

# Simon Tye

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## Professional Summary

Dr. Simon Tye is a wildlife biologist. He is skilled at data management, geospatial analyses, statistical analyses, writing grants and publications, graphic design, and science communication. His recent research focuses on better understanding how sudden die-offs in animal populations affect wild communities and developing approaches to help mitigate future animal declines, with current emphases on fish and birds.

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## Education

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| 2018 – 2023 | <i>University of Arkansas</i><br>PhD. - Biology<br>Dissertation: Ecological, evolutionary, and temporal dynamics of animal mortality events<br>Advisor: Dr. Adam Siepielski |
| 2014 – 2017 | <i>University of Nebraska at Kearney</i><br>B.S. - Biology (Wildlife)<br>Thesis: Phenology of a North American beaver lodge<br>Advisors: Drs. Keith Geluso and Mary Harner  |
| 2008 – 2010 | <i>Creighton University</i><br>Social Entrepreneurship  |
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## Work Experience

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|-------------|---|
| 2020 – 2023 | <i>Research assistant</i> <ul style="list-style-type: none"><li>• Siepielski Lab</li></ul>  |
| 2019 – 2023 | <i>Graphic designer</i> <ul style="list-style-type: none"><li>• Alverson Lab</li></ul>  |
| 2018 – 2019 | <i>Graduate assistant</i> <ul style="list-style-type: none"><li>• Siepielski Lab</li></ul>  |
| 2015 – 2017 | <i>Undergraduate researcher</i> <ul style="list-style-type: none"><li>• Platte Basin Timelapse Project</li><li>• Witnessing Watersheds Lab</li><li>• Geluso Lab</li></ul> |
| 2014 – 2015 | <i>Undergraduate researcher</i> <ul style="list-style-type: none"><li>• Simon Lab</li></ul>   |
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## Teaching Experience

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| 2019 – 2020 | <i>Teaching assistant: General Ecology Lab</i> <ul style="list-style-type: none"><li>• Instructed two lab sections for late-stage undergraduates</li></ul> |
| 2019        | <i>Teaching assistant: Human Anatomy Lab</i>   |

- 2018 • Instructed two lab sections for early-stage undergraduates  
*Teaching assistant: Principles of Biology Lab*
- 2008 – 2010 • Instructed two lab sections for early-stage undergraduates.  
*Tutor: Building Bright Futures Foundation*
- Tutored and mentored disadvantaged high school and community college students

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## Journal Articles

### Under review / In preparation

- Tye, SP**, SB Fey, JP Gibert, and AM Siepielski. 2023. Predator mass mortality events restructure freshwater food webs via trophic recoupling. Under review at Nature.
- Tye, SP**, and AM Siepielski. 2023. Size-selective predation generates divergent consumer life history trait evolution under contrasting resource levels. In preparation for Ecology Letters.
- Tye, SP**, AM Siepielski, et al. 2023. Witnessing the decline of North American birds. In preparation for Science.

### Published

- Gómez-Llano, M, WA Boys, T Ping, **SP Tye**, and AM Siepielski. 2022. Interactions between fitness components across the life cycle constrain competitor coexistence. In press at Journal of Animal Ecology.
- Tye, SP**, AM Siepielski, A Bray, A Rypel, N Phelps, and SB Fey. 2021. Climate change amplifies the frequency of fish mass mortality events across north temperate lakes. *Limnology and Oceanography Letters*, 7(6):510-519.
- Hasik, AZ, **SP Tye**, T Ping, and AM Siepielski. 2021. A common measure of prey immune function is not constrained by the cascading effects of predators. *Evolutionary Ecology*, 37(1):13-30.
- Tye, SP**, ML Forsberg, EM Brinley Buckley, JS Dale, K Geluso, AM Siepielski, and MJ Harner. 2021. One house is a home for many: temporal partitioning of vertebrate species on an American beaver lodge. *American Midland Naturalist*, 185(2):229-240.
- Siepielski, AM, AZ Hasik, T Ping, M Serrano, K Strayhorn, and **SP Tye**. 2020. Predators weaken prey intraspecific competition through natural selection. *Ecology Letters*, 23(6):10.1111/ele.13491
- Tye, SP**, BK Blaske, and AM Siepielski. 2020. Population-level variation of digestive physiology costs of mounting an immune response in damselflies. *Ecological Entomology*, 45(3):635-643.
- Tye, SP**, and K Geluso. 2019. Day roosts of *Myotis* (Mammalia: Chiroptera) in an arid riparian corridor in southwestern New Mexico. *Western North American Naturalist*, 79(4):515-522.
- Tye, SP**, and K Geluso. 2019. Natural history: *Thamnophis radix*. *Herpetological Review*, 50(3):603.
- Tye, SP**, IR Gomez, EM Brinley Buckley, and MJ Harner. 2019. Natural history: *Phrynosoma hernandesi*. *Herpetological Review*, 50(1):143-144.

