

RESEARCH INTERESTS

Conservation ecology, species recovery, knowledge exchange, road ecology, urban ecology

EDUCATION

- 2012- 2017 **Ph.D. Conservation Biology** (University of Central Florida)
Dissertation: *The behavior of humans and wildlife with respect to roads: insights for mitigation and management* (advised by Dr Reed Noss)
- 2016 **Certification, Faculty Center for Teaching and Learning** (University of Central Florida)
- 2008-2012 **B.S. Biology with High Distinction** (Duke University)
Thesis: *Effects of traffic noise on the acoustically complex notes of the Carolina chickadee* (advised by Dr Stephen Nowicki and Dr Rindy Anderson)
- 2010 **African Ecology and Conservation Semester** (Organization for Tropical Studies, Kruger National Park, South Africa)

EMPLOYMENT HISTORY

- Sept. 2017-
July 2021 **NERC Knowledge Exchange Fellow, IUCN Green List of Species**,
University of Oxford Zoology Department, UK
- April 2018-
present **Course Tutor, MPLS Presentation Skills**, University of Oxford, UK
- 2016-2017 **Independent Consultant, GIS Applications**, Conservation Science Inc.,
USA
- 2015-2017 **Instructor of Record, Biology II**, University of Central Florida Biology
Department, USA
- 2012-2015 **Research Assistant, Roadside Animal Detection System Project**,
University of Central Florida Biology Department, USA
- 2010-2012 **Development Assistant**, Organization for Tropical Studies, USA

NOTABLE FELLOWSHIPS, GRANTS, AND AWARDS

- 2018 **National Environmental Research Council Knowledge Exchange Fellowship**. "Assessing conservation success in government, policy, and business using the IUCN Green List of Species". **£149,577**; 1 Aug. 2018 - 31 July 2021.

- 2018 **University of Oxford Knowledge Exchange Seed Fund**. PI: Molly Grace. "Making the IUCN Green List work for government and business". **£3,222**; 1 April 2018 - 31 June 2018
- 2017 **National Environmental Research Council Knowledge Exchange Fellowship**. "From Red to Green: Synthesizing research to create a metric of species conservation success for multiple end-users". **£34,412**; 11 Sept. 2017 - 10 April 2018.
- Graduate Dean's Dissertation Completion Fellowship**, University of Central Florida, **\$10,000**
- 2015 **Experiment.com crowdfunding grant**. PI: Molly Grace. "Does traffic noise negatively affect frogs? Getting the jump on a potential threat". **\$800**
- 2013-2016 **Graduate Presentation Fellowship**, University of Central Florida, **\$2600**
- 2012-2014 **Graduate Dean's Fellowship**, University of Central Florida, **\$12,000**
- 2013 **Honorable Mention, NSF Graduate Research Fellowship**

PUBLICATIONS

- 9) Grace, M**, HR Akçakaya, E Bennett, C Hilton-Taylor, B Long, EJ Milner-Gulland, R Young, M Hoffmann. *In press*. [Using historical and paleoecological data to inform ambitious species recovery targets](#). *Philosophical Transactions of the Royal Society B: Biological Sciences*. doi: 10.1098/rstb.2019.0297.
- 8) P.J. Stephenson, M Grace**, HR Akçakaya, ASL Rodrigues, B Long, DP Mallon, E Meijaard, JP Rodriguez, RP Young, TM Brooks, C Hilton-Taylor. 2019. [Defining the indigenous ranges of species to account for geographic and taxonomic variation in the history of human impacts: reply to Sanderson 2019](#). *Conservation Biology*. doi: 10.1111/cobi.13400.
- 7) Garnett, S, S Butchart, B Baker, E Bayraktarov, K Buchanan, A Burbidge, A Chauvenet, L Christidis, G Ehmke, M Grace**, D Hocom, S Legge, I Leiper, D Lindenmayer, R Loyn, M Maron, P McDonald, P Menkhorst, H Possingham, J Radford, A Reside, D Watson, J Watson, B Wintle, J Woinarski, H Geyle. 2018. [Metrics of progress in the understanding and management of threats and their application to Australian birds](#). *Conservation Biology*. doi: 10.1111/cobi.13220
- 6) Akcakaya, R, E Bennett, T Brooks, M Grace**, A Heath, S Hedges, C Hilton-Taylor, M Hoffmann, D Keith, B Long, DP Mallon, EJ Milner-Gulland, ASL Rodrigues, JP Rodriguez, PJ Stephenson, S Stuart, R Young. 2018. [Quantifying Species Recovery and Conservation Success: a practical framework for expanding the IUCN Red List of Threatened Species](#). *Conservation Biology*, doi: 10.1111/cobi.13112. Open Access.
- 5) Grace, M**, RF Noss. 2018. [Evidence for selective avoidance of traffic noise by anuran amphibians](#). *Animal Conservation*, 21(2018): 343–351. doi: 10.1111/acv.12400.
- 4) Grace, M**, DJ Smith, RF Noss. 2017. [Reducing the threat of wildlife-vehicle collisions during peak tourism periods using a Roadside Animal Detection System](#). *Accident Analysis & CV-* Molly Grace 2019

