

## BRIAN WEEKS

University of Michigan  
School for Environment and Sustainability  
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### EDUCATION

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#### **Columbia University**

Ph.D. in Ecology, Evolution and Environmental Biology 2017  
Advisors: Shahid Naeem and Joel Cracraft  
M.Phil. in Ecology, Evolution and Environmental Biology 2014  
M.A. in Ecology, Evolution and Environmental Biology 2013

#### **Brown University**

B.A., with honors, in Human Biology: Ecology and Evolution 2006

### EMPLOYMENT

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- Assistant Professor, School for Environment and Sustainability, University of Michigan, September 2019 – present
- Affiliated Researcher, Department of Ornithology, University of Michigan Museum of Zoology, 2020 – present
- Postdoctoral Researcher, Department of Ecology and Evolutionary Biology, University of Michigan, 2017-2019
- Pacific Programs Manager, Center for Biodiversity and Conservation, American Museum of Natural History, July 2010-July 2011
- Production Manager, Network of Conservation Educators and Practitioners, Center for Biodiversity and Conservation, American Museum of Natural History, August 2007-July 2010

### AWARDS AND FELLOWSHIPS

Packard Fellowship for Science and Engineering. 2022. David & Lucile Packard Foundation.  
George Mercer Award. 2022. Ecological Society of America.  
Katma Award. 2019. American Ornithological Society.  
Graduate Research Fellowship Program. 2011-2015. NSF

### PUBLICATIONS

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Lab members are underlined, \*Senior Author

#### *Submitted/In Review*

1. **Weeks, B.C.**, C. Harvey, C. Sheard, J.A. Tobias, Z. Zhou, and D.F. Fouhey. Thermoregulatory demand for heat dissipation shapes bird wings.
2. Zimova, M., **B.C. Weeks\***, S. Giery, D.E. Willard, and B.M. Winger\*. Body size determines contemporary rates of change in birds.

3. Gyllenhaal, E.F., L.B. Klicka, L.H. DeCicco, **B.C. Weeks**, R.G. Moyle, and M.J. Andersen. Phylogeographic inference is biased by island-mediated gene flow.

*Published or in press*

4. **Weeks, B.C.**, M. Klemz, H. Wada, R. Darling, T. Dias, B.K. O'Brien, M. Zhang, and M. Zimova. 2022. Temperature, size and developmental plasticity in birds. *Biology Letters*. 18(12): 20220357.
5. **Weeks, B.C.**, B.K. O'Brien, C.A. Sheard, S. Claramunt, J.J. Chu, and J.A. Tobias. 2022. Morphological adaptations linked to flight efficiency and aerial lifestyle determine natal dispersal distance in birds. *Functional Ecology*. 36(7): 1681-1689.
6. **Weeks, B.C.**, Z. Zhou, B.K. O'Brien, R. Darling, M. Dean, T. Dias, G. Hassena, M. Zhang, and D. Fouhey. 2022. A deep neural network for high throughput measurement of functional traits on museum skeletal specimens. *Methods in Ecology and Evolution*. <https://doi.org/10.1111/2041-210X.13864>.
7. **Weeks, B.C.**, S. Naeem, J.R. Lasky, and J.A. Tobias. 2022. An inverse relationship between diversity and extinction risk at a global scale. *Ecology Letters*. 25(3): 697-707.  
PRESS: Covered in 13 new outlets, including *Science*.
8. Tobias, J.A...**B.C. Weeks**...*et al.* 2022. AVONET: Functional traits for the world's birds. *Ecology Letters*. 25(3): 581-597.  
RECOGNITION: ISI Highly Cited paper.
9. Allgeier, J.E., **B.C. Weeks**, K.S. Munsterman, N. Wale, S.J. Wenger, V. Parravicini, N.M.D. Schiettekatte, S. Villéger, D.E. Burkepile. 2021. Phylogenetic conservatism drives nutrient dynamics of coral reef fishes. *Nature Communications* 12: 5432.
10. Zimova, M., D.E. Willard, B.M. Winger\*, and **B.C. Weeks**\*. 2021. Widespread shifts in bird migration phenology are decoupled from parallel shifts in morphology. *Journal of Animal Ecology*. 90(10): 2348-2361.
11. Zhou, Z., G. Mohammed, **B.C. Weeks**, D. Fouhey. 2021. Quantifying bird skeletons. *CV4Animals: Computer Vision for Animal Behavior Tracking and Modeling at Computer Vision and Pattern Recognition 2021*.
12. Cowles, S.A., **B.C. Weeks**, L. Perrin, N. Chen, and J.A.C. Uy. 2021. Small estimated population sizes of the two Kolombangara White-eye *Zosterops* species suggest need for stringent conservation efforts. *Emu – Austral Ornithology*. 121(1-2): 45-54.
13. Anujan, K., S.A. Heilpern, C.M. Prager, **B.C. Weeks**, S. Naeem. 2021. Trophic complexity alters the diversity-multifunctionality relationship in experimental grassland mesocosms. *Ecology and Evolution*. 11(11): 6471-6479.
14. **Weeks, B.C.**, S. Naeem, B.M. Winger, and J. Cracraft. 2020. The relationship between morphology and behavior in mixed-species flocks of island birds. *Ecology and Evolution*. 10(19): 10593-10606.

