# J. ALEX

# **BAECHER**



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# **EDUCATION**

AUGUST 2024

INTERDISCIPLINARY ECOLOGY, PHD | UNIVERSITY OF FLORIDA

THESIS: Influence of Global Change on Species' Behavior, Movement, and Ranges PDF

**ADVISOR:** Brett R Scheffers

DECEMBER 2017

BIOLOGICAL SCIENCES, MS | EASTERN KENTUCKY UNIVERSITY

THESIS: Environmental gradients in old-growth Appalachian forest predict habitat use, fine-scale distribution, co-occurrence, and density of woodland salamanders PDF

ADVISOR: Stephen C Richter

MAY 2014

BIOLOGICAL SCIENCES, BS | UNIVERSITY OF ARKANSAS

THESIS: Impact of Anthropogenic Land Use and Hydrologic Disturbance on Crayfish PDF

ADVISOR: Daniel D Magoulick

## **EXPERIENCE**

AUGUST 2019 - 2024

POSTDOCTORAL RESEARCH ASSOCIATE | UNIVERSITY OF FLORIDA

AUGUST 2019 - 2024

DOCTORAL PREEMINENCE RESEARCH FELLOW | UNIVERSITY OF FLORIDA

JANUARY 2018 - JULY 2019

CONSERVATION AND RESEARCH TECHNICIAN | MEMPHIS ZOO

MAY – AUGUST 2017

NSF REU RESEARCH COORDINATOR | EASTERN KENTUCKY UNIVERSITY

MAY 2015 - AUGUST 2017

GRADUATE TEACHING ASSISTANT | EASTERN KENTUCKY UNIVERSITY

August 2012 - March 2015

UNDERGRADUATE RESEARCH ASSISTANT | UNIVERSITY OF ARKANSAS

Funding			
<b>AMOUNT</b>	ORGANIZATION	AWARD NAME	YEAR
\$4,000	UF	Robin Nadeau Graduate Research Award	2019
\$195k	UF	Doctoral Preeminence Fellowship Award	2019
\$500	SSAR	Grant-in-Aid of Herpetological Research	2016
\$500	EKU	Dep. Biological Sciences Travel Stipend	2016
\$500	EKU	Div. Natural Areas Research Grant	2016
\$1,100	EKU	Marcia Athey Research Grant	2016
\$700 (x2)	SFS	Instars Fellowship	2013 - '14
\$5,000 (x2)	NSF	Research Experience for Undergraduates	2012 - '13

