

## **Christopher M Tonra, Ph.D.**

School of Environment and Natural Resources, The Ohio State University, 2021 Coffey Road,  
210 Kottman Hall, Columbus, OH 43210 phone: 614-292-9838 website: [www.christophertonra.com](http://www.christophertonra.com)

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### **Education**

**Ph.D.**, Biology, Dec 2011, **University of Maine**, Orono, ME  
Advisors: Dr. Rebecca Holberton and Dr. Peter Marra

**M.S.**, Wildlife Biology, May 2006, **Humboldt State University**, Arcata, CA  
Advisor: Dr. Matthew D. Johnson

**B.A.**, Anthropology, May 1999 **State University of New York**, Albany, NY

**Research interests:** animal migration, conservation biology, physiological ecology, behavioral ecology, population biology, stable isotope ecology, habitat ecology

### **Appointments and Awards**

Chair, Schiermeier Olentangy River Wetlands Research Park, The Ohio State Univ. (2022-present)  
Associate Prof., School of Environment and Natural Resources, The Ohio State Univ. (2021-present)  
Assistant Prof., School of Environment and Natural Resources, The Ohio State Univ. (2014-2021)  
George Didden Conservation Biology Fellowship, Smithsonian National Zoo (2014)  
Post-doctoral Fellowship, Smithsonian Conservation Biology Institute (2012)  
Outstanding Student Research Presentation Award, American Ornithologist Union (2011)  
Graduate Prize in Animal Biology, University of Maine School of Biology and Ecology (2011)  
Research Assistantship, University of Maine School of Biology and Ecology (2007-2010)  
Teaching Assistantship, Humboldt State University Dept. of Wildlife and Dept of Biology (2004-2006)

### **Fellowships and Grants (\$2,155,140 in grants since 2014)**

Ohio Division of Wildlife, *Expanding and updating the Motus network in Ohio*. \$24,487 (included within Terrestrial Wildlife Ecology Lab Operational Support; 2022-2023)  
Ohio Division of Wildlife, *Ohio bird conservation initiative*. \$143,358 (co-PI with Stephen Matthews; 2022-2023)  
Ohio Division of Wildlife, *Advancing understanding of critical cerulean warbler habitat to maximize conservation across Ohio*. \$50,338 (co-PI with Stephen Matthews; 2022-2023)  
U.S. Fish and Wildlife Service, *Assessing the risk to migratory birds of offshore wind on Lake Erie: Prevalence and spatial distribution of lake-crossing behavior*. \$84,224 (co-PIs: Mark Shieldcastle, Molly McDermott, Matthew Shumar; 2022-2024)  
U.S. Fish and Wildlife Service, *Why are whip-poor-wills disappearing across the Midwest?* \$122,537 (co-PI; PI: Michael P. Ward, co-PIs: Thomas J. Benson, Stephen Matthews, and Frank R. Thompson III; 2022-2024)  
Ohio Agricultural Research and Development Center, Internal Grants Program – Immediate Needs, *Assessing the risk to migratory birds of offshore wind on Lake Erie: Prevalence and spatial distribution of lake-crossing behavior*. \$49,996 (co-PI: Stephen Matthews; 2022-2024)  
Ohio Agricultural Research and Development Center, OARDC SEEDS, *Interspecies transmission mechanisms of deltacoronavirus from birds to pigs*. \$80,000. (co-PI; Lead PI: Qihong Wang; co-PI: Scott Kenney; 2020-2022)  
U.S. Fish and Wildlife Service, *Filling critical knowledge gaps in the Eastern Whip-poor-will annual cycle*. \$59,306 (co-PIs Michael P. Ward, Thomas J. Benson, Stephen Matthews, and Frank R. Thompson III; 2018-2020)

