

## Curriculum Vitae

Oswald Joseph Schmitz  
Oastler Professor of Population and Community Ecology

**WORK ADDRESS** Yale University, School of the Environment, 195 Prospect St., New Haven, CT  
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**URL** <http://schmitz.environment.yale.edu>

### DEGREES

1985-1989 Ph.D. University of Michigan, School of Natural Resources.  
1983-1984 M.Sc. University of Guelph, Department of Zoology  
1978-1982 B.Sc. University of Guelph, Department of Zoology

### PROFESSIONAL POSITIONS

2019-present Senior Associate Dean for Research and Director of Doctoral Studies, Yale University  
School of the Environment.  
2011-2018 Director, Yale Institute for Biospheric Studies  
2004-2009 Associate Dean for Academic Affairs, Yale University, School of the Environment  
2000-present Professor, Yale University, School of the Environment  
2000-present Joint Professor, Yale University, Department of Ecology and Evolutionary Biology  
(courtesy appointment subject to biannual re-approval)  
1997-2000 Joint Associate Professor, Yale University, Department of Ecology and Evolutionary  
Biology  
1996-2000 Associate Professor with term, Yale University, School of the Environment  
1992-1996 Assistant Professor with term, Yale University, School of the Environment  
1990-1992 N.S.E.R.C. (Canada) Postdoctoral Fellow, Department of Zoology, University of British  
Columbia  
1988-1989 Rackham Predoctoral Fellow, School of Natural Resources, University of Michigan

### FELLOWSHIPS/AWARDS/HONORS

2019 Bruce MacLaren Distinguished Lecture, Eastern Kentucky University Chautauqua  
Lecture Series in Celebration of Science Week  
2017 Keynote Speaker—3<sup>rd</sup> International Workshop on Trait-based Approaches to Ocean Life  
2017 Keynote Speaker—University of Wisconsin Ecology Spring Symposium  
2016 Riser Lecture—Northeastern University Marine Science Center  
2015 Named Fellow of the Ecological Society of America  
2015 Bronze Medal, the Federated Garden Clubs of Connecticut's highest honor awarded for 10  
years of dedicated service teaching in the Federation's Environmental Studies School.  
2014 Charles Jenner Memorial Lectureship— Curriculum for the Environment and Ecology,  
University of North Carolina - Chapel Hill  
2014 Class of 2014 Teaching Award for Professor Most Exemplifying Aldo Leopold's Land Ethic,  
Yale University, School of the Environment.  
2011 Distinguished Ecologist Lecture Series—Michigan Tech University  
2010 Biodiversity, Ecology and Global Change Lecture—Harvard University Center for the  
Environment.  
2009 Ledermann Lecture in Natural History and Conservation Biology—College of the

- Environment and Life Sciences, University of Rhode Island
- 2006 Named the Oastler Professor of Population and Community Ecology, Yale School of Forestry and Environmental Studies
- 2006 Elected Fellow of the AAAS (American Association for the Advancement of Science) for distinguished fundamental contributions towards understanding the emergence and maintenance of ecosystem structure and functioning and for relating ecosystem patterns to individual behaviors.
- 2005 The Walton Lecture Series—Mountain Lake Biological Station, Virginia, USA
- 1999 Class of 1999 Teaching Award, Yale University, School of the Environment
- 1994 Yale University Nominee, Packard Foundation Science Fellowship
- 1992 University Postdoctoral Fellowship, University of Calgary,  
(Declined to accept position at Yale)
- 1990-1992 N.S.E.R.C. Postdoctoral Fellowship, University of British Columbia
- 1988-1989 Rackham Predoctoral Dissertation Fellowship, University of Michigan
- 1987 Rackham Research Fellowship, University of Michigan
- 1987 The Howard M. Wight Prize for Outstanding Qualities of Scholarship and Leadership, University of Michigan School of Natural Resources

## **BIOGRAPHICAL SKETCH**

Oswald Schmitz is the Oastler Professor of Population and Community Ecology, in the Yale University, School of the Environment. He studies the linkage between two important components of natural systems: biodiversity and ecosystem services. These issues are examined using field experimentation guided by formal mathematical theory of species interactions. His research explains how predator and herbivore species determine the species composition and productivity of plants in ecosystems, and ensuing ecosystem processes such as nutrient and carbon cycling. Research also focuses on elucidating how important environmental disturbances, such as global climate change and natural resource exploitation, alter the nature and strength of species interactions in ecosystems and ensuing ecosystem services. The scientific insights aid efforts to conserve vital services that species in ecosystems provide to humankind. His research evaluates how to rethink conservation strategies by considering species as part of a natural portfolio. This portfolio represents a wealth of potential alternatives to contemporary technologically intensive and expensive approaches in environmental management. His book “The New Ecology: Rethinking a Science for the Anthropocene” encapsulates much of his thinking about biodiversity and ecosystems and, heavily inspired by the writings of Aldo Leopold, makes ecological science accessible to a broader readership.

## **PROFESSIONAL AFFILIATIONS**

Ecological Society of America; American Association for the Advancement of Science; Society of American Naturalists,

## **PROFESSIONAL SERVICE**

### ***To Conservation and Policy***

- 2017-2020 Member, Board of Directors, Ocean Conservancy, Washington, DC.
- 2014-present Member, Science Advisory Council, Ocean Conservancy, Washington, DC.
- 2012 Science Advisor, Open Space Institute’s Northeast Resilient Landscapes Initiative, NY
- 2005-2009 Advisory Board Member, Center for Conservation Solutions, American Forest Foundation, Washington, DC.

- 2004 Member, US Environmental Protection Agency (EPA) Scientific Advisory Board ad hoc panel reviewing the EPA Report on the Environment.
- 2004 Presented “The effects of global climate change on species diversity and ecosystem functioning within the continental USA” to the spring meeting of the New England Governors and Eastern Canadian Premier’s conference. This was a prelude to the fall meeting that led to significant New England wide agreements and subsequent legislation on controlling greenhouse gas emissions in New England.
- 1994 – 2000 Scientific Advisory Board, Mistik Forest Management Ltd., Saskatchewan, Canada
- 1999 Member, Scientific Advisory Panel on “Total Land Management”, Mining Prospectors and Developers Association of Canada.

