

2022 EAAFP Small Grant Fund Application Form

Part A.

A. Personal Details of Applicant

Title: Dr. Conklin Jesse
(Mr, Ms etc) Family name Given Name/s

Institution: University of Groningen
Institutional address: PO Box 11103
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Suburb or town State or country Postcode

+31 6 1968 7138
Primary contact number Mobile phone number

Email address: conklin.jesse@gmail.com

B. Relevant Working Group or Task Force Chair/Coordinator - DETAILS

Please contact the EAAFP Programme Officer if additional guidance is needed in relation to this section (programme@eaaflyway.net)

Name of Working Group or Task Force: Shorebird Working Group

Title of Chair/Coordinator: Dr. Lanctot Richard
(Mr, Ms etc) Family name Given Name/s

Email address: richard_lanctot@fws.gov

C. Eligibility of Projects

Please select "Yes" or "No" for each of the following questions:

- The focus of the project is migratory waterbirds and their habitats? **Yes**
- The project will improve the understanding of factors important for the conservation of migratory waterbirds and their habitats in the EAAF? **Yes**
- The applicant agrees to provide a final report within 3 months of the completion of the project? **Yes**
- The applicant agrees to submit 1-2-page article and photographs for inclusion on EAAFP's website and/or write a brief article for the EAAFP's newsletter. Photographers will be acknowledged? **Yes**
- The applicant will acknowledge the support of the EAAFP in any publications, presentations and reports arising from this work? **Yes**

D. Project Details

Project Title: Please provide a concise and informative title of your entire project (not just the component for which funds are sought)

Post-hatch survival and migratory movements of juvenile Bar-tailed Godwits in Alaska

Project Proposal:

Details of your entire project (not just the component for which EAAFP funds are sought) (2.5 page maximum)

- Objectives:**
 - Monitor post-hatch survival and local movements of Bar-tailed Godwit chicks in Alaska
 - Document post-fledging movements and site use of juvenile Bar-tailed Godwits
 - Track first-time southbound migrations of godwits from Alaska
- Background:**

Bar-tailed Godwits (*Limosa lapponica*; hereafter godwits) are considered Near Threatened on the IUCN Red List (BirdLife International 2022), and within the East Asian-Australasian Flyway (EAAF) the Alaska-breeding subspecies *L. l. baueri* meets the requirements for Red List Status based on observed population declines (Conklin et al. 2014, Conklin et al. 2016). Godwits breed cryptically and at low densities in remote regions of Alaska, factors which have impeded studies of the subspecies' breeding ecology. As such, breeding-related demographic rates are largely unknown for godwits. Conklin et al. (2016) created age-structured population matrix models to help interpret recent population declines in New Zealand, but due to species-specific knowledge gaps, Conklin et al. necessarily relied upon unverified values for multiple demographic rates in the model. Certain knowledge gaps (e.g., survival rates of juvenile godwits in Alaska, juvenile mortality associated with first trans-Pacific migration) have inherent theoretical importance in the context of partitioning survival across life-history stages, while others (e.g., pre-migratory movement and site use of juvenile godwits in Alaska) obscure potential conservation actions. Despite a relative dearth of information regarding their breeding ecology in Alaska, godwits have received wide attention for their >11,000-km long migration between staging sites in western Alaska and nonbreeding sites in New Zealand and eastern Australia (Gill et al. 2009). These non-stop movements approach 10 days in duration and are believed to be the longest non-stop migrations in the avian world (Conklin et al. 2017), but the timing, routes, and survival of juvenile godwits on this epic migration is unknown.

Bar-tailed Godwits have experienced loss and degradation of key habitats in parts of their range (Ma et al. 2014, Murray et al. 2014), but the habitats used by godwits in Alaska are largely unaltered and ecosystem processes across the region are largely intact. As such, it is probably impractical to consider active management actions that might improve the reproductive output of godwits in Alaska. Nonetheless, a lack of information on the reproductive ecology of godwits in Alaska represents an important knowledge gap that inhibits informed species management. We propose to measure the post-hatch survival of juvenile godwits using VHF telemetry to monitor broods. Prior to fledging, we will affix satellite transmitters (hereafter PTT) to nearly-grown juveniles to monitor post-fledging movements and survival, and the routes and timing of their first southbound migrations. These field activities have never before been attempted on Bar-tailed Godwits, and efforts in 2022 represent a proof-of-concept study. Pending success, we envision expanding these methods to other sites in future years to gain better temporal and spatial representation.
- Project plan, timeline and methods:**

