Keeping the Common Shorebirds Common -
Focus on Dunlin
for the Conservation of Shorebirds in the EAAF

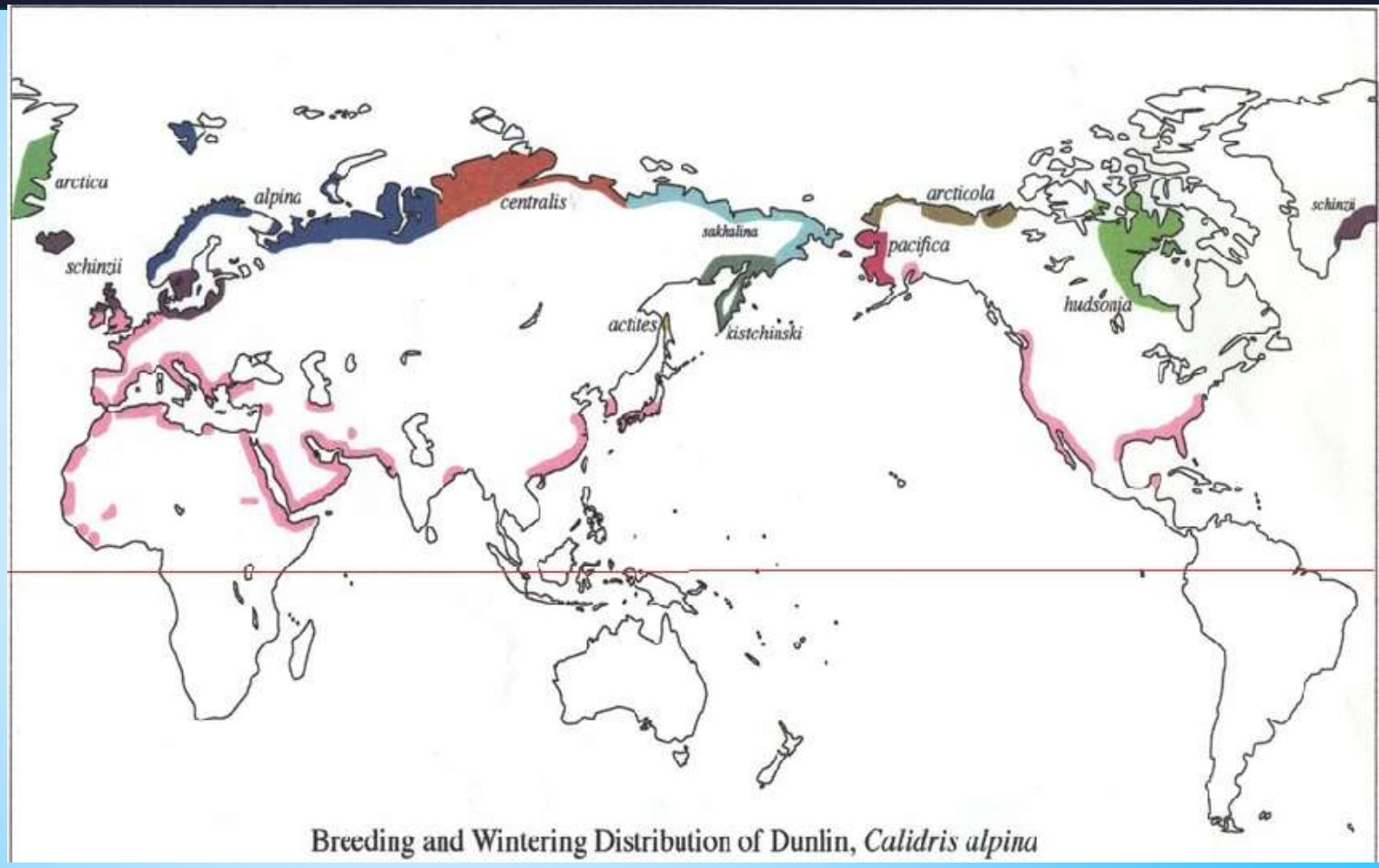
KASHIWAGI Minoru, Ramsar Network Japan

This presentation is made by the continuous works and contribution from and based on the work of Shorebird Group

And many other researchers, banders and counters in Japan and beyond
under the auspices of the Ministry of the Environment Japan

Dunlin *Calidris alpina*

- Distributes globally
- Common shorebird species
- Nine 9 Subspecies globally
- Nearly circumpolar breeding distribution
- Very few migrating south of equator



Breeding and Wintering Distribution of Dunlin, *Calidris alpina*

Fig: Y.Shigeta

Dunlin - in EAAF

- Shorebirds in EAAF:
  - Min. population 8 000 000
  - Species 54
  - Sites of international importance 400

- Dunlin: 950 000 – 2 750 000
  - Second Dominant shorebird Species
  - Oriental Pratincole: 2 880 000
  - Discrepancy between count result and population estimated from breeding area (Non breeding count in 2003: 382 871)
  - Majority in East Asian countries

Four Subspecies using EAAF

Table: M.A. Barter, 2003

Subspecies	Estimated number	Source
arcticola	750 000	Brown, S. et al.2001
sakhalina	100 000 – 1 000 000	Bamford et al. in prep
kischinski	100 000 – 1 000 000	Bamford et al. in prep
actites	600	Nechaev & Tomkovich 1997 1998

(M.Bamford et al., 2008)

Dunlin as an indicator Species

- Dunlin shares habitats with other shorebird species
- Dunlin is a dominant shorebird species in East Asian countries
- Many individuals are not identified in the EAAF.

