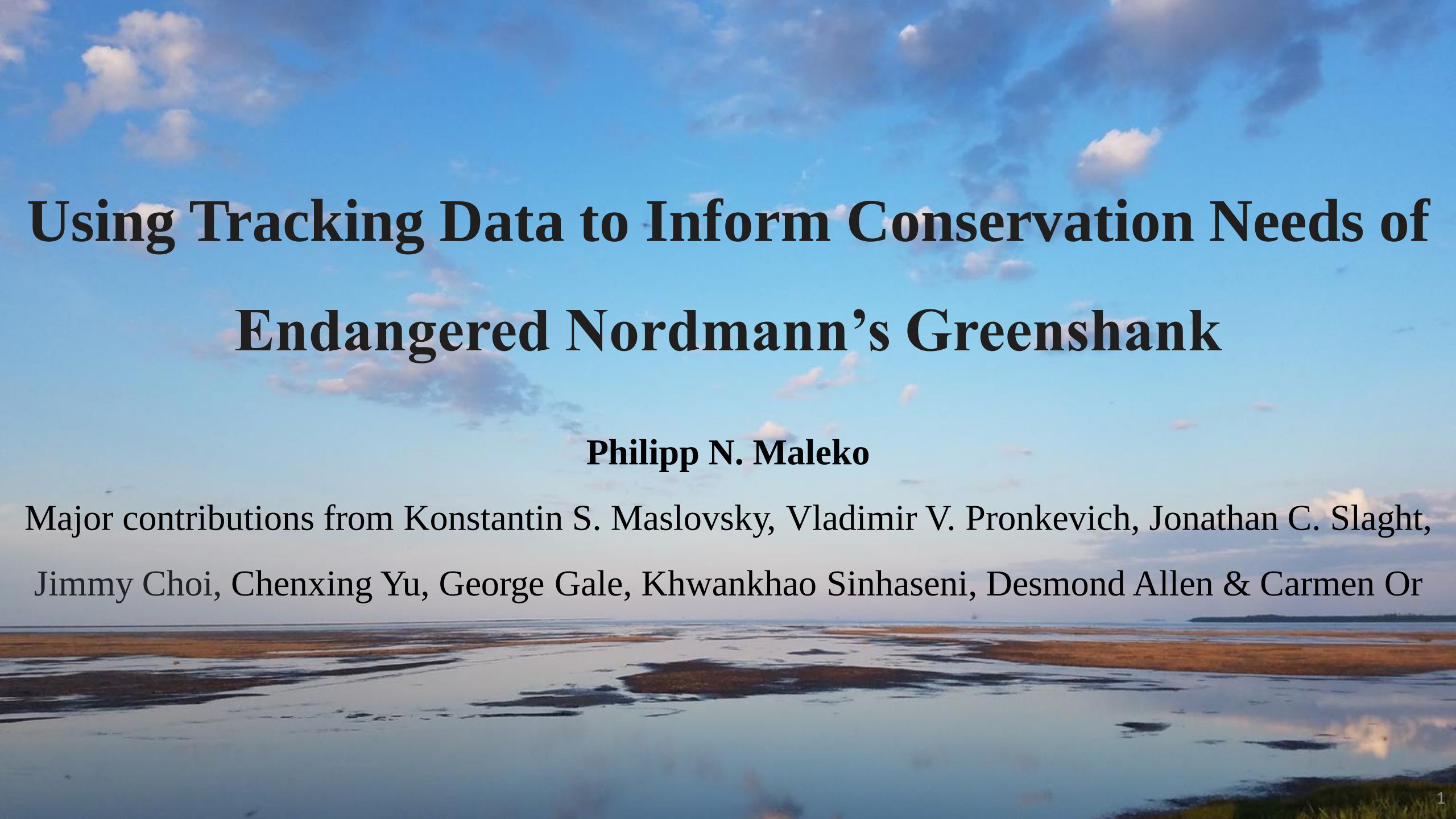
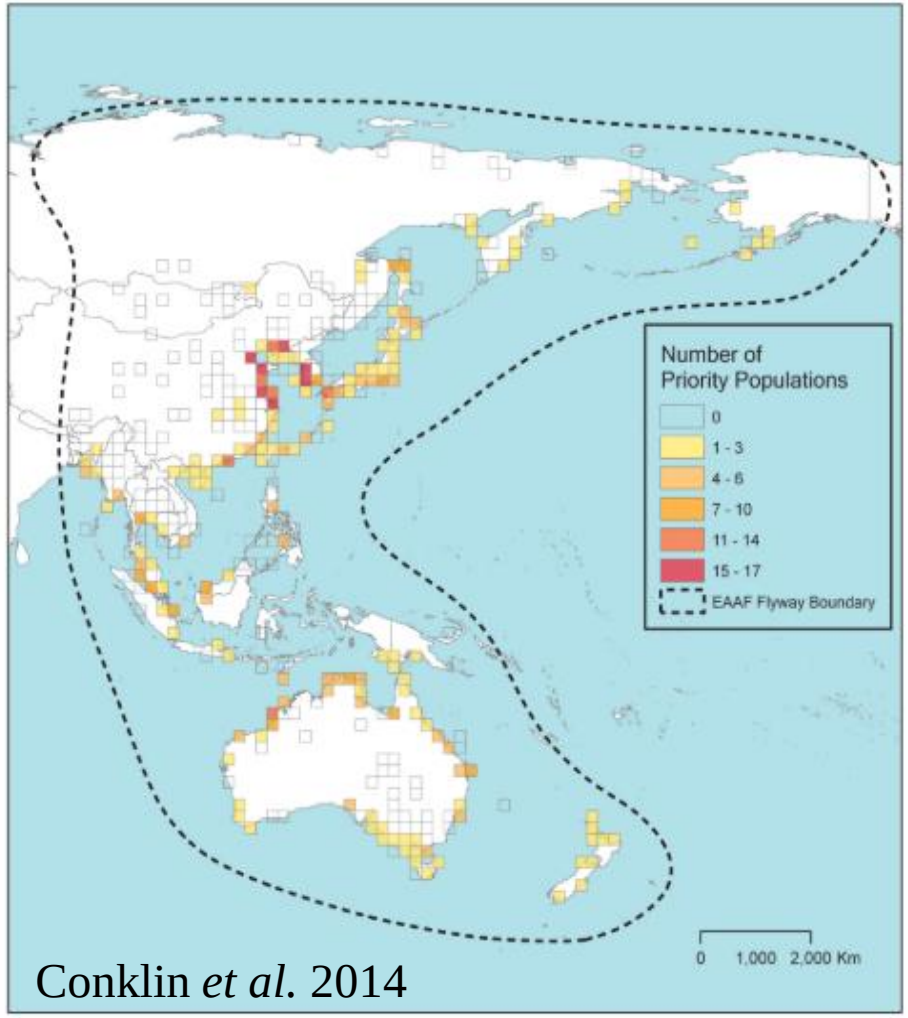


Using Tracking Data to Inform Conservation Needs of Endangered Nordmann's Greenshank

Philipp N. Maleko

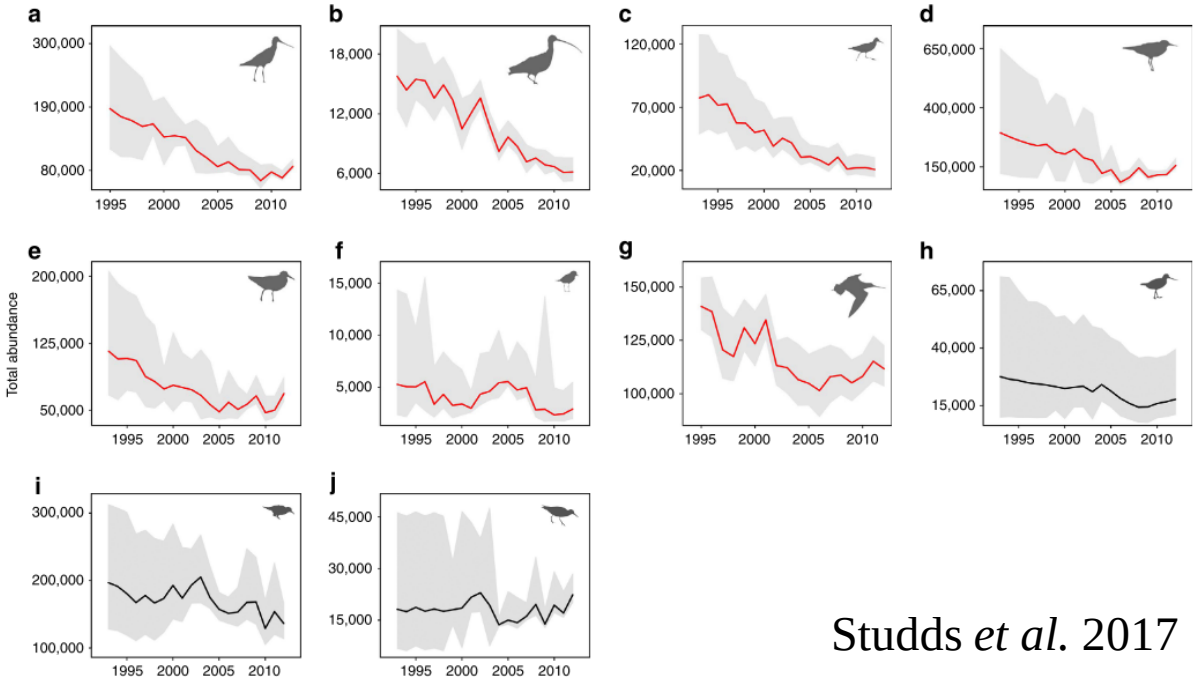
Major contributions from Konstantin S. Maslovsky, Vladimir V. Pronkevich, Jonathan C. Slaght, Jimmy Choi, Chenxing Yu, George Gale, Khwankhao Sinhaseni, Desmond Allen & Carmen Or

Declining Shorebirds in the EAAF



Conklin *et al.* 2014

Critical areas of the EAAF, based on the number of priority shorebird populations supported in internationally important numbers.



