

# CURRICULUM VITAE

**PATRICK J. RUHL**

May 2023

## PERSONAL

---

Title: Assistant Professor

Address: Department of Biology  
Box 12251  
Harding University  
Searcy, AR 72149

Phone: (765)418-8202  
email: pruhl@purdue.edu

## EDUCATION

---

Harding University

B.S. – 2012  
Major: Biology  
Cumulative GPA: 3.94  
*Summa Cum Laude*

Purdue University

M.S. – 2014  
Concentration: Wildlife Science  
Cumulative GPA: 3.91

Purdue University

Ph.D. – 2018  
Concentration: Avian Ecology  
Cumulative GPA: 3.91

## FIELDS OF INTEREST

---

General: Wildlife Biology and Conservation

Specific: - Full annual cycle ecology of Worm-eating Warblers  
- Impacts of Modern Forestry Practices on breeding bird demography  
- Roosting and foraging ecology of birds during the non-breeding season  
- Anthropogenic impacts on wildlife populations.

## ACADEMIC AND RESEARCH POSITIONS

---

2018-Present *Assistant Professor:* Harding University, Searcy, AR

Instructor of Biostatistics, Environmental Science, Ecology Lab,  
and Director of the Gilliam Biological Research Station

References- Available upon request

2015 – 2018 *Research Assistant:* Purdue University, West Lafayette, IN

Research on postfledging ecology of mature forest birds in early  
successional habitat

Reference- Professor John, B. Dunning Jr.: [jdunning@purdue.edu](mailto:jdunning@purdue.edu)

2012 – 2014 *Research Assistant:* Purdue University, West Lafayette, IN

Research on the effects of timber harvest on terrestrial salamanders  
Reference- Professor John, B. Dunning Jr.: [jdunning@purdue.edu](mailto:jdunning@purdue.edu)

2011 *Research Technician:* Purdue University, West Lafayette, IN

Assisted with trapping and tagging small mammals

Oak Savanna Restoration Project

Reference- Valerie Clarkston: [val.clarkston@gmail.com](mailto:val.clarkston@gmail.com)

**PUBLISHED MANUSCRIPTS**

---

1. McKinney, A.B., K.N. Barlow, H.E. Adams, J.L. White, K.F. Kellner, and **P. J. Ruhl**. 2023. Foraging intensity of Tufted Titmice (*Baeolophus bicolor*) in response to feed type and extreme winter conditions. *Southeastern Naturalist* 22:43-56.
2. **Ruhl, P.J.**, K.F. Kellner, and J.B. Dunning Jr. 2020. Ecological factors explain habitat associations of mature-forest songbirds in regenerating forest clearcuts. *Wilson Journal of Ornithology* 132:145-158.
3. **Ruhl, P.J.**, E.A. Flaherty, and J.B. Dunning Jr. 2020. Using stable isotopes of plasma, red blood cells, feces, and feathers to assess mature-forest bird diet during the postfledging period. *Canadian Journal of Zoology* 98:39-46.
4. Kellner, K.F., **P.J. Ruhl**, J.B. Dunning Jr., K.W. Barnes, M.R. Saunders, and R.K. Swihart. 2018. Local-scale habitat components driving bird abundance in Eastern deciduous forests. *American Midland Naturalist* 180:52-65.
5. **Ruhl, P.J.**, C.D. Delancey, and J.B. Dunning Jr. 2018. Roost preference, postfledging habitat use, and breeding phenology of adult female Worm-eating Warblers (*Helmitheros vermivorum*) on the breeding grounds. *Wilson Journal of Ornithology* 130:397-409.
6. **Ruhl, P.J.**, K.F. Kellner, J.M. Pierce, J.K. Riegel, R.K. Swihart, M.R. Saunders, and J.B. Dunning Jr. 2018. Characterization of Worm-eating Warbler (*Helmitheros vermivorum*) breeding habitat at the landscape level and nest scale. *Avian Conservation and Ecology* 13:11.
7. Homoya, W., J.W. Moore, **P.J. Ruhl**, and J.B. Dunning, Jr. 2017. Do American Golden-Plovers (*Pluvialis dominica*) avoid wind-energy turbines in Indiana during spring migration? *The Wilson Journal of Ornithology* 129:863-871.
8. Peele, J., C. Nix, **P. Ruhl**, R. Chapman, P. Zollner, and M. Saunders. 2017. Effects of woody biomass harvests on a population of Plethodontid salamanders in Southeast Indiana. *American Midland Naturalist* 178:132-143.
9. **Ruhl, P.J.**, J.M. Pierce, J.B. Dunning Jr. 2016. An efficient and inexpensive apparatus for collecting fecal samples during banding studies: revisiting an underutilized technique. *North American Bird Bander* 41:145-150.
10. Kellner K.F., **P.J. Ruhl**, J.B. Dunning Jr., J.K. Riegel, and R.K. Swihart. 2016. Multi-scale responses of breeding birds to experimental forest management in Indiana, USA. *Forest Ecology and Management* 382:64-75.
11. **Ruhl P.J.**, R.N. Chapman, and J.B. Dunning Jr. 2016. Field Testing a standard metabolic rate estimation technique for Eastern Red-Backed Salamanders. *Journal of Herpetology* 50:138-144.
12. **Ruhl P.J.**, J.B. Dunning Jr. 2015. Morphometrics of Worm-eating Warblers in South-Central Indiana: hatching-year and after hatching-year comparison. *North American Bird Bander* 40:81-84.
13. **Ruhl P.J.**, J.K. Riegel, and J.B. Dunning Jr. 2015. Confirmation of successful Chestnut-sided Warbler breeding in South-Central Indiana. *Proceedings of the Indiana Academy of Science* 124:38-42.