15. Oliver, R.Y., P.J. Mahoney, E. Gurarie, N. Krikun, **B.C. Weeks**, M. Hebblewhite, G. Liston, and N. Boelman. 2020. Dynamic responses to the local environment are a mechanism for shifting migratory phenology. *Environmental Research Letters*. 15(4): 045003.
16. **Weeks, B.C.**, D. Willard, M. Zimova\*, M. Hennen, M. Witynski, A. Ellis, S. Florida, and B.M. Winger. 2020. Shared morphological consequences of global warming in North American migratory birds. *Ecology Letters*. 23(2): 316-325.

**RECOGNITION:** Awarded the Ecological Society of America's 2022 George Mercer Award for an outstanding paper written by a young ecologist.

**PRESS:** Covered in 156 news outlets, including *Science*, *The Wall Street Journal*, *The Washington Post*, *BBC News*, *Le Monde*, *El País*, and additional outlets from over 10 countries. Higher altmetric score (1,571) than 99.98% of the 20 million papers ever tracked by altmetric (as of April 2022). Also interviewed about this work on nationally syndicated radio shows in Canada and the US and for a Vox YouTube video viewed over 710,000 times.

17. Pigot, A.L., C. Sheard, E.T. Miller, T.P. Bregman, B.G. Freeman, U. Roll, N. Seddon, D. Swindlehurst, **B.C. Weeks**, and J.A. Tobias. 2020. Macroevolutionary convergence connects morphological form to ecological function in birds. *Nature Ecology and Evolution*. 4: 230-239.

**RECOGNITION:** ISI Highly Cited paper.

18. Winger, B.M., **B.C. Weeks**, A. Jones, and D. Willard. 2019. Light and flight calls interact to determine building collision frequency in migratory birds. *Proceedings of the Royal Society B: Biological Sciences* 286(1900): 20190364.

**PRESS:** *Science*, *The Chicago Tribune*, *Audubon*, and 14 other outlets.

19. Winger, B.M., G. Auteri, T.M. Pegan, and **B.C. Weeks**. 2019. A long winter for the red queen: rethinking the evolution of seasonal migration. *Biological Reviews*.

**RECOGNITION:** Katma Award, American Ornithological Society

20. Heilpern, S., **B.C. Weeks**, and S. Naeem. 2018. Predicting ecosystem vulnerability to biodiversity loss from community composition. *Ecology*. 99(5): 1099-1107.
21. **Weeks, B.C.**, J. Diamond, P. Sweet, C. Smith, G. Scoville, and C.E. Filardi. 2017. New behavioral, ecological, and biogeographic data on the montane avifauna of Kolombangara, Solomon Islands. *The Wilson Journal of Ornithology*. 129(4): 676-700.
22. Lasky, J., T.H. Keitt, **B.C. Weeks**, and E.P. Economo. 2017. A hierarchical model of whole assemblage island biogeography. *Ecography*. 40(8): 982-990.
23. **Weeks, B.C.**, N. Gregory, and S. Naeem. 2016. Bird assemblage vulnerability depends on the diversity and biogeographic histories of islands. *Proceedings of the National Academy of Sciences*. 113(36): 10109-10114.
24. Naeem, S., C. Prager, **B.C. Weeks**, A. Varga, D. Flynn, K. Griffin, R. Muscarella, S. Wood, and W. Schuster. 2016. Biodiversity as a multidimensional construct: a review,

framework, and case study of herbivory's impact on plant biodiversity. *Proceedings of the Royal Society B: Biological Sciences*. 283: 20153005.

