

Curriculum Vitae
Sara L. Zeigler

Current Affiliation: United States Geological Survey, Woods Hole Coastal and Marine Science Center, Woods Hole MA (Mendenhall Fellow)

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SUPERVISOR CONTACTS FOR REFERENCES

1. Dr. Robert Thieler; USGS Woods Hole Coastal and Marine Science Center, 384 Woods Hole Rd, Woods Hole MA 02543; rthieler@usgs.gov; 508-457-2350
2. Dr. Jeffrey Walters; Department of Biological Sciences, Virginia Tech, 105 Perry St, Blacksburg VA 24061; jrwalt@vt.edu; 540-231-3847
3. Dr. Sarah Karpanty; Department of Fish and Wildlife Conservation, Virginia Tech, 310 West Campus Drive, Blacksburg VA 24061; karpanty@vt.edu; 540-231-4586

EDUCATION

2011	Ph.D.	University of Maryland, Department of Geographical Sciences (College Park, MD).
2006	MSc.	University of Maryland, Sustainable Development and Conservation Biology (College Park, MD).
2004	B.A.	Franklin and Marshall College, Environmental Science (Lancaster PA). Cum laude; Honors in Dept. of Earth and Environment.

POST-DOCTORAL TRAINING

2014 – present	USGS Mendenhall Fellow; <i>Forecasting the effects of sea-level rise on piping plover habitat and utilization</i> . Project start data: June 2014. Advised by Drs. E. Robert Thieler, Nathaniel Plant (USGS), and Sarah Karpanty (Virginia Tech).
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2011 – 2014 *Decision support frameworks for the conservation of red-cockaded woodpeckers*. Project start date: January 2011. Advised by Dr. Jeffrey Walters, Virginia Tech.

APPOINTMENTS

2014 – present	Mendenhall Postdoctoral Fellow	US Geological Survey
2013 – present	Member and Consulting Program Officer	IUCN Conservation Breeding Specialist Group
2011 – 2014	Postdoctoral Researcher	Virginia Tech (Dept. of Biological Sciences)
2010	Ann G. Wylie Dissertation Fellow	University of Maryland (Dept. of Geographical Sciences)
2006 – 2010	Graduate Research Assistant	University of Maryland (Dept. of Plant Science and Landscape Architecture)
2007	Graduate Research Fellow	Smithsonian National Zoological Park (Conservation Biology Institute)
2005	Intern	Smithsonian National Zoological Park (Conservation Biology Institute)
2004	Intern	Smithsonian National Zoological Park (Conservation Biology Institute – GIS Lab)
2001 – 2004	Undergraduate Research Assistant	Franklin and Marshall College (Dept. of Earth and Environment)

RESEARCH INTERESTS AND EXPERIENCE

Interests:

- The interface between landscape ecology and population biology – how do landcover change, natural and anthropogenic disturbances, and habitat

- availability/configuration impact species-specific population dynamics and extinction risk?
- Conservation biology and extinction risk
 - Landscape ecology, movement ecology, and habitat connectivity in a range of terrestrial and aquatic environments
 - Population biology and ecology, especially for small populations and threatened/endangered species
 - Movement, population, and community ecology in dynamic landscapes
 - Development of tools and frameworks that inform conservation-related decision-making
 - Improving communication and interaction between scientists and conservation practitioners

Select Major Research Programs:

Forecasting the effects of sea-level rise on piping plover habitat and utilization

USGS (Woods Hole)

2014 – present

Co-PI/Postdoc

- Project overview: Use of a series of linked Bayesian networks to model sea-level rise, barrier island/beach geomorphology, and habitat utilization by piping plovers and other shorebirds to determine how global change will affect these systems.
- Major duties:
 - Management and training of over 30 federal, state, and private partners at over 60 field sites as they collect data using a mobile web application (iPlover) developed as part of this project.
 - Use of iPlover data to predict piping plover habitat suitability at a variety of sites along the US Atlantic Coast.
 - Acquire and process data from remote sources (lidar, aerial photography, satellite imagery, etc.)
 - Collaboration with other project members in integrating plover-related data and models with barrier island and sea-level rise models.
 - Writing project-related publications and reports
- Skillsets required: Advanced geospatial techniques (ArcGIS, Lidar Fusion); statistical analysis (Netica, program R, MatLab); strong inter-personal and management skills.
- Secured \$25,000 (plus Mendenhall salary and benefits) over two years through a USGS Mendenhall postdoctoral fellowship.
- To date: 3 manuscripts in advanced stages of preparation, several more anticipated by project end.

