

BIOGRAPHICAL SKETCH -- Patrick Andrew Zollner

Office:

Department of Forestry & Natural Resources
Purdue University
195 Marsteller Street Room 307
West Lafayette, Indiana 47907

Office Phone: 765-496-9495
Lab Phone: 765-496-9510
Email: pzollner@purdue.edu

Home:

7412 Indian Mound Trail
Battle Ground, Indiana 47920

Phone: 765-430-7858

CURRENT POSITION

Professor of Quantitative Ecology, 2018 – present. Department of Forestry and Natural Resources, Purdue University.

EDUCATION

B.S. in Natural Resources, 1989. University of Michigan, Ann Arbor.

M.S. in Wildlife Ecology, 1993. Mississippi State University, Starkville. Thesis title: *Habitat ecology of the swamp rabbit in central Arkansas*. Advisors: Dr. Leonard A. Brennan & Dr. Winston P. Smith

Doctorate in Ecology, December 1998. Indiana State University, Terre Haute. Dissertation title: *Perceptual range, search strategies, and the behavioral ecology of ecological landscapes*. Dissertation Advisor: Dr. Steven L. Lima

ACADEMIC POSITIONS

Laboratory Assistant, Summer 1986. Kellogg Biological Station, Hickory Corners, Michigan.

Instructional Intern, 1989, School for Field Studies, Center for Rainforest Studies, Yungaburra, Queensland, Australia.

Administrative Assistant, 1990. School for Field Studies, Center for Rainforest Studies, Yungaburra, Queensland, Australia.

Research Assistant, 1991 – 1993. Department of Wildlife and Fisheries, Mississippi State University.

Research Assistant, 1993 – 1998. Department of Life Sciences, Indiana State University.

Teaching Assistant, 1993 – 1998. Indiana State University;
Introduction to Biology for Majors I & II; Ornithology;
Computer Applications in Graduate Research

BIOGRAPHICAL SKETCH -- Patrick A. Zollner

Undergraduate Research Supervisor, 1996 & 1997 (Advised two Undergraduates while at I.S.U.)

Special Course Consultant, 1996 – 1998. (Developed web based instructional materials and advised on lab design) Introduction to Biology for Majors I & II

Research Ecologist, 1999 – 2006. USDA Forest Service North Central Research Station.

Assistant Professor of Quantitative Ecology, 2006 – 2010. Department of Forestry and Natural Resources, Purdue University.

Associate Professor of Quantitative Ecology, 2010 – 2018. Department of Forestry and Natural Resources, Purdue University.

Professor of Quantitative Ecology, 2018 – present. Department of Forestry and Natural Resources, Purdue University.

GRANTS

Behavioral mechanisms defining ecological landscapes. 1994. American Museum of Natural History Theodore Roosevelt Research Fund. \$450

Search strategies for landscape-level inter patch movements. 1998. Indiana State University Graduate School Research Fund. \$250

Movement as a link between behavioral and landscape ecology: mammals as models. 1999. American Society of Mammalogists (Funded Symposium for 2000 meeting). \$2143

Impacts of spatial and temporal patterns of human activities on animals.
2004. Research funded by NCRS project 4902. \$40,829.
2005. BP Leadership Award to Southeast Environmental Task Force. \$50,000

Broad-scale inventory of 22 Mammal Species using Genetic Sampling. 2005. State of Wisconsin Wildlife Grant Fund. \$62,020

*Simulating Dispersal Movements by American Marten (*Martes americana*) Following Reintroduction.* 2006. USDA Forest Service Northern Research Station. \$75,000

Mobile Automatic VHF Telemetry Tower System. 2007. Purdue University Department of Forestry and Natural Resources Equipment Grant. \$7136

*Distribution of the plains pocket gopher (*Geomys bursarius*) in the grassland physiographic regions of Indiana.* 2007. Diversity Section of Indiana Department of Fish and Wildlife. \$8000

BIOGRAPHICAL SKETCH -- Patrick A. Zollner

Assessment of the role of Interstate Highways as barriers to gene flow and metapopulation persistence in mammals from Indiana. 2007. Diversity Section of the Indiana Department of Natural Resources Division of Fish and Wildlife. \$ 510,976

Forest management impacts on pine martens. 2008. USDA Tribal College Research Grant Program. \$150,000

Mammalian community response to black oak savannah restoration. 2009. The Nature Conservancy of Indiana. \$17,500.

Assessment of experimental oak barren restoration upon mammalian wildlife. 2009. Purdue University Agricultural Research Program. \$35,000

Partnership between Purdue University and the Sloan Foundation to increase the number of Native Americans completing graduate degrees in the STEM disciplines. Alfred P. Sloan Foundation. 2009. \$84,888

*Simulating the implications of recreational disturbance on Karner blue butterflies (*Lycaeides melissa samuelis*) at the Indiana Dunes National Lakeshore.* 2009. Indiana/Illinois Sea Grant. \$10,000

Using virtual ecology techniques to inform the recreational planning of Fort Harrison State Park. 2010. Indiana Parks and Reservoirs Department of Natural Resources. \$13,500.

*Habitat conservation plan development and implementation for the Indiana bat (*Myotis sodalis*) on Indiana state forests.* 2010. Division of Forestry Indiana Department of Natural Resources. \$180,076.

Continued partnership between Purdue University and the Sloan Foundation to increase the number of Native Americans completing graduate degrees in the STEM disciplines. 2010. Alfred P. Sloan Foundation. \$153,000

Evaluation of Mammalian community response to oak barrens restoration. 2011. The Nature Conservancy of Indiana. \$16,000.

Handheld GPS and Hypsometer Units for Geospatial Instruction. 2011. Purdue University College of Agriculture Instructional Innovation Funds. \$13,195.

Digital Remote Camera Units for Wildlife Management Instruction. 2012. Purdue University College of Agriculture Instructional Innovation Funds. \$8,500.

Computers to support collaborative GIS instruction. 2013. Purdue University College of Agriculture Instructional Equipment Allocation Program. \$23,770.