- Geluso, K, EC Keele, IR Gomez, NM Pauley, and **SP Tye**. 2018. Night-roosting behaviors for the northern long-eared myotis (*Myotis septentrionalis*) under a bridge revealed by time-lapse photography. *American Midland Naturalist*, 179(2):287-293.
- Tye, SP**, and K Geluso. 2017. Geographic distribution: *Tropidoclonion lineatum*. *Herpetological Review*, 48(4):187.
- Tye, SP**, K Geluso, and MJ Harner. 2017. Geographic distribution: *Hyla chrysocelis*. *Herpetological Review*, 48(2):382-383.
- Tye, SP**, K Geluso, and MJ Harner. 2017. Early emergence and seasonality of the red-bellied snake (*Storeria occipitomaculata*) along the Platte River in south-central Nebraska, USA. *Transactions of the Nebraska Academy of Sciences and Affiliated Societies*, 37:11-17.
- Tye, SP**, K Geluso, and MR Fugagli. 2016. Merriam's shrew (*Sorex merriami*) in the diet of a Mexican spotted owl (*Strix occidentalis lucida*) from Grant County, New Mexico. *Museum of Texas Tech Occasional Papers*, 341:1-5.
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### Book Chapters

- Siepielski, AM, WA Boys, T Lanzer, M Gomez-Llano, and **SP Tye**. 2021. Insect coexistence under global change. *The Encyclopedia of Conservation*, Elsevier.
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### Popular Articles

- Tye, SP**. 2023. Snapshot: Climate. *Southern Cultures*.
- Tye, SP**, and ER Hagen. 2022. The Perennial Seeds of Zapata. *Science for the People*.
- Tye, SP**. 2020. Bats of Arkansas. University of Arkansas Museum. University of Arkansas Museum Student Advisory Council.
- Tye, SP**. 2019. Enhancing figures: from ggplot2 to Adobe Illustrator. *American Society of Naturalists Graduate Student Council*.
- Tye, SP**. 2017. Sights and Sounds of Spring. *Platte Basin Timelapse Project*.
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### Press

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| 2023 | Animals Are Dying in Droves. What Are They Telling Us? <i>The New Republic</i> .              |
| 2022 | As Temperatures Get Warmer, Fish Are At Risk, <i>National Public Radio</i> , Science Friday.  |
| 2022 | A Warming Climate Brings Dire Predictions for Minnesota Fish, <i>Minnesota Public Radio</i> . |
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### Presentations

#### Oral

- Tye, SP**, SB Fey, JP Gibert, and AM Siepielski. 2021. Mass mortality events of predators generate unique community dynamics. *Ecological Society of America*. Oral.

- Harner, MJ, EM Brinley Buckley, ES Soles, D Whited, **SP Tye**, and MS Cooper. 2020. Shifting channels of the Gila: historical analysis of land-cover change along the Cliff-Gila Valley floodplain from 1935 to 2016. Natural History of the Gila Symposium, Silver City, NM.
- Tye, SP**, MJ Harner, ML Forsberg, EM Brinley Buckley, and JS Dale. 2018. Biodiversity and animal activity associated with a beaver lodge near the Platte River. Platte River Basin Ecosystem Symposium, Wood River, Nebraska. Oral.
- Harner, MJ, EM Brinley Buckley, and **SP Tye**. 2017. The art and science of the Platte River wetlands. Museum of Nebraska Art Showcase, Kearney, Nebraska. Oral.
- Tye, SP**, ML Forsberg, EM Brinley Buckley, K Geluso, JS Dale, and MJ Harner. 2017. Phenology of a North American beaver (*Castor canadensis*) lodge near the Platte River, Nebraska, unveiled by time-lapse photography. Society for Freshwater Science, Raleigh, North Carolina. Oral.
- Harner MJ, EM Brinley Buckley, B Gottesman, **SP Tye**, M Farrell, ML Forsberg, and B Pijanowski. 2017. Sights and sounds of the spring sandhill crane migration on the Platte River. North American Crane Workshop, Chattanooga, Tennessee, Oral.

#### Poster

- Lanzer, T, WA Boys, T Ping, **SP Tye**, and AM Siepielski. 2021. Cheating death: natural selection overcomes the growth-predation tradeoff. Ecological Society of America. Poster.
- Tye, SP**, BK Blaske, and AM Siepielski. 2019. Population density influences the digestive physiology costs of mounting an immune response in damselflies. Ecological Society of America, Louisville, Kentucky. Poster.
- Tye, SP**, and K Geluso. 2017. Day roosts of *Myotis* (Mammalia: Chiroptera) in an arid riparian corridor in southwestern New Mexico. Central Plains Society of Mammalogists, Dubuque, Iowa. Poster.
- Geluso, K, EC Keele, IR Gomez, NM Pauley, and **SP Tye**. 2017. Night-roosting behaviors for the northern long-eared myotis (*Myotis septentrionalis*) under a bridge revealed by time-lapse photography. Central Plains Society of Mammalogists, Dubuque, Iowa. Poster.

