

CATHERINE F. FROCK

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RESEARCH INTERESTS

behavioral landscape ecology, conservation biology, climate change, interspecies interactions, montane and forest ecosystems, human impacts on wildlife, habitat connectivity

EDUCATION

- 2013–present **University of Wisconsin-Madison (UW-Madison) – Madison, WI**
M.S. in Zoology (*in progress*)
GPA: 4.0
Advisor: Dr. Monica Turner
Thesis: Effects of wildfire on spatial variation in animal foraging on lodgepole pine seeds and potential implications for post-fire forest regeneration in the northern Rocky Mountains
- 2005-2009 **North Carolina State University (NCSU) – Raleigh, NC**
B.S. in Biological Sciences
GPA: 3.811/3.623 (overall/major), summa cum laude
Concentration: Ecology, Evolution, and Conservation Biology
Advisor: Dr. Nick Haddad
Honors thesis: The effects of human landscape modification on amphibian movement and habitat choice

GRANTS AND AWARDS

2013–present	NSF Graduate Research Fellowship Program, 3 years of funding	~\$44,000 per year
2015	UW-Madison John Jefferson Davis Travel Award (<i>declined due to USAID award</i>)	\$600
2015	U.S. Agency for International Development Research and Innovation Fellowship	\$11,500
2015	National Science Foundation Graduate Research Opportunities Worldwide Award	\$5,000
2014	UW-Madison Department of Zoology Graduate Student Summer Research Award	\$2,500
2009	NSF Research Experience for Undergraduates at the University of Alaska Southeast	\$4,950
2007-2009	Howard Hughes Research Scholars Program at NCSU	\$14,620
2008	Phi Kappa Phi Study Abroad Scholarship	\$1,000
2008	NCSU Study Abroad Office Scholarship	\$1,750
2005	State Employees Credit Union Foundation “People Helping People” Scholarship	\$10,000

PROFESSIONAL EXPERIENCE

- May-Aug. 2013 **Biological Science Technician (Wildlife) - Crew Leader**
U.S. Forest Service – Oakhurst, CA
Sierra National Forest
- Conducted multi-taxa small mammal trapping research for the Pacific Southwest Research Station to understand wildlife responses to fuels reduction treatments
 - Scheduled, supervised, trained a team of 3-10 technicians; performed data error proofing

- Oct. 2012 **Contractor: Bureau of Land Management**
University of California, Berkeley – Berkeley, CA
Panoche, CA and Coalinga, CA
- Oct. 2012 **Contractor**
TOSS Inc. – Ridgecrest, CA
Naval Air Weapons Station China Lake
- Apr.-Sep. 2012 **Lab Assistant I**
University of California, Berkeley – Berkeley, CA
Carrizo Plain National Monument
- Performed wildlife surveys for long-term study to evaluate grazing as a management tool
 - Conducted small mammal mark-recaptures, bird point counts, reptile transect surveys, spotlighting surveys, insect pitfall trapping, wildlife camera trapping, gopher trapping
- Jan.-Mar. 2012 **Wildlife Management Intern**
U.S. Fish and Wildlife Service – Fremont, CA
The Farallon Islands
- Controlled invasive plants, mapped treated areas in restricted use areas of islands
 - Participated in wildlife surveys including: Burrowing Owl surveys and pellet searches, Cassin's Auklet nest box checks, salamander and invertebrate cover board surveys
- Apr. 2011-
Jan. 2012 **Field Biology Intern**
U.S. Fish and Wildlife Service – Fremont, CA
San Francisco Bay area
- Surveyed and/or monitored special status birds, plants, amphibians, mammals, insects
 - Worked independently, served as acting biologist for two Refuges during hiring transition
 - Prepared official reports of endangered species surveys; updated Access databases
- Oct. 2010-
May 2011 **Volunteer**
Edgewood Weed Warriors - Redwood City, CA
Edgewood County Park and Natural Preserve
- Nov. 2010-
Mar. 2011 **Volunteer/Fish Data Collection Intern**
Marine Science Institute – Redwood City, CA
San Francisco Bay area
- May-Sep. 2010 **Biological Science Technician (Wildlife)**
U.S. Forest Service – Camptonville, CA
Tahoe National Forest
- Managed/verified California Spotted Owl survey data in a 27,000 acre study area
 - Performed protocol-level surveys and monitoring of special status birds, herptiles, plants
- Aug. 2007-
May 2010 **Research and Laboratory Technician**
NCSU Biology Department – Raleigh, NC
Fort Bragg military installation
- Designed, developed protocols, led studies of common and special status amphibians
 - Observed nocturnal movement through forests using dye powder and ultraviolet lights
 - Recruited, scheduled, trained volunteers in animal handling and data collection protocols
- May 2007, **Field Technician**

