

Nathan M. Tarr

nmtarr@ncsu.edu | ntarr@usgs.gov
<https://nmtarr.wordpress.ncsu.edu/>
<https://github.com/nmtarr>
(919)-513-7280

Education

Master of Science in Fisheries and Wildlife Sciences

North Carolina State University, Raleigh, NC 27695

August 2005 - December 2008

Minor: Statistics

Advisor: Dr. Theodore R. Simons

Thesis: Fall migration and vehicle disturbance of shorebirds at South Core Banks, North Carolina

Bachelor of Arts

Guilford College, Greensboro, NC 27410

August 1996 - May 2000

Majors: Life Sciences and Environmental Studies

Professional Experience

Research Scholar, March 2019 - present

North Carolina Cooperative Fish and Wildlife Research Unit

North Carolina State University

- Develop tools and methods that support U.S. Geological Survey Core Science Analytics and Synthesis research and foundational data.
- Collaborate on landscape-scale research to support regional and national conservation decision-making.
- Contribute biological and technical expertise to the NC Wildlife Resources Commission's Scientific Council for Birds and NC Bird Atlas.

Research Associate, November 2009 – March 2019

North Carolina Cooperative Fish and Wildlife Research Unit

North Carolina State University

- Developed a multispecies approach for describing spatial patterns of biodiversity.
- Contributed to the development and maintenance of databases and software for wildlife-habitat relationship and range data in support of the U.S. Geological Survey Core Science Analytics and Synthesis's National Gap Analysis Project.
- Created habitat distribution models for 236 bird and mammal species for the National Gap Analysis Project.

- Led and collaborated on research projects that assessed the risks of future bioenergy demands on landscapes and wildlife in the southeastern U.S.

Research Technician, August 2019

U.S. Army Corps of Engineers Construction Engineering Research Laboratory

Principal Investigator: Dr. William Fields

- Conducted avian point count surveys at Fort Bragg, NC for a project characterizing *Lindera subcoriacea* ecology and metapopulation dynamics.

Conservation Recommendations Research Technician, January – November 2009

North Carolina Wildlife Resources Commission

- Synthesized scientific literature on the habitat needs of priority species for conservation in North Carolina.
- Drafted conservation recommendations for land use planners and developers.

Research Assistant, January – November 2009

North Carolina Cooperative Fish and Wildlife Research Unit

Principal Investigator: Dr. C. Ashton Drew

- Reviewed scientific literature on the habitat relationships of Swainson's Warblers for use in spatially-explicit habitat models.
- Hired field assistants for secretive marsh bird surveys in wildlife refuges.

Graduate Teaching Assistant, August – December 2008

Department of Plant Biology, North Carolina State University

- Instructed two lab sections of "Introduction to Ecology."

Graduate Research Assistant, August 2005 – August 2008

North Carolina Cooperative Fish and Wildlife Research Unit

Principal Investigator: Dr. Theodore R. Simons

- Designed, performed, analyzed, and published an experimental field study on the effects of vehicle disturbance on shorebirds' habitat use and behavior at Cape Lookout National Seashore, NC.
- Performed extensive shorebird surveys at South Core Banks, NC.
- Recruited, trained, and supervised field assistants.
- Assisted with a raccoon population management study.

Research Technician, May - June 2008

North Carolina Cooperative Fish and Wildlife Research Unit

Principal Investigator: Dr. Theodore R. Simons

- Participated in field research that assessed methods for estimating detection probabilities during avian point count surveys.
- Performed modified point counts along 12 Breeding Bird Survey routes in central North Carolina.

Graduate Teaching Assistant, January - May 2006

Department of Zoology, North Carolina State University

- Instructed two lab sections of “Evolution, Behavior, and Ecology”

Research Technician, February - June 2005

North Carolina Cooperative Fish and Wildlife Research Unit

Principal Investigator: Dr. Sarah Mabey

- Manually processed Nexrad WSR-88D imagery from the National Climatic Data Center for the identification of migratory bird stopover sites in North Carolina and Virginia.

Research Technician, May - July 2004

North Carolina Cooperative Fish and Wildlife Research Unit

Principal Investigator: Dr. Theodore R. Simons

- Collected field data on spatial and temporal variations in Black-throated Blue Warbler and Ovenbird singing rates, Pisgah National Forest, NC.
- Located and monitored nests, sampled singing rates, and sampled vegetation at study sites.

Research Technician, April 2004

Department of Forestry, North Carolina State University

Principal Investigators: Dr. George Hess and Dr. Christopher Moorman

- Conducted songbird surveys along transects in Raleigh and Cary, NC to investigate use of urban greenways by migrating songbirds.

Assistant Produce Team Leader, February 2003 - March 2004

Whole Foods Market, Pittsburgh, PA and Durham, NC

- Ordered and inventoried produce in accordance with department’s target profit margin and implemented regional standards and performance goals.
- Oversaw product merchandising and quality control.
- Supervised and trained 25 team members.

