

## Erin Leigh Heller

**Permanent Address:**

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**Current Address:**

Virginia Tech  
Dept. of Fish and Wildlife Conservation  
Cheatham Hall Room 124  
elheller@vt.edu

**EDUCATION**
**Virginia Polytechnic Institute and State University (Virginia Tech)**

Blacksburg, VA 24061  
PhD Fish and Wildlife Conservation Expected: August 2020  
National Science Foundation Graduate Research Fellow/Cunningham Fellow  
Current GPA: 4.00

**Old Dominion University**

Norfolk, VA 23529  
Masters of Science in Biology: December 2015  
Thesis: The effects of urbanization on tick parasitism rates in birds of coastal southeastern Virginia  
Graduate Research Assistant and Graduate Teaching Assistant  
Overall GPA: 4.00

**Virginia Polytechnic Institute and State University (Virginia Tech)**

Blacksburg, VA 24061  
Bachelor of Science: May 2011  
Major: Wildlife Science; Minors: Biology, Spanish  
Undergraduate Thesis: Habitat management plan for the golden-winged warbler; Dr. Dean Stauffer  
Overall GPA: 3.95 (Summa Cum-Laude, Honors Scholar); In Major GPA: 3.96

**Universidad de Guanajuato, Study Abroad**

Guanajuato, Mexico (July-August 2009)

- Studied Advanced Spanish Business and Advanced Hispanic Literature
- Participated in a full-immersion program and lived with a Mexican family

**RELATED EXPERIENCES**
**Doctoral Student, Climate Change and Red Knots, Virginia Tech**

Blacksburg, Virginia 24061  
Working for Drs. Sarah Karpanty/Jim Fraser, Department of Natural Resources and Conservation  
August 2015-present

- Manage/organize 10-year data set on red knots in Virginia
- Create a dissertation research project to continue sampling red knots and other shorebird species on Virginia's barrier islands
- Determine what relationships there are among red knots, their prey, and various climate change and island geomorphological metrics
- Conduct field research during red knot spring migration
- Mentor undergraduate students

**Graduate Research Assistant, Bird/Tick Interactions, Old Dominion University**

Norfolk, VA 23529  
Worked for Dr. Eric Walters, Department of Biological Sciences  
July 2012-August 2014

- Mist-netted birds throughout Hampton Roads, VA year-round
- Banded and drew blood from birds (subpermit holder under Eric Walters' Master permit)
- Collected ticks off birds to analyze how birds serve as hosts for tick-borne pathogen transfer
- Worked with Kiptopeke State Park's raptor banding station to check raptors for ticks
- Identified ticks to species using morphometrics

**Research Technician, Red Knot Study, Virginia Tech**

Oyster and Wachapreague, VA 23419

Worked for Dr. Sarah Karpanty, College of Natural Resources and Environment

May-June 2012 (Research Technician), May 2010 (Volunteer)

- Used cannon nets to capture red knots
- Banded, took measurements, and placed radio tags on red knots
- Collected sand and peat samples to look for red knot prey
- Used scopes to conduct point-count samples of various seabirds

**Research Technician, Cape Lookout Shorebird Study, Virginia Tech**

Blacksburg, VA 24061

Worked for Dr. Sarah Karpanty, College of Natural Resources and Environment

August 2011-May 2012

- Collected data on the effect of military overflights on shorebirds of Cape Lookout National Seashore, NC, and managed project's database using Microsoft Access and Excel
- Reviewed camera footage of least terns, common terns, Wilson's plovers, gull-billed terns, and black skimmers to determine the behavioral effects of anthropogenic events
- Utilized National Park Service Acoustic Monitoring Toolbox programs to conduct heart rate sampling on Wilson's plovers and to determine times and lengths of military overflights

**Volunteer, Animal Navigation Study, Virginia Tech**

Blacksburg, VA 24061

Worked for Dr. John Phillips' lab, College of Science

May 2011-September 2011

- Participated in study that investigates the orientation and navigation of inbred C57BL/6 mice using magnetic cues in nest building experiments

**Undergraduate Thesis, Habitat Management Plan: Golden-winged Warbler, Virginia Tech**

Blacksburg, VA 24061 and Meadows of Dan, VA 24120

Worked for Dr. Dean Stauffer and Scott Klopfer, College of Natural Resources and Environment

August 2010-February 2011

- Evaluated suitability of current habitat at Primland Resort for Golden-winged Warblers
- Created a habitat management plan including suggestions on silvicultural practices

