Australia-Asia Little Tern *Sterna albifrons* Geolocator Project

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INTRODUCTION

Populations of Little Tern (*Sterna albifrons*) around the world are decreasing (e.g. Japan, Australia, EU). The Little Tern is listed as “Endangered” on the Ministry of the Environments Red List and is also designated by law in Japan as an “Internationally Endangered Species of Wild Fauna and Flora” . The terns total length is approximately 28cm and its body weight is approximately 50g.

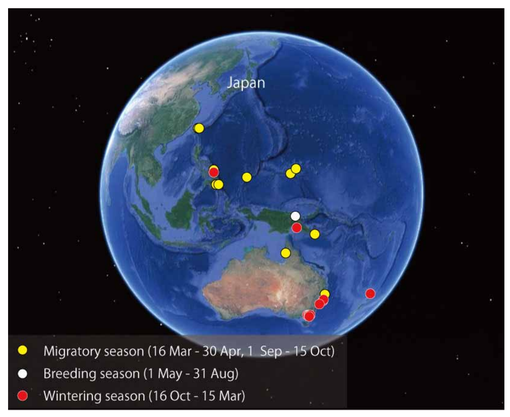
For better conservation of the Little Tern its migratory routes, stopover sites and also its wintering sites must be clarified.

Below photo: The East Asian-Australasian Flyway is an important flyway for waterbirds and shorebirds in this part of the world.

Banding surveys have partially revealed wintering sites of the East Asian Little Tern.

- Australia
- New Zealand
- Other East Asian Countries?

Wintering sites of the East Asian Little Tern are not well understood yet.



Many devices have been developed for the study of bird migration.

- satellite tracking
- GPS
- geolocator etc…

Geolocators are the easiest way to understand migration routes in lighter weighting birds. However, there is little information on the application of geolocators used on smaller tern species.

PURPOSE

Investigation of migratory routes of the East Asian Little Terns by attaching geolocators.

MATERIALS & METHODS

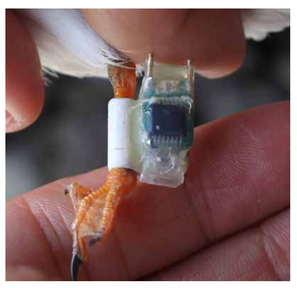
STUDY SITES

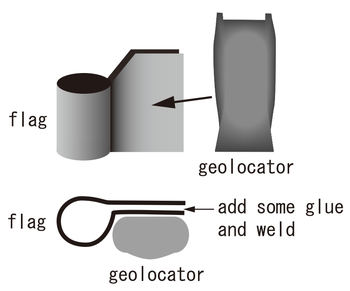
We used geolocators which can record light levels and time to gather informations during their migration. We captured 100 Litlle Terns and attached a geolocator to one leg of each tern at 7 sites (6 areas) during the 2013 breeding season.

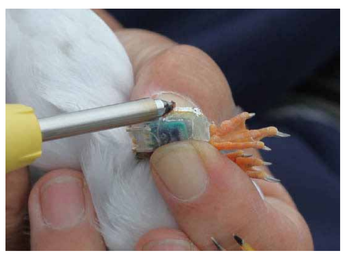
We used the following type of the geolocator.

Biotrack MK5090
Size: 16 x 8 x 6 mm
Weight: 1.2g(including flag)
Battery life: 2years
Sampling span: 2minutes

Geolocators were put on their left legs with color flags.

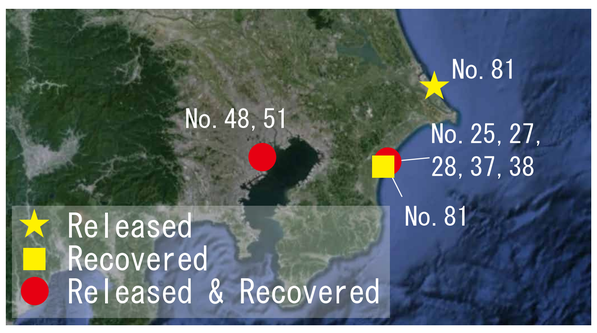






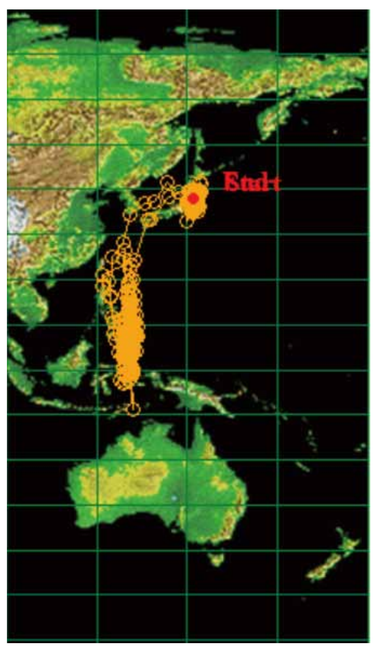
RESULTS

In the 2014 breeding season we recovered 8 geolocators, and could analyze 4 of them.