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#### Awards and Fellowships

2023	Distinguished Dissertation Award <i>University of Arkansas</i>
2020 – 2023	Graduate Research Fellowship <i>National Science Foundation</i>
2019	David Causey Prize for Graduate Study <i>Department of Biological Sciences, University of Arkansas</i>
2018 – 2022	Doctoral Academy Fellowship <i>Department of Biological Sciences, University of Arkansas</i>
2017	Outstanding Undergraduate Student <i>Department of Biology, University of Nebraska at Kearney</i>
2007	Eagle Scout <i>Boy Scouts of America</i>

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## Grants

### Funded

- Tye, SP.** 2020. Role of adaptation in generating community responses to mass mortality events. National Science Foundation: Graduate Research Fellowship Program. \$138,000.
- Tye, SP.** 2019. Doctoral Student Travel Grant. University of Arkansas. \$1,100.
- Tye, SP.** 2017. Biology Department Research Award. University of Nebraska at Kearney. \$500.
- Tye, SP.** 2017. Undergraduate Research and Creative Activity Award. University of Nebraska at Kearney. \$400.

### Not funded

- Tye, SP.** 2020. Eco-evolutionary feedbacks generated by mass mortality events. Society for the Study of Evolution: R.C. Lewontin Award. \$1,790.
- Tye, SP.** 2020. Ecological and evolutionary responses after mass mortality events. University of Arkansas: Graduate-Professional Student Congress Research Grant. \$1,255.
- Tye, SP.** 2019. Potential coevolutionary dynamics after mass mortality events. American Philosophical Society: Lewis and Clark Fund for Exploration and Field Research \$5,000.
- Tye, SP.** 2018. Ecological and evolutionary implications of mass mortality events. National Academy of Sciences, Engineering, and Medicine. \$72,000.
- Tye, SP.** 2017. Macroinvertebrate communities of the upper Gila River. National Science Foundation Graduate Research Fellowship Program. \$138,000.
- Tye, SP,** and K Geluso. 2017. Day roosts of bats in an arid riparian corridor in southwestern New Mexico. Holohil. Not funded. \$2,500.

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## Service and Outreach

### Committees

2019 – 2022	Graduate Council member <i>American Society of Naturalists</i>
2019 – 2022	Student Awards committee member <i>American Society of Naturalists</i>
2019 – 2022	Workshop committee member <i>American Society of Naturalists</i>
2019 – 2020	Student Advisory Council member <i>University of Arkansas Museum Student Advisory Council</i>

### Workshop

Lehmborg, ES, and **SP Tye.** 2020. Command-line programming and bioinformatics workshop. ECR<sup>2</sup> (Evolution Community Resources for Early Career Researchers; American Society of Naturalists, Society of the Study of Evolution, Society of Systematic Biologists). Co-host.

### Graphic design

- Created merchandise for the American Society of Naturalists (ASN) to help fund diversity, equity, and inclusion initiatives. Profits provided 100 international researchers with free virtual admission to Evolution 2022.

- Created logos and multimedia for major academic conferences in ecology and evolutionary biology (ECR<sup>2</sup> 2020, Virtual Asilomar 2021, Evolution 2022, Asilomar 2023).
- Helped create figures in *New Phytologist* (Onyshchenko et al., 2021), *Trends in Ecology and Evolution* (Gómez-Llano et al., 2021), *Proceedings of the National Academy of Sciences* (Svensson et al., 2020), *The Anatomical Record* (Robinson and Yoakum, 2020), and *Journal of Wildlife Diseases* (Lindblom et al., 2017).

### Societies

2019 – Present	American Society of Naturalists
2019 – 2023	Society for the Study of Evolution
2019 – 2022	Ecological Society of America
2017 – 2020	Society for Freshwater Science
2017 – 2019	Central Plains Society of Mammalogists

### Reviewer

The Prairie Naturalist, Ecological Entomology, PLOSOne

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## **Computer Skills**

### *Coding languages and applications*

R (advanced), Python (intermediate), Bash (intermediate), HTML (intermediate), Shiny Apps (intermediate)

### *Geographic information systems*

ERDAS Imagine (intermediate), ESRI ArcGIS (intermediate), QGIS (intermediate), Google Earth Engine (intermediate)

### *Graphic design*

Adobe Creative Cloud (After Effects, Bridge, Illustrator, Photoshop, Premiere Pro; advanced)

### *Word processing*

Apache OpenOffice, Google Office, Microsoft Office

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## **Relevant coursework**

*Biostatistics, Community Ecology, Ecology, Entomology, Evolution, Evolutionary Ecology, Genetics, Herpetology, Mammalogy, Ornithology, Phylogenetic Comparative Methods, Plant Biology, Plant Ecology, Plant Taxonomy, Time-Series Analyses*

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## References

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*Dr. Andrew Alverson*  
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