Movement cues and drivers for dispersing red-cockaded woodpeckers

Virginia Tech

2014 – present

Co-PI

- Project overview: Use over 30 years of demographic and movement data for red-cockaded woodpeckers (RCWs) to determine what, if any, social or landscape

- cues RCWs use when deciding (i) whether to disperse from natal territories, (ii) what direction and pathways to take during dispersal, (iii) what neighboring territories to visit, (iv) which new territory to ultimately settle in.
- Major duties:
 - Initial conceptualization and development of project questions and ideas.
 - Processing and organization of demographic/movement datasets from multiple previous studies, spatial datasets of study areas.
 - Collaboration with other PIs and post-docs at the University of Maryland.
 - Will contribute to publications
 - Skillsets required: Advanced geospatial techniques (ArcGIS); use of Microsoft Access.

Impacts of climate change on management of red-cockaded woodpeckers

Virginia Tech

2013 – present

Co-PI/Postdoc

- Project overview: Modify an existing decision support framework to model landscape change at Fort Bragg (Army) and Marine Corps Base Camp Lejeune (MCBCL) and its effect on populations of red-cockaded woodpeckers (RCWs). Integrate likely future affects of climate change on RCWs indirectly (through interactions with the landscape) and directly (through changes in life history and demography).
- Major duties:
 - Develop and validate separate state-and-transition models of succession and disturbances for long-leaf pine ecosystems at Fort Bragg and MCBCL.
 - Integrate landscape model with existing model of RCW population dynamics.
 - Collect and process GIS layers to represent landscapes at study sites.
 - Handle all Department of Defense reporting requirements.
 - Write project-related publications.
- Skillsets required: Advanced geospatial techniques (ArcGIS); population modeling (species-specific population model); strong written and oral communication skills.
- Helped to secure \$204,763 as a co-PI in support of this work through DCERP funding.

Metamodels for transdisciplinary analysis of wildlife population dynamics

Several participating institutions

2004 – present

Co-PI/Research Assistant

- Project overview: Large research collaboration network developing discipline-specific modules that are capable of operating as stand-alone programs or as a series of linked models to investigate complex ecological and social systems for conservation. Modules intended for use with widely used conservation programs like RAMAS and Vortex.
- Major duties:

- Worked in several capacities for this project, including undergraduate research assistant, intern, and project chair.
- Conceptualized and/or developed several modules (e.g., a spatial module that models animal movement and habitat use, a social module to incorporate complex social interactions in population viability analysis)
- Project chair, organizing all research, publication writing, and reporting related to one of 4 case studies within this project.
- Ran workshops for module development
- Skillsets required: Advanced geospatial techniques, strong written and oral communication skills, strong inter-personal and management skills.
- Helped to secure \$490,905 as a primary collaborator in an NSF Research Collaboration Network grant.
- Lead or co-author on 1 published paper, 3 manuscripts in advanced stages of preparation.

Developing dynamic reference models and a decision support framework for southeastern ecosystems

Virginia Tech

2011 – 2014

Co-PI/Postdoc

- Project overview: Development of a decision support framework for the conservation of red-cockaded woodpeckers (RCW) at Eglin Air Force Base. Framework consists of a state-and-transition model of succession and disturbance in a longleaf pine ecosystem and a species-specific spatially explicit population model. (This is a larger project, but other aspects of project led and carried put by collaborators).
- Major duties:
 - Constructed the state-and-transition landscape model, which included the collection of expert opinion, quantitative data, and information from the published literature to inform this model. Validated this model with GIS-based data that I processed for this purpose (data originally collected by Eglin staff members).
 - Conceptualized how the landscape model would interact with an existing RCW population model such that habitat availability and change would impact RCW survival, reproduction, and movement. Worked closely with the project programmer to implement this integration.
 - Analyzed a 30+ year dataset of RCW demography and movement and used this information to validate the RCW population model. Worked closely with the project programmer to troubleshoot and correct aspects of the program based on validation.
 - Conceptualized, simulated, and analyzed several scenarios to determine how landscape change impacts the RCW population at Eglin.
 - Handled all Department of Defense reporting requirements.
 - Wrote final project report (sections relevant to the RCW-part of the project) and publication manuscripts.