---

**IN PREP MANUSCRIPTS**

---

14. González, E., F.N. Hale, M.J. Adams, D.A. Kidder, and **P.J. Ruhl**. 2023. Roosting site preferences and habitat associations of White-throated Sparrows (*Zonotrichia albicollis*) on the wintering grounds.

---

**INVITED TALKS**

---

1. **Patrick J. Ruhl**. "Breeding Bird Response to Forest Management in the Hardwoods Ecosystem Experiment" - *Forestry for the Birds: Joint Meeting of the Indiana Society of American Foresters, The Nature Conservancy in Indiana, and the Indiana Chapter of the Wildlife Society, March, 24, 2022*
2. **Patrick J. Ruhl**. "Importance of Early Successional Habitat for "Mature-Forest" Birds" - *Wildlife in America Online Webinar for Purdue University Fall 2020*
3. **Patrick J. Ruhl**, Kenneth F. Kellner, John B. Dunning Jr. "Using Quantitative Methods to Understand Postfledging Associations of Mature Forest Birds" - *Harding University Mathematics Department Seminar Series, in Searcy, AR, February 11, 2020*
4. **Patrick J. Ruhl**. "Understanding the Postfledging Associations of Mature Forest Birds with Early Successional Habitat" - *Arkansas State University Biology Department Seminar Series, in Jonesboro, AR, September 19, 2018*
5. **Patrick J. Ruhl**, Kenneth F. Kellner, Elizabeth A. Flaherty, and John B. Dunning Jr. "Where Do Forest Birds Go After Nesting?" - *Monthly meeting of the Robert Cooper Audubon Society, Muncie, IN February 21, 2018*
6. **Patrick J. Ruhl**, Kenneth F. Kellner, Elizabeth A. Flaherty, and John B. Dunning Jr. "What is a Mature Forest Bird? Habitat-use of Breeding Birds in Southern Indiana" - *Wednesdays in the Wild at Lilly Nature Center, West Lafayette, IN February 7, 2018*
7. **Patrick Ruhl**, Kenneth Kellner, Jeffery Riegel, Elizabeth Flaherty, and John Dunning Jr. "Postfledging Habitat Associations of Mature Forest Birds in Southern Indiana." - *Harding University Biology Department Seminar Series, in Searcy, AR. October 30, 2017*
8. **Patrick J. Ruhl** and John B. Dunning Jr. "Breeding Bird Response to Even-aged Management in the Central Hardwoods Region." - *Partners in Flight Central Hardwoods Joint Venture Management Board Meeting at the Hoosier National Forest Headquarters, Bedford, IN April 25, 2017*
9. **Patrick J. Ruhl**, and John B. Dunning Jr. "A Plethora of Wormies." - *The Wildlife Society North Central Section Student Conclave at Camp Tecumseh, Brookston, IN March 25, 2017*
10. **Patrick J. Ruhl**, Kenneth Kellner, John Dunning Jr., Jeffery Riegel, Robert Swihart. "Habitat Use and Seral Associations of Indiana Birds." - *Central Hardwood Oak Ecology and Wildlife Management Conference, Nashville, IN March 8, 2017*
11. **Patrick J. Ruhl**. "Worm-eating Warbler Breeding Demography and Post-fledging Habitat Use in South-Central Indiana."