- 2008, 2009; Mar. 2010 NCSU Zoology Department - Raleigh, NC
Savannah River Site, SC
- Collected, transplanted plants to prepare ecological experiments with habitat corridors
 - Gathered vegetative data on herbivory rates, disease damage, plant growth, seed viability
- May-Aug. 2009 **Undergraduate Researcher: NSF REU Program**
University of Alaska Southeast – Juneau, AK
Southeast Alaska
- Managed project on disease ecology of chytrid fungus affecting boreal toads
 - Surveyed historic breeding sites, obtained tadpole tail clips; performed DNA extractions
- May-Aug. 2007, 2008 **Field Technician in Conservation Biology**
NCSU Zoology Department - Raleigh, NC
Fort Bragg military installation
- Conducted mark-recapture and observational studies of endangered, common butterflies
 - Assisted with data entry and management, captive breeding of endangered butterflies
- May-Jun. 2008 **Study Abroad Program Participant**
NCSU Study Abroad Office – Raleigh, NC
Namibia
- Installed, maintained, processed captures from pitfall traps; identified insects
 - Conducted vegetation sampling, tree belt transect surveys to determine plant densities

TEACHING AND MENTORING EXPERIENCE

- Apr. 16, 2015 **Guest Instructor**
UW-Preschool Laboratory – Madison, WI
- As a Science Communication for Ecologists graduate seminar student, co-developed and co-led a hands-on lesson about animal development for 20 preschool children
- Sep.-Dec. 2014 **Undergraduate Student Mentor: Introductory Biology (BIO 152) Independent Projects**
UW-Madison – Madison, WI
- Trained, advised two students on literature reviews, lab protocols, data processing/entry
 - Edited, collaborated on drafts of project proposals, reports, posters, and oral presentations
- Jan.-Apr. 2011 **Instructor**
Mad Science of the Bay Area - Newark, CA
San Francisco Bay area
- Conducted demonstrations, hands-on activities illustrating how science affects the world around us using inquiry-based discovery methods
 - Led children ages 3-12 for after-school programs, in-class lessons, and special events
- Jan.-May 2010 **Teaching Assistant: Ecology, Evolution, and Behavior**
NCSU Biology Department - Raleigh, NC
San Francisco Bay area
- Graded problem sets, extra credit assignments, exams for 200+ student lecture class
 - Attended lectures; assisted in development of problem sets and exam questions

REPORTS AND MEMOS

Frock, C. and S. Euing. U.S. Fish and Wildlife Service. 2011. Lange's metalmark butterfly annual survey report. *Memo to the files.*

Frock, C. and S. Euing. U.S. Fish and Wildlife Service. 2011. Contra Costa wallflower annual survey report. *Memo to the files.*

Frock, C. and S. Euing. U.S. Fish and Wildlife Service. 2011. Antioch Dunes evening primrose annual survey report. *Memo to the files.*

Thurgate, N. Y., W. Fields, N. Haddad, and **C. Frock**. 2009. Status and ecology of the eastern tiger salamander and Carolina gopher frog on Fort Bragg, NC. *Final report to the Army.* 33 pp.

Frock, C. 2009. The effects of human landscape modification on amphibian movement and habitat choice. *Howard Hughes Research Scholars Program thesis.* 12 pp.

Thurgate, N. Y., W. Fields, N. Haddad, **C. Frock**, J. MacAllister, and M. Chesser. 2008. Status and ecology of the eastern tiger salamander and Carolina gopher frog on Fort Bragg, NC. *Final report to the Army.* 30 pp.

TALKS (* indicates presenter)

Frock, C.* May 7, 2015. Spatial variation in animal behavior: causes and effects. One of “12 Ecological Research Stories in 1 Hour” by Science Communication For Ecologists Seminar Graduate Students, Madison, WI. *5-minutes.*

Frock, C.* Mar. 13, 2014. Could granivory influence local plant recruitment patterns in a fire-dominated landscape? Student Association for Fire Ecology (UW-M chapter), Madison, WI. *5-minutes.*

Fields, W.R.*, **Frock, C.**, Haddad, N.M., and N. Thurgate. Aug. 9, 2011. Testing assumptions about amphibian movement behavior with field experiments. 96th Annual Ecological Society of America Annual Meeting, Austin, TX.

Frock, C.* Nov. 7, 2009. Movement studies of the impacts of human disturbance on amphibian habitat quality. 32nd Annual Fall Conference and General Meeting of the North Carolina Herpetological Society, Raleigh, NC. *20-minutes.*

Frock, C.* Aug. 5, 2009. Distribution and infection patterns of the chytrid fungus affecting boreal toads of southeast Alaska. REU Student Research Seminar, Juneau, AK. *20-minutes.*

Frock, C.* Mar. 20, 2009. The effects of habitat management on amphibian movement behavior. Howard Hughes Research Scholars Program Seminar, Raleigh, NC. *15-minutes.*

Frock, C.* Dec. 20, 2007. The effects of habitat management on salamander movement behavior. Howard Hughes Research Scholars Program Seminar, Raleigh, NC. *15-minutes.*

POSTERS (* indicates presenter)

Hudgens, B.*, N. Haddad, W. Fields, N.Y. Thurgate, **C. Frock**, D. Kuefler, B. Morris, and T. Jobe. Jul. 6, 2010. Using movement behaviors to assess dispersal routes in complex landscapes. 24th Annual International Congress for Conservation Biology, Edmonton, AB.

