

FINAL REPORT

Project: Establishment and Coordination of the EAAF Shorebird Tracking Group

BACKGROUND

People living in the EAAF have a long history of banding shorebirds as a means of documenting their movements. Today, a growing number of citizen scientists along the whole flyway give their time and talent to provide resightings of banded birds (e.g., Lagassé et al. 2020). These efforts have led to many insights into the distribution and schedule of shorebird migrants. More recently, PTT and GPS satellite transmitters, geolocators, cell phone based trackers, and other technologies have been used by researchers to determine the pathways of migratory shorebirds. These technologies have advanced our understanding of individual migration strategies and itineraries, and filled knowledge gaps in regions with less band resighting efforts (e.g. Chan et al. 2019). This science-based information has been instrumental in identifying the importance of the Yellow Sea (e.g. Battley et al. 2012), leading to historic designations of important areas as part of a new World Heritage Site (e.g. Piersma et al. 2017).

While increasing number of tracking studies has been conducted by various institutions/groups across the flyway, there is little coordination and lack of prioritization on species and populations to be tracked. In addition, the wide variety of techniques, their constant development, difficulties in analyzing data, and raising funds to purchase the tracking devices have created challenges for people wanting to begin using these techniques. Given the urgent need to conserve migratory shorebirds that are in decline across the EAAF, it is imperative to create a Shorebird Tracking Group that can provide a mechanism to share information and techniques, allow and promote collaborations across the nonbreeding range of a species and across multiple species using the same site, utilizing the full potential of tracking data in conservation of shorebirds in this flyway.

The need for this group was apparent during enthusiastic discussions by participants of the 1st EAAF Shorebird Science Meeting held in November 2020. To help steward this group along, the EAAFP has funded activities and Ying-Chi Chan for coordinating the group for 2021-2022. The group is open to anyone interested in studying or learning about shorebird migration.

Here are the goals of the EAAF Shorebird Tracking Group (EAAF STG):

1. establish group membership and tracking project directory to determine existing work occurring within the EAAF,
2. establish and maintain a website to orchestrate the group's knowledge and activities,
3. coordinate/lead on-line meetings to facilitate exchange of ideas and techniques, promote collaborations between researchers, and between researchers and conservation organizations, and
4. garner support to projects and initiatives that promote shorebird conservation in the EAAF using science-based tracking information.

PROJECT OUTCOMES

Mailing list

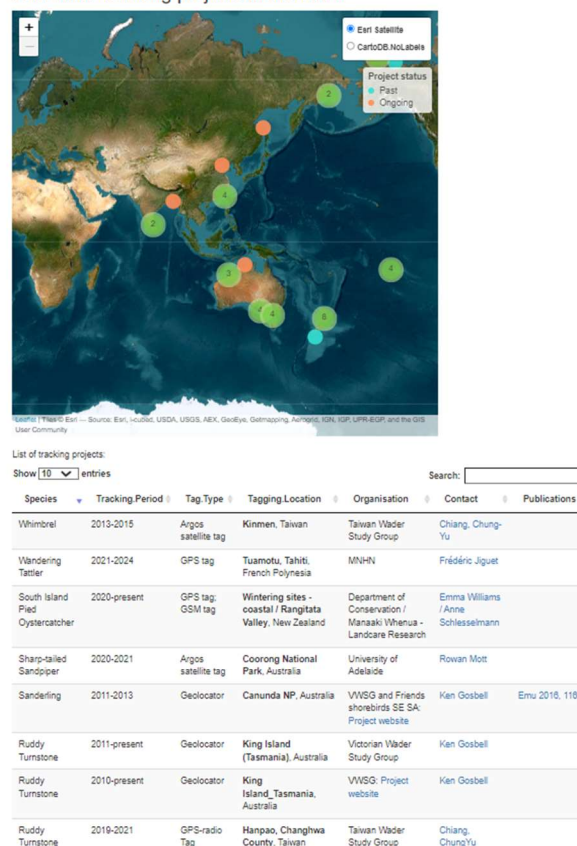
A mailing list is established since April 2021 to announce activities and important news. Currently there are 127 members. Besides announcing activities organized the group, the mailing list also announce e.g. webinars related to shorebirds and/or bird-tracking organized by other organisations, conferences. Particularly, the mailing list was used to share the news of call of tracking data for use in conservation of particular sites along the flyway, e.g. Lianyungang in China and at sites at the Republic of Korea.