Prevention, 109: 55-61.

3) **Grace, M**, DJ Smith, RF Noss. 2017. [Roadside Abundance of Anurans within a Community Correlates with Reproductive Life History](#). *Frontiers in Ecology and Evolution* 5: 65. doi:10.3389/fevo.2017.00065. Open Access.

2) **Grace, M**, DJ Smith, RF Noss. 2015. [Testing alternative designs for a roadside animal detection system using a driving simulator](#). *Nature Conservation* 11: 61–77. doi:10.3897/natureconservation.11.4420. Open Access.

1) **Grace, M**, RC Anderson. 2014. [No frequency shift in the “D” notes of Carolina chickadee calls in response to traffic noise](#). *Behavioral Ecology & Sociobiology*, 69(2): 253-263.

MANUSCRIPTS IN REVIEW

3) Akçakaya, HR, A Rodrigues, D Keith, EJ Milner-Gulland, EW Sanderson, S Hedges, D Mallon, **M Grace**, B Long, E Meijaard, PJ Stephenson. *In review*. [Assessing Ecological Function in the Context of Species Recovery](#).

2) Veríssimo D, T Pienkowski, M Arias, L Cugnière, H Doughty, M Hazenbosch, E de Lange, A Moskeland, **M Grace**. *In review*. [Ethical publishing in biodiversity conservation science](#).

1) Castaneda, E, V Leavings, RF Noss, **Grace M**. *In review*. [Are roadside ditches an ecological trap? The effects of traffic noise on tadpole behavior and development](#).

BOOK CHAPTERS

Grace, MK. *In review*. [Methods used to assess species conservation status](#). In: Maclean, N (Ed.) *The Living Planet: The Present State of the World's Wildlife*. Cambridge University Press, Cambridge, United Kingdom.

DATABASES

Grace, MK. 2019. [Conservation Archive: A User-Created Database of Resources to Link Conservation Biology with Paleoecology and Historical Ecology](#). Built in the R Shiny platform.

INVITED PRESENTATIONS

9. Long, B, **MK Grace**. October 2019. IUCN Knowledge Products: What does the world need to catalyze conservation on species? IUCN Species Survival Commission Leader's Meeting, Abu Dhabi, United Arab Emirates.

8. **Grace, MK**. April 2019. Quantifying Conservation Success: The IUCN Green List of Species. International Otter Congress 2019, Tangjiahe National Preserve, China.

7. **Grace, MK.** February 2019. Avoiding extinction isn't enough: developing a system to incentivise species recovery. The Oxford University Biological Society seminar series.
6. **Grace, MK.** January 2019. Using knowledge of the past to set conservation goals in the present. The past is a foreign country: how much can the fossil record really inform conservation? The Royal Society, London.
5. **Grace, MK.** October 2018. What does conservation success look like? Proposing a recovery framework with the IUCN Green List of Species. Seminar Series at the Center for Macroecology, Evolution, and Climate, University of Copenhagen.
4. **Grace, MK.** April 2018. Quantifying Species Conservation Success: The IUCN Green List of Species. Meeting of the IUCN SSC Red List Technical Working Group, University of Cambridge.
3. **Grace, MK.** March 2018. Conservation goals informed by ecology: Operationalising the IUCN Green List of Species. Showcasing Zoology Knowledge Exchange: lunchtime seminar and Q&A session. Department of Zoology, University of Oxford.
2. **Grace, MK.** November 2017. The IUCN Green List of Species: An Optimistic New Vision for Conservation. Presentation to Centre for Ecology and Hydrology, Wallingford, UK.
1. **Grace, MK.** October 2015. Preventing collisions between vehicles and endangered species: lessons from simulation and field studies. Graduate Fellows Symposium. University of Central Florida.

