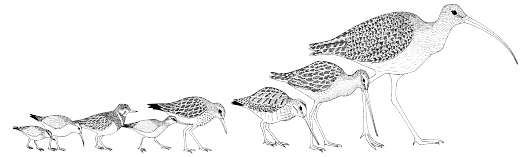


MATTHEW G. HETHCOAT

Grantham Centre for Sustainable Futures
Department Applied Mathematics, University of Sheffield



AREAS OF INTEREST

Biodiversity conservation, land-use change, avian ecology, evolutionary traps, predator-prey interactions

EDUCATION

2019* Ph.D., Mathematics and Statistics - *University of Sheffield, Sheffield, United Kingdom*

Dissertation: *"Measuring tropical forest degradation and its consequences using satellite data."*

*anticipated graduation date

2014 M.Sc., Zoology - *University of Wyoming, Laramie, Wyoming, USA*

Thesis: *"Mechanistic understanding of the effects of natural gas development on sagebrush-obligate songbird nest predation rates"*

2006 B.Sc., Wildlife Biology - *Humboldt State University, Arcata, California, USA*

Honours Thesis: *"Parental care strategies of the dark-eyed junco (Junco hyemalis) across a food availability gradient imposed by fire severity."*

PUBLICATIONS

Hethcoat, M.G. and A.D. Chalfoun (2015) Towards a mechanistic understanding of human-induced rapid environmental change: A case study linking energy development, avian nest predation, and predators. *In press, Journal of Applied Ecology*

Hethcoat, M.G. and A.D. Chalfoun (2015) Energy development and avian nest survival: a test of a common disturbance index *Biological Conservation* 184:327-334.

Chalfoun, A.D., M.M. Gilbert, and **M.G. Hethcoat**. Increased nest predation and food limitation as potential mechanisms underlying sagebrush-obligate songbird declines within energy fields? *In revision, Condor*

Hethcoat, M.G. and A.D. Chalfoun. Adaptive nest-site selection mediates an ecological trap for songbirds breeding in energy fields *In preparation, Journal of Animal Ecology*

RESEARCH AWARDS & FELLOWSHIPS

2015 Grantham Centre for Sustainable Futures Research Fellowship- University of Sheffield

2014 Outstanding Master's Thesis Award- University of Wyoming (\$3000)

2013 Reed W. Fautin Memorial Award- Dept. of Zoology and Physiology, University of Wyoming (\$1000)

2013 Scott-Walter Funds- University of Wyoming (\$550)

2013 Marcia Brady Tucker Travel Award- American Ornithologists' Union (\$380)

2013 Robert B. Berry Student Award- American Ornithologists' Union (\$300)

2013 Best Student Presentation Award- Wyoming Wildlife Society (\$150)

2010 Wyoming Cooperative Wildlife Research Unit Research Fellowship- University of Wyoming

2003 S & S Memorial Scholarship- Finger Lakes Community College (\$500)

2002 S & S Memorial Scholarship- Finger Lakes Community College (\$500)

PROFESSIONAL AFFILIATIONS

Memberships:

Society for Conservation Biology
American Ornithologists' Union

Cooper Ornithological Society
Wilson Ornithological Society

Manuscript Reviews for:

Biological Conservation, Journal of Applied Ecology, Southwestern Naturalist, Western North American Naturalist

RESEARCH & PROFESSIONAL EXPERIENCE

2014- **Research Assistant** – Durham University – Pilanesberg National Park, South Africa

2015 *The role of fire regime in determining savanna avian diversity*

2014 **Field Instructor** – Mankwe Wildlife Reserve – North West Province, South Africa

Taught field techniques to UK university students (Durham, Nottingham Trent, Easton & Otley)

2011- **Master's Thesis Research** – University of Wyoming – Laramie, Wyoming, USA

2014 *Mechanistic understanding of energy development's impacts to songbird nest predation rates*

- Hired, trained, and supervised two, 4 member field crews to collect data
- Built access database and analyzed all project data in R for manuscripts
- Taught two, 30 student lab sections regarding animal taxonomy, anatomy, & physiology

2010 **Research Assistant** – University of Montana – Mt. Kinabalu National Park, Borneo, Malaysia

Geographic Variation in Avian Life History Traits and Parental Care Behaviors

2008- **Field Supervisor** – Institute for Wildlife Studies – San Clemente Island, California, USA