Studds *et al.* 2017

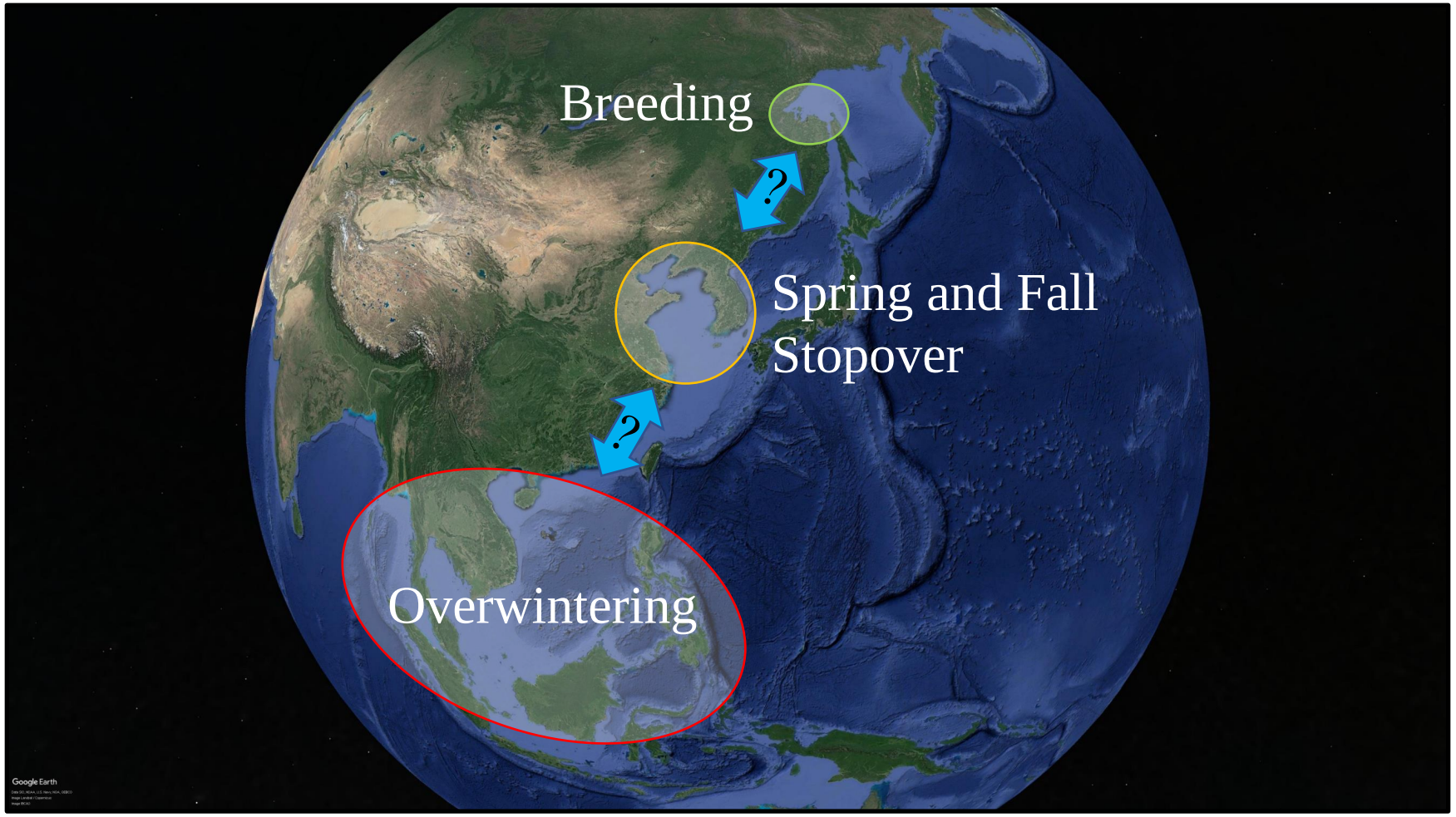
Figure 2 | Total abundance between 1993 and 2012 for ten EAAF migratory shorebird taxa. (**a**–**f**) Taxa are ordered from highest to lowest Yellow Sea reliance, the proportion of the flyway population that stages on Yellow Sea tidal mudflats to refuel for long-distance migrations. (**a**) *Menzbieri* bar-tailed godwit; (**b**) far eastern curlew; (**c**) curlew sandpiper; (**d**) great knot; (**e**) red knot; (**f**) lesser sand plover; (**g**) *baueri* bar-tailed godwit; (**h**) terek sandpiper; (**i**) red-necked stint; and (**j**) grey-tailed tattler. Total abundance estimates are posterior means from Bayesian N-mixture models of counts across Australia and New Zealand, including the majority of internationally important sites. Lines show posterior mean abundance estimates for each year, with red lines indicating taxa with credibly declining populations and grey shading denoting the 95% CRI. Overall trend estimates appear in Table 1. Detection probabilities for each taxon ranged from 0.52 to 0.68 (Supplementary Fig. 1) and were reflected in modelled abundances and trend estimates. Posterior predictive checks indicated good model fit in all cases (Supplementary Fig. 2).

- 12 species of shorebirds are under threat of extinction.
  - Populations are declining by 5-9% each year.

Nordmann's Greenshank (*Tringa guttifer)*

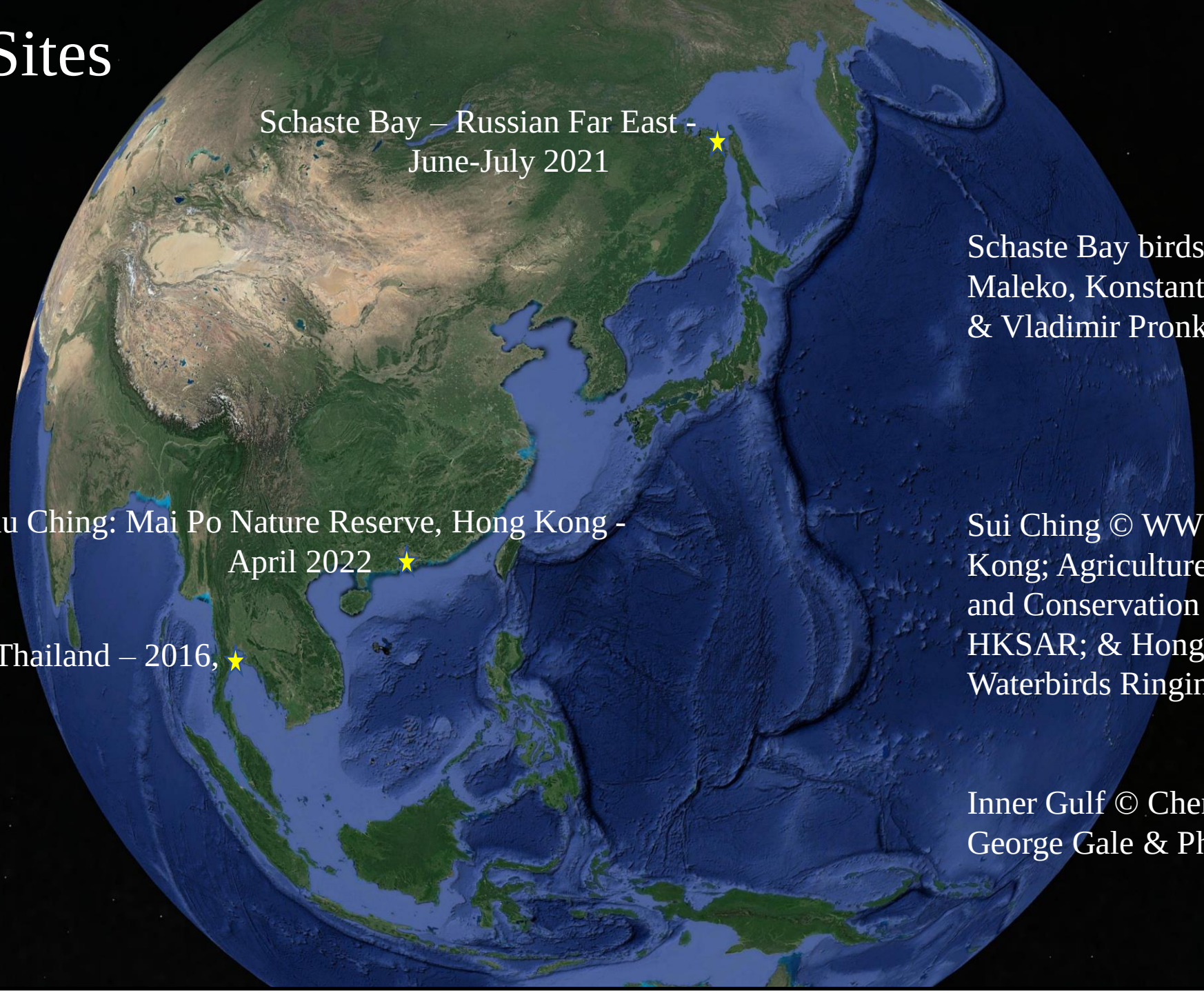
- Endemic to the EAAF.
- Rare and endangered with a global population of 1200-2000 individuals.
- Umbrella species as it relies on various habitats throughout the annual cycle.