- EAAF has the largest number of threatened species
- Shorebird population in EAAF is still decreasing

- Conservation actions to **KEEP COMMON SHOREBIRD, Dunlin, COMMON** can also serve for the conservation of many other shorebirds, as Dr Barter said.
- Dunlin as a Flagship for Shorebird conservation

Dunlin in EAAF / Japan

- For a long time, the subspecies in Japan is thought to be *sakhlina* breeding in far east Siberia
- BUT
- In 1996, a Dunlin marked in Northern Alaska, sbsp. *arcticlola*, was observed in central north coast of Japan

⇒ Jp-US Joint Dunlin Survey

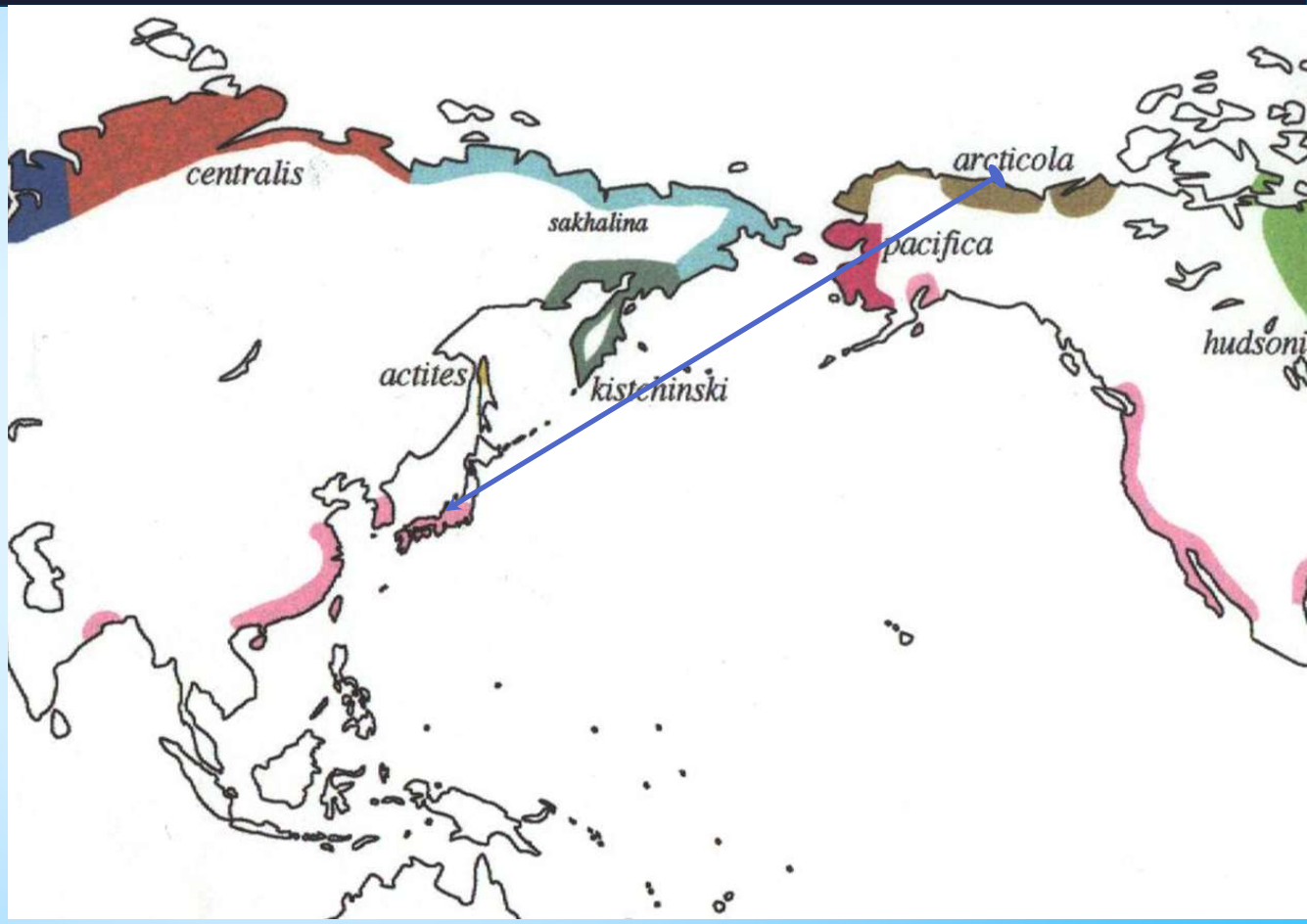


Fig: Y.Shigeta

International movements

- Japan ⇔ Alaska 75
- Japan ⇔ Russia 26
  - Chukotka 3
  - Kamchatka 14
  - Sakhalin 9
- Japan → Busan 5 (same bird)
- Japan ⇔ Taiwan 7
- Japan ← HK 1
- Japan ≠ Yellow Sea 0