- Skillsets required: Advanced geospatial skills (ArcGIS, ST-Sim); population modeling (in toolbar in ArcGIS); statistical analysis (program R); strong written and oral communication skills; inter-personal management.
- 2 manuscripts in advanced stages of preparation; 2 manuscripts in earlier stages of preparation.

Forest loss and fragmentation in southern Bahia, Brazil: Implications for the extinction risk of golden-headed lion tamarins

University of Maryland

2005 – 2011

Principal Investigator

- Project overview: Investigation of how habitat availability and connectivity have changed for golden-headed lion tamarins in the Atlantic forest of Brazil and how those changes impact the species' extinction risk.
- Major duties:
 - Collected, processed, and analyzed Landsat imagery for several dates.
 - Modeled habitat connectivity using concepts from circuit theory and graph theory.
 - Conducted population viability analysis for the species, considering several scenarios representing current and future threats.
- Skillsets required: Advanced geospatial skills (Envi, ArcGIS, Conefor Sensinode, Circuitscape); population modeling (Vortex, RAMAS GIS, Leslie matrices).
- Secured \$19,200 as principle investigator to conduct and to present this research.
- 6 papers published from this work (5 first-author).

A Bioinformatics approach to studying plants listed under the US Endangered Species Act

University of Maryland

2006 – 2011

Research Assistant

- Project overview: This project broadly used a database approach to study how conservation knowledge about well-studied species can be used to inform conservation efforts for lesser-known species.
- Major duties:
 - Populated database with information from recovery plans for every plant and animal species listed under the US Endangered Species Act.
 - Created and populated a database describing population viability analysis or Leslie/Lefkovitch matrices for every plant species in the published literature.
 - Responsible for writing publications
- First or co-author on 2 papers published from this work.

Habitat availability and networks for endangered megafauna in Sumatra, Indonesia

Franklin and Marshall College

2001 – 2004

Principal Investigator

- Project overview: Evaluated habitat availability and connectivity within and between protected areas in Sumatra, Indonesia for tigers, elephants, and rhinoceros.
- Major duties:
 - Collected and processed spatial data
 - Determined habitat needs and drivers of habitat suitability for study species based on the published literature.
 - Developed species-specific models of habitat suitability for focal species to delineate corridors for movement.
 - Determined carrying capacity given available habitat for Sumatran tigers.
- Skillsets required: Advanced geospatial skills (ArcGIS)
- Secured \$13,300 in support of this research as an undergraduate principle investigator.

Insect diversity in an agricultural mosaic in south-central Pennsylvania

Franklin and Marshall College

2001

Co-PI/Research Assistant

- Project overview: Investigated differences in insect species diversity within and at the edges of major habitats across an agricultural landscape.
- Major duties:
 - Sampled and identified insects (to genus) over the course of 3 months.
 - Analyzed and presented data
- Secured \$3,200 in support of this research as an undergraduate principle investigator.

TEACHING EXPERIENCE

2015	<i>Conservation Biology</i> (undergraduate) Guest Lecturer, Virginia Tech
2014	<i>Vertebrate Dispersal</i> (graduate) Guest Lecturer, Virginia Tech
2014	<i>Landscape Ecology</i> (graduate) Guest Lecturer, Virginia Tech
2008	<i>Biogeography</i> (undergraduate) Teaching Assistant, University of Maryland, College Park
2005	<i>Project Cycle Management for Conservation Practitioners</i> (professionals) Co-developed curriculum, University of Maryland, College Park
2005	<i>Biology for Non-Science Majors</i> (undergraduate) Teaching Assistant, University of Maryland, College Park

- 2005 ***Geographical Information Systems for Conservation Practitioners***
(professionals)
Teaching Assistant, Conservation Breeding Specialist Group, Apple Valley MN
- 2005 ***Geographical Information Systems for Wildlife Managers***
(professionals)
Teaching Assistant, Smithsonian Conservation and Research Center, Front Royal VA
- 2004 ***Environmental Resources and Geographical Information Systems***
Teaching Assistant, Franklin and Marshall College
- 2002 ***Chemistry I***
Teaching Assistant, Franklin and Marshall College

FUNDING AND FELLOWSHIPS

Zeigler, SL, ER Thieler, NG Plant, BT Gutierrez, C McGowan, DH Catlin, D Gibson, JD Fraser, SM Karpanty. 2017 – 2020. A decision support portal for evaluating the effects of development, restoration, and climate change on shorebird overwintering and nesting habitat. In review – NOAA Restore Act Science Program. \$1,295,096.49 requested.

