

Rafał Zwolak

Department of Systematic Zoology
Institute of Environmental Biology
Adam Mickiewicz University
ul. Uniwersytetu Poznańskiego 6
61-614 Poznań
Poland
e-mail: rzwolak@amu.edu.pl;
phone: (+48) 61 8295799
www.rzwolak.home.amu.edu.pl

AREAS OF SPECIALIZATION AND INTEREST

Plant-animal interactions, seed predation and dispersal, disturbance ecology, conservation biology, and spatial population dynamics.

ACADEMIC HISTORY

- 2018-present **Associate Professor**, Department of Systematic Zoology, Institute of Environmental Biology, Adam Mickiewicz University, Poznań, Poland
- 2017-2018 **Fulbright Visting Scholar**, University of California in Davis
- 2009-2018 **Assistant Professor** (*adiunkt*), Department of Systematic Zoology, Institute of Environmental Biology, Adam Mickiewicz University, Poznań, Poland
- 2008 **Ph.D.**, Organismal Biology and Ecology, Division of Biological Sciences, University of Montana, Missoula, MT, USA
- 2003 **M.S.**, Institute of Environmental Biology, Adam Mickiewicz University, Poznań, Poland
- 2001 **B.A.**, Institute of Environmental Biology, Adam Mickiewicz University, Poznań, Poland

GRANT SUPPORT (PI on grant, unless otherwise indicated)

2021-2023	(Polish) National Science Centre “Sonatina” Grant (Co-PI),	963 941 zł
2019-2023	(Polish) National Science Centre “Harmonia” Grant,	901 397 zł
2015-2018	(Polish) National Science Centre “Opus” Grant,	313 234 zł
2012-2015	(Polish) National Science Centre „Harmonia” Grant,	463 471 zł
2010-2011	(Polish) Ministry of Science and Higher Education „Juventus Plus”	95 600 zł
2009-2013	(Polish) Ministry of Science and Higher Education Grant,	216 090 zł
2009-2011	Foundation for Polish Science “Homing” Grant,	92 000 zł
2007-2008	USDA McIntire-Stennis Grant (Co-PI),	\$18 000
2006	USDA Research Joint Venture Agreement (Co-PI),	\$6 800

PEER-REVIEWED PUBLICATIONS

1. ZWOLAK R., D. Clement, A. Sih, and S. J. Schreiber. *In press*. Granivore abundance shapes mutualism quality in plant-scatterhoarder interactions. **New Phytologist**.
2. Zduniak M., S. Serafini, A. Wróbel, and R. ZWOLAK. 2023. Host's body mass, not sex, affects ectoparasite loads in yellow-necked mouse *Apodemus flavicollis*. **Parasitology Research**, 122: 2599-2607.
3. Baláž I., M. Bogdziewicz, S. Dziemian-Zwolak, C. Lo Presti, A. Wróbel, M. Zduniak, and R. ZWOLAK. 2023. From fleas to trees: masting indirectly affects flea abundance on a rodent host. **Integrative Zoology**, 18: 440-452.
4. ZWOLAK R., P. Celebias, and M. Bogdziewicz. 2022. Global patterns in the predator satiation effect of masting – a meta-analysis. **Proceedings of the National Academy of Sciences**, 119: e2105655119.
5. Bogdziewicz M., B. Jędrzejewska, E. Wysocka-Fijorek, A. Gazda, S. Miścicki, D. Kuijper, R. ZWOLAK, M. Churski i T. Podgórski. 2022. Emerging infectious disease triggered a trophic cascade and enhanced recruitment of a masting tree. **Proceedings of the Royal Society B**, 289: 20212636.
6. Bednarz P. and R. ZWOLAK. 2022. Body mass and sex, but not breeding condition and season, influence open-field exploration in the yellow-necked mouse. **Ecology and Evolution**, 12: e8771.
7. Wróbel A., P. Kurek, M. Bogdziewicz, D. Dobrowolska, and R. ZWOLAK. 2022. Avian dispersal of an invasive oak is modulated by acorn traits and the presence of a native oak. **Forest Ecology and Management** 505: 119866.
8. ZWOLAK R., D. Clement, A. Sih, and S. J. Schreiber. 2021. Mast seeding promotes evolution of scatter-hoarding. **Philosophical Transactions of the Royal Society B**, 376: 202003754.
9. ZWOLAK R., M. Bogdziewicz, and E. E. Crone. 2020. On the need to evaluate costs and benefits of synzoochory for plant populations. **Journal of Ecology**, 108: 1784-1788.
10. ZWOLAK R. and A. Sih. 2020. Animal personalities and seed dispersal: A conceptual review. **Functional Ecology**, 34: 1294-1310.
11. Bogdziewicz M., E. E. Crone, and R. ZWOLAK. 2020. Do benefits of seed dispersal and caching by scatterhoarders outweigh the costs of predation? An example with oaks and yellow-necked mice. **Journal of Ecology** 108: 1009-1018.
Article shortlisted for the Harper Prize, awarded by the British Ecological Society
12. Schupp E. W., R. ZWOLAK, (...), and K. Shea (14 authors). 2019. Intrinsic and extrinsic drivers of intraspecific variation in seed dispersal are diverse and pervasive. **AoB Plants** 11: plz067.
13. Meagher S., K. L. Winters, K. W. McCravy, and R. ZWOLAK. 2019. Complex and diverse drivers of parasite loads in a cosmopolitan insect. **Journal of Parasitology** 105: 659-668.