Mixed methods in socio-ecological systems: survey-based simulation models of human-wildlife interactions in a recreational park. 2013. Department of Forestry and Natural Resources Seed Grant. \$13,493.

BIOGRAPHICAL SKETCH -- Patrick A. Zollner

Competition and resource partitioning among three coexisting carnivores inhabiting Indiana river systems. 2013. The Indiana Academy of Science. \$926

Measuring and simulating the utility of a dispersal corridor for Martens along the Gogebic Range. 2014. Great Lakes Indian Fish and Wildlife Commission. \$20,000.

Modeling behavioral response of bat maternity colonies to landscape-level forest management practices in Purdue Agricultural Centers. 2015. Mary S. Rice Farm Estate \$10,000

Integrating ecological, landscape and social information for wildlife conservation and management. 2015. Indiana Department of Natural Resources. \$74,884

Surveys of breeding grassland birds of the Kankakee Sands, Newton County IN. 2015. The Nature Conservancy of Indiana. \$13,250.

Investigating the impact of invasive Asian carp on river otters in the native fish communities in Indiana. The Indiana Academy of Science. \$3000

Modeling bat habitat in Indiana's Forests. 2015. The Indiana Forestry and Woodland Owners Association. \$2000

Utilizing research and education to address interactions among climate change, natural resource use, and wildlife conservation in a multi-cultural environment. 2016. USDA NIFA ELI. \$67,462.

Understanding Resource use by Northern Long Eared Bat in Fragmented Landscapes of Northern Indiana. 2017. IN DNR. \$59,527

Nocturnal habitat selection of bats using occupancy models. 2017. Division of Forestry Indiana DNR. \$810

Assessing Aspects of Bobcat Spatial and Population Ecology in Indiana. 2018. Division of Fish and Wildlife Indiana DNR. \$112,770

AWARDS

1998 Best Student Presentation Award. Thirteenth annual meeting of the International Association for Landscape Ecology (US Chapter)

1998 Best Student Presentation Award. Annual fall meeting of the Indiana Academy of Sciences

2003 USDA Forest Service Chiefs Early Career Science Award

2004 Presidential Early Career Award for Scientists and Engineers \$25,000/year for 5 years

2005 Invited for six-month fellowship at Hebrew University of Jerusalem

2006 Awarded OECD Fellowship for Exchange to UFZ in Leipzig Germany

BIOGRAPHICAL SKETCH -- Patrick A. Zollner

- 2010 Certificate of Appreciation for Service U.S. Chapter International Association of Landscape Ecologists
- 2011 Department of Forestry and Natural Resources Outstanding Undergraduate Teacher Award
- 2012 Indiana Chapter of the Wildlife Society Best Paper Award
- 2013 Indiana Chapter of the Wildlife Society Best Paper Award
- 2014 Department of Forestry and Natural Resources William L. Hoover Exemplary Faculty Service Award
- 2015 Bravo Award Winner for Professional Meeting Preparation Class Purdue University
- 2015 Outstanding Paper in *Invasive Plant Science and Management* Award
- 2015 Department of Forestry and Natural Resources Outstanding Undergraduate Counselor Award
- 2016 Department of Forestry and Natural Resources Outstanding Undergraduate Counselor Award
- 2017 Department of Forestry and Natural Resources Outstanding Undergraduate Counselor Award
- 2017 Innovative Teach Award from Board on Agriculture Assembly's Academic Programs Section of the Association of Public Land-Grant Universities

SCIENTIFIC PUBLICATIONS

Published Papers

1. Lima S.L., and P.A. Zollner. 1996. Towards a behavioral ecology of ecological landscapes. *Trends in Ecology and Evolution* 11: 131-135.
2. Zollner, P.A., W.P. Smith, and L.A. Brennan. 1996. Characteristics and adaptive significance of latrines of swamp rabbits (*Sylvilagus aquaticus*). *Journal of Mammalogy* 77: 1049-1058.
3. Lima, S.L., and P.A. Zollner. 1996. Anti-predatory vigilance and limits to collective detection of predatory attack: spatial and visual separation between forages. *Behavioral Ecology and Sociobiology* 38: 355-363.
4. Zollner, P.A., and S.L. Lima. 1997. Perceptual range and its implications for landscape-level ecological phenomena. *Oikos* 80: 51-60.
5. Zollner, P.A., and S.L. Lima. 1999. Search strategies for landscape-level inter-patch movements. *Ecology* 80: 1019-1030.

