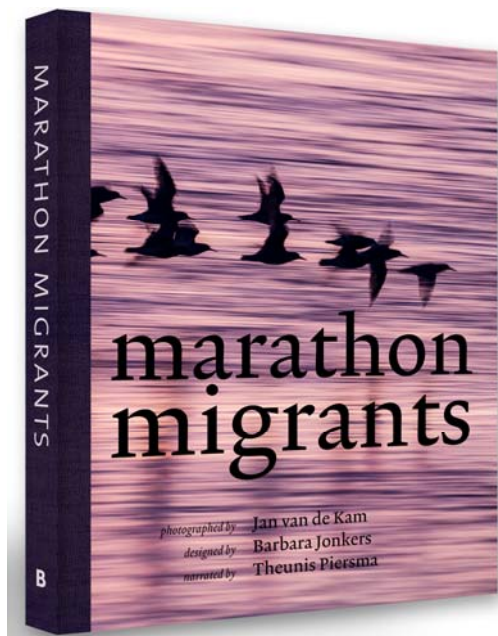
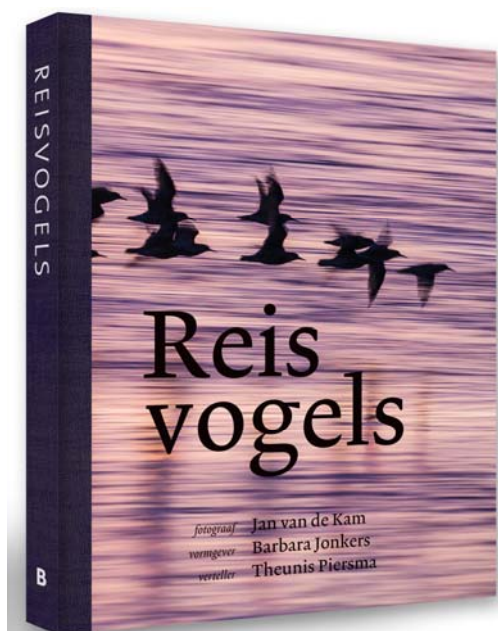


Report of the  
**Chair in Global Flyway Ecology**  
(July 2015 – July 2016)  
at the University of Groningen

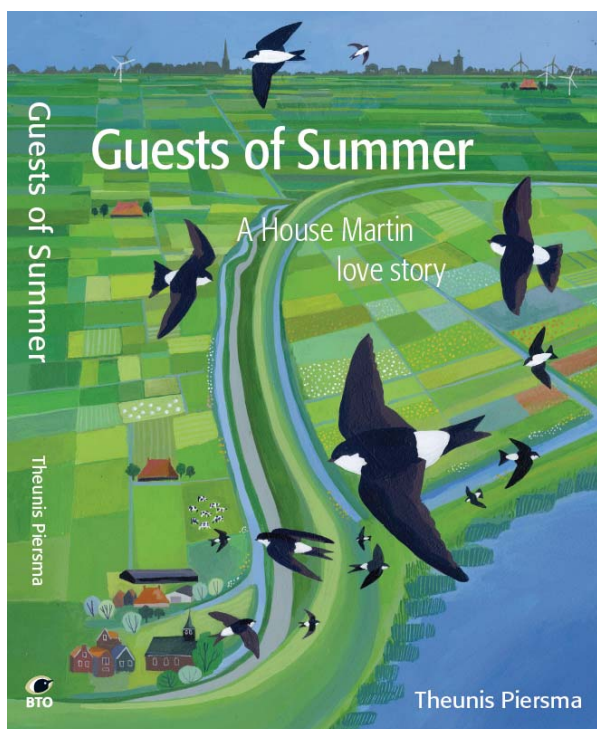
**New in 2016:**  
**FOUR books by the Chair in Global Flyway Ecology**



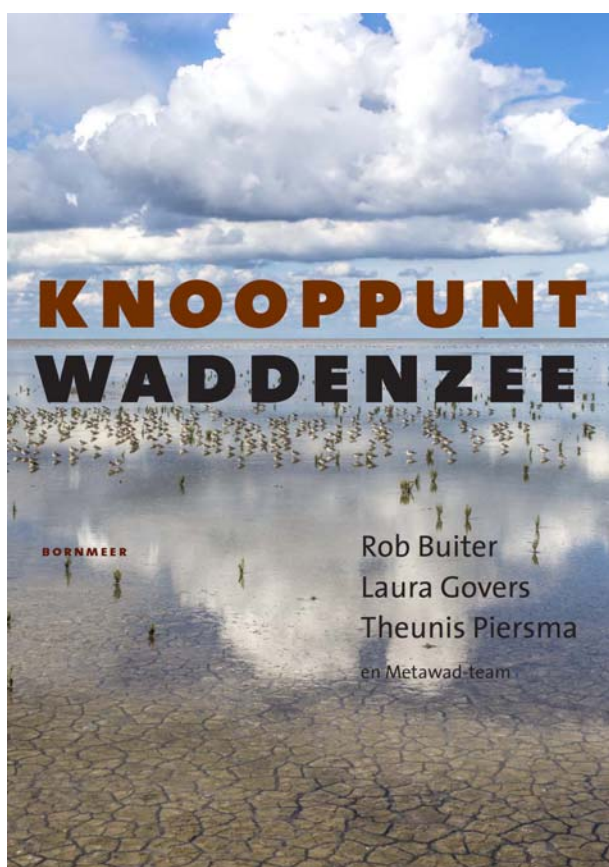
‘The delightful combination of wonder and insight is our best bet at nature conservation. This book is a fairy tale and a scientific discovery in one. The epic journeys of shorebirds in all corners of our blue planet cannot but baffle us earthlings.’ Johan van de Gronden, CEO WWF-Nederland



‘Een leven lang fotografeerde Jan van de Kam steltlopers en zo werd hij al net zo’n reisvogel als de steltlopers zelf. Dit boek documenteert prachtig zijn kunsten als fotograaf en laat tegelijkertijd zien hoe wonderbaarlijk de wereld van deze ‘frequent fliers’ in elkaar zit.’ Frans Lanting, Fotograaf



‘This is a delightful book – there ought to be more like it. The book is peppered with observations of the bird that were made by chance as the author went about his daily work. And this, too, is a book written by a leading ornithologist and ecologist whose observations of the birds around him are informed by a love of birds but also an understanding of what makes them tick. This is a book to buy now and read, and then to take out and read again every April for the rest of your life so that you can appreciate the author’s skill and remind yourself of the bird that is about to return to grace the skies of your city, town or village.’  
Mark Avery on his blog



Als je alle routes van die trekvogels op de wereldbol tekent, zie je halverwege die kaart een druk knooppunt: de Waddenzee! In het project Metawad zijn vijf compleet verschillende trekvogels van de Waddenzee onderzocht: de kanoet, de drieteenstrandloper, de rosse grutto, de rotgans en de lepelaar. Knooppunt Waddenzee biedt een kleurrijk palet van portretten van de wetenschappers. Ploeterend met palen en hekwerk achterop hun fiets trekken ze over de kwelder. Het biedt ook portretten van de vijf onderzochte vogelsoorten. Wat weten we van deze dieren? En vooral: hoe kunnen overheden of natuurbeheerders hun voordeel doen met deze wetenschap?

**Preface** - In this report I will look back at the activities carried out in July 2015- July 2016 of the Chair in Global Flyway Ecology, established at the University of Groningen in May 2012 in a covenant of the university with BirdLife Netherlands (VBN) and World Wildlife Fund Netherlands (WNF). Additionally the Chair has continued the coordinated research and outreach activities around the globe under the international umbrella of the *Global Flyway Network* (GFN). GFN is an independent foundation by Dutch law, being funded separately from the Chair to carry out specific activities.

## Overview

The period from July 2015 tot July 2016 has been used for:

- Continue and develop of the portfolio of long-term **demographic studies on long-distance migrating shorebirds in several major flyways**, and embedding of the demographic studies in solid descriptive work on the ecological context in which the demographic changes take place. Knowing the vital rates is crucial to keep a close eye on the health of the populations, and to detect where in the annual cycle the bottlenecks occur before population collapse.