# **PUBLICATIONS**

§MENTEE CO-AUTHOR †NATURAL HISTORY NOTE

- ...) Baecher, JA, DH Klinges, LJ Evans, BR Scheffers. *In prep. Informing species' range shifts with global connectivity*.
- ...) Evans, LJ, **JA Baecher**, J Cullen, C Romagosa, BR Scheffers. *In prep*. An expert elicitation tool for mapping the prevalence and habitat suitability of invasive species.
- ...) Baecher, JA, D Klinges, LJ Evans, C Romagosa, R Fletcher, BR Scheffers. *In revision.*Isolating what limits the spread of an invasive predator. *Journal of Applied*Ecology CODE PREPRINT
- 14) Evans, LJ, **JA Baecher**, BR Scheffers. *Accepted*. *Invasion risk posed by the pet trade*. *Frontiers in Ecology and the Environment*
- 13) Baecher, JA. 2024. The environmental filtering paradigm and non-filtering community assembly processes. Journal of Biogeography 51(7):31–8 HTML PDF
- 12) DH Klinges, JA Baecher, JJ Lembrechts, IMD Maclean, J Lenoir, C Greiser, M Ashcroft, LJ Evans, MR Kearney, J Aalto, IC Barrio, P De Frenne, J Guillemot, K Hylander, T Jucker, M Kopecký, M Luoto, M Macek, I Nijs, J Urban, L van den Brink, P Vangansbeke, J Von Oppen, J Wild, J Boike, R Canessa, M Nosetto, A Rubtsov, J Sallo-Bravo, BR Scheffers. 2024. Proximal microclimate: moving beyond spatiotemporal scale to improve predicted biological responses. Global Ecology and Biogeography 33(7):e1–16 HTML PDF CODE
- 11) Comte, L, R Bertrand, S Diamond, LT Lancaster, ML Pinsky, BR Scheffers, JA Baecher, RMWJ Bandara, I-Ching Chen, JA Lawlor, NA Moore, BF Oliveira, J Murienne, J Rolland, MA Rubenstein, J Sunday, LM Thompson, F Villalobos, SR Weiskopf, J Lenoir. 2024. Bringing traits back in the equation: A roadmap to understand species redistribution. Global Change Biology 30:e17271 HTML PDF
- 10) Lawlor, JA, L Comte, G Grenouillet, J Lenoir, JA Baecher, RMWJ Bandara, R Bertrand, I-Ching Chen, SE Diamond, LT Lancaster, NA Moore, J Murienne, BF Oliveira, GT Pecl, ML Pinsky, J Rolland, M Rubenstein, BR Scheffers, LM Thompson, B van Amerom, F Villalobos, SR Weiskopf, J Sunday. 2024. Mechanisms, detections, and impacts of species redistributions under climate change. Nature Reviews Earth & Environment 5:351–368 HTML PDF
- 9) Baecher, JA, SA Johnson, EA Roznik, BR Scheffers. 2023. Experimental evaluation of how invasions and climate change interact to alter the vertical assembly of an amphibian community. Journal of Animal Ecology 92(4):875–888 HTML PDF CODE | Press: Nature Climate Change | Florida Today | USGS

- 8) Basham, EW, JA Baecher, DH Klinges, BR Scheffers. 2022. Vertical stratification patterns of tropical forest vertebrates: A meta-analysis. Biological Reviews 98(1):99–114 HTML PDF CODE
- 7) Basham, EW, M González-Pinzón, A Romero-Marcucci, N Carl, **JA Baecher**, BR Scheffers. **2022**. Large, old trees define the vertical, horizontal, and seasonal distributions of a poison frog. **Oecologia** 199:257–269 HTML PDF CODE
- 6) Swartwout, M, PN Vogrinc, JA Baecher, CS Kross, JD Willson. 2020. Prey Size and Growth Rate do not Influence Trophic Morphology of Juvenile Water Snakes Nerodia sipedon. Herpetologica 76(1):53–60 HTML PDF
- 5)† Baecher, JA, §E Jones, SC Richter. 2020. Tail bifurcation in two species of Desmognathus salamander Caudata: Plethodontidae in southeastern Kentucky, USA. Herpetological Bulletin 150:29–30 HTML PDF
- 4) Hinkson, KM, JA Baecher, S Poo. 2019. Cryopreservation and hormonal induction of spermic urine in the smooth-sided toad Rhaebo guttatus. Cryobiology 89:109 –
   111 HTML PDF | Press: The Commercial Appeal | USA Today
- 3) Baecher, JA, SC Richter. 2018. Environmental gradients in an old-growth Appalachian Forest predict fine-scale distribution, co-occurrence, and abundance of woodland salamanders. Ecology and Evolution 8(24):12940–12952 HTML PDF CODE
- 2) Baecher, JA, PH Vogrinc, JC Guzy, CS Kross, JD Willson. 2017. Herpetofaunal Communities in Restored and Unrestored Remnant Tallgrass Prairie and Associated Wetlands in Northwest Arkansas. Wetlands 38:157–168 HTML PDF
- 1)<sup>†</sup> Baecher, JA, PH Vogrinc, JC Guzy, JC Neal, JD Willson. **2014**. Lithobates areolatus, *Predation*. **Herpetological Review** 45(4):681–682 PDF

### TEACHING AND INSTRUCTION

INSTRUCTOR OF RECORD

UNIVERSITY OF FLORIDA | SCHOOL OF NATURAL RESOURCES AND ENVIRONMENT
ENVIRONMENTAL SCIENCE LAB (EVS 3000L)
FALL 2022 & 2023