The Four Stages of their Annual Cycle



- Depending on strategy, may require many different sites along migration.
  - What sites require conservation attention? What are the issues?

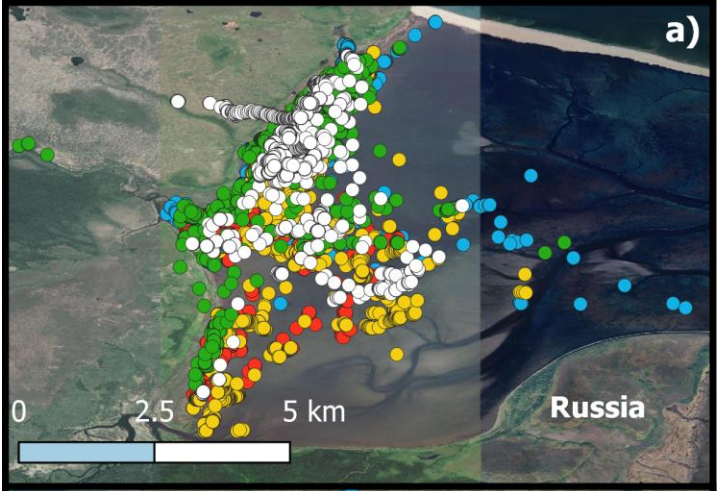
Capture Sites

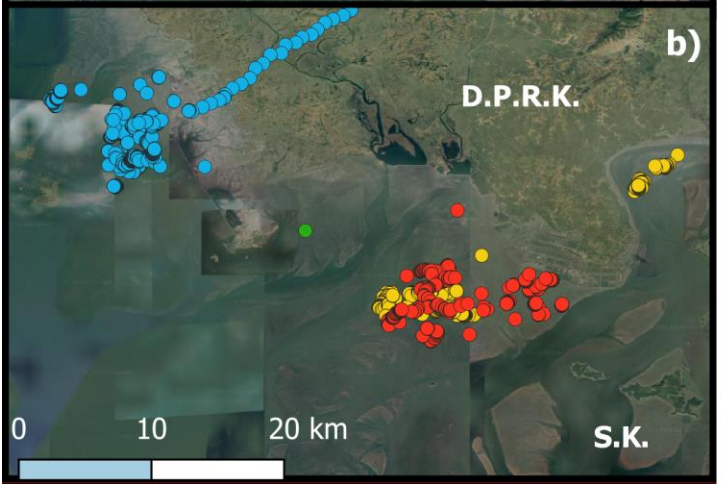


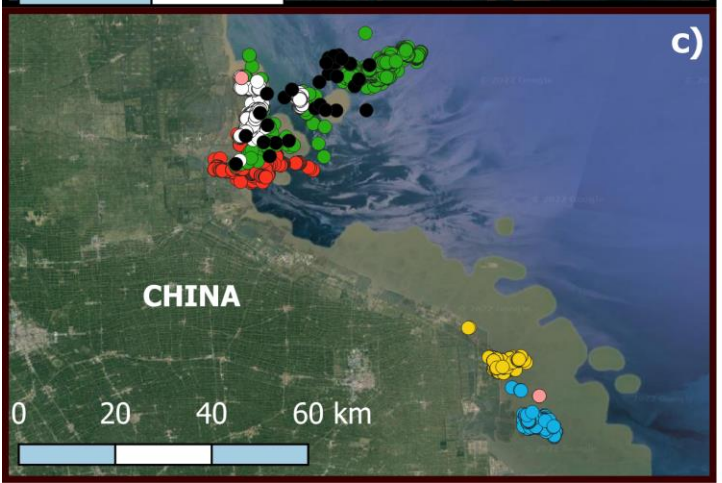
Schaste Bay birds © Philipp Maleko, Konstantin Maslovsky & Vladimir Pronkevich

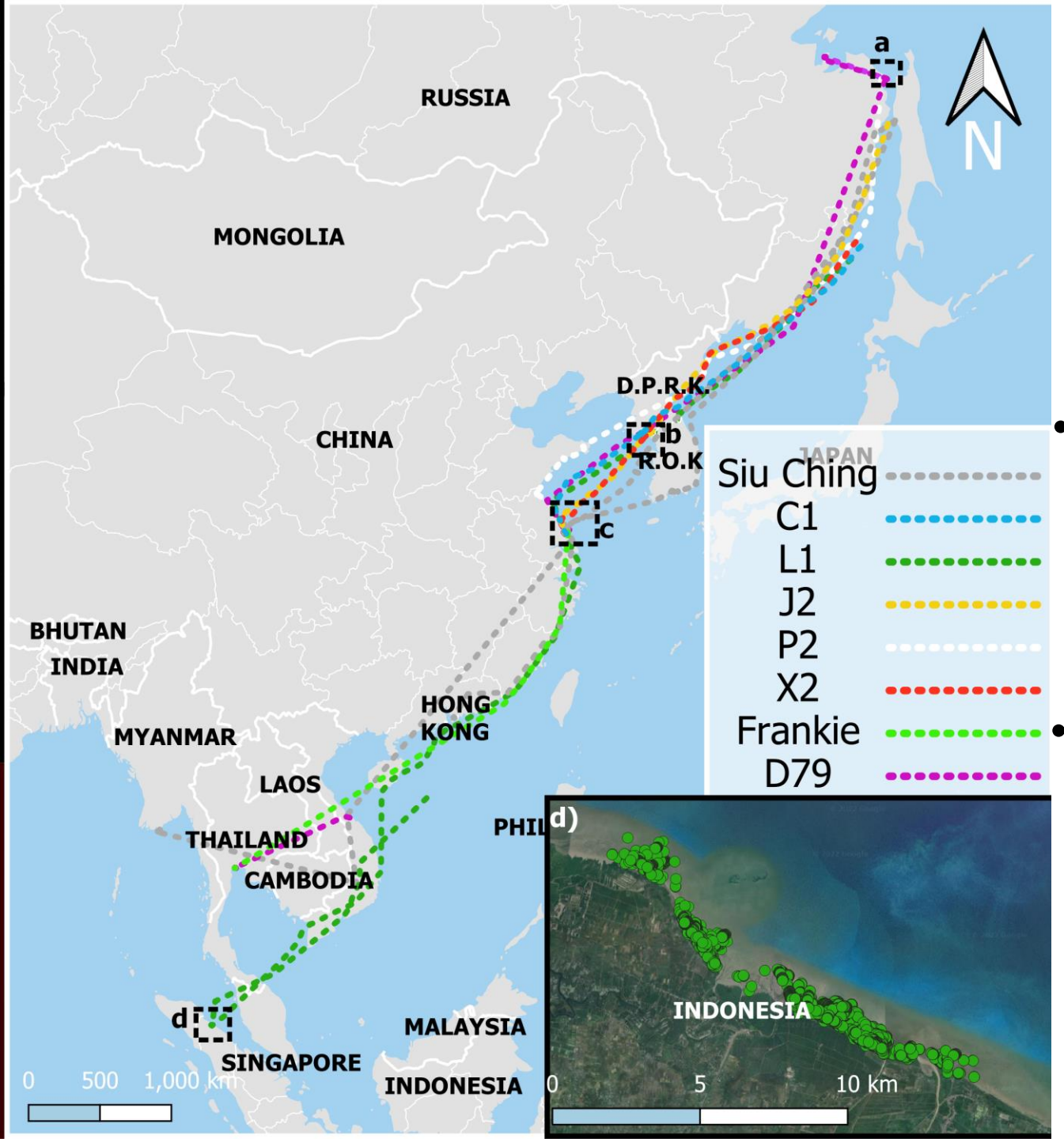
Sui Ching © WWF-Hong Kong; Agriculture, Fisheries and Conservation Department, HKSAR; & Hong Kong Waterbirds Ringing Group