The magnitude of this undertaking has required the input of two Netherlands research institutes already involved (RUG and NIOZ) and included several major projects that have independent financing, i.e. *SIBES* (Synoptic Intertidal Benthic Surveys of the Wadden Sea, a programme so far funded by ZKO, NIOZ and NAM), *Waddensleutels* and *Metawad* (research programmes funded by Waddenfonds to respectively investigate foodweb processes and long-term demography of tropically characteristic long-distance migrants) and *Grutto-demography*: the large-scale demography study of black-tailed godwits in southwest Fryslân that started in 2004 has received major funding from the Province of Fryslân and the Ministry of Economic Affairs (ex LNV). In spring 2016, both parties have committed to continue their support, in the case of the Province of Fryslân the support extending to 2020!

- Continuation of the research on four species (red knot, great knot, bar-tailed godwit, black-tailed godwit) in the **East Asian–Australasian Flyway**, clearly the most threatened bird migration flyway in the world. This includes work on the ground in northwest Australia, the wintering area of birds, and in China. Using solar-panelled satellite trackers on Great Knot, Bar-tailed Godwit and Black-tailed Godwit we will establish the scope for adaptation to the extremely rapid changes for mudflat-depending migrant shorebirds in the Flyway. The trackers are applied in NW Australia allowed us to zoom in on the movements during stopover in the Yellow Sea. This is done in close collaboration with Beijing Normal University, Fudan University and with continued funding from WWF-Netherlands (in collaboration with WWF-China).

- Further development of the **communication between the science and conservation** to make our interactions as productive as possible in terms of conservation action. This reporting period, this has led to *Oerol Seminar 'Bird Senses of Places'*, the official presentation of the outcomes of *Metawad*. It was for the first time in The Netherlands that a scientific programme of the calibre of *Metawad* was presented at a cultural festival. Related to this seminar we published the book *Knooppunt Waddenzee*, co-authored with science journalist Rob Buiter. The seminar and the book are specially aimed at governments, conservationists and site managers, so they can take advantage of the knowledge (Uitgeverij Bornmeer).
- The 3-week **Master Course in Flyway Ecology** was successfully held first from 12-30 October 2015 at the University of Groningen.
- Further development of a programme of **science-art activities and public outreach** in the province of Fryslân focussed on the plight of its agricultural country-side, using the *limosa*-subspecies of the black-tailed godwit as its flagship species. This project is called *Kening fan 'e Greide*, with an international branch developed in the context of the Leeuwarden 2018 Culture Capital of Europe distinction: *King of the Meadows*. A highlight was the cultural science event *Landschapspijn* with Professor Dave Goulson, famous for his research on bumblebees and the effects of neonicotinoids.
- Further development of **scientific support of conservation advocacy**. In Oct 2015, the Chair accompanied the Dutch King visiting the Chinese coast of Shanghai. In December 2015, following explicit interest in meeting the GFN chair, Piersma met the Conservation minister of New Zealand, Maggie Barry (DOC). China State Forest Administration (SFA) and the WWF, signed a memorandum of understanding in Oct 2015. In March 2016, DOC and SFA agreed to work together to protect wetlands visited by migratory birds.
- All this work over the past year, and whatever it is build on, has received very strong support in the competitive arena. Between July 2015-July 2016 the Chair received the following grants/awards/distinctions:
  - o Elected member of the Royal Holland Society of Sciences and Humanities (KHMW). Koninklijke Hollandsche Maatschappij der Wetenschappen (KHMW), 20-Feb-2016.

## Research activities

Over the reporting period July 2015 – July 2016 the following PhD student were coached towards the completion of their PhD theses:

1. **Jim de Fouw** (Nationality: Dutch) “Trophic interactions on seagrass beds at Banc d'Arguin, Mauritania” (2e promotor).  
Current appointment: Self-employed ecological consultant.

The following thesis PhD projects are currently under way, and in various stages of advancement (from nearly complete, to just starting):

1. **Hong-Yan Yang (Nicky)** (Nationality: Chinese) “Foraging ecology of red knots in Bohai Bay” (promotor).  
Current appointment: Beijing Forestry University, China.



2. **Lucie Schmaltz** (Nationality: French) “Population dynamics of ruffs and golden plovers” (1e promotor).  
Current appointment: University of Groningen, the Netherlands.
3. **Thomas Oudman** (Nationality: Dutch) “Ecology of red knots at Banc d'Arguin, Mauritania” (1e promotor).  
Current appointment: NIOZ, the Netherlands.
4. **Roeland Bom** (Nationality: Dutch) “Feeding ecology of Crab Plovers at Barr el Hikman in Oman” Current appointment: NIOZ, the Netherlands.
5. **Jeroen Onrust** (Nationality: Dutch) “Ecology of earthworms in agricultural grasslands” (1e promotor).  
Current appointment: University Campus Fryslân/University of Groningen, the Netherlands.
6. **El-Hacen Moh. El-Hacen** (Nationality: Mauritanian) “Nutrient limitation to the Banc d'Arguin ecosystem” (2e promotor).  
Current appointment: Banc d'Arguin National Park (PNBA), Mauretania/University of Groningen, the Netherlands.
7. **Sidi Moh. Ould Cheikh** (Nationality: Mauritanian) “Temporal dynamics of intertidal flats” (2e promotor).  
Current appointment: Banc d'Arguin National Park (PNBA), Mauretania.
8. **Jeltje Jouta** (Nationality: Dutch) “Trophic relations across the Wadden Sea revealed by stable isotope tracing” (1e promotor).  
Current appointment: NIOZ, the Netherlands.
9. **Robert E. Gill** (Nationality: Dutch) “How wind-systems affect the long-distance migrations of shorebirds” (promotor).  
Current appointment: US Geological Survey, USA.
10. **Anne Dekinga** (Nationality: Dutch) “Tropic ecology of mudflats along the Bering Sea, Alaska” (promotor).  
Current appointment: NIOZ, the Netherlands.
11. **Janne Ouwehand** (Nationality: Dutch) “Migration ecology of pied flycatchers” (2e promotor).  
Current appointment: University of Groningen, the Netherlands.
12. **Obe Brandsma** (Nationality: Dutch) “Ecology of meadowbirds: observations and experiments” (promotor).  
Current appointment: Province of Overijssel, the Netherlands.
13. **Jan van der Winden** (Nationality: Dutch) “Migration ecology of piscivores” (promotor).  
Current appointment: Self-employed.
14. **Mo Verhoeven** (Nationality: Dutch) “Genesis of migration routines in back-tailed godwits: observational approaches” (promotor).  
Current appointment: RUG, the Netherlands.
15. **Ying Chi (Ginny) Chan** (Nationality: Chinese) “Exploration and migration in shorebirds along the East Asian flyway” (promotor).  
Current appointment: NIOZ, the Netherlands with RUG, the Netherlands.

16. **Jelle Loonstra** (Nationality: Dutch) “Genesis of migration routines in back-tailed godwits: experimental approaches” (promotor).  
Current appointment: RUG, the Netherlands.
17. **Eva Kok** (Nationality: Dutch) “Ontogeny of habitat choice in red knots: experimental and observational approaches” (promotor).  
Current appointment: NIOZ, the Netherlands.
18. **Lei Wei Pan (Leiming)** (Nationality: Chinese) “The ecology of shorebirds using the Nanpu salt pond complex, Bohai Bay, China” (promotor).  
Current appointment: Beijing Normal University, Beijing China with the involvement of RUG, the Netherlands & University of Extremadura, Badajoz, Spain.
19. **Hebo Peng** (Nationality: Chinese) “The food distribution and habitat choice of migratory shorebirds in a threatened staging area” (promotor).  
Appointment: RUG, the Netherlands with NIOZ, the Netherlands.
20. **Drew Bing Run** (Nationality: Chinese) “Flyway structure, migration and habitat use of black-tailed godwits in China” Copromotor.  
Current employment: Beijing Normal University.
21. **Sidi Yahya** (nationality: Mauritanian) “Population dynamics and ecological role of sharks and rays at Banc d’Arguin, Mauritania” Copromotor.  
Current employment: IMROP, Nouadhibou, Mauritania

## Education

I have (modestly) contributed to the **Erasmus Mundus Top-programme in Ecology and Evolution** in September 2015.

I have developed the new 3-week **Master Course in Flyway Ecology**, which was held first in 12-30 October 2015. The course teachers were the Chair Prof dr Theunis Piersma, together with Prof. Dr Ian Newton (UK), Dr Yvonne Verkuil (RUG), Dr Raymond Klaassen (RUG), RUG & NIOZ postdoctoral researchers Dr Jesse Conklin, Dr Roos Kentie, Dr Eldar Rakhimberdiev and Dr Nathan Senner, as well as PhD candidates Jelle Loonstra, Janne Ouwehand and Mo Verhoeven. Their joint expertise covers a great many aspects of flyway ecology and conservation.