BIOGRAPHICAL SKETCH -- Patrick A. Zollner

6. Zollner, P.A. and S.L. Lima. 1999. Orientational data and perceptual range: real mice aren't blind. *Oikos* 84: 164-166.
7. Lima, S.L., P.A. Zollner, and P.A. Bednekoff. 1999. Predation, scramble competition and the group size effect in anti-predatory vigilance. *Behavioral Ecology and Sociobiology* 46: 110-116.
8. Zollner, P.A. and S.L. Lima. 1999. Illumination and the perception of remote habitat patches by white-footed mice. *Animal Behaviour* 58: 489-500.
9. Zollner, P.A., W.P. Smith, and L.A. Brennan. 2000. Home range use by swamp rabbits (*Sylvilagus aquaticus*) in a frequently inundated bottomland forest. *American Midland Naturalist* 143:64-69.
10. Zollner, P.A. 2000. Landscape-level perceptual abilities of forest sciurids: a comparative analysis. *Landscape Ecology* 15:523-533.
11. Zollner, P.A., W.P. Smith, and L.A. Brennan 2000. Microhabitat characteristics of sites used by swamp rabbits (*Sylvilagus aquaticus*). *The Wildlife Society Bulletin* 28:1003-1011.
12. Smith, W.P. and P.A. Zollner. 2001. Seasonal habitat distribution of mammals in an old-growth bottomland hardwood forest. Pp 83-99. In: P.B. Hamel, and T. Foti editors. Bottomland hardwoods of the Mississippi Alluvial Valley: characteristics and management of natural function. USDA Forest Service, General Technical Report, Southern Research Station, Asheville, NC.
13. Mech, S.G., and P.A. Zollner 2002. Using body size to predict perceptual range. *Oikos*. 48:47-52.
14. Conradt, L., Zollner, P.A., Roper, T.J., Frank, K. & Thomas, C.D. 2003. Foray search: an effective systematic dispersal strategy in fragmented landscapes. *The American Naturalist*. 161:905-915.
15. Zollner, P.A., and K.J. Crane. 2003. Influence of canopy closure and shrub coverage on travel along coarse woody debris by eastern chipmunks (*Tamias striatus*). *American Midland Naturalist*. 150:151-157.
16. Sturtevant, B.R., P.A. Zollner, E.J. Gustafson, and D.T. Cleland. 2004. Human influence on fuel connectivity and risk of catastrophic fires in mixed forests of northern Wisconsin. *Landscape Ecology*. 19:235-253.
17. Gustafson, E.J., P.A. Zollner, H.S. He, B. R. Sturtevant, and D.J. Mladenoff. 2004. Influence of management alternatives and landtype on susceptibility to fire in Northern Wisconsin USA. *Landscape Ecology*. 19:327-341.
18. Zollner, P.A., and S.L. Lima. 2005. Behavioral trade-offs when dispersing across a patchy landscape. *Oikos*. 108:219-230
19. Zollner, P.A., Gustafson, E.J., H.S. He, V.C. Radeloff, and D.J. Mladenoff. 2005. Modeling the Influence of Dynamic Zoning of Forest Harvesting on Ecological Succession in a Northern Hardwoods Forest. *Environmental Management*. 35(4):410-425.

BIOGRAPHICAL SKETCH -- Patrick A. Zollner

20. Smith, W.P, and P.A. Zollner. 2005. Sustainable management of wildlife habitat and risk of extinction. *Biological Conservation*. 125:287-295.
21. Harvey, S., Dumyhan, J., Zollner, P., Gilbert, J., Eklund, D., Matthiae, T. 2005. American marten Wisconsin habitat guide. Power point presentation on compact disk and accompanying brochure for forest managers. US Forest Service Internal Extension Publication.
22. Blumstein, D.T., E. Fernandez-Juricic, P.A. Zollner, and S. C. Garity. 2005. Inter-specific variation in wildlife responses to human disturbance: a review and synthesis. *Journal of Applied Ecology*. 42:943-953.
23. Crow, T.R., Cleland, D.T., DonnerWright, D.M., Gustafson, E.J., Lytle, D.E., Parker, L.R., Probst, J., Schulte, L.A., Sturtevant, B.R., and Zollner, P.A. 2006. Managing midwestern landscapes using ecological principles. In Chen, J, Saunders, S.C., Brosofske, K.D., and Crow, T.R. eds. Linking ecology to landscape hierarchies. Nova Sciences Publishers, New York. p. 251-281.
24. Radeloff, V.C., Mladenoff, D.J., Gustafson, E.J., Scheller, R.M., He, H.S., Zollner, P.A., and R. Akçakaya. 2006. Modeling forest harvesting effects on landscape pattern in Northwest Wisconsin Pine Barrens. *Forest Ecology and Management*. 236:113-126.
25. Williams, B.W., Gilbert, J.H., and Zollner, P.A. 2007. Historical perspective on the reintroduction of the fisher and American marten in Michigan and Wisconsin. Gen. Tec. Rep. NC 06-150. Newton Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 29 p.
26. Dumyahn, J.D., Zollner, P.A., and Gilbert, J.L. 2007. Home range level habitat selection of American marten in Wisconsin. *American Midland Naturalist*. 158:382-394
27. Fernandez-Juricic, E., P.A. Zollner, Le Blanc, C. and Westphal, L. 2007. Responses of nestling Black-crowned Night Herons (*Nycticorax nycticorax*) to aquatic and terrestrial recreational activities: a manipulative study. *Waterbirds*, 30(4):554-565.
28. Zollner, P.A., Roberts, L.J., Gustafson, E.J., H.S. He, and V.C. Radeloff. 2008. Influence of forest planning alternatives on landscape pattern and ecosystem processes in Northern Wisconsin, USA. *Forest Ecology and Management*. 254:429-444
29. Bennett, V.J., Beard, M., Zollner, P.A., Fernandez-Juricic, E., L. Westphal, and C. Le Blanc. 2009. Understanding wildlife responses to human disturbance through simulation modelling: A conservation tool. *Ecological Complexity*. 6:113-134.
30. Gilbert, J.G., Zollner, P.A., Green, A.K., Wright, J.L., and Karasov, W.A. 2009. Seasonal field metabolic rate of American marten in Wisconsin. *American Midland Naturalist*. 162:327-334.
31. Dumyahn, J.D. and P.A. Zollner. 2010. Home range characteristics of swamp rabbits (*Sylvilagus aquaticus*) in Southwestern Indiana and Northwestern Kentucky. *The Proceedings of the Indiana Academy of Sciences*. 119:80-86.