***To Academics/Professional Societies***

- 2016-2018 Member, Fellows Selection Committee, Ecological Society of America
- 2017 Member, University of Massachusetts Biology Department External Review Committee
- 2015 Member, NSF site review panel evaluating the National Socio-Environmental Synthesis Center (SESYNC) for a second 5-year term funding renewal.
- 2012 Member, Society of American Naturalists ad hoc committee to select the Editor-in-Chief of *The American Naturalist*
- 2012-2014 Member, Steering Committee, Predator-Prey Gordon Research Conference
- 2011-2012 Member, Steering Committee for Workshop: Climate change and species interactions: ways forward. Institute of Ecosystem Studies, Millbrook NY
- 2010-2013 Member, Editorial Advisory Board, *Encyclopedia of Sustainability Volume 5: Ecosystem Management and Sustainability*.
- 2010, 2013 Judge, Blavatnik Awards for Young Scientists, New York Academy of Sciences.
- 2010 Member, Millennium Conferences proposal review committee, Ecological Society of America.
- 2004-2010 Invited Faculty Member, Community Ecology and Biodiversity Group (1 of 9 original Internationally) Faculty of 1000 Biology—A next-generation literature awareness tool in which faculty members highlight the most interesting papers published in the biological sciences.
- 2006-2014 Review Panel Member, on various US National Science Foundation (NSF) Environmental Biology Panels (DDIG, General Ecology, Population & Community Ecology preproposal)
- 2004 External Faculty Opponent, Ph.D. Dissertation, Umeå University
- 2002 External Faculty Opponent, Ph.D. Dissertation, University of Amsterdam
- 2002 Organized a Special Feature entitled “Linking Individual-scale trait plasticity to community dynamics” published in *Ecology*.
- 2002 Review Panel Member, US National Science Foundation (NSF) Biocomplexity in the Environment Program.
- 2000 Review Panel Member, United States Department of Agriculture (USDA) Ecosystem Science Grants Program
- 2000 Review Panel Member, US National Science Foundation (NSF) Doctoral Dissertation Improvement Grants Program
- 1996 Guest Editor, Special issue of *Evolutionary Ecology* (November 1997) on the theme “The population and community dynamical implications of optimal foraging theory” commemorating the 30th anniversary of optimal foraging theory.

***To the Community***

- 2005- 2008 Member, New Haven Science Fair Steering Committee

2005 Yale-New Haven Teacher's Institute—Teaching Fellow: Ecology and Conservation  
for New Haven Public School teachers.  
1995- present Mentor, New Haven Science Fair

### **EDITORIAL SERVICE**

2017-2018 Section editor for a special issue in *CURRENT OPINION IN INSECT SCIENCE* on  
Global Change Biology—Eco-Evolutionary Ecology and Adaptation.  
2014- Associate Editor, *ECOLOGY AND EVOLUTION*  
2012, 2013 Guest Editor, *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCE*  
USA (3 manuscripts)  
2006-2014 Associate Editor, *ECOSCIENCE*  
2010-2013 Associate Editor, *ECOSPHERE*  
2009-2013 Associate Editor, *THE AMERICAN NATURALIST*  
2007-2009 Associate Editor, *RESEARCH LETTERS IN ECOLOGY*  
2004-2008 Editor, *ECOLOGY LETTERS*  
2001-2007 Associate Editor, *OECOLOGIA*  
1999-2005 Associate Editor, *ECOLOGY & ECOLOGICAL MONOGRAPHS*

### **PEER REVIEW CONTRIBUTIONS**

- Proposal Reviewer for USA National Science Foundation (NSF): Population and Community Ecology, Ecosystem Ecology, Physiology and Behavior, and LTER panels.
- Proposal Reviewer for Academy of Sciences of the Czech Republic
- Proposal Reviewer for Canada Natural Sciences Research Council (NSERC)
- Proposal Reviewer for Israeli National Science Foundation
- Proposal Reviewer for National Geographic Committee for Research and Exploration
- Proposal Reviewer for Netherlands Organization for Scientific Research
- Proposal Reviewer for Royal Society of New Zealand Marsden Fund
- Proposal Reviewer for South African Science Foundation
- Proposal Reviewer for US-Israel Binational Science Foundation
- Proposal Reviewer for UK Natural Environment Research Council (NERC)

### **SERVICE TO YALE UNIVERSITY**

#### **Administrative service**

2019- Senior Associate Dean for Research and Director of Doctoral Studies, Yale  
University School of the Environment  
2001- Member, Yale College Environmental Studies Major Faculty Advisory  
Committee  
2011-2018 Director, Yale Institute for Biospheric Studies  
2012-2016 Member, Strategic Planning Committee, Yale Forestry and  
Environmental Studies  
2015-2016 Member, Yale School of Public Health SAC Committee  
2015 Member, Yale Divinity School SAC Committee  
2009-2011 Chair, Faculty Development and Appointments Committee, Yale School of the  
Environment  
2003-2005 Member, Yale University International Education Committee  
2001-2008 Member, Yale University Technological Services Committee  
2001-2006 Member, Yale University Press Publications Committee  
2001-2004 Director of Doctoral Studies, Yale School of the Environment

2000-2001 Acting Chair, F&ES Curriculum Committee  
 1998-2002 Director, Yale University Center for Computational Biology

## TEACHING

### Courses taught

Population/Community Ecology	Conservation Biology	Experimental Design
Wildlife Conservation Ecology	Developing a Conservation Ethic	Biostatistics
Evolutionary Ecology	Bioreserve Design	Research Methods
Ecology & Environmental Problem Solving	Ecosystem Ecology	Ethics and Conservation
		Conservation Science and Land use planning

### Student Advising

### Senior Undergraduate Theses Supervised

#### *Environment Studies*

Anne Guerry. 1995. The fusion of ecology and wildlife management: perspectives on wolf control in Alaska.

Leana Rosette 1998. The reintroduction of two Mantled Howler Monkeys in Manual Antonio, Costa Rica.

Anna Gross 2003-2004. Evaluating habitat conservation plans.