Inner Gulf © Chenxing Yu, George Gale & Philipp Maleko



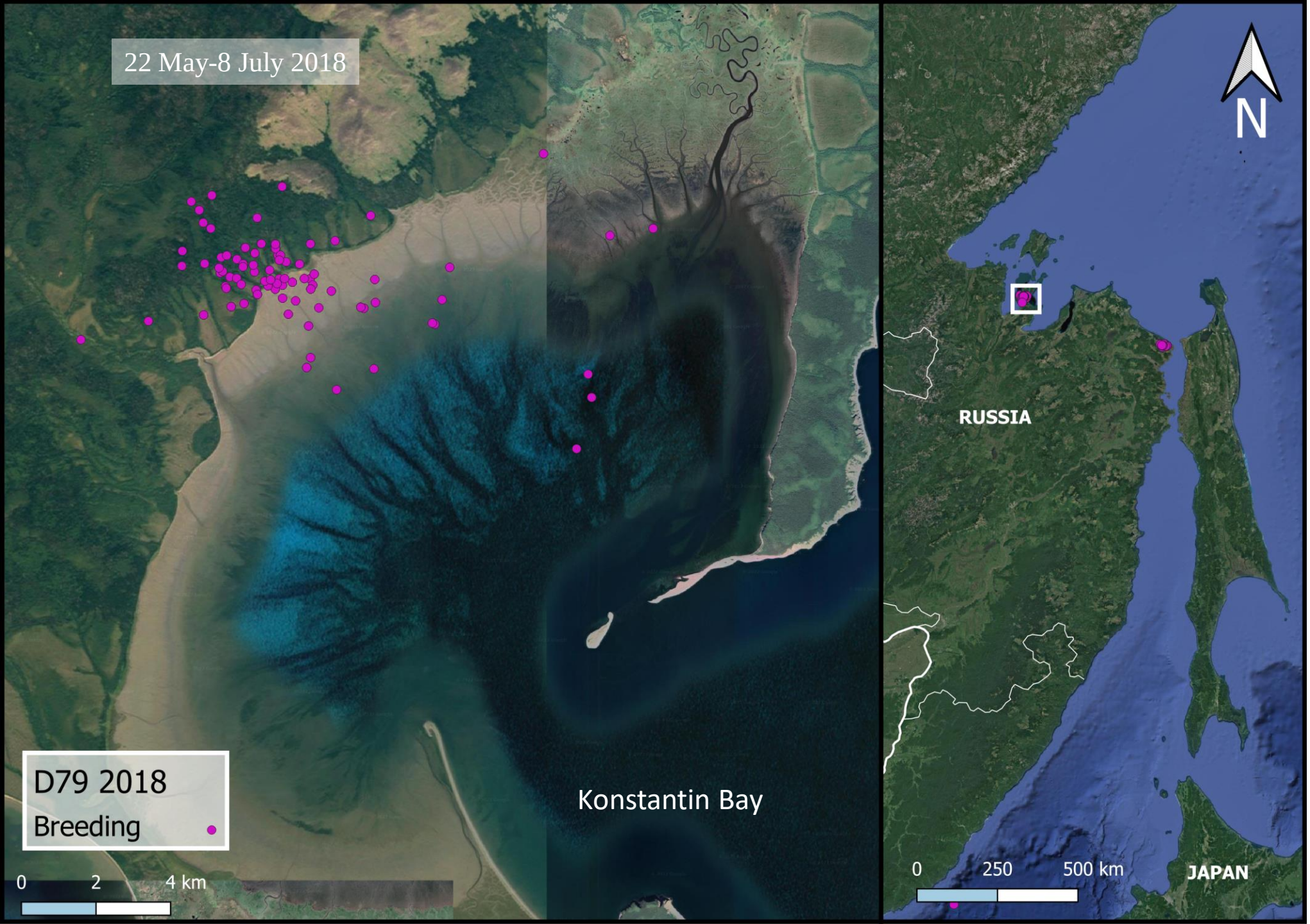






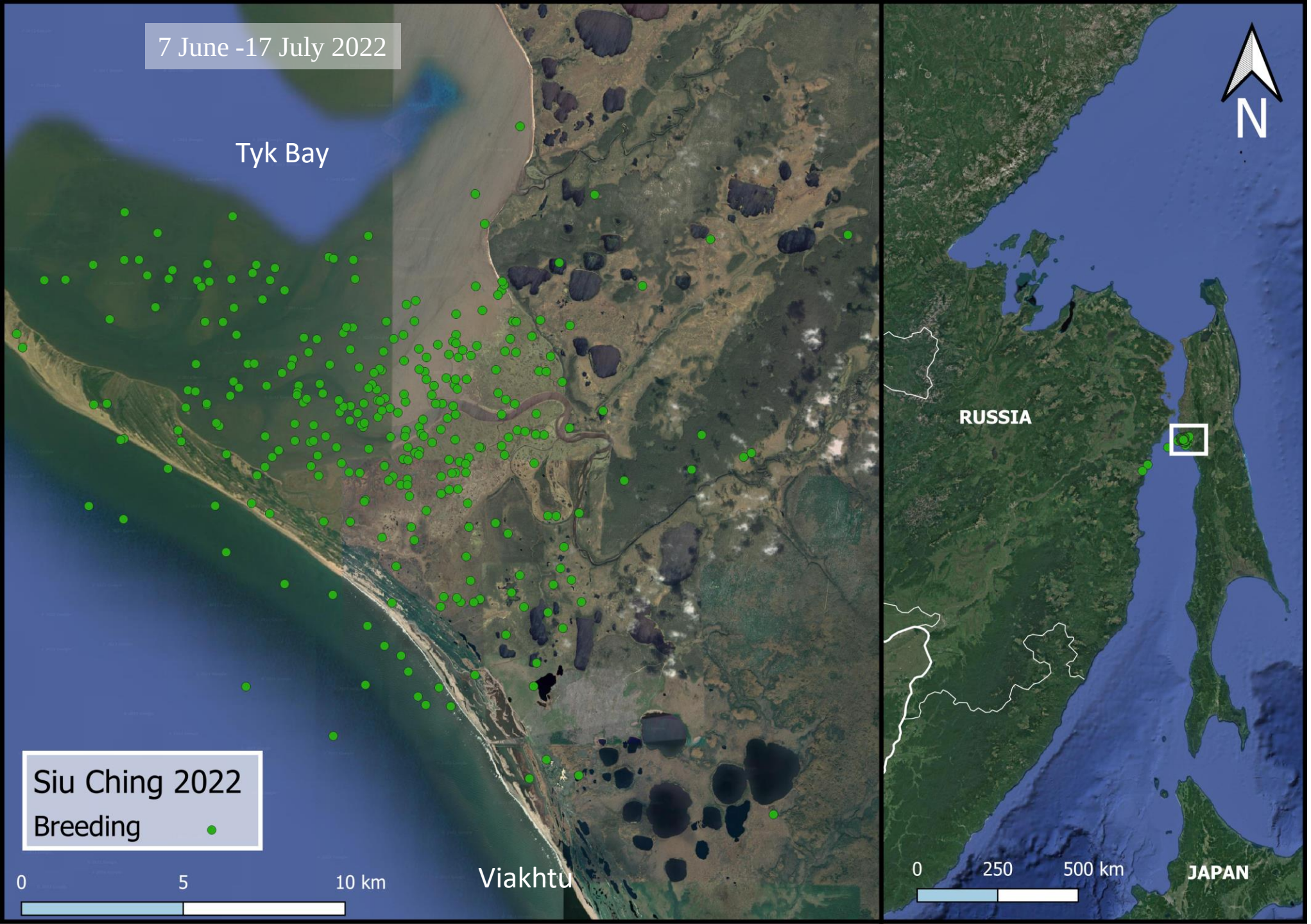
Migration Overview

- Almost entirely Coastal
- Jump and Hop
- **Key Migration sites**: Gyeonggi Bay; Mai Po, Lianyungang & Yancheng Wetlands (esp Tiaozini).