The course consisted of a week of studying *The migration ecology of birds* – including (Skype) sessions with the author Ian Newton: “When do you get the chance to spend a whole week reading a book!” The second week consisted of retreat in the research station de Herdershut in Schiermonnikoog, and in the third week the students developed and wrote a research proposal.



Over the three weeks, we gave of 20 lectures, 4 practicals - including student presentations, societal debate practice and a theoretical practice in designing a demography study. The course materials encompassed (1) global research programmes on avian migration in the context of (a) seasonal connections and demography and (b) global connections of ecosystems, and (2) migration theory on the level of individuals, populations and ecosystems. We also covered practical themes and methodological applications such as tracking free-living animals, estimating annual and seasonal survival, measuring the ecological context of variation in survival, migrants as integrative sentinels, the societal impact of flyway ecology, and applications in nature conservation

Additionally, the students were also exposed to stories about research expeditions through evening lectures by Verhoeven, Senner & Klaassen.



## Lectures and presentations

Oral presentations (July 2015-July 2016), by the Chair:

1. **Cultuurnatuur tussen wal en schip** - bij afscheidsymposium Johan van de Gronden (WWF), Wereld Natuur Fonds, 30-Jun-2016, Rotterdam, Netherlands
2. **Metawad: Oerolcollege** 10 June 2016, Oerol - Sense of Place, 10-Jun-2016, Terschelling, Netherlands
3. **'Natuurinclusieve landbouw' in het groene onderwijs: Het delen van (wetenschappelijke) kennis ten bate van 'natuurinclusieve landbouw'**, Hogeschool Van Hall Larenstein Docentenmiddag, 18-May-2016, Leeuwarden, Netherlands
4. **How climate and other planetary changes affect migrating shorebirds**, Beijing Normal Univ, Beijing Normal University, College of Life Sciences, 9-May-2016, Beijing, China
5. **Global Flyway Network: Research and outreach along all Flyways**, China Biodiversity Conservation and Green Development Foundation, 4-May-2016, Beijing, China
6. **The Yellow Sea And Shorebirds: An Evening With Professor Theunis Piersma**, Birding Beijing, 4-May-2016, Beijing, China
7. **Hong Kong Alumni reception with Prof. Theunis Piersma and UG students**, RUG Alumni Hong Kong, 3-May-2016, Hong Kong
8. **How the Microwave Telemetry 'satellite tags' are revolutionizing the study and conservation of long-distance migrating shorebirds**, MTI Microwave Telemetry, Inc, 16-Apr-2016, Columbia, USA
9. **AMBI lecture: Bottlenecks in annual cycles (of migrant shorebirds), with a focus on the Yellow Sea**, Arctic Migratory Birds Initiative of Arctic Council Observer countries, 6-Apr-2016, Texel, Netherlands
10. **Voor trekvogels draait de wereld past echt door**, Tresoar, Fries historisch en letterkundig centrum, 17-Mar-2016, Leeuwarden, Netherlands
11. **Developmental processes unify ecology with evolution: remarks from a shorebird biologist**, Netherlands Inst Ecol, NIOO KNAW, 14-Mar-2016, Wageningen, Netherlands
12. Speaker at: **Thema-avond. Het platteland: nu en in de toekomst; kansen en bedreigingen**, FNP De Fryske Marre, 4-Feb-2016, Sint Nyk, Netherlands
13. **Bisten en Blommen**, Natuurmuseum Fryslân, 31-Jan-2016, Leeuwarden, Netherlands
14. **100 jaar verwant 100 jaar verschil**, Fries Scheepvaart Museum, Fries Scheepvaart Museum, 30-Jan-2016, Sneek, Netherlands



15. **Presentation during workshop Parc National Banc d'Arguin**, The Scientific Council of Parc National Banc d'Arguin (PNBA), 21-Jan-2016, Nouackchott, Mauritania
16. **Bottlenecks in annual cycles (of migrant shorebirds), with a focus on the Yellow Sea**, Massey Univ, Massey University, 9-Dec-2015, Palmerston North, New Zealand
17. **The conservation ecology of Red Knots: why are our knots so endangered?**, University of Auckland, 1-Dec-2015, Auckland, New Zealand
18. **Why is the Yellow Sea the conservation bottleneck for our migratory shorebirds?** The scientific evidence, Pukorokoro Miranda Shorebird Centre, 29-Nov-2015, Pokeno, New Zealand
19. **In the face of extinction: a hemispheric observatory**, BirdLife International - Global Council meeting, 17-Nov-2015, Kampala, Uganda (video talk).
20. **Jan Abrahamselezing 2015 - Landschap en verbeelding**, Stichting Noorderbreedte, 6-Nov-2015, Assen, Netherlands
21. **Following the fates of the world's record-flying marathon migrants**, Chongming Dongtan National Nature Reserve, 28-Oct-2015 → 30-Oct-2015, Shanghai, China
22. **Ecology of shorebird movements**, Symposium Ecological Consequences of Waterbird Movement, University of Utrecht, 22-Sep-2015, Utrecht, Netherlands
23. **Flyway Flexibility: inter- and intra-generational degrees of freedom for seasonal migrants**, 10th Conference of the European Ornithologists' Union, 27-Aug-2015, Badajoz, Spain

## Other oral presentations (July 2015-July 2016):

1. **A Journey to the Arctic & Back**, by GFN researcher Chris Hassell



## Symposia – Seminars

**April 5-7, 2016**

Arctic Migratory Birds Initiative Implementation Meeting (**AMBI**), Texel, Netherlands, Co-hosted with Maarten Loonen en Jan van Gils. Pleanry lecture on the flyway work by Theunis Piersma.

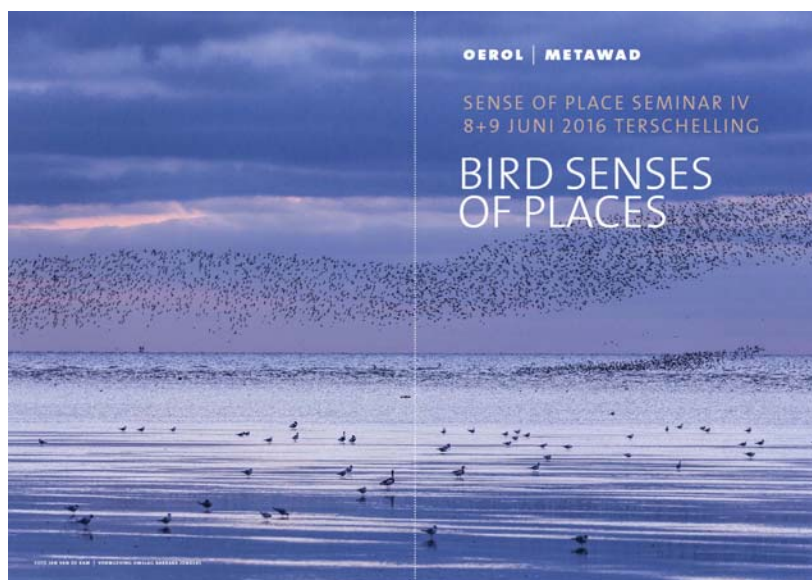


**June 8-9, 2016**

Metawad Seminar **Bird Senses of Places**, in lieu with cultural festival Oerol, Terschelling, Netherlands. Followed by live exhibits and talks on NIOZ research vessel *Navicula* from 10 – 19 June (as part of *Expeditie Oerol*), with ca 3000 visitors.



**oerol**  
10-19 Juni 2016



**Metawad Seminar Program:** Wednesday 8 June

- **Opening** by Klaas Sietse Spoelstra, Theunis Piersma en Joop Mulder, location: de Tonnenlood, West-Terschelling.

- Book presentation **Marathon Migrants**, to Waddenacademie en Vogelbescherming, location: de Tonnenlood, West-Terschelling.
- Opening **photo exhibit Marathon Migrants** (Jan van de Kam), location: de Tonnenlood, West-Terschelling.



(Seminar participants are provided with bicycles to move between subsequent seminar locations)

- **The Barnacle Goose**, location: Dwarsdijk (on a dike where mudflats meet the polder). Oene de Jong, Flang Cupido and the goose researchers explained and enacted the different life styles of geese feeding on mudflats or in polders.
- **The Sanderling**, location: beach near Midsland. Actor Arnold Dijkstra reads a story written by Rebekka de Wit. Revealing not only the newest insights in the travels of Sanderlings, but also researching the soul of the researchers.
- **De Gastelaar**, location: beach near Midsland. Maaïke Ebbinge en Victor Freriks present their interactive exhibit, where o.a. migration tracks can be created by tourist using their own movements.
- Landschapsarchitect Bruno Doedens presented his dune project '**Windwerk**', location: beach near Midsland.