Project timeline: We will conduct fieldwork in Alaska from mid-June through late July 2022. We will monitor the pre- and post-fledging movements and survival of juveniles via remote telemetry, and we anticipate that birds will migrate to New Zealand or eastern Australia by mid-October. Efforts in 2022 take advantage of the infrastructure of a co-occurring project on Red Knots (*Calidris canutus roselaari*). As such, the project will reap considerable cost savings due to our ability to integrate the proposed research into the pre-existing logistical framework of the Red Knot project.

Project methods: Beginning in mid-June, we will search for godwit broods along the road system near Nome, Alaska, and capture tending adult(s) and chicks. Adults will be swept from the air and captured using a mist-net held horizontally over a speaker playing a recorded chick distress call. Chicks will be captured as they call and move once the adult godwits have been captured. This capture technique works best when chicks are young (<5 days old) because adults do not vigorously defend older chicks. All godwits will be banded with a U.S. Geological Survey metal band, and adults will be equipped with uniquely coded leg flags. We will attach small (0.75 g) VHF radios (3–5 week battery life; Holohil Systems Ltd.) to adult godwits and up to two chicks within each brood using a glue-on technique (Warnock & Warnock 1993). We will use the VHF radios to relocate broods once the chicks are approximately 20 days old, an age when godwit chicks are likely to fledge and are also large enough to carry a satellite transmitter. At this time, we will band each chick with a uniquely coded leg flag, and equip at least 10 chicks with 5-g solar-powered PTTs (Microwave Telemetry Inc.). These methods have worked effectively for tagging juvenile Black-tailed Godwits (N. Senner pers. comm.). Efforts in 2022 will assess attachment methods that