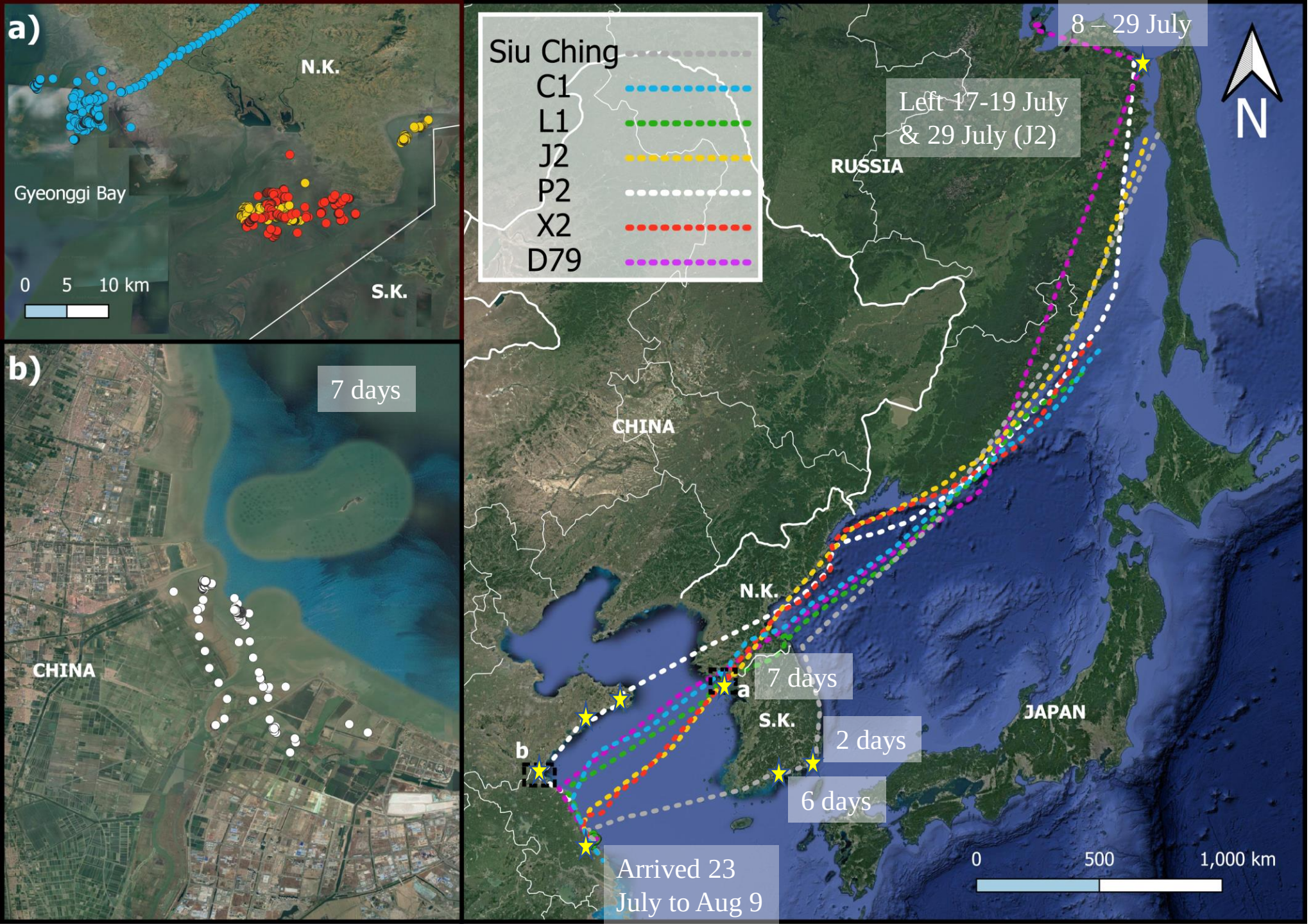
D79

- Nesting in Konstantin Bay?
- Staging in eastern Schaste Bay



Siu Ching

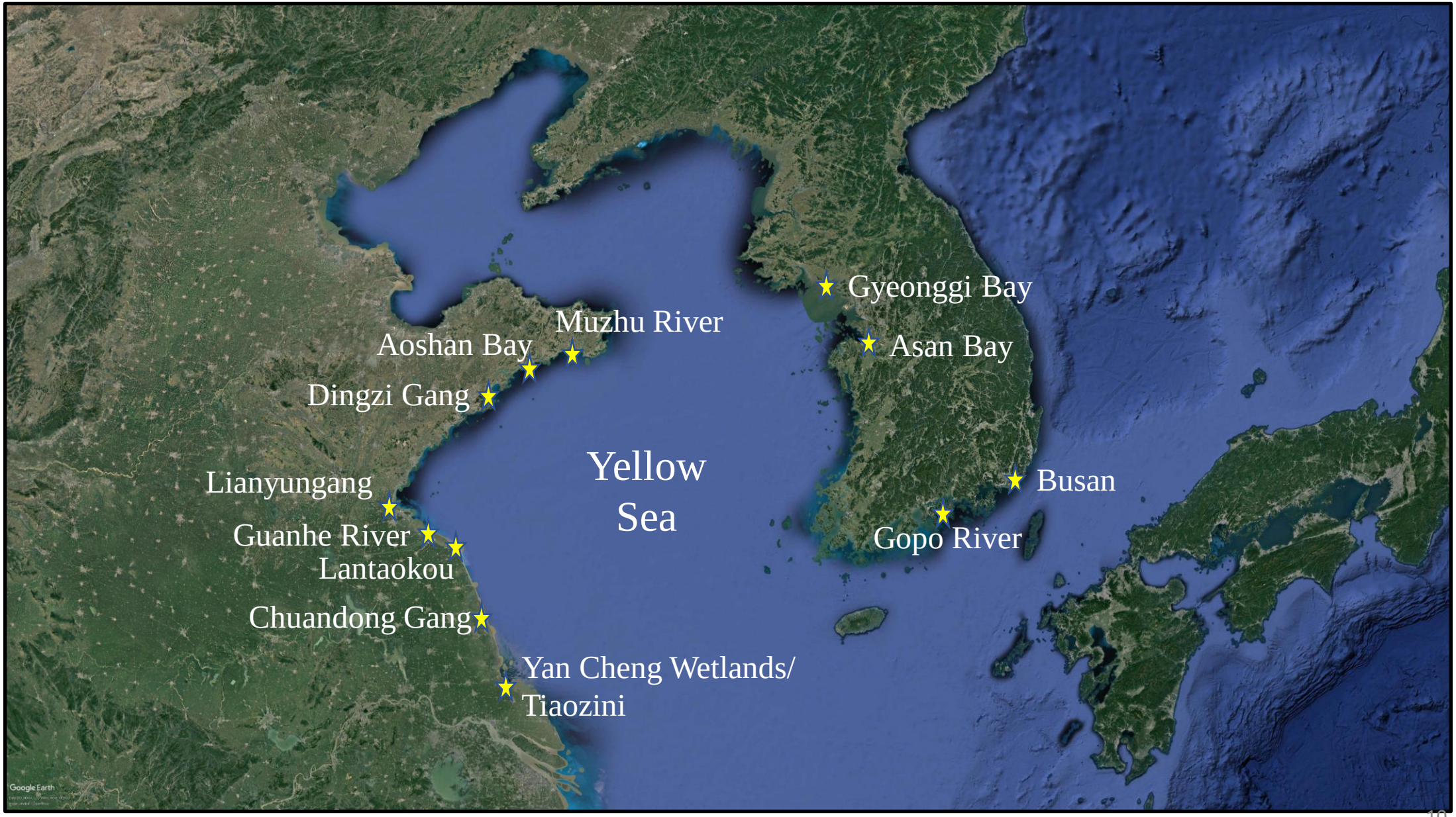
- Nesting in Tyk Bay?

