Nicolette (Nikki) S. Roach

Department of Wildlife and Fisheries Sciences,

Applied Biodiversity Sciences, Texas A&M University

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**EDUCATION/AFFILIATION Citizenship:** U.S.

**Ph.D. In Progress.** Applied Biodiversity Sciences & Wildlife and Fisheries Sciences, Texas A&M University *Advisor: Dr. Thomas Lacher*

**M.S. 2015.** Wildlife and Fisheries Biology, Clemson University. *Advisor: Dr. Kyle Barrett, Thesis: Assessing the vulnerability of coastal marsh birds to sea level rise in South Carolina.*

**B.S.** **2010.** Wildlife and Fisheries Conservation Biology, University of California Davis.

**RESEARCH INTERESTS**

Urgent conservation issues highlighting the impacts of land use and climate change on vertebrates. Broadly, I am interested in conservation planning for threatened species, landscape ecology, human-wildlife dimensions, and science communication and policy.

**GRADUATE RESEARCH EXPERIENCE**

**Department of Wildlife and Fisheries Sciences, Texas A&M University** (Aug. 2015 – current)

Research focuses on the vulnerability of threatened species to short (land use change) and long-term (climate change) threats. Using a mixture of field-based research and modeling I am examining amphibian communities in the Sierra Nevada de Santa Marta, Colombia – the world’s most irreplaceable site. I am a member of three IUCN specialist groups: Amphibian Specialist Group, Climate Change Specialist Group, and Small Mammal Specialist Group – where I coordinated assessment efforts for 1,000 priority species of New World small mammals from August 2015 – 2017.

**Department of Forestry and Environmental Conservation, Clemson University** (Jan. 2013 – May 2015)

My thesis work addressed the vulnerability of South Carolina’s coastal marsh bird species to sea level rise and coastal development through a combination of field observations and modeling. Specifically, I focused on habitat use of nesting rails species with an emphasis on Clapper Rails (*Rallus crepitans*) and Black Rails (*Latterallus jamaicensis*). Our goal was to prioritize critical habitat areas for secretive marsh birds along the South Carolina coast.

I led the first statewide survey for Black Rails in South Carolina. As the project coordinator, my responsibilities included managing surveys amongst multiple agencies, stakeholders, and volunteers (30 people); and providing project materials and reports to South Carolina Department of Natural Resources (SCDNR), U.S. Fish and WildlifeService (USFWS), Nemours Wildlife Foundation, and private landowners. In addition, I led a variety of meetings with collaborators, including two Black Rail training workshops for surveyors.

**PUBLICATIONS/REPORTS**

Lacher, T.E., Jr. and **N. Roach**. 2018. The status of biodiversity in the Anthropocene: trends, threats, and actions. **In:**Lacher, T.E., Jr. and S. Pyare (Editors). *Vol 3 (Biodiversity), of Vols 1 - 5 in the Encyclopedia of the Anthropocene* (D.A. DellaSala and M.I. Goldstein, Editors-in-Chief). Elsevier, Oxford, UK.

Lacher, T.E., Jr., R.P.Young, R. Kennerley, **N.S. Roach**, S. McCay, and S.T. Turvey. 2017. Conserving the biodiversity of the largest Order of Mammals: Priorities and actions for the Rodentia. In: *Handbook of Mammals of the World. Vol. 7. Rodents2.*D.E. Wilson, T.E. Lacher, Jr and R.A. Mittermeier (eds). Lynx Editions, Barcelona, Spain.

González, JL.P., **N.S. Roach**., Solano, L.A.R. 2017. *Atelopus carrikeri* (Guajira Stubfoot Toad) and *Atelopus laetissimus. Interspecific Amplexus*. Herpetological Review: Natural History.

**Roach, N.S.**, E.A. Hunter, N.P. Nibbelink, and K. Barrett. 2017. Poor transferability of a distribution model for a widespread marsh bird in the southeastern United States. Ecosphere (8): e01715.

