

# Amanda Bevan

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## EDUCATION

Ph.D. in Biological Education, 2018 - present

University of Northern Colorado

School of Biological Sciences

Advisor: Dr. Rick Adams

Dissertation focus: Response of bats and associated nocturnal food webs to forests impacted by mountain pine beetle (*Dendroctonus ponderosae*) outbreaks.

B.S. in Ecology, Evolution, and Natural Resources (2016)

Rutgers University

School of Biological and Environmental Sciences

Advisor: Dr. Brooke Maslo

Thesis: *Survival analysis of Indiana bats with white-nose syndrome*

## ACADEMIC AWARDS AND HONORS

National Science Foundation Graduate Research Fellowship Program, *Honorable Mention* (2020)

Dr. Albert M. Winchester Graduate Fellowship in Biology (2020-2021)

Dr. Jim Applegate Award for Outstanding Student in Wildlife Conservation (2016)

## RESEARCH EXPERIENCE

Adams Bat Lab, University of Northern Colorado

August 2018 – Present

*Independent & Collaborative Researcher*

- Quantified bat assemblage structure in mountain pine beetle impacted forests in the Northern Front Range using acoustic surveys and Sonobat software
- Conducted ordinations in PC-ORD to identify food web variables that explain variation in bat activity
- Developed methods to integrate point and transect surveys of bats, prey availability (active and resting insects), and habitat structure (understory and overstory)
- Completed driving acoustic surveys to study elevational bat migration
- Conducted mist net surveys to quantify bat drinking activity and seasonal population changes

Holt Lab, University of Northern Colorado

January 2019 – Present

*Collaborative Researcher*

- Conducted analyses using conditional random forest modeling in R to determine best predictors of perceived barriers to biology doctoral student success from survey data
- Identified and adapted instruments from peer-reviewed literature and dissertations for questionnaire survey to quantify perceived barriers for biology doctoral students

Organization for Bat Conservation

February 2017 – February 2018

*Independent & Collaborative Researcher*

- Developed quantitative questionnaire survey to assess how the structure of citizen science projects may impact participant attitudes towards conservation
- Summarized participant responses into order to perform statistical analyses

Maslo Lab, Rutgers University, NJ

May 2013 – May 2016

*Independent & Collaborative Researcher*

- Developed project as lead researcher to investigate impact of white-nose syndrome on Indiana bats in New Jersey using mark-recapture data in Program MARK
- Coordinated lab-wide systematic review of roost site characteristics for bats impacted by white-nose syndrome
- Compiled and analyzed published habitat data on northern long-eared bats (*Myotis septentrionalis*) and gray bats (*Myotis grisescens*) as part of lab-wide systematic review
- Prepared guano samples for DNA extraction and PCR studies

Maslo Lab & New Jersey Non-Game Endangered Species Program

February 2015 – August 2015

*Research Assistant*

- Developed data collection protocols for study of roost site characteristics of northern long-eared bats.
- Used mist nets to catch, band, collect data, and affix radio transmitters on northern long-eared bats to radio track individuals to roost sites
- Trapped, banded, and collected data on bats roosting in bat houses in suburban areas as part of a long-term monitoring effort

## **WORK EXPERIENCE**

School of Biological Sciences, University of Northern Colorado

May 2018 - present

*Graduate Teaching Assistant*

- Taught Human Anatomy Laboratory, Introductory Biology Laboratory (for biology majors), and Introductory Biology (for non-majors)
- Acted as Human Anatomy Lab Coordinator (Spring 2019 – present)
- Created introductory videos, lab activities, quizzes, and practicals for 14 online labs during Covid-19 pandemic
- Held weekly meetings with course graduate teaching assistants to discuss material and course issues
- Prepared and maintained Canvas shells for all lab sections

Adams Bat Lab, University of Northern Colorado

May 2018 - present

*Research Assistant*

- Wrote conservation plan for *Perimyotis subflavus* for Boulder County Parks and Open Space (BCPO)
- Conducted mist net surveys on BCPO parks to census bat populations
- Surveyed maternity colonies using stationary and hand-held acoustic bat detectors

Rocky Mountain Amphibian Project, Natural Diversity Database

May 2018 - October 2018

*Project Manager*

- Recruited and trained citizen participants on amphibian survey methods and project goals
- Conducted amphibian surveys to identify important habitat for Wyoming and Northern Colorado's amphibians

- Radio tracked boreal toads to characterize activity patterns and habitat
- Collaborated with partners from Wyoming Game and Fish Department and the U.S. Forest Service to ensure all sites were surveyed
- Maintained project equipment and project database to ensure correct data entry