A server on the Discord platform was also established for to facilitate communication within members and share resources on analytical methods, online meeting recordings, etc., but with low usage, it was discontinued.

Project Directory

A project directory of past and current shorebird telemetry studies occurring within the EAAF was established. For each project, principal investigators are asked to list the species, tag deployment location, tracking device, years of study, organisation, contact person and email, and a link to their project website (optional). This allows an overview of what has and has not occurred to date, helping to identify knowledge gaps and prioritize future collaborative projects.

Shorebird Tracking projects in the EAAF



The EAAF Shorebird Tracking Project directory

Website

A website is created to include project directory and links to relevant tracking literatures. While there was a plan to include blogs written by members on news from their tracking projects, as it will be a lot of work from the writers, that was not easy to set up. Nowadays, there are already quite a lot of blogs on published papers maintain by the society that publishes the journals (e.g. British Ornithological Union <https://bou.org.uk/blog/>, the BES Journal of Animal Ecology <https://animalecologyinfocus.com/blog/>). These platforms are more desirable for authors to increase publicity for their papers, as they will probably reach a much wider audience than our website. Therefore, in the future, the EAAF STG can focus on helping authors, especially non-native English speakers, to write blogs in these platforms, and advertising them on social media.

Webinar series

Regular online meetings in the form of seminar on a topic on migration and movement ecology or tracking techniques were organized by the EAAF STG.

From April 2021 to November 2022, there were 11 webinars organized, on average every 1-2 months. There were 21 speakers, and 3 of them gave a talk two times. Here is the list of speakers and titles of their talk. Some webinars were organized with a theme, such as the Bar-tailed godwit (12 July 2021) and Nordmann's Greenshank (1 September 2022).

Date	Speaker / title
13 April 2021	Bingrun (Drew) Zhu Tracking the annual cycle of the Bohai Black-tailed Godwits Delip (Bisharga) Das Uncovering international connections of Eurasian Curlew in Bangladesh: a project update Rick Lanctot The role of shorebird movement studies in advancing shorebird conservation in North America Brad Woodworth Differential population trends are linked to migratory connectivity in an Endangered shorebird
12 July 2021	Ying-Chi Chan Migration routes of the elusive Anadyr bar-tailed godwit Phil Battley New insights from New Zealand godwits
26 August 2021	Jimmy Choi The commuting behavior of wintering shorebirds in southeast China using GPS Bluetooth trackers Misha Zhemchuzhnikov Food supply for Arctic waders in Siberian breeding grounds: Arthropod phenology and abundance
4 October 2021	Yu Hui Continuous behaviour monitoring smart trackers - application on Pacific Black Ducks <i>Anas superciliosa</i> in Southeast Australia Batbayar Galtbalt

	Shorebirds like to stay low during migratory flights
18 October 2021	Katharine Bowgen Winter wanderings of Welsh Curlews Marcel Klaassen Ruddy Turnstones in times of change
25 November 2021	Nigel Clark Should we track the rarest migrant shorebird in the world and what can we learn?
3 March 2022	David Li Shorebird Tracking in Singapore Camilo Carneiro Recent findings on the annual cycle of Icelandic whimbrels
9 May 2022	Delip Das Tracking curlews and godwits of Bangladesh Adrian Riegen Tracking young Bar-tailed Godwits on their first migrations
25 May 2022	Bingrun Zhu Fantastic godwits and where to find them: the distribution of two Black-tailed Godwit subspecies in the East Asian-Australasian Flyway Thomas Lameris Are Arctic migratory birds mismatched and does that matter?
1 September 2022	Carmen Or Recent tracking of Black-tailed Godwit, Eurasian Curlew and Nordmann's Greenshank from Mai Po, Hong Kong Khwankhao Sinhaseni Lessons learnt from field survey of Nordmann's Greenshank in Thailand Philipp Maleko Preliminary results from tracking Nordmann's Greenshank throughout the EAAF
17 November 2022	Xu Shi Monitoring bird movement in the EAAF with weather radar: opportunities for shorebirds? Ying-Chi Chan Highlights on recent EAAF shorebird tracking papers and resources for data management and analyses