25. **Weeks, B.C.**, S. Claramunt, and J. Cracraft. 2016. Integrating systematics and biogeography to disentangle the roles of history and ecology in biotic assembly. *Journal of Biogeography*. 43(8): 1546-1559.
26. **Weeks, B.C.** and S. Claramunt. 2014. Dispersal has inhibited avian diversification in Australasian archipelagoes. *Proceedings of the Royal Society B: Biological Sciences*. 281: 20141257.
27. **Weeks, B.C.** and C.E. Filardi. 2011. Community is key to REDD success. *Nature* 474: 450.
28. Alexander, C., N. Bynum, L. Johnson, U. King, T. Mustonen, P. Neofotis, N. Oetlé, C. Rosenzweig, C. Sakakibara, M. Vicarelli, J. Waterhouse, and **B.C. Weeks**. 2011. Linking indigenous and scientific knowledge of climate change. *BioScience* 61(6): 477-484.
29. **Weeks, B.C.**, S.P. Hamburg, and M.A. Vadeboncoeur. 2009. Ice storm effects on the canopy structure of a northern hardwood forest after 8 years. *Canadian Journal of Forest Research* 39(8): 1475-1483.
30. Bynum, N., E.J. Sterling, **B.C. Weeks**, A. Gomez, K. Roosenburg, E. Vintinner, F. Arengo, M. Domroese, and R. Pearson. 2009. Emerging topics in the study of life on earth: systems approaches to biological and cultural diversity. *Science Education and Civic Engagement: An International Journal* 2(1): 38-55.

## **FUNDING**

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Climate change adaptation: From pattern to process and prioritization. 2022-2027. **Packard Fellowship for Science and Engineering, The David and Lucile Packard Foundation (\$875,000)**.

Forecasting climate-driven changes in human-wildlife interactions. Co-PI. 2022-2025. **Institute for Global Change Biology, University of Michigan (~\$250,000 [3 years of a postdoctoral fellow, funding for workshops])**

Predicting the limits to adaptive shifts in range and phenology in migratory birds. 2019-2021. PI. **Institute for Global Change Biology, University of Michigan (\$149,500)**.

## **TEACHING**

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*Master's Thesis Development*, University of Michigan

*Conservation Biology*, University of Michigan

*An Introduction to R*, University of Michigan

*Keys to a Successful Thesis*, University of Michigan

## **MENTORING**

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PhD Primary Advisor: Charlotte Probst (UM; 2022 - ), Tiffany Dias (UM; 2020-)

MS Thesis Advisor: Isaac Smith (UM; 2022-), Ena Humphries (UM; 2022-), Summer Mengarelli (UM; 2022-), Madeleine Klemz (UM; 2020-2022), Mingyu Zhang (UM 2020-2022), Morgan Dean (UM 2020-2022)

Undergraduate Research Opportunity Program Advisor: Mark Ziebell (UM; 2022-), Megan Trapp (UM 2017-2018).

Postdoctoral Research Fellow Advisor: Marketa Zimova (UM; 2019-2021)

PhD Committee Member: Matthew Heck (UM; 2022-), Katrina Munsterman (UM; 2020-), Kristen Wacker (UM; 2020-), Tilahun Fikadu (UM; 2021-), Andrew Barnard (UM; 2021-)

Faculty Advisor, Michigan Internship Learning Environment, 2019

Program in the Environment, Independent Research (2 BA students: Madeleine Klemz and Sophie Barlow), Fall 2019

Mentor for the AMNH Student Research Mentorship Program (2 HS students), 2016-2017  
Rebecca Lewis, HS student, Measuring bird wings of the world, Summer 2014

## **FIELD WORK**

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- 2021 Ornithological collection, Northern Michigan
- 2018 Ornithological collection, Upper Peninsula, Michigan
- 2017 Ornithological collection, Kyrgyzstan and Upper Peninsula, Michigan
- 2016 Migratory bird GPS tagging, Northern Canada; Mixed-species flock observation, Solomon Islands
- 2013 Ornithological collection and ecological observation, Solomon Islands
- 2012 Ornithological collection and ecological observation, Australia and Solomon Islands
- 2011 Conservation and education programmatic support, Solomon Islands
- 2010 Conservation and education programmatic support, Solomon Islands
- 2009 Conservation and education programmatic support, Solomon Islands
- 2005 Canopy foliage-height profile research at Hubbard Brook Forest, NH.
- 2004 Soil nutrient study at the Hubbard Brook Experimental Forest, NH.

## **PROFESSIONAL SERVICE**

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Associate Editor, *Evolutionary Ecology*, 2022-present

Reviewer: *Science*, *Nature Communications*, *Ecology Letters*, *Evolution*, *The American Naturalist*, *Molecular Ecology*, *Ecological Applications*, *Journal of Avian Biology*, *Communications Biology*, *Global Ecology and Biogeography*, *Biological Journal of the Linnean Society*, *Biology Letters*, *Journal of Biogeography*, *Ecology and Evolution*, *Avian Research*, *Emu: Austral Ornithology*, *The Wilson Journal of Ornithology*, *New Phytologist*, *Global Ecology and Conservation*, *Biodiversity Conservation*

Specimen collection and preparation from expeditions to: Solomon Islands (multiple), Kyrgyzstan, Australia, Boreal North America (multiple)

OpEd contributor to The Hill. Radio/Video interviews: NPR's Science Friday and All Things Considered, Canadian Broadcast Corporation's Quirks and Quarks (nationally syndicated show with >800,000 listeners), Vox Magazine, and Vox YouTube (my interview has been viewed >700,000 times). Provided interviews for articles about my work that

appeared in >100 newspapers, including: New York Times, Wall Street Journal, el País, etc. I estimate I have given roughly 50 interviews about this work, and while I lost track of exactly where I interviewed, my work on climate change impacts on birds has been featured in at least 148 news outlets and 10 blogs in well over 10 countries.