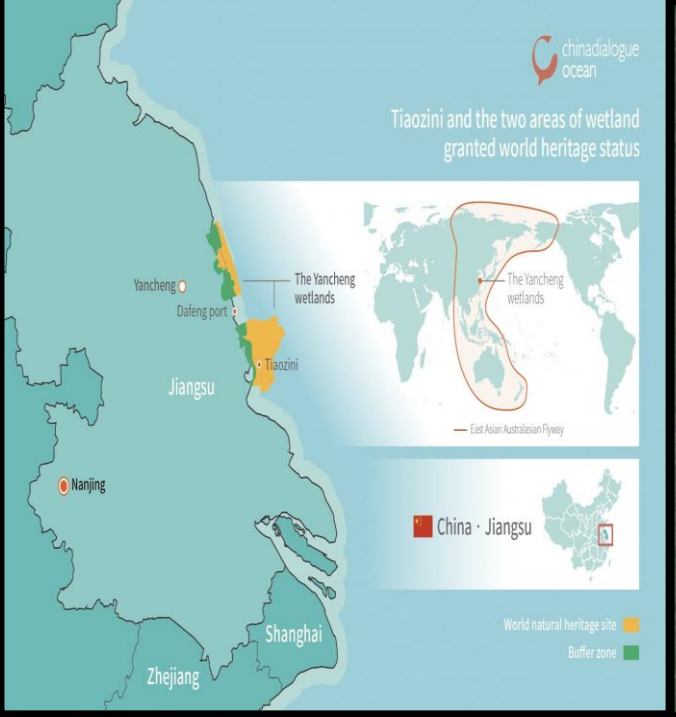


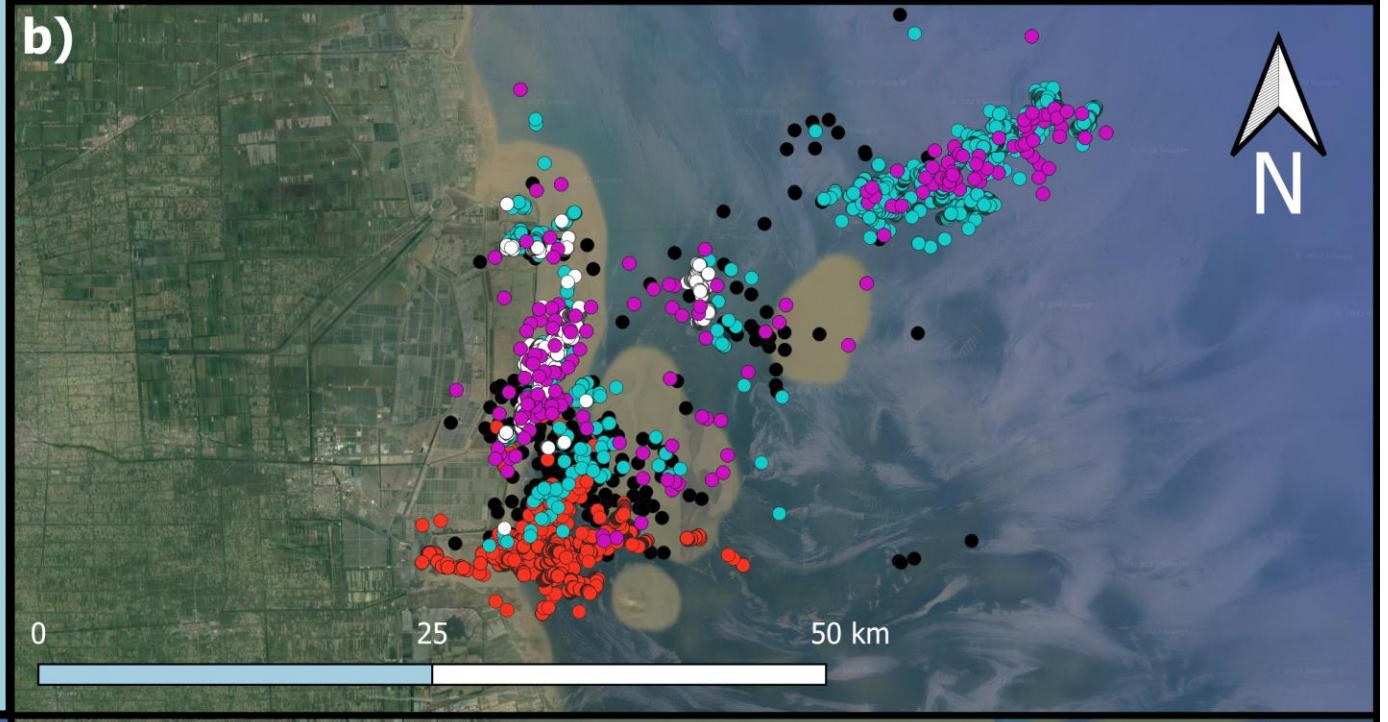
Southward Migration to Stopover

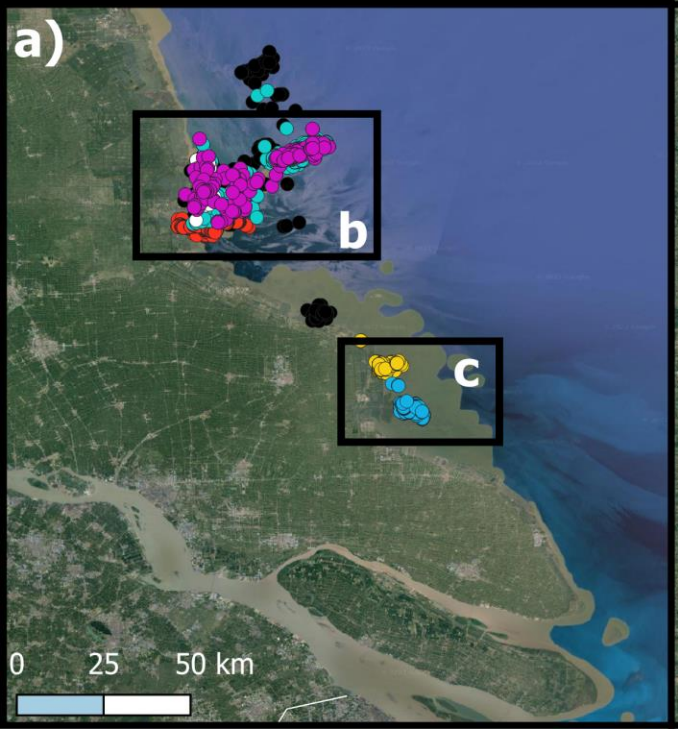
- Traveled along the coast, crossed or went around Korean peninsula, flew across the Yellow Sea, down the Jiangsu coast.