**Research Technician, Piping Plover Study, Virginia Tech**

Chincoteague National Wildlife Refuge and Assateague Inland National Seashore, VA 23336

Worked for Dr. Sarah Karpanty, College of Natural Resources and Environment

June 2010

- Captured Piping Plovers to serve as a baseline study for the effects of the Deep Water Horizon oil spill
- Assisted with banding and in drawing blood to test hydrocarbon levels
- Spun blood and took measurements on red blood cells and plasma

**Volunteer, Maymont Park – Wildlife Rehabilitation and Education**

Richmond, VA 23220

May 2010-August 2010, volunteered four days/week

- Assisted park's four zoologists on park rounds covering 100 acres
- Personally responsible for raptor feeding and enclosures
- Prepared food for raptors, black bears, gray foxes, otters, bobcats, sika deer, bison, white-tailed deer, sheep, chickens, goats, ducks, pigs

**TEACHING  
POSITIONS**

**Graduate Teaching Assistant**, Old Dominion University  
 General Biology Lab for Majors Part 1 (3 classes; Fall 2014)  
 General Biology Lab for Majors Part 2 (3 classes; Spring 2015)  
 General Biology Lab for Majors Parts 1 & 2 (1 class; Summers I and II 2015)

**Course Leader/Instructor**, Virginia Tech  
 Honors Colloquium Course: Community gardening to El Porvenir, Honduras (1 class, Spring 2009)

**OTHER  
EXPERIENCES****Graduate Mentor, Virginia Tech College of Natural Resources**

Blacksburg, VA 24061

August 2016-present

- Serve as a graduate mentor to new graduate students
- Serve as a graduate mentor through The Wildlife Society to undergraduate students interested in pursuing graduate school through Virginia Tech's Chapter of The Wildlife Society
- Serve as a graduate mentor to the undergraduate students (4) working on the red knot project in the Virginia Tech Shorebird lab

**Project Manager, Virginia-Maryland Regional College of Veterinary Medicine**

Blacksburg, VA 24061

Worked for Dr. Marlice Vonck, Pete Jobst, Lynn Chipkin, and Dee Snider

September 2007-May 2012

- Founder and President of a student organization entitled Bonding with Animals through Recreation on Campus (BARC), created in conjunction with Pamplin Scholar
- Wrote and obtained legal consent for liability waivers and releases
- Wrote a club constitution and assisted in rewriting training procedures for animal programs
- Trained over 100 students to work with the dogs in the veterinary teaching program
- Club has remained sustainable and active through new officers and members to the present

**Veterinary Assistant, Virginia-Maryland Regional College of Veterinary Medicine**

Blacksburg, VA 24061

Worked for Dr. Marlice Vonck, DVM

May 2011-September 2011

- Assisted Dr. Vonck on rounds of university-owned animals to provide veterinary care
- Handled research animals for different procedures (ie gavage, anesthesia, euthanasia, blood draw, castration, vaccine administration)
- Assisted with administrative paperwork in preparation for Association for Assessment and Accreditation of Laboratory Animal Care International (AALAC) certification
- Exercised, socialized, and trained 44 teaching dogs

**Volunteer, Cardiac Study, Virginia-Maryland Regional College of Veterinary Medicine**

Blacksburg, VA 24060

Worked for Dr. Mari Waterman, DVM, on her Master's Thesis experiment

June 2011-July 2011

- Acclimated dogs to be conditioned to ECG placement
- Looked at appropriate dosing intervals for atenolol to help regulate adrenergic  $\beta$ -receptor antagonist effects to decrease heart rate

**PRESENTATIONS****International/National**

2017 Oral Presentation: Western Hemisphere Shorebird Group. Addressing from where blue mussels found in Virginia originate and its implications on the red knot. Catlin, D.H.\*, **E.L. Heller**, S.M. Karpanty, J.D. Fraser, and S.J. Ritter. Paracas, Peru.

2017 Oral Presentation: American Ornithological Society. Addressing from where blue mussels found in Virginia originate and its implications on the red knot. **Heller, E.L.\***, S.M. Karpanty, J.D. Fraser, and S.J. Ritter. East Lansing, MI, USA.

2016 Oral Presentation: Waterbird Society, Annual Meeting. Red knot (*Calidris canutus rufa*) and prey abundance and distribution along the Virginia barrier islands, USA. **Heller, E.L.\***, S.M. Karpanty, J.D. Fraser, S.J. Ritter, and J.B. Cohen. New Bern, NC, USA.