14. #Wróbel A., E. E. Crone, and R. ZWOLAK. 2019. Differential impacts of soil microbes on native and co-occurring invasive tree species. **Ecosphere** 10: e02802.
15. Snell R. S., N. G. Beckman, (...), R. ZWOLAK, and E. Schupp (22 authors). 2019. Consequences of intraspecific variation in seed dispersal for plant demography, communities, evolution, and global change. **AoB Plants** 11: plz016.
16. Bogdziewicz M., N. Lichti, and R. ZWOLAK. 2019. Consumer-mediated indirect interaction with a native plant lowers the fitness of an invasive competitor. **Journal of Ecology** 107: 12-22.
17. Wróbel A., and R. ZWOLAK. 2019. Habitat-dependent seed dispersal of an introduced tree species by native rodents. **Forest Ecology and Management** 433: 563-568.
18. Bogdziewicz M., S. Marino, R. Bonal, R. ZWOLAK, and M. Steele. 2018. Rapid aggregative and reproductive responses of weevils to masting of North American oaks counteract predator satiation. **Ecology** 99: 2575-2582.
19. ZWOLAK R., J. Witczuk, M. Bogdziewicz, L. Rychlik, and S. Pagacz. 2018. Simultaneous population fluctuations of rodents in montane forests and alpine meadows suggest indirect effects of tree masting. **Journal of Mammalogy** 99: 586-595.
20. Bogdziewicz M., R. Bonal, J. M. Espelta, E. M. Kalembe, M. A. Steele, and R. ZWOLAK. 2018. Invasive oaks escape pre-dispersal insect predators and trap enemies in their seeds. **Integrative Zoology** 12: 457-467.
21. ZWOLAK R. 2018. How individual variation in seed dispersing animals matters for plants. **Biological Reviews** 93: 897-913.
22. von Merten S., R. ZWOLAK, and L. Rychlik. 2017. Social personality: a more social shrew species exhibits stronger differences in personality types. **Animal Behaviour** 127: 125-134.
23. Bogdziewicz M., E. E. Crone, M. A. Steele, and R. ZWOLAK. 2017. Effects of nitrogen deposition on reproduction in a masting tree: benefits of higher seed production are trumped by negative biotic interactions. **Journal of Ecology** 105: 310-320.
24. Wróbel A., and R. ZWOLAK. 2017. Deciphering the effects of disperser assemblages and seed mass on patterns of seed dispersal in a rodent community. **Integrative Zoology** 12: 457-467.
25. Bogdziewicz M., R. ZWOLAK, L. Redosh, L. Rychlik, and E. E. Crone. 2016. Negative effects of density on space use of small mammals differ with the phase of the masting-induced population cycle. **Ecology and Evolution** 6: 8423-8430.
26. ZWOLAK R., M. Bogdziewicz, A. Wróbel, and E. E. Crone. 2016. Advantages of masting in European beech: timing of granivore satiation and benefits of seed caching support the predator dispersal hypothesis. **Oecologia** 180: 749-758.
27. Bogdziewicz M., R. ZWOLAK, and E. E. Crone. 2016. How do vertebrates respond to mast seeding? **Oikos** 125: 300-307.

