

MATTHEW D. FUIRST

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EDUCATION

- 2022 Ph.D., University of Guelph, Department of Integrative Biology, Advisor: Dr D. Ryan Norris
- 2018 M.Sc., Stony Brook University, School of Marine and Atmospheric Sciences, Advisor: Dr Lesley Thorne
- 2015 B.Sc., Paul Smith's College, Major: Fisheries and Wildlife Science, Minor: Geographic Information Systems, *Cum laude*.

PROFESSIONAL APPOINTMENTS

- 2022 Aquatic Science Biologist II, Department of Fisheries and Oceans Canada, Sponsor: Dr. David Yurkowski
- 2022 Sessional Lecturer, Department of Integrative Biology, University of Guelph

PUBLICATIONS

11. **Fuirst M**, McLeod J, Norris DR. 2022. Habitat preferences of adult Canada jays (*Perisoreus canadensis*) during the post-breeding period in Algonquin Provincial Park, Ontario. **Canadian Journal of Zoology**. 100: 355-362
10. Sorensen M, Strickland D, Freeman NE, **Fuirst M**, Sutton AO, Norris DR. 2022. Early-life experience shapes patterns of senescence in a food-caching passerine. **Biology Letters**. 18: 20210532
9. Martin RJ, **Fuirst M**, Sherry D. 2022. Canada jays (*Perisoreus canadensis*) identify and exploit coniferous cache locations using visual cues. **Ethology**. 00: 1-10
8. Gow EA, Burant JB, Sutton AO, Freeman NE, Grahame E, **Fuirst M**,...Shiffman DS. 2022. Popular press portrayal of issues surrounding free-roaming domestic cats *Felis catus*. **People and Nature**. 00: 1-12
7. **Fuirst M**, Strickland D, Norris DR. 2021. Breeding dispersal in a resident boreal passerine can lead to short- and long-term fitness benefits. **Ecosphere**. 12: e03747. *Cover story*
6. **Fuirst M**, Strickland D, Norris DR. 2021. Patterns and causes of breeding dispersal in a declining population of Canada jays (*Perisoreus canadensis*) over 55 years. **Animal Behaviour**. 182: 31-41
5. **Fuirst M**, Ward CS, Schwaner C, Diana Z, Schultz TF, Rittschof D. 2021. Compositional and functional microbiome variation between tubes of an intertidal polychaete and surrounding marine sediment. **Frontiers in Marine Science**. 8: 656506
4. **Fuirst M**, Greer J, Bowman R. 2020. Ontogeny of food-caching site preferences in young Florida Scrub-Jays: evidence of learning or changing social status? **Journal of Field Ornithology**. 91: 241-253
3. Thorne LH, **Fuirst M**, Veit RR, Baumann Z. 2020. Mercury concentrations provide an indicator of marine foraging in coastal birds. **Ecological Indicators**. 121: 106922
2. Lato K, Thorne LH, **Fuirst M**, Brownawell BJ. 2020. Microplastic abundance in gull nests in relation to urbanization. **Marine Pollution Bulletin**. 164: 112058
1. **Fuirst M**, Hahn M, Dheilly N, Veit RR, Thorne LH. 2018. Effects of urbanization on the foraging ecology and microbiota of a generalist seabird *Larus argentatus*. **PLoS One**. 13: e0209200

MANUSCRIPTS IN PROGRESS

(available upon request)

Chicalo R, Williams E, Phillips L, Burant JB, **Fuirst M**, Norris DR. *In revision*. Causes and consequences of variation in incubation behaviour in the Canada jay (*Perisoreus canadensis*), a winter-nesting boreal passerine. **Ornithology**

Fuirst M, Strickland D, Freeman NE, Sutton AO, Graham BA, Burg T, Norris DR. *In review*. Reduced first-year survival in Canada jays expelled from the natal territory by dominant siblings. **Behavioural Ecology**

Fuirst M, Strickland D, Freeman NE, Sutton AO, Norris DR. *In review*. Early-life sibling conflict in Canada jays has lifetime fitness consequences. **Proceedings of the Royal Society B**

Lolya L, Matthews S, **Fuirst M**, Radcliffe D, Karns G. *In review*. Avian responses to habitat management along pipeline right-of-way corridors. **Journal of Wildlife Management**

Fuirst M, and Norris DR. *In advanced preparation*. A review of the determinants and consequences of avian dispersal.

