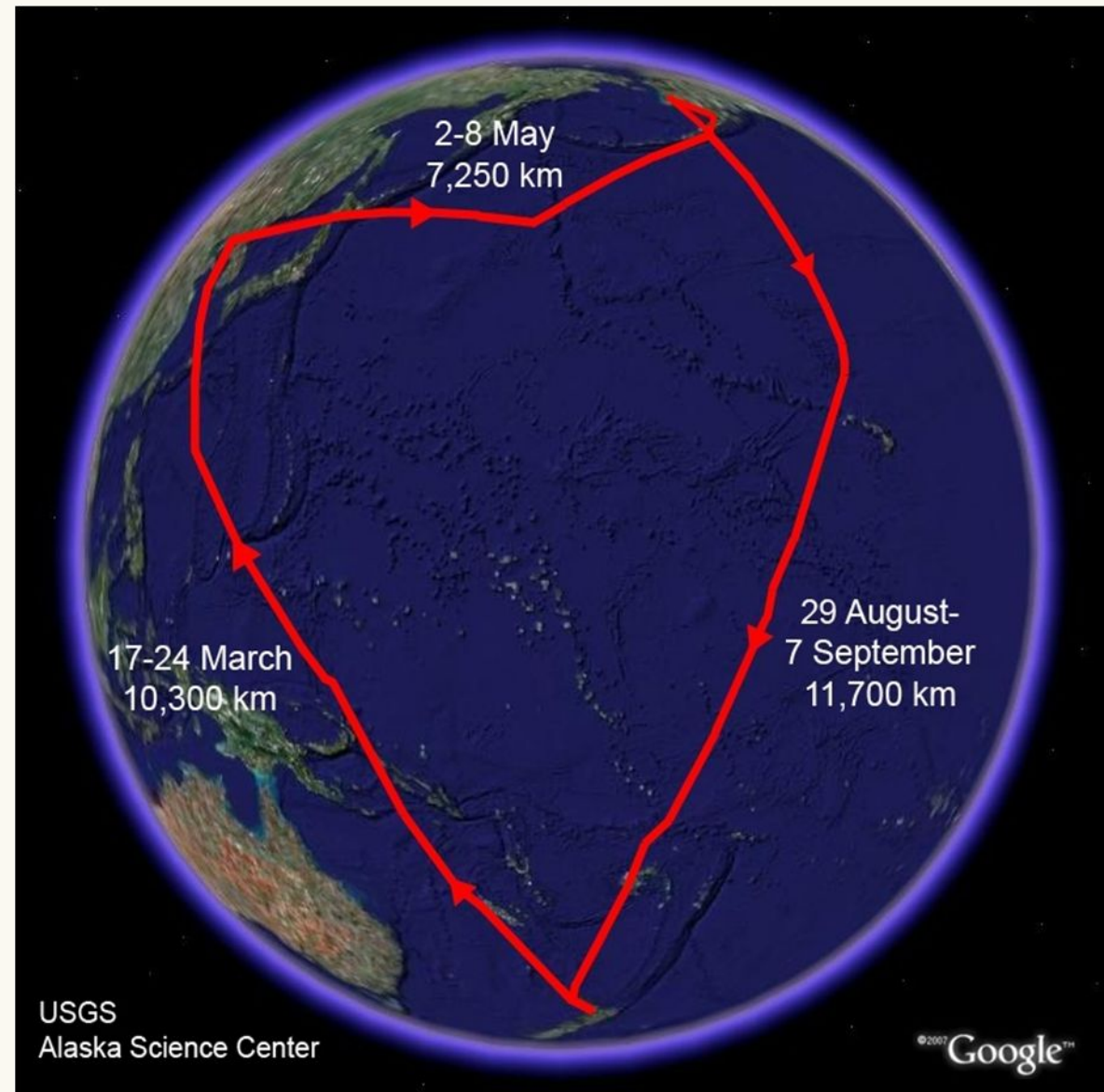


Figure prepared by Colleen Handel using NASA World Wind;
used with permission (from van de Kam *et al.* 2008)



Long-term and recent Shorebird Popolation Trends in ROK, Japan and Australia

Species	Past 30 yrs ROK	Past 10 yrs ROK	Past 30 yrs Japan	Past 10 yrs Japan	Trend in Australia ~10 yrs
Bar-tailed Godwit	DEC	INC	DEC	DEC	DEC
Ruddy Turnstone	DEC	DEC	DEC	DEC	DEC
Sharp-tailed Sandpiper	INC	DEC	DEC	DEC	UNK
Dunlin	DEC	DEC	DEC	DEC	N/A