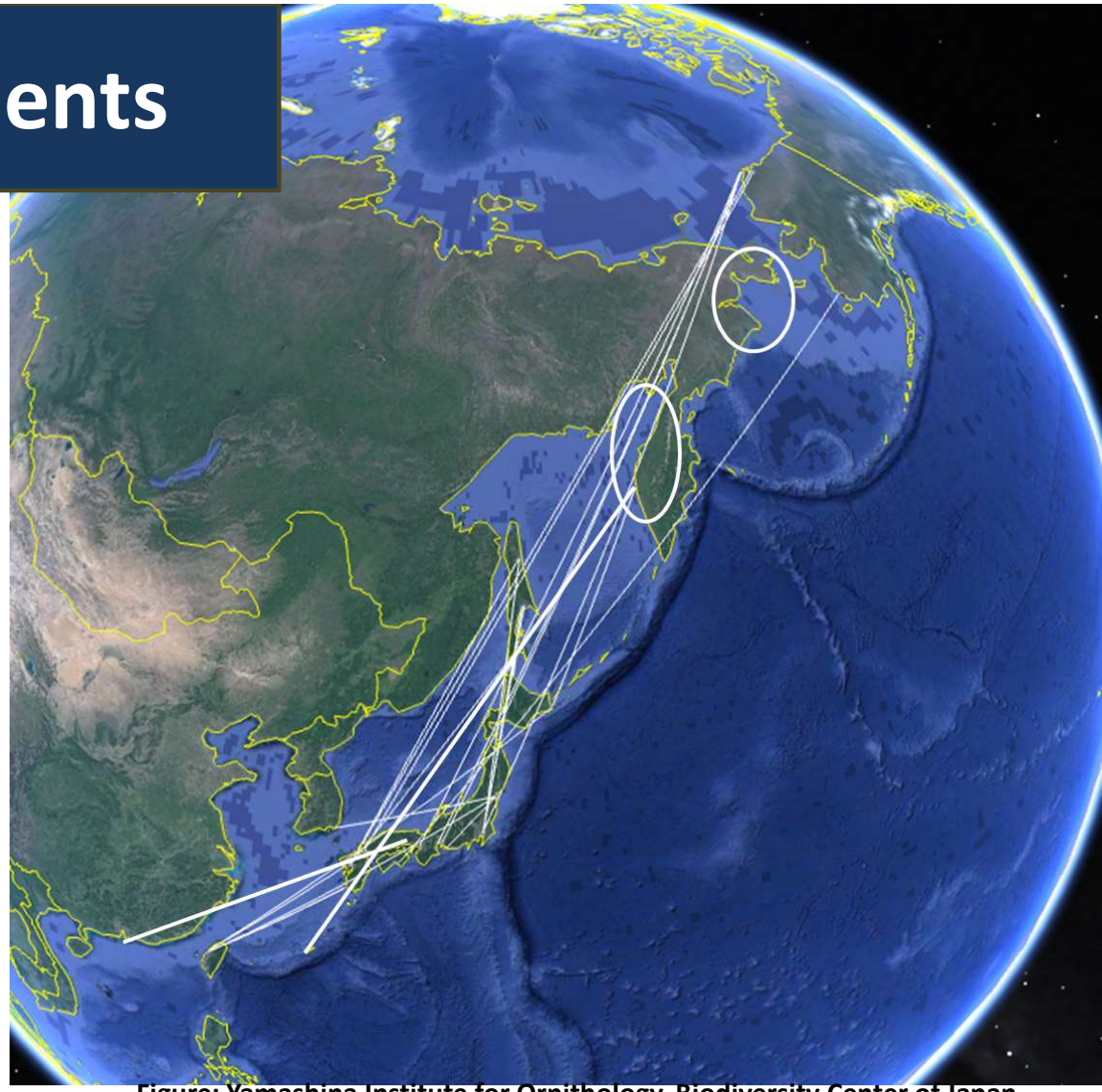


Figure: Yamashina Institute for Ornithology, Biodiversity Center of Japan

Shorebird Population Monitoring in Japan

1. Citizen Scientists started monitoring shorebirds coordinated by Non-Government Organisations as an indicator of the health of the tidal flat
   - 1973-1985National Simultaneous Wader Survey (WBSJ)
   - 1974-1982 National Fixed Point Waterbird Survey (JSPB)
   - 1996-1998 National Shorebird Count (JAWAN)

2. National Government started with NGOs
   - 1981-2004 National Fixed Point Waterbird Survey (EA-J - JSPB)

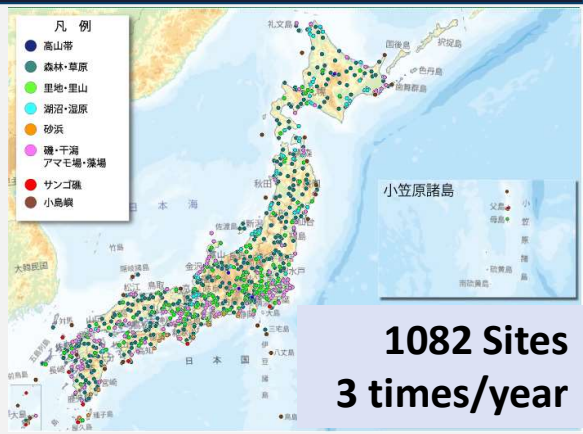
3. Above systems were merged in:
   - 1999-2004 Shorebird Population Change Monitoring (MOEJ - WWF-J)

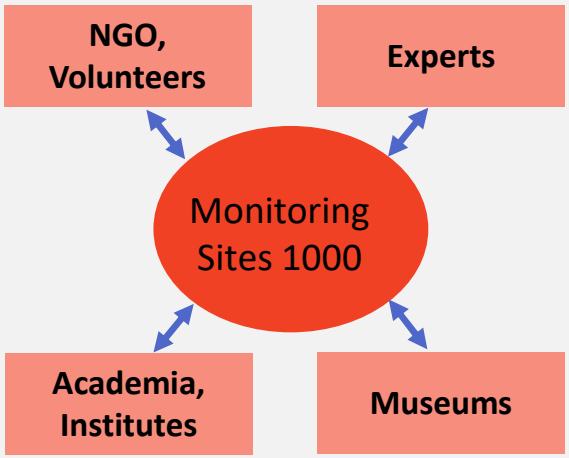
4. System 3 is introduced in the monitoring of various ecosystems throughout the country
   - 2003-Pres. Monitoring Site 1000 (MOEJ – WWFJ, BR-J)

Monitoring in Japan: Monitoring Sites 1000

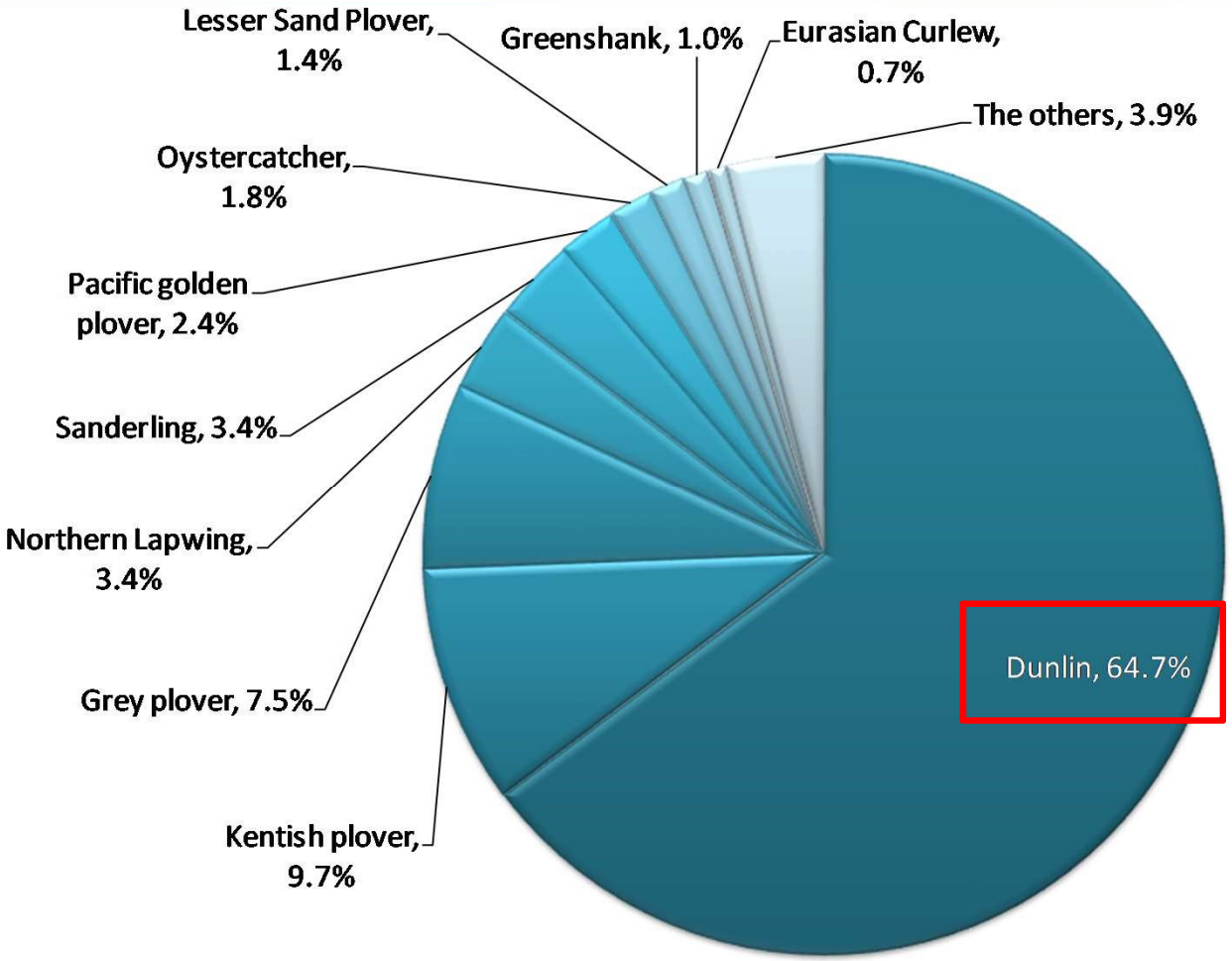
➢Monitoring Sites 1000 (2003-)