2013 Oral Presentation: Wilson Ornithological Society, Annual Meeting. Effects of urbanization on the relationship among birds, ticks, and tick-borne diseases. **Heller, E.L.\***, E.L. Walters, and H.D. Gaff. Williamsburg, VA.

### **Regional/Local**

2018 Poster Presentation: Long Term Ecological Research Virginia Coastal Reserve (LTER VCR), Annual Meeting. Addressing from where blue mussels found in Virginia originate and its implication on migratory red knots. **Heller, E.L.\***, Dixon, H.M., J.F. Hall, A. Scott, B.C. Gill, J.D. Fraser, and S.M. Karpanty. Cape Charles, VA.

2017 Oral Presentation: New Jersey Sea Grant Red Knot Aquaculture Symposium. Red knot global conservation challenges: global to local. Karpanty, S.M.\* , **E.L. Heller**, J.D. Fraser, and J.B. Cohen. Tuckerton, NJ.

2017 Poster Presentation: Virginia Tech College of Natural Resources and Environment 25<sup>th</sup> Anniversary. Addressing from where blue mussels found in Virginia originate and its implication on the red knot population. Dixon, H.M.\* , J.F. Hall\*, A. Scott, **E.L. Heller**, J.D. Fraser, and S.M. Karpanty. Blacksburg, VA.

2017 Oral Presentation: Virginia Coastal Avian Partnership meeting. Understanding climate change impacts on federally-threatened Western Atlantic red knots (*Calidris canutus rufa*) in Coastal Virginia. **Heller, E.L.\***, S.M. Karpanty, and J.D. Fraser. Melfa, VA.

2016 Oral Presentation: Virginia Tech College of Natural Resources and Environment. Working Plan Presentation: Saving the Moonbird: How interactions between the Western Atlantic red knot (*Calidris canutus rufa*) and its prey are influenced by climate change and island geomorphology. **E.L. Heller\***, S.M. Karpanty, and J.D. Fraser. Blacksburg, VA.

2016 Poster: Atlantic Coast Piping Plover and Least Tern Workshop. Saving the Moonbird: effects of prey abundance, climate change, and island geomorphology on population trend projections of the Western Atlantic red knot (*Calidris canutus rufa*) in Coastal Virginia. **Heller, E.L.\***, S.M. Karpanty, J.D. Fraser, S.J. Ritter, and J.B. Cohen. US Fish and Wildlife Service National Conservation Training Center, Shepherdstown, West Virginia.

2015 Oral Presentation: Virginia Academy of Science Annual conference. The effects of urbanization on bird parasitism rates by various tick species. **Heller, E.L.\***, E.L. Walters, and H.D. Gaff. Harrisonburg, VA.

2014 Oral Presentation: Virginia Academy of Science Annual conference. Effects of urbanization on the relationship among birds, ticks, and tick-borne pathogens. **Heller, E.L.\***, E.L. Walters, and H.D. Gaff. Richmond, VA.

2014 Oral Presentation: Old Dominion Undergraduate Research Symposium. The effects of avian foraging and nesting behavior on the probability of tick parasitism. Paine, D.R., **E.L. Heller\***, and C.L. Wright. Norfolk, VA.

2014 Oral Presentation: Old Dominion University Graduate Appreciation Day. Effects of urbanization on the relationship among birds, ticks, and tick-borne pathogens. **Heller, E.L.\***, E.L. Walters, and H.D. Gaff. Norfolk, VA.

2014 Oral Presentation: Old Dominion University Graduate Symposium. Effects of urbanization on the relationship among birds, ticks, and tick-borne pathogens. **Heller, E.L.\***, E.L. Walters, and H.D. Gaff. Norfolk, VA.

2014 Oral Presentation: Old Dominion University Undergraduate Symposium. Birds as vectors of *Rickettsia parkeri*. Vincent, J.\*, **E.L. Heller**, D. Gauthier, E.L. Walters, and H.D. Gaff. Norfolk, VA.

2014 Poster: Tidewater Chapter of Sigma Xi meeting. The effects of urbanization on bird parasitism rates by various tick species. **Heller, E.L.\***, E.L. Walters, and H.D. Gaff. Newport News, VA.

2014 Poster: Mid-Atlantic Tick Summit III. Effects of urbanization on the relationship between birds and ticks. **Heller, E.L.\***, C.L. Wright, E.L. Walters, and H.D. Gaff. Laurel, MD.