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- The American Chestnut Foundation, *Reseeding restored forests: Can seed dispersal mutualisms amplify restoration of American chestnut (Castanea dentata)?* \$15,986 (co-PIs Stephen Mathews and Leila Pinchot; 2017-2020)
- Columbus Audubon Society, *Field testing modifications to existing avian architecture to improve low reproductive rates in Ohio's largest population of Prothonotary Warblers*, \$4,000 (co-PI with Elizabeth Ames; 2017)
- Ohio Agricultural Research and Development Center, OARDC SEEDS, *Will impacts of forest change on seed dispersal mutualisms amplify the decline in oak-hickory forests?* \$49,967 (co-PI Stephen Mathews; 2017)
- U.S. Fish and Wildlife Service, *Abundance and movement of Prothonotary Warblers in the non-breeding season in the core of the wintering range*, \$19,994 (co-PI with Lesley Bulluck and Catherine Vivrette; 2016-17)
- Ohio Sea Grant, *Emerald ash borer tree mortality and invasive species penetration into forested wetlands in the Lake Erie coastal zone: developing habitat restoration priorities*, \$9,933 (2016)
- Columbus Audubon Society, *Thinking inside the box: Evaluating the relative value of natural vs. artificial cavities in habitat patches of varying size for Prothonotary Warblers*, \$5,000 (2016)
- U.S. Fish and Wildlife Service, *Stopover Ecology and Migratory Connectivity of the Rusty Blackbird (Euphagus carolinus)*, \$10,000 (2016)
- Ohio Division of Wildlife, *Forest focus monitoring*, \$111,523 (co-PI; PI: Stephen Matthews)
- Ohio Division of Wildlife, *Responses of colonial wading bird populations within the Lake Erie Marsh Focus Area to cormorant control and wetland management*, \$380,355 (2015-19)
- Ohio Division of Wildlife, *Population ecology and habitat relationships of Sora and Virginia rails in northwestern Ohio*. Amount received: \$298,987 (co-PI with Bob Gates; 2015-2020)
- Smithsonian Institution Stable Isotope Research Post-doctoral Fellowship, \$49,000 (2013)
- Post-doctoral Travel Award, American Ornithologists Union, \$270 (2013)
- Smithsonian Institution Pre-doctoral Fellowship, \$29,000 (2011)
- National Science Foundation Doctoral Dissertation Improvement Grant, \$9,300 (2010)
- Wilson Ornithological Society Louis Agassiz Fuertes Award, \$2,500 (2010)
- University of Maine Graduate Student Government Award, \$650 (2009), \$823 (2010)
- American Ornithologist Union Student Research Award, \$1,000 (2008)
- Frank M. Chapman Research Award, American Museum of Natural History, \$1,500 (2008)
- Joseph Grinnell Student Research Award, Cooper Ornithological Society, \$1,000 (2008)
- Marin Rod and Gun Club Scholarship for Graduate Research in Wildlife, \$1,000 (2005)
- Mono Basin Bird Chautauqua Bird Research Grant, \$1,000 (2005)

### **Peer-reviewed Publications** (\* - indicates student author)

36. Skinner, A.A.\*, S.N. Matthews, M.P. Ward, I. Souza-Cole, J.R. Wright\*, F.R. Thompson III, T.J. Benson, C.M. Tonra. 2023. Agriculture and forest fragmentation are associated with nonbreeding home range size in the Eastern Whip-poor-will. **Ornithological Applications**. duac050.
35. Brunner, A.R.\*, B.C. Dossman, K.L. Percy, V. Jirinec, C.M. Tonra, E.I. Johnson, and P.P. Marra. 2022. Migratory behavior and connectivity revealed in a secretive Neotropical migratory songbird, the Swainson's Warbler. **Journal of Field Ornithology** 93: 10.5751/JFO-00134-930305.
34. Wright, J.R.\*, S.N. Matthews, C.C. Pinchot, and C.M. Tonra. 2022. Preferences of avian seed-hoarders in advance of potential American chestnut reintroduction. **Forest Ecology and Management**.