PANELS HOSTED

The Green List of Species: A high-profile assessment of conservation success stories. September 2019. Conservation Optimism Summit, University of Oxford, Oxford, United Kingdom.

PRESENTATION AWARDS

5. **Grace, MK, DJ Smith, RF Noss.** May 2017. Promise and Limitations of Roadside Animal Detection Systems. Best student talk, International Conference on Ecology and Transportation, Salt Lake City, UT.
4. **Grace, MK, E Castaneda, V Leavings, R Noss.** Traffic noise alters tadpole behavior, but does not affect growth. Best student poster, International Conference on Ecology and Transportation, Salt Lake City, UT.
3. **Grace, MK.** March 2014. Using a driving simulator to test the effectiveness of an animal detection system in reducing wildlife-vehicle collisions. Third place, talks, Southeastern Ecology and Evolution Conference, Georgia State University.
2. **Grace, MK and RC Anderson.** March 2013. Acoustically complex notes: a strategy for effective songbird communication in a noisy world? Best talk, Southeastern Ecology and Evolution Conference, University of Central Florida.

1. **Grace, MK** and RC Anderson. March 2013. Songbirds' acoustically complex notes may facilitate communication in noisy urban areas. Best student talk, Annual Meeting of the Association of Field Ornithologists, Archbold Biological Station, Venus, FL.

RECENT LEADERSHIP/ SERVICE POSITIONS

- 2019-2020 **Treasurer/ Fellowships and Grants Representative**, Zoology Early Career Researchers Network at the University of Oxford
- 2018-2019 **Member**, Beyond the Academy network and working group.
- 2018-2019 **Chair**, Zoology Early Career Researchers Network at the University of Oxford
- 2018 **Oxford Mentor**, NERC-DTP Partner Sandpit
- 2018 **OxRSS representative**, Zoology Early Career Researchers Network at the University of Oxford
- 2017-2018 **Voice Representative** for Zoology, Oxford Research Staff Society (OxRSS)
- 2016- 2017 **Faculty Liaison** for the Biology Graduate Student Association at the University of Central Florida
- 2015-2016 **Search Committee**, Behavioral Ecology Faculty Search, University of Central Florida

BLOGS

3. Behind the paper, Nature Ecology and Evolution. 2018. [Defining Species Recovery: A Global Endeavour.](#)
2. Oxford University MPLS. 2018. [A List for the Optimist: The IUCN Green List of Species.](#)
1. Interdisciplinary Centre for Conservation Science. 2018. [Celebrating Conservation Successes with the IUCN Green List of Species.](#)

MEDIA INTEREST/ INTERVIEWS

5. Lesley Evans Ogden, *BioScience*. 2019. [A New Green List: Metrics for Recovery.](#) 69(2):156, <https://doi.org/10.1093/biosci/biy156>
4. Andrew Williams, *ITS International Magazine*. 2018. [Avoiding the Call of the Wild.](#)
3. Kieran Lindsey, *Car Talk*. 2016. [Picture Panthers: Can Better Signage Get Drivers to Brake for Wildlife?"](#)
2. American Association for The Advancement of Science, *Eureka Alert*. 2015. [When cars and wildlife collide: Virtual reality could prevent real-life road accidents.](#)

1. Joshua Rapp Learn, *The Wildlife Society*. 2015. [Automated Wildlife Crossing Detection Shows Promise.](#)

WORKSHOPS HOSTED

- 26-27 Sept 2019 Incentivizing Tree Conservation: Making the IUCN Green List of Species Work for Trees. Cambridge Conservation Initiative.
- 24 July 2019 Translating the Terminology of Species Recovery. International Congress for Conservation Biology, Kuala Lumpur, Malaysia.
- 7 June 2018 Accounting for the Conservation Difference Businesses Make: A NERC Knowledge Exchange Workshop. University of Oxford.
- 22 Mar 2018 Green List of Species Technical Workshop. University of Oxford.