Catlin, DH, SL Zeigler, D Gibson, JD Fraser, SM Karpanty, BT Gutierrez, ER Thieler, NG Plant, C McGowan. 2017 – 2020. The effects of restoration, human use, and climate change on shorebirds, their invertebrate prey, and their habitats. In review – NOAA Restore Act Science Program. \$5,000,000 requested.

Thieler, ER, N Plant, S Karpanty, S Zeigler (Mendenhall Fellow). 2014-2016. Forecasting the effects of sea-level rise on piping plover habitat and utilization. U.S. Geological Survey, Mendenhall postdoctoral fellowship program. \$25,000 plus Mendenhall salary and benefits.

Walters, JR and SL Zeigler. 2012-2016. Impacts of climate change on management of red-cockaded woodpeckers at Marine Corps Base Camp Lejeune. Department of Defense, Strategic Environmental Research and Development Program, Defense Coastal/Estuarine Research Program. \$204,763.

Lacy, RC and HR Akcakaya. 2012-2017. *Using metamodels to enable transdisciplinary research for the study of dynamic biological systems under global change*. National Science Foundation. \$490,905. (**not listed as a “PI”, but officially listed as a “collaborator” on the grant with significant participation in grant and project development).

Zeigler, SL. 2010. *Forest loss and fragmentation in southern Bahia, Brazil: Implications for the extinction risk of golden-headed lion tamarins*. Ann G. Wylie Dissertation Fellowship, University of Maryland. \$10,800.

Zeigler, SL. 2010. *Forest loss and fragmentation in southern Bahia, Brazil: Implications for the extinction risk of golden-headed lion tamarins*. Jacob K. Goldhaber Travel Grant, University of Maryland. \$500.

Zeigler, SL. 2010. *Forest loss and fragmentation in southern Bahia, Brazil: Implications for the extinction risk of golden-headed lion tamarins*. NASA-MSU Professional Enhancement Award, NASA and the International Association of Landscape Ecologists. \$700.

Zeigler, SL. 2008. *Forest loss and fragmentation in southern Bahia, Brazil: Implications for the extinction risk of golden-headed lion tamarins*. Exploration and Field Research Grant, The Explorer's Club Washington Group. \$1700.

Zeigler, SL. 2007. *Forest loss and fragmentation in southern Bahia, Brazil: Implications for the extinction risk of golden-headed lion tamarins*. Graduate Research Fellowship, Smithsonian Institution. \$5,500.

Zeigler, SL. 2006. Organization for Tropical Studies study abroad grant, University of Maryland. \$6,400.

Zeigler, SL. 2005. *Conservation project cycle management for conservation practitioners*. Jacob K. Goldhaber Travel Grant, University of Maryland. \$500.

Zeigler, SL. 2004. *Habitat availability and networks for endangered megafauna in Sumatra, Indonesia*. Hackman Research Fellowship, Franklin and Marshall College. \$3,200.

Zeigler, SL. 2003. *Habitat availability and networks for endangered megafauna in Sumatra, Indonesia*. Student Travel Award, Franklin and Marshall College. \$500.

Zeigler, SL. 2003. *Habitat availability and networks for endangered megafauna in Sumatra, Indonesia*. Mayaud Summer Research and Travel Award, Franklin and Marshall College. \$3,200.

Zeigler, SL. 2003. *Habitat availability and networks for endangered megafauna in Sumatra, Indonesia*. Bonchek Research Fellowship, Franklin and Marshall College. \$3,200.

Zeigler, SL. 2002. *Habitat availability and networks for endangered megafauna in Sumatra, Indonesia*. Hackman Research Fellowship, Franklin and Marshall College. \$3,200.