2014 Poster: American Society for Microbiology Virginia Branch Annual Meeting. Birds as vectors of *Rickettsia parkeri*. Vincent, J.\*, C.L. Wright, **E.L. Heller**, D. Guathier, E.L. Walters, and H.D. Gaff. Charlottesville, VA.

2013 Oral Presentation: College of William & Mary Graduate Research Symposium. Effects of urbanization on the relationship among birds, ticks, and tick-borne diseases. **Heller, E.L.\***, E.L. Walters, and H.D. Gaff. Williamsburg, VA.

2013 Oral Presentation: Virginia Annual Tick Biology Meeting. Effects of urbanization on the relationship among birds, ticks, and tick-borne diseases. **Heller, E.L.\***, E.L. Walters, and H.D. Gaff. Richmond, VA.

2013 Oral Presentation: Virginia Coastal Avian Partnership, Annual Meeting. Effects of urbanization on the relationship among birds, ticks, and tick-borne diseases. **Heller, E.L.\***, E.L. Walters, and H.D. Gaff. Melfa, VA.

2013 Oral Presentation: Old Dominion University Graduate Symposium. Effects of urbanization on the relationship among birds, ticks, and tick-borne diseases. **Heller, E.L.\***, E.L. Walters, and H.D. Gaff. Norfolk, VA.

2012 Poster: Ecological Society of America, Mid-Atlantic Chapter. Assessing the potential impact of human activities on the incubation rates of Least Terns at Cape Lookout National Seashore, North Carolina. **Heller, E.L.\***, M.D. Hillman, S.M. Karpanty and J.D. Fraser. Blacksburg, VA.

## OUTREACH/ SERVICE

### Presentations

2017 Oral Presentation: Eastern Shore Barrier Island Center. Implications of climate change on red knots using Virginia barrier island stopover (and other fun facts). **Heller, E.L.\***, S.M. Karpanty, J.D. Fraser, and S.J. Ritter. Machipongo, VA.

2017 Oral Presentation: Christiansburg Aquatic Center Summer Youth Camp. From tremendous athletic feats to tick transportation: the wonderful world of migratory birds. **Heller, E.L.\*** Christiansburg, VA.

2017 Tour/Demonstration: Tazewell County 4<sup>th</sup> graders. Introduction to natural resources. **Heller, E.L.\***, B. Semel. Blacksburg, VA.

2017 Demonstration: Governor's School Visit (AP Biology high school students). Wildlife-related career options and college recruitment. **Heller, E.L.\***, S. Hope, and C. Row. Blacksburg, VA.

2016 Poster: Eastern Shore Birding and Wildlife Festival. Travelling to the moon: the red knot's epic migration. **Heller, E.L.\***, S.M. Karpanty, and J.D. Fraser. Cape Charles, VA.

2015 Oral Presentation: Virginia Tech College of Natural Resources and Environment. Graduate school preparation for undergraduate students: balancing life. **E.L. Heller\*** and D.F. Stauffer. Blacksburg, VA.

2015 Oral Presentation: Cape Henry Audubon Society. Effects of urbanization on tick parasitism rates on various bird species. **Heller, E.L.\***, E.L. Walters, and H.D. Gaff. Norfolk, VA.

2014 Oral Presentation: Hoffler Creek Wildlife Preserve annual meeting. Effects of urbanization on the relationship among birds, ticks, and tick-borne pathogens. **Heller, E.L.\***, E.L. Walters, and H.D. Gaff. Portsmouth, VA.

2013 Oral Presentation: Hampton Roads Bird Club. Effects of urbanization on the relationship among birds, ticks, and tick-borne diseases. **Heller, E.L.\***, E.L. Walters, and H.D. Gaff. Hampton, VA.

2013 Oral Presentation: Cape Henry Audubon Society. Effects of urbanization on the relationship among birds, ticks, and tick-borne diseases. **Heller, E.L.\***, E.L. Walters, and H.D. Gaff. Norfolk, VA.

### Service

**2017-present.** Vice President. VT Fish & Wildlife Graduate Student Association. Blacksburg, VA.

**2017-present.** Graduate Student Representative. College of Natural Resources & Environment Diversity Committee. Blacksburg, VA.

**2017.** Graduate Student Representative. College of Natural Resources & Environment 25<sup>th</sup> Anniversary Committee. Blacksburg, VA.