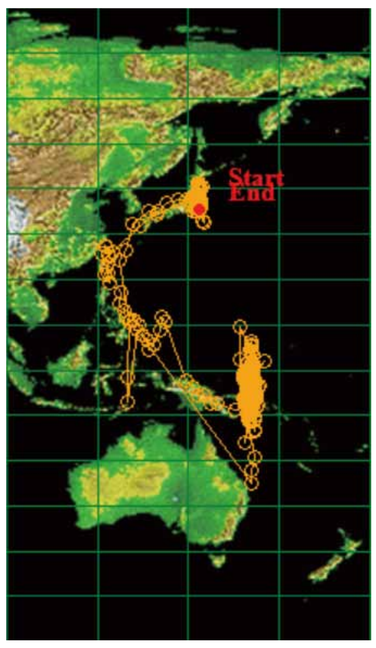


Recoverd geolocator

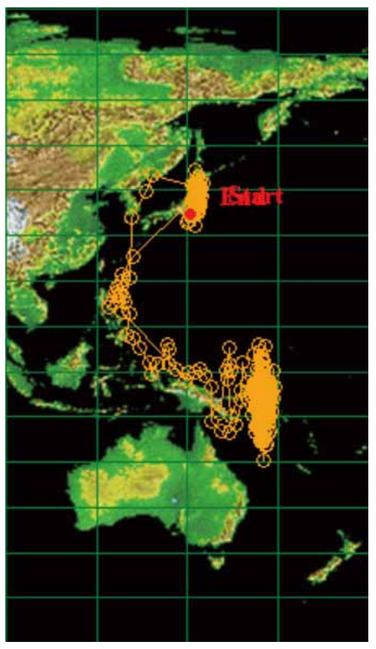
MIGRATING ROUTE OF LITTLE TERN OF EAST ASIA



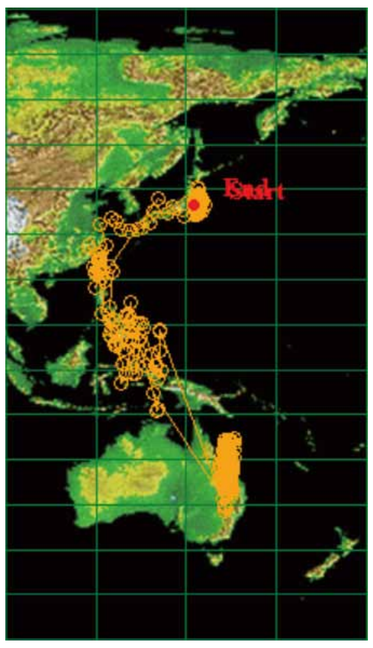
No.48 (excluded data: ±8days)



No.28 (excluded data: ±10days)



No.81 (excluded data: ±8days in autumn & ±10days in spring)



No.25 (excluded data: ±16days)

We excluded 8-16 days data before and after equinoxes because geolocators can not correctly estimate coordinates around equinoxes. Equinoxes were assumed to be September 22, 2013 and March 20, 2014.

DISCUSSION

SUMMARY

- The use of geolocators helped to clarify some of the migratory routes of smaller tern species.
  - Application for similar-sized birds was expected.
- East Asian Little Terns winter not only in Australia and New Zealand, but also a broader area of Oceania and South East Asia which were previously unknown wintering areas (Philippines, New Guinea).
  - This information can be used in the conservation of the Little Terns wintering sites.

FUTURE PERSPECTIVES

- Continue to gather information of the migratory routes , stopover sites and wintering sties with the use of geolocators and direct observation.
- Compare the migratory patterns to other areas and subspecies (such as Lithuania -> P04-010).
  - Higher priority should be given to protecting important areas which were specified by geolocators.
  - Establish effective conservation plans for East Asian Little Terns.
- Conservation of waterbirds throughout the East Asian-Australasian Flyway.

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Cooperation

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JSPB -> P04-010
http://www.jspb.org/index.html

Little Tern Project -> P04-061
http://www.littletern.net

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