

ANDREW MILES DUBOIS

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EDUCATION

B.S. Biology, June 2013, North Central College, Naperville, IL

- Thesis: *New quantitative polymerase chain reaction techniques for identifying oomycete pathogens of amphibians*

PROFESSIONAL EXPERIENCE

Wildlife Ecologist & Citizen Science Coordinator, Jefferson County Open Space (JCOS)

April 2016 - present (Seasonal staff)

- Led field surveys to inventory amphibian, reptile, and avian species and identify priority habitat features throughout the diverse habitats of a 55,000-ac park system along the wildland-urban interface along the Colorado Front Range.
- Provided technical expertise and staff training in wildlife conservation and management with an emphasis on amphibians and reptiles.
- Proposed primary research topics and served as the staff coordinator of multiple research projects under the JCOS Small Research Grant Program.
- Oversaw the County's FrogWatch USA and Colorado Butterfly Monitoring Network citizen-science chapters (over 90 volunteers), including the development of new monitoring sites, volunteer training, and data management.
- Engaged in online wildlife education and outreach through e-newsletters, professional conference presentations, blogs, social media, and media interviews.
- Designed public educational programming and organized outreach events focusing on land stewardship topics including special-status species conservation, wildfire prevention, and wildlife safety.
- Created non-personal media illustrating natural history and safety relating to Colorado wildlife, interactive crafts demonstrating the concept of metamorphosis, and an in-house identification guide to local herpetofauna.

Wildlife Ecologist, Private Consultant

June 2016 - present

- Planned projects, designed studies, and prepared technical reports for research, inventory, and monitoring projects related to amphibians, reptiles, and birds for Colorado Parks and Wildlife and City of Boulder Parks and Recreation.
- Designed and implemented wildlife identification, inventory, and monitoring trainings for government biologists and environmental services contractors.

Naturalist Aide, Division of Fish and Wildlife, Indiana Department of Natural Resources

February 2015 - November 2016 (Seasonal staff)

- Used radio-telemetry to track eastern box turtles and assess the result of their relocation from an interstate corridor to the Patoka River National Wildlife Refuge.
- Collected biological data and prepared detailed weekly reports on field activities.
- Inventoried and monitored populations of amphibians and reptiles, including special-status species (e.g. eastern box turtles, eastern hellbenders, green salamanders, and crawfish frogs).
- Studied the occurrence of chronic wasting disease and hemorrhagic disease in white-tailed deer.

Program Naturalist, Wesselman Woods Nature Center, IN

April 2015 - November 2016 (Seasonal Staff)

- Led small teams of volunteers in delivering educational programs about Midwestern wildlife, including owls, woodland salamanders, turtles, and ephemeral wildflowers.
- Delivered talks about the importance of stewardship in the conservation of local wildlife (e.g. eastern box turtles) at local events, schools, and museums.

Research Assistant, Dept. of Forestry and Natural Resources, Purdue University, IN

March 2014 - October 2014 (Seasonal Staff)

- Maintained a database tracking the spread of ranavirus in a population of eastern box turtles and led a small team of volunteers in collecting field data and tissue samples.
- Assisted with husbandry and population augmentations efforts of the near-threatened eastern hellbender and sampled the salamander's skin microbiome throughout its range.

Research Assistant, Department of Biology, North Central College, IL

June 2010 - June 2013

- Assessed habitat quality of a restored prairie stream by examining water quality, algal biomass, and the diversity of the macroinvertebrates living in the stream's substrate.
- Designed species-specific fast qPCR probe and primers to detect the presence and zoospore abundance of the important amphibian egg pathogen *Saprolegnia ferax*.
- Demonstrated that the presence of pathogenic oomycetes caused a delay in hatching of axolotl salamander eggs.
- Examined the role of the pseudogene YAK1 in the ecological separation and speciation of two yeast species.