TEACHING EXPERIENCE

Instructor

Animal Behaviour, University of Guelph 2022

Teaching Assistant

Evolutionary Ecology, University of Guelph 2022

Animal Behaviour, University of Guelph 2021

Field Ecology, University of Guelph 2019, 2021

Introduction to Wildlife Rehabilitation, University of Guelph 2020

Discovering Biodiversity, University of Guelph 2018

Conservation and Ecology of Seabirds, Stony Brook University 2017

Marine Apex Predators, Stony Brook University 2016

Guest Lecturer

Animal Behaviour, University of Guelph, *cooperation and food-caching in animals* 2021

Animal Behaviour, Benedictine College, *cooperative breeding of birds* 2021

Field Ecology, University of Guelph, *applications of radio telemetry* 2019, 2020

Scientific Communication, University of Guelph, *developing a proposal* 2019

Conservation and Ecology of Seabirds, Stony Brook University, *gull research* 2016

Ecology Summer Camp, Archbold Biological Station, *Florida Scrub-Jay research* 2016

STUDENT MENTORSHIP

Thesis Mentees

*student current enrolled in graduate program

Sammi Luk, University of Guelph, *causes of window collisions in migratory birds* current

Karen Ong*, University of Guelph, *mechanisms of food-cache degradation* current

Kyle Parkinson*, University of Guelph, *effects of nutrition on dispersal patterns* current

Marlee Pyott*, University of Guelph, *home range patterns of domestic cats* current

Justine Kaseman*, University of Guelph, *causes of mortality in Jefferson salamanders* current

Joschka McLeod*, University of Guelph, *Canada jay habitat selection* 2020-2021

Violetta Onland*, Wageningen University, *climate change effects on Canada jay breeding* 2019

Maria Amella, Stony Brook University, *microplastic abundances in seabird nest* 2017

Field Assistants and Volunteers

Sequoia Elson, University of Guelph	2022
Yara Ibrahim, University of Guelph	2022
Kathryn Nicol*, University of Guelph	2021
Joschka McLeod, University of Guelph	2020-2021
Andre Picard, University of Guelph	2020
Eloise Hind-Smith, University of Guelph	2019
Cheyenne Patterson-Garand, St. Lawrence College	2019
Kim Lato*, Stony Brook University	2018
Stephanie Adamczak*, Stony Brook University	2016-2018
Tucker Taylor, Tuckernuck Land Trust	2016-2018
Allison Black, Tuckernuck Land Trust	2016-2018

GRANTS AND AWARDS

2021	Weston Family Foundation Fellowship for Northern Conservation, Wildlife Conservation Society Canada	\$ 10,200
	Integrative Biology Distinguished Student Award, University of Guelph	\$ 300
	Paul A. Stewart Research Grant, Wilson Ornithological Society	\$ 1,000
	Student Research Award, Animal Behaviour Society	\$ 1,500
	Student Research Award, American Ornithological Society	\$ 2,500
2020	James L. Baillie Research Award, Society of Canadian Ornithologists	\$ 2,000
	Elgin Card Terrestrial Zoology Scholarship, University of Guelph	\$ 4,000
2019	Elgin Card Terrestrial Zoology Scholarship, University of Guelph	\$ 4,000
	Doctoral Tuition Fellowship Award, University of Guelph	\$ 2,500
2018	Maze-Landau Graduate Student Travel Award, Stony Brook University	\$ 450
	Nisbet Research Award, Waterbird Society	\$ 565
	Pacific Seabird Group Graduate Student Travel Award	\$ 1,000
2017	Association of Field Ornithologist Student Travel Award	\$ 1300

INVITED SEMINARS

2022	University of Guelph, Institute for Environmental Research, Guelph, ON
2021	University of Guelph, Department of Integrative Biology, Guelph, ON Benedictine College, Department of Biology, Atchison, KS
2020	Georgian Bay Biosphere Reserve, Parry Sound, ON Long Beach Island Science and Art Foundation, Harvey Cedars, NJ Algonquin Wildlife Research Station, Algonquin Provincial Park, ON
2018	Harbor Herons and Colonial Waterbirds Working Group, Staten Island, NY
2017	Maria Mitchell Association, Nantucket, MA
2016	Archbold Biological Station, Venus, FL

CONTRIBUTED FIRST-AUTHORED PRESENTATIONS

**Indicates voted as best student presentation*

2022	Canadian Society for Ecology and Evolution & Ecological Society of America Joint Conference.
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Montreal, QC.

Fuirst M, Strickland D, Freeman NE, Sutton AO, Norris DR. Survival benefits of delayed dispersal in Canada jays

Ontario Chapter of the Wildlife Society Conference. Virtual meeting.

Fuirst M, Strickland D, Freeman NE, Sutton AO, Norris DR. Patterns of natal dispersal and fitness consequences of social dominance in Canada jays

2021 **American Ornithological Society & Society for Canadian Ornithologists Joint Conference.** Virtual Meeting.

Fuirst M, Strickland D, Freeman NE, Sutton AO, Norris DR. Patterns and consequences of natal dispersal in a declining population of Canada jays at the southern edge of their range

International Student Symposium on Animal Behaviour and Cognition. London, Ontario.

Fuirst M, Strickland D, Norris DR. Canada jays (*Perisoreus canadensis*) identify and exploit coniferous cache locations using visual cues*

Duke Microbiome Center Symposium on Microbiome Biology. Durham, NC.