- Government led monitoring where citizens participate in.
- To detect the degradation of ecosystems in early stage through long-term continuous monitoring of their components, which enables to take appropriate measures for biodiversity conservation.
- 7 NGOs + 6000 monitors (researchers and citizens)
- The national government runs the scheme and maintains the database. The data obtained is available to the public.





Why Dunlin matters? - Dunlin (*Calidris alpina*)



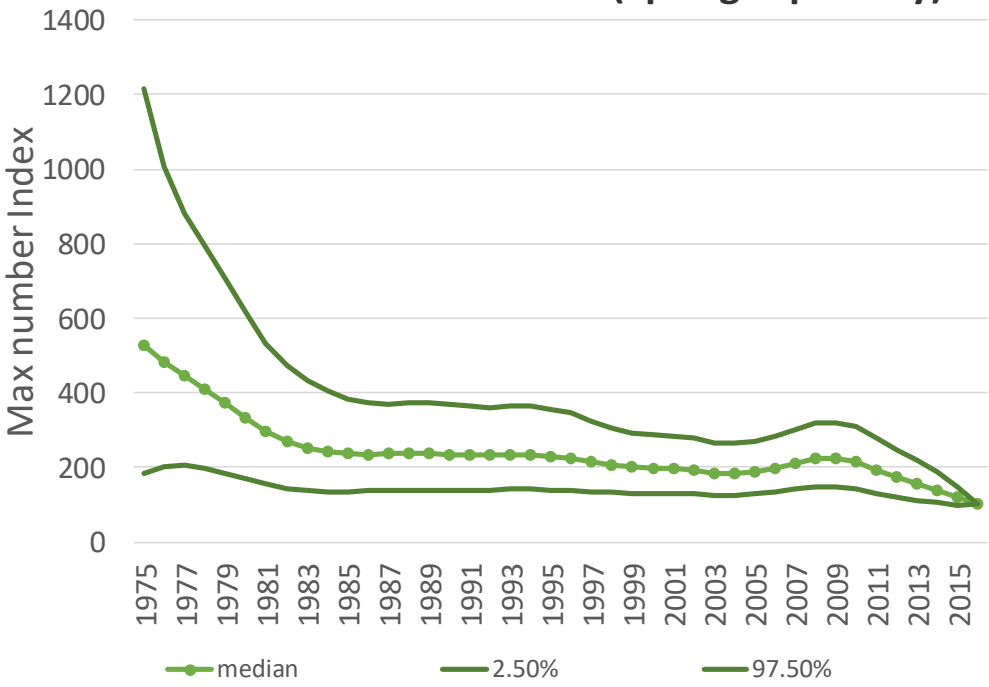
- Dominant shorebird species in Japan

Figure: Japan Bird Research Association

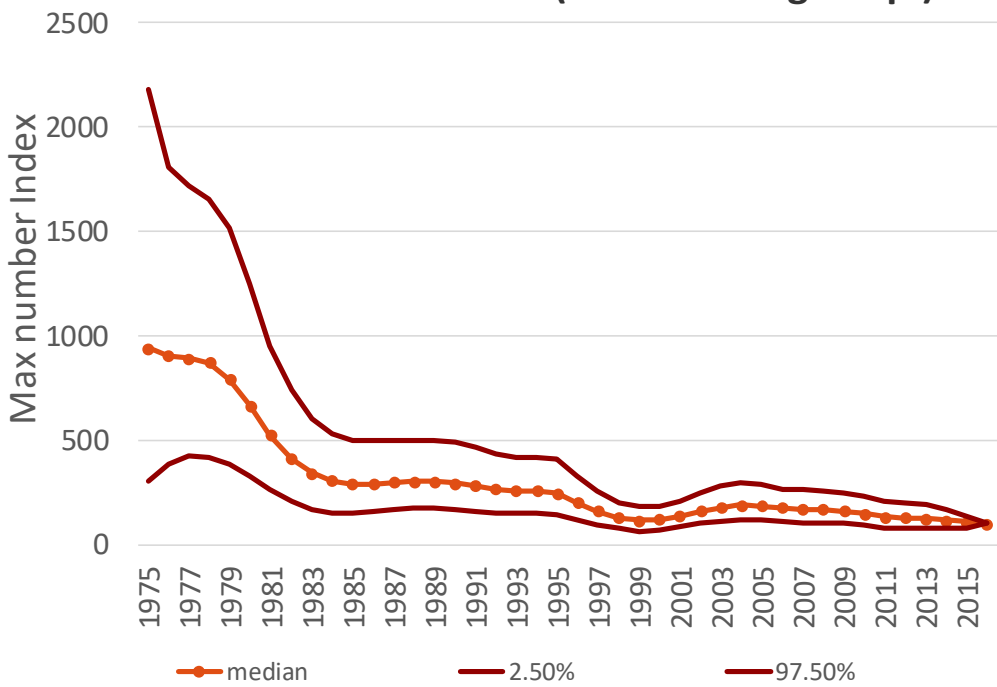
Dunlin's population trends in Japan

(Long-term: 1975-2016)