	<p>minimize detrimental effects to juvenile godwits. As such, we will either deploy transmitters using a harness made of stretchy (silicon) material or directly glue transmitters to the godwit's dorsum. The former technique will potentially permit multi-year tracking of individual godwits, and has been successfully used for tagging post-arrival juveniles in New Zealand, but could negatively affect younger birds. The latter technique is comparatively benign (J. Johnson pers. comm.) but will only track the godwits until they shed the transmitter upon initiation of pre-basic molt shortly after arrival to nonbreeding sites. Attachment methods will be determined based on in-the-field assessments of harness fit, and PTTs will be glued to birds if harness attachments are deemed detrimental to juvenile godwits.</p> <p><i>Please include the proposed timing of project commencement, start and completion of fieldwork (if applicable), project completion. Please also comment on the flexibility of the timeline of the project.</i></p>
<ul style="list-style-type: none"> • Likely benefit to the conservation of migratory waterbirds and their habitat / or key research outputs: 	<p>This research project will help fill basic knowledge gaps concerning the reproductive output of Alaska-breeding godwits and the post-fledging migration ecology of juvenile godwits. This critical period between hatching and arrival at non-breeding sites is the major knowledge gap unaddressed by decades of previous research on the species. Specifically, information on post-fledging site use within Alaska, as well as eventual settlement at nonbreeding locations in New Zealand and eastern Australia, will address Partnership Objective 1 by identifying sites within the EAAF of high-importance to juvenile godwits (KRA 1.1). The inherent curiosity surrounding a juvenile godwit's first trans-Pacific migration will generate public interest that promotes flyway-wide conservation of Bar-tailed Godwits. These outcomes also satisfy Partnership Objective 3 by identifying sites of international importance for conservation management and prioritization (KRA 3.3). Alaska-breeding godwits are a Key Species within the EAAFP, and this project will for the first time focus research during the godwit's post-hatch period. This focus will help identify potential threats during this sensitive period, results which will address Partnership Objective 5 (KRA 5.2). <i>In addressing this question, please also identify which EAAFP Key Result Areas the project will contribute to (see the EAAFP Strategic Plan 2019 – 2028).</i></p>
<ul style="list-style-type: none"> • Alignment with EAAFP Working Groups and Task Forces priorities: 	<p>This project falls under the purview of Shorebird Working Group. Our proposal promotes the conservation of shorebird species specifically by supporting collaborative migration ecology studies along the EAAF (priority 2.4; 'Priority for EAAF Partnership's Shoreb Working Group, 2019-2020). More generally, results from this study provide support for capacity building for shorebird conservation (priority 3.2 and 3.3) and may also identify aspects of juvenile godwit movement that necessitate the recognition of specific sites for their conservation (priority 1.1). <i>Please indicate which of the EAAFP Working Groups and Task Forces priorities are addressed in this project.</i></p>
<ul style="list-style-type: none"> • Explain the part of your project for which you are seeking EAAFP funds in this Application (provide details in the Project Budget section below): 	<p>Generous support from Dr. Bart Kempenaers (Max Planck Institute, Germany) has made available 20 PTTs for use in this pilot study. Additional support from Jim Johnson at the U.S. Fish and Wildlife Service and Dan Ruthrauff at the U.S. Geological Survey will cover costs related to field accommodations, food, and travel, and supply other required gear such as capture equipment and VHF receivers. As such, we are specifically requesting funds to purchase VHF radios to monitor pre-fledging brood movements and survival.</p>
<ul style="list-style-type: none"> • Scientific References cited in the Application: 	<p>BirdLife International. 2022. Species factsheet: <i>Limosa lapponica</i>. Accessed 28 January 2022 at: http://datazone.birdlife.org/species/factsheet/bar-tailed-godwit-limosa-lapponica.</p> <p>Conklin, J.R., Y.I. Verkuil & B. Smith. 2014. Prioritizing migratory shorebirds for conservation: action on the East Asian-Australasian flyway. WWF–Hong Kong.</p> <p>Conklin, J.R., T. Lok, D.S. Melville, A.C. Riegen, R. Schuckard, T. Piersma & P.F. Battley. 2016. Declining adult survival of New Zealand Bar-tailed Godwits during 2005–2012 despite apparent population stability. <i>Emu</i> 116: 147–157.</p> <p>Conklin, J. R., N. R. Senner, P. F. Battley, and T. Piersma (2017). Extreme migration and the individual quality spectrum. <i>Journal of Avian Biology</i> 48:19–36.</p> <p>Gill, R.E., Jr., T.L. Tibbitts, D.C. Douglas, C.M. Handel, D.M. Mulcahy, J.C. Gottschalck, N. Warnock, B.J. McCaffery, P.F. Battley & T. Piersma. 2009. Extreme endurance flights by landbirds crossing the Pacific Ocean: ecological corridor rather than barrier? <i>Proceedings of the Royal Society of London B</i> 276: 447–457.</p> <p>Ma, Z., D.S. Melville, J. Liu, Y. Chen, H. Yang, W. Ren, Z.-W. Zhang, T. Piersma & B. Li. 2014. Rethinking China's new great wall. <i>Science</i> 346: 912–914.</p> <p>Murray, N.J., R.S. Clemens, S.R. Phinn, H.P. Possingham & R.A. Fuller. 2014. Tracking the rapid loss of tidal wetlands in the Yellow Sea. <i>Frontiers in Ecology & the Environment</i> 12: 267–272.</p>

8. How will any continuing COVID restrictions be managed for project delivery?:

Project participants are following CDC guidelines on vaccinations and boosters, as well as USFWS and USGS covid policies relating to travel and fieldwork. At this time, current covid restrictions and agency policies should not inhibit the successful completion of our project.

Part B. FOR CONFERENCE APPLICANTS ONLY

(For Task Force or Working Group members delivering their own work as a presentation, paper or poster)

Conference Title:	Location:	Date:
Presentation Abstract (250 word maximum):		

Part C. FOR ALL APPLICANTS

Experience Relevant to Project:

Dr. Conklin has extensive experience studying Bar-tailed Godwits in New Zealand, China, and Alaska (2005–present). This experience includes nest- and brood-searching, capture of both adults and young by several methods, and attachment of tracking devices including geolocators, VHF radios, and satellite-transmitters. Dr. Conklin is currently co-investigator on a project (in collaboration with Massey University, New Zealand and Max Planck Institute, Germany) tracking the migrations of adult and subadult Bar-tailed Godwits in New Zealand, and has successfully deployed 58 PTTs on godwits in the last three years using the harness method proposed here. Co-investigators James Johnson (Wildlife Biologist, U.S. Fish and Wildlife Service) and Dan Ruthrauff (Wildlife Biologist, U.S. Geological Survey) have over 40 years of combined experience studying shorebirds in Alaska, including dedicated studies of Bar-tailed Godwits. Johnson and Ruthrauff will provide on-the-ground logistical support at the Nome study site.