**Roach, N.S.,** and K. Barrett. 2015. Managed habitats may increase resilience of a marsh specialist, Black Rail (*Laterallus jamaicensis*), to climate impacts along the coast of South Carolina. Wetlands (35):1065-1076.

**Roach, N.S.,** and K. Barrett.South Carolina Department of Natural Resources Annual Report: Black Rail distribution, habitat use, and vulnerabilities to sea level rise in South Carolina. Prepared for South Carolina Department of Natural Resources. December 2014.

**GRANTS & AWARDS (Total: $154,980)**

* Mohamed Bin Zayed Species Conservation Fund. **$5,000**.Dec. 2017.
* Global Wildlife Conservation Seed Grant. **$2,000**. Jun. 2017
* Fulbright Fellow, Colombia 2017 – 2018. **$8,000.** Mar. 2017.
* Phoenix Zoo. **$3,000**. Feb. 2017.
* Chicago Herpetological Society. **$1,000**. Feb. 2017.
* Mohamed Bin Zayed Species Conservation Fund. **$12,500**. Dec. 2016.
* Chicago Zoological Society’s Chicago Board of Trade Endangered Species Fund. **$3,700**. Jun. 2016.
* Global Wildlife Conservation Seed Grant. **$4,000**. May 2016.
* Applied Biodiversity Science Travel Award (Texas A&M University). **$1,400**. May 2016/2017.
* Richard Baldauf Scholarship (Texas A&M University). **$1,000.** Apr. 2016
* Study Abroad Scholarship (Texas A&M University). **$1,200.** Mar. 2016
* Merit Fellowship (Texas A&M University). **$64,000**. Aug. 2015.
* Society for Conservation Biology Travel Grant. **$500.** Jul. 2015.
* Professional Enrichment Grant (Clemson University): **$2,500**. 2014/2015
* Natural Resources Graduate Student Association Travel Award: **$430.** 2013/2014.
* Bill Terrell Grant (Georgia Ornithological Society): **$4,750**. Mar. 2014
* A Survey of Black Rails (Laterallus Jamaicensis) in the ACE Basin of South Carolina: A Pilot Study Leading to a Statewide Survey and Habitat Analysis for this Species of Concern (South Carolina Department of Natural Resources): **$35,000**. Feb. 2014
* Marion-Bailey Research Assistantship Grant (National Park Service and Clemson University): **$10,000**. May 2013