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33. Brunner, A.R.\* , P.P. Marra, and C.M. Tonra. 2022. Vulnerable Neotropical migratory songbird demonstrates flexibility in space use in response to rainfall change. **Ornithology** 139: ukac005.
32. Skinner, A.A.\* , M.P. Ward, I. Souza-Cole, J.R. Wright\*, F.R. Thompson III, T.J. Benson, S.N. Matthews, and C.M. Tonra. 2022. High spatiotemporal overlap in the non-breeding season despite variable breeding latitudes in the Eastern Whip-poor-will (*Antrostomus vociferus*). **Diversity and Distributions** 28: 10.1111/ddi.13477
31. Pageau, C.\* , J. Sonnleitner, C.M. Tonra, M. Shaikh, and M.W. Reudink. 2021. Evolution of winter molting strategies in European and North American passerines. **Ecology and Evolution** 11: 10.1002/ece3.8047
30. Scarpignato, A.L., K.A. Stein\*, E.B. Cohen, P.P. Marra, L.J. Kearns, S. Hallager, and C.M. Tonra. 2021. Full annual cycle tracking of Black-crowned Night-Herons suggests wintering areas do not explain differences in colony population trends. **Journal of Field Ornithology** 92:143-155.
29. Peacock, J.\* , Tonra, C.M., King, J.\* , and Davies, G.M., 2021. Restoration of gallery forest patches improves recruitment of motacú palms (*Attalea princeps*) while diversifying and increasing wildlife populations. **Plos One** 16: p.e0250183.
28. Hauber, M.E., S.K. Heath, and C.M. Tonra. 2020. Direct estimates of breeding site fidelity and natal philopatry in parasitic Brown-headed Cowbirds (*Molothrus ater*). **Ardea** 108:1-9.
27. Youtz, J.\* , K.D. Miller, E.K. Bowers, S. Rogers\*, L.P. Bulluck, M. Johnson, B.D. Peer, K.L. Percy, E.I. Johnson, E.M. Ames\*, C.M. Tonra, and T.J. Boves. 2020. Bergmann's rule is followed at multiple stages of development in a long-distance migratory songbird, but climate change may alter this relationship. **Ecology and Evolution** 10: 10.1002/ece3.6721
26. Wright, J.R.\* , L.L. Powell, S.N. Matthews, C.M. Tonra. 2020. Rusty Blackbirds select areas of greater habitat complexity during stopover. **Condor: Ornithological Applications** 122:duaa040.
25. Pageau, C.\* , C.M. Tonra, M. Shaikh, and M.W. Reudink. 2020. Evolution of moult-migration is directly linked to aridity of the breeding grounds in North American passerines. **Biology Letters** 16: 20200155.
24. Ames, E.A.\* , M.R. Gade\*, J.R. Wright\*, C.L. Nieman\*, C.M. Tonra, A.M. Tutterow\*, C.M. Marroquin\*, and S.M. Gray. 2020. Striving for population-level conservation: integrating physiology across the biological hierarchy. **Conservation Physiology** 8:10.1093/conphys/coaa019.
23. Reese, J.\* , C. Viverette, C.M Tonra. N.J. Bayly, T.J. Boves, E. Johnson, M. Johnson; P.P. Marra, E.M. Ames\*, A. Caguazango, M. DeSaix\*, A. Matthews, A. Molina, K. Percy, M.C. Slevin, L.P. Bulluck. 2019. Using stable isotopes to estimate migratory connectivity for a patchily-distributed, wetland-associated Neotropical migrant. **The Condor: Ornithological Applications** 121:duz052.
22. Tonra, C.M., J.R. Wright\*, and S.N. Matthews. 2019. Remote estimation of overwintering home ranges in an elusive, nocturnal migratory bird. **Ecology and Evolution** 9:12586–12599.
21. Bulluck, L.P., E.M. Ames\*, N. Bayly, J. Reese\*, C. Viverette, J.R. Wright\*, A. Caguazango, and C.M. Tonra. 2019. Habitat-dependent occupancy and movement in a migrant songbird highlights the importance of mangroves and forested lagoons in Panama and Colombia. **Ecology and Evolution** 9: 11064–11077

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20. Weigand, N.\*, R. Wagner, C.M. Tonra, and V.D. Popescu. 2019. Proximity to highways has limited influence on space use and physiology of terrestrial testudines. **European Journal of Wildlife Research** 65:80.
19. DeSaix, M.\*, L.P. Bulluck, A. Eckert, C. Viverette, T.J. Boves, J. Reese\*, C.M. Tonra, R. Dyer. 2019. Population assignment reveals low migratory connectivity in a weakly structured songbird. **Molecular Ecology** 28: 2122-2135.
18. Tonra, C.M., M. Hallworth, T. Boves, J. Reese\*, L. Bulluck, M. Johnson, C. Viverette, K. Percy, E.A. Ames\*, A. Matthews\*, M.C. Slevin\*, R.R. Wilson, and E.I. Johnson. 2019. Concentration of a widespread breeding population in few critically important nonbreeding areas: Migratory connectivity in Prothonotary Warbler. **The Condor: Ornithological Applications** 121:duz019.
17. Reese, J.\*, C.M. Tonra, C. Viverette, P.P. Marra, and L.P. Bulluck. 2018. The influence of age, sex, year, and feather type on hydrogen isotope variation in a wetland-associated songbird. **Waterbirds** 41:247-256.
16. Tonra, C.M. and M.W. Reudink. 2018. Expanding the traditional definition of molt-migration. **The Auk: Ornithological Advances** 135:1123-1132.
15. Wright, J.R.\*, L.L. Powell, and C.M. Tonra. 2018. Automated telemetry reveals staging behavior in a declining migratory passerine. **The Auk: Ornithological Advances** 135:461-476
14. Wright, J.R.\*, C.M. Tonra, and L.L. Powell. 2018. Prealternate molt-migration in Rusty Blackbirds and its implications for stopover biology. **The Condor: Ornithological Applications** 120:507-516.
13. Tonra, C.M., K. Sager-Fradkin, and P.P. Marra. 2016. Barriers to salmon migration impact body condition, offspring size, and life history variation in an avian consumer. **Ecography** 39:1056–1065. **\*Journal Cover Article**
12. Tonra, C.M., K. Sager-Fradkin, S. Morley, J. Duda, and P.P. Marra. 2015. The rapid return of marine-derived nutrients to a freshwater food web following dam removal. **Biological Conservation** 192:130-134.
11. Marra, P.P., E.B. Cohen, S.R. Loss, J. Rutter, and C.M. Tonra. 2015. A call for full annual cycle research in animal ecology. **Biology Letters** 11:20150552.
10. Tonra, C.M., C. Both, and P.P. Marra. 2015. Incorporating site dependence and year-specific deuterium ratios ( $\delta^2\text{H}$ ) from precipitation into geographic assignments of a migratory bird. **Journal of Avian Biology** 46:266-274.
9. Tonra, C.M., K.L.D. Marini\*, P.P. Marra, R.R. Germain, R.L. Holberton, and M.W. Reudink. 2014. Color expression in experimentally regrown feathers of an overwintering migratory bird: implications for signaling and seasonal interactions. **Ecology and Evolution** 4:1222-1232.
8. Tonra, C.M., P.P. Marra, and R.L. Holberton. 2013. Experimental and observational studies of seasonal interactions between overlapping life history stages in a migratory bird. **Hormones and Behavior** 64:825–832.
7. Croston, R.\*, C.M. Tonra, S.K. Heath, and M.E. Hauber. 2012. Flange color differences in brood parasitic Brown-headed Cowbirds from nests of two host species. **Wilson Journal of Ornithology** 124:139-145.
6. Tonra, C.M., P.P. Marra, and R.L. Holberton. 2011. Early elevation of testosterone advances migratory preparation in a songbird. **Journal of Experimental Biology** 214:2761-2767.