- *Annual Inland Bird Banding Association Meeting at Mary Gray Bird Sanctuary, Connersville, IN November 12, 2016*
- 12. **Patrick J. Ruhl.** "Managing Indiana Woodlands for Bird Biodiversity: A Report from the Hardwood Ecosystem Experiment."  
- *Indiana Forestry and Woodland Owners Association Annual Meeting Columbus, IN November 5, 2016*
- 13. **Patrick J. Ruhl.** "Can Salamanders Become Canaries? The Utility of Red-backed Salamanders as Bioindicators for Forest Ecosystem Health."  
- *Hoosier Herpetological Society Meeting at the Holliday Park Nature Center, in Indianapolis, IN. September 21, 2016*
- 14. **Patrick J. Ruhl.** "Forest Bird Response to Clearcutting."  
- *Natural Resources Teacher Institute at the Forestry Training Center, in Morgan Monroe State Forest, IN. June 24, 2016*
- 15. **Patrick J. Ruhl.** "The impacts of Timber Harvest on Southern Indiana Birds are not so 'Clear-cut.'"  
- *Ball State University Chapter of The Wildlife Society Seminar Series Muncie, IN April 14, 2016*
- 16. **Patrick J. Ruhl,** Chapman, R.N., and Dunning J.B.Jr. "Effects of biomass harvest on eastern red-backed salamanders (*Plethodon cinereus*)"  
- *Harding University Biology Department Seminar Series, in Searcy, AR. September 08, 2014*

#### **PROFESSIONAL PRESENTATIONS**

---

1. **Patrick Ruhl.** "Migratory connectivity of Louisiana Waterthrush and Worm-eating Warbler." *October 12, 2020*  
- *Harding University Biology Department Seminar Series "Bio Bit" Searcy, AR*
2. **Patrick Ruhl.** "Identifying and investigating knowledge gaps in the Worm-eating Warbler full annual cycle to inform habitat management and conservation decisions." *June 26, 2019*  
- *Annual meeting of the American Ornithological Society, Anchorage, AK*
3. **Patrick Ruhl,** Kenneth Kellner, John B. Dunning Jr. "Ecological variables explaining early-successional habitat associations of six mature-forest bird species during the breeding season." *June 27, 2019*  
- *Annual meeting of the American Ornithological Society, Anchorage, AK*
4. **Patrick Ruhl,** Kenneth Kellner, John B. Dunning Jr., Jeffery Riegel, Robert Swihart, and Elizabeth Flaherty. "Multi-scale bird community response to forest management in the Central Hardwood Region." *August 3, 2017*  
- *1<sup>st</sup> annual meeting of the American Ornithological Society, Lansing, MI*
5. **Patrick J. Ruhl,** and John B. Dunning Jr. "Nursery or buffet: to what extent are Worm-eating Warblers using early successional habitat on summer breeding grounds?" *August 19, 2016*  
- *North American Ornithological Conference, in Washington, D.C.*
6. **Patrick J. Ruhl.** "How do forest birds respond to clearcutting?"  
- *Wednesdays in the Wild at Lilly Nature Center, West Lafayette, IN March 16, 2016*
7. **Patrick J. Ruhl.** "A Summer of bird banding in southern Indiana."

*-Monthly meeting of the Sycamore Chapter of the Audubon Society, in West Lafayette, IN November 12, 2015*

8. **Patrick J. Ruhl**, Chapman, R.N., and Dunning J.B.Jr. "Effects of biomass harvest on eastern red-backed salamanders (*Plethodon cinereus*)"

*-Joint meeting of Ichthyologists and Herpetologists, in Chattanooga, TN August 01, 2014*

## **TEACHING EXPERIENCE**

---

### **Courses Taught**

|                         |              |
|-------------------------|--------------|
| Ornithology/Herpetology | 2022–Present |
| Biostatistics           | 2018–Present |
| Animal Behavior Lab     | 2019         |
| Ecology Lab             | 2020–Present |
| Environmental Science   | 2020–Present |

### **Graduate Teaching Assistant Positions**

|   |             |
|---|-------------|
| Wildlife Techniques   | 2017        |
| <u>Reference</u> - Professor Elizabeth Flaherty; eflaher@purdue.edu   |             |
| Ornithology   | 2014 – 2017 |
| <u>Reference</u> – Professor John B. Dunning Jr.; jdunning@purdue.edu |             |
| Ornithology Lab   | 2016        |
| <u>Reference</u> – Professor Ken Kellner; ken.kellner@gmail.com       |             |
| Herpetology Lab   | 2013 – 2014 |
| <u>Reference</u> - Professor Rod Williams: rodw@purdue.edu            |             |