Organization for Bat Conservation, Pontiac, MI

September 2016 - February 2018

*Urban Bat Project Lead*

- Collaborated with multiple partners in ten cities to build, install, and distribute bat houses, plant “bat-friendly” gardens, and organize citizen scientist-led bat walks
- Trained partners and citizen scientists to use acoustic monitoring equipment
- Organized and led urban bat walks in Pontiac and Detroit
- Trained citizens to build and install bat houses

*Education Specialist*

- Performed educational, live animal presentations for school groups, library/nature programs, bat festivals, and outreach events for groups of up to 400 people
- Created new conservation education presentations and activities

Wyoming Natural Diversity Database, Wyoming

Summer 2016

*Bat Field Technician*

- Conducted mist net surveys and acoustic monitoring surveys using Song Meter SM2BAT+
- Radio tracked northern long-eared bats and fringed myotis (*Myotis thysanodes*) at Devils Tower National Monument
- Performed vegetation surveys and collected habitat data to characterize roost site selection of radio-tracked bats
- Conducted exploratory mist net surveys in Medicine Bow National Forest to determine presence of northern long-eared bats (*Myotis septentrionalis*)

Youth Advisory Board, School of Social Work, Rutgers University, NJ

January 2014-May 2016

*Central Region Ambassador*

- Facilitated groups of young people to share their experience with foster care and/or homelessness
- Worked with youth and community partners to investigate/promote solutions to improve foster care

African Bat Conservation, Dr. Emma Stone, Malawi, Africa

January 2016

*Volunteer Research Assistant*

- Conducted surveys using mist nets and harp traps to collect data on bats in Liwonde National Park
- Collected insects using light traps and gathered vegetation data at mist net sites
- Sorted, pinned, and identified insect specimens

Maslo Lab and Cooperative Extension, Rutgers University, NJ

April 2014 – April 2016

*Wildlife Conservation and Management Assistant*

- Worked with citizens with bats on their property to mount various types of bat houses to reduce human-bat conflict
- Developed and Led bat walks as part of educational outreach events
- Conducted acoustic monitoring surveys using Song Meter SM2 or Pettersson D500x units in remediation sites and orchards
- Collected guano from roost sites to analyze diet

## MENTORING AND LEADERSHIP EXPERIENCE

Adams Bat Lab, University of Northern Colorado

October 2018 - present

### *Research mentor*

- Oversaw undergraduate research on
  - Relationships between bat ecomorphology and drinking activity at high elevation ponds (Summer 2020)
  - Impacts of bark beetle kill on pond water quality (Summer 2020)
  - *Myotis evotis* foraging strategies in beetle affected forests (Summer 2019)
  - Changes in moisture content and litter layer following bark beetle kill (Summer 2019)
- Trained undergraduate students field research techniques (Summer 2019 & 2020)
- Taught undergraduate students scientific proposal writing for independent research funding (Spring 2019 & Spring 2020)
- Mentored students on data analysis techniques and scientific poster presentations (Fall 2018 – present)
- Trained bat mist netting techniques to undergraduate student (Fall 2018)

Aresty Research Center, Rutgers University, NJ

May 2015 – May 2016

### *Peer Instructor*

- Led biweekly meetings to discuss students' research project development
- Acted as liaison between students and Aresty staff to ensure student success

The Wildlife Society: Rutgers Student Chapter

March 2015 – May 2016

### *Cofounder & Coordinator*

- Worked with students and faculty to start chapter of The Wildlife Society to connect students with wildlife professionals and professional opportunities
- Coordinated with wildlife professionals to visit chapter and give presentations
- Connected students with wildlife professionals and professional opportunities

## PEER REVIEWED PUBLICATIONS

**Bevan, A.,** T. Hobbs, D. Barrett, R. A. Adams. (2020). Factors driving high elevational activity patterns of tricolored bats (*Perimyotis subflavus*) in the northern Front Range of Colorado (in progress).

Grit matters: Passion and perseverance predict doctoral student perception of barriers (in prep).

Maslo, B., O. Stringham, **A. Bevan**, A. Brumbaugh, C. Sanders, M. Hall, N. Fefferman. (2017). High annual survival in infected wildlife populations may veil a persistent extinction risk from disease. *Ecosphere*.

Maslo, B., R. Valentin, K. Leu, K. Kerwin, G.C. Hamilton, **A. Bevan**, N. H. Fefferman, D. M. Fonseca. (2017). *Chiro*surveillance: the use of native bats to detect invasive agricultural pests. *PLoS ONE*, 12(3), e0173321.