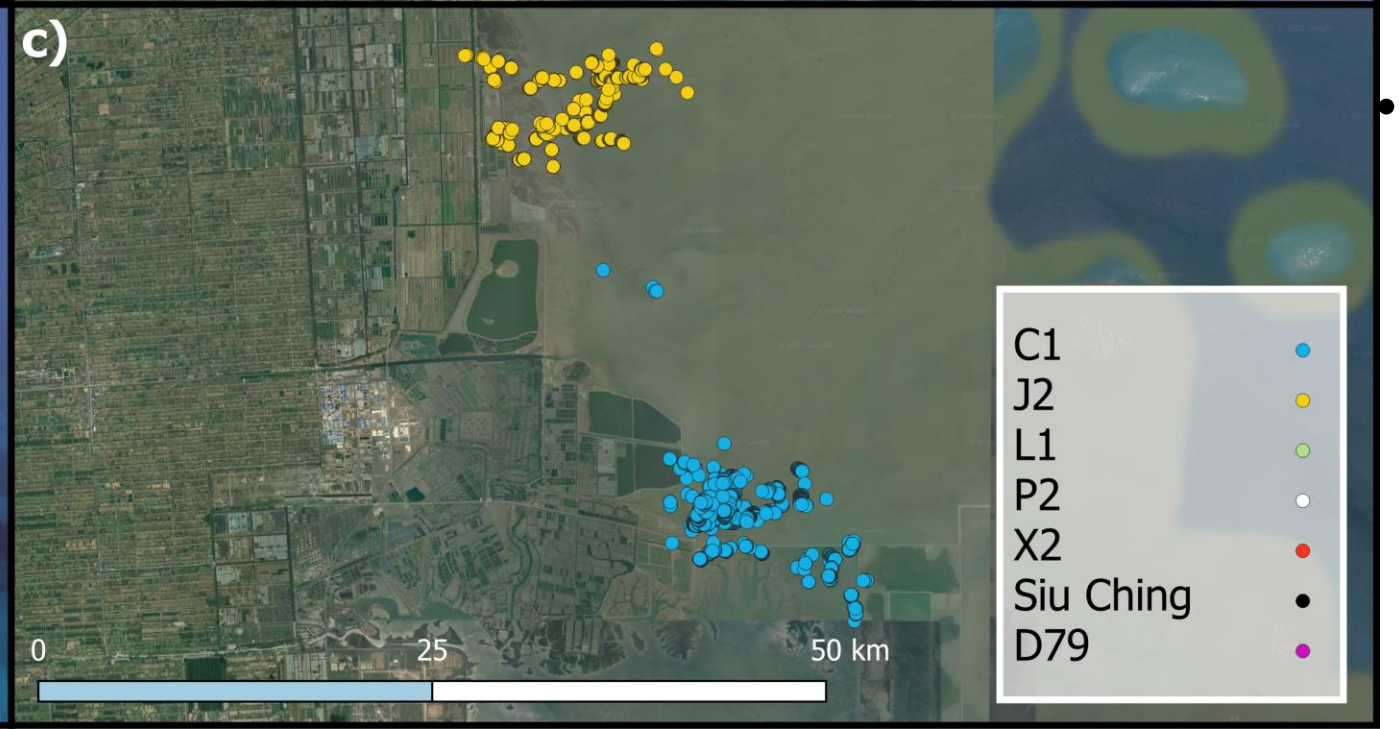
Staging and Stopover Grounds





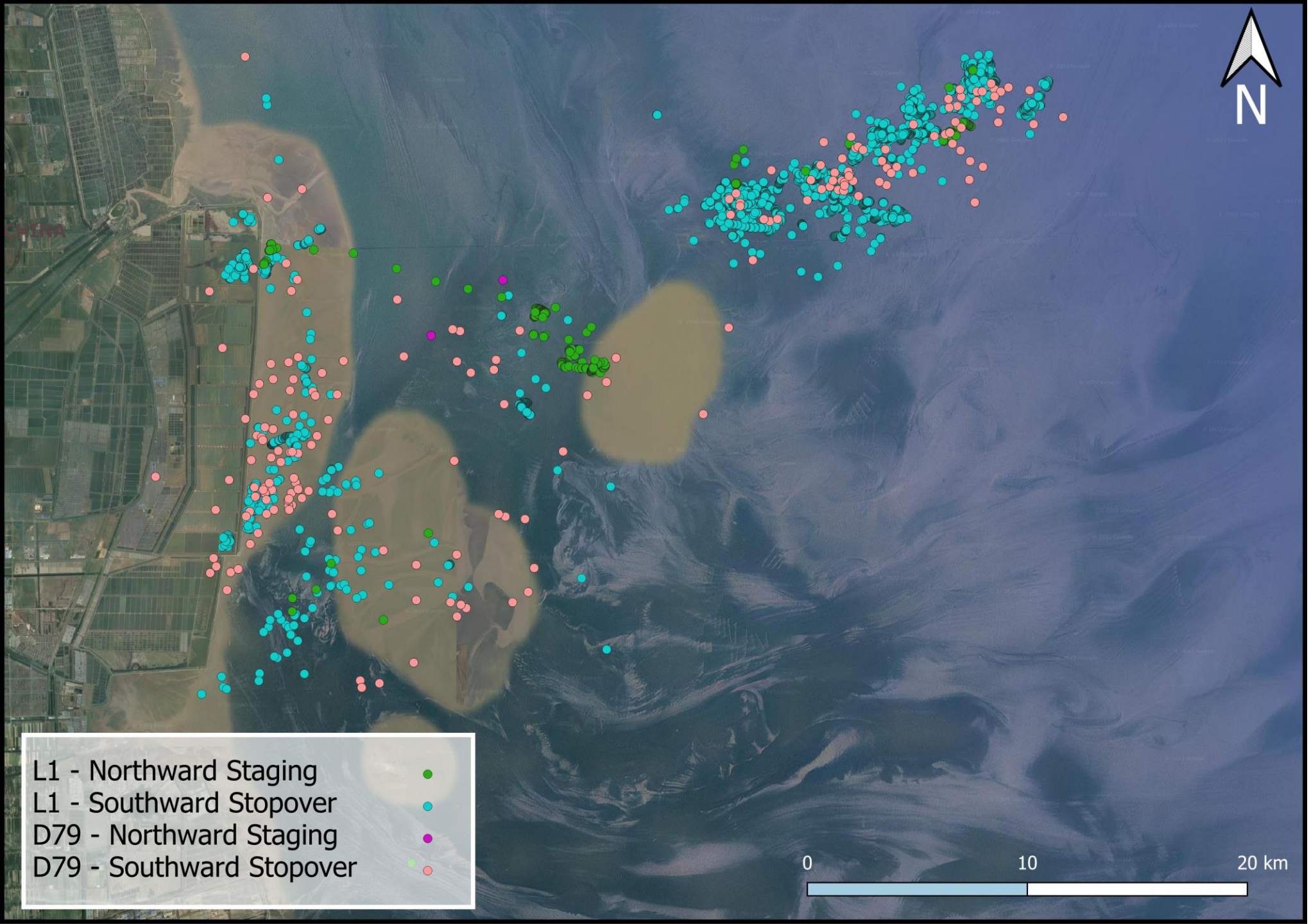






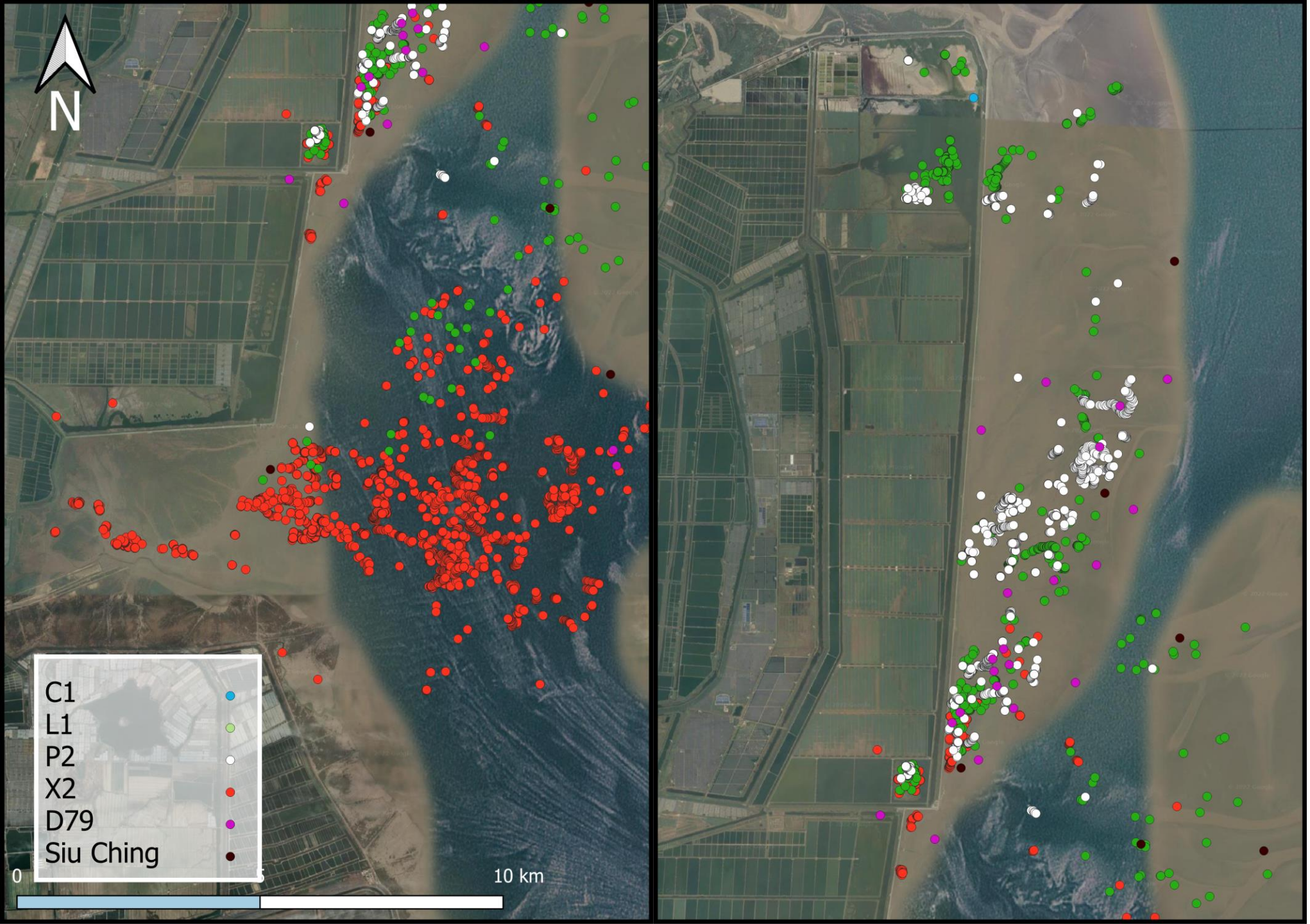
Movement within Stopover

- Stayed at one site for duration of stopover period.
- On border or outside of Tiaozini Wetland Park.



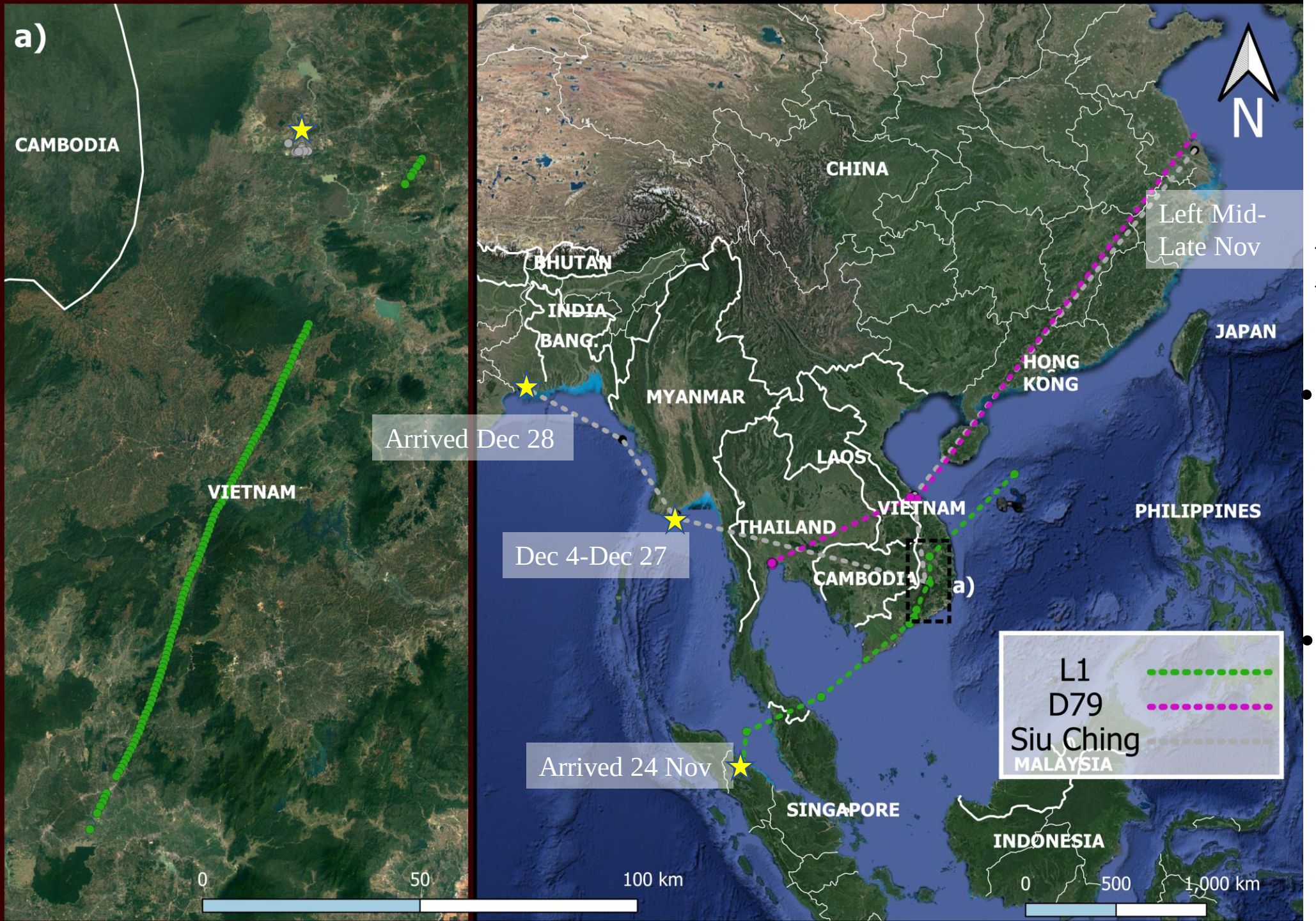
Repeated Use of Jiangsu, China

- Birds used the same exact location during northward and southward migration for staging and stopover.