28. ZWOLAK R., M. Bogdziewicz, and L. Rychlik. 2016. Beech masting modifies the response of rodents to forest management. **Forest Ecology and Management** 359: 268-276.
29. Dziemian S., B. Sikora, B. Piłacińska, J. Michalik, and R. ZWOLAK. 2015. Ectoparasite loads in sympatric urban populations of the northern white-breasted and the European hedgehog. **Parasitology Research** 114: 2317-2323.
30. Dziemian S., J. Michalik, B. Piłacińska, S. Bialik, B. Sikora, and R. ZWOLAK. 2014. Infestation of urban populations of the Northern white-breasted hedgehog, *Erinaceus roumanicus*, by *Ixodes* spp. ticks in Poland. **Medical and Veterinary Entomology** 28: 465-469.
31. Bogdziewicz M., and R. ZWOLAK. 2014. Responses of small mammals to clear-cutting in temperate and boreal forests of Europe: a meta-analysis and review. **European Journal of Forest Research** 133: 1-11.
32. Wróbel A., and R. ZWOLAK. 2013. The choice of seed tracking method influenced fate of beech seeds dispersed by rodents. **Plant Ecology** 214: 471-475.
33. ZWOLAK R., S. Meagher, J. W. Vaughn, S. Dziemian, and E. E. Crone. 2013. Reduced ectoparasite loads of deer mice in burned forest: From fleas to trees? **Ecosphere** 4: art132.
34. ZWOLAK R., and E. E. Crone. 2012. Quantifying the outcome of plant-granivore interactions. **Oikos** 121: 20-27.
35. ZWOLAK R., D. E. Pearson, Y. K. Ortega, and E. E. Crone. 2012. Mechanisms driving postfire abundance of a generalist mammal. **Canadian Journal of Zoology** 90: 51-60.
36. ZWOLAK R., D. E. Pearson, Y. K. Ortega, and E. E. Crone. 2010. Fire and mice: Seed predation reduces fire's influence on conifer recruitment. **Ecology** 91: 1124-1131.
37. ZWOLAK R. 2009. A meta-analysis of the effects of wildfire, clearcutting, and partial harvest on the abundance of North American small mammals. **Forest Ecology and Management** 258: 539-545.
38. ZWOLAK R., and K. R. Foresman. 2008. Deer mouse demography in burned and unburned forest: no evidence for source-sink dynamics. **Canadian Journal of Zoology** 86: 83-91.
39. ZWOLAK R., and K. R. Foresman. 2007. Effects of a stand-replacement fire on small mammal communities in montane forest. **Canadian Journal of Zoology** 85: 815-822.
40. ZWOLAK R. 2007. Ogniu, krocza za mną: ekologia i polityka pożarów lasów Ameryki Północnej. [Fire walk with me: Ecology and politics of forest fires in North America] **Wiadomości Ekologiczne** 53: 191-200. – in Polish with English summary.
41. Rychlik L., and R. ZWOLAK 2006. Interspecific behavioural domination among four sympatric species of shrews. **Canadian Journal of Zoology** 84: 434-448.
42. ZWOLAK R. 2006. Długi i skuteczny pościg w konflikcie dwóch ryjówek aksamitnych *Sorex araneus*. **Przegląd Przyrodniczy** 17: 137-138. – in Polish.
43. Rychlik L., and R. ZWOLAK 2005. Behavioural mechanisms of conflict avoidance among shrews. **Acta Theriologica** 50: 289-308.

44. ZWOLAK R., and L. Rychlik 2004. Does the reduction of locomotor activity serve as an aggression avoidance mechanism in shrews (Soricidae)? **Electronic Journal of Polish Agricultural Universities** 7(2), issue Biology.
45. ZWOLAK R. 2002. Zachowania agonistyczne ryjowkowatych - problem postaw ciała. [Agonistic behaviour of shrews - the problem of body postures] **Wiadomości Ekologiczne** 48: 3–17. – in Polish with English summary.