Dawn Lippert 2005-2006. Vieques' Vanishing Residents: An Analysis of Leatherback Sea Turtle Management on Vieques Island, Puerto Rico

Karen Stamieszkin 2005-2006. Assessing ecological viability of oyster farming in Maine.

Christa Anderson 2006-2007. Interactions between humans and lions in southern Tanzania.

Kathy Hughes 2009-2010. Empirical study of habitat complexity and predator-prey interactions as it informs ecosystem conservation. (*Winner of the 2010 Donnelley Prize for best senior thesis in the Environmental Studies Major*).

Sabrina Clevenger 2017-2018. Range contraction of the American Pika: Climate refugia and the defense against climate warming.

Madeline Zimmerman. 2017-2018. The changing fate of Thailand's elephants, but a future worth fighting for: the interplay of culture and ecology for conservation.

#### *Ecology & Evolution*

Joann Lo. 1997. Associational defense hypothesis: the efficacy of trichomes as a defense against herbivory for associated defended and undefended plants.

Blake Suttle. 1997. Agonistic interactions of prey between coexisting spiders: the effects of habitat structural complexity and food limitation.

Kara Rodgers. 1998. The effects of herbivory and plant competition on an oldfield plant community.

Lauge Sokol-Hessner. 2000. Understanding the effects of multiple spider predator combinations on grasshopper prey populations.

Megann Young. 2001. Effects of intermediate trophic complexity on top-down effects in food webs.

Farrin Anello. 2002. Effects of prey body size state on predation-risk avoidance behavior.

Charlie Liu. 2006. Grasshopper mouthpart plasticity and implications for population dynamics.

Katherine Urban-Mead. 2013. Influence of land use variation on pollinator diversity and abundance.

Zachary Miller. 2017. Elemental cycling, physiological stress, and ecosystem functioning: Confronting a stoichiometrically-explicit model with data.

Katherine Wyatt. 2017. Adapting Predator-Prey Interactions between *Melanoplus femurrubrum* grasshopper and *Pisaurina mira* spider in New England Warming Conditions.

Adam Houston. 2017-2018. Nutrient cycling, top-down, and bottom-up controls in old-fields.

Jonah Ury. 2018-2019. The climate bioeconomics of forest management: Maximizing the carbon-inclusive profits of the North American boreal forest.

***Applied Mathematics***

Sacha Litman. 1995. Stability analysis of a plant-adaptive herbivore system.

**Masters students who did research in my lab**

Andrew Beckerman 1992-1994	Tierney Kelly 2000-2001	Jeff Carroll 2010-2012
Erin Girdler 1992-1994	Elisabeth Jones 2000-2002	Jason Clark 2010-2012
Scott Mathison 1992-1994	Krithi Karanth 2000-2003	Judith Ament 2011-2013
Theodore Wong 1993-1995	Elizabeth Kalies 2002-2004	Henry Glick 2011-2013
Andrew Cooper 1993-1995	Jennifer Molnar 2002-2004	Robert Buchkowski 2012-2014
Brett Eldered 1993-1995	Tendro Ramaharitra 2003-2005	Bryan Crowley 2012-2014
Kristina Rothley 1993-1995	Radhika Dave 2004-2006	Jeffrey Smith 2013-2015
Kathleen O'Brien 1994-1996	Rebecca Sanborn 2004-2006	Meredith VanAcker 2014-2016
Maria Uriarte 1994-1996	Charlie Liu 2005-2007	Katherine Urban-Meade 2016
Jay West 1994-1996	Maya Cahn 2005-2007	Adam Eichenwald 2016-2018
Heinrich zu Dohna 1996-1998	Kelsey Kidd 2006-2008	Nathalie Somer 2017- 2019
Kevin Drury 1996-1998	Angela Rutherford 2006-2008	Kimberly Zamuda 2017- 2019
Andrei Podolsky 1996-1998	Sarah Fierce 2008-2010	Courtney Anderson 2018-2020
Benjamin Ruttenberg 1997-1998	Kathryn Freund 2008-2010	Danielle Glass 2018-2020
Rebecca Young 1997-1999	Alexandra Whitney 2008-2010	Quint Doan 2020-
Anne Axel 1997-1999	Jessica Price 2009-2011	Stan Gosliner 2020-
Drue DeBerry 1997-1999	Kevin Barrett 2010-2012	
Jennifer Garrison 1997-1999		

**Doctoral Students*****Current***

Mary Burak (2016-) *recipient of an NSF Graduate Research Fellowship*  
 Julia Monk (2016-) *recipient of a Yale Graduate School Dean's Emerging Scholars Fellowship (1 of 15 awarded in 2016)*  
 Kristy Barnes (2018-) *recipient of an NSF Graduate Research Fellowship (co-advised with Mark Bradford)*  
 Katherine Orrick (2018-)  
 Nathalie Sommer (2019-)

***Past***

Andrew Beckerman (1995-1999). *The distribution of the red-legged grasshopper, Melanoplus femurrubrum, among oldfields: resolving a counterintuitive pattern.* Currently Professor, Department of Animal and Plant Sciences, University of Sheffield, Sheffield UK.  
 Susan Koenig, (1995-1999). *The reproductive biology of Jamaica's black-billed parrot (Amazona agilis) & conservation implications.* Currently the Executive Director, Windsor Research Station, Windsor Jamaica.  
 Kristina Rothley (1996-1999). *Trade-offs between conflicting demands and the management of habitat.* Currently Associate Attorney, Chester and Vestal, Portland, Maine.  
 Jason Gear (1998-2003) *Mechanisms determining spatial dynamics of forest collembolans.* Currently Ecologist, EPA Atlantic Ecology Division National Health and Environmental Effects Research Laboratory, Narragansett, RI