TEACHING

- Oct 2018-
May 2019 Course Tutor, MPLS Presentation Skills, University of Oxford, UK (one half-day course per term)
- August 2016-
Dec 2016 Course content development: Updated 5 labs for Biology II (BSC 2011C)
- Jan 2015-
Dec 2016 Graduate Teaching Associate (Instructor of Record), Biology II (BSC 2011C)
- Summer
2015/2016 Instructor (Animal Physiology), BIOTEC (Biology Integrated Orlando Training and Enrichment Camp). High school summer camp at UCF.
- 2015 Certification, Preparing Tomorrow's Faculty course, University of Central Florida Faculty Center for Teaching and Learning
- 2014 Invited guest lecture, BSC 3052 - Conservation Biology (undergraduate course), University of Central Florida. "Florida panthers: a case study for assigning value in conservation."
- 2013-2014 Graduate mentor, UCF Learning Environment and Academic Research Network (LEARN)
- 2010-2011 Peer tutor, Introductory Biology (BIO 25L), Duke University

UNDERGRADUATES MENTORED

- 2018-2019 **Alec Bannister**, University of Oxford
Using the Nordic and Barents Seas (NoBa) Atlantis model to estimate the impacts of climate change on species recovery potential
- 2018-2019 **Wanda Criswell**, University of Oxford
Green List assessment of wild pigs (*Sus scrofa*)

- 2017-2018 **Joseph Bush**, University of Oxford
Assessing Britain's native species with the IUCN Green List of Species criteria
- 2017-2018 **Michael Hammond**, University of Oxford
Weighting spatial units within the Green List of Species protocol
- 2018 **Emma Fowler**, Stanford University/University of Oxford
Stanford University Bing Overseas Studies Program
- 2016-2017 **Erica Castaneda**, University of Central Florida
Does traffic noise affect the feeding behavior of Cuban treefrog tadpoles?
- 2015-2017 **Vernell Leavings**, University of Central Florida
1. Do tadpoles alter movement patterns in response to traffic noise?
2. Assessment of adult anuran behavioral response to traffic noise
- 2015 **Amanda Trompeta**, University of Central Florida
Experimental assessment of adult anuran behavior in response to traffic noise
- 2015 **Ashley Craft**, University of Central Florida
Experimental assessment of adult anuran behavior in response to traffic noise
- 2013-2014 **Mychol Styles**, University of Central Florida
Impact of Roadside Animal Detection Systems on the Florida Panther Mortality Rate
- 2013-2014 **Jessica Milos**, University of Central Florida
The effect of driver age on panther-vehicle collisions and reaction to the Roadside Animal Detection System (RADS)

OTHER RESEARCH EXPERIENCE

Does social rank influence frequency of behavioral thermoregulation in *Lemur catta*?
Supervisor: Dr. Leslie Digby; Duke University Lemur Center (2011)

The influence of termitaria on woody plant communities.
Supervisors: Dr. Alan Gardiner and Karen Vickers, MSc.; Organization for Tropical Studies, Kruger National Park, South Africa (2010)

Patterns of fuelwood consumption, purchase, and sale in four Venda villages.
Supervisor: Dr. Wayne Twine; Organization for Tropical Studies, Kruger National Park, South Africa (2010)

Do swamp sparrow (*Melospiza georgiana*) females use song as an indicator of age in a potential mate?
Supervisors: Dr. Stephen Nowicki and Dr. Rindy Anderson; Duke University (2009)

PROGRAMS

Statistical analysis software (R; WinBUGS; JMP; STATISTICA); Web app design (shinyR); ArcGIS; HexSim, SIGNAL digital signal analysis software; Syrinx sound

recording/editing/playback program; The Observer data collection software for the Psion Workabout handheld data recorder; FinchTV DNA sequence trace viewer; Website builders (WordPress, SohoLaunch); Blackbaud Raiser's Edge fundraising software; Microsoft Office

LANGUAGES

Spanish (spoken: fair, reading: good, writing: good)

PROFESSIONAL REFERENCES

Dr Barney Long (Collaborator)
Senior Director of Species Conservation
Global Wildlife Conservation
PO Box 129
Austin, TX 78767 USA
blong@globalwildlife.org

Prof E.J. Milner Gulland (Postdoc Supervisor)
Tasso-Leventis Professor of Biodiversity
University of Oxford
Department of Zoology
New Radcliffe House, Walton Street
Oxford, OX2 6BW
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Dr Reed Noss (PhD Supervisor)
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