
KATHERINA GIEDER
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PROFESSIONAL EXPERIENCE

Research associate (2015-present)

Employer: Virginia Tech, Department of Fish and Wildlife Conservation

- Facilitating communication with researchers at Virginia Tech, USGS, USFWS, and NPS staff to communicate results of a large-scale study to inform coastal management plans in the face of sea-level rise and habitat improvement strategies
- Producing multiple peer-reviewed publications explicitly detailing the results of several research studies that I managed as a PhD graduate, including:
 - Effects of sea-level rise and management decisions on barrier island geomorphology and nesting habitat of the federally-threatened Piping Plover
 - Occupancy and habitat use of the red fox in a barrier island landscape
 - Estimating sika deer density using unique antler characteristics

Climate change species vulnerability data specialist (2015-2016)

Employer: University of Hawaii, Hawaii Cooperative Studies Unit

- Coordinated with researchers across Hawaii to procure data for a Hawaiian native plant species climate change vulnerability assessment model, with the ultimate goal to prioritize Hawaii's native plant species conservation goals
- Managed large database on more than 80 plant variables
- Assisted with the development of an expert elicitation questionnaire to obtain additional data for plant species where research was lacking

Graduate Research Assistant, PhD (2010-2015)

Employer: Virginia Tech, Department of Fish and Wildlife Conservation

- Leading research among USGS, USFWS Northeast Landscape Conservation Cooperative (LCC), NPA, VDGIF, Maryland DNR to develop a decision-based tool for climate change adaptation to conserve and protect ESA threatened Piping Plover habitat on Assateague Island, MD and VA
- Supervised 11 lab technicians and field technicians
- Presented research at scientific meetings and to local community groups in Virginia
- Coordinated the development of a series of Bayesian Network models to predict the effects of climate change to piping plover habitat
- Conducted quantitative and spatial analysis using ArcGIS, Spatial Analyst, Geospatial Modelling Environment, Erdas Imagine, and Google Earth to process landscape characteristic data and uncertainty evaluation

- Tested model sensitivity using cross validation techniques and likelihood estimation in Netica and Matlab programs
- Managed and administered all aspects (budget, permits, technicians/volunteers, field equipment, database, publications) of a camera trapping study to assess mammalian shorebird predator habitat use and occupancy
- Modeled occupancy and habitat associations of red fox on a barrier island using program PRESENCE
- Managed and administered a collaborative project with the NPS investigating sika deer occupancy and density on Assateague Island National Seashore, Maryland.
- Analyzed and evaluated data on sika deer browse intensity and understory cover using R and estimated density in program DENSITY
- Coordinated with the NPS, FL, LA, TX, GA, SC State departments, and municipal agencies to complete federal and state permits, and reports, for a study investigating the effects of the 2010 BP oil spill on piping plovers.
- Collected field data for a long term study investigating ESA threatened Red Knot foraging ecology on the Eastern Shore in VA
- Applied for permits to conduct research and ensured compliance with all relevant laws, rules, regulations, standards, policies, and procedures affecting wildlife research and ESA threatened and endangered species in particular
- **Field work** – set-up and maintained grids of field cameras, used survey grade GPS units to record elevation and walk perimeters of habitat boundaries, surveyed for Red Knots, captured/banded/measured/weighed ESA threatened red knots, and collected sediment samples, conducted habitat assessments using quadrats and PCQ methods

American Oystercatcher Banding Consultant (2010)

Employer: City University of New York, The Graduate Center CUNY

- Coordinated and supervised nest monitoring, re-sighting and banding of American Oystercatchers with various agencies throughout MA including:
 - Mass Audubon
 - MA Division of Fisheries and Wildlife, Department of Conservation and Recreation
 - Manomet Center for Conservation Sciences
 - Nantucket Conservation Foundation
 - USACE, USFWS, NPS
 - Towns of Chatham and Orleans
- Supervised 5 seasonal staff and volunteers on proper oystercatcher banding/capturing techniques
- Entered band re-sights into online database intended to monitor shorebird populations and nest success throughout MA
- Attended and contributed feedback to revisions of the American oystercatcher BNA account
- **Field work** - surveyed American Oystercatchers by foot/boat on remote islands in MA (Elizabeth Islands, Tuckernuck Island), captured/banded/measured/weighed/extracted blood from oystercatcher adults and chicks throughout Cape Cod and islands, including Martha's Vineyard, Nantucket, and Monomoy, mapped nest locations using GPS units and Google Earth

Graduate Research Assistant, MSc (2007-2010)

Employer: Trent University, Biology Department

- Managed all aspects of an independent research project investigating effects of recreational activity on migrating shorebirds at a barrier island in MD and VA
- Coordinated with NPS and USFWS to manage recreational activity and coastal habitat
- Produced scientific and technical publications and presented research at scientific meetings
- Organized logistics for field research including:
 - applying for research and travel grants
 - procuring housing and transportation
 - hiring, training, and supervising field assistants
- Analyzed and evaluated data using ArcMap, R, Statistica, Microsoft Access/Excel
- Applied for permits to conduct research and ensured compliance with all relevant laws, rules, regulations, standards, policies, and procedures affecting wildlife research and ESA threatened and endangered species in particular
- **Field work** - conducted shorebird surveys, behavioural observations, invertebrate sampling, and habitat assessments

Science Horizons Intern (2006-2007)

Intervale Associates Inc.