Research Technician, April 2002 - June 2002

Department of Forestry, North Carolina State University

Principal Investigators: Dr. George Hess and Dr. Christopher Moorman

- Performed point count surveys of songbirds in Raleigh and Cary, NC for a study of avian responses to urban greenway characteristics.

Research Technician, June 2000 - July 2002

Mears Fork Corridor Project, Summerfield, NC

Supervisor: Moni Bates

- Created and implemented an annual bird survey protocol for assessing the effectiveness of habitat conservation efforts along Mears Fork Creek in NC.

Volunteer Experience

Audubon Christmas Bird Count, 2004-2019

- Participated in counts annually at Umstead State Park, NC and at Pettigrew State Park in 2019.

Carolina Vegetation Survey, Spring 2010

- Participated in a “pulse” plant survey in the Mayo River State Park in NC.

Painted Bunting Population Assessment and Monitoring Project, Spring 2007

USGS, USFWS, and NC Museum of Natural Sciences

- Performed Painted Bunting surveys at 18 sites in coastal North Carolina.

All Bird Radio Project, Fall 2004 - Spring 2007

USGS Cooperative Fish and Wildlife Research Unit, North Carolina State University

- Performed simulated point count surveys of recorded bird songs for a study of avian point count methods and detection probability.

Powdermill Bird Banding, 2003

Powdermill Avian Research Center, Carnegie Museum of Natural History
Rector, PA

- Banded birds and recorded data for a long-term banding project.

Skills

Programming geospatial data manipulation, analysis, and visualization with Python, R, SQL, Conda, Git, and Jupyter Notebook; Microsoft Office; ArcGIS Desktop; QGIS; SQL Server; SQLite; Spatialite; visual and auditory identification of eastern North American birds; wildlife survey methods; bird banding; ATV operation; nest-searching.

Software

Tarr, N.M., McKerrow, A.J., and M.J. Rubino. 2021. The Wildlife Wrangler. U.S. Geological Survey software release. <https://doi.org/10.5066/P98K7E93>.

Publications

Tarr, N.M. Tarr, N.M. Demonstrating a conceptual model for multispecies landscape pattern indices in landscape conservation. 2019. Landscape Ecology. doi.org/10.1007/s10980-019-00888-7.*

Gergely, K.J., Boykin, K.G., McKerrow, A.J., Rubino, M.J., **Tarr, N.M.**, and Williams, S.G. 2019. Gap Analysis Project (GAP) terrestrial vertebrate species richness maps for the conterminous U.S.: U.S. Geological Survey Scientific Investigations Report 2019–5034, 99 p. doi.org/10.3133/sir20195034.

Duden, A.S., Rubino, M.J., **Tarr, N.M.**, Verweij, P.A., Faaij, A.P.C., and F. van der Hilst. 2018. Impact of increased wood pellet demand on biodiversity in the southeastern US. GCB Bioenergy. doi:10.1111/gcbb.12554.

McKerrow, A.J., **Tarr, N.M.**, Rubino, M.J., and S.G. Williams. 2018. Patterns of species richness hotspots and estimates of their protection are sensitive to spatial resolution. Diversity and Distributions. doi:10.1111/ddi.12779.

Tarr, N.M., Rubino, M.J., Costanza, J., McKerrow, A., Collazo, J., and R. Abt. 2016. Projected gains and losses of wildlife habitat from bioenergy-induced landscape change. GCB Bioenergy. doi: 10.1111/gcbb.12383.

North Carolina Wildlife Resources Commission. 2012. Conservation recommendations for priority terrestrial wildlife species and habitats in North Carolina

Tarr, N.M., Simons, T.R., and K. H. Pollock. 2010. An experimental assessment of vehicle disturbance effects on migratory shorebirds. *Journal of Wildlife Management* 74(8):1776-1783.

Presentations

Tarr, N.M., Rubino, M.J., and Williams, S.J. 2020. Building transparency into species range maps. IALE-North America Annual Meeting. Virtual Remote Conference.

Tarr, N.M., Rubino, M.J., and Williams, S.J. 2019. Transparent, automated screening of species occurrence records for distribution models. The Wildlife Society. Reno, NV.

Tarr, N.M. 2019. Updates and applications of Gap Analysis Project data. South Atlantic Landscape Conservation Cooperative Third Thursday Forum Webinar.

Tarr, N.M. 2019. Diverse effects of biomass production on landscapes and wildlife habitat amount in North Carolina. North Carolina Sandhills Conservation Partnership Meeting, Southern Pines, NC.

Tarr, N.M. and M. Rubino. 2018. USGS Gap Analysis Project habitat maps: Prospects for multi-species, multi-scale assessments of habitat fragmentation. US Regional Association of the International Association for Landscape Ecology, Chicago, IL.