Frock, C.* Jul. 4, 2010. The effects of human landscape modification on the movement behavior of common and rare amphibian species. 24th Annual International Congress for Conservation Biology, Edmonton, AB.

Hudgens, B.*, N. Haddad, W. Fields, N. Y. Thurgate, **C. Frock**, D. Kuefler, T. Jobe. Dec. 1, 2009. Using movement behaviors to determine connectivity in complex landscapes. Partners in Environmental Technology Technical Symposium and Workshop, Washington, D.C.

Frock, C.* Apr. 1, 2008. How do wildfires affect the terrestrial movement behavior of amphibians? 17th Annual NC State University Undergraduate Research Symposium, Raleigh, NC.

Cash, J.D.*, **Frock, C.F.***, Henry, A.B., Herbold, M.A., Maynard, B.P., Morgan, S.M., Sheikh, A.T., and S.L. Wray. Apr. 17, 2007. What about global warming? Learning experiences in topics related to global warming. 9th Annual NC State University & College of Agriculture and Life Sciences Undergraduate Teaching Symposium, Raleigh, NC.

SCIENCE COMMUNICATION AND OUTREACH EXPERIENCE

- Jan. 2014-present **Member**
Biology Outreach Club
UW-Madison – Madison, WI
- Sep. 2014-May 2015 **Co-Chair, Outreach Committee**
Zoology Graduate Student Organization
UW-Madison – Madison, WI
- Trained, organized volunteers; participated in three public outreach events
 - Applied for and awarded \$200 to improve, develop educational outreach booth materials
- Feb. 2, 2015 **Interviewee**
Jeremy Spool's "Chatting with Scientists" YouTube video series
<https://www.youtube.com/channel/UC1CaL48atS6LhtKc2bqwGvA>
- Spring 2009 **Invited Speaker**
"Studying abroad in Namibia"
Valley Springs Middle School – Asheville, NC
- Sep. 20, 2008 **Volunteer**
Bug Fest
North Carolina Museum of Natural Sciences - Raleigh, NC
- Dec. 2007-May 2008 **Graphic Designer and Newsletter Editor, *The Leaflet***
Wolfpack Environmental Student Association
NCSU - Raleigh, NC
- Aug. 2007-May 2008 **Co-Founder, Secretary, Webmaster**
Wolfpack Environmental Student Association
NCSU - Raleigh, NC
- Apr. 15, 2008 **Invited Speaker**
"Fire & fluorescent dye: how habitat management techniques affect amphibian movement behavior" 60-minute talk.
Encore Program for Lifelong Enrichment - NCSU - Raleigh, NC

UNIVERSITY ACTIVITIES AND SERVICE

Sep. 2013- **Member**

- present *Wisconsin Ecology*
UW-Madison – Madison, WI
- Feb. 2014-
May 2015 **Secretary**
Student Association for Fire Ecology – UW-Madison chapter
UW-Madison – Madison, WI
- Dec. 2014-
May 2014 **Representative**
Zoology Graduate Student Organization
UW-Madison – Madison, WI
- Led a Graduate Student Informal Seminar on “Non-academic vs. academic careers”
 - Staffed an exploration station “Diversity in the Animal Kingdom” (April 5, 2014) at UW-Madison Science Expeditions
- Sep. 30, 2013 **Workshop Leader, “NSF Application Overview and Panel”**
& May 5, 2014 *Graduate Student Professional Development*
UW-Madison – Madison, WI
- Aug. 2006-
May 2007 **Honors Village Fellow**
University Housing & University Honors Program
NCSU – Raleigh, NC

ADDITIONAL HONORS

- 2010 United States Department of Agriculture Certificate of Appreciation
- 2005-2009 NCSU University Honors Program
- 2007-2009 NCSU College of Agriculture and Life Sciences Honors Program
- 2005-2009 Dean’s List (Fall 2005; Spring, Fall 2006; Spring, Fall 2007; Spring 2008; Spring, Fall 2009)
- 2007 9th Annual NC State University & College of Agriculture and Life Sciences Undergraduate Teaching Symposium’s Honorable Mention in Collaborative Learning Honors Projects
- 2007 NCSU University Honors Village Founders’ Award
- 2005-2006 Freshman Scholarship Certificate, Gamma Sigma Delta Honor Society for Agriculture
- National Society of Collegiate Scholars
- Membership invitations: Alpha Zeta, Golden Key International Honor Society, The Honor Society of Phi Kappa Phi

PROFESSIONAL ORGANIZATIONS

- 2014-present Student member, Ecological Society of America
- 2014-present Member, Wisconsin Chapter of the Society for Conservation Biology – Madison, WI
- 2014-present Member, The Sierra Club
- 2010-2011 Member, The Nature Conservancy
- 2009-2010 Member, North Carolina Herpetological Society
- 2009-2010 Student member, Society for Conservation Biology
- 2009-2010 Member, Triangle Chapter of the Society for Conservation Biology - Raleigh, NC