- Catherine Burns (1999-2004: recipient of an NSF Graduate Research Fellowship) *Investigating the response of white-footed mice to habitat loss: from individual behavior to landscape ecology*. Currently Associate Director, Water and Habitat for Nature, The Nature Conservancy, California.
- Michael Booth (1999-2005) *Effects of ectomycorrhizal fungi on forest plant competition*. Deceased 2011.
- Elizabeth Jones (2002-2007: co-advised with Lisa Curran) *The influence of mammalian seed predation on five species in Papua New Guinea: differential effects of recruitment, distribution and implications for community composition*. Currently: Author for Friedland and Relyea, Teacher's Edition for Environmental Science for AP
- Brandon Barton (2005-2010). *Species Interactions in a Warming Climate: Examining the Direct and Indirect Effects of Climate Change on New England Grassland Food Webs*. Currently Assistant Professor, Department of Biological Sciences, Mississippi State University.
- Holly Jones (2005-2010). *Evaluating island recovery following invasive species removal and seabird restoration*. Currently Associate Professor, Department of Biological Sciences, Northern Illinois University.
- Jennifer Miller (2009-2015: recipient of an NSF Graduate Research Fellowship). *Examining Predation Risk as a Guide for Mitigating Large Carnivore Attacks on Livestock*. Currently *International Program Specialist, U.S. Fish and Wildlife Service*
- Kevin McLean (2010-2016: recipient of a NASA Earth and Space Science Fellowship) *Canopy habitat and arboreal mammal Community: Integration of movement ecology and wildlife monitoring in a Neotropical forest*. Currently *Associate Director of Research Talks and Outreach, iBiology*
- Colin Donihue (2011-2016). *Drivers of functional trait variability in Podarcis erhardii, the Aegean Wall Lizard*. Currently Voss Postdoctoral Fellow, Institute at Brown for Environment and Society.
- Karin Burghardt (2010-2016: recipient of an NSF Graduate Research Fellowship) *Linking plasticity in Goldenrod anti-herbivore defense to population, community and ecosystem processes*. Currently Assistant Professor, Department of Entomology, University of Maryland.
- Alexandria Moore (2013-2018) *Trophic interactions, ecosystem functioning, and restoration of New England tidal wetlands*. Currently Postdoctoral Fellow, American Museum of Natural History, NY.
- Robert Buchkowski (2014-2019) *recipient of an NSERC-Canada Graduate Scholarship*. Currently NSERC Postdoctoral Fellow, Department of Biology, Western University (Canada).

### **Postdoctoral Associates**

#### ***Current***

- James Lichtenstein (2020-2022): PhD University of California Santa Barbara  
 Matthew McCary (2020- ): PhD University of Illinois--Chicago  
 Annise Dobson (2018- ): PhD Cornell University

#### ***Past***

- Peter Hambäck (1997-1999): Currently Professor, Department of Botany, Stockholm University, Stockholm, Sweden  
 Barney Luttbeg (1997-1999): Currently Associate Professor, Department of Zoology, Oklahoma State University  
 Ofer Ovadia, (1999-2003): Currently Professor, Department of Life Sciences, Ben Gurion University, Beer Sheva, Israel  
 Joohyoung Lee (2003-2005): Currently Research Scientist, Wayne State University.  
 Dror Hawlena (2007-2011): Currently Senior Lecturer, Institute of Life Sciences, Hebrew University, Jerusalem, Israel  
 Chia-Ying Ko (2010-2012): Currently Assistant Professor, Institute of Fisheries Science and Department of Life Science, National Taiwan University  
 Anne Trainor (2011- 2015): Currently Development by Design Spatial Scientist, The Nature Conservancy Africa Region program.

Adam Rosenblatt (2013-2016): Currently Assistant Professor, Department of Biology, University of North Florida

Lauren Smith (2014-2016): Currently Postdoctoral Fellow, National Institute for Mathematical and Biological Synthesis.

## **PUBLICATIONS**

### **Books**

- 1) Schmitz, O.J. 2016. *The New Ecology: Rethinking a Science for the Anthropocene*. Princeton University Press.
- 2) Ohgushi, T., O.J. Schmitz and R.D. Holt (Editors). 2012. *Trait-Mediated Indirect Interactions: Ecological and Evolutionary Perspectives*. Cambridge University Press with the British Ecological Society Ecological Reviews Series.
- 3) Schmitz, O.J. 2010. *Resolving Ecosystem Complexity*. Princeton University Press Monographs in Population Biology.
- 4) Schmitz, O.J. 2007. *Ecology and Ecosystem Conservation*. Island Press—Foundations of Contemporary Environmental Studies Series.

### **Articles in Peer-reviewed Journals**

—————**2020**

- 5) Maher, S.M., E.P. Fenichel, O.J. Schmitz and W.L. Adamowicz. 2020. The economics of ‘conservation debt’: A natural capital approach to revealed valuation of ecological dynamics. *Ecological Applications* 30(6): e02132
- 6) Schmitz, O.J. 2020. Predators and rainfall control spatial biogeochemistry in a landscape of fear. *Proceedings of the National Academy of Science USA* (<https://doi.org/10.1073/pnas.2016449117>).
- 7) Schmitz, O.J. and S.J. Leroux. 2020. Food webs and ecosystems: Linking species interactions to the carbon cycle. *Annual Review of Ecology, Evolution and Systematics* 51:291-295.
- 8) Sommer, N. and O.J. Schmitz. 2020. Differences in prey personality mediate trophic cascades. *Ecology and Evolution* 10:9538-9551.
- 9) Wirsing, A.J., M.R. Heithaus, J.S. Brown, B.P. Kotler and O.J. Schmitz. 2020. The context dependence of non-consumptive predator effects. *Ecology Letters* (in press).