BIOGRAPHICAL SKETCH -- Patrick A. Zollner

32. McCann, N.P., Zollner, P.A., and J.H. Gilbert 2010. Survival of adult American marten in Northern Wisconsin. *The Journal of Wildlife Management*.74:1502-1505.
33. Quinn, V.S., C-C. Tsai, and P.A. Zollner. 2010. Distribution of the plains pocket gopher (*Geomys bursarius*) in the grassland physiographic regions of Indiana. *The Proceedings of the Indiana Academy of Sciences*. 119:87-94.
34. Currylow, A.F., P.A. Zollner, B.J. MacGowan, and R.N. Williams. 2011 A survival estimate of Indiana's adult box turtles using radio telemetry. *The American Midland Naturalist*. 165:143-149.
35. Bennett, V.J., Fernandez-Juricic, P.A. Zollner, # M.E. Beard, L. Westphal, and C. Le Blanc. 2011. Modeling the responses of 'species of management concern' to ecotourism to contrast the impacts of recreational scenarios. *Ecological Modeling*. 222:2770– 2779
36. Powell, R.A., J.C. Lewis, B. Slough, S. Brainerd, N.R. Jordan, A. Abramov, V. Monakhov, P.A. Zollner, and T. Murakami 2012. Evaluating translocations of martens, sables, and fishers: Testing model predictions with field data. Pp. 93-137. In K.B. Aubry, W.J. Zielinski, M.G. Raphael, G. Proulx, and S.W. Buskirk, eds. *Biology and Conservation of Martens, sables, and Fishers: a New Synthesis*. Cornell University Press, New York.
37. Olson, Z.H., N.G. Burgmeier, P.A. Zollner, and R.N. Williams 2013. Survival estimates for adult Eastern Hellbenders and their utility for future conservation efforts. *Journal of Herpetology* 47:1-4.
38. Bennett, V.J., D.W. Sparks, and P.A. Zollner 2013. Modeling the indirect effect of road networks on the foraging activities of an endangered bat. *Landscape Ecology* 28:979–991.
39. Pauli BP, McCann NP, Zollner PA, Cummings R, Gilbert JH, and E.J. Gustafson. 2013. SEARCH: Spatially Explicit Animal Response to Composition of Habitat. *PLoS ONE* 8(5): e64656. doi:10.1371/journal.pone.0064656.
40. Bennett, V.J., V.S. Quinn, and P.A. Zollner 2013. Exploring the implications of recreational disturbance on an endangered butterfly using a novel modeling approach. *Biodiversity and Conservation* 22:1783–1798.
41. McCann, N.P., P.A. Zollner, and J.H. Gilbert 2014. Bias in the use of broad-scale vegetation data in the analysis of habitat. *The Journal of Mammalogy* 95(2):369-381.
42. Earl, J.E. and P.A. Zollner 2014. Effects of animal movement strategies and costs on the distribution of active subsidies across simple landscapes. *Ecological Modeling* 283:45-52.
43. Rodriguez-Prieto, I., Bennett, V.J., Zollner, P.A., Mycroft, M., List, M., and E. Fernandez-Juricic. 2014. Simulating the responses of forest bird species to multi-use recreational trails. *Landscape and Urban Planning* 127:164-172.

BIOGRAPHICAL SKETCH -- Patrick A. Zollner

44. Jenkins, L.H., Jenkins, M.A., Webster, C.R., Zollner, P.A. and J.M. Shields. 2014. Herbaceous layer response to 17 years of controlled deer hunting in forested natural areas. *Biological Conservation* 175:119-128.
45. Shields, J.M, Jenkins, M.A., Zollner, P.A., and M.R. Saunders. 2014. Effects of amur honeysuckle invasion and removal on white-footed mice. *The Journal of Wildlife Management*. 78(5):867–880.
46. Hennessy, C.A., Tsai, C-C., Beasley, J.C., Beatty, W., Zollner, P.A., and O.E. Rhodes Jr., 2015. Elucidation of population connectivity in synanthropic mesopredators: Using genes to define relevant spatial scales for management of raccoons and Virginia opossums. *The Journal of Wildlife Management* 79(1):112-121.
47. Shao, G., Haulton, S.G., Shao, G.F., Zollner, P.A., and B.P. Pauli. 2015. Forest cover mapping through a two-stage unsupervised classification aided with forest inventory data in Indiana. *Journal of Applied Remote Sensing* 8(1): 083546. doi:10.1117/1.JRS.8.083546.
48. Houser, C.M. and P.A. Zollner 2015. Trap Elevation and Biotic Factors Influencing Capture Frequencies of Western Harvest Mice (*Reithrodontomys megalotis*) in Prairie Grasses of Indiana. *The Proceedings of the Indiana Academy of Science* 122(2): 126-129.
49. Pauli, B.P., P.A. Zollner, G.S. Haulton, G. Shao, and G. Shao. 2015. The simulated effects of timber harvest on suitable habitat for Indiana and northern long-eared bats. *Ecosphere* 6:art58
50. Shields, J.M, Jenkins, M.A., M.R. Saunders, Gibson, K.D., Zollner, P.A., and Dunning, J.B. Jr. 2015. Influence of intensity and duration of invasion by Amur honeysuckle (*Lonicera maackii*) on mixed-hardwood forests of Indiana. *Invasive Plant Science and Management*. 8(1):44-56.z
51. Shields, J.M., M.R. Saunders, Gibson, K.D., Zollner, P.A., J.B. Jr., Dunning, and Jenkins J.M. 2015. Short-Term Response of Native Flora to the Removal of Non-Native Shrubs in Mixed-Hardwood Forests of Indiana, USA. *Forests* 6: 1878-1896.
52. Dumyah, J.D., Zollner, P.A., and W.P. Smith. 2015. Microhabitat Comparison of Swamp Rabbit Sites between Periphery and Core of the Species Range. *The Journal of Wildlife Management*. 79(7):1199-1206.
53. Pauli, B.P., H.A. Badin, G.S. Haulton, P.A. Zollner and T.C. Carter 2015. Landscape features associated with the roosting habitat of Indiana bats and northern long-eared bats. *Landscape Ecology* 30:2015-2029.
54. Tonos, J.M., Pauli, B.P., Zollner, P.A., and G.S. Haulton 2015. A Comparison of the Efficiency of Mobile and Stationary Acoustic Bat Surveys. *The Proceedings of the Indiana Academy of Science*. 123(2):103-111.