**PRESENTATIONS/POSTERS** (\*presented by other authors)

* “Desafios na Avaliação do Risco de Extinção para Mamíferos Brasileiros.” T.E. Lacher, Jr.\* and **N. Roach**, Presented (*in Portuguese*) in the symposium “Conservação de Mamíferos no Neotrópico.” *9th Congresso Brasileiro de Mastozooologia*, Brazil, Sept. 2018.
* **Roach, N.** Ranas y Ratas, Conservación en Colombia (*in Spanish*). *Parques Nacionales, Colombia (Santa Marta)*. Sept. 2017 (Oral presentation)
* **Roach, N.,** T. Lacher, R. Kennerley, S. McCay, R. Young. IUCN Red List Small Mammal Assessments: Conservation Priorities and Future Research Directions. *International Congress for Conservation Biology, Colombia*. Jul. 2017 (Oral Presentation, ICCB symposium)
* **Roach, N.** Roaches, Ranas, y Ratas: Conservation in Colombia. Global Wildlife Conservation Staff Retreat. Jan. 2017. (Oral Presentation)
* **Roach, N.** After the Conflict: Conservation in Colombia. *Wildlife and Fisheries Seminar Series*, Texas A&M. Nov. 2016. (Oral Presentation)
* Barron, A.\*, **Roach, N**., and T. Lacher. Neotropical backbone: Conservation assessment of Latin America’s Spiny Rats. *Society for Advancement of Chicanos/Hispanics and Native Americans in Science.* Oct. 2016 (Poster)
* **Roach, N.** So you want to be a conservation biologist? Steps for turning your passion into a career. *Society for Conservation Biology*, TAMU chapter. Mar. & Sept. 2016. (Oral Presentation)
* **Roach, N.,** K. Barrett. Assessing the vulnerabilities of marsh birds to sea level rise in the south Atlantic coast. *Wildlife and Fisheries Sciences Seminar Series*, Texas A&M. Oct. 2015. (Oral Presentation)
* **Roach, N.,** K. Barrett, E.A. Hunter, N.P. Nibbelink. Assessing transferability of habitat models for a widespread marsh bird in the Southeastern United States: Implications for conservation planning. *International Congress for Conservation Biology*. Aug. 2015. (Oral Presentation)
* **Roach, N,** and K. Barrett. Flying off the rails: Habitat loss due to climate change may endanger marsh-dwelling birds*. Clemson Biological Sciences Annual Student Symposium*. Feb. 2015. (Oral Presentation)
* **Roach, N,** and K. Barrett. Marsh bird habitat associations and vulnerabilities to sea level rise in South Carolina. *The Wildlife Society*. Oct. 2014. (Oral Presentation)
* **Roach, N,** and K. Barrett. Assessing the vulnerability of coastal marsh birds to sea level rise. *Baruch Institute of Coastal Ecology and Forest Science*. Sept. 2014. (Poster)
* **Roach, N,** and K. Barrett. Assessing the vulnerability of coastal marsh birds to sea level rise in South Carolina. *Ecological Society of America*. Aug. 2014. (Poster)
* **Roach, N,** and K. Barrett\*. Overview of secretive marsh birds and their vulnerabilities to coastal changes in South Carolina. *National Audubon Society: ACE Basin salt marsh sea level rise adaptation project scoping meeting*. Jul. 2014. (Oral Presentation)
* **Roach, N,** and K. Barrett. Marsh Madness: Assessing marsh bird vulnerability to sea level rise in South Carolina. *Baruch Institute of Coastal Ecology and Forest Science Research Symposium*. May 2014. (Oral Presentation)
* **Roach, N.** Black Rails in South Carolina: Habitat-use, distribution, and future concerns. *Nemours Wildlife Foundation*. Mar. 2014. (Oral Presentation)
* **Roach, N,** and K. Barrett. Marsh Madness: Assessing marsh bird vulnerability to sea level rise. *Clemson Biological Annual Student Symposium*. Feb. 2014. (Oral Presentation)
* **Roach, N**. Working with wildlife: The first steps in turning your passion into your career. *The Wildlife Society, Clemson Chapter*. Nov. 2013. (Oral Presentation)
* **Roach, N,** and K. Barrett. Assessing the vulnerability of coastal marsh birds to sea level rise in South Carolina. *The Wildlife Society National Conference*. Milwaukee, WI. Oct. 2013. (Poster)

**TEACHING/UNDERGRADUATE MENTOR EXPERIENCE**

* **Guest Lecture.** Conservation Biology (TAMU). Oct. 2016
* **Guest Lecture.** Mammalogy Field Techniques (TAMU). Apr. 2016.
* **SMSG IUCN Red List Assessments** (15 undergraduates, masters\*)
  + **Texas A&M:** Rebecca Langley, Holly Pierro (Sept 2015 – Jan. 2016), Lauren Naylor (Sept 2015 – Aug. 2016), Sahiti Karmuri, Karyn Ho, Kenny Le (Jan – Jun. 2016), Kristin Cotrell, Houston Kimes (May 2016 – Aug. 2016), Alondrita Barron, Wendy Diaz, Kai DeVoglaer, Lois Ann Voekel (Jan 2016 – current), Kristen Cunningham (Aug 2016 – Feb 2017), Sara Pecina, Amy Stilley (Sept 2016 – current), Shelby McKay\* (Jan 2017 – current)
  + **Universidad de Magdalena**: Daniela Acosta, (Jun. – Aug. 2016), Jeferson Villalba (Jun. – current).
* **Teaching Assistant/Guest Lecture**, Wetlands and Wildlife Biology. Clemson University (Spring 2014 & 2015)