(Spring: Apr.-May)

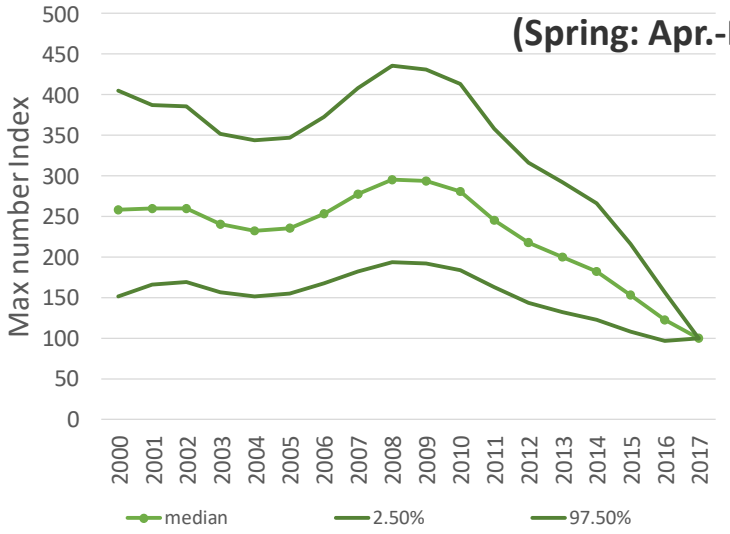


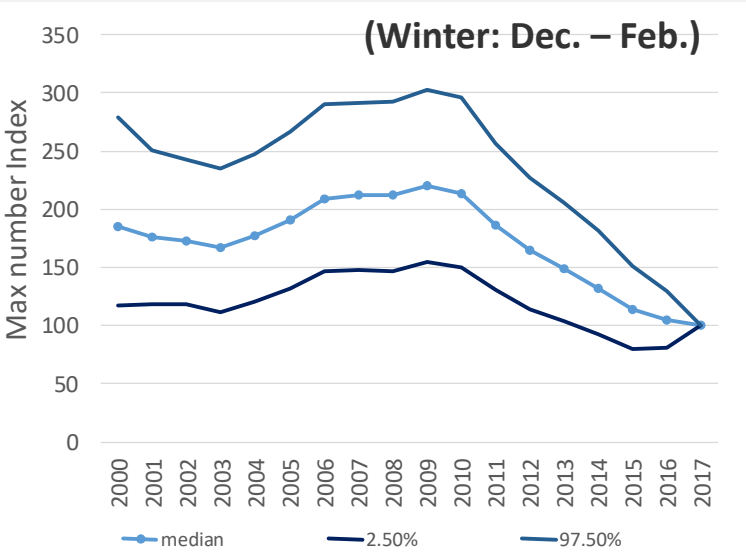
(Autumn: Aug.- Sep.)