**2016.** Tour Leader. Eastern Shore Birding and Wildlife Festival. Lead public birding tours. Cape Charles, VA.

**2016.** Volunteer. Women in Natural Resources Conference. Set-up crew member. Blacksburg, VA.

**2016.** Volunteer. Waterbird Society, Annual Meeting. Assistant session moderator. New Bern, NC.

**2013-2014.** Guide. Master's Research Outreach, Paradise Creek Nature Preserve. Public mistnetting demonstrations. Portsmouth, VA.

### PROFESSIONAL AFFILIATIONS

Sigma Xi: The Scientific Research Honor Society associate member (2017-present)

National Audubon Society member (2017-present)

American Ornithological Society member (2017-present)

Waterbird Society member (2016-present)

Waterbird Society Diversity Committee member (2016-present)

American Ornithologists' Union member (2013-present)

Virginia Academy of Science member (2013-present)

Virginia Society of Ornithology member (2014-2015)

Wilson Ornithological Society member (2013-2015)

Cape Henry Audubon Society member (2012-2015)

Ecological Society of America member (2012-2014)

Phi Kappa Phi member (2010-2012)

### PUBLICATIONS

**Heller, E.L.**, H.D. Gaff, R.J. Brinkerhoff, and E.L. Walters. *In Prep*. The effects of urbanization on tick parasitism rates in birds of coastal southeastern Virginia. *Conservation Biology*.

**Heller, E.L.**, K.C.R. Kerr, N.F. Dahlan, C.J. Dove, and E.L. Walters. 2016. Overcoming challenges to morphological and molecular identification of *Empidonax* flycatchers: a case study from Virginia. *Journal of Field Ornithology*:1-8.

**Heller, E.L.,** C.L. Wright, R. Nadolny, W. Hynes, H. D. Gaff, and E.L. Walters. 2015. New records of *Ixodes affinis* parasitizing avian hosts in southeastern Virginia. *Journal of Medical Entomology*:1-5.

**Heller, E.L.,** J.A. Arnold, and E.L. Walters. 2015. Migrant bird research at Old Dominion University. *Virginia Birds* 11:4-5.

**Heller, E.L.** 2015. The effects of urbanization on tick parasitism rates in birds of southeastern Virginia. MS Thesis, Old Dominion University, Norfolk, VA. 201p.

#### **POPULAR PRESS**

- 2017.** Eastern Shore Post “Rufa red knot shorebirds’ decline mirrors erosion of barrier islands”
- 2015.** Entomology Today “A tick that feeds on birds may increase the range of Lyme disease”
- 2015.** The Wildlife Society “Lyme-carrying ticks could be hitching rides on birds”
- 2015.** Old Dominion University Graduate School Promotional Video
- 2013.** Old Dominion University’s News Article “ODU Student Adds Dusky Flycatcher to Virginia Bird List”

#### **GRANTS/MONETARY AWARD**

- 2018.** Virginia Tech Graduate Diversity Scholar Award (\$300)
- 2017.** Virginia Tech Graduate Research Development Program Award (\$1,000)
- 2017.** Small Research Grant, Virginia Academy of Science (\$1,250)
- 2017.** American Ornithological Society Annual Meeting Diversity in Ornithology Travel Award (\$600)
- 2017.** American Ornithological Society Annual Meeting Registration Award (\$225)
- 2017.** JJ Murray Research Award, Virginia Society of Ornithology (\$1,000)
- 2016.** Richard Hunter Cross, Jr. Scholarship (\$500)
- 2016.** Virginia Tech Graduate Research Development Program Award (\$1,000)
- 2016.** Graduate School Association Travel Fund Program Award (\$205)
- 2016.** The Waterbird Society Annual Meeting Student Travel Award (\$100)
- 2015-2018.** Graduate Research Fellowship, National Science Foundation (NSF; ~\$132,000)
- 2015.** Virginia Tech Cunningham Doctoral Award (~\$70,000 over two years– deferred until NSF GRFP completion)
- 2014.** Small Research Grant, Virginia Academy of Science (\$1,250)
- 2014.** ODU Alumni Association Outstanding Scholar Fellowship (\$1,500)
- 2014.** Small Research Grant, Virginia Academy of Science (\$1,250)
- 2014.** JJ Murray Research Award, Virginia Society of Ornithology (\$1,000)
- 2013.** Small Research Grant, Virginia Academy of Science (\$1,250)
- 2013.** Wilson Ornithological Society Travel Award (\$50)
- 2010.** Gray Lumber Company Scholarship (\$1,300)
- 2009.** International Studies Abroad Memorial Scholarship (\$750)
- 2009.** Human Resources Scholarship (\$1,000)
- 2009.** Charles Grose Jr. Scholarship (\$2,000)
- 2008.** Jean B. Duerr (PEO) Memorial Scholarship for Women in Science (\$1,500)
- 2007-2011.** Pamplin Scholar (~\$38,000)
- 2007-2011.** Robert C. Byrd Honors Scholarship (\$6,000)
- 2007-2009.** Virginia Tech Presidential Scholarship (\$6,000)
- 2007.** Pamplin Leader Award (\$1,000)
- 2007.** John Pratt Freshman Merit Scholarship (\$3,000)
- 2007.** Virginia Tech Alumni Association Rachael Hill Memorial Scholarship (\$2,000)