**UNIVERSITY SERVICE**

* **Co-chair, Steering Committee**. Ecological Integration Symposium 2017. (May 2016 – May 2017)
* **Session Moderator**. Ecological Integration Symposium. (Apr. 2016)
* **Poster Judge**.Ecological Integration Symposium (Apr. 2016)
* **Chair, Social Media (curate website and twitter accounts)**.Applied Biodiversity Science. (Nov. 2015 – current)
* **Member, Seminar Committee**. Applied Biodiversity Science. (Jan. 2016 – Aug. 2017)
* **Member.** Association of Wildlife Graduate Students, Texas A&M University. (Aug. 2015 – current)
* **Member.** Ecology and Evolutionary Biology Interdisciplinary Student Organization, Texas A&M University. (Aug. 2015 – current)
* **Poster Judge**. Clemson Biological Sciences Annual Student Symposium. (Feb. 2015)
* **Grant Reviewer**. Professional Enrichment Grant Application Services, Graduate Student Government, Clemson University. (Nov. 2014 – May 2015)
* **Officer (event coordinator)**. Natural Resources Graduate Student Association (NRGSA), Clemson University. Founder/coordinator 1st and 2nd annual ecology and natural resources graduate student/faculty mixer. (May 2013 – May 2015)
* **Fundraising.** NRGSA. $1200. (Feb. – Dec. 2014)
* **Member.** Natural Resources Graduate Student Association, Clemson University. (Apr. 2013 – May 2015)

**PROFESSIONAL SERVICE**

* **Director of Communications**. Society for Conservation Biology – Latin American and Caribbean Section. (Jan 2018 – current)
* **Alternate Representative.** Texas A&M University, IUCN Red List Partner Signatories. Oct 2017 – current)
* **Member**. Climate Change Specialist Group (Sept. 2017 – current)
* **Member**. Amphibian Specialist Group (Jun. 2017 – current)
* **Member.** Education and Student Affairs Committee. International Congress for Conservation Biology. (Jun. 2016 – Jul. 2017)
* **Member**. Small Mammal Specialist Group (Apr. 2016 – current)
* **Project Coordinator**.IUCN Small Mammal Specialist Group, Red List Assessments for New World Small Mammals. (Aug. 2015 – current)
* **Session Moderator**. Population Viability Analysis.International Congress for Conservation Biology. (Aug. 2015)

**PROFESSIONAL AFFILIATIONS**

* **Associate Research Scientist**. Global Wildlife Conservation (Apr. 2016 – current)

**PROFESSIONAL MEMBERSHIPS**

* IUCN Species Survival Commission
  + Small Mammal Specialist Group (Aug. 2015 – current)
  + Amphibian Specialist Group (Jun. 2017 – current)
  + Climate Change Specialist Group (Sept. 2017 – current)
* Chicago Herpetological Society (Dec. 2016 – current)
* American Society for Mammologists (Jan. 2016 – current)
* Society for Conservation Biology (Jan. 2014 – current)
* Ecological Society of America (Dec. 2013 – current)
  + ESA Applied Science Section (Dec. 2015 – current)
* The Wildlife Society (May 2013 – May 2017)
  + TWS Southeastern Section (May 2013 – May 2014)
* Georgia Ornithological Society (Aug. 2013 – Aug. 2015)
* Advocacy groups: 500 Women Scientists, The Sierra Club, Natural Resources Defense Council, Union of Concerned Scientists (current)

**CERTIFICATIONS**

IUCN Red List Assessor Training (Sept. 2015)

**RESEARCH EXPERIENCE**

**IUCN Small Mammal Specialist Group Red List Coordinator (New World)**

Project Manager (Aug 2015 – current). Re-assess the species extinction risk of ~ 700 species of New World small mammals.

* Primary duties include: Facilitate Red List assessments for New World species, mentor and train undergraduate students for red list assessments (16 students), lead weekly
* meetings, distribute materials, instruct students on use of SIS database and data mining, and literature searches. Collate and disseminate information collected across ~ 60 people. Texas A&M University.