Duden, A., Rubino, M., **Tarr, N.M.**, Verweij, P.A., Faaij, A., and F. van der Hilst. 2018. The impact of wood pellet demand on biodiversity in the southeastern US. US Regional Association of the International Association for Landscape Ecology, Chicago, IL.

Duden, A., Rubino, M., **Tarr, N.M.**, Verweij, P.A., and F. van der Hilst. 2017. Impacts of wood pellet demand on biodiversity in the southeastern US. Ecosystem Services Partnership 9 World Conference, Shenzhen, China.

Tarr, N., J. Costanza, M. Rubino, R. Abt, A. McKerrow, and J. Collazo. 2016. Modeling the effects of biomass production on landscapes and wildlife habitat. US Regional Association of the International Association for Landscape Ecology, Asheville, NC.

Terando, A., Costanza, J., **Tarr, N.**, Abt, R. and M. Rubino. 2015. Modeling the local ecological response to regional landscape and global change forcings: A case study of bioenergy in North Carolina. Poster presentation. American Geophysical Union, San Francisco, CA.

Tarr, N.M. and T.R. Simons. 2015. Vehicle disturbance of nonbreeding shorebirds at South Core Banks, North Carolina. Burlington Bird Club, Greensboro, NC.

Costanza, J., **N. M., Tarr**, M. J. Rubino, A.C. Drew, R. Abt, A. McKerrow, J. Collazo. 2014. Assessing habitat impacts of potential biofuels production scenarios in North Carolina. North American Congress for Conservation Biology, Missoula, MT.

Rubino, M. J., J. Aycrigg, A. McKerrow, **N. M. Tarr**, K. Boykin, and J. Lonneker. 2013. Habitat modeling efforts of the Gap Analysis Program. Poster presentation. North American Congress for Conservation Biology, Missoula, MT.

Tarr, N.M., J. Aycrigg, A. McKerrow, M. J. Rubino, K. Boykin, and J. Lonneker. 2013. Habitat modeling efforts of the Gap Analysis Program. Poster presentation. American Ornithologists' Union and Cooper Ornithological Society, Chicago, IL.

Tarr, N.M., J. Aycrigg, A. McKerrow, M. J. Rubino, K. Boykin, and J. Lonneker. 2012. The Gap Analysis Program: National databases for enhancing bird conservation. North American Ornithological Conference, Vancouver, BC, Canada.

Tarr, N.M. and T.R. Simons. 2009. Vehicle disturbance of nonbreeding shorebirds at South Core Banks, North Carolina. Piedmont Bird Club, Greensboro, NC.

Tarr, N.M. and T.R. Simons. 2008. Vehicle disturbance of nonbreeding shorebirds at South Core Banks, North Carolina. North Carolina Partners in Flight, Conover, NC.

Tarr, N. M., T. R. Simons, and K. H. Pollock. 2008. The effects of off-road vehicle disturbance on nonbreeding shorebird behavior and habitat use. Poster presentation. American Ornithologists' Union and Cooper Ornithological Society, Portland, OR.

Tarr, N. M. and T. R. Simons. 2008. ORV disturbance and fall waterbird migration at Cape Lookout National Seashore, North Carolina. North Carolina Colonial Waterbird Working Group, Swansboro, NC.

O'Connell, A. F., T. R. Simons, A. Waldstein, S. Schulte, and **N. M. Tarr**. 2008. Raccoon ecology and protected species management at Cape Lookout National Seashore, North Carolina. US Geological Survey's New England Disciplines Management Council (NEDMAC) Science Forum Troy, NY.

Tarr, N. M. and T. R. Simons. 2007. ORV disturbance and wintering shorebirds. North Carolina Colonial Waterbird Working Group, Swansboro, NC.

Tarr, N. M. 2001. Surveying the birds of Mears Fork Creek. Piedmont Bird Club, Greensboro, NC.

Peer-reviews

The Wildlife Society Bulletin, 2019

The Journal of Wildlife Management, 2015

Biological Conservation, 2010

Awards

*Best Article Award in Landscape Ecology - Honorable Mention, 2019

Cooper Ornithological Society student membership award, 2007

Best presentation by an M.S. student, Zoology Department of Zoology Graduate Student Symposium, 2008, \$200

American Ornithologists' Union Marcia Brady Tucker Student Travel Award, 2008, \$350

Professional Activities

North Carolina Bird Atlas Science Subcommittee cochairman, 2020 - present

North Carolina Bird Atlas Steering Committee member, 2020 - present

International Association of Landscape Ecologists – North America member, 2018 - present

Wilson Ornithological Society member, 2006 - 2020

The North Carolina Chapter of the Wildlife Society member, 2006 - present

The Wildlife Society member, 2006 – present

TWS National Meeting Field Trip Subcommittee member, 2015 - 2016

NCSU Zoology Graduate Student Association library liaison, 2006 - 2008