2010 *Supervised a long-term recovery project for the endangered San Clemente Loggerhead Shrike*

- Hired, trained, and supervised 8 member field crews on remote military base
- Maintained large database, produced reports for interagency meetings to aid management

2008 **Ringing Supervisor** – University of Montana – Coconino National Forest, Arizona, USA

Life History Ecology of a High Elevation Avian Community

2008 **Research Assistant** - Washington State University – Atherton Tablelands, Queensland, Australia

Behavioral Endocrinology of the Red-backed Fairy-wren

2007 **Field Biologist** – World Parrot Trust – Llanos de Moxos, Beni, Bolivia

Blue-throated Macaw Population Monitoring and Recovery Program

2006- **Field Biologist** – Institute for Wildlife Studies – San Clemente Island, California, USA

2007 *San Clemente Sage Sparrow Population Monitoring and Recovery Program*

2005 **Research Assistant** – Avian Science Center – Missoula, Montana, USA

The Role of Fire-Severity in Shaping Avian Selection Pressures

2004 **Research Assistant** – Humboldt State University – Prince of Wales Island, Alaska, USA

Avian Nest Survival in Post-Logging Coastal Buffer Strips in the Pacific Northwest

2002 **Research Assistant** – Finger Lakes Community College – Honeoye, New York, USA

Muller Field Station Biological Inventory Project

TEACHING EXPERIENCE

- 2014 Field Techniques – Mankwe Wildlife Reserve, Northwest Province, South Africa, ~80 students
2013 Tropical Ecology – University of Wyoming, Mindo Region, Ecuador, 15 students
2012 Animal Biology – University of Wyoming, Laramie, Wyoming, 60 students

SYMPOSIA & CONFERENCE PRESENTATIONS

- Hethcoat, M.G.** and A.D. Chalfoun. *Habitat loss from hydraulic fracturing lowers avian nest survival in a western North America landscape.* 27th International Congress for Conservation Biology, Montpellier, France, August 2015. (Paper)
- Chalfoun, A.D., K.A. Schmidt, and **M.G. Hethcoat.** *Adaptive breeding site selection in the face of nest predation: Is it for the birds?* 26th International Ornithological Congress, Tokyo, Japan, August 2014. (Paper)
- Chalfoun, A.D. and **M.G. Hethcoat.** *Understanding nest predation risk: What we can learn from concomitant study of predators and prey?* Gordon Research Conferences: Predator-Prey Interactions, Ventura, California, USA, January 2014. (**Invited** Poster)
- Hethcoat, M.G.** and A.D. Chalfoun. *Nest predation and energy development: What's coming down the pipe for sagebrush-obligate songbirds?* Annual Meeting of The Wyoming Chapter Wildlife Society, Rock Springs, Wyoming, USA, October 2013. (Paper) **Awarded best student presentation**
- Hethcoat, M.G.** and A.D. Chalfoun. *Nest predation and energy development: What's coming down the pipe for sagebrush-obligate songbirds?* Joint meeting of the American Ornithologists' Union and Cooper Ornithological Society, Chicago, Illinois, USA, August 2013. (Paper) **Awarded best student presentation**
- Hethcoat, M.G.** and A.D. Chalfoun. *Consequences of altered predator activity on avian nest survival in energy field landscapes.* Annual Meeting of The Wyoming Chapter Wildlife Society, Laramie, Wyoming, USA, November 2012. (Paper) **Runner-up, best student presentation**
- Hethcoat, M.G.** and A.D. Chalfoun. *Increased nest predation and energy development; what's coming down the pipe for sagebrush obligates?* Annual Meeting of The Wildlife Society, Portland, Oregon, USA, October 2012. (Poster)
- Hethcoat, M.G.** and A.D. Chalfoun. *Increased nest predation and energy development; what's coming down the pipe for sagebrush obligate songbirds?* North American Ornithological Conference, Vancouver, British Columbia, Canada, August 2012. (Poster)
- Chalfoun, A.D., M.M. Gilbert, and **M.G. Hethcoat.** *Energy development and songbirds: patterns and mechanisms* 1st North America Congress for Conservation Biology, Oakland, California, USA, July 2012. (**Invited** Paper)
- Hethcoat, M.G.** and A.D. Chalfoun. *Well density as a misleading indicator of energy development impacts: The case for landscape pattern analysis.* Annual Meeting of The Wyoming Chapter Wildlife Society, Jackson, Wyoming, USA, December 2011. (Paper)
- Hethcoat, M.G.** and A.D. Chalfoun. *Mechanisms underlying increased songbird nest predation in natural gas fields.* Annual Meeting of The Wildlife Society, Kona, Hawaii, USA, October 2011. (Poster)
- Hethcoat, M.G.** and A.D. Chalfoun. *Mechanistic understanding of the effects of natural gas development on sagebrush-obligate songbird nest predation rates.* Annual Meeting of The Wyoming Chapter Wildlife Society, Lander, Wyoming, USA, November 2010. (Poster)