**McMaster University – Cabo Rojo National Wildlife Refuge, Cabo Rojo, Puerto Rico.** Research assistant **(**Oct. 2012 – Jan. 2013). Project: Behavior, breeding and vocalization of Smooth-Billed Ani’s (*Crotophaga ani).*

* Primary duties included: observational studies, nest searching and monitoring, measuring and banding chicks and adults, trapping adults via lure traps and nest traps.

**U.S Geological Surveys – Western Ecological Research Center, Davis and Newark, CA.** Ecologist GS-5 (Oct. 2011 – Oct. 2012). Project: Effects of contaminant bioaccumulation on waterbird reproductive success.

* Primary duties included: nest searches and monitoring, measuring and banding chicks, collection of feather, eggs, and fish, and vegetation surveys.

**U.S. Fish and Wildlife Service – Don Edwards San Francisco Bay National Wildlife Refuge, CA.** Wildlife Intern (Apr. 2011 – Oct. 2011). Project: Focused on invasive plant species control, endangered species monitoring, and waterbird monitoring.

* Primary duties included: vegetation mapping, invasive species control, small mammal, amphibian, and invertebrate surveys, waterbird nest and chick monitoring.

**Global Wildlife Conservation** **– Austin, TX and Choco, Colombia**.

Intern and Research Assistant (Jun. – Sep. 2010).

* Grant and project proposals, finances (domestic and international transactions) for the “Lost Amphibians” project, social network campaigns: “Save the Saola” and “Save my Home”.
* Research Assistant for global “lost amphibians” campaign.

**University of California Davis, Department of Wildlife, Fish, and Conservation Biology**. Mallard Intern (Mar. – Jun. 2010). Project: Monitor mallard populations on UC Davis campus.

* Recorded data on foraging behaviors, sex ratios, “hybrids”, aged chicks, assisted with adult capture and release, morphometric measurements, bleeding, and banding.

**FIELD SKILLS**

* 4x4, small boat and trailer operation, standard transmission
* Identify North American bird species by sight and sound, morphometric measurements, bleeding, banding, broadcast vocalization surveys, mist-net/lure/drift-fence trapping, artificial nest construction, egg collection and dissection, and point counts.
* Amphibian, mammal, bird surveys
* Small mammal trapping, camera trapping
* Vegetation monitoring and mapping
* Radio telemetry, GPS and Trimble handheld unit, and Real Time Kinetics (RTK).