NON-REFEREED ARTICLES

- ZWOLAK R. 2023. Błąd non stop. **Polityka** 48 (3441), 22.11-28.11.2023. Available at: <https://www.projektpulsar.pl/struktura/2235864,1,zaskakujaco-duza-czesc-artykulow-naukowych-jest-bledna.read>
- ZWOLAK R. 2022. Naukowcy równi i równiejsi. **Polityka** 41 (3384), 5.10 – 11.10.2022. Available at: www.polityka.pl/tygodnikpolityka/nauka/2183656,1,naukowcy-rowni-i-rowniejsi.read
- ZWOLAK R. 2022. Klęska urodzaju. Czy nauka sama zastawiła na siebie pułapkę? **Polityka**, 11.03.2022. Available at: www.polityka.pl/tygodnikpolityka/nauka/2159263,1,kleska-urodzaju-czy-nauka-sama-zastawila-na-siebie-pulapke.read
- ZWOLAK R. 2009. Czwarty Żywiół. **Wiedza i Życie**, 8/2009, 36-38.
- ZWOLAK R., D. E. Pearson, K. R. Foresman, E. E. Crone, and Y. K. Ortega. 2008. Are mice eating up all the pine seeds? **EcoReport**, USDA Forest Service, RMRS, Forestry Sciences Laboratory, Missoula, MT.
- ZWOLAK R. 2002. Wielki mały terytorialista – rzecz o ryjówkach. **Wszechświat** 4-6, 130.

MENTORING

Current PhD students

Paulina Celebias (started 2018, co-advised with Michał Bogdziewicz): recipient of Faculty of Biology, Adam Mickiewicz University Dean's Grant

Milena Zduniak (started 2017): recipient of National Science Centre "Preludium" grant and the Israeli Council for Higher Education Academic Internship.

Former PhD students

Paula Bednarz (2023): recipient of Faculty of Biology, Adam Mickiewicz University Dean's Grant, and the IDEAMU Grant (awarded by the Adam Mickiewicz University).

Aleksandra Wróbel (graduated 2019): recipient of the National Science Centre "Preludium" Grant, and the POWER fellowship (awarded by the Faculty of Biology, Adam Mickiewicz University).

Michał Bogdziewicz (graduated 2017): recipient of the National Science Centre „Preludium” and „Etiuda” grants, Foundation for Polish Science START fellowship, Minister of Science and Higher Education fellowship, City of Poznań fellowship, and Adam Mickiewicz University Foundation fellowship.

Former M.S. students

Sarah Serafini (graduated 2020, Tuscia University, Italy, co-adviser)

Ewelina Mikołajczyk (graduated 2020)

Aleksandra Konieczna (graduated 2019)

Milena Zduniak (graduated 2015)

Aleksandra Wróbel (graduated 2013)

HONORS

- | | |
|------------------|--|
| 2020, 2022 | Excellence Award, <i>project “Initiative of Excellence – Research University”, Adam Mickiewicz University</i> (two consecutive editions) |
| 2018, 2019, 2023 | First Degree Award (for research publications), <i>Adam Mickiewicz University</i> |
| 2017 | Fulbright Senior Award (9-month research stay at the University of California in Davis, prof. Andrew Sih’s lab) |
| 2017 | Third Degree Award (for research publications), <i>Adam Mickiewicz University</i> |
| 2014 | “Mentor” fellowship, <i>Foundation for Polish Science</i> |
| 2011 | Scholarship for outstanding young researchers, <i>(Polish) Ministry of Science and Higher Education</i> |
| 2011 | Third Degree Award (for acquiring research grants), <i>Adam Mickiewicz University</i> |
| 2009 | “Homing” scholarship, <i>Foundation for Polish Science</i> |
| 2008 | Bertha Morton Graduate Scholarship, <i>University of Montana</i> |
| 2006 | Outstanding Presentation Award, <i>University of Montana Graduate Student and Faculty Conference</i> |
| 2005 | Thesis Award, <i>University of Montana</i> |
| 2003 | Outstanding Senior Award, Faculty of Biology, <i>Adam Mickiewicz University</i> |

SEMINARS

- 2023 Senckenberg Biodiversity and Climate Research Centre, Frankfurt, Germany
- 2018 Seminars in Ecology and Evolution, University of California in Davis, USA
- 2017 Animal Behavior Graduate Group Seminar Series, University of California in Davis, USA
- 2017 Seminars in Ecology and Evolution, Adam Mickiewicz University, Poznań
- 2013 Faculty of Natural Sciences, Constantine the Philosopher University in Nitra, Slovakia
- 2012 Laboratory of Forest Biology, Uniwersytet Wrocławski
- 2011 II Conference on Research and Education of the Biology Department, Adam Mickiewicz University, Poznań
- 2009 Seminar of the Department of Behavioral Ecology, Adam Mickiewicz University, Poznań