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5. Tonra, C.M., P.P. Marra, and R.L. Holberton. 2011. Migration phenology and winter habitat quality are related to circulating androgen in a long-distance migratory bird. **Journal of Avian Biology** 42:397-404.
4. Angelier F., C.M. Tonra, R.L. Holberton, and P.P. Marra. 2011. Short-term changes in body condition in relation to habitat and climate in American redstarts during the non-breeding season. **Journal of Avian Biology** 42:355-341.
3. Angelier F., C.M. Tonra, R.L. Holberton, and P.P. Marra. 2010. How to capture wild passerine species to study baseline corticosterone levels. **Journal of Ornithology** 151:415-422.
2. Tonra, C.M., M.D. Johnson, M.E. Hauber, and S.K. Heath. 2009. Does nesting habitat influence hatching synchrony between brood parasitic brown-headed cowbirds (*Molothrus ater*) and two hosts? **Ecography** 32:497-503.
1. Tonra, C.M., M.E. Hauber, S.K. Heath, and M.D. Johnson. 2008. Ecological correlates and sex differences in early development of a generalist brood parasite. **Auk** 125:205-213.

### Manuscripts in progress (\* - indicates student author)

- Trevelline, B.K., D. Sprockett, W.V. DeLuca, C.R. Andreadis, A.H. Moelle, and C.M. Tonra. *In revision*. Adaptive remodeling of gut microbiome over long-distance migration. **Functional Ecology**.
- Cooper, N.W., B.C. Dossman, L.E. Berrigan, J. Morgan Brown, A.R. Brunner\*, H.E. Chmura, D.A. Cormier, C. Bégin-Marchand, A.D. Rodewald, P.D. Taylor, C.M. Tonra, J.A. Tremblay, and P.P. Marra. *In revision*. Songbirds initiate migratory flights synchronously after civil dusk. **Movement Ecology**.
- Robertson, K.\*, E.H. Ellington, C.M. Tonra, S.D. Gehrt. *In review*. Stress in the city? Coyote cortisol varies with intrinsic and extrinsic factors within a heavily urbanized landscape. **Science of the Total Environment**.
- Rogers, S.L., B.C. Verrelli, P.A. Bukaveckas, E.M. Ames\*, J. Youtz, T.J. Boves, E.I. Johnson, C.M. Tonra, and L.P. Bulluck. *In review*. DNA metabarcoding reveals rangewide flexibility in aquatic diet of a riparian avian insectivore. **Ornithology**.
- Gade, M.R.\*, M.L. Brown\*, C.M. Tonra, and W.E. Peterman. *In revision*. Landscape physiology of terrestrial ectotherms across scales and contexts. **Conservation Physiology**.

### Other Publications

- Soulliere, G.J., M.A. Al-Saffar, K.R. VanBeek, C.M. Tonra, M.D. Nelson, D.N. Ewert, T. Will, W.E. Thogmartin, K.E. O'Brien, S.W. Kendrick, A.M. Gillet, J.R. Herkert, E.E. Gnass Giese, M.P. Ward, and S. Graff. 2020. Upper Mississippi / Great Lakes Joint Venture Landbird Habitat Conservation Strategy – 2020 Revision. U.S. Fish and Wildlife Service, Bloomington, Minnesota, USA.
- Tonra, C.M. 2019. Book Review: For the Birds: American Ornithologist Margaret Morse Nice. **Auk: Ornithological Advances** 136: ukz021.
- Tonra, C.M. 2018. "Bio Box: Margaret Morse Nice". In *Ornithology: Foundation, Critique, and Application*. Eds.: Morrison, M.L., Rodewald, A.D., Voelker, G., Prather, J.F., Colón, M.R.
- Soulliere, G.J., M. A. Al-Saffar, R.L. Pierce, M.J. Monfils, L.R. Wires, B.W. Loges, B.T. Shirkey, N.S. Miller, R.D. Schultheis, F.A. Nelson, A.M. Sidie-Slettedahl, C.M. Tonra, and D.J. Holm. 2018. Upper