1 section per week (3 hrs in-class); 14 student cap

Teaching evaluations >4.5 / 5 across all categories; eval reports: 2022 2023

TEACHING ASSISTANT

EASTERN KENTUCKY UNIVERSITY | DEPARTMENT OF BIOLOGY

HUMAN ANATOMY AND PHYSIOLOGY LAB (BIO 307)

SPRING & FALL 2022 & 2023

2 – 3 sections per week (4-6 hrs in-class); 25 students

Teaching evaluations 3.8 in overall satisfaction (GPA scale)

#### GUEST LECTURES AT UNIVERSITY OF FLORIDA:

- 4) Baecher, JA. 2021. Achieving landscape connectivity under rapid global change. The Ecology of Climate Change (WIS 3410) SLIDES
- 3) Baecher, JA. 2020. Restoration ecology of grasslands and associated herpetofauna. Wildlife of Florida (WIS 3402) SLIDES
- 2) Baecher, JA. 2020. Salamander diversity and conservation in the Southeastern USA. Wildlife of Florida (WIS 3402) SLIDES
- 1) **Baecher**, **JA**. **2020**. Amphibian diversity. **Wildlife of Florida** (WIS 3402) **SLIDES HOSTED WORKSHOPS**:
- 3) Fletcher, RJ, **JA Baecher**, M lezzi, A Marx. **2023**. Application of connectivity modeling to identify and predict movement and range redistribution. **Species On The Move**. Bonita Springs, FL SLIDES
- Baecher, JA, L Evans, BR Scheffers. 2022. Expert elicitation of key invasive species habitat requirements, prevalence, and life history attributes. Austin Carey Forest. Gainesville, FL SLIDES
- Fletcher, RJ, JA Baecher, M lezzi, A Marx. 2021. Expanding the scope of connectivity modeling with Markov chains: perspectives and applications in R. Annual Meeting of the International Association of Landscape Ecologists. Virtual VIDEO

### **PRESENTATIONS**

#### †TALK <sup>‡</sup>POSTER <sup>§</sup>MENTEE

- 35) \*Baecher, JA, L Evans, ... BR Scheffers. 2024. Toward knowledge co-production in invasion modeling: Developing novel interactive expert-elicitation software.

  Invasive Species Research Institute Conference. Gainesville, FL SLIDES
- 34) <sup>†</sup>Evans, L, **JA Baecher**, BR Scheffers. **2024**. *An Integrated Approach for Robust Invasive Species Risk Assessments*. **Invasive Species Research Institute**. Gainesville, FL
- 33) \*Baecher, JA, D Klinges, L Evans, BR Scheffers. 2023. Informing Species Range-shifts with Preliminary Global Connectivity. Species On The Move. Ft Myers, FL SLIDES
- 32) <sup>†</sup>Scheffers, BR, **JA Baecher**, E Basham. **2023**. *Vertical Collapse in Assemblage Complexity Due to Shifts in Precipitation and Novel Biotic Interactions*. **Species On The Move**. Ft. Myers, FL
- 31) <sup>†</sup>Evans, L, **JA Baecher**, BR Scheffers. **2023**. *Invasion Risk Posed by the Pet Trade*. **Species On The Move**. Ft. Myers, FL
- 30) <sup>†</sup>Klinges, DH, J Lembrechts, IMD Maclean, **JA Baecher**, J Lenoir, BR Scheffers. **2023**.