BIOGRAPHICAL SKETCH -- Patrick A. Zollner

55. Urban, M.C., G. Bocedi, A.P. Hendry, J.-B. Mihoub, G. Pe'er, A. Singer, J.R. Bridle, L.G. Crozier, L. De Meester, W. Godsoe, A. Gonzalez, J.J. Hellmann, R. D. Holt, A. Huth, K. Johst, C.B. Krug, P.W. Leadley, S.C.F. Palmer, J.H. Pantel, A. Schmitz, P.A. Zollner, and J. M. J. Travis. 2016. Improving the forecast for biodiversity under climate change. *Science* 353:(6304). [doi: 10.1126/science.aad8466]
56. Quackenbush, H.L., D'Acunto, L.E., Flaherty, E. and P.A. Zollner. 2016. Testing the efficacy of an acoustic lure on bat mist-netting success in North American central hardwood forests. *The Journal of Mammalogy* 97(6):1617-1622.
57. Jost Robinson, C.A., Zollner, P.A., and Kpanou J.B. 2017. Night and day: the use of nocturnal and diurnal transects to monitor ungulates (genus *Cephalophus*) in the Dzanga-Sangha Protected Areas, Central African Republic. *African Journal of Ecology* 55(2):222-232
58. Pauli, B.P, P.A. Zollner, and G.S. Haulton. 2017. Nocturnal Habitat Selection of Bats Using Single- and Multi-Species Occupancy Models. *Journal of Wildlife Management* 81(5):878–891
59. McCann, N.P., P.A. Zollner, and J.H. Gilbert. 2017 Classifying carnivore tracks using dimensions that control for snow conditions. *The Wildlife Society Bulletin* 41(2):278-285.
60. Peele, J., C. Nix, P. Ruhl, R. Chapman, P.A. Zollner, and M.R. Saunders. 2017, Effects of Woody Biomass Harvests on a Population of Plethodontid Salamanders in Southeast Indiana. *The American Midland Naturalist* 178:132-143.
61. Mutascio, H.E., S.E. Pittman, and P.A. Zollner. 2017. Investigating movement behavior of invasive Burmese pythons on a shy-bold continuum using individual-based modeling. *Perspectives in Ecology and Conservation* 15:25-31. Journal formerly known as *Natureza & Conservação*.
62. Earl, J.E. and P.A. Zollner. 2017. Advancing research on animal-transported subsidies by integrating animal movement and ecosystem modeling. *Journal of Animal Ecology* 86:987–997.
63. Vemulapalli T.H., S.S. Donkin, T.B. Lescun, P.A. O'Neil, and P.A. Zollner 2017. Animals in Teaching: Considerations When Writing and Reviewing a Teaching Protocol That Utilizes Animals. *Journal of the American Association for Laboratory Animal Science* 56(5):500-508.
64. McCann, N.P., P.A. Zollner, and J.H. Gilbert. 2017. Temporal scaling in analysis of animal activity. *Ecography* 40: 1436–1444
65. Gilbert, J.H., R.A. Powell, N.P. McCann, P.A. Zollner, and T.R. Aldred 2017. Habitat use by fishers and martens in mixed Laurentian forests south of Lake Superior. Published in *The Martes complex in the 21st Century: Ecology and Conservation* Eds. A. Zalewski, I.A. Wierzbowska, K.B. Aubry, J.D.S. Birks, D.T. O'Mahony, and G. Proulx. Published by Mammal Research Institute, Polish Academy of Sciences, Białowieża. Poland Pages 221-248.

BIOGRAPHICAL SKETCH -- Patrick A. Zollner

66. C.C. Day, and P.A. Zollner. 2017 Mustelid Navigation in The Encyclopedia of Animal Cognition and Behavior. Publisher: Springer International Publishing, Editors: Jennifer Vonk, Todd Schackelford, pp.1-8 10.1007/978-3-319-47829-6_1196-1
67. Mutascio, H.E., S.E. Pittman, and P.A. Zollner, and L.E. D'Acunto. 2018. Modeling relative habitat suitability of invasive Burmese pythons (*Python molurus bivittatus*) in southern Florida. *Landscape Ecology* 33:257–274
68. Pourshoushtari, R.D., B.P. Pauli, P.A. Zollner, and G.S. Haulton. 2018. Road and Habitat Interact to Influence Selection and Avoidance Behavior of Bats in Indiana. *The Northeastern Naturalist* 25(2):236-247.
69. D'Acunto, L.E., B.P. Pauli, M. Moy, K. Johnson, J. Abu-Omar, and P.A. Zollner. 2018 Timing and technique impact the effectiveness of road-based, mobile acoustic surveys of bats. Accepted by *Ecology and Evolution* 2018; 8:3152–3160. <https://doi.org/10.1002/ece3.3808>
70. Laura E. D'Acunto, Robert J. Spaul, Julie A. Heath, Patrick A. Zollner. 2018. Simulating the success of trail closure strategies on reducing human disturbance to golden eagles (*Aquila chrysaetos*). *The Condor* 120:703-718.
71. Hennessy, C.A., Tsai, C-C., Anderson, S.J., Zollner, P.A., and O.E. Rhodes Jr. 2018. What's stopping you? Variability of interstate highways as barriers for four species of terrestrial rodents. Revision submitted to *Ecosphere* 9(7):e02333. 10.1002/ecs2.2333
72. Vanausdall, R.A., B.P. Pauli, P.A. Zollner, and G.S. Haulton 2018. Predicting potential conflict areas between wind energy development and eastern red bats (*Lasiurus borealis*) in Indiana. *The Proceedings of the Indiana Academy of Science* 127(1):57 – 71.
73. McCann, N.P., P.A. Zollner, and J.H. Gilbert. 2019 Activity of fishers at multiple temporal scales. Accepted by *The Journal of Mammalogy* 100:178-184
74. Phillips R.P., L. Brandt, D.P. Polly, P.A. Zollner, M.R. Saunders, K. Clay, L. Iverson, and S. Fei. 2019. An integrated assessment of the potential impacts of climate change on Indiana forests. Accepted by *Climate Change* <https://doi.org/10.1007/s10584-018-2326-8>
75. D'Acunto, L.E., and P.A. Zollner. 2019. Factors influencing endangered bat conservation management by professional foresters. *Forest Ecology and Management* 434:172-180.
76. Trapp, S., E.A. Flaherty, P.A. Zollner, C.C. Day, and W.P. Smith. 2019. Modeling the impacts of landscape connectivity on dispersal movements of northern flying squirrels (*Glaucomys sabrinus griseifrons*). *Ecological Modelling* 394:44-52.
77. Casey C. Day, Nicholas P. McCann, Patrick A. Zollner, Jonathan H. Gilbert, and David M. MacFarland. 2019. Plasticity in habitat selectivity explains patterns of dispersal and home range establishment in a solitary carnivore. *Behavioral Ecology* 30:528–540.