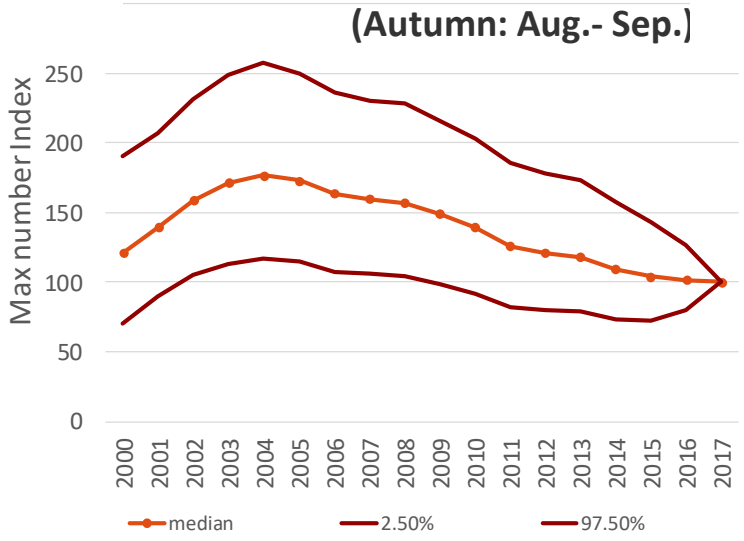


Figures: Japan Bird Research Association

Dunlin’s population trends in Japan



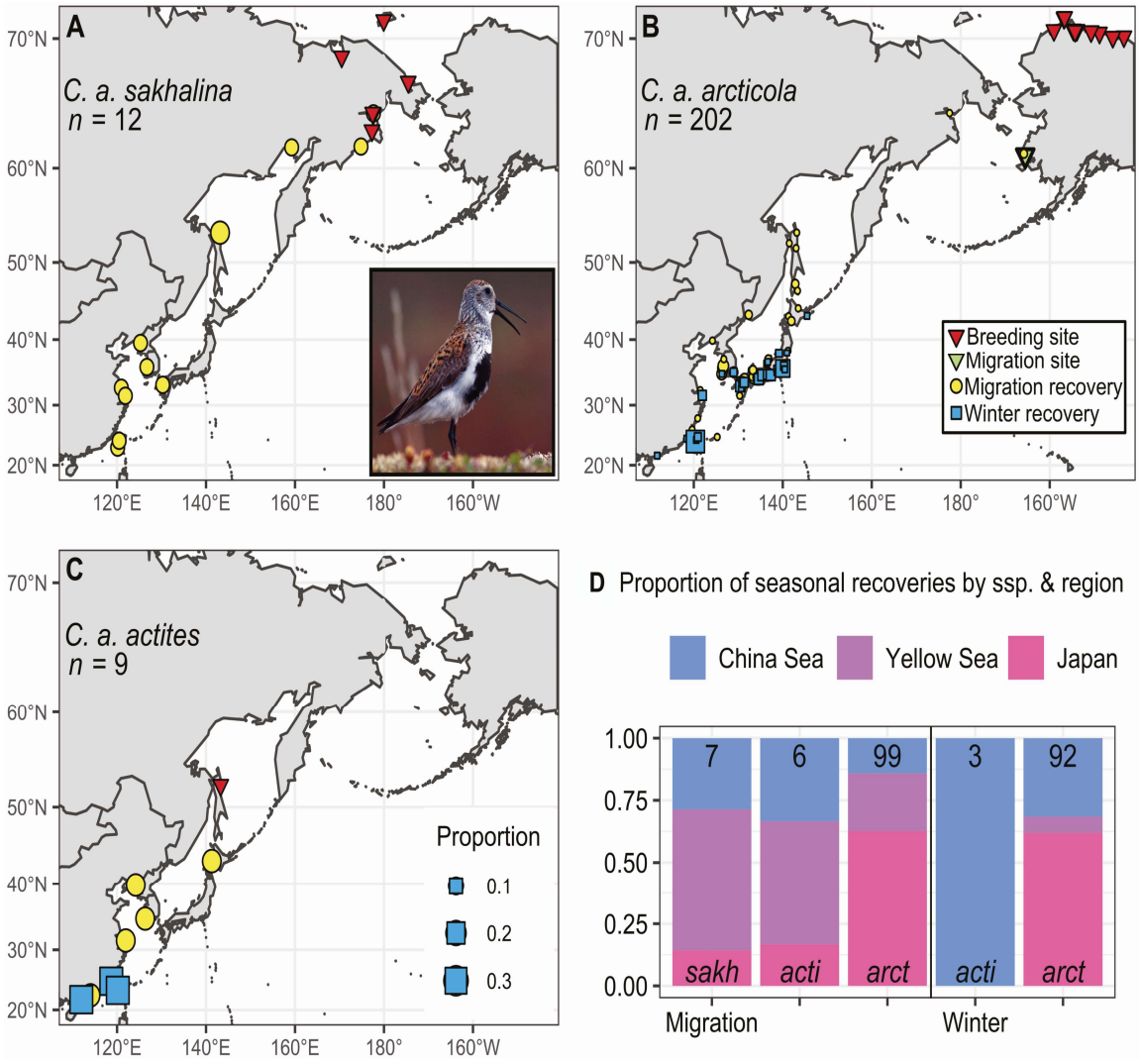




(<u>Short-term:</u> 2000-2017)

Figures: Japan Bird Research Association

FIGURE 2. (A–C) SITES WHERE SUBSPECIES OF DUNLIN (CALIDRIS ALPINA) WERE MARKED AND LATER RECOVERED ALONG THE EAAF



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Questions arose from the trends…

- **Decline in the population of Dunlin**
  - What is happening since 2010?
  - Where does the autumn population in Ariake Sea come from?

- **Analysis to find out drivers of decrease**
  - Global warming? Predation? Illegal hunting? Habitat destruction??

- **Exchange of information with EAAF countries**
  - Population trend
  - Condition in the breeding and wintering grounds
  - Migration and distribution of the subspecies

The workshop on the conservation of small shorebird species that migrate among US, Russia and Japan – especially on Dunlin –

- **Date:** 28 January 2020
- **Venue:** Izunuma-Uchinuma Sanctuary Centre, Miyagi, Japan
- **Participants:** 13 (US (1), Russia (2), Japan (10))

- **Common recognition obtained:** to proceed monitoring/researches as a flagship species for the conservation of small shorebird species
- **Important points raised:**
  - To identify the distribution and population size and trends of each subspecies within the East Asian-Australasian Flyway
  - To identify the threats within EAAF
  - Flyway-wide approach: to share at the 1st EAAF-SSM

Dunlin Conservation Investigative Commission

From FY2021 a Dunlin Commission have been held under the auspices of MOEJ to discuss how to promote Dunlin conservation in Japan. The actions proposed and taken are to:

- Identify knowledge gaps on the present situation of Dunlin in Japan
- Identify and start working survey works necessary,
  - eg. Monitoring, banding
- Organise a national Dunlin conservation Group:
  - Representative : Jun HOSOYA (Yamashina Institute for Ornithology)
  - Coordinator: Toshifumi MORIYA (Japan Bird Research Association)
- Write and publish a guideline booklet to promote protection of Dunlin in Japanese. Planned to be translated into English

Identified key research actions

1. Analyse the knowledge gap

(1) Analyse and publish the existing data of geolocator, banding, monitoring (each country)
(2) Identify the knowledge gap and location based on (1) above

We call for more attention on Dunlin throughout EAAF

2. Monitoring in breeding sites

(1) Continue monitoring efforts in Alaska
(2) Start monitoring for *kitschinski* and *sakhalina* in Russia
(3) Estimate the population size of *kitschinski* and *sakhalina* more accurately in Russia
(4) Tracking: research with new tracking devices in Alaska and Russia

3. Research/conservation in stopover and wintering sites

(1) Banding: Share the methodology of measurement and DNA analysis and research the details of migratory patterns for each subspecies in Japan; Continue banding in Kamchatka including cooperative studies to identify subspecies Russia
(2) Monitoring: Continue the monitoring inJapan; How are the monitoring conducted in other wintering sites in EAAF? Trends?
(3) Identify and address the threats for Dunlins throughout the EAAF

4. Identify the breeding sites of the population that are wintering in Japan

Personally, Everything started in Australia in 1994

Mar 1994	NW Australia Wader and Tern Expedition, Broome, WA (also 1996, 1998)
Nov 1994	Workshop on waterbirds in EAA Flyway, Kushiro, Japan
Apr 1995	Migratory Bird Route Tour in Japan; Started Legflag Sighting campaign in Japan
Mar 1996	Flyway Shorebird Conference + Ramsar COP 6, Brisbane, QLD
Mar 1999	Jp-US Migratory Bird Treaty Meeting, Tokyo, JP
Aug 1999	Jp-US Joint Dunlin Survey in North Slope, AK, US (until 2003)
Jun 2001	Expedition on waterbirds in Chukotka, survey focus Geese and Spoon-billed Sandpiper
Jan 2020	Jp-Ru-US Workshop on small shorebirds, Miyagi, JP