Here is a list of the species involved in the webinars:

- Bar-tailed Godwit
- Black-tailed Godwit
- Eurasian Curlew
- Red Knot
- Nordmann's Greenshank
- Redshank
- Ruddy Turnstone
- Spoon-billed Sandpiper
- Whimbrels

The webinars were organized on Zoom. Duration of a webinar is about 1 hour 15 mins to 1 hour 30 mins. Recordings of the most recent webinars are available on a youtube channel <https://www.youtube.com/@trackeaaf>. Currently there are 65 subscribers of the channel.

The webinars are well-received, with about 100-300 registrants: about 50-100 participated on Zoom (100 is the maximum that our Zoom license allows), and others watching youtube livestream. The livestreams have on average 157 views, the most-watched webinar having 386 views.

Researchers studying populations of shorebirds in flyways other than the EAAF were occasionally invited. The purpose was to exchange information and stimulate potential collaborations. For example, the webinar on 3 March 2022 has a focus on whimbrels, with both speakers studying this species, David Li in EAAF and Camilo Carneiro in the East Atlantic Flyway. Overall, 20 presentations were about research from the EAAF and 4 presentations were on research from other flyways.

Workshop

On 11 November 2022, an online workshop about Moveapps was organized. The moveapps.org platform contains freely available apps that can visualise and process movement data, and no programming knowledge is required to use them. We have invited Dr. Andrea Kölzsch, the researcher who led the development of moveapps from the Max Planck Institute of Animal Behaviour, Germany, to give a first introduction. This is followed by some quick demonstrations of how the program works by Ying-Chi Chan who host the workshop. Then we had a discussion of potential improvements to the platform, what kind of apps that users want the platform to have.

Evaluation and future development

There was much positive feedback from people on the flyway that they enjoyed the webinars, e.g. it is a useful platform to stay updated.

The webinars has speakers from organizations based in about 11 countries – it did not cover all the countries in the flyway yet but it is not bad in terms of representation. However, the male: female (17:4) ratio of the speakers is skewed. Actually I (the webinar coordinator) noticed the skewed ratio and tried to invite more female speakers whenever possible. However, the percentage of female researchers/conservationists in the flyway is probably lower than males (a survey would be needed to confirm that). This highlights the importance of further research into this area, and initiatives that encourage career development of female researchers/conservationists in the flyway.

Since mid-2022, many countries were gradually easing COVID-restrictions. In-person meetings and conferences are becoming commoner, and fieldwork were resuming. This also mean less time for people to attend webinars. Also, since 2022, there were many more webinars organized by other organisations, focusing on shorebirds/waterbirds. Although our webinar series was the only one focusing on shorebird movements, the abundance of webinars had a slight dilution effect. These factors might explain the gradual drop in number of participants when comparing 2022 with 2021.

Nevertheless, webinars are still an excellent method in terms of cost-efficiency to share information and connect people across the flyway. The webinar series will continue in 2023, but I anticipate it not to be as frequent, subject to the availability of speakers and organisers. As in-person meetings are now possible, the EAAF STG should focus more on organizing in-person workshops and symposiums that co-occur with a conference. After meeting online for the last 2 years, it is time to meet in-person and that would be imperative to foster connections and collaborations within the flyway. One consideration of the EAAF STG is to share the workload to organize activities. There were attempts to recruit organisers for webinars. While there were people showing interests, it is difficult for people to find time to help. However, this might be improved if there is an opportunity to meet in-person. In the long-term, it will be good to form an organising committee. The group of course will have to find funding for any activities, but this might not be very difficult due to the foundations built in 2021-2022.

References

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