BIOGRAPHICAL SKETCH -- Patrick A. Zollner

78. Elizabeth A. Flaherty, Rachael E. Urbanek, Darren M. Wood, Casey C. Day, Laura E. D'Acunto, Vanessa S. Quinn, and Patrick A. Zollner. 2018. A Framework for Mentoring Students Attending Their First Professional Conference. *Natural Sciences Education* 47:170022
79. Hsiang Ling Chen, Gabrielle Beca, Mauro Galetti, Chiachun Tsai, Wei Hua Xu, Jing Jing Zhang, Patrick Zollner (In Press). Habitat loss and fragmentation. In John L. Koprowski and Paul R. Krausman eds *International Wildlife: Contemporary Challenges in a Changing World*. in the *Wildlife Management and Conservation Book Series* published by The Wildlife Society and Johns Hopkins University Press. To be published September 2019.
80. R. A. Lumkes, C. C. Day, P. A. Zollner (In Press) Behavioral Response of the Mammalian Community to River Otter Latrine Activity. To be published in *The American Midland Naturalist* July 2019.

Manuscripts Submitted/In Preparation

81. Elizabeth A. Flaherty, Rachael E. Urbanek, Darren M. Wood, Casey C. Day, Laura E. D'Acunto, Vanessa S. Quinn, and Patrick A. Zollner. (In Review). Mentored Conference Experiences Support Students' Career Exploration and Professional Development. Minor revisions submitted to *The Wildlife Society Bulletin* March 2019.
82. Bampoh D., J.E. Earl, and P.A. Zollner. (In Revision) Examining relative influence of animal movement behaviors and mortality models on the distribution of animal transported subsidies. Revision due to *Ecological Modelling* July 2019.
83. D'Acunto, L.E., P.A. Zollner, K.A. Rushmore, and B.P. Pauli. (In Review) Use of informative priors in Bayesian occupancy models to improve understanding of habitat selection in declining species 2018. Submitted to *Diversity and Distributions* October 2018.
84. Day, C.C., A.S. Webb, M.D. Westover, P.A. Zollner, and B.R. McMillan (In Revision) Restoring competition: Reintroduction events affect temporal niche space of native competitors. Revision to be submitted to *Ecology and Evolution* TBD.
85. Cohen, A.J. and P.A. Zollner (In Revision) Simulating Piping Plover Productivity as a Function of Predation and Human Disturbance in Complex Beach Environments. Revision to be submitted to *Ecological Modeling* TBD
86. M.E. Egan, C.C. Day, T.E. Katzner, and P.A. Zollner (In Prep) Dominant coyotes impact gray fox occupancy across the Eastern United States. To be submitted to *The Canadian Journal of Zoology* February 2019.
87. M.E. Egan, T.E. Katzner, and P.A. Zollner (In Prep) Interacting Effects of Land Cover and Mesocarnivore Interactions Shape Predator Occupancy in The Eastern USA. To be submitted to *The Journal of Mammalogy* January 2019.
88. Cohen, A.J., and P.A. Zollner. (In Prep) Modeling the impacts of human disturbance on Piping Plovers: interactions between plovers, environment, and humans. To be submitted to *Ecological Modelling* TBD

BIOGRAPHICAL SKETCH -- Patrick A. Zollner

89. Tsai, C.-C., J.B. Dumyahn, and P.A. Zollner (In Prep) Evaluating Efficacy of Intensities of Camera Trapping for Estimating Mammal Occupancy. To be submitted to *The American Midland Naturalist* March 2017.

Book Reviews

90. Zollner, P.A. 2001. Review of Landscape Ecology of Small Mammals. Edited by G.W. Barrett and J. D. Peles, Springer, New York, 1999. *Ethology* 107:365.

SCIENTIFIC PRESENTATIONS

Invited Seminars

Iowa State University, Department of Animal Ecology (1996).
Miami University (Ohio), Department of Zoology (1998).
University of Wisconsin Stevens Point, College of Natural Resources (1999).
American Museum of Natural History, Southwestern Research Station (1999).
Purdue University, Department of Forestry and Natural Resources (1999).
University of Wisconsin Madison, Department of Wildlife Ecology (2000).
University of Oxford, Behavioral Ecology Research Group (2001).
Fragland TMR Network, University of Leeds (2001).
International Theriological Congress, Sun City South Africa (2001).
Institute for Ecosystem Studies, Milbrook, NY (2002).
University of California Davis, Animal Behavior Group (2003).
Northern Michigan University, Department of Biology (2003).
Lynx Biology Team Meeting (2005).
Wabash College, Biology Department (2006).
University of Wisconsin Madison, Department of Wildlife Ecology (2007)
Ball State University, Department of Biology (2007)
Purdue University, Department of Biology (2008)
University of Wyoming, Department of Zoology and Physiology (2008)
Lac Courte Oreilles Ojibwe Community College (2008)
Indiana State University, Department of Life Sciences (2008)
Eastern Michigan University, Department of Biology (2008)
University of Missouri, Department of Biology (2009)
North Carolina State University Keck Center for Animal Behavior (2009)
South American Landscape Ecology Meetings (2009)
University of Sao Paulo (2009)
University of Missouri, Complexity Modelling Group (2011)
Toledo Metro Parks (2012)
SDiv RangeShifter Working Group Leipzig Germany (2013)
Boise State University (2013)
Davidson College (2014)
SDiv RangeShifter Working Group Leipzig Germany (2014)
Indiana State University, Department of Life Sciences (2015)
University of Montana, Wildlife Department (2019)