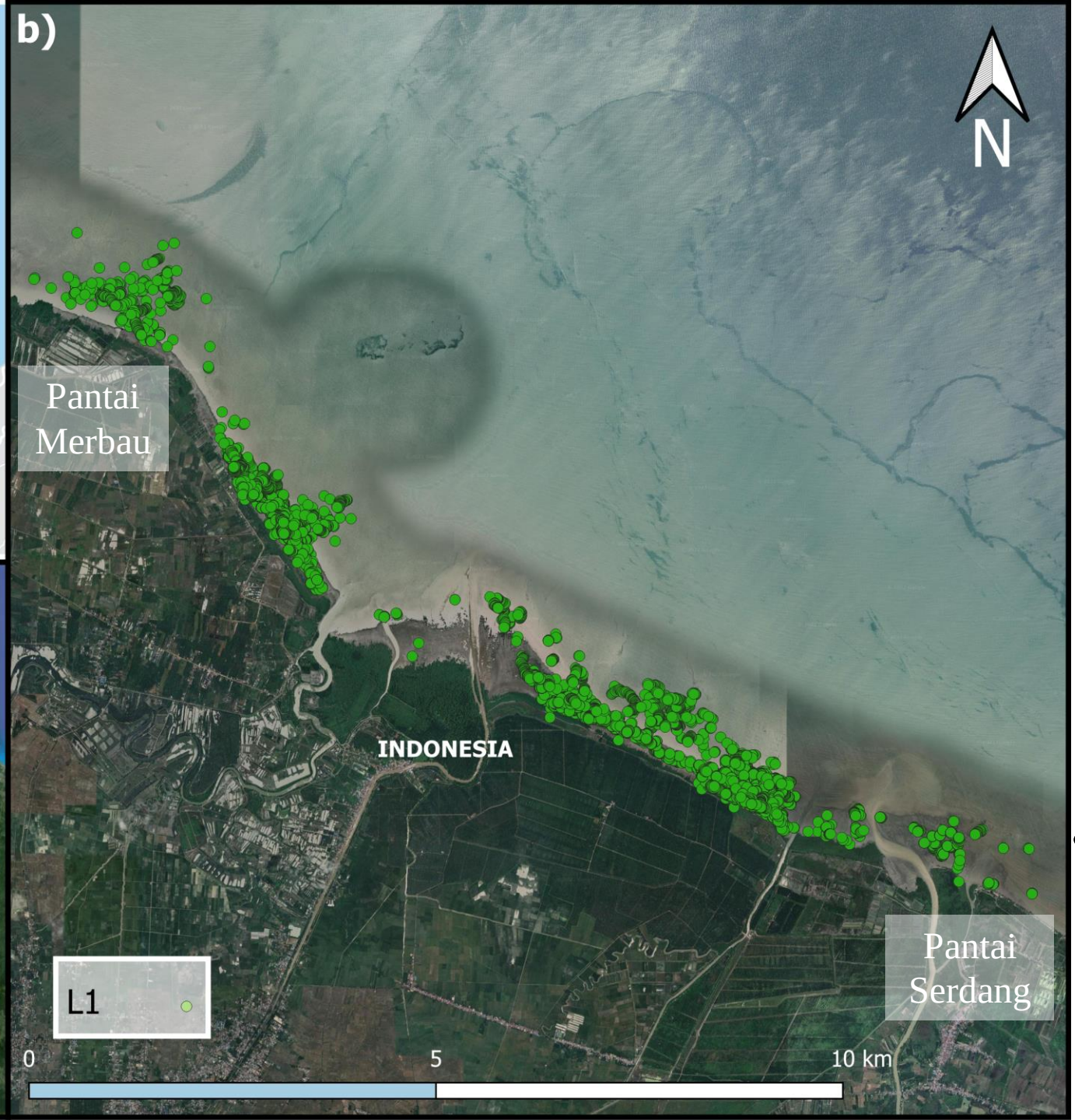
Movement within Stopover

- Planned development of a recreational facility.



Southward Migration to Wintering

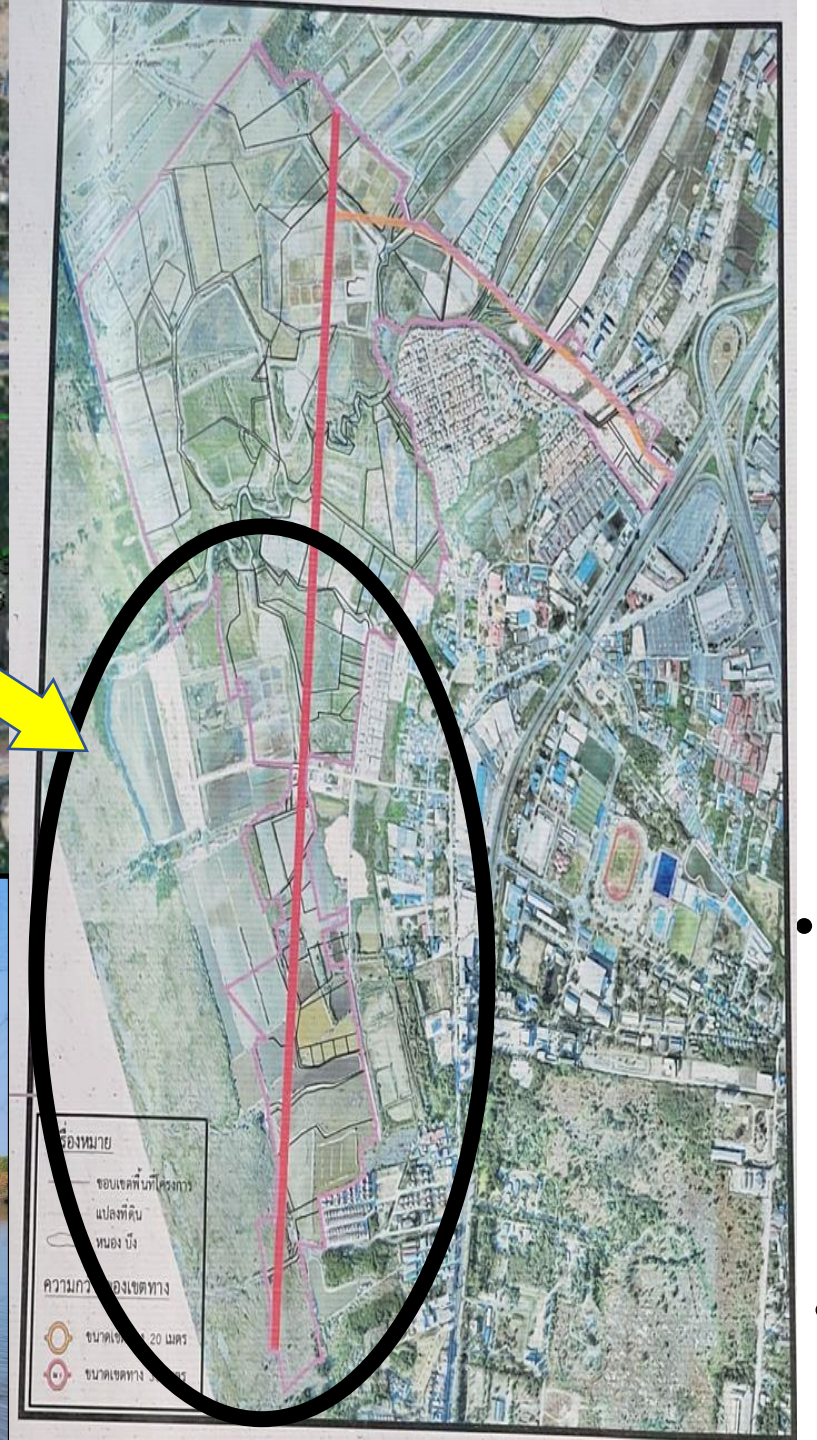
- Brief inland route across Vietnam and Thai-Malay Peninsula.
- Possible overland migration to Thailand/other western area (Bangladesh/ Myanmar)?



Movement within Indonesia

Nov to mid April.

- Used one site.
- Used intertidal flats. Very few points in mangrove or human-modified areas.



Movement within Thailand

- Use one site.
- Used intertidal flats and highly faithful to inland roost.
- Trapping and construction.

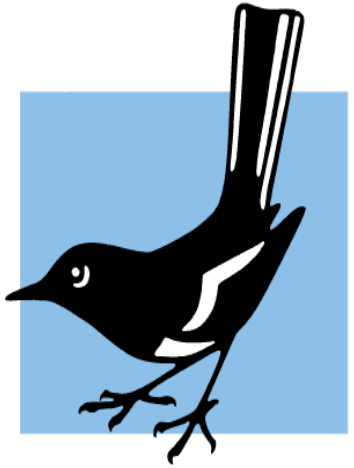
Conclusions

- Greenshanks seem to be coastal habitat obligates with only brief inland migrations.
- Coastal areas are on the frontlines of climate change and are the most developed in the world.

Thank you for your attention!

Wildlife Conservation Society

EAAFP



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环球信士

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