SELECTED CONFERENCE PRESENTATIONS

- 2022 8th Polish Evolutionary Conference, Toruń, Poland
- 2019 7th Polish Evolutionary Conference, Gdańsk, Poland
- 2019 Conference “Forests at risk”, Warsaw, Poland
- 2016 Conference “Trees and forests in changing environments”, Poznań, Poland
- 2015 100th Annual Meeting of the Ecological Society of America, Baltimore, MD, USA
- 2015 6th International Symposium on Frugivores & Seed Dispersal, Drakensberg, South Africa
- 2013 11th International Mammalogical Congress, Belfast, UK
- 2012 97th Annual Meeting, Ecological Society of America, Portland, OR, USA
- 2012 Rodens et Spatium, Rovaniemi, Finland
- 2010 95th Annual Meeting, Ecological Society of America, Pittsburgh, PA, USA
- 2009 IX National Mammalogy Conference, Poznań, Poland
- 2008 Montana Chapter of the Society for Conservation Biology, Missoula, MT, USA
- 2008 88th Annual Meeting of the American Society of Mammalogists, Brookings, SD, USA
- 2007 92nd Annual Meeting, Ecological Society of America, San Jose, CA, USA
- 2006 University of Montana Graduate Student and Faculty Research Conference, Missoula, MT, USA
- 2005 University of Montana Graduate Student and Faculty Research Conference, Missoula, MT, USA
- 2003 IV National Conference on Behavioral Ecology, Siedlce, Poland
- 2002 II International Colloquium on the Biology of the Soricidae, Powdermill Biological Station, PA, USA

OTHER PROFESSIONAL ACTIVITIES

- 2017 – present Member of **The Committee of Environmental and Evolutionary Biology**, Polish Academy of Sciences
- 2008 – present **Ad Hoc Reviewer** for *Acta Theriologica*, *Acta Oecologica* (x2), *Animal Cells and Systems*, *Basic and Applied Ecology*, *Behavioral Ecology and Sociobiology* (x3), *Behavioural Processes*, *Biology Letters*, *Biotropica* (x3), *Canadian Journal of Forest Research* (x5), *Canadian Journal of Zoology*, *Canadian Wildlife Biology & Management*, *Ecography*, *Ecology*, *Ecology and Evolution*, *Ecology Letters* (x2), *Ecoscience*, *Ecosphere*, *Ethology*, *European Journal of Forest Research*, *Fire Ecology*, *Forest Ecology and Management* (x8), *Global Ecology and Biogeography*, *Global Ecology and Conservation*, *Integrative Zoology* (x5), *Journal of Animal Ecology* (x2), *Journal of Ecology* (x3), *Journal of Mammalogy* (x2), *Mammalian Biology*, *Natural Areas Journal*, *Oecologia* (x2), *Oikos*, *Parki Narodowe i Rezerwaty Przyrody*, *Physiology & Behavior*, *Plant Biology*, *PLOS One* (x2), *Polish Journal of Ecology*, *Proceedings of the Royal Society B* (x2), *Scientific Reports*, and *Restoration Ecology*.
- 2009-present **Ad Hoc Reviewer** of grant proposals for (Polish) *National Science Center*, *National Science Foundation (USA)* - twice, *Foundation for Polish Science*, *United States – Israel Binational Science Foundation*, and *French National Research Agency (ANR)*.
- 2018-2019 **Mentor**, Polish-U.S. Fulbright Commission
- 2014 **Expert** at XXIV Workshop on Scientific Presentation Techniques “OAK”, Spała, Poland
- 2008 **Organization** of the 1st MT-SCB Annual Symposium “Applying Conservation Science to Action”, Missoula, MT
- 2007 – 2008 **Board Member** of the Montana Chapter of the Society for Conservation Biology
- 2006, 2008 **Graduate Student Representative**, Organismal Biology & Ecology, Division of Biological Sciences, University of Montana
- 2002 **Organization** of the X Workshop on Scientific Presentation Techniques “OAK”, Jeziory, Poland