### **Undergraduate Teaching Assistant Positions**

|                  |             |
|------------------|-------------|
| Microbiology Lab | 2010 – 2012 |
| Chemistry Lab    | 2009        |

## **PROFESSIONAL DEVELOPMENT/TRAINING**

---

### **Association of College and University Educators (ACUE) Teaching Certification**

*Course in Effective Teaching Practices 2019-2020*

### **ARCGIS**

*Completed ESRI ArcGIS desktop course; experience with ArcGIS Spatial Analyst*

### **Google Drive**

*Completed Google Drive and Google Team Drive Training 8/23/2019*

### **Microteaching Workshop**

*Teaching Professional Development 2012*

## **PROFESSIONAL SOCIETY MEMBERSHIP**

---

American Ornithological Society (current)  
 National Audubon Society (current member and past board member local chapter)  
 American Studies Institute (current)  
 Alpha Chi National College Honors Scholarship Society (current)  
 Society for the Study of Amphibians and Reptiles (past)

**REVIEWER FOR**

*Avian Conservation and Ecology, Ecology and Evolution, Ecosphere, Forest Ecology and Management, Forests, Sustainability, Landscape Ecology, PeerJ, Ornithological Applications, Wilson Journal of Ornithology, Acta Ornithologica, American Midland Naturalist, North American Bird Bander, American Woodcock Proceedings*

**EXTENSION AND OUTREACH**

- Biology/Ornithology Instructor for 5-day 3<sup>rd</sup>-8<sup>th</sup> grade STEM Camp  
-Harding University STEM Camp, Searcy, AR August 8-12, 2022
- Facilitated a collaborative research project with Southwest Middle School 4<sup>th</sup> graders using Harding Biology Department live stream bird feeder data  
-Southwest Middle School STEAM Collaboration, Searcy, AR Fall 2020
- Recorded a wildlife extension video for elementary school ESL students  
-Sydney Deener Elementary School, Searcy, AR October 5, 2020
- Presented wildlife extension program to elementary school ESL students  
-Sydney Deener Elementary School, Searcy, AR October 29, 2019
- Served as master bander at weekly bird banding station  
-Gilliam Biological Research Station, AR 2018-Present
- Represented Harding Biology Department at Southwest Middle School Annual S.T.E.A.M. Day. Discussed biological research with 1,100 4<sup>th</sup>-6<sup>th</sup> graders  
-Southwest Middle School, Searcy, AR October 1, 2019
- Presented research to state legislators (1 Senator and 4 District Representatives) concerning breeding bird response to Indiana forest management:  
-Morgan-Monroe State Forest, IN 2018
- Taught bird identification to Kindergarteners and 2<sup>nd</sup> graders, and helped develop a bird-friendly nature area for a local Elementary School  
-Mayflower Mill Elementary School, Lafayette, IN 2016-17
- Assisted with a field day on birding and bird banding with the Tippecanoe County chapter of Indiana Master Naturalists  
-Purdue Wildlife Area September 8, 2017
- Presented research and demonstrated bird sampling techniques for a Hardwood Ecosystem Experiment field day  
-Morgan Monroe State Forest, Morgan County, IN October 2, 2015
- Presented research on the effects of biomass harvest for cellulosic biofuel on eastern red-backed salamanders at the Southeast Purdue Agricultural Center Field Day  
-Jennings County, IN May 31, 2014

**Extension Publications**

- Kellner K.F., **P. J. Ruhl**, J. B. Dunning Jr., and R. K. Swihart. (2017). Managing Forests for Birds in Indiana. Indiana Woodland Steward 25:7-8.
- **Patrick Ruhl**. Grouse! Researchers interact with ruffed grouse in Southern Indiana's managed Hardwood Ecosystem Experiment. Ruffed Grouse Society Magazine. Spring 2017 Volume 29, Issue 1, Page 59.