- Supervised 4 local youths for a peatland restoration project in Cartwright, Labrador and assisted with a species at risk conservation project in Newfoundland, Canada
- Coordinated community outreach to promote Species at Risk Act (SARA) threatened Wolffish (*Anarhichus spp.*) and habitat conservation with first nations communities, fish harvesters, researchers and, federal and municipal agencies
- Spearheaded, promoted, and helped build a local community garden in Cartwright, Labrador
- Co-produced a DVD on Wolffish stewardship and recovery
- Provided editorial input for research projects, grant proposals, and seminars
- Developed public and media relations to promote species and habitat conservation, including articles in local newspapers and regional magazines
- **Field work** - supervised a re-vegetation project on the northernmost end of remote gravel road in Labrador, interviewed local fish harvesters about Wolffish conservation

FUNDED GRANTS (TOTAL \$439, 654)

\$204, 445 US – Sea-level rise hazards and decision support: beach-dependent shorebirds. Funding agency: USGS. Contract period: October 1, 2011 – December 31, 2014.

\$204, 445 US – The effects of sea-level rise and altered storm activity on breeding piping plover habitat along the U.S. East Coast. Funding agency: USFWS Landscape Conservation Cooperative. Contract period: October 1, 2011 – December 31, 2014.

\$30, 764 US – Sika deer occupancy, density, and habitat use on Assateague Island National

Seashore, MD. Funding agency: NPS. Contract period: April 1, 2014 – April 1, 2015.

EDUCATION

Ph.D., Fish and Wildlife Conservation (2011-2015)

Dissertation: Modeling climate change effects to piping plover (*Charadrius melodus*) habitat and mammalian predator population dynamics on Assateague Island, MD and VA

Advisor: Dr. Sarah Karpanty

Virginia Tech, Blacksburg, VA

M.Sc., Environmental & Life Sciences (2007-2010)

Thesis: The effects of off-road vehicles on migrating shorebirds at a barrier island in Maryland and Virginia

Advisor: Dr. Erica Nol

Trent University, Peterborough, Ontario

Graduate Diploma, Environmental Impact Assessment (2005-2007)

Concordia University, Montreal, Québec

B.Sc., Wildlife Biology, Anthropology Minor (2001-2004)

McGill University, Montreal, Québec

HONOURS AND ACHIEVEMENTS

- Virginia Tech Graduate Student Assembly Travel Fund. 2014. **\$130 US**
- Waterbird Society Student Travel Award. 2014. **\$200 US**
- Virginia Tech Graduate Research Assistantship. 2011-present. **\$26,234/yr US**
- National Park Service Travel Grant. 2010. **\$550 US**
- Wilson Ornithological Society Student Travel Award. 2009. **\$450 US**
- Great Circle Institute Travel Award. 2009. **\$775 US**
- National Park Service Travel Grant. 2009. **\$570 US**
- Waterbird Society Student Travel Award. 2008 and 2009. **\$400 US**
- Trent University Research Fellowship, 2007-2009. **\$8,302/yr Can.**
- Trent University Graduate Teaching Assistantship. 2007-2009. **\$8,698/yr Can.**
- Environment Canada Science Horizons Research Internship. 2006. **\$12,000 Can.**

PUBLICATIONS (PEER-REVIEWED)

Conis, E.E., K.D. Gieder. 2016. Predator co-occupancy across a barrier island in MD and VA. In draft.

Gieder, K.D., T.J. Gieder, Z.J. Farris, S.M. Karpanty. 2016. Estimating sika deer (*Cervus nippon*) density using unique antler characteristics. In review.

Gieder, K.D., S.M. Karpanty. 2016. Occupancy and habitat use of the red fox (*Vulpes vulpes*) in a

barrier island landscape. In review.

Gieder, K.D., B.T. Gutierrez, S.M. Karpanty, N.G. Plant, E.R. Thieler, J.D. Fraser, D.H. Catlin. 2016. Quantifying the cascading effects of sea-level rise and management decisions on barrier island geomorphology and nesting habitat of the federally-threatened Piping Plover (*Charadrius melodus*). In review.

Gieder K.D., S.M. Karpanty, J.D. Fraser, D.H. Catlin, B.T. Gutierrez, N.G. Plant, A.M. Turecek, E.R. Thieler. 2014. A Bayesian network approach to predicting nest presence of the federally-threatened Piping Plover (*Charadrius melodus*) using barrier island features. Ecological modelling 276:38-50. <http://www.sciencedirect.com/science/article/pii/S0304380014000398>

SELECTED PRESENTATIONS

Oral Presentation. 2014. Gieder, K.D, B.T. Gutierrez, S.M. Karpanty, N.G. Plant, E.R. Thieler, J.D. Fraser, D.H. Catlin. Quantifying the effects of sea-level rise and management decisions on piping plovers (*Charadrius melodus*). The Waterbird Society Annual Meeting, La Paz, Mexico.