***Metawad Seminar Program: Thursday 9 June***

- **Breakfast** on the mudflats with live music by Christiaan Verbeek, location: West-Terschelling, NIOZ research vessel De Navicula. The seminar participants were driven away from the breakfast table as if they were Red Knots.



- **Food landscape**, location: mudflats West-Terschelling. Seminar participants take core samples at 500 sampling locations, until also they get flooded. Flags were planted at each point where bivalves appeared in the sieves of participants, illustrating patchiness in prey distribution.
- **The Red Knot**, location: dunes West-Terschelling. Looking back at the food landscape just created by the participants, Theunis Piersma, Allert Bijleveld, Thomas Oudman & Piet van de Hout explain the research finding about Red Knots in the Dutch Wadden Sea and in Mauritania.



- **The Bar-tailed Godwit**, location: the dike near high tide roost Doodemanskisten. Harry Horn explains the importance of safe roosts and the lessons learned from long-term colour ringing programs, while in the distance the bar-tailed godwits flock over the roost. Next, dance company Club Guy & Roni connect nature and culture with their dance 'Vuurvogel' (Firebird).
- **The Spoonbill**, location: de Waterplak, Midsland. Joeri Lamers, Freek Zwart and Petra de Goeij the demography of how spoonbills and the crucial role of flat fish in their diet. Next, the children of dance studio Terschelling of Kyra Meijer perform their show Lepelaar, a choreography especially developed for this event.
- **TRACKS**, location: de Tonnenlood, West-Terschelling. A performance by Theunis Piersma and Sytze Pruiksmā. Directed by Jos Thie and produced by Pier 21. <https://youtu.be/VcOsEPVvkqk>





## External evaluation of the METAWAD project

At the request of funder Waddenfonds, a committee organized and chaired by the Waddenacademie in early 2016 reviewed four Waddenfonds projects with scientific content. METAWAD received the highest accolades, as is clear from this assessment:

### Project: Metawad

Met het totale project is 3.318.977,00 euro gemoeid, waarvan het Waddenfonds 2.987.079,00 bijdraagt.

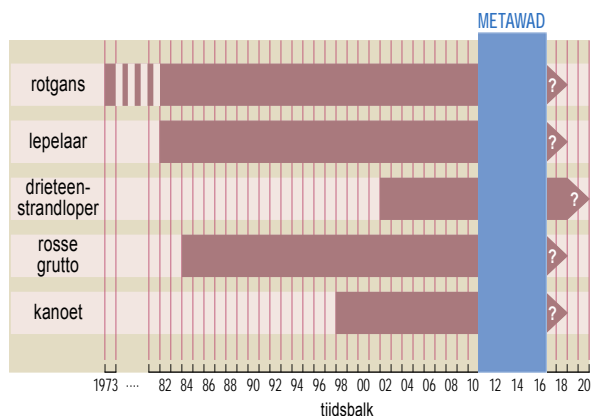
Oordeel van de commissie:

Maatschappelijke relevantie en impact	Erg goed (en kan excellent worden)
Wetenschappelijke kwaliteit	Excellent

In juni 2016 tijdens de slotmanifestatie op Oerol, waarnaar met veel verwachting wordt uitgekeken, zal het samenvattende populairwetenschappelijke boek 'Knooppunt Waddenzee' worden gepresenteerd, waardoor de maatschappelijke relevantie en impact excellent zal kunnen worden.

At a more general level, the evaluation committee concluded that sourcing scientific work is highly relevant to the aims of Waddenfonds:

De commissie sluit af met een oproep: Wetenschappelijk onderzoek levert voor het beheer van het waddengebied veel op, daarvan is de commissie na deze evaluatie overtuigd. En mede dankzij het Waddenfonds is er in de afgelopen jaren een stevige en zeer betrokken Wadden onderzoeksgemeenschap opgebouwd, die elkaar ook in toenemende mate weet te vinden. Maar met onderzoek is ook geld gemoeid. Geld dat afkomstig is van universiteiten, NWO, EU en andere instanties, waaronder ook het Waddenfonds. De investeringen uit het Waddenfonds aan deze vier projecten hebben niet alleen een directe bijdrage geleverd, maar ook een enorme hefboomwerking gehad. De commissie dringt er bij het Waddenfonds op aan om ook in de toekomst in onderzoek te blijven investeren. Niet alleen omdat meer kennis over het complexe waddensysteem wetenschappelijk interessant is, maar vooral ook omdat het beheer van het waddengebied hier baat bij heeft. Een excellent beheer van het unieke waddengebied kan niet zonder een excellente kennisinfrastructuur. De hoofddoelstellingen van het Waddenfonds kunnen alleen worden bereikt indien het fonds ook in de toekomst hierin blijft investeren.



## Fieldwork & expeditions

The Chair has personally participated in fieldwork activities in The Netherlands (various programmes) and furthermore participated in research at Banc d'Arguin, Mauritania (2 times in reporting period), China (3 times), New Zealand (1 time), Extremadura, Doñana, Spain and Tejo, Portugal (1 time).

## External functions

- Chairman of the *Global Flyway Network*, an international foundation
- Member of KNAW, Amsterdam
- Editor-in-Chief of *Ardea* (from January 2014)
- Associate Editor of *Functional Ecology* (until January 2015)
- Editorial board of *Journal of Ornithology*
- Editorial board of *Movement Ecology*
- Editorial board of *Emu*

## Publications (2015-2016)

### Books

1. Buiten, R, Govers, L, **Piersma, T** & Metawad Team 2016 Knooppunt Waddenzee. Utjouwerij Bornmeer, Gorredijk.
2. van de Kam, J, Jonkers B & **Piersma, T** & 2016 Marathon Migrants. Utjouwerij Bornmeer, Gorredijk.
3. van de Kam, J, Jonkers B & **Piersma, T** & 2016 Reisvogels. Utjouwerij Bornmeer, Gorredijk.
4. **Piersma, T** 2016 Guests of Summer: A House Martin love story. BTO Books, Thetford.
5. Addition to 2014-2015 report: **Piersma, T.** (2014). Werelderfgoed Waddenzee: grootse natuur in een klein land. Pp. 275-281 in: *Waddenzee – Werelderfgoed*. Redactie Jan Abrahamse, Uitgeverij Matrijs

### Popular publications

1. **Piersma, T** 2016 'Voorwoord bij 'Steltlopers van Europa' door Lars Geijl'. KNNV, Zeist.
2. **Piersma, T** 2016 'The Yellow Sea – a rapidly narrowing bottleneck for migrating shorebirds' Webblog - Journal of Applied Ecology
3. **Piersma, T** 2016 'Anderland – Huismus' Noorderbreedte 40 , no.1: 19-21

4. **Piersma, T** 2016 'Anderland - Rosse grutto' *Noorderbreedte* 40, 2: 37-39
5. **Piersma, T** 2015 'Anderland – Fuut' *Noorderbreedte* 39, 4: 27-29.
6. **Piersma, T** 2016 'Lân fan langstme'. in *Bisten en blommen*. Fries Natuurmuseum: 9-15.
7. **Piersma, T** 2015 'Koninklijke aandacht' *Vogels+*, 2 (4).
8. **Piersma, T** 2015 'Oude liefde roest niet' *Vogels+*, 2 (3).
9. **Piersma, T** 2015 'Goede tijden - slechte tijden' *Vogels+*, 2 (2).
10. **Piersma, T** 2015 'De eerste zwaluw!' *Vogels+*, 2(1).
11. **Piersma, T** 2015 'Geen vogel zo koninklijk' *Trouw*, De Verdieping: Dossier
12. **Piersma, T** 2015 'Tracking bottlenecks in the annual cycles of long-distance migrating shorebirds' *MTI Newsletter*.

## Review & opinion articles

1. **Piersma, T** 2016 'Davies N. 2015. Cuckoo. Cheating by Nature' *Ardea*, 104, 1: 101-102.
2. **Piersma, T** 2015 'Ornithology from the flatlands: Contributing to larger intellectual framework' *Ardea*, 103, 2: 97-98.
3. **Piersma, T** 2015 'Red Knots and the Red Square' *Wader Study*, 122, 3: 169-170.
4. **Piersma, T** 2015 Book Review: A Message from Martha. The extinction of the Passenger Pigeon and its relevance today. Avery M. *Ardea*, 103, 2: 189-190, 10.5253/arde.v103i2.a8
5. **Piersma, T** 2015. Book Review: Animal Movement Across Scales. Edited by Hansson L.-A. & Akesson, S. *Animal Behaviour* 102: 139-139.
6. **Piersma, T** 2015 Book Review: The Social Life of Greylag Geese. Patterns, Mechanisms and Evolutionary Function in an Avian Model System. Edited by Scheiber, I.B.R, Weiss, B.M, Hemetsberger, J. & Kotrschall, K. *Ibis*, 157: 903-904.