**RELEVANT SKILLS**

---

**Wildlife Sampling**

*Mist netting and bird banding (>3500 birds banded) and avian blood collection*  
*Radio Telemetry and Geolocation – direct tracking and triangulation*  
*Passive Integrated Transponder (PIT) tagging for Radio Frequency Identification*  
*Amphibian sampling and marking techniques - Visible Implant Elastomers (VIEs)*  
*Small mammal live-trapping and ear tagging*

**Statistical Analysis**

*Experience with: STATISTICA, SAS, SYSTAT, and Program R*

**VOLUNTEER EXPERIENCE**

---

|  |  |                |
|--|--|----------------|
| Chi Sigma Alpha Social Club                      | -Served as a sponsor   | 2019-present   |
| Peripatetic Lecture on Aristotle and Biology     |  | 2019           |
|  | -Guest lecture for Harding University Western Civ. Students                        |                |
| Ball State Cerulean Warbler Research Group       |  | 2017           |
|  | -Assisted Clayton Delancey with Cerulean Warbler Roost Telemetry                   |                |
| Sycamore Chapter of the Audubon Society          |  | 2016-2017      |
|  | -Served as Secretary   |                |
| Lafayette Regional Science and Engineering Fair  |  | 2014, '15, '17 |
|  | -Judged science fair projects for students 5 <sup>th</sup> -12 <sup>th</sup> grade |                |
| Purdue FNR/Indiana DNR                           |  | 2013           |
|  | -Performed nest searches for Hellbender conservation                               |                |
| Indiana DNR (Jasper/Pulaski)                     |  | 2011           |
|  | -Banded wood ducks   |                |
| Purdue FNR American Chestnut Restoration Project |  | 2010           |
|  | -Helped plant 1000+ saplings   |                |
| Bald Knob Wildlife Refuge Deer Check station     |  | 2008           |
|  | -Checked in deer took measurements and jawbone samples                             |                |

**GRANT FUNDING**

---

- Roosting Ecology of White-throated Sparrows on the Wintering Grounds **\$3000**  
*Margaret M. Plummer Memorial Research Fund - 2022*
- Quantifying Seasonal Fluctuations in Blood Profile Relative to Singing Ability in Avian Species **\$350**  
*Arkansas Audubon Society- 2019*
- Postfledging Association of Mature Forest Birds with Early Successional Habitat in South-Central Indiana **\$3,000**  
*Amos Butler Audubon Society Birdathon Grant – 2017*
- Using Stable Isotope Analysis to Determine Avian Foraging Preference During the Postfledging Period in Southern Indiana **\$3,000**  
*Indiana Academy of Sciences Senior Research Grant – 2016*
- Worm-eating Warbler Breeding Demography in South-Central Indiana **\$3,000**  
*Amos Butler Audubon Society Birdathon Grant – 2016*
- Post Fledgling Association of Mature Forest Birds with Early Successional Habitat in South-Central Indiana **\$3,000**  
*Amos Butler Audubon Society Birdathon Grant – 2015*

**ACADEMIC AWARDS & HONORS**

---

|   |           |
|---|-----------|
| College of Sciences Teacher Achievement Award Recipient       | 2023      |
| Chase S. Osborn Award in Wildlife Conservation                | 2022      |
| Charles M. Kirkpatrick Outstanding FNR Graduate Student Award | 2018      |
| FNR Teaching Academy Graduate Teaching Award                  | 2018      |
| Ray Kinslow Science Award                                     | 2012      |
| Harding Academic Scholarship                                  | 2009-2012 |
| Pryor Science Scholarship                                     | 2011-2012 |
| James W. Pugh Scholarship                                     | 2010-2012 |
| Science/Nursing Convocation Award                             | 2009-2010 |
| Undergraduate Deans List                                      | 2008-2012 |

**RELEVANT GRADUATE COURSEWORK**

---

|                                     |             |
|-------------------------------------|-------------|
| Forest Resources Seminar            | 2012-2016   |
| Quantitative Methods for Ecologists | Spring 2016 |
| Landscape Ecology                   | Fall 2015   |
| Introduction to University Teaching | Fall 2015   |
| Conservation Biology I              | Fall 2015   |
| Advanced Ornithology                | Spring 2015 |
| Evolution of Behavior               | Spring 2015 |
| Modern Applied Statistics           | Spring 2015 |
| Disturbance Ecology                 | Spring 2014 |
| Analyzing Ecological Data           | Spring 2014 |
| Ecological Statistics               | Fall 2013   |
| GIS Application                     | Fall 2013   |
| Applied Regression Analysis         | Spring 2013 |
| Conservation Biology II             | Fall 2012   |
| Soundscape Ecology                  | Fall 2012   |
| Research Ethics                     | Fall 2012   |
| Statistical Methods                 | Fall 2012   |