## NON-PEER REVIEWED PUBLICATIONS

Adams, A. A., and Bevan, A. J. 2018. Continued Survey of Bats in Boulder County. Report for Boulder County Parks and Open Space, 25pp.

Bevan, A. and R. A. Adams. 2019. Conservation plan for the tri-colored bat (*Perimyotis subflavus*). Boulder County Parks and Open Space. 13 pp.

## RESEARCH PRESENTATIONS

**Bevan, A.**, R. A. Adams. *Response of Bats and Nocturnal Food Webs to Mountain Pine Beetle Outbreaks (Poster)*. Annual meeting of the North American Society for Bat Research, October 2019

**Bevan, A.** Food web analysis approach to quantify bat activity patterns in mountain pine beetle affected forests of the Front Range of Colorado **(Talk)**. Research Day, University of Northern Colorado, April 2019.

**Bevan, A.**, G. Auterie, R. Mies. *Does the framework of citizen science projects affect participants' attitudes towards conservation? (Poster)*. Annual meeting of the North American Society for Bat Research, October 2017

**Bevan, A.**, Maslo, B. *A survival analysis of Indiana bats (*Myotis septentrionalis*) with white-nose syndrome (Talk)*. Department of Ecology, Evolution, and Natural Resources G. H. Cook Honors Thesis Presentation, April 2016

Kerwin, K., L. Tsen, M. Arias, **A. Bevan**, B. Schum, B. Maslo. *A systematic review of roost-site characteristics of forest-dwelling bats affected by white-nose syndrome (Poster)*. Annual meeting of the Northeast Fish & Wildlife Association, April, 2016

Maslo, B., R. Valentin, K. Leu, K. Kerwin, **A. Bevan**, G.C. Hamilton, N. H. Fefferman, D. M. Fonseca. *Chirosurveillance: the use of native bats to detect invasive agricultural pests (Poster)*. Annual meeting of the Ecological Society of America, August 2015

## OUTREACH PRESENTATIONS

2020 *Bat conservation proposal for the West Greeley Conservation District*. Houston Gardens & West Greeley Conservation District Board of Directors Meeting **(Proposal)**.

2020 *Professional development in ecology*. Department of Ecology, Evolution, and Natural Resources course, Rutgers University **(Video)**.

2019 *Bats in Roosevelt National Forest near you!* Crystal Lakes Recreation Department, Monthly Wildlife Committee meeting **(Talk)**.

2017 *Educating, inspiring, and activating urban communities to save bats*. Annual meeting of the North American Society for Bat Research, Teacher Workshop **(Talk)**.

2017 *Bat appreciation day- live chat with Amanda Bevan*. Explore.org **(Live Stream Talk)**.

2016 *Studying bats at Devils Tower National Monument*. Devils Tower National Monument's Bat Festival **(Talk)**.

2016 *Backyard wildlife management*. Master Gardener Association of Passaic County, NJ **(Talk)**.

## POPULAR PRESS INTERVIEWS

*BeProvided Conservation Radio*, Amanda Bevan: Educator for Organization for Bat Conservation. Discussed why bats are important, white-nose syndrome, and ways to conserve bats. Podcast interview by Marcia Sivek and Grey Hayes, October 31, 2017.  
<http://beprovidedconservationradio.libsyn.com/website/amanda-bevan-educator-for-organization-for-bat-conservation>

*Smithsonian Magazine*, How a deadly flesh-eating fungus helped make bats cute again. Rachel E. Gross, October 26, 2017. <https://www.smithsonianmag.com/science-nature/how-flesh-eating-fungus-helped-make-bats-cute-again-180966974/>

*The Mid-Michigan Pet Expert Talk Show*, Bats and black cats. Discussed ways to people can help bats in their own backyards. Radio interview by Lee Cohen, October 16, 2017.  
[http://1320wils.com/podcasts/mid-michigan-pet-expert-talk-show?play\\_file=62687](http://1320wils.com/podcasts/mid-michigan-pet-expert-talk-show?play_file=62687)

*Stateside-Michigan Radio, National Public Radio*, As bat populations decline, conservationists urge urbanites to welcome new nocturnal neighbors. Interview by Lester Graham Sept. 2017. [https://cpa.ds.npr.org/michigan/audio/2017/09/20170908\\_SS\\_Urban\\_Bat\\_project.mp3](https://cpa.ds.npr.org/michigan/audio/2017/09/20170908_SS_Urban_Bat_project.mp3)  
*The DIRT-American Society of Landscape Architects*, Are urban bats the future? Dana Davidsen, June 30, 2017. <https://dirt.asla.org/2017/06/30/are-urban-bats-the-future/>