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Mississippi River and Great Lakes Region Joint Venture Waterbird Habitat Conservation Strategy –  
2018 Revision. U.S. Fish and Wildlife Service, Bloomington, Minnesota, USA.

Tonra, C.M. 2011. The role of breeding preparation in migration phenology and seasonal interactions in  
migratory passerines. Doctoral Dissertation, University of Maine, Orono, ME

Tonra, C.M. 2006. The influence of habitat on hatching asynchrony in the Brown-headed Cowbird. M.S.  
Thesis, Humboldt State University, Arcata, CA.

Heath, S.K., L.A. Culp, H.R. Gates, Q.S. Latif, and C.M. Tonra. 2004. Riparian songbird monitoring in  
the Eastern Sierra: results of the 2003 field season and selected 1998-2003 summary results. PRBO  
contribution #1171. Stinson Beach, CA.

### **Teaching Experience**

#### ***School of Environment and Natural Resources, The Ohio State University:***

Forestry Fisheries and Wildlife Capstone (ENR 4900.02), Fall 2016

Graduate Seminar - Animal Movement (ENR 8890.01), Fall 2015, 2017, 2019, 2021

Graduate Seminar – Stable Isotopes in Wildlife Ecology (ENR 8890.01), Fall 2018

Avian Biology and Management (ENR 5364.2), Spring 2015-22

Introduction to Fisheries Forestry and Wildlife (ENR 3300), Fall 2014-22

Introduction to Biological Studies – Birds (EEOB 1920), Summer 2016-19, 2022

#### ***Other:***

Biogeography (GES 313), University of Maryland Baltimore County, Guest Lecturer, 18 Nov 2013

Introduction to Migratory Birds, Adult Education Class for Friends of the National Zoo- Nov, 2013

Plant Taxonomy (BOT 350), HSU Biology Dept - *Laboratory Instructor*, Spring 2005, Fall 2005

General Botany (BOT 105), HSU Biology Dept- *Laboratory Instructor*, Spring 2004, Fall 2004

Ornithology (WLDF 365), HSU Wildlife Dept- *Teaching Assistant*, Spring 2005&2006, Fall 2005

Wildlife Techniques (WLDF 311), HSU Wildlife Dept- *Teaching Assistant*, Fall 2004

### **Professional Service**

**Associate Editor:** The Auk: Ornithological Advances

**Ad hoc reviewer for:** *American Naturalist, Auk: Ornithological Advances, Behavioral Ecology, Biological Conservation, Biology Letters, Bird Study, Condor: Ornithological Applications, Ecology, Ecology and Evolution, Hormones and Behavior, Ibis, General and Comparative Endocrinology, Journal of Animal Ecology, Journal of Field Ornithology, Nature Communications, Proceedings of the Royal Society B, Studies in Avian Biology, Physiology and Behavior*

**American Ornithological Society:** *Elective Member*, Early Career Professionals Committee (2013-2018), Historical Committee (2013-2015), Student Presentation Awards judge (2014)

**U.S. Fish and Wildlife Service:** Upper Mississippi River Great Lakes Region Migratory Bird Joint Venture Science Team (Landbirds Technical Committee 2015-2017, co-chair 2018-present; Waterbirds Technical Committee 2015-2017)

**Midwest Migration Network:** Steering committee member (2015-2019), Telemetry Working Group leader (2015-2018)

**National Science Foundation:** Ad hoc reviewer, Pre-proposal panel member (IOS-Animal Behavior)

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**Collaborative Species Conservation and Research:** Rusty Blackbird Working Group;  
Prothonotary Warbler Working Group

**Society for Conservation Biology:** Abstract reviewer, Student Awards reviewer and judge (2014)

**Smithsonian Conservation Biology Institute:** Seminar series organizer (2013-2014); Stable Isotope  
Research Post-doctoral Fellowship reviewer (2016)

**Cooper Ornithological Society:** Joseph Grinnell Student Research Award reviewer (2016)

**Center for Global Change:** Reviewer for 2014 Global Change Student Research Grant Competition

### **Professional Symposia Organized**

79th Annual Midwest Fish and Wildlife Conference, Cleveland, OH (2019) Science in service to  
wetlands conservation and wildlife management in the lower Great Lakes region: history, status, and  
state of the art. (co-organized with: Robert Gates, OSU; Brendan Shirkey and John Simpson,  
Winous Point Marsh Conservancy)