Zeigler, SL. 2001. *Insect diversity in an agricultural mosaic in south-central Pennsylvania*. Hackman Research Fellowship, Franklin and Marshall College. \$3,200.

Zeigler, SL. 2000. John Marshall Fellowship, Franklin and Marshall College. \$33,000 (included \$3,000 for research).

Anticipated Grant Applications for Fall 2015

Catlin, DH, SL Zeigler, JD Fraser, SM Karpanty. The effect of altered disturbance regimes on early successional organisms. Proposal to be submitted to the NSF LTREB program.

Zeigler, SL and B Brown. Metacommunity formation and stability in a dynamic “landscape”. Proposal to be submitted to the NSF Integrative Organismal Systems program.

OTHER AWARDS AND HONORS

2008	Outstanding Graduate Teaching Assistant Award	University of Maryland
2004	Departmental Honors (Earth and Environment)	Franklin and Marshall College
2003	Pi Mu Epsilon Mathematics Honor Society	Franklin and Marshall College
2002	Skull and Crown Sophomore Honor Society	Franklin and Marshall College

ACADEMIC AND PROFESSIONAL SERVICES

Ad hoc Reviewer:

Forest Ecology and Management
Landscape Ecology
Florida Field Naturalist

Professional Societies:

Geological Society of America
International Association for Landscape Ecology
Association for Tropical Biology and Conservation
Society for Conservation Biology

Symposia Leadership and Meeting Facilitation:

2015	Organizing committee	Western Hemisphere Shorebird Group annual meeting (Eastern Shore, VA)
2014	Chair	Modeling Social Species workshop (Virginia Tech, Blacksburg VA)
2013	Facilitator	Yellow-tailed wooly monkey conservation workshop (hosted by Rare, facilitated by CBSG; Moyobama, Peru)
2012	Facilitator	Western pond turtle conservation workshop (hosted by Woodland Park Zoo, facilitated by CBSG; Olympia, WA)
2012	Facilitator	Jaguar Recovery Team Meeting (hosted by USFWS, facilitated by CBSG; Tucson, AZ)
2011	Co-chair	Golden Head Lion Tamarin Research in the 21 st Century: Recent Advances and Potential Areas of Future Research. (Ilheus, Brazil)

Other Service Activities:

2015	Virginia Tech Chapter of the Wildlife Society	Volunteered as quiz bowl judge
2015	Virginia Tech	Search committee for postdoctoral candidate

PUBLICATIONS

Peer-Reviewed Literature:

Zeigler SL, ER Thieler, BT Gutierrez, NG Plant, M Hines, J Fraser, DH Catlin, SM Karpanty. In review. Smartphone technologies and Bayesian networks to assess shorebird habitat selection. *Wildlife Society Bulletin*.

Zeigler, SL, DH Catlin, M Bomberger-Brown, JD Fraser, L Dinan, K Hunt, JG Jorgensen, and SM Karpanty. In press. Effects of climate change and anthropogenic modification on a disturbance-dependent species in a large riverine system. *Ecosphere*.