## Scientific papers (2015-2016)\*

\* Overlap with last year's report may exist because papers are selected by calendar year

1. Bijleveld, AI, MacCurdy, RB, Chan, Y-C, Penning, E, Gabrielson, RM, Cluderay, J, Spaulding, EL, Dekinga, A, Holthuijsen, S, ten Horn, J, Brugge, M, van Gils, JA, Winkler, DW & **Piersma, T** 2016 'Understanding spatial distributions: Negative density-dependence in prey causes predators to trade-off prey quantity with quality' *Proceedings of the Royal Society of London. Series B, Biological Sciences*, 283, 1828, 10.1098/rspb.2015.1557
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## Plans for 2016-2017

The Spinoza Premie to be awarded on 9 September 2014 has generated considerable positive attention to Trekvoegeleecologie/Flyway Ecology, and has put the chair in the limelight as well as enabled more in-depth studies using advanced technological observational tools and experimentation.

## **Research 2016-2017**

Projects we will continue to work on in 2016-2017 under the Chair of Global Flyway Ecology and the Global Flyway Network (GFN) are:

### **Shorebirds of (wet) Dutch grasslands and meadows**

‘Variation in migration behaviour of black-tailed godwits: what is the role of ecological context during ontogeny?’

‘Ecology of meadow birds: observations and experiments’

‘Ecology of earthworms in agricultural grasslands’

‘Population dynamics of black-tailed godwits, ruffs and golden plovers’

### **Foodwebs in intertidal areas**

‘Trophic relations across the Wadden Sea revealed by stable isotope tracing’

‘Trophic ecology of mudflats along the Bering Sea, Alaska’

‘Foraging ecology of red knots in Bohai Bay, China’

‘Ecology of red knots at Banc d’Arguin National Park (PNBA), Mauritania’

‘Trophic interactions on seagrass beds at Banc d’Arguin, Mauritania’

‘Nutrient limitation to the Banc d’Arguin ecosystem’

‘Temporal dynamics of intertidal flats of the Banc d’Arguin’

### **Connections between species, habitats and continents**

‘Ecological drivers of the world-wide evolution of migration routes’

‘Migration ecology of pied flycatchers’

‘Migration ecology of piscivore birds’

‘How wind systems affect the long-distance migrations of shorebirds’

‘Exploration and migration in shorebirds along the East Asian–Australasian flyway’

‘Migration and survival of *rufa* red knots in the Americas’

## **Education planned 2015-2017**

Since 2015, we offer high-profile education in the research field of global flyway ecology through a 3-week Flyway Ecology course, which will be part of the international Master of Science education at the University of Groningen.

In 2017, the course will be open to students in the RUG Ecology and Evolution MSc programme and Biology MSc programme, and as well to students of other (international) MSc programmes. The goal of the course is to introduce a new generation of biologists to the world of flyway ecology, to reach a level of understanding in this research field that will allow students to ask new study questions and develop societally relevant research programs integrating available ecological and evolutionary knowledge.



**In summary**

Clearly, there is a need for some organisational strengthening to make sure the entire research, education and outreach portfolio associated with the Chair will maintain its strength, and help safe the future of the birds under study.

**Attachment:** Media and Outreach

## Media & Outreach

### Highlights **June 2015-July 2016**

**Theunis Piersma meets King Willem-Alexander on Shanghai's Chongming island.** They inspected the mudflats and witnessed the signing of a memorandum of understanding between the China State Forestry Administration and WWF. See [Report in USA China Daily](#)



**Theunis Piersma brings his message to Miranda ..... and to the Conservation Minister.** [Link to Miranda News](#). This was followed up a few months later by the New Zealand Department of Conservation and China's conservation agency agreeing to protect migratory birds [DOC news 18 March 2015!](#)



At the end of the meeting, Mr Scott Simpson at left, Mrs Maggie Barry in the middle, looking at Janet Esley's and Lee Tibbitts' cultural cartography of red knot migrations, produced for and by Global Flyway Network

**(Inter) national media about Journal of Applied Ecology publication** "The Yellow Sea, a narrowing bottleneck for migratory birds", 2-19 February 2016 – The Strait Times (Singapore) [Link to newspaper article](#), Bionieuws, NWO actueel, EAAF Domestic News and Events (for Chinese), BirdLife International Asia. [Link to various sources](#)

**(Inter)national media coverage of Science publication** “Shrinking shorebird pays the bill for rapid Arctic warming while wintering in the tropics”, 12-21 May 2016 – Science Magazine, New York Times, PAP-Nauka w Polsce, International Business Times, The Atlantic, Washington Post, Smithsonian Magazine, New Scientist, National Geographic; Dutch media: NRC, Trouw, Friesch Dagblad; radio: ABC, BBC, NOS, BNR, Omrop Fryslân, VARA Vroege Vogels; >10 online media channels. [Link to various sources](#)

**ABC/BBC World Service Radio documentary series**, 20 June 2016. Highlighting work of GFN and in Bohai Bay [Link to series at ABC website](#)

**Metawad Seminar “Bird Senses of Place”** at Oerol, 8-9 June 2016. Interview with Theunis Piersma at VARA Vroege Vogels, reports in Trouw en Leeuwarder Courant.

Leeuwarder Courant - vrijdag 10 juni 2016 - fryslan@lc.nl

LC

fryslân 25

# Voelen hoe het de kanoet vergaat

Voelen hoe het is om een kanoet te zijn, kijken waar de rosse grutto zijn voedsel zoekt en luisteren naar verhalen over de lepelaar die net overvliegt. Dat is Sense of Place.

HALBE HETTEMA

**H**et gaat over vogels op het seminar Sense of Place, de twee dagen voor de echte drukte van Oerol op Terschelling losbarst. Over vijf soorten die alles met de Waddenzee te maken hebben en daarom hoofdrolspelers zijn van het net afgesloten onderzoeksprogramma Metawad. Daar horen naast de lepelaar, de rosse grutto en de kanoet ook de rotgans en de drieteenstrandloper bij.

Praten in het leefgebied van de vogels zelf, met tussendoor een vleugje cultuur. Maar ook met de ervaring van hoe het voelt een kanoet te zijn die in beperkte tijd genoeg schelpdieren van de wadplaten moet halen om nieuwe energie op te doen. Dat gebeurt op het Groene Strand, waar 's morgens vroeg bij laagwater de ontbijttafel is gedekt. Het duurt maar even voor het water stijgt. De muziek vanaf een nabijgelegen schip voert de spanning op en de etensgasten moeten vluchten naar een plekje hoger op.

„Je houdt de spanning op”, vertelt Christiaan Verbeek van instituut NI-OZ. „Redt de kanoet het wel met het foerageren voor de zandplaten onderlopen?”

De mensen gaan schelpjes zoeken. Waar ze liggen worden vlaggetjes geplaatst. Zo ontstaat een beeld van het voedselaanbod. Dat blijkt niet mee te vallen, al zijn er enkele plekken waar het wel goed is. Het is precies het beeld dat in de verhalen naar voren komt. Op het Nederlandse Wad gedragen de kanoeten zich als sociale dieren die in grote groepen hun voedsel zoeken. Dat is dan precies op de plekken waar veel schelpdieren te vinden zijn.

Er is ook ruimte voor cultuur op het seminar. Met dansers die rosse grutto's en lepelaars uitbeelden. Als ondersteuning van bijvoorbeeld het verhaal van Harry Horn, die bij het afkalvende kweldertje van Strip vertelt dat die grutto's juist op deze plek hun voedsel zoeken als ze voor een tussenstop op de trek de Waddenzee aandoen.

De enige van de vijf genoemde soorten die op het eiland broedt, is de lepelaar. Die vliegt net op van het Waterplak als Freek Zwart en Joeri Lamers van Staatsbosbeheer ter plekke vertellen hoe het de vogel

**Piersma wilde verhaal kwijt aan 'mannen yn grize pakken'**

hier vergaat. En dat het er meer kunnen worden als het lukt meer platvis in de Waddenzee te krijgen. Het helpt dat de natte duinvalleien zijn opgeknapt en het water tegenwoordig vasthouden. „Mooi voor de natuur, maar ook voor de mensen”, vertelt Zwart. „Die kunnen vanaf het fietspad dit moois beleven.”