American Ornithological Society Annual Meeting, Tucson, AZ (2018) Ecology, evolution, and  
conservation of molt-migration. (co-organized with Jared Wolfe, Michigan Tech)

American Ornithologist's Union/Cooper Ornithological/Society of Canadian Ornithologists Joint  
Annual Conference Estes Park, CO (2014) Successes and Challenges in Riparian Restoration: Birds  
as the Yardstick (co-organized with Tom Gardali, Point Blue Conservation Science)

### **Invited Professional Symposia and Seminars**

University of Maine, Department of Wildlife, Fisheries, and Conservation Biology (September 2021).  
Goatsuckers on the Move: Migration and Winter Ecology of the Midwest's Eastern Whip-poor-  
wills.

Society of Canadian Ornithologists Annual Conference, Quebec City, QB, Canada (August 2019). Full  
annual cycle ecology and conservation of migratory birds in the lower Great Lakes. Symposium:  
Symposium: Tracking migratory waterbirds using new technologies.

79<sup>th</sup> Annual Midwest Fish and Wildlife Conference, Cleveland, OH (January 2019). Full annual cycle  
ecology and conservation of migratory birds in the lower Great Lakes. Symposium: Science in  
service to wetlands conservation and wildlife management in the lower Great Lakes region:  
history, status, and state of the art.

University of Illinois Urbana-Champaign, Department of Natural Resources and Environmental  
Sciences Seminar Series (October 2018). Pulling Back the Curtain on Migratory Bird Behavior and  
Ecology Using MOTUS.

The Ohio State University Environmental Science Graduate Program Seminar Series (September 2018)  
Pulling Back the Curtain on Migratory Bird Behavior and Ecology Using MOTUS.

American Ornithological Society Annual Meeting, Tucson, AZ (April 2018) Expanding the Traditional  
Definition of Molt-Migration (M.W. Reudink, co-author); Symposium: Ecology, evolution, and  
conservation of molt-migration.

University of North Carolina Wilmington, Department of Biology and Marine Biology Seminar Series  
(March 2018), Pulling Back the Curtain on Migratory Bird Behavior and Ecology Using MOTUS.

Inland Bird Banding Association Annual Meeting, Kalamazoo, MI (October 2017), Keynote Address:  
Pulling Back the Curtain on Migratory Behavior and Ecology Using MOTUS in the Great Lakes.

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- Virginia Tech University, Ecology, Evolution, and Behavior Seminar Series (March 2017) Pulling Back the Curtain On Migratory Behavior and Ecology Using Automated and Satellite Telemetry in the Great Lakes.
- Duquesne University, Biology Department Seminar Series (November 2016) Resource Limitation at the Aquatic-Terrestrial Boundary: Barriers to Salmon Migration Change Everything for a Songbird.
- Ohio University, Biology Dept. Seminar Series (Sept 2016) Resource Limitation at the Aquatic-Terrestrial Boundary: Barriers to Salmon Migration Change Everything for a Songbird.
- 5<sup>th</sup> Quadrennial North American Ornithological Conference, Washington, DC (2016) Adventitious molt in an overwintering migratory bird: color change, carotenoid content, and implications for seasonal interactions. (M.W. Reudink, K. Marini, K. McKenna, K. Donkor, R. Holberton, R. Germain, P.P. Marra). Symposium: Adding Molt to the Full-annual-cycle Perspective on Avian Conservation
- Humboldt State University, Wildlife Ecology Series (March 2016) Resource Limitation at the Aquatic-Terrestrial Boundary: Barriers to Salmon Migration Change Everything for a Songbird.
- The Ohio State University, School of Environment and Natural Resources Seminar Series (April 2015) Avian Ecology in the Context of the Full Annual Cycle.
- Arkansas State University, Dept. of Biological Sciences Seminar Series (Feb 2015) Avian Ecology in the Context of the Full Annual Cycle.
- American Ornithologist's Union/Cooper Ornithological Society/ Society of Canadian Ornithologists Joint Annual Conference, Estes Park, CO (2014) Tracking the return of critical nutrient subsidies to western riparian ecosystems following dam removal: the value of songbirds as bio-indicators (P.P. Marra and K. Sager-Fradkin, co-authors). Symposium: Successes and Challenges in Riparian Restoration: Birds as the Yardstick
- 5<sup>th</sup> Quadrennial North American Ornithological Conference, Vancouver, BC (2012) The nexus of non-breeding, migratory, and breeding life history stages in migratory songbirds (P.P. Marra, D. Willard, and R.L. Holberton, co-authors). Symposium: Hot Topics in the Tropics: Research to Support Full Life-cycle Conservation of Migrants.
- Smithsonian Conservation Biology Institute Seminar Series (2012) The Confluence of Non-Breeding, Migratory, and Breeding Life History Stages: Observational and Experimental Studies In Passerines.
- University of Maine Biology Club Seminar, Orono, ME (2010) *Birds of Two Worlds: Connecting Winter and Summer Events in Migratory Songbirds.*
- AOU/CSO/COS Joint Annual Conference, Portland, OR (2008) *Navigating the trail to the grail: A physiological codex in search of body condition.* (R.L. Holberton, presenter; E.M. Adams, S.M. Agius, K.M. Covino, A.J. Leppold, C.M. Tonra, W.A. Wright, co-authors); Symposium: Bodycondition of birds: the search for the Holy Grail.
- Humboldt State University Ecology Series, Arcata, CA (2005 and 2006) *Influence of host and habitat on Brown-headed cowbird productivity.*