Number of individuals observed in the early autumn migration by region

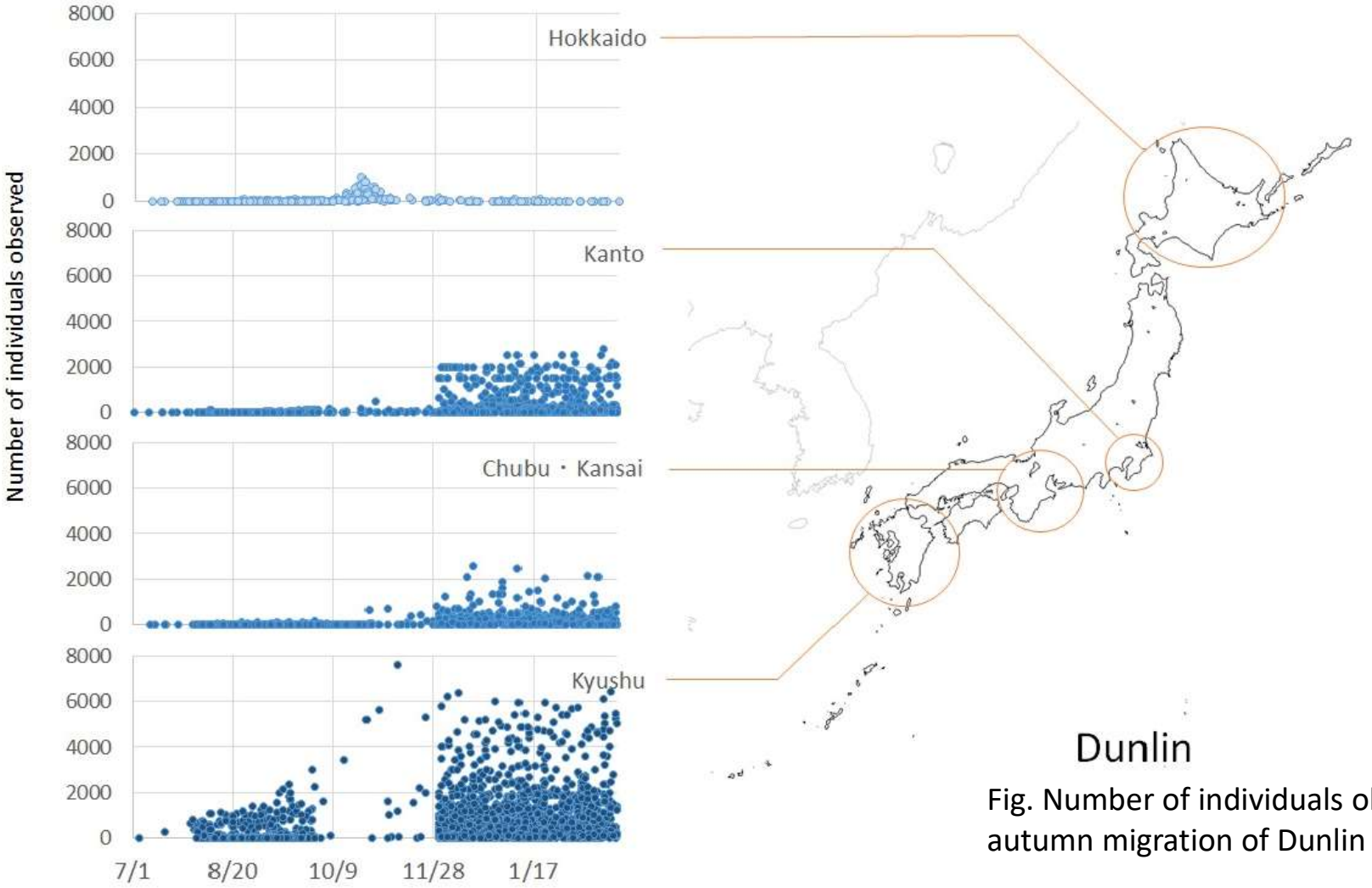


Fig. Number of individuals observed in the early autumn migration of Dunlin by region in Japan

Tracking Dunlins' flyways by banding

Metal bands

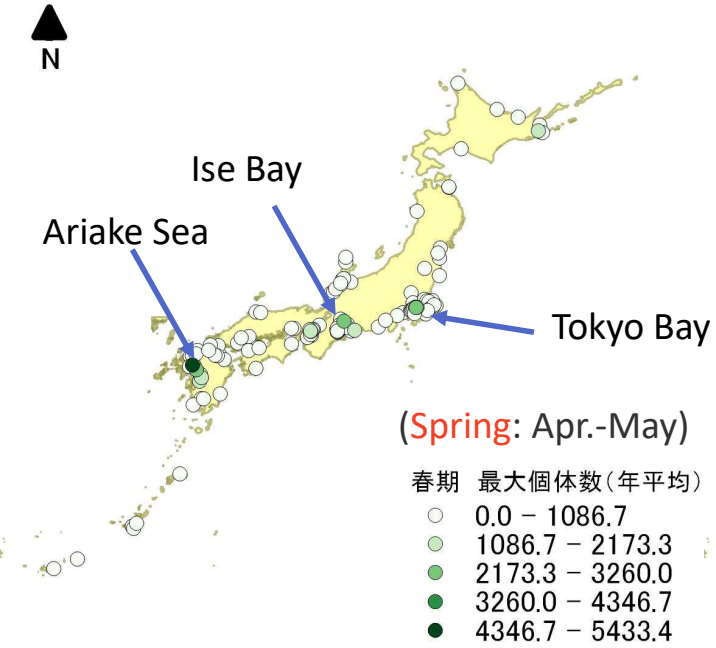
- Period: 1973-2018
- Newly marked: 6,869
- Repeat capture: 220
- Return: 278
- Metal band recovery: 35

Colour marking

- 1988-2015: 2,600 rings/flags (plain)
- 2010-2018: 744 engraved flags
- Flag sightings >840
- Flag sightings of individually identified birds 130

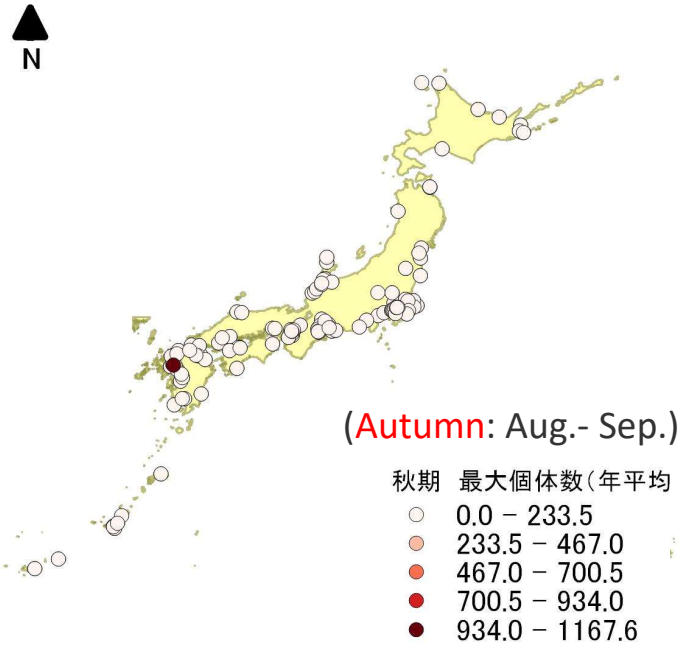
Data: Yamashina Institute for Ornithology