#### **HONORS/AWARDS**

- 2017.** American Ornithological Society Student Membership Award (2017-2019)
- 2017.** Virginia Tech Graduate Student Leaders and Fellows Reception at The Grove
- 2016.** Virginia Tech Graduate Student Leaders and Fellows Reception at The Grove
- 2014.** VAS Natural History & Biodiversity Woolcott Award for Best Student Presentation
- 2014.** ODU Champion of Diversity Award
- 2014.** ODU's Biology Graduate Student Organization Graduate Symposium Master's 3rd Place
- 2013.** NSF Graduate Research Fellowship Program Honorable Mention

**2013.** William & Mary Graduate Research Symposium Visiting Scholar Award for Excellence in Scholarship in the Natural and Computational Sciences  
**2013.** American Ornithologists' Union Student Membership Award  
**2013.** ODU's Biology Graduate Student Organization Conference Registration Award (received 2)  
**2013.** ODU's Biology Graduate Student Organization Graduate Symposium MS Runner-up  
**2012.** Virginia Tech Chapter of Phi Kappa Phi Graduate Fellowship first runner-up  
**2011.** College of Natural Resources and Environment (CNRE) Achievement in Science Award  
**2011.** Excellence in Access and Inclusion Award CNRE Phi Kappa Phi Outstanding Graduating Senior Award  
**2011.** Featured in Center for Student Engagement and Community Partnership's magazine  
**2009.** American Society of Animal Science Scholarship Award  
**2007-2011.** Dean's List at Virginia Tech (8 semesters, 2007-2011)

#### **VT ACADEMIC PERFORMANCE**

**Fall 2017.** GRAD 5104 Preparing the Future Professoriate (A)  
**Fall 2017.** GRAD 5214 Diversity and Inclusion in a Global Society (A)  
**Fall 2017.** FIW 7994 Research and Dissertation (EQ-Pass)

**Spring 2017.** FREC 5254 Remote Sensing in Natural Resources (A)  
**Spring 2017.** STAT 5214G Advanced Methods of Regression (A)  
**Spring 2017.** FIW 7994 Research and Dissertation (EQ-Pass)

**Fall 2016.** FIW 6984 Parameter Estimation (A)  
**Fall 2016.** FIW 5984 Design/Analysis of Field Studies (A)  
**Fall 2016.** FIW 7994 Research and Dissertation (EQ-Pass)

**Spring 2016.** FIW 5004 GS: Graduate Seminar (Pass)  
**Spring 2016.** FIW 5984 Analysis and Programming for R (A)  
**Spring 2016.** STAT 5616 Statistics in Research II (A)  
**Spring 2016.** GEOS 3034 Oceanography (Audit)  
**Spring 2016.** FIW 7994 Research and Dissertation (EQ-Pass)

**Fall 2015.** FIW 5004 GS: Graduate Seminar (Pass)  
**Fall 2015.** FIW 5314 Vertebrate Population Ecology and Management (A)  
**Fall 2015.** FIW 5414 Endangered Species Management (A)  
**Fall 2015.** FIW 7994 Research and Dissertation (EQ-Pass)

#### **REFERENCES**

**Dr. Sarah Karpanty, Associate Professor**  
 Virginia Tech, College of Natural Resources and Environment  
 150 Cheatham Hall, Blacksburg, VA 24061  
 (540)231-4586; karpanty@vt.edu

**Dr. Jim Fraser, Associate Professor**  
 Virginia Tech, College of Natural Resources and Environment  
 106C Cheatham Hall, Blacksburg, VA 24061  
 (540)231-6064; fraser@vt.edu

**Dr. Eric Walters, Associate Professor**  
 Old Dominion University, College of Sciences  
 302G Mills Godwin Building, Norfolk, VA 23529  
 (757)683-5461; ewalters@odu.edu