Please **also** attach a maximum 2-page CV or list non-academic research experience and experience with migratory waterbirds/conservation e.g. work experience, volunteer experience, bird banding, birdwatching.

E. Project Budget (please outline costs of your entire project, not just the component(s) for which funds are being sought from EAAFP)

Item (Please list)	Budget (USD)	Co-funding acquired (source and amount in USD)	Co-funding applied for (source and amount in USD)	Support requested from EAAFP (USD)
Equipment: (details) Hohohil BD-2 VHF radios (\$180/ea.)	\$4,860 (27 total)	USFWS & USGS, \$2,000 (receivers, antennas); Max Planck Institute, \$60,000 (20 PTT units)		\$4,860
Consumable items (details)		USFWS, \$1,500 (food)		\$0
Travel and accommodation (details)		USGS, \$3,000 (airfare and per diem) USFWS, \$6,000 (lodging, car rental)		\$0
Computing & clerical (details)				\$0
Other (details)				\$0
Total amount requested from EAAFP Small Grants Fund: (in USD)				\$4,860

Budget justification: Please provide brief description and justification of all major budgetary items requested, indicating any that are essential to the project and/or conference for which you are applying (250 word maximum):

The purchase of VHF radios will permit the monitoring and recapture of post-hatch juvenile godwits (see D3 above). Only by tracking juvenile godwits until ~20 days of age will we be able to deploy PTTs on nearly-flighted godwits, the primary project objective. Due to uncertainty in both brood survival and our ability to follow them until the proper age for PTT deployment, we need to instrument a sufficient number of broods with VHF radios to ensure the later deployment of at least 10 PTTs. We estimate that instrumenting and following 9 broods (1 adult + 2 chicks from each = 27 VHF radios) will be both logistically feasible and have a reasonable chance of enabling 10+ PTT deployments.

F. Declaration

I have discussed the contents of this Application with the relevant Chair/s and Coordinator/s of relevant Working Group and/or Task Forces and I certify that to the best of my knowledge all documentation and information submitted or made available by me is true, accurate and complete.

By ticking the box you are agreeing to the above statement:

G. Application Checklist

All relevant sections of this Application have been completed.	Yes
Full payment details have been provided on the final page.	Yes
Application is being submitted electronically as one single document.	Yes
Application is being submitted in MS Word format.	Yes
Application has been discussed with the relevant Chair/s and Coordinator/s of relevant working Group and/or Task Forces and these have been carbon copied (cc) to this application submission as evidence they have seen and approved this Application.	Yes

Applications that do not comply with these guidelines will be returned to the applicant.

Application Submission

Please email your Application as a single document to:
secretariat@eaaflyway.net

EAAFP will acknowledge the receipt of your Application.

Applications close at 5pm (Seoul Time) on 6 February 2022
Results will be announced on 7 March 2022 on EAAFP Webpage and via email

OFFICE USE ONLY:

Decision: _____

Authorised: __ / __ / __ _____

Entered: __ / __ / __ _____

Comments: _____

Lead Investigator Advised: __ / __ / __ _____

PLEASE COMPLETE PAYMENT DETAILS ON FINAL PAGE

PAYMENT DETAILS

To ensure prompt payment of successful applications please complete the following details and submit with your Application.

PREFERRED PAYMENT METHOD

Electronic funds transfer (EFT)

GRANT CONDITIONS

In accordance with the application criteria, the following conditions must be met:

- Funds are to be strictly exempt from organisational administration charges.
- You are required to submit one copy by email of the final report within 3 months of the completion of the project.
- You are required to acknowledge the EAAFP and the Small Grant Fund in any presentations, publications, reports or promotional material arising from this work. Please email secretariat@eaaflyway.net in order to obtain an electronic copy of EAAFP logo for use on any display material you will be preparing.
- You may be requested to write a brief article for the EAAFP newsletter.
- You are required to provide EAAFP with an electronic copy of your final report at the completion of your project, as well as a copy of any publications that result from your grant.