- ER Thieler, LA Winslow, MK Hines, JS Read, JI Walker, **S L Zeigler**. In press. Leveraging low-cost mobile platforms for large-scale shorebird science: application to biogeomorphic attribute classification of *Charadrius melodus* nest sites. *PLoS ONE*
- Catlin, DH, M Bomberger-Brown, L Dinan, JD Fraser, KL Hunt, J Jorgensen, and **SL Zeigler**. 2016. Metapopulation viability of an endangered shorebird depends on man-made habitats: piping plovers and prairie rivers. *Movement Ecology*. 4(6): 1-15.
- Zeigler, S** and JR Walters. 2014. Population models for social species: lessons learned from models of red-cockaded woodpeckers (*Picoides borealis*). *Ecological Applications*. 24(8): 2144-2154.
- Zeigler, S** and WF Fagan. 2014. Transient windows of connectivity. *Movement Ecology*. 2(1): 1-10.
- Lacy, RC, PS Miller, PJ Nyhus, JP Pollak, BE Raboy, **SL Zeigler**. 2013. Metamodels for transdisciplinary analysis of wildlife population dynamics. *PLoS ONE*. 8(12): e84211
- Zeigler, S**, JP Che-Castaldo, MC Neel. 2013. Actual and potential use of population viability analysis in recovery of plant species listed under the US Endangered Species Act. *Conservation Biology*. 27(6): 1265-1278.
- Zeigler, S**, B Raboy, and K De Vleeschouwer. 2013. Assessing extinction risk in small metapopulations of golden-headed lion tamarins (*Leontopithecus chrysomelas*) in Bahia, Brazil. *Biotropica*. 45(4): 528-534.
- Zeigler, S**. 2013. Predicting responses to climate change require all life-history stages. *Journal of Animal Ecology* (invited In Focus article). 82 (1): 3-5.
- Zeigler, S**. 2012. Identifying and prioritizing forest patches key for the survival of the golden-headed lion tamarin (*Leontopithecus chrysomelas*). *Neotropical Primates*. 19 (1): 28-33.
- Raboy, BE, KM De Vleeschouwer, **SL Zeigler**. 2012. Using functional connectivity and flow models to prioritize areas for reforestation in severely fragmented regions of the golden-headed lion tamarin (*Leontopithecus chrysomelas*). *American Journal of Primatology*. 74: 34-34.
- Raboy, BE, LG Neves, **SL Zeigler**, and LC Oliveira. 2011. Occurrences of *Leontopithecus chrysomelas* above 500 meters in southern Bahia, Brazil and implications for conservation planning. *Primate Conservation*. 26: 1-7
- De Vleeschouwer, K, L Oliveira, B Raboy, N Raghunathan, and **S Zeigler**. 2011. Golden-headed lion tamarin research in the 21st century: Recent advances and potential areas of future research. *Neotropical Primates*. 18 (2): 72-76.

Zeigler, S, MC Neel, L Oliveira, BE Raboy, and WF Fagan. 2011. How conspecific and heterospecific attraction affect functional connectivity. *Biodiversity and Conservation*. 20 (12): 2779-2796.

Zeigler, S, WF Fagan, R DeFries, and B Raboy. 2010. Identifying important forest patches for the long-term persistence of the endangered golden-headed lion tamarin. *Tropical Conservation Science*. 3(1): 63-77

Lynch, H, **S Zeigler**, L Wells, JD Ballou, and WF Fagan. 2010. Drivers of survivorship shape and its use in the estimation of maximum population growth rates. *Ecological Applications*. 20(8): 2334-2345.

Raboy, BL Neves, **S Zeigler**, N Saraiva, N Cardoso, G Santos, J Ballou, and P Leimgruber. 2010. Strength of habitat and landscape metrics in predicting golden-headed lion tamarin presence or absence in forest patches. *Biotropica*. 40(3): 388-397.

Publications Currently In Advanced Stages of Preparation:

Zeigler, SL, C Sanderson, JR Walters, and K Alexander. In Prep. You can't always get by with a little help from your friends: consequences of social behaviors on a changing planet. Target: *Frontiers in Ecology and Evolution*

Walters, JR, **SL Zeigler**, R McGregor, P Baldassarro, K Convery, and J Priddy. In Prep. A user-friendly interface for modeling population dynamics and identifying critical habitat for an endangered species. Target: *The Journal of Wildlife Management*.

SL Zeigler, R McGregor, P Baldassarro, K Convery, J Priddy, and JR Walters. In Prep. The impacts of new range construction on a red-cockaded woodpecker population on Fort Benning, Georgia. Target: *The Journal of Wildlife Management*.

Official Reports and Theses:

Hiers, JK, A Barnett, LK Kirkman, LL Smith, LM Conner, **SL Zeigler**, M Mack, JR Walters, and RJ Mitchell. 2015. *Developing dynamic reference models and a decision support framework for southeastern ecosystems*. Final Report for SERDP Project RC 1696. US Department of Defense.

Pramuk, J, F Koontz, M Tirhi, **S Zeigler**, K Schwartz, and P Miller (eds.) 2013. *The Western Pond Turtle in Washington: a Population and Habitat Viability Assessment*. IUCN/SSC Conservation Breeding Specialist Group, Apple Valley, MN.

Zeigler, SL. 2011. Forest loss and fragmentation in southern Bahia, Brazil: Implications for the extinction risk of golden-headed lion tamarins. PhD dissertation. University of Maryland, Department of Geographical Sciences.