  \*\*Climate Variability and Change Across Scales Using a Novel Global Microclimate Database. **Species On The Move**. Ft. Myers, FL

- 29) <sup>‡</sup>Evans, L, BR Scheffers, **JA Baecher**. **2022**. *Invasion Risk Posed by the Pet Trade*. **NA** *Invasive Species Management Association Annual Conference*. Ft. Myers, FL
- 28) <sup>†</sup>Klinges, DH, **JA Baecher**, J Lembrechts, IMD Maclean, BR Scheffers. **2022**. *Climate Variability and Change Across Scales Using a Novel Global Microclimate Database*. *Microclimate Ecology and Biogeography Conference*. Antwerp, Belgium
- 27) †Baecher, JA, BR Scheffers. 2022. Informing Species Range-shifts with Preliminary

  Global Connectivity. BIOSHIFTS Working Group. Montpellier, France SLIDES
- 26) †Baecher, JA, L Evans, BR Scheffers. 2022. Predicting the spread of invasive Burmese pythons in South Florida. SERISCC Network Seminar Series. (Virtual) SLIDES VIDEO
- 25) <sup>†</sup>Khazan, E ... **JA Baecher**. **2022**. Deconstructing functional diversity to better conservation research and applications using a case study of Colombian butterflies. **Annual Meeting of the Association for Tropical Biology and Conservation**. Cartagena, Columbia
- 24) †Baecher, JA, ... BR Scheffers. 2022. Modeling spread of invasive Burmese pythons: integrating thermoregulation, behavior, and mortality. Annual Meeting of the International Association of Landscape Ecologists. (Virtual) SLIDES VIDEO
- 23) <sup>†</sup>Evans, L, BR Scheffers, **JA Baecher**. 2022. Invasion Risk Posed by the Pet Trade. **Collaborative to Combat the Illegal Trade in Turtles**. (Virtual)
- 22) †Basham, EW, M González-Pinzón, A Romero-Marcucci, ..., **JA Baecher**, BR Scheffers. **2021**. Large, old trees define the vertical, horizontal, and seasonal distributions of a poison frog. **International Canopy Science Conference**. (Virtual)
- 21) †Basham, EW, M González-Pinzón, A Romero-Marcucci, N Carl, **JA Baecher**, BR Scheffers. **2021**. Large, old trees define the vertical, horizontal, and seasonal distributions of a poison frog. **Annual Meeting of the Ecological Society of America**. (Virtual)
- 20) †Basham, EW, JA Baecher, BR Scheffers. 2021. Large, old trees define the vertical, horizontal, and seasonal distributions of a poison frog. European Meeting of Students in Evolutionary Biology. (Virtual)
- 19) †§Jones, E, JA Baecher, M James, A Braccia, SC Richter. 2019. Influence of Salamanders on Leaf Litter Decomposition in Appalachian Headwater Streams. Annual Meeting of the Association of Southeastern Biologists. Memphis, TN
- 18) <sup>†</sup>Hinkson, KM, **JA Baecher**, S Poo. **2019**. Cryopreservation and hormonal induction of spermic urine in the smooth-sided toad (Rhaebo guttatus). **Annual Meeting of the Association of Southeastern Biologists**. Memphis, TN

- 17) \*Baecher, JA, SB Reichling. 2018. Current Status of the Louisiana Pinesnake Captive Breeding Program at the Memphis Zoo. USFWS Working Group Meeting.