Oral Presentation. 2013. Gieder, K.D., S.M. Karpanty, J.D. Fraser, D.H. Catlin, and S.J. Ritter. Modeling effects of sea-level rise and altered storminess on barrier island habitat using historical Piping Plover nesting data. Wilson Ornithological Society annual meeting. Williamsburg, VA.

Poster Presentation. 2012. Gieder, K.D., S.M. Karpanty, J.D. Fraser, and D.H. Catlin. Effects of sea-level rise and altered storminess on Piping Plover (*Charadrius melodus*) habitat along the U.S. Atlantic Coast. Office of Geographical Information Systems (OGIS) symposium. Blacksburg, VA.

Oral Presentation. 2011. Gieder, K.D. Tight squeeze: the surprising resilience of migrating shorebirds to intense recreational activity on a barrier islands in MD. New River Valley Bird Club, Blacksburg, VA.

Poster Presentation. 2011. Gieder, K.D., S.M. Karpanty, J.D. Fraser, and D.H. Catlin. 2011. Effects of sea-level rise and altered storminess on Piping Plover habitat along the U.S. Atlantic and Gulf Coasts. The Waterbird Society 35th Annual Meeting. Annapolis, MD.

Oral Presentation Forgues, K.D. and E. Nol. 2010. The effects of off-road vehicles on migrating shorebirds at a barrier island in Maryland and Virginia. Oral presentation, Assateague Island National Seashore. Berlin, Maryland.

Oral Presentation Forgues, K.D. and E. Nol. 2009. The effect of off-road vehicles on migrating shorebirds. Oral presentation. Western Hemisphere Shorebird Group Conference. Mazatlan, Mexico.

Oral Presentation Forgues, K.D. and E. Nol. 2008. Making the connection between shorebirds and off-road vehicles. Oral presentation. The Waterbird Society Annual Meeting. South Padre Island, TX.

PROFESSIONAL ACTIVITIES

Associations

- Association of Field Ornithologists (AFO)
- American Ornithologists Union (AOU)
- Wilson Ornithological Society (WOS), award sponsored
- The Waterbird Society
- The Wildlife Society

Reviews

- Grants. 2015. Virginia Tech Graduate Research Travel Grant Fund.
- Abstracts. 2014. Virginia Tech Graduate Research Development Program.
- Paper. 2014. Ecological Modelling Journal.
- Presentation Judge. 2012. Virginia Tech 28th Annual Graduate Student Association Research Symposium.
- Paper. 2011. W. F. Thompson Award presented by the American Institute of Fisheries Research Biologists.

SELECTED TECHNICAL REPORTS, BOOK CHAPTERS, AND POPULAR PRESS

Gieder, K.D. 2015. The changing face of diversity in European higher education. pp. 19-21 in Shanks JD (Ed.) Global perspectives future of education: preparing for change. GPP Manual 2014. Universität Basel and Virginia Polytechnic Institute and State University.

Gieder, K.D. and S.M. Karpanty. 2015. Informing predator management at Assateague Island National Seashore. Investigator's Annual Report to Assateague Island National Seashore: project overview and summary of findings for data collected in summer 2014.

S.M. Karpanty, K.D. Gieder, J.D. Fraser, and D.H. Catlin. 2014. Assessing the Impacts of Sea-Level Rise on Piping Plovers at Assateague Island, Virginia and Maryland. Final report submitted to the USFWS.

Gieder, K.D. and S.M. Karpanty. 2014. North Atlantic Landscape Conservation Cooperative: Tools to Predict Effects of Accelerating Sea-Level Rise on Piping Plovers. Investigator's Annual Report to Assateague Island National Seashore: project overview and summary of findings for data collected in summer 2013.

Gieder, K.D. and S.M. Karpanty. 2012. Understanding the effects of climate change on breeding piping plover habitat and assessing the effects of possible climate change mitigation strategies on that habitat. Report to Virginia Department of Game and Inland Fisheries.

Forgues, K.D., and K. Blanchard. 2007. Wolffish: a balance of life. DVD storyboard. Intervale Associates Inc. Newfoundland and Labrador.

Forgues, K.D., and K. Blanchard. 2007. They're ugly but they are worth more than you think –

Wolffish: a new DVD, underwater scenes and comments from fish harvesters. The Navigator 10(3):40-42.

SKILLS AND CERTIFICATIONS

Computer: Microsoft Access, Excel, Word, PowerPoint, ArcGIS, R, Matlab, Netica, Program MARK, PRESENCE, Program DENSITY

Languages: English, French

Motor vehicle operation: Class D license, automatic and manual transmission, 4WD, off-road, ATV, boat (<22 ft.)

Training: Institutional Animal Care and Use Committee (IACUC) 2015, Canadian Red Cross Certification in First Aid/CPR 2004