**MEDIA**

* **Blog post.** *Voices from the field: Global Wildlife Conservation (Nov. 2017):* [*https://www.globalwildlife.org/2017/11/17/a-day-in-the-field-colombia/*](https://www.globalwildlife.org/2017/11/17/a-day-in-the-field-colombia/)
* **Interview.** Podcast “Making Waves” – Society for Freshwater Science (Nov. 2017).
* **Blog Post.** *Lost and Found Blog (Oct. 2017):* [*http://lostandfoundnature.com/blog/2017/10/15/searching-for-the-santa-marta-toro-a-tale-of-a-roach-a-rat/*](http://lostandfoundnature.com/blog/2017/10/15/searching-for-the-santa-marta-toro-a-tale-of-a-roach-a-rat/)
* **Blog Post.** *Voices from the field: Global Wildlife Conservation (Jul. 2017):* <https://www.globalwildlife.org/2017/07/20/all-the-way-up-almost/>
* **Blog Post.** *Voices from the field: Global Wildlife Conservation (Jul. 2016):* <http://globalwildlife.org/2016/07/26/update-from-the-field-search-for-the-santa-marta-toro/>
* **Interview*.*** *Search for the Lost Toro (2016): Bogota City Newspaper*: <https://www.thecitypaperbogota.com/features/the-search-for-toro-in-the-sierra-nevada>,
* **Interview.** *Mongabay*: <https://news.mongabay.com/2016/08/in-search-of-a-lost-species-the-santa-marta-toro/>
* **Interview.** *Mother Nature Network*: <http://www.mnn.com/earth-matters/animals/stories/researchers-on-hunt-adorable-rodent-thought-extinct-113-years>
* **Interview.** *Seeker (Discovery News*): <http://www.seeker.com/animal-holy-grail-to-find-the-elusive-toro-1964411577.html>
* **Interview.** *Texas A&M Today News*: <https://today.tamu.edu/2016/08/30/rediscovery-of-fuzzy-species-sparks-conservationist-excitement/>
* **Interview.** *Live Science News*: <http://www.livescience.com/56337-rare-tree-rat-rediscovered.html>
* *ConsoGlobe (France)*: <http://www.consoglobe.com/recherche-espece-disparue-colombie-cg>
* **Featured Researcher.** Expeditions with Patrick McMillan (Apr. 2015)
* **Speaker.** Baruch Open House. (Sep. 2014) <http://www.live5news.com/story/26610495/clemson-celebrating-expansion-to-coastal-research-institute>
* **Interview.**Promotional Video for Baruch Institute of Coastal Ecology and Forest Science (0:10-1:20) <https://www.youtube.com/watch?v=8Cu3JY-Nu4Y>; Full coverage (min 1:25- 6:30 )<https://www.youtube.com/watch?v=riPoInaEbWg&feature=youtu.be>
* **Science Communication Research Videos**: <http://nroach.weebly.com/creations.html>

**COMPUTER PROGRAMS**

*Statistica*l: R statistical software, PRESENCE

*Spatial*: ArcGIS, ENVI, Fragstats

*Data Organization*: Microsoft Office & Access

**RELATED COURSES**

**Texas A&M University:**

Community Ecology, Quantitative Geography (Applied Statistics), Remote Sensing of the Environment, Applied Biodiversity Sciences I & II, Changing Natural Resource Policy

**Clemson University:**

Landscape Ecology with GIS, Land Planning/GIS, Wetland Wildlife Biology, Design and Analysis of Experiments, Environmental Law & Policy, Global Change Ecology, Applied Population Dynamics, Forested Wetland Ecology, Politics of Science

**University of California, Davis:**

Habitat Conservation, Conservation Biology, Wildlife Ecology, Animal Behavior, Ecology of Waterfowl and Game Birds, Biology and Conservation of Wild Birds, Biology and Conservation of Mammals, Biology and Conservation of Fishes, Linear Regression Analysis & Statistics for Biological Sciences, Rangeland Ecology

**OUTREACH**

Skype a Scientist. (Jan 2017 – current)

Science mentor. Letters to a Pre-Scientist. (Oct. 2015 – May 2016)

STEM night volunteer. John C. Webb Elementary, Navasota TX. (Nov. 2015)

**VOLUNTEER EXPERIENCE**

Foster. Aggieland Humane Society. (Aug. 2015 – Aug. 2016)

Speaker. Clemson Graduate Student Orientation. (Aug. 2014)

Christmas Tree Fundraiser. NRGSA. (Dec. 2014)

Forest Clean Up. NRGSA. (Mar. 2014)

Christmas Tree Fundraiser. NRGSA. (Dec. 2013)

National Hunting and Fishing Day. South Carolina DNR. (Sep. 2013)

Dog Socializer. Oconee Humane Society. (Aug. 2013 – Feb. 2015)

**MISC**

Wildlife Film and Photography

Spanish

**REFERENCES (**Full contact available upon request)

Thomas Lacher, PhD

Associate Professor, Texas A&M University

[tlacher@tamu.edu](mailto:tlacher@tamu.edu)

Kyle Barrett, PhD

Assistant Professor, Clemson University

[rbarre2@clemson.edu](mailto:rbarre2@clemson.edu)

Wes Sechrest, PhD

CEO, Global Wildlife Conservation

[wsechrest@globalwildlife.org](mailto:wsechrest@globalwildlife.org)