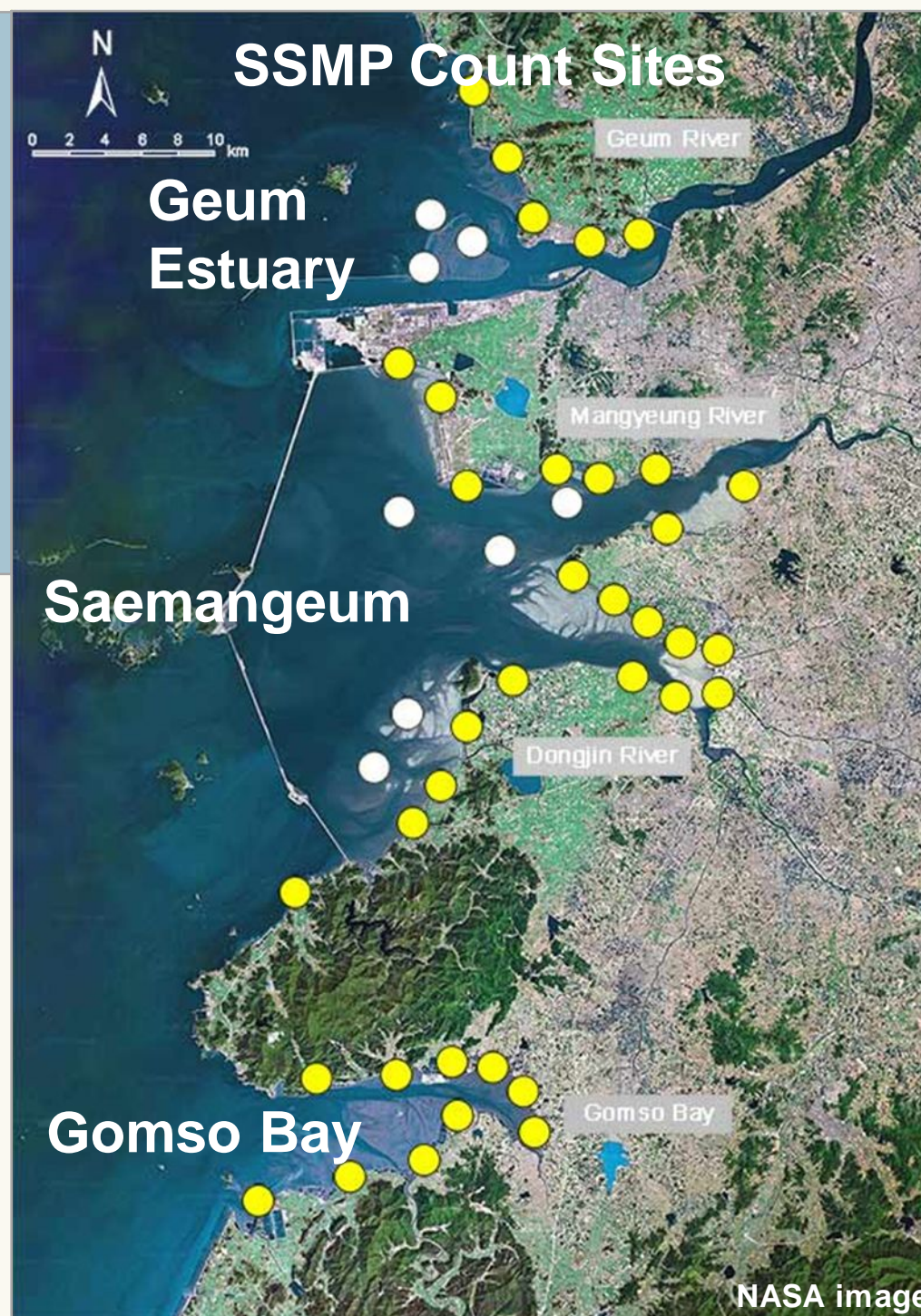
Many species of shorebird that link the ROK (and Japan) to the USA are in decline...



Why are Shorebirds Declining?

Case Study:
Saemangeum Shorebird
Monitoring Program (SSMP)
Birds Korea &
Australasian Wader Studies
Group (AWSG)

- | April-May 2006-2008
- | Saemangeum and adjacent Geum Estuary & Gomso Bay
- | Meshed with national and international surveys



Saemangeum Shorebird Monitoring Program

During seawall construction, decline during Northward Migration from 316,000 shorebirds in 1997-2001 to 180,000 in 2006

Seawall closed in April 2006

Between 2006 and 2008, during Northward Migration:

- 1. Further declines of >130,000 shorebirds within Saemangeum**
- 2. Declines of >100,000 shorebirds within SSMP Study Site**
- 3. Large declines at national level of most species**
- 4. With MYSMA, found >20% decline in world population of Great Knot**

Most Shorebirds Could Not “Relocate”