Zeigler, SL. 2006. The effectiveness of the Population and Habitat Viability Assessment workshop process in stimulating conservation action: Lessons from multi-year workshops. Scholarly paper. University of Maryland, Conservation Biology and Sustainable Development Program.

Zeigler, SL. 2004. Constructing a habitat network in Sumatra, Indonesia using a focal species approach: Implication for endangered wildlife. Undergraduate Thesis. Franklin and Marshall College, Department of Earth and Environment.

* PHVA reports currently in preparation for the yellow-tailed woolly monkey and jaguar workshops.

SELECTED ACADEMIC PRESENTATIONS AND INVITED SEMINARS

Zeigler, SL. 2015. Conservation in a Brave New World: protecting piping plovers threatened by altered disturbance regimes. Invited seminar for the Department of Earth and Environment at Franklin and Marshall College, 27 March 2015, Lancaster, PA.

Zeigler SL, S Stippa, M Hines, B Gutierrez, K Gieder, S Karpanty, N Plant, ER Thielier, D Catlin, JD Fraser. 2015. An interdisciplinary framework for the conservation of species threatened by sea-level rise. Paper presented at the annual meeting of the Virginia Coast Avian Partnership, 10 March 2015, Melfa VA.

Zeigler, SL, DH Catlin, KL Hunt, LR Dinan, M Bomberger-Brown, JG Jorgensen, MJ Friedrich, JD Fraser, KL Davis, and SM Karpanty. 2014. Stable sources in unstable environments - Are source habitats consistently important for a piping plover (*Charadrius melodus*) metapopulation in a dynamic landscape? Paper presented at the 38th annual meeting of the Waterbird Society, November 5th-7th, La Paz, Mexico.

Lacy, R, P Miller, P Nyhus, JP Pollak, B Raboy, and **S Zeigler.** 2013. Metamodels: Connecting models and people for inclusive, integrated, transdisciplinary analysis of populations facing multiple threats. Talk presented at the 26th International Congress for Conservation Biology, 21-25 July 2013, Baltimore MD.

Zeigler, S, J Walters, R Mitchell, JK Hiers. 2013. A novel linked landscape – demographic model to connect systems, disciplines, and stakeholders for the conservation of red-cockaded woodpeckers. Poster presented at the 26th International Congress for Conservation Biology, 21-25 July 2013, Baltimore MD.

Zeigler, S. 2013. Models for conservation: How simulation tools can bridge the gap between science and management for endangered species conservation. Invited seminar for the Department of Biology, University of Toronto.

Zeigler, S. 2013. Models for conservation: How simulation tools can bridge the gap between science and management for endangered species conservation. Invited seminar for the Department of Fish and Wildlife Conservation, Virginia Tech.

Zeigler, S. 2011. Forest loss and fragmentation in southern Bahia, Brazil: Implications for the extinction risk of golden-headed lion tamarins. Invited seminar for the Department of Biological Sciences, Virginia Tech.

Zeigler, S, WF Fagan, R DeFries, BE Raboy. 2010. Identifying important forest patches for the long-term persistence of the endangered golden-headed lion tamarin (*Leontopithecus chrysomelas*). Poster presented at the 2010 Association of American Geographers annual meeting, 14-18 April 2010, Washington, DC.

Zeigler, S, M Neel, L Oliviera, B Raboy, and W Fagan. 2010. Conspecific and heterospecific attraction in the assessment of functional connectivity. Poster presented at the 2010 US-IALE annual meeting, 5-9 April 2010, Athens, Georgia.

Invited Speaker: 2009 Annual Dinner for the Explorer's Club of Washington DC.

TECHNICAL SKILLS AND ABILITIES

- Image processing and analysis: ERDAS Imagine; ENVI; ArcGIS; Land Change Modeler
- Demographic/population modeling: RAMAS; Vortex; HexSim
- Landscape modeling: ST-Sim; Conefor Sensinode; Circuitscape
- Statistical modeling and analysis: R
- Bayesian networks: Netica
- Proficient in Microsoft Windows applications
- Exceptional written and oral communication skills
- High physical fitness, ability to work in adverse/difficult field conditions

OTHER INTERESTS AND ACTIVITIES

Competitive cyclist (category 2); Ironman triathlete; adventure racing