The distribution of Dunlin in Japan



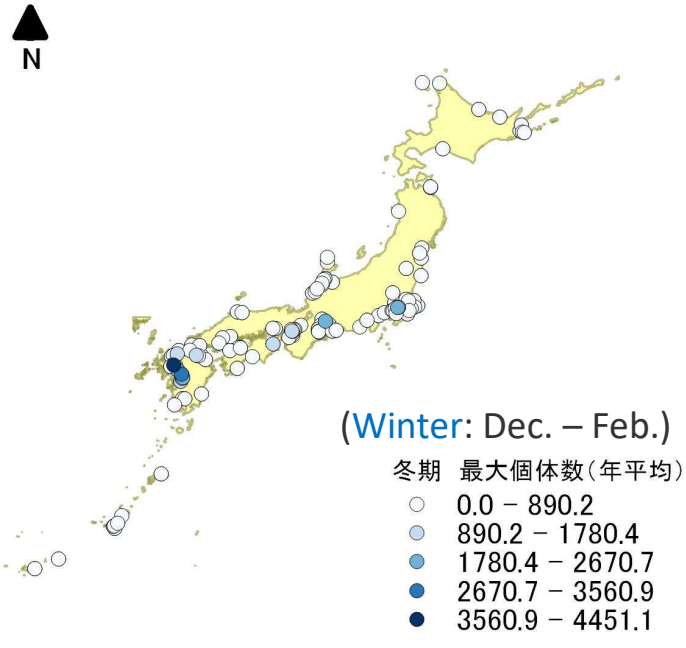
(Spring: Apr.-May)

春期　最大個体数（年平均）
- 0.0 – 1086.7
- 1086.7 – 2173.3
- 2173.3 – 3260.0
- 3260.0 – 4346.7
- 4346.7 – 5433.4



(Autumn: Aug.- Sep.)

秋期　最大個体数（年平均）
- 0.0 – 233.5
- 233.5 – 467.0
- 467.0 – 700.5
- 700.5 – 934.0
- 934.0 – 1167.6

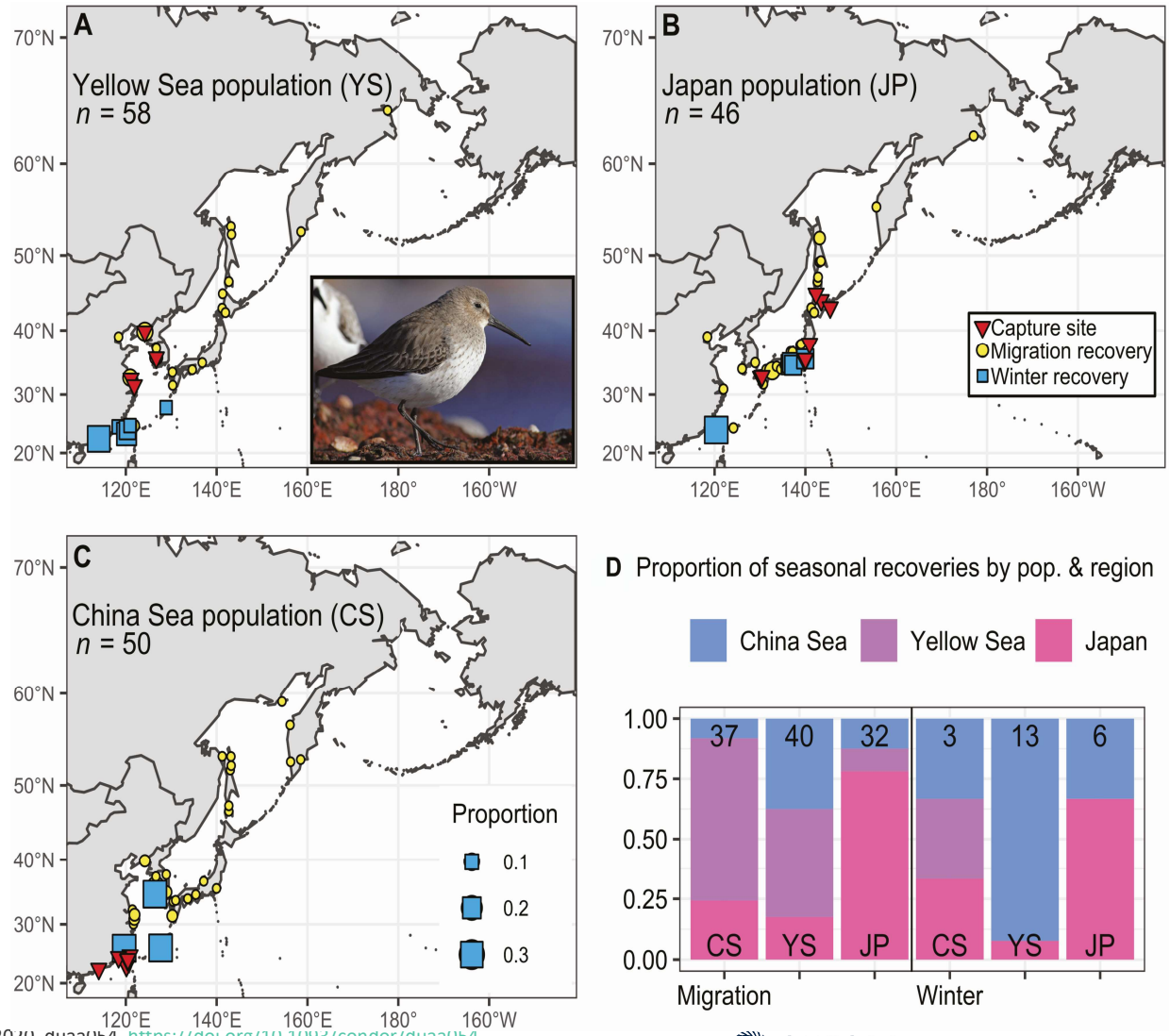


(Winter: Dec. – Feb.)

冬期　最大個体数（年平均）
- 0.0 – 890.2
- 890.2 – 1780.4
- 1780.4 – 2670.7
- 2670.7 – 3560.9
- 3560.9 – 4451.1

Figures: Japan Bird Research Association

FIGURE 3. (A–C) SITES WHERE DUNLIN (CALIDRIS ALPINA) OF UNKNOWN SUBSPECIES WERE MARKED AND LATER RECOVERED ALONG THE EAAF



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