—————**2019**

- 10) Benedek, K., J. Bálint, I. Máthé, G. Mara, T. Felföldi, A. Szabó, C. Fazakas, C. Albert, R.W. Buchkowski, O.J. Schmitz, and A. Balog. 2019. Linking intraspecific variation in plant chemical defence with arthropod and soil bacterial community structure and N allocation. *Plant and Soil* 444:383-397.
- 11) Buchkowski, R.W., O.J. Schmitz and M.A. Bradford. 2019. Nitrogen recycling in coupled green and brown food webs: weak effects of herbivory and detritivory when nitrogen passes through soil. *Journal of Ecology* 107:963–976

- 12) Buchkowski, R.W., S.J. Leroux and O.J. Schmitz. 2019. Microbial and animal nutrient limitation change the distribution of nitrogen within coupled green and brown food chains. *Ecology* 100(5): e02674.
- 13) Flecker, A.S., C.W. Twining, O.J. Schmitz, S.J. Cooke, and N. Hammerschlag. 2019. Aquatic predators influence micronutrients: important but understudied. *Trends in Ecology and Evolution* 34: 882-883
- 14) Hammerschlag, N., O.J. Schmitz, A.S. Flecker, K.D. Lafferty, A. Sih, T.B. Atwood, A.J. Gallagher, D.J. Irschick, R. Skubel and S.J. Cooke. 2019. Ecosystem function and services of aquatic predators in the Anthropocene. *Trends in Ecology and Evolution* 34:369-383.
- 15) Miller, J.R.B. and O.J. Schmitz. 2019. Landscape of fear and human-predator coexistence: applying spatial predator-prey interaction theory to understand and reduce carnivore-livestock conflict. *Biological Conservation* 236:464-473.
- 16) Rosenblatt, A.E., K.S. Wyatt and O. J. Schmitz. 2019. Will like replace like? Linking thermal performance to ecological function across predator and herbivore populations. *Ecology* 100(4): e02643.
- 17) Schmitz, O.J. 2019. Fearful effects on ecological competitors. *Nature* 570: 43-44.
- 18) VanAcker, M, M.R. Lambert, O.J. Schmitz, and D.K. Skelly. 2019. Suburbanization increases echinostome infection in green frogs and snails. *EcoHealth* 16:235-247.
- 19) Yona, L., B. Cashore and O.J. Schmitz. 2019. Integrating policy and ecology within a single system to achieve path dependent climate solutions. *Environmental Science and Policy* 98: 54-60.

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**2018**

- 20) Barton, B.T. and O.J. Schmitz. 2018. Opposite effects of daytime and nighttime warming on top-down control of plant diversity. *Ecology* 99:13-20.
- 21) Burak, M.K., J.D. Monk and O.J. Schmitz. 2018. Eco-evolutionary dynamics: The predator-prey adaptive play and the ecological theater. *Yale Journal of Biology and Medicine* 91:481-489. (invited for special issue on ecology and evolution)
- 22) Burghardt, K.T., M.A. Bradford, and O.J. Schmitz. 2018. Acceleration or deceleration of litter decomposition by herbivory depends on nutrient availability through intraspecific differences in plant defense expression. *Journal of Ecology* 106:2380-2394.
- 23) Kofler, N., J.P. Collins, J. Kuzma, E. Marris, K. Esvelt, M.P. Nelson, A. Newhouse, L.J. Rothschild, V.S. Vigliotti, M. Semenov, R. Jacobsen, J. E. Dahlman, S. Prince, A. Caccone, T. Brown and O.J. Schmitz. 2018. Editing nature: local roots of global governance. *Science* 362: 527-529.
- 24) Rutenbeck, N.E., B.R. Frey, K.R. Covey, G.P. Berlyn, O.J. Schmitz, B.C. Larson and M.S. Ashton. 2018. Influence of gap position and competition control on the leaf physiology of planted *Picea glauca* and natural regeneration of *Populus tremuloides*. *Forest Ecology and Management* 424:228-235.

- 25) Schmitz, O.J. 2018. Species in ecosystems and all that jazz. *PLoS Biology* 16(7): e2006285.
- 26) Schmitz, O.J. and A.E. Rosenblatt. 2018. Editorial overview: Global change, evolutionary ecology and adaptation. *Current Opinion in Insect Science* 29: iii-v.
- 27) Schmitz, O.J., C.C. Wilmers, S.J. Leroux, C.E. Doughty, T.B. Atwood, M. Galetti, A.B. Davies, S. J. Goetz. 2018. Animals and the zoogeochemistry of the carbon cycle. *Science* 362: eaar3213.
- 28) Smith-Ramesh, L.M., A.E. Rosenblatt and O.J. Schmitz. 2018. Multivariate climate change can favor large herbivore body size in food webs. *American Naturalist* 191: 333-342.
- 29) van Eeden, L.M., A. Eklund, J.R.B. Miller, J.V. López-Bao, G. Chapron, M.R. Cejtin, M.S. Crowther, C.R. Dickman, J. Frank, M. Krofel, D.W. Macdonald, J. McManus, T.K. Meyer, A.D. Middleton, T.M. Newsome, W.J. Ripple, E.G. Ritchie, O.J. Schmitz, K.J. Stoner, M. Tourani and A. Treves. 2018. Carnivore conservation needs evidence-based livestock protection. *PLoS Biology* 16(9): e2005577.

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**2017**

- 30) Buchkowski, R.W., M.A. Bradford, A.S. Grandy, O.J. Schmitz and W. R. Wieder. 2017 Applying population and community ecology theory to advance understanding of belowground biogeochemistry. *Ecology Letters* 20:231-245.
- 31) Northfield T., B.T. Barton and O.J. Schmitz 2017. A spatial theory for emergent multiple predator-prey interactions in food webs. *Ecology and Evolution* 28: 6935-6948.
- 32) Rosenblatt, A.E., L.M. Smith-Ramesh and O.J. Schmitz. 2017. Interactive effects of multiple climate change variables on food web dynamics: modeling the effects of warming, CO<sub>2</sub> and water availability on a tri-trophic food web. *Food Webs* 13:98-108.
- 33) Schmitz O.J. 2017. Predator and prey functional traits: understanding the adaptive machinery driving predator-prey interactions (*invited contribution*). *F1000Research* 6(F1000 Faculty Rev):1767 (doi: 10.12688/f1000research.11813.1).
- 34) Schmitz, O.J., R.W. Buchkowski, J.R. Smith, M. Telthorst, A.E. Rosenblatt. 2017. Predator community composition is linked to soil carbon retention across a human land use gradient. *Ecology* 98:1256-1265.
- 35) Schmitz, O.J., J.R.B. Miller, A.M. Trainor, and B. Abrahms. 2017. Toward a community ecology of landscapes: predicting multiple predator-prey interactions across geographic space. *Ecology* 98:2281-2292.
- 36) Schmitz, O.J. and A.E. Rosenblatt. 2017. The temperature dependence of predation stress and prey nutritional stoichiometry (*invited contribution*). *Frontiers in Ecology and Evolution* 5:73 doi: 10.3389/fevo.2017.00073.
- 37) Smith-Ramesh, L.M., A.C. Moore and O.J. Schmitz. 2017. Global synthesis suggests that food web connectance correlates to invasion resistance. *Global Change Biology* 23:465-473

