How birds weather the weather: avian migration in the mid-latitudes

Kemp, M.U.

Publication date
2012

Citation for published version (APA):

General rights
It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations
If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: https://uba.uva.nl/en/contact, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.
The analyses described herein are the result of a combined effort among scientists with backgrounds in biology, meteorology, physical geography, statistics, computer science, visualization, engineering, and others. Many of these scientists’ expertise overlaps several of these fields. It is their shared fascination with the world of birds and pervasive love of knowledge and science that has made this thesis possible. I have been privileged to know and benefit from this exciting and diverse group.

I am indebted to my promoter, Prof. dr. ir. Willem Bouten, and co-promoters, Dr. Judy Shamoun-Baranes and Dr. ir. Emiel van Loon, for giving me the opportunity to be involved in this cutting-edge research group. Whereas PhD students are often mentored by an individual supervisor with particular expertise, I was fortunate enough to benefit from this collection of mentors with a broad range of skills and knowledge. I learned from each of them, and their different backgrounds and styles resulted in my having a more multifaceted education. Our dialog was very open, and they were forthright with both criticism and praise. They valued my opinion and trusted my judgment, allowing me to travel much of Europe serving as a proud ambassador of the Computational Geo-Ecology (CGE) group. Beyond being helpful supervisors, with characteristics complimentary of one another, they are genuinely wonderful and interesting people, and I have enjoyed knowing them both in and out of the workplace.

I have grown quite close to many of my colleagues, and will remember particularly fondly the entertaining (and often nonsensical) lunchtime banter we shared. It will be difficult to now part ways, but hopefully many of our paths will at some point cross again. My fellow PhD researchers: Niels Anders,
ACKNOWLEDGMENTS

Ehsan Forootan, Jamie McLaren, Dang Thu Ha Phan, Héctor Serna-Chavez, Ivan Soenario, Jurriaan Spaaks, Wouter Vansteelandt, and Laurens Veen, with whom I have shared so much of this experience, were instrumental in the pleasurable transition between continents and cultures I experienced. Besides being an excellent friend, colleague, and officemate, Laurens is a wizard with all things technical and provided invaluable support and insight on many occasions. I owe a particular thanks to Jurriaan for kindly providing a Dutch translation of the summary of this thesis and for initiating (and perpetuating) the CGE writers’ club. To those who attended these writers’ club meetings and provided insightful (and not too painful) critiques of my work, I am most grateful. I cannot thank Jamie McLaren enough for always taking the time to discuss concepts and answer my questions concerning mathematics, biology, birds, Dutch culture, etc., etc. His friendship and comradery have had a tremendous, positive impact on my experience. I was fortunate as well to have shared time at the UvA with Adriaan Dokter, Diana Gorea, Tomislav Hengl, and Stacy Shinneman. I particularly enjoyed, and will remember fondly, organizing and conducting summer courses with Wouter and Stacy. From Adriaan, I learned a great deal, particularly concerning birds and mathematics, and the discussions between he, Jamie, and I were a constant source of inspiration. Tomislav felt like family almost immediately; more specifically, he felt like a domineering older brother... but family nonetheless. He not only helped further my understanding of spatial analysis and the R programming language, he constantly reminded me to savor all aspects of this experience. The staff of the IBED Secretariat, and in particular Mijke Heldens, provided assistance (and, in the case of Mijke, well-needed distractions) throughout... by the way, Mijke, I have a letter from the IND for you to translate.

I would also like to thank the members of my PhD defense committee for taking the time to review and consider my thesis and for their stimulating and thoughtful questions during the defense. Similarly, I would like to thank Jamie and Adriaan, again, for serving as paranymphs during my defense ceremony.

The primary source of funding for my research was the European Space Agency (ESA) and the Ministry of Defence, in particular the Royal Netherlands Air Force (RNLAF). The RNLAF, as well as the Belgian Air Force (BAF), also shared bird migration data obtained from their surveillance radars, facilitating my research. I was privileged to meet and work with Serge Sorbi from the BAF and Inge Both, Arie Dekker, and Hans van Gasteren from the RNLAF. In particular, Hans provided invaluable support and direction concerning not only my work for the RNLAF but also my research and progress in general.