Zo iets hoort Joop Mulder graag. De Oerolbaas koppelt bij de beleving vooral graag cultuur aan natuur. Hij noemt als voorbeeld het afplaggen van duinvalleien. Het plaggen hoeft niet als chemisch afval te worden afgevoerd, maar kan ook worden hergebruikt. Als kunstwerk, bijvoorbeeld, zoals dat op Terschelling al is gedaan. Mulder: „Natuur en cultuur samen laten optrekken. Dat is Sense of Place.”

Ondertussen ziet trekvogeleoloog Theunis Piersma uit Gaast tevreden toe hoe de verhalen indruk maken. Er is iets speciaals aan de hand, vertelt hij. Praktische problemen op de buitenpodia maken het lastig en daarom is van de nood een deugd gemaakt: alle verhalen worden verteld zonder ondersteuning van de tegenwoordig onmisbaar geachte PowerPoint-presentaties: „En dat wurket geweldig.”

Eigenlijk voldoet het seminar niet aan de opzet zoals Piersma aanvankelijk had bedacht. Hij wilde mensen die veel met de Waddens te maken hebben, er niet veel komen maar wel de beslissingen nemen, op slecht-touw nemen. „Om de verhalen te vertellen oan in man as tritich yn grize pakken.” Hij heeft er hard aan getrokken, maar hij kreeg ze niet bij elkaar. Het blijft nu bij wetenschappers en beheerders. „Dy fine inoar in stik better as yn it ferline.” Rest het probleem dat de onderzoekers vaak maar moeilijk kunnen uitleggen waar ze mee bezig zijn. Piersma: „Mar dan is der de keunst. Dy makket ús ferhalen tagonklik.”



Bij het Waterplak vertelt Freek Zwart (rechts) hoe het de lepelaars vergaat. FOTO CATRINUS VAN DER VEEN

## All media attention

1. **ABC - BBC World Service documentary series**, 4-Jun-2016 → 25-Jun-2016, with interviews with several Global Flyway Network researchers Chris Hassell & Theunis Piersma. Episodes Off Track: Flying for your life. The journey begins (part I), China's new great wall (part II), An unlikely saviour (part III), Birds without borders (part IV). See <http://www.abc.net.au/radionational/programs/offtrack/flying-for-your-life-4/7487310>

### Interviews with the Chair:

2. **De Ochtendtalkshow** - Paulien Cornelisse & Chris Bajema, Oerol - Sense of Place, 13-Jun-2016
3. **Welkom grutto! "Kuikenland is het meest belangrijk"**, VARA Vroege Vogels Radio, 20-Mar-2016
4. **Welkom grutto! Staatssecretaris Martijn van Dam komt grutto's kijken**, VARA Vroege Vogels Radio, 20-Mar-2016
5. **Theunis Piersma: "Het heeft nog geen grutto's opgeleverd"**, Oog Radio, Groningen, 14-Mar-2016
6. **Waar is Amalia?**, VARA Vroege Vogels Radio, 13-Mar-2016
7. **Stichting Water Land en Dijken, en de grutto**, RTV Purmerend, 21-Feb-2016
8. **Trekvogels in het nauw**, VARA Vroege Vogels Radio, 7-Feb-2016
9. 让候鸟飞公益基金"抢救江苏东台条子泥滩涂湿地纪录片 (**Tiaozini mudflats are facing huge threats from reclamation**), Video on environmental crisis in China's wetlands; Theunis Piersma is one of the international experts interviewed, EAAFP - Let Birds Fly, 2-Feb-2016
10. **Grutto gekozen tot Nationale Vogel**, VARA Vroege Vogels TV, 16-Nov-2015
11. **Trekvogelonderzoeker Theunis Piersma**, NTR De Kennis van Nu Radio, 16-Aug-2015

## Performances for a general audience

### **Landschapspijn. Muzikale wetenschapsvoorstelling, met Sytze Pruiksmā & Dave Goulson & SoliBrass**

Harmonie Leeuwarden, 24-Jun-2016

### **TRACKS. Muzikale wetenschapsvoorstelling, met Sytze Pruiksmā**

Oerol - Sense of Place, 9-Jun-2016

**'King of the Meadows' in Broek in Waterland, met Sytze Pruikma**  
Kerk in Broek-in-Waterland, Streekfonds Waterland, 22-Apr-2016

**'Les Saisons' Biodiversiteitsevenement - Jacques Perrin en Jacques Cluzaud**  
Pakhuis Willem de Zwijger, Amsterdam, 22-Apr-2016

**"The King of the Meadows" at UvA, with Sytze Pruikma and Theunis Piersma**  
After-dinner presentation in "De Oerknal" at Science Park 306, Amsterdam, UvA-BiTS Symposium, 21-Apr-2016

**De Koning (van het Weiland) in Leiderdorp, met Sytze Pruikma**  
Stichting Land van Wijk en Wouden, Gemeentehuis Leiderdorp, 24-Feb-2016

**Music of Migration in Purmerend, met Sytze Pruikma**  
Theater de Purmerein, Vereniging Agrarisch Natuur- en Landschapsbeheer Water, Land & Dijken (WLD), 22-Feb-2016

**Birds & Brass in concert, met Sytze Pruikma**  
Kening fan 'e Greide, sporthal Beetsterzwaag.

**Weidevogels in Amsterdamse achtertuin? Voorstelling over de grutto, met Sytze Pruikma**  
Weidevogeltop VBN/KfeG, Pakhuis Willem de Zwijger, Amsterdam, 30-Sep-2015

**Kening fan 'e Greide - ode aan het Friese landschap: voorstelling met Sytze Pruikma**  
2015Festival - Milleniumnetwerk Fryslân, IJlst, Mauritiuserkerk, 5-Sep-2015

## **Printed media**

### **Press clippings**

**29. Kanoet vliegt in één ruk 4000 km van Canadees poolgebied naar Waddenzee, 18-Jul-2016**

<http://www.metronieuws.nl/nieuws/extra/2016/07/vogel-vliegt-in-een-ruk-van-canada-naar-de-waddenzee>

<http://vroegevogels.vara.nl/media/361952>

<http://www.texelsecourant.nl/nieuws/natuur/25027/kanoet-paula-vliegt-non-stop-4000-km->

<http://www.groningerkrant.nl/2016/07/kanoet-vliegt-ruk-4000-km-canadees-poolgebied-naar-waddenzee/>

<http://www.headlines.nl/14787146/Vogel-vliegt-in-een-ruk-van-Canada-naar-de-Waddenzee/>

<http://www.omropfryslan.nl/nieuws/651172-vogel-vliegt-non-stop-van-canada-naar-terschelling>

<http://www.metawad.nl/nieuws/kanoet-vliegt-in-een-ruk-4000-km-van-canadees-poolgebied-naar-waddenzee/>

**28. Boekrecensie "Reisvogels" / Book review "Marathon Migrants", 11-Jul-2016**

<http://www.dijksterhuis.net/natuurdagboek/rosse-gruttos-en-andere-wereldreizigers/>

**27. Bumblebee professor and migratory bird ecologist on expedition (in the Netherlands), 25-Jun-2016**

<http://www.lc.nl/friesland/Hommelprofessor-en-trekvoegecoloog-op-expeditie-21455326.html>

<https://www.lc.nl/friesland/Hommelprofessor-in-een-mijnenveld-21435670.html>

<http://www.frieschdagblad.nl/index.asp?artID=71434>

Leeuwarder Courant:

[http://www.rug.nl/research/gelifes/ceg/\\_media/lc\\_25062016\\_2.jpg](http://www.rug.nl/research/gelifes/ceg/_media/lc_25062016_2.jpg)

**26. Provincie Friesland redt grutto-onderzoek van Piersma, 22-Jun-2016**

<http://www.omropfryslan.nl/nieuws/646108-provinciale-staten-redden-grutto-onderzoek-van-piersma>

<http://www.ukrant.nl/nieuws/grutto-onderzoek-piersma-gered>

**25. BBC World Service & ABC radio documentary: Flying for your life, 20-Jun-2016**

Co-production with the BBC World Service and ABC RN. In this third (of four) episodes is interviewed during his work in Bohai Bay in the Yellow Sea.