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 2016

- 38) Benedek, K., S.E. Zytynska, J. Bálint, R.V. Salamon, M. Mehrparvar, W.W. Weisser, O.J. Schmitz and A. Balog. 2016. Intraspecific differences in plant chemotype determines the structure of arthropod food webs. *Oecologia* 180:797-807.
- 39) Ko, C-Y, O.J. Schmitz and W. Jetz. 2016. The limits of direct community modeling approaches for broad-scale predictions of ecological assemblage structure. *Biological Conservation* 201: 396-404.
- 40) Mendelsohn, R, I.C. Prentice, O.J. Schmitz, B. Stocker, R.W. Buchkowski and B. Dawson. 2016. The ecosystem impacts of severe warming. *American Economic Review: Papers and Proceedings* 106:612-614.
- 41) Miller, J.R.B., Y.V. Jhala and O.J. Schmitz. 2016. Human perceptions mirror realities of carnivore attack risk for livestock: Implications for mitigating human-carnivore conflict. *PLoS ONE* 11(9): e0162685.
- 42) Miller, J.R.B., K.J. Stoner, M.R. Cejtin, T.K. Meyer, A.D. Middleton, and O.J. Schmitz. 2016. Effectiveness of contemporary techniques for reducing livestock deprecations by large carnivores. *Wildlife Society Bulletin* 40: 806–815.
- 43) Ripple, W.J., J.A. Estes, O.J. Schmitz, V. Constant, M.J. Kaylor, A. Lenz, J.L. Motley, K.E. Self, D.S. Taylor, and C. Wolf. 2016. What is a trophic cascade? *Trends in Ecology and Evolution* 31:842-849.
- 44) Rosenblatt, A.E., B.T. Crowley and O.J. Schmitz. 2016. Linking trophic interactions to plasticity in thermal sensitivity of geographically separated populations of a herbivore. *Evolutionary Ecology* 30:649-661.
- 45) Rosenblatt, A.E., and O.J. Schmitz. 2016. Climate change, nutrition, and bottom-up and top-down food web processes. *Trends in Ecology and Evolution* 31:965-975.
- 46) Schmitz, O.J., A.E. Rosenblatt and M. Smylie. 2016. Temperature dependence of predation stress and the nutritional ecology of a generalist herbivore. *Ecology* 97:3119-3130.
- 47) Schmitz, O.J. and G.C. Trussell. 2016. Multiple stressors, state-dependence and predation risk — foraging trade-offs: toward a modern concept of trait-mediated indirect effects in communities and ecosystems (*invited contribution*). *Current Opinion in Behavioral Sciences* 12:6-11.
- 48) Smith, J.R. and O.J. Schmitz. 2016. Cascading ecological effects of landscape moderated arthropod diversity. *Oikos* 125: 1261-1271.
- 49) Wilmers, C.C. and O.J. Schmitz. 2016. Effects of wolf-induced trophic cascades on ecosystem carbon cycling. *Ecosphere* 7:e01501.

---

 2015

- 50) Buchkowski, R.W., and O.J. Schmitz. 2015. Detritivores ameliorate the enhancing affect of plant-based trophic cascades on N cycling in an old-field system. *Biology Letters* 11:20141048. **Featured as Editor's Choice in Ecology by The Scientist** <http://www.the-scientist.com/?articles.view/articleNo/43334/title/1---1---1/>

- 51) Buchkowski, R.W., O.J. Schmitz, and M.A. Bradford. 2015. Microbial stoichiometry overrides biomass as a regulator of soil carbon and nitrogen cycling. *Ecology* 94:1139-1149.
- 52) Fortin, D., P.-L. Buono, O.J. Schmitz, N. Courbin, C. Losier, M.-H. St. Laurent, P. Drapeau, S. Heppell, C. Dussault, V. Brodeur and J. Mainguy. 2015. A spatial theory for characterizing predator-multiprey interactions in heterogeneous landscapes. *Proceedings of the Royal Society of London B* 282: 20150973.
- 53) Fraser, L.H., W.L. Harrower, H.W. Garris, S. Davidson, P.D.N. Hebert, R. Howie, A. Moody, D. Polster, O.J. Schmitz, A.R.E. Sinclair, B.M. Starzomski, T. P. Sullivan, R. Turkington, and D. Wilson. 2015. A call for applying trophic structure to restoration. *Restoration Ecology* 23:503-507.
- 54) Leroux, S.J. and O.J. Schmitz. 2015. Predator-driven elemental cycling: the predation and risk effects on ecosystem elemental cycling. *Ecology and Evolution* 5:4976-4988.
- 55) Miller, J.R.B., Y.V. Jhala, J. Jena and O. J. Schmitz. 2015. Landscape-scale accessibility of livestock to tigers: implications of spatial grain for modeling predation risk to mitigate human-carnivore conflict. *Ecology and Evolution* 5: 1354-1367.
- 56) Schmitz, O.J., R.W. Buchkowski, K.T. Burghardt, and C.M. Donihue. 2015. Functional traits and trait-mediated interactions: connecting community-level interactions with ecosystem functioning. *Advances in Ecological Research* 52:319-344.
- 57) Schmitz, O.J., J.J. Lawler, P. Beier, C. Groves, G. Knight, D.A. Boyce Jr, J. Bulluck, K.M. Johnston, M.L. Klein, K. Muller, D.J. Pierce, W.R. Singleton, J.R. Strittholt, D.M. Theobald, S.C. Trombulak, and A.E. Trainor. 2015. Conserving biodiversity: practical guidance about climate change adaptation approaches in support of land-use planning. *Natural Areas Journal* 35:190-203.
- 58) Smith, L.M. and O.J. Schmitz. 2015. Invasive plants may promote predator-mediated feedback that inhibits further invasion. *Ecology and Evolution* 5:2411-2419.
- 2014
- 59) Ko, C-Y, O.J. Schmitz, M. Barbett-Massin and W. Jetz. 2014. Dietary guild composition and disaggregation of avian assemblages under climate change. *Global Change Biology* 20:790-802.
- 60) Miller, J.R.B., J.M. Ament, and O.J. Schmitz. 2014. Fear on the move: predator hunting mode predicts variation in prey mortality and plasticity in prey spatial response. *Journal of Animal Ecology* 83: 214-222.
- 61) Ripple, W. J., J. A. Estes, R.L. Beschta, C.C. Wilmers, E.G. Ritchie, M. Hebblewhite, J. Berger, B. Elmhagen, M. Letnic, M.P. Nelson, O.J. Schmitz, D.W. Smith, A.D. Wallach, and A.J. Wirsing. 2014. Status and ecological effects of the world's largest carnivores. *Science* 343:1241484.
- 62) Rosenblatt, A.E. and O.J. Schmitz. 2014. Interactive effects of multiple climate change variables on trophic interactions: a meta-analysis. *Climate Change Responses* 1:8 doi:10.1186/s40665-014-0008-y.