BIOGRAPHICAL SKETCH -- Patrick A. Zollner

Sessions Organized

- Animal movements across landscapes: The big picture. 1996. Midwest Regional Animal Behavior Society Conference. (Organized session and invited participants)
- Movement as a link between behavioral and landscape ecology: mammals as models. 2000. American Society of Mammalogists Meetings. (Organized symposium and affiliated contributed paper section)
- Swamp Rabbit Summit. 2007. Meeting Hosted by Purdue University New Harmony IN. (Organized session and invited participants)
- IBM Symposium. February 2015. Midwest Fish and Wildlife Meetings in Indianapolis Indiana.
- Behavioral Landscape Ecology 2018. US Chapter of the International Association for Landscape Ecology
- Developing Cross-Cultural Competence and Increasing Diversity in the Wildlife Management Profession 2018. National Meeting of the Wildlife Society

Presentations at Meetings

1992. Annual Meeting of the American Society of Mammalogists.
1993. Annual Meeting of the American Society of Mammalogists.
1994. Annual Meeting of the American Society of Mammalogists.
56th Midwest Fish and Wildlife Conference.
1995. Annual Meeting of the American Society of Mammalogists.
Annual Meeting of the Animal Behavior Society.
1996. Annual Meeting of the American Society of Mammalogists.
Midwest Population Biology Conference
Midwest Regional Animal Behavior Society Conference.
1997. Annual Meeting of the American Society of Mammalogists.
Annual Meeting of the Animal Behavior Society.
Midwest Regional Animal Behavior Society Conference.
1998. (U.S. Chapter) International Association for Landscape Ecology.
Annual Meeting of the American Society of Mammalogists.
Annual Meeting of the Animal Behavior Society.
Annual Meeting of the Ecological Society of America.
Annual Meeting of the Indiana Academy of Sciences.
1999. Annual Meeting of the American Society of Mammalogists.
5th World Congress of the International Association for Landscape Ecology.

BIOGRAPHICAL SKETCH -- Patrick A. Zollner

2000. (U.S. Chapter) International Association for Landscape Ecology.
Annual Meeting of the American Society of Mammalogists.
2001. Tracking Animals with GPS, Macaulay Land Use Research Institute.
British Ecological Society Annual Symposium Dispersal.
(U.S. Chapter) International Association for Landscape Ecology.
2002. (U.S. Chapter) International Association for Landscape Ecology.
International Union Forest Research Organizations (landscape ecology working party).
Annual Meeting of the American Society of Mammalogists.
2003. (U.S. Chapter) International Association for Landscape Ecology.
Midwest Fur Bearer Workshop.
USFS Wildlife Research Review.
2004. MN 3rd Annual Forest and Wildlife Research Review.
(U.S. Chapter) International Association for Landscape Ecology.
Annual Meeting of the American Society of Mammalogists.
2005. Annual Meeting of the American Society of Mammalogists.
The Wildlife Society Annual Conference
2006. The Wildlife Society Annual Conference
2007. (U.S. Chapter) International Association for Landscape Ecology
Annual Meeting of the American Society of Mammalogists
USDA Tribal College Research Grant Program.
Great Lakes Inter-Tribal Council NARCH Retreat
Pokagon Band of Potawatomi School Children
2008. (U.S. Chapter) International Association for Landscape Ecology
Annual Meeting of the American Society of Mammalogists
Midwest Fish and Wildlife Meetings
2009. Annual Meeting of the American Society of Mammalogists
International *Martes* Meeting
South American Landscape Ecology Meetings
2010. Annual Meeting of the American Society of Mammalogists
2011. (U.S. Chapter) International Association for Landscape Ecology
The Wildlife Society Annual Conference
Annual meeting of the American Society of Mammalogists

BIOGRAPHICAL SKETCH -- Patrick A. Zollner

- 2012. Midwest Bat Working Group Annual Conference
The Wildlife Society Annual Conference
Indiana Chapter of the Wildlife Society Annual Conference
Annual Meeting of the Indiana Academy of Science
- 2013. Midwest Bat Working Group Annual Conference
Indiana Chapter of the Wildlife Society Annual Conference
Annual meeting of the American Society of Mammalogists
The Wildlife Society Annual Conference
- 2014. Midwest Bat Working Group Annual Conference
The Wildlife Society Annual Conference
- 2015. National Joint Bat Working Group Annual Conference
Midwest Fish and Wildlife Conference
Midwest Furbearer Meetings
Annual meeting of the American Society of Mammalogists
The Wildlife Society Annual Conference
- 2016. Midwest Bat Working Group Annual Conference
International Ecological Modeling Conference
Annual meeting of the American Society of Mammalogists
The Wildlife Society Annual Conference
Midwest Society for Ecological Restoration
Indiana Academy of Science
Midwest Furbearer Meetings
- 2017. Midwest Bat Working Group Annual Conference
(U.S. Chapter) International Association for Landscape Ecology
Annual meeting of the American Society of Mammalogists
The Wildlife Society Annual Conference
International Ecological Modeling Conference
- 2018. (U.S. Chapter) International Association for Landscape Ecology
Annual meeting of the American Society of Mammalogists
Indiana Chapter of The Wildlife Society Meeting
The Wildlife Society Annual Conference
International Martes Symposium
- 2019. Midwest Bat Working Group Annual Conference
Indiana Chapter of The Wildlife Society Meeting

PROFESSIONAL AFFILIATIONS & SERVICE

- American Society of Mammalogists 1992 - present
- Serving on Grants-in-Aid Committee 2000 - 2004
- Serving on Program Committee 2000 – 2012
- Breakfast with a Scientists 2001
- Associate Editor Journal of Mammalogy 2014 – present