RESEARCH INTERESTS

Community ecology; species coexistence; spatial ecology; natural history; species distribution modeling; ecological niche modeling; habitat associations; restoration ecology; herpetology; rare species conservation; landscape ecology

AWARDS, HONORS, AND SCHOLARSHIPS

- 2016 NSF Graduate Research Fellowship, Honorable Mention.
- 2009-2013 North Central College, College Scholar.
- 2009-2013 North Central College, Presidential Scholarship. **\$68,000**
- 2009-2013 North Central College, Science Scholarship. **\$8,000**
- 2009-2013 North Central College, Dean's List.

CERTIFICATIONS

- 2017-present Certified Interpretive Guide (National Association for Interpretation)

RESEARCH GRANTS

- 2017 "Conserving northern leopard frogs on Colorado's Front Range," Boulder County Nature Association Grant, **\$1,300 (PI)**
- 2017 "Conserving northern leopard frogs on Colorado's Front Range," Lois Webster Fund Grant, Audubon Society of Greater Denver, **\$1,300 (PI)**
- 2010-2011 "Exploring the effects of YAK1 on cellular growth rates of *Saccharomyces cerevisiae* and *Saccharomyces bayanus*," Richter Grant, North Central College, **\$1,700 (A. DuBois, S. Johnston)**

CONSULTING CONTRACTS

- 2018 "Venomous snake identification, myths, misconceptions, and safety video," United States Navy, Washington, D.C., **\$8,000**
- 2018 "Venomous snake safety and removal techniques," Pacific Gas and Electric Company, San Francisco, CA, **\$1,000**
- 2017 "Take it to the ribbit: determining the presence or absence of northern leopard frogs in City of Boulder Open Spaces," City of Boulder Parks and Recreation, Boulder, CO, **\$3,146**
- 2017 "Front Range anurans and garter snakes," Felsburg, Holt, & Ullevig, Centennial, CO, **\$1,150**
- 2016 "Bird and herptile surveys at Boyd Lake State Park," Colorado Parks and wildlife, Denver, CO, **\$6,890**

TEACHING

Denver Public Schools

2016 – 2018 Guest Teacher (kindergarten, first grade)

Wesselman Nature Society

2015 Guest Lecturer (*Homeschool Field & Lab Methods Course*, fifth grade)

North Central College

2013 Teaching Assistant (*Developmental Biology Laboratory*, undergraduates)

2013 Teaching Assistant (*Genetics Laboratory*, undergraduates)

2012 Teaching Assistant (*Introduction to Cell Biology and Genetics Laboratory*, undergraduates)

PEER-REVIEWED PUBLICATIONS

DuBois, A., and I. DuBois. **2018.** Geographic Distribution: *Thamnophis sirtalis* (Common Gartersnake). *Herpetological Review* 49(2): 288.

DuBois, A. **2017.** Natural History: *Spea intermontana* (Great Basin Spadefoot) Diet. *Herpetological Review* 48(1):172.

DuBois, A., Robertson, A., and L. Bowman. **2016.** Geographic Distribution: *Necturus maculosus* (Mudpuppy). *Herpetological Review* 47(2):245.

DuBois, A., Larson, M., Bowman, L., and A. Mallery. **2016.** Geographic Distribution: *Lithobates clamitans* (Green Frog). *Herpetological Review* 47(3):420.

TECHNICAL REPORTS

DuBois, A., K. Tiece, and J. Ehrenberger. **2017.** Take it to the Ribbit: determining the presence or absence of northern leopard frogs in City of Boulder Open Spaces. Unpublished report for City of Boulder Parks and Recreation, Boulder, Colorado.

Ehrenberger, J., T. Mathies, and **A. DuBois.** **2016.** Boyd Lake State Park 2016 Herpetological Survey. Unpublished report for Colorado Parks and Wildlife, Denver, Colorado.

Ehrenberger, J., T. Mathies, and **A. DuBois.** **2016.** Boyd Lake State Park 2016 Migratory and Breeding Bird Survey. Unpublished report for Colorado Parks and Wildlife, Denver, Colorado.