- 63) Schmitz, O.J. and B.T. Barton. 2014. Climate change effects on physiological and behavioral ecology of predator-prey interactions: implications for conservation biological control. *Biological Control* 75:87-96.
- 64) Schmitz, O.J. P.A. Raymond, J.A. Estes, W.A. Kurz, G.W. Holtgrieve, M.E. Ritchie, D.E. Schindler, A.C. Spivak, R.W. Wilson, M.A. Bradford, V. Christensen, L. Deegan, V. Smetacek, M.J. Vanni, and C.C. Wilmers. 2014. Animating the carbon cycle. *Ecosystems* 7:344-359.
- 65) Sergio, F., O.J. Schmitz, C.J. Krebs, R.D. Holt, M.R. Heithaus, A.J. Wirsing, W.J. Ripple, E. Ritchie, D. Ainley, D. Oro, Y. Jhala, F. Hiraldo and E. Korpimäki. 2014. Towards a cohesive, holistic view of top predation: a definition, synthesis and perspective. *Oikos* 123: 1234-12143. **Flagged as “Editor’s Choice” by *Oikos*.**
- 66) Szénási, Á, Z. Pálinkás, M. Zalai, O.J. Schmitz and A. Balog. 2014. Short-term effects of different genetically modified maize varieties on arthropod food web properties: an experimental field assessment. *Nature Scientific Reports* 4:5315.
- 67) Trainor, A.E. and O.J. Schmitz. 2014. Infusing considerations of trophic dependencies into species distribution modeling. *Ecology Letters* 17:1507-157.
- 68) Trainor, A.E., O.J. Schmitz, J. Ivan, and T.M. Shenk. 2014. Enhancing species distribution modeling by characterizing predator-prey interactions. *Ecological Applications* 24:204-216.

---

**2013**

- 69) Balog, A. and O.J. Schmitz. 2013. Predation determines different selective pressure on pea aphid host races in a complex agricultural mosaic. *PLoS ONE*: 8(2): e55900.
- 70) Balog, A. and O.J. Schmitz. 2013. Predation drives stable coexistence ratios between red and green pea aphid morphs. *Journal of Evolutionary Biology* 26:545-552.
- 71) Barrett, K. J. and O.J. Schmitz. 2013. Effects of deer settling stimulus and deer density on regeneration in a harvested southern New England forest. *International Journal of Forestry Research* 2013: Article ID 690213.
- 72) Schmitz, O.J. 2013. Global climate change and the evolutionary ecology of ecosystem functioning. *Annals of the New York Academy of Science* 1297:61-72.
- 73) Schmitz, O. J., M.A. Bradford, M.S. Strickland, and D. Hawlena. 2013 Linking predation risk, herbivore physiological stress and microbial decomposition of plant litter. *Journal of Visualized Experiments* 73:e50061, doi:10.3791/50061.
- 74) Strickland, M.S., D. Hawlena, A. Reese, M.A. Bradford and O.J. Schmitz. 2013. Trophic cascade alters ecosystem carbon exchange. *Proceedings of the National Academy of Science USA* 110:11035-11038. **Featured by *Scientific American*** <http://www.scientificamerican.com/article.cfm?id=predators-help-plants-put-away-carbon>.

---

**2012**

- 75) Hawlena, D., M.S. Strickland, M.A. Bradford, and O.J. Schmitz. 2012. Fear of predation slows plant-litter decomposition. *Science* 336: 1434–1438. **Featured by *Nature News and Comment*** <http://www.nature.com/news/stressed-grasshoppers-slow-plant-decay-1.10839>; **Featured by *Faculty of 1000 Biology***

<http://f1000.com/717747953>

- 76) Johnston, K.M., K.A. Freund, and O.J. Schmitz 2012. Projected range shifting by montane mammals under climate change: implications for Cascadia's National Parks. *Ecosphere* 3:Article 97
- 77) Leroux, S.J., D. Hawlena and O.J. Schmitz. 2012. Predation risk, stoichiometric plasticity and ecosystem elemental cycling. *Proceedings of the Royal Society London B* 279:4183-4191.
- 78) Schmitz, O.J. 2012. Restoration of ailing wetlands (*invited contribution*). *PLoS Biology* 10(1): e1001248.