### **Oral Papers**

- Tonra, C.M., Skinner, A.A., M.P. Ward, I. Souza-Cole, J.R. Wright, F.R. Thompson III, T.J. Benson, and S.N. Matthews. High spatiotemporal overlap in the non-breeding season despite geographically dispersed breeding locations in the Eastern Whip-poor-will (*Antrostomus vociferus*). Association of Field Ornithologists Annual Conference, Plymouth, MA.



## Christopher M Tonra, Ph.D.

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American Ornithological Society Annual Meeting, Anchorage, AK (June 2019). Full annual cycle ecology and conservation of migratory birds in the lower Great Lakes.

Association of Field Ornithologists/Wilson Ornithological Society Joint Annual Meeting, Cape May, NJ (October 2019). Concentration of a widespread breeding population in few critically important nonbreeding areas: Migratory connectivity in Prothonotary Warbler. (M. Hallworth, T. Boves, J. Reese, L. Bulluck, M. Johnson, C. Viverette, K. Percy, E.A. Ames, A. Matthews, M.C. Slevin, R.R. Wilson, and E.I. Johnson, co-authors)

Ohio Avian Research Conference, Mansfield, OH (2014) Tracking the return of critical nutrient subsidies to western riparian ecosystems following dam removal: the value of songbirds as bio-indicators (P.P. Marra and K. Sager-Fradkin, co-authors).

International Congress on Conservation Biology, Baltimore, MD (2013) Tracking responses to marine derived nutrients in riparian consumers in the context of the largest dam removal in United States history. (P.P. Marra and K. Sager-Fradkin, co-authors)

American Ornithologist's Union/Cooper Ornithological Society Joint Annual Conference, Chicago, IL (2013) Tracking responses to marine derived nutrients in American dippers in the context of the largest dam removal in history. (P.P. Marra and K. Sager-Fradkin, co-authors)

American Ornithologist's Union Annual Conference, Jacksonville, FL (2011) *The role of androgens in seasonal interactions: observational and experimental studies in the American Redstart*. (P.P. Marra and R.L. Holberton, co-authors) **\*Awarded Outstanding Student Research Presentation**

Ecological Society of America Annual Conference, Pittsburgh, PA (2010) *Balancing the demands of migration and the physiological transition to breeding in Neotropical songbirds: a dual role for testosterone?* (P.P. Marra and R.L. Holberton, co-authors)

American Ornithologist's Union Annual Conference, Philadelphia, PA (2009) *The physiological underpinnings of seasonal interactions in a Neotropical migrant songbird*. (P.P. Marra and R.L. Holberton, co-authors)

Hubbard Brook Ecosystem Study Annual Conference, North Woodstock, NH (2009) *The role of breeding hormones in seasonal interactions in a Neotropical migrant songbird*. (P.P. Marra and R.L. Holberton, co-authors)

American Ornithologist's Union Annual Conference, Santa Barbara, CA (2005) *Habitat as a predictor of hatch synchrony in the Brown-headed Cowbird*. (M.D. Johnson, S.K. Heath, M.E. Hauber, co-authors)

### **Invited General Public Seminars and Workshops**

Columbus Science Pub, Columbus, OH (August 2021) The Science of Surviving the Suburbs: Opportunities for Our Feathered Neighbors.

Cape Fear Audubon, Wilmington, NC (October 2021) Pulling Back the Curtain On Migratory Bird Behavior and Ecology Using MOTUS (delivered via Zoom).

OSU Extension Webinar Series, Columbus OH. (Feb 2021) Goatsuckers on the Move: Migration and Winter Ecology of the Midwest's Eastern Whip-poor-wills (delivered via Zoom).

Columbus Science Pub, Columbus, OH (April 2020) The feathered superhighway over our heads (delivered via Zoom).

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Ohio Wildlife Biodiversity Conference, Columbus, OH (March 2020) Migration and Winter Ecology of Ohio's Eastern Whip-poor-wills.