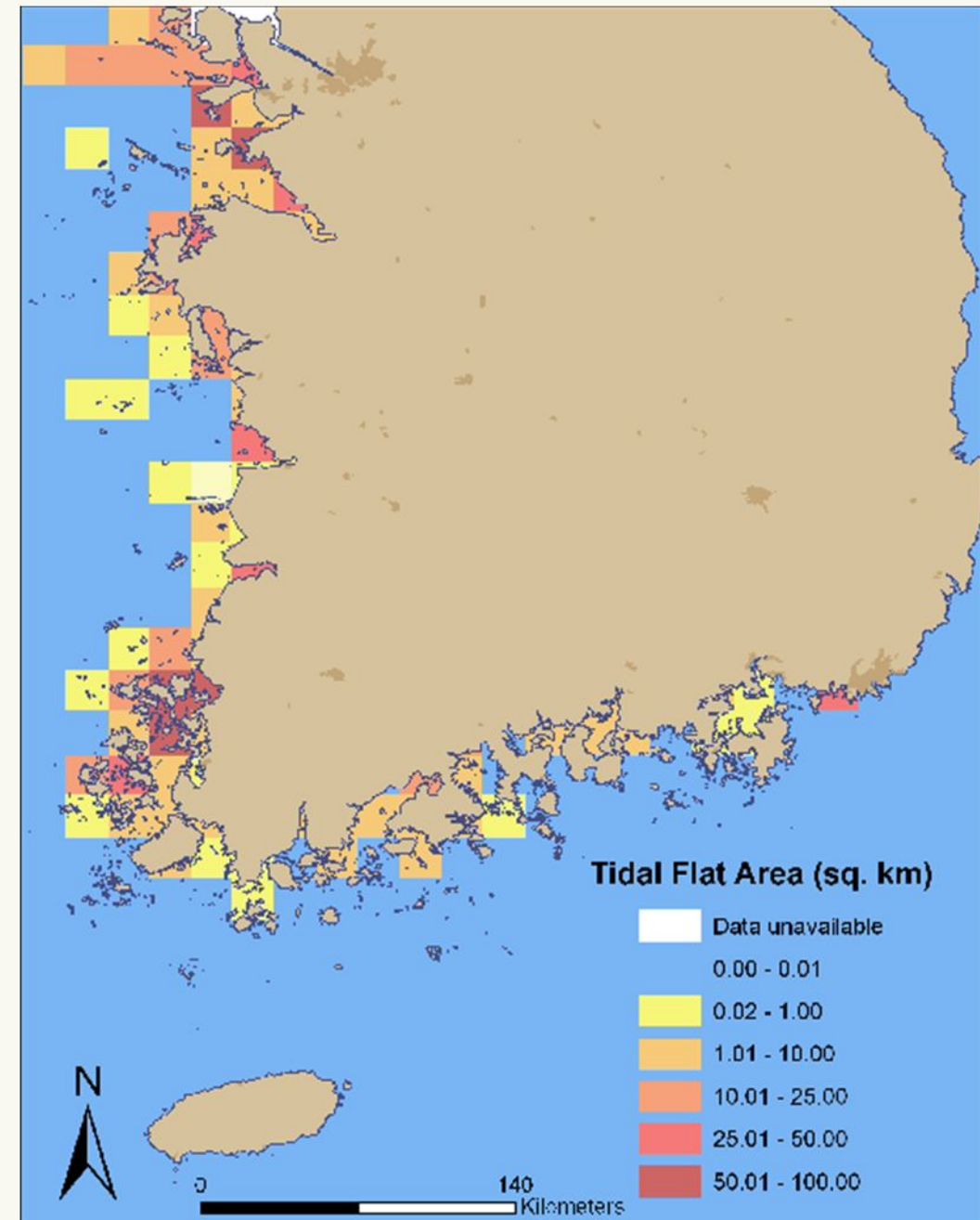


Loss of Tidal-flats to Reclamation

Birds Korea Blueprint (2010):

1. Loss of c. 75% of historical area of ROK tidal-flat
2. Two-thirds of loss since 1987
3. Almost all rivers have estuarine barrages and dams
4. Increased habitat change coincidental with waterbird declines
5. Remaining area of intertidal wetland (c. 110,000ha) half that estimated by ROK (2009); similar to area informally estimated in 2012 by N. Murray (University of Queensland and co-author IUCN-commissioned study by Mackinnon *et al.* 2012)

Republic of Korea – Tidal Flat Distribution



(Birds Korea 2010, Moores 2012)



IUCN Study: Reclamation is Problem

In East and South-east Asia:

- | “Fisheries and vital ecological services are collapsing and ecological disasters increasing...rates of declines of waterbird species .. are among the highest of any ecological system on the planet**
- | Unless major steps are taken ...likely to experience extinctions and associated collapses of essential and valuable ecological services in the near future**
- | The Yellow Sea emerges as the focus of greatest concern...the fast pace of coastal land reclamation is the most pressing threat... losses of up to 60% of intertidal habitats in some key areas...**
- | Losses of such magnitude are likely the key drivers of declines in biodiversity and ecosystem services in the intertidal zone of the region”**



The Way Forward

Threats in ROK to Shared Species include:

1. Ongoing reclamation at several internationally important sites, including Saemangeum, Namyang and Asan Bays, Song Do
2. Proposed Incheon and Ganghwa Tidal Power-plants (suspended in Nov 2012)
3. Offshore wind-farms (as yet without adequate EIA)
4. Chronic pollution
5. Unsustainable fisheries, including double gill-net system

In ROK, in order to meet Existing Conservation Obligations (under Ramsar, CBD, Millennium Development Goals / Sustainable Development Targets), we need support to help:

1. Cancel reclamation projects and initiate restoration projects
2. Improve research links (both formal and informal)
3. Make data sets and information publicly accessible
4. Raise awareness of decision-makers and stakeholders
5. Make best use of existing conservation strategies
6. And...?



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Establishing The Link



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