INVITED PRESENTATIONS

DuBois, A., J. Ehrenberger, K. Tiece, J. Master, and J. Wold. **2018.** Conserving the Northern Leopard Frog on Colorado's Front Range. Boulder County Nature Association (BCNA) annual meeting, Boulder, CO.

DuBois, A. 2018. Jefferson County Amphibians and Reptiles. Oral presentation for the Jefferson County Open Space (JCOS) Land Stewardship Series, Golden, Colorado.

DuBois, A., Shipley, B., K. Triece, H. Johnson, H. Urbanek, and J. Erenberger. 2017. What's all the buzz about? Prairie Rattlesnake movements in an urban landscape and assessing visitor perception. Jefferson County Open Space (JCOS) Land Stewardship Series, Golden, CO.

DuBois, A. 2016. The Tail's Tale: Exploring the development of the rattlesnake's unique warning system. JCOS Director's Forum, Golden, CO.

DuBois, A., DeWerff, S., and S. Johnston. 2010. Phenotypic analyses of the effects of YAK1 on *Saccharomyces cerevisiae* and *Saccharomyces bayanus* in response to carbon and nitrogen sources. Oral presentation to the North Central College board of directors, Naperville, IL.

CONTRIBUTED CONFERENCE PRESENTATIONS

Triece, K., **A. DuBois**, W. Keeley, C. Beebe, and A. Rayburn. **2018.** Not a good friend of mine: opportunities for collaborative bullfrog management along Colorado's Front Range. Colorado Open Space Alliance Conference, Grand Junction, CO.

Bonnell, M.A., B. Shipley, **A. DuBois**, and J. Ehrenberger. **2018.** What's the buzz? Research at the rattlesnake-human interface. Partners In The Outdoors Conference, Breckenridge, CO.

Shipley, B., **DuBois, A.** and J. Erenberger. **2017.** Prairie Rattlesnake (*Crotalis viridis*) studies engage visitors and inform land management along Colorado's developing Front Range. Southwest Partners in Amphibian and Reptile Conservation (SWPARC) annual meeting, Denver, CO.

DuBois, A., Ruthig, G., and C. O'Connor. 2013. Delayed hatching of Axolotl (*Ambystoma mexicanum*) in response to water mold. Poster presentation at the 3rd Annual St. Louis Ecology, Evolution and Conservation Meeting, St Louis, MO.

DuBois, A., Ruthig, G. and C. O'Connor. 2013. *Ambystoma mexicanum* delays hatching in response to a *Saprolegnia* sp. National Conference of Undergraduate Research (NCUR), University of Wisconsin La Crosse, La Crosse, WI.

Di Bernardo, J., **DuBois, A.,** and G. Ruthig. **2013.** Identification, quantification, and preservation of amphibian pathogens in DuPage County, IL. Poster presentation at the National Conference of Undergraduate Research (NCUR), University of Wisconsin La Crosse, La Crosse, WI

Ruffatti, M., **DuBois, A.**, Troyer, C. Gravelle, V., Arif, Z., and C. Weilhoefer. **2012**. Is stream restoration effective? Poster presentation at the Rall Symposium, North Central College, Naperville IL.

DuBois, A., DeWerff, S., Rasmussen, K., and S. Johnston. 2011. Exploring the effects of YAK1 expression on *Saccharomyces cerevisiae* and *Saccharomyces bayanus*. Poster presentation at the annual Rall Symposium, North Central College, Naperville, IL.

DeWerff, S., **DuBois, A.** and S. Johnston. 2010. YAK1 is an expressed pseudogene in *Saccharomyces bayanus*. Midwest Yeast Meeting, Evanston, IL.