## **FELLOWSHIPS (\$5,500), GRANTS (\$3,080), AND SCHOLARSHIPS (\$36,500)**

Dr. Albert M. Winchester Graduate Fellowship in Biology - \$784 (2020-2021)  
Graduate Student Association Research Grant - \$2,055 (July 2020)  
Graduate Student Association Research Grant - \$1,163 (June 2020)  
Graduate Student Association Research Grant - \$480 (July 2019)  
Graduate Student Association Research Grant - \$300 (May 2019)  
Wildlife Acoustics Research Equipment Grant - \$1,200 value (February 2017)  
Aresty Conference Funding Grant - \$500 (April 2016)  
Center for Global Education Scholarship - \$1,500 (December 2016)  
Cook Community Alumni Association Scholarship - \$1,000 (December 2016)  
Department of Ecology, Evolution, and Natural Resources Grant - \$300 (December 2016)  
School of Environmental and Biological Sciences Grant - \$300 (December 2016)  
Center for Global Education Scholarship - \$2000 (June 2014)  
Price Family Fellowship - \$5500 (Fall 2014 - May 2016)  
Rutgers National Scholarship - \$32,000 (Fall 2011 - Spring 2015)

## **TROPICAL FIELD COURSES**

Tropical Ecology and Primatology, Dr. Watsa, Peru January 2015

- Tracked emperor tamarins using radio telemetry and collected behavioral data to create daily energy budgets for individuals
- Conducted mist net surveys for bats and birds

Tropical Ecology, Primatology, and Conservation, Dr. Vogel, Indonesia June 2014- July 2014

- Tracked orangutans from sunrise to sunset to collect behavioral data
- Performed independent research investigating adult female orangutan energy budget in a secondary peat swamp forest
- Worked with local community to start a vegetable garden and recycling program

## **SERVICE**

Board member, Colorado Bat Society (Fall 2018- present)  
External reviewer for outreach materials on bats for Houston Gardens and West Greeley Conservation District (Spring 2019-present)  
Reviewed McNair Scholar application materials for NSF's Graduate Research Fellowship (Fall 2020)  
Treasurer, UNC's Ju-Jitsu Club (Fall 2019-Spring 2020)  
Served as panel member for McNair Scholar Program discussion on graduate school and application process (Spring 2019).  
Hiked to remote, protected areas to release captive-bred endangered Wyoming toads with WY Game and Fish Department (June 2018).  
Taught English and conservation biology to students age 6- 40 with Liceu Schools, Biocucanga, Brazil (February 2018-May 2018)  
Worked to establish and design pollinator gardens in Pontiac, MI (April-September 2016)  
Assisted with pollinator surveys at remediation sites in NJ with Rutgers University (Summer 2015)

Participated in wetland bird survey, Liwonde National Park, Malawi (January 2016)  
Assisted in mist net survey for northern saw-whet owls at Rutgers Ecological Preserve, Rutgers University (October 2015)  
Volunteer lab assistant for the Winfree Lab (native bees), Rutgers University, NJ (September 2013-April 2014)

## **CERTIFICATIONS & OTHER TRAINING**

Multivariate Analysis of Community Data in PC-ORD, 1 credit course (Spring 2019).  
CPR (October 2017)  
Environmental Geomatics (GIS) (2016)  
Project Learning Tree (2015)  
Project W.E.T (Water Education for Teachers) (2015)

## **SKILLS**

GPS	Bat identification	ArcGIS/ESRI
Map and compass navigation	Radio telemetry	R
Transect surveys	Vegetation surveys	Kaleidoscope and Sonobat
Mist netting	SM2 surveys	Program MARK
Bat handling	Microsoft Office Suite	PC-ORD

## **RELEVANT COURSEWORK**

Environmental Geomatics & ArcGIS (I, II,III)	Wildlife Ecology and Conservation
Analytical Methods in Ecology (used R)	Natural Resource Management
Conversational Bio-Mathematics	Vertebrate Zoology
Statistics, Applied (I & II, used R)	Environmental Education
Conservation Biology	U.S. Environmental Policy
Principles of Evolution	Ornithology
Coevolution	Disturbance Ecology
Behavioral Ecology	

## **OTHER RELEVANT INFORMATION**

Rabies pre-exposure vaccinated (2015)