  Shreveport, LA
- 16) <sup>‡§</sup>Jones, E, **JA Baecher**, M James, A Braccia, SC Richter. **2018**. *Influence of Salamanders on Leaf Litter Decomposition in Appalachian Headwater Streams*. **Kentucky Academy of Science**. Bowling Green, KY
- 15) †Gross, BA, Z Patton, **JA Baecher**. **2018**. Evaluation of American Alligator Nuisance Management and Human-Alligator Conflict. **25**<sup>th</sup> **Annual Crocodile Specialist Group**. Sante Fe, Argentina
- 14) \*Baecher, JA, SC Richter. 2018. Natural Environmental Gradients Influence the Fine-scale Distribution and Abundance of Terrestrial Salamanders in an Old Growth Appalachian Forest. Joint Meeting of Ichthyology and Herpetology. Rochester, NY
- 13) <sup>†</sup>Grap, P, S Harrel, ... **JA Baecher**. **2018**. Habitat and community differences in the historic and current range of the Buck Darter (Etheostoma nebra). **Annual Meeting of the Association of Southeastern Biologists**. Myrtle Beach, SC
- 12) <sup>†§</sup>Peters, J, J Koslow, **JA Baecher**. **2018**. Influences on the Presence of Invasive Plant Species within Old Growth Forest of Lilley Cornett Woods. **Annual Meeting of the Association of Southeastern Biologists**. Myrtle Beach, SC
- 11) \*Baecher, JA, SC Richter. 2017. Natural Environmental Gradients Influence the Fine-scale Distribution and Abundance of Terrestrial Salamanders in an Old Growth Appalachian Forest. University of Kentucky Center for Ecology, Evolution and Behavior. Lexington, KY
- 10) †SGrap, P, S Harrel, D Black, JA Baecher. 2017. Habitat and community differences in the historic and current range of the Buck Darter (Etheostoma nebra). Southeastern Fisheries Council Annual Meeting. Chattanooga, TN
- 9) \*Baecher, JA, SC Richter. 2017. Modeling occupancy and abundance of terrestrial salamanders across natural environmental gradients in old growth forest. Southeastern Partners in Amphibian and Reptile Conservation Annual Meeting. Little Rock, AR
- 8) \*Swartwout, M, P Vogrinc, JA Baecher, CS Kross, JD Willson. 2016. Growth and Phenotypic Plasticity of Nerodia sipedon in Response to Feeding Frequency and Prey Size. Joint Meeting of Ichthyology and Herpetology. New Orleans, LA
- \*Baecher, JA, P Vongrinc, JD Willson. 2016. Herpetofauna of degraded and restored remnant tallgrass prairie. Joint Meeting of Ichthyology and Herpetology. New Orleans, LA

- 6) \*Baecher, JA, DR Leasure, D Lynch, DD Magoulick. 2013. Impact of Anthropogenic Land Use and Hydrologic Disturbance on Crayfish Assemblages. Joint Meeting of Aquatic Sciences. Portland, OR
- 5) \*Baecher, JA, DR Leasure, D Lynch, DD Magoulick. 2013. Impact of Anthropogenic Land Use and Hydrologic Disturbance on Crayfish Assemblages. Ecosystem Services Research Symposium. Fayetteville, AR
- 4) \*Baecher, JA, DR Leasure, D Lynch, DD Magoulick. 2013. Impact of Anthropogenic Land Use and Hydrologic Disturbance on Crayfish Assemblages. Annual Meeting of the American Fisheries Society. Little Rock, AR
- 3) \*Baecher, JA, J Ortega, SJ Beaupré. 2013. Use of Stable Isotope Analysis for Determining the Diet Breadth of the Western Cottonmouth (Agkistrodon piscivorous). Society for Freshwater Science Annual Meeting. Jacksonville, FL
- 2) \*Baecher, JA, J Ortega, SJ Beaupré. 2013. Use of Stable Isotope Analysis for Determining the Diet Breadth of the Western Cottonmouth (Agkistrodon piscivorous). Arkansas Water Resource Conference. Jacksonville, FL
- \*Baecher, JA, J Ortega, SJ Beaupré. 2012. Use of Stable Isotope Analysis for Determining the Diet Breadth of the Western Cottonmouth (Agkistrodon piscivorous). Ecosystem Services Research Symposium. Fayetteville, AR

# **PEER REVIEW**

JOURNAL (REVIEWED/REQUESTED):

BIOLOGICAL CONSERVATION (1/1); CONSERVATION SCIENCE AND PRACTICE (1/2); ECOGRAPHY (1/1); ECOLOGY & EVOLUTION (4/5); HERPETOLOGICAL CONSERVATION BIOLOGY (3/5); HERPETOLOGICAL REVIEW (4/5); HYDROBIOLOGY (1/1); NATURAL AREAS JOURNAL (2/2); OECOLOGIA (1/2); SCIENTIFIC REPORTS (1/1); WILDLIFE SOCIETY BULL. (2/2)