Developer and maintainer of <https://skelevision.net>, a public database of bird skeleton functional traits (see Weeks *et al.* 2022, *Methods in Ecology and Evolution*).

## **PRESENTATIONS**

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1. **Weeks, B.C.**, C. Harvey, C. Sheard, and J. Tobias. 2022. Cryptic evidence of Allen's Rule: heat dissipation demand links temperature and structure in bird wings. Annual meeting of the Ecological Society of America.
2. **Weeks, B.C.** 2022. The power and promise of specimen collections as windows into contemporary responses to global change (invited). Annual meeting of the International Ornithologists' Union.
3. **Weeks, B.C.** 2022. Global change biology (invited). Eton Academy.
4. **Weeks, B.C.** 2021. Skelevision: Understanding temperature-driven morphological variation across space and time using bird skeletal specimens and computer vision (invited). Dept. of Ecology and Evolutionary Biology Seminar Series, University of Michigan.
5. **Weeks, B.C.** 2021. What can 70,000 bird specimens tell us about the impacts of climate change on migratory birds? Rocky Point Bird Observatory.
6. **Weeks, B.C.** 2020. Using 70,000 bird specimens to understand 40 years of warming-driven morphological change (invited). Kellogg Biological Station, Michigan State University.
7. **Weeks, B.C.** 2020. The relationship between morphology and behavior in mixed-species flocks of island birds (invited). Andersen Lab, University of New Mexico.
8. **Weeks, B.C.** and J. Tobias. 2019. The impacts of diversity and assembly on community vulnerability (invited). Annual meeting of the American Ornithological Society.
9. Pegan, T., **B.C. Weeks**, and B. Winger. 2019. How do dispersal and migration influence range expansion in birds? Annual meeting of the American Ornithological Society.
10. Winger, B., **B.C. Weeks**, et al. 2019. Nocturnal flight-calling behaviour predicts vulnerability to artificial light in migratory birds. Annual meeting of the American Ornithological Society.
11. **Weeks, B.C.** 2018. A role for history in biodiversity-ecosystem function relationships. Early professional mini talks. Annual meeting of the American Ornithological Society.
12. **Weeks, B.C.** 2018. Moving to the mainland: Expanding assessment of the impacts of biodiversity and biogeography on assemblage vulnerability. Annual meeting of the American Ornithological Society.
13. Heilpern, S., **B.C. Weeks**, and S. Naeem. Predicting ecosystem vulnerability to biodiversity loss from community composition. 2018. Annual meeting of the Ecological Society of America.

14. Anujan, K., S. Heilpern, C. Prager, **B.C. Weeks**, S. Bruner, and S. Naeem. 2018. Trophic level structure alters the diversity-multifunctionality effect in experimental grassland mesocosms. Annual meeting of the Ecological Society of America.
15. **Weeks, B.C.** 2014. Origins of avian diversity in the South Pacific, community assembly, and contemporary ecology. Invited seminar, Jetz lab at Yale University.
16. **Weeks, B.C.**, E.R. Fischer, N. Gregory, H. Jaris, A. Klavans, D.L. Kriensky, A. Varga, and S. Naeem. 2014. Diversity and the robustness of avian assemblages in the Solomon Archipelago. Annual Meeting of the Ecological Society of America. Sacramento, CA.
17. Naeem, S., **B.C. Weeks**, C.M. Prager, A.T. Varga, S.A. Wood, and R. Muscarella. 2014. Herbivore-induced dissolution of the dimensional structure of biodiversity's association with ecosystem functioning: Impacts of deer exclusion on biodiversity and ecosystem functioning in a temperate forest. Annual Meeting of the Ecological Society of America. Sacramento, CA.
18. Cracraft, J.L., **B.C. Weeks**, and S. Claramunt. 2012. Reconstructing the history of ecological assemblages at different spatiotemporal scales: an evolutionary approach. Presented as a keynote talk at the Association for Tropical Biology and Conservation's 49<sup>th</sup> Annual Meeting. Bonito-MS, Brazil.
19. Filardi, C.E. and **B.C. Weeks**. 2011. Pan-Pacific evolutionary scale, regional policy, and meeting the challenges of local conservation action in the Solomon Islands. Presented at the Smithsonian National Museum of Natural History's Evolution of Life on Pacific Islands and Reefs: Past, Present, and Future. Honolulu, HI.

## **LANGUAGES**

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