Fuirst M, Ward CS, Schwaner C, Diana Z, Schultz TF, Rittschof D. Compositional and functional microbiome variation between tubes of an intertidal polychaete and surrounding marine sediment

2020 **North American Ornithological Congress.** Virtual meeting.

Fuirst M, Strickland D, Norris DR. Till death do us part: Mate loss and territory proximity cause breeding dispersal in Canada jays (*Perisoreus canadensis*)

Ontario Ecology, Ethology, and Evolution Colloquium. Guelph, ON.

Fuirst M, Strickland D, Norris DR. Mate loss and territory proximity drive breeding dispersal in Canada jays (*Perisoreus canadensis*)*

2018 **Pacific Seabird Group Conference.** La Paz, Mexico.

Fuirst M, Veit RR, Thorne LH. Comparing herring gull (*Larus argentatus*) foraging ecology along an urban gradient

Harbor Herons and Colonial Waterbirds Working Group Symposium. Staten Island, NY.

Fuirst M, Veit RR, Thorne LH. Street smarts: utilization of urban habitats by herring gulls

2017 **Nantucket Biodiversity Initiative Meeting.** Nantucket, MA.

Fuirst M, Veit RR, Thorne LH. A comparison of foraging ecology between urban and remote seabird colonies

Ornithological Congress of the Americas. Iguazu, Argentina.

Fuirst M, Greer J, Bowman R. Learning where to store your food: microhabitat caching preferences of yearling and adult Florida Scrub-Jays

PREVIOUS RESEARCH EXPERIENCE

Red Sea Research Center, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia 2022

- *Lead researcher: movement and breeding ecology of white-eyed gulls*

Norris Lab at the University of Guelph, Guelph, ON 2018-2022

- *Graduate research assistant: the dispersal and breeding ecology of Canada jays*

Thorne Lab at Stony Brook University, Stony Brook, NY 2016-2018

- *Graduate research assistant: foraging ecology of herring gulls*

Avian Ecology Lab, Archbold Biological Station, Venus, FL 2016

- *Research technician: the demography and behaviour of Florida Scrub-Jays*

Saltmarsh Habitat and Avian Research Program, University of Delaware, Dover, DE 2014-2015

- *Research technician: the role of sea-level rise on saltmarsh bird populations*

PROFESSIONAL ENGAGEMENT

- 2021 - present President: Ontario Chapter of The Wildlife Society
 2018 - 2021 Graduate Student Representative: College of Biological Sciences Office of Educational Scholarship and Practice, University of Guelph
 2020 - present Co-founder: Bird Safe Guelph, University of Guelph
 2018 - present Committee member: Student Mental Health and Wellness, University of Guelph

PEER REVIEW

Journals

- 2022 *Ecology and Evolution, Marine Pollution Bulletin, PLoS One, Ornithological Applications, Ornithology*
 2021 *Ornithology, Marine Pollution Bulletin, PLoS One, Journal of Fish Biology, Peer J, Journal of Avian Biology*
 2020 *PLoS One, Ecological Indicators*
 2019 *PLoS One*

OUTREACH

- 2022 Presentation on careers in wildlife biology to University of Guelph Wildlife Club Ontario Field Ornithologists field research introduction day
 2021 Presentation on Canada jay research to Arc'teryx Toronto
 Presentation on Canada jay research to Algonquin Wildlife Research Station
 2018 – 2021 Graduate Student Symposium organizing committee leader
 Graduate Student Invited Seminar organizing committee member
 2018 – 2021 CoBUMP mentor. *A semester-long undergraduate mentorship program for future biology students*

POPULAR PUBLICATIONS

- 2021 *Ice, ice, babies: the winter breeding Canada jays of Algonquin.* Algonquin Life Magazine. Winter Issue
 2021 *Algonquin Jays in Decline.* Muskoka Steward. Winter Issue
 2021 *Canada Jays on the Air.* The Raven. Winter Issue
 2021 *Changing gulls in a changing world.* The Sandpiper. Winter Issue
 2020 *Where do Canada jays go on summer vacation?* Algonquin Wildlife Research Station Blog. Fall Issue
 2017 *Organic vs Fast Food: herring gulls make diet choices too.* Tuckernuck News. Fall Issue

PROFESSIONAL AFFILIATIONS

- Associated Wildlife Biologist through The Wildlife Society – certified July 2019
 The Wildlife Society
 The Ontario Chapter of The Wildlife Society
 Society for Canadian Ornithologists
 Animal Behaviour Society
 American Ornithological Society
 Association of Field Ornithologists

REFERENCES

Dr. Ryan Norris
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Associate Professor
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Dr. Amy Newman
University of Guelph, Guelph, Ontario
Associate Professor and Interim Department Chair
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Dr. Lesley Thorne
Stony Brook University, Stony Brook, NY
Assistant Professor
Lesley.thorne@stonybrook.edu