<http://www.abc.net.au/radionational/programs/offtrack/flying-for-your-life-3/7487290>

**24. Metawad Seminar "Bird Senses of Places" op Oerol: Levensverhalen van vogels op het wad, 6-Jun-2016**

Trouw: [http://www.rug.nl/research/gelifes/ceg/\\_media/trouw\\_06062016.jpg](http://www.rug.nl/research/gelifes/ceg/_media/trouw_06062016.jpg)

<http://www.sense-of-place.eu/>

<http://www.metawad.nl/nieuws/metawad-opent-oerol/>

<http://www.metawad.nl/nieuws/trekvoegecologie-creatief-op-oerol/>

<http://www.metawad.nl/nieuws/metawad-is-een-hit-op-oerol/>

<http://vroegevogels.vara.nl/nieuws/knooppunt-waddenzee>

<http://www.metawad.nl/wp-content/uploads/2016/06/Voelen-hoe-het-de-kanoet-vergaat-LeeuwarderCourant->

Oeroldagkrant: <http://www.metawad.nl/wp-content/uploads/2016/06/Het-gaat-lekker-met-de-lepelaar-Oeroldagkrant.jpg>

**23. Gek van de trek, 1-Jun-2016**



Sovon-Nieuws:

[http://www.rug.nl/research/gelifes/ceg/\\_media/sovonnieuws\\_01062016.pdf](http://www.rug.nl/research/gelifes/ceg/_media/sovonnieuws_01062016.pdf)

**22. Shrinking shorebird pays the bill for rapid Arctic warming while wintering in the tropics, 12-May-2016**

[http://www.nytimes.com/2016/05/17/science/climate-change-bird-red-knots.html?\\_r=0](http://www.nytimes.com/2016/05/17/science/climate-change-bird-red-knots.html?_r=0)

<http://nos.nl/artikel/2104705-kanoet-dubbel-slachtoffer-van-klimaatverandering.html>

<http://www.abc.net.au/news/2016-05-13/shrinking-shorebirds-a-sentinel-for-climate-change-in-the-arctic/7409296>

<https://www.newscientist.com/article/2087982-earlier-ice-melt-in-the-arctic-cuts-survival-of-birds-in-africa/>

<http://phys.org/news/2016-05-shorebird-bill-rapid-arctic-wintering.html>

<http://www.ibtimes.co.uk/climate-change-shrinking-arctic-migratory-birds-1559832>

<http://www.bnr.nl/incoming/201506-1605/onderzoekers-vrezen-dat-vogelsoort-kanoet-uitsterft>

<http://www.nrc.nl/next/2016/05/13/warme-noordpool-is-probleem-voor-hongerige-kanoet-1620308>

[http://vroegevogels.vara.nl/Fragment.150.0.html?&tx\\_ttnews\[tt\\_news\]=375617&cHash=e346639cca0912907d90ee2001d66bf8](http://vroegevogels.vara.nl/Fragment.150.0.html?&tx_ttnews[tt_news]=375617&cHash=e346639cca0912907d90ee2001d66bf8)

<https://www.washingtonpost.com/news/energy-environment/wp/2016/05/11/the-shorebird-tragedy-global-warming-is-literally-causing-the-bodies-of-red-knots-to-shrink/>

<http://scienceblogs.com/gregladen/2016/05/13/climate-change-not-good-for-red-knots/>

<http://www.theatlantic.com/science/archive/2016/05/climate-change-is-shrinking-earths-far-flying-birds/482379/>

<http://www.smithsonianmag.com/science-nature/when-arctic-gets-warmer-it-also-affects-tropical-ecosystem-thousands-miles-away-180959090/>

<http://www.eenews.net/climatewire/2016/05/13/stories/1060037183>

<http://www.takepart.com/article/2016/05/12/how-warming-arctic-kills-birds-tropics>

<http://naukawpolsce.pap.pl/aktualnosci/news,409661,biegus-nie-siega-tam-gdzie-wczesniej-siegal-to-przez-ocieplenie.html>

<http://www.iflscience.com/plants-and-animals/arctic-warming-shrinks-birds-price-pay-tropics>

<http://www.nationalgeographic.nl/artikel/arctische-broedsoorten-kleiner-door-opwarming>

<http://www.reuters.com/article/us-climatechange-redknots-idUSKCN0Y32JQ>

<http://www.examiner.com/article/note-to-shorebirds-with-slightly-shorter-bills-size-matters-to-survival>

<http://news.nationalgeographic.com/2016/05/160512-arctic-warming-shrinking-shorebirds-climate-red-knot/>

<http://www.csmonitor.com/Science/2016/0512/Climate-change-could-be-shrinking-these-Arctic-birds>  
<http://www.observatoriodoclima.eco.br/en/derretimento-de-neve-no-artico-mata-aves-migratorias-nos-tropicos/>  
<http://www.omropfryslan.nl/nieuws/637726-opwarming-aarde-heeft-grote-impact-op-waddenvogel-kanoets>  
Science Magazine (International media):  
[http://www.rug.nl/research/gelifes/ceg/\\_media/sciencemagazine\\_13052016.pdf](http://www.rug.nl/research/gelifes/ceg/_media/sciencemagazine_13052016.pdf)  
Trouw,: [http://www.rug.nl/research/gelifes/ceg/\\_media/trouw\\_13052016.pdf](http://www.rug.nl/research/gelifes/ceg/_media/trouw_13052016.pdf)  
Friesch Dagblad;  
[http://www.rug.nl/research/gelifes/ceg/\\_media/frieschdagblad13052016.jpg](http://www.rug.nl/research/gelifes/ceg/_media/frieschdagblad13052016.jpg)  
New Scientist (International media):  
[http://www.rug.nl/research/gelifes/ceg/\\_media/newscientist\\_21052016.jpg](http://www.rug.nl/research/gelifes/ceg/_media/newscientist_21052016.jpg)

### **21. Red Knots create cockles with thick shells, 1-May-2016**

Vogelwarte (International media):”[http://www.rug.nl/research/gelifes/ceg/\\_media/vogelwarte\\_01052016.pdf](http://www.rug.nl/research/gelifes/ceg/_media/vogelwarte_01052016.pdf)

### **20. Bruce McKinlay on role of Global Flyway Network at the Australian Shorebirds Summit, 8-April-2016**

Tattler: Newsletter for the Asia Pacific Flyways & Australian Shorebirds 2020 Project (International media), 30-May-2016  
<http://awsg.org.au/tattler/Tattler-39.pdf>

### **19. Steun provincie voor gruttostudie op de tocht, 21-Apr-2016**

Leeuwarder Courant:  
[http://www.rug.nl/research/gelifes/ceg/\\_media/leeuwadercourant\\_22042016.jpg](http://www.rug.nl/research/gelifes/ceg/_media/leeuwadercourant_22042016.jpg)  
<http://www.ukrant.nl/nieuws/spinoza-life-support-cant-save-godwits>  
<http://www.ukrant.nl/nieuws/spinoza-infuus-kan-grutto-niet-redden>  
<https://eelkesweblok.wordpress.com/2016/04/23/1658/>

### **18. Er is nog steeds hoop voor koning van de weidevogels, 13-Apr-2016**

Dagblad van het Noorden:  
[http://www.rug.nl/research/gelifes/ceg/\\_media/nieuwsbaldvanhetnoorden\\_13042016.pdf](http://www.rug.nl/research/gelifes/ceg/_media/nieuwsbaldvanhetnoorden_13042016.pdf)

### **17. Wilsterflappen in een koude polder, 5-Apr-2016**

Trouw: [http://www.rug.nl/research/gelifes/ceg/\\_media/trouw\\_05042016.pdf](http://www.rug.nl/research/gelifes/ceg/_media/trouw_05042016.pdf)

### **16. Wij zijn jarig! En dit is wat we willen. Durf te vragen, 2-Apr-2016**

Noorderbreedte Magazine,;  
[http://www.rug.nl/research/gelifes/ceg/\\_media/noorderbreedte\\_02042016.pdf](http://www.rug.nl/research/gelifes/ceg/_media/noorderbreedte_02042016.pdf)

### **15. 'Sweltsjes fan Gaast' now 'Guests of Summer'. Book published in English, 26-Mar-2016**

<http://markavery.info/2016/05/02/bank-holiday-monday-book-review-summer-guests-theunis-piersma/>

Friesch Dagblad:

[http://www.rug.nl/research/gelifes/ceg/\\_media/frieschdagblad\\_26032016.jpg](http://www.rug.nl/research/gelifes/ceg/_media/frieschdagblad_26032016.jpg)