STEAM Factory Festivus Celebration, Franklinton Fridays, Columbus, OH (December 2018) Ohio's Winter Birds – How They Survive and What You Can Do to Help.

Delaware County Bird Club, Delaware, OH (Sep 2018) Barriers to Salmon Migration Change Everything for a Songbird.

Columbus Science Pub, special event at COSI (August 2018) The Feathered Superhighway Over Our Heads.

Columbus Science Pub, Columbus, OH (April 2018) The Feathered Superhighway Over Our Heads.

OSU Extension Woodland, Water, and Wildlife conference, Mansfield, OH (Feb 2017) Migratory Birds of Ohio's Lake Erie region: Where do they go and How Do They Get There

Grange Insurance Scioto Audubon Center (Jan 2016) Full Annual Cycle Research in the Birds of Ohio.

Delaware County Bird Club (Oct 2015) Full Annual Cycle Research in the Birds of Ohio.

Buckeye Lake Historical Society Seminar Series (June 2015) Avian Ecology in the Context of the Full Annual Cycle.

Audubon Dungeness River Center Special Program, Sequim, WA (2012) Impacts of obstructions to salmon migration on riparian ecosystems on the Olympic Peninsula. Invited seminar given to local public on ongoing research for my Smithsonian Post-doc.

Parsons Memorial Lodge Summer Seminar Series, Yosemite National Park, CA (2006) *Parasites in Paradise: the Brown-headed Cowbird in the Mono Basin.*

Refreshments with Refreshing Biologists, Lee Vining, CA (2003 and 2005) *Influence of habitat on Brown-headed Cowbird productivity.*

Mono Basin Bird Chautauqua, Lee Vining, CA (2004 - 2006) *Feeder Cafe Workshop.*

### **Conference Posters**

American Ornithological Society/Society of Canadian Ornithologists Joint Annual Conference, East Lansing, MI (2017) Migratory Movements and Wintering Locations of a Threatened Population of Black-crowned Night-Herons (C.M. Tonra, Kristie Stein, and L. Kearns)

American Ornithologist's Union/Cooper Ornithological Society Joint Annual Conference, Chicago, IL (2013) Using building strikes in Chicago to compare the relative influence of endogenous and environmental factors on breeding preparation in migrating Ovenbirds. C.M. Tonra, R.L. Holberton, and P.P. Marra

Association of Field Ornithologists Annual Conference, Ogden, UT (2010) Is there evidence for host-parasite flange color matching in Brown-headed Cowbirds (*Molothrus ater*) and their hosts? R. Croston (presenter), C.M. Tonra, S.K. Heath, M.E. Hauber.

American Ornithologist's Union Annual Conference, Philadelphia, PA (2009) A novel "pita" design for hormone manipulations in small birds. R.L. Holberton, K.N. Porcelli, C.M. Tonra.

### **Popular Writings**

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Ohio State University Extension Woodland Stewards Newsletter (Summer-Fall 2015). Critter Corner:  
Song Sparrow - *Melospiza melodia*

Smithsonian Migratory Bird Center Bird of the Month, March 2011: The Dark Side of Migratory Birds:  
the Brown-headed Cowbird. [http://nationalzoo.si.edu/scbi/migratorybirds/featured\\_birds](http://nationalzoo.si.edu/scbi/migratorybirds/featured_birds)

### **Professional Skills**

- Isotope mass spectrometry ● Radioimmunoassay ● Experimental endocrinology
- R, WinBUGS, JAGS, SPSS, S-Plus, MARK, SAS ● ArcGIS ● model selection
- Population Demography Analysis ● Mixed Models ● Probability Density Functions
- North American avian species identification by sight and song ● VCP point counting
- Avian banding (all species) ● Radio telemetry and transmitter attachment ● Territory mapping
- Avian blood collection ● Nest searching ● Target netting/playback surveys

### **Additional Professional Experience**

PRBO Conservation Science, Chico/Mono Lake, CA- Field Biologist (2006-2007), Research  
Collaborator (Oct 2004-May 2006), Nest Searcher (2003-2004), Point Counter (2002)  
Ventana Wilderness Society, Big Sur Ornithology Lab, Big Sur, CA- Research Intern (2003)  
Golondrinas de las Americas, Lee Vining, CA- Volunteer (2002, 2003)  
Las Joyas Research Station, Jalisco, Mexico- Bird Banding Volunteer (2002-2003)  
Humboldt Bay Bird Observatory, Tyee City, CA- Bird Banding Volunteer (2002-2005)  
Humboldt State University, Shorebird Roost Survey, Arcata, CA- Volunteer (2001-2002)  
Werner Archaeological Consulting, Albany, NY- Field Assistant (1997-1998)

### **Professional Societies**

American Ornithologists Union, Association of Field Ornithologists, Wildlife Society, Ecology Society  
of America, Society for Conservation Biology