#### MENTORSHIP

EASTERN KENTUCKY UNIVERSITY: NATHAN MCGREGOR, ASHLEY ALBINO, EMILY JONES, ALEX GIBSON, MYESHA JAMES, KELLEY HOEFER

RHODES COLLEGE: BILL HAUGE, MADELINE ESTES

UNIVERSITY OF FLORIDA: SIERRA SCAUZILLO, NOAH BOWEN

# Non-funded Proposals

<b>AMOUNT</b>	GRANT DESCRIPTION	DECISION	YEAR
\$235k	NSF: Postdoctoral Research Fellowship – Biology	"Highly meritorious"	2023
\$25k	The Wilderness Society: Gloria Barron Fellowship	Declined	2021
\$3,500	AmMusNatHist: Teddy Roosevelt Memorial Grant	Declined	2020
\$4,000	FCSal: Daniel M. Digiacomo Grant	Declined	2020
\$60k	Walt Disney Company: Disney Conservation Fund	Inquiry declined	2019
\$10k	NPS: James T. Tanner Memorial Fellowship	Inquiry declined	2019

# **VOLUNTEER AND OUTREACH ACTIVITIES**

ACTIVITY   EVENT (# OF ATTENDEES)	YEAR	CONT'D	
Outreach   UARK Sooie RSO Fair, AR (~300)	2013	Hike leader   Maywoods Teach. Lab, KY (~100)	2015
Outreach   UARK Razorbash, AR (~100)	2013	Outreach   Floracliff Nature Sanct., KY(~35)	2015
Outreach   Holt Middle School (~30)	2013	Outreach   Model Elementary School, KY (~15)	2015
Cleanup   Lake Fayetteville Watershed (~30)	2013	Outreach   EKU Career Fair, KY (~150)	2016
Outreach   Mt. Kessler Bioblitz, AR (~15)	2013	Hike leader   Lilley Cornett Woods, KY (~20)	2016
Clean up   Scull Creek, AR (~30)	2013	Outreach   Water Quality Assessment, KY (~30)	2016
Science Judge   NWA Sci. Eng. Fair (~50)	2013	Hike leader   Lilley Cornett Woods, KY (~20)	2016
Hike leader   Mt. Kessler Bioblitz, AR (~15)	2014	Outreach   Rhodes College, TN (~25)	2017
Hike leader   Ozark Nat. Sci. Center, AR (~30)	2014	Outreach   Memphis Zoo, TN (~5)	2017
Outreach   UARK Wildlife Society, AR (~40)	2014	Outreach   Memphis Zoo, TN (~100)	2017
Hike leader   Mt. Kessler Bioblitz, AR (~15)	2014	Outreach   Memphis Zoo, TN (~200)	2018
Hike leader   Woolsey Wet Prairie, AR (~10)	2014	Outreach   Memphis Zoo, TN (~30)	2018
Hike leader   Floracliff Nature Sanct., KY(~20)	2015	Outreach   Memphis Zoo, TN (~15)	2019

# PROFESSIONAL REFERENCES

BRETT R SCHEFFERS, PHD | UNIVERSITY OF FLORIDA

ASSOCIATE PROFESSOR, Department of Wildlife Ecology and Conservation

**2**: 352-846-0570

: WEBSITE

ROBERT GURALNICK, PHD | UNIVERSITY OF FLORIDA

CURATOR OF BIODIVERSITY INFORMATICS, Florida Museum of Natural History

**2**: 352-273-1980

website

STEPHEN C RICHTER, PHD | EASTERN KENTUCKY UNIVERSITY

PROFESSOR, Department of Biological Sciences

DIRECTOR, Division of Natural Areas

EXECUTIVE DIRECTOR, Institute of Ag., Nat. Res., and the Envir.

**73**: 859-622-8688

website

JOHN D ("JD") WILLSON, PHD | UNIVERSITY OF ARKANSAS

ASSOCIATE PROFESSOR, Department of Biological Sciences

**8**: 479-575-2647

w: WEBSITE