MENTORING AND OUTREACH INVOLVEMENT

- 2016 Formulated content integration focusing on natural history topics to assist students with Tier 3 (extreme) behavioral needs at Westbrook Elementary School, Omaha, NE.
- 2015 Supervised and mentored a 7th grade science student in an 8-week independent study surveying reptiles and amphibians living in a local park in Evansville, ID.
- 2015 Naturalist Judge at the 32nd Annual Indiana Wildlife Artists Exhibit at Angel Mounds State Park, Evansville, ID. Invited.
- 2015 Showcased and delivered a presentation on native amphibian biology at the Owensboro Museum of Science & History, Owensboro, KY. Invited.
- 2015 Held a discussion table about native amphibian biodiversity and ecology in Indiana at the Haynie's Corner Art District First Fridays, Evansville, ID. Invited.
- 2015 Organized and provided family-oriented educational activities showcasing the ecological importance of invertebrates at Wesselman Woods Nature Preserve's Bug Fest, Evansville, ID.
- 2015 Presented overview of eastern box turtle biology and conservation status to primary and middle school classes in Evansville, ID schools. Invited.
- 2014 Help the Hellbender Volunteer, Purdue University - Educated the public on freshwater systems and native amphibians at the annual Hellbender Hustle 5k, as well as through electronic media.
- 2012-2013 Volunteer educated high-needs high school students participating in "Science Nights" on different fields within biology and discussed career prospects and avenues to success with interested students in Chicago-area schools.

MEMBERSHIP & SERVICE

- 2018-present Co-Chair, Colorado Partners in Amphibian and Reptile Conservation. Determined priority conservation projects for Colorado Partners in Amphibian and Reptile Conservation, organized field trips, and initiated improvements to the organization's education and outreach efforts.
- 2018-present Steering Committee member, Southwest Partners in Amphibian and Reptile Conservation. Served as the Colorado state liaison to the regional steering committee and helped to facilitate communication between herpetological conservationists throughout the region.
- 2016-present Steering Committee member, Colorado Partners in Amphibian and Reptile Conservation. Organized spring social events for the organization, communicated work and volunteer opportunities in amphibian and reptile conservation to members, Amphibian and Reptile, and supported data collection efforts for ongoing CO PARC research projects.
- 2016-present Steering Committee member, Colorado Partners in Amphibian and Reptile Conservation. Organized spring social events for the organization, communicated work and volunteer opportunities in amphibian and reptile conservation to members, Amphibian and Reptile, and supported data collection efforts for ongoing CO PARC research projects.
- 2016-present Amphibian and reptile monitoring volunteer, Colorado Parks & Wildlife. Used visual encounter surveys and auditory surveys to create a baseline inventory of amphibians and reptiles at Staunton State Park.
- 2016 Venomous snake specialist, Scales of Biodiversity Project, Clemson University. Collected San Lucan speckled rattlesnakes (*Crotalus mitchelli*) from Baja California Sur to be used in studies of snake venom evolution and function across multiple levels of diversity.
- 2016 Amphibian survey volunteer, City of Boulder Parks & Recreation. Investigated the presence/absence of amphibian species in three parks using a combination of auditory surveys, visual encounter searches, and road cruising.
- 2012-2013 Vice President, Beta Beta Beta Biological Honors Society, North Central College. Planned and presented programs to the executive board and volunteered at club functions, facilitated student involvement in academic search committees for hiring new science department faculty.

- 2010-2011 College Scholars honors program recruiting committee, North Central College. Presented involvement and research opportunities to potential members, advised underclassmen in deciding on and gathering information on a research topic and writing internal grants.
- 2009-2011 Office of Service volunteer, North Central College. Renovated a local shop with proceeds supporting a non-profit organization serving children and adults with autism, performed basic home repairs for elderly people in the community.
- 2010 Resident Assistant, North Central College Office of Residence Life. Offered support and guidance to residents in both their educational and personal struggles, arbitrated conflicts between residents and enforced policy violations, prepared and facilitated character and community-building programs for students.
- 2009 Crew Leader, Appalachia Service Project, North Central College. Directed volunteers in making repairs to leaky roofs in a high needs community in rural Virginia.