BIOGRAPHICAL SKETCH -- Patrick A. Zollner

Animal Behavior Society 1995 to 2011
Ecological Society of America 1997 to present
Indiana Academy of Science 1998 – 2000 and 2007 – present
International Society for Ecological Modeling 2016 – present
U.S. Chapter International Association for Landscape Ecology 1998 to present
 Serving on Awards Committee 2000 – 2002
 Serving on Nominating Committee 2006 - 2011
 Chair of Awards Committee 2003 – 2005
 Chair of Membership Committee 2006 -- 2010
 Lunch with a mentor 2002 – 2004
 Served on Careers in Landscape Ecology Panel 2004
 US IALE Executive Committee Member 2005 – 2007
 Section Editor Current Landscape Ecology Reports 2018
The Wildlife Society 2005 to present
Purdue University
 Department of Forestry and Natural Resources
 Chairing Web Site Committee 2007 – 2016
 Serving on Awards Committee 2007 – 2011 and 2015 - present
 Serving on Computer Committee 2010 – 2016
 Serving on Safety Committee 2016 - present
 FNR Representative COA Honors Committee
 Tecumseh Program Faculty Member
State of Wisconsin Department of Natural Resources
 Serving on Marten Conservation Committee 2004 – present
State of Indiana Department of Natural Resources
 Mammalian Nongame Technical Advisory Committee 2008 – 2015
 Mammalian Nongame Technical Advisory Chair 2015 – present

REVIEWER OF MANUSCRIPTS FOR (187 of articles reviewed for 50 journals)

Acta Theriologica (3)(7/09, 1/10)
African Journal of Ecology (1)(12/18)
American Midland Naturalist (5) (9/03, 1/04, 10/04, 5/05, 05/06)
The American Naturalist (6) (6/03, 2/04,2/05, 10/05, 12/07, 2/14)
Animal Behavior (3) (11/05, 2/06, 3/14)
Behavioral Ecology (6) (1/03, 2/03, 9/04, 11/04, 3/05)
Behavioral Ecology and Sociobiology (5)(9/04,12/05, 4/06,7/08)
Biodiversity and Conservation (1)
Biological Conservation (5)(7/06, 9/06, 2/07,7/09, 2/10)
Biological Reviews (2)(12/18, 3/19)
BioScience (1)(6/14)
Biotropica (1)(4/10)
Canadian Journal of Zoology (1)(8/05)
Conservation Biology (3)(7/12, 4/15)
Ecography (7)(6/06,6/06,9/07,4/08, 3/11, 3/17)
Ecologia Austral (2)(8/03, 11/14)
Ecology (8)(5/05, 5/06, 2/09, 4/13)
Ecological Applications (7)(6/07,7/11, 12/11, 9/12, 9/13, 11/14)
Ecological Modeling (9) (7/03, 1/05, 8/15, 5/17, 7/17, 7/17, 9/17, 12/18)

BIOGRAPHICAL SKETCH -- Patrick A. Zollner

Ecological Monographs (2)
Ecology Letters (2)(6/10)
Ethology (3)(11/03, 9/11)
Evolutionary Ecology (1)(08/05)
Forest Ecology and Management (6) (11/03, 4/07,11/07,4/08,7/10, 6/17)
Functional Ecology (1)(5/09)
Global Change Biology (1) (6/06)
Journal of Animal Ecology (4) (3/04, 5/05,9/09, 7/10)
Journal of Applied Ecology (4)(1/14, 6/14, 6/18, 12/18)
Journal of Ethology (3)(6/11, 8/12, 4/13)
Journal of Mammalogy (12)(11/07, 1/10, 4/10,7/11,2/12, 8/13, 7/15, 5/18)
Journal of Theoretical Biology (3)(10/07, 1/14)
Journal of Tropical Ecology(1)(4/08)
Journal of Wildlife Management (10)(9/04, 3/07, 3/07, 12/08, 1/10,4/12.3/16)
Journal of Zoology(2)(7/10, 9/14)
Landscape Ecology (20) (2/03, 8/03, 11/03, 2/04, 5/04, 12/04, 11/05, 2/06, 9/06, 10/06, 3/07, 12/08,
3/11, 5/12, 7/13, 11/15, 8/16, 2/17, 3/18)
Landscape and Urban Planning (2) (4/05, 3/11)
Mammalia (1) (3/10)
Oecologia (1)(6/07)
Oikos (14) (3/03, 5/04,11/04, 9/05, 9/08, 9/09, 3/11, 8/12, 11/12, 3/14)
Northeast Wildlife (2)(9/13)
PLoS One (8) (1/11, 3/11, 6/11, 1/12, 9/13, 8/16, 9/16,12/16)
The Prairie Naturalist (1)(1/12)
Proceedings of the Royal Society of London B (4) (9/03, 10/09)
Proceedings of the National Academy of Science (3)(3/08, 2/14, 4/14)
Small Carnivore Conservation (1)(7/08)
Southeastern Naturalist (2) (9/11, 12/11)
Southwestern Naturalist (2) (3/03)
Theoretical Population Biology (1) (7/04)
Ursus (1) (4/06)
Wetlands (1)(4/08)
Wildlife Society Bulletin (1) (2/03)

REFERENCES

Dr. Eric J. Gustafson (Post-Doctoral Supervisor)
Research Ecologist and Project Leader
USFS North Central Research Station
5985 Hwy K
Rhineland, Wisconsin 54501
715-362-1152
715-362-1166 fax
egustafson@fs.fed.us

Dr. Steven L. Lima (Ph.D. Advisor)
Professor
Department of Life Sciences
Indiana State University
Terre Haute, IN 47809
812-237-3677
812-237-4480 fax
s-lima@indstate.edu

BIOGRAPHICAL SKETCH -- Patrick A. Zollner

Dr. Leonard A. Brennan (M.S. Co-Advisor)
Professor & Endowed Chair Quail Research
Caesar Kleberg Wildlife Research Institute
Texas A&M University Kingsville
Kingsville, TX 78363-8202
Phone: 361-593-5551
Fax: 361-593-3924
kflab00@tamuk.edu

Dr. Winston P. Smith (M.S. Co-Advisor)
Research Wildlife Biologist
USFS Pacific Northwest Research Station
Forestry Sciences Laboratory
3625 93rd Avenue, SW
Olympia, WA 98512
Phone: 360-753-7724
Fax: 360-753-7737
wpaulsmith@aol.com