#### **14. Nonnetjes voorspellen de toekomst van de Waddenzee, 22-Mar-2016**

<https://www.naturetoday.com/intl/nl/nature-reports/message/?msg=22606>

Friesch Dagblad:

[http://www.rug.nl/research/gelifes/ceg/\\_media/frieschdagblad\\_24032016.jpg](http://www.rug.nl/research/gelifes/ceg/_media/frieschdagblad_24032016.jpg)

Bionieuws:

[http://www.rug.nl/research/gelifes/ceg/\\_media/bionieuws\\_26032016.jpg](http://www.rug.nl/research/gelifes/ceg/_media/bionieuws_26032016.jpg)

#### **13. Groter graseiland rond nest biedt meer kans op succes, 19-Mar-2016**

Friesch Dagblad:

[http://www.rug.nl/research/gelifes/ceg/\\_media/frieschdagblad\\_19032016.jpg](http://www.rug.nl/research/gelifes/ceg/_media/frieschdagblad_19032016.jpg)

Leeuwarder Courant:

[http://www.rug.nl/research/gelifes/ceg/\\_media/leeuwardercourant\\_23032016.jpg](http://www.rug.nl/research/gelifes/ceg/_media/leeuwardercourant_23032016.jpg)

#### **12. De grutto is onderweg - Fryslân viert de aankomst van Amalia, 14-Mar-2016**

Friesch Dagblad:

[http://www.rug.nl/research/gelifes/ceg/\\_media/frieschdagblad\\_05032016.jpg](http://www.rug.nl/research/gelifes/ceg/_media/frieschdagblad_05032016.jpg)

Friesch Dagblad:

[http://www.rug.nl/research/gelifes/ceg/\\_media/frieschdagblad\\_12032016.jpg](http://www.rug.nl/research/gelifes/ceg/_media/frieschdagblad_12032016.jpg)

Leeuwarder Courant:

[http://www.rug.nl/research/gelifes/ceg/\\_media/leeuwadercourant\\_14032016.jpg](http://www.rug.nl/research/gelifes/ceg/_media/leeuwadercourant_14032016.jpg)

Friesch Dagblad:

[http://www.rug.nl/research/gelifes/ceg/\\_media/frieschdagblad\\_14032016.jpg](http://www.rug.nl/research/gelifes/ceg/_media/frieschdagblad_14032016.jpg)

Workumer:

[http://www.rug.nl/research/gelifes/ceg/\\_media/workumer\\_150302016.jpg](http://www.rug.nl/research/gelifes/ceg/_media/workumer_150302016.jpg)

#### **11. De toekomst van het Friese landschap - Vakblad Groen, 1-Mar-2016**

Vakblad

Groen: [http://www.rug.nl/research/gelifes/ceg/\\_media/vakbladgroen\\_01032016.pdf](http://www.rug.nl/research/gelifes/ceg/_media/vakbladgroen_01032016.pdf)

#### **10. Krimpemde Gele Zee nekt verschillende trekvogels, 2-Feb-2016**

Groninger krant: <http://www.groningerkrant.nl/2016/02/krimpemde-gele-zee-nekt-verschillende-trekvogels/>

Bionieuws:

[http://www.rug.nl/research/gelifes/ceg/\\_media/bionieuws26.3\\_13022016.jpg](http://www.rug.nl/research/gelifes/ceg/_media/bionieuws26.3_13022016.jpg)

<http://www.nwo.nl/actueel/nieuws/2016/nioz/krimpemde-gele-zee-nekt-trekvogels.html>

<http://www.eaaflyway.net/the-yellow-sea-a-narrowing-bottleneck-for-migratory-birds/>

<http://www.eaaflyway.net/wetland-crisis-in-china-large-scale-reclamation-is-still-in-process/>

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<http://phys.org/news/2016-02-yellow-sea-narrowing-bottleneck-migratory.html>

<http://www.birdlife.org/asia/news/reclamation-yellow-sea-causing-serious-declines-migratory-shorebirds>

<http://www.straitstimes.com/singapore/environment/migratory-birds-at-risk-as-habitats-shrink>

### **9. China kijkt jaloers naar ons onderzoek, 1-Feb-2016**

Vogels: [http://www.rug.nl/research/gelifes/ceg/\\_media/vogels\\_01022016.pdf](http://www.rug.nl/research/gelifes/ceg/_media/vogels_01022016.pdf)

### **8. Geringd op pad - Vogelexpeditie in Mauritanië, 19-Dec-2015**

Leeuwarder Courant: [http://www.rug.nl/research/gelifes/ceg/\\_media/geringd-op-pad.pdf](http://www.rug.nl/research/gelifes/ceg/_media/geringd-op-pad.pdf)

### **7. Theunis Piersma brings his message to Miranda ..... and to the Conservation Minister, 1-Dec-2015**

Pukorokoro Miranda News:

[http://www.rug.nl/research/gelifes/ceg/\\_media/mirandanews\\_01012016.pdf](http://www.rug.nl/research/gelifes/ceg/_media/mirandanews_01012016.pdf)

<http://www.doc.govt.nz/news/media-releases/2016/doc-and-chinas-conservation-agency-agree-to-protect-migratory-birds/>

### **6. Grutto, bluffer op lange poten, wint nationale vogelverkiezing, 18-Nov-2015**

Algemeen Dagblad:

[http://www.rug.nl/research/gelifes/ceg/\\_media/ad\\_18112015.jpg](http://www.rug.nl/research/gelifes/ceg/_media/ad_18112015.jpg)

Dagblad van het Noorden: <http://www.dvhn.nl/extra/In-beeld-Koning-van-de-weide-21196561.html>

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Trouw:

<http://www.trouw.nl/tr/nl/5009/Archief/article/detail/4084558/2015/06/20/Gee-n-vogel-zo-koninklijk.dhtml>

### **5. 'Supergene' underlies genetic differences, sexual behavior in male ruff, 16-Nov-2015**

[http://www.nature.com/news/supergene-determines-wading-birds-sex-strategy-1.18802?WT.mc\\_id=TWT\\_NatureNews](http://www.nature.com/news/supergene-determines-wading-birds-sex-strategy-1.18802?WT.mc_id=TWT_NatureNews)

<https://www.newscientist.com/article/dn28493-ruff-bird-orgies-have-four-sexes-thanks-to-a-supergene-flip/>

<http://www.iflscience.com/plants-and-animals/how-one-bird-got-three-such-different-looks>

<https://www.washingtonpost.com/news/speaking-of-science/wp/2015/11/16/female-impersonator-or-mate-thief-for-these-birds-one-supergene-determines-sexual-strategy/>

<http://www.sciencedaily.com/releases/2015/11/151116112453.htm>

<http://www.dailymail.co.uk/sciencetech/article-3320685/The-cross-dressing-bird-steals-girlfriends-Supergene-lets-male-ruffs-avoid-competition-mimicking-females.html>

**4. Leefbaarheid. De kaalslag van het platteland: Nog even en de grutto is verleden tijd, 7-Nov-2015**

Volkskrant: [http://www.rug.nl/research/gelifes/ceg/\\_media/vk\\_07112015.pdf](http://www.rug.nl/research/gelifes/ceg/_media/vk_07112015.pdf)

**3. Theunis Piersma (Kening fan 'e Greide) begeleidt koningspaar in China**

<http://www.kingofthemeadows.eu/theunis-piersma-kening-fan-e-greide-begeleidt-koningspaar-in-china/>

Leeuwarder Courant:

[http://www.rug.nl/research/gelifes/ceg/\\_media/lc\\_27102015.jpg](http://www.rug.nl/research/gelifes/ceg/_media/lc_27102015.jpg)

[http://usa.chinadaily.com.cn/epaper/2015-10/29/content\\_22311785.htm](http://usa.chinadaily.com.cn/epaper/2015-10/29/content_22311785.htm)

**2. Ontsnappen uit het 'groene riool', 15-Oct-2015**

It Fryske Gea Magazine:

[http://www.rug.nl/research/gelifes/ceg/\\_media/itfryskegea\\_15102015.pdf](http://www.rug.nl/research/gelifes/ceg/_media/itfryskegea_15102015.pdf)

**1. 'De grutto is een vliegende panda', 11-Jul-2015**

Vrij Nederland: <https://www.vn.nl/de-grutto-is-een-vliegende-panda/> &

[http://www.rug.nl/research/gelifes/ceg/\\_media/vrijnederland\\_11072015.jpg](http://www.rug.nl/research/gelifes/ceg/_media/vrijnederland_11072015.jpg)