PUBLIC OUTREACH

Hethcoat, M.G. and A.D. Chalfoun. *Mechanistic understanding of the effects of natural gas development on sagebrush-obligate songbird nest predation rates.* Wyoming Wildlife Society Student Chapter. Laramie, WY, USA, March 2014

Hethcoat, M.G. and A.D. Chalfoun. *Songbirds and energy development: Patterns and mechanisms.* Laramie Audubon Society. Laramie, WY, USA, October 2012

Chalfoun, A.D., **M.G. Hethcoat**, and M.M. Gilbert. *Songbirds and energy development: Patterns and mechanisms.* Wyoming Landscape Conservation Initiative Science Workshop, Rock Springs, WY, USA, May 2012

Hethcoat, M.G. and A.D. Chalfoun. Study Investigates Changes in Bird Predation Associated with Energy Development. *Wyoming Game and Fish Department State Wildlife Action Plan E-Newsletter*, December 2011.

Hethcoat, M.G. and A.D. Chalfoun. *Energy development and nest predation.* University of Wyoming Seminar Series. Laramie, WY, USA, April 2011

Hethcoat, M.G. and J.T. Stahl. *San Clemente Island: Past, Present, and Future.* San Clemente Island Loggerhead Shrike Survey Orientation and Introduction. San Clemente Island, CA, USA, April 2009

TECHNICAL REPORTS

Bowen et al., **M.G. Hethcoat**. 2014. U.S. Geological Survey Science for the Wyoming Landscape Conservation Initiative—2013 annual report: U.S. Geological Survey Open-File Report 2014–1213.

Bowen et al., **M.G. Hethcoat**. 2014. U.S. Geological Survey Science for the Wyoming Landscape Conservation Initiative—2012 annual report: U.S. Geological Survey Open-File Report 2014–1093.

Bowen et al., **M.G. Hethcoat**. 2013. U.S. Geological Survey Science for the Wyoming Landscape Conservation Initiative—2011 annual report: U.S. Geological Survey Open-File Report 2013–1033.

Stahl, J.T., **M.G. Hethcoat**, J.P. Gunther, A.S. Bridges, D.K. Garcelon. 2010. San Clemente Loggerhead Shrike Monitoring Final Annual Report – 2009. U.S. Navy, Environmental Department, Naval Facilities Engineering Command Southwest, San Diego, California.

Stahl, J.T., **M.G. Hethcoat**, J.G. Yoo, A.S. Bridges, D.K. Garcelon. 2009. San Clemente Loggerhead Shrike Monitoring Final Annual Report – 2008. U.S. Navy, Environmental Department, Naval Facilities Engineering Command Southwest, San Diego, California.

VOLUNTEER ACTIVITIES

2014 Durham University – *Durham, UK*– nest box monitoring and banding program
2012-2014 University of Windsor – *Laramie, Wyoming, USA* – snow bunting wintering ecology
2012, 2013 Wyoming State Science Fair – *Laramie, Wyoming, USA* – Judge
2007-2010 Cabrillo National Monument – *Point Loma, California, USA* – bird banding
2003-2005 Humboldt Bay Bird Observatory – *Arcata, California, USA* – bird banding

COUNTRY EXPERIENCE

Australia, Bahamas, Bolivia, Cambodia, Canada, Costa Rica, Ecuador, Malaysia, Mexico, Morocco, Peru, Singapore, South Africa, United Kingdom, United States

Language Skills: Spanish- elementary proficiency (IRL level 1)