The Royal Netherlands Meteorological Institute (KNMI) provided a great
deal of the data that I used in my research. Not only did they provide and assist with atmospheric data from numerical weather models and measurements from the Cabauw experimental site for atmospheric research, it was from weather radars operated by KNMI that measurements of bird movement were obtained for several of the analyses herein. In particular, I would like to thank Henk Klein Baltink, Martin de Graaf, and Toon Moen for providing their expertise and assisting with these data. Hidde Leijnse, as well, not only provided assistance with data but served as a point of contact with KNMI and was a constant, beneficial source of advice and guidance.

My work was facilitated by the BiG Grid infrastructure for e-Science and was assisted greatly by the ICT infrastructure, services, and expertise provided by SARA. In particular, Bart Heupers, Tijs de Kler, Coen Schrivers, and Lykle Voort developed and maintained data base facilities and visualization tools that were invaluable to my work. As a representative of the LifeWatch program, I was privileged to be given the opportunity on several occasions to demonstrate these tools at international conferences using the Virtual Lab for Bird Migration Modelling.

During the course of my PhD studies, I was fortunate to be involved in the development of a research collaborative entitled the “European Network for the Radar surveillance of Animal Movement” (ENRAM). The members of ENRAM, representing research institutes in over a dozen European nations, are too numerous to name individually; nonetheless, I would like to mention Judy Shamoun-Baranes with the University of Amsterdam, Jason Chapman with Rothamsted Research, Ommo Hüppop with Vogelwarte Helgoland, and Felix Liechti with Vogelwarte Sempach for having organized and graciously hosted ENRAM meetings.

I am still indebted to my instructors at Louisiana State University (and, in fact, all of my previous educators) who helped set me on this path. In particular, I would like to thank Dr. Robert Rohli for his supervision, advice, guidance, and friendship. I would also like to thank Dr. Kevin Robbins who introduced me to the R language, providing me with skills that have served me so well during the course of my research.

My family deserves the lion’s share of my thanks, as anything good that I am or will be is due in no small part to the sacrifices they have made on my behalf; many of those sacrifices I may never fully appreciate. My mother, in particular, has been the single greatest influence in my life and has shown me endless love and support. Though her presence and personality are powerful, her guidance is light-handed. She has allowed (and indeed encouraged) me to grow and learn independently and has placed in me a great deal of trust and responsibility from a very early age. She has always maintained that I
am perfect, and while I know better, her belief has kept me moving in the right direction. My father is responsible for instilling in me a penchant for skepticism, beneficial for scientific pursuits. My grandfather, around whom has developed a large, wonderfully-supportive, and loving family, is an inspiration for me, and I am continually impressed by his worldliness and vitality. My brother Reese, with whom I am most at ease, has always been my best friend. Being away from him has perhaps been the most challenging aspect of my time here. I have been proud to watch (though from afar) as he begins to cultivate his own beautiful family... welcome Marcelle! I have been fortunate to have positive figures in my life who, though not related by blood, I surely count among family. In particular, I am grateful for the guidance and support I received from Bill Carville and Butch Kerr.

My wife Callie, with whom I have shared this experience most intimately, is extraordinary. I have been so fortunate to find her (and even more fortunate in convincing her to marry me!), and I feel privileged to have been welcomed so unreservedly into her wonderful, loving family. It has been incredible for me to spend our first several years as man and wife together on this adventure. The two of us are a team, even when we disagree, and I can imagine no substitute for her partnership. She is strong when I need support, gentle when I am vulnerable, and firm when I need direction. She is loving, reliable, and positive... not to mention beautiful! With her, I want for nothing, and I look forward with excitement to our adventures yet to come.

Callie and I have had such wonderful experiences and made such good friends here in the Netherlands; so many memorable BBQ’s, boat rides, holidays, cycling trips, and parties... even a thwarted burglary (thanks to Maarten and Bullit) and a couple of fabulous weddings! We have made lifelong friendships here with wonderful people from all over the world, and while I could not possibly list them all, many of them will hopefully make their way to the U.S. to visit Callie and I (and make room on their sofa for us when we return to visit them!).

I could continue these acknowledgments until they eclipsed the length of the thesis itself and still not mention everyone who deserves my thanks, which in my opinion is quite a fortunate position in which to find oneself.