—————2011

- 79) Cahn, M.L., M.M. Conner, O.J. Schmitz, T.R. Stephenson, J.D. Weihausen and H.E. Johnson. 2011. Disease, population viability, and recovery of endangered Sierra Nevada bighorn sheep. *Journal of Wildlife Management* 78:1753-1766.
- 80) Calcagno, V., C. Sun, O.J. Schmitz, and M. Loreau. 2011. Keystone predation and plant species coexistence: the role of carnivore hunting mode. *American Naturalist* 177: E1-E13.
- 81) Hawlena, D., K.M. Hughes and O.J. Schmitz. 2011. Trophic trait plasticity in response to changes in resource availability and predation risk. *Functional Ecology* 25:1223-1231.
- 82) Hawlena, D., H. Kress, E. Dufresne, and O.J. Schmitz. 2011. Grasshoppers alter jumping biomechanics to enhance escape performance under chronic risk of spider predation. *Functional Ecology* 25:279-288. *Featured in Journal of Experimental Ecology* <http://jeb.biologists.org/cgi/content/full/214/5/vi?etoc>
- 83) Milakovsky, B., B. Frey, M.S. Ashton, B.C. Larson, and O.J. Schmitz. 2011. Influences of gap position, vegetation management and herbivore control on survival and growth of white spruce (*Picea glauca* (Moench Voss) seedlings. *Forest Ecology and Management* 261:440-446.
- 84) Schmitz, O.J. and J.R. Price. 2011. Convergence in trophic interaction strengths in grassland food webs through metabolic scaling of herbivore biomass. *Journal of Animal Ecology* 80:1330-1336. (See [In Focus article by M. Emmerson, \*Journal of Animal Ecology\* 80:1111-1114.](#))
- 85) Warren, R.J., D.K. Skelly, O.J. Schmitz and M. Bradford. 2011. Universal ecological patterns in college basketball communities. *PLoS ONE* 6(3):e1734

—————2010

- 86) Hawlena, D. and O.J. Schmitz. 2010. Herbivore physiological response to fear of predation and implications for ecosystem nutrient dynamics. *Proceedings of the National Academy of Science USA* 107:15503-15507. *Featured by Nature's News and Comment* <http://www.nature.com/news/2010/100921/full/news.2010.479.html>
- 87) Hawlena D. and O.J. Schmitz. 2010. Physiological stress as a fundamental mechanism linking predation to ecosystem processes. *American Naturalist* 176:537-556. *Featured by Nature's News and Comment* <http://www.nature.com/news/2010/100921/full/news.2010.479.html>; *Featured by Faculty of 1000 Biology* <http://f1000.com/5879962>

- 88) Rutherford, A.C. and O.J. Schmitz 2010. Regional-scale assessment of deer impacts on vegetation within western Connecticut USA. *Journal of Wildlife Management* 74:1257-1263.
- 89) Schmitz, O.J. 2010. Spatial dynamics and ecosystem functioning (*invited contribution*). *PLoS Biology* 8(5): e1000378.
- 90) Schmitz, O.J., D. Hawlena, and G.C. Trussell. 2010. Predator control of ecosystem nutrient dynamics. *Ecology Letters* 13:1199-1209.
- 2009
- 91) Barton, B.T., A.P. Beckerman, and O.J. Schmitz. 2009. Climate change affects direct and indirect interactions in an old-field food web. *Ecology* 90:2346–2351. **Featured on F1000 Biology** <http://f1000biology.com/article/id/1955956/evaluation>
- 92) Barton, B.T. and O.J. Schmitz. 2009. Experimental warming transforms multiple predator effects in a grassland food web. *Ecology Letters* 12:1317-1325. **Featured on F1000 Biology** <http://f1000biology.com/article/id/1351956/evaluation>
- 93) Jones, H.P. and O.J. Schmitz. 2009. Rapid recovery of damaged ecosystems. *PLoS One* 4: e5653. doi:10.1371/journal.pone.0005653. **Featured on National Public Radio (NPR) News; Research Highlights in the journal Nature 459 (755 (11 June 2009) | doi:10.1038/459755a; F1000 Biology** <http://www.f1000biology.com/article/id/1161091/evaluation>, **The Economist and Conservation Magazine** <http://www.conservationmagazine.org/articles/v11n1/wounds-that-can-heal/>.
- 94) Schmitz, O.J. 2009. Effects of predator functional diversity on grassland ecosystem function. *Ecology* 90:2339–2345.
- 2008
- 95) Filin, I, Schmitz, O.J. and O. Ovadia. 2008. Consequences of individual size variation on the survival of an insect herbivore: An analytical model and an experimental field test using the Red-legged Grasshopper. *Journal of Orthopteran Research* 17:283-291.
- 96) Peckarsky, B.L., P.A. Abrams. D. Bolnick, J.H. Grabowski, B. Luttbeg, J.L. Orrock, S.D. Peacor, E.L. Preisser, O.J. Schmitz and G.C. Trussell. 2008. Revisiting the classics: Considering non-consumptive effects in textbook examples of predator-prey interactions. *Ecology* 89:2416-2425.
- 97) Schmitz, O.J. 2008. Effects of predator hunting mode on grassland ecosystem function. *Science* 319:952-954. (see **Perspective article by S. Naeem Science 319:913-914.**) **Featured on National Public Radio (NPR) Living on Earth program and Canadian Broadcasting Corporation (CBC) Quriks and Quarks program.**
- 98) Schmitz, O.J. 2008. Herbivory from individuals to ecosystems. *Annual Review of Ecology, Evolution and Systematics* 39:133-152.
- 99) Schmitz, O.J. 2008. Predators avoiding predation. (*invited contribution*). *Proceedings of the National Academy of Science USA* 105:14749-14750.
- 100) Schmitz, O.J., J.H. Grabowski, B.L. Peckarsky, E.L. Preisser, G.C. Trussell, and J.R. Vonesh. 2008. From individuals to ecosystems: toward an integration of evolutionary and ecosystem ecology. *Ecology* 89:2436-2445.

---

**2007**

- 101) Ovadia, O., H. zu Dohna, G. Booth and O.J. Schmitz. 2007. Consequences of body size variation among herbivores on the strength of plant-herbivore interactions in a seasonal environment. *Ecological Modelling* 206:119-130.
- 102) Preisser, E.L., J.L. Orrock, and O.J. Schmitz. 2007. Predator hunting mode and habitat domain affect the strength of non-consumptive effects in predator-prey interactions. *Ecology* 88: 2744-2751.
- 103) Schmitz O.J. 2007. Predator diversity and trophic interactions. *Ecology* 88:2415-2426.

---

**2006**

- 104) Koellner, T. and O.J. Schmitz. 2006. Biodiversity, ecosystem function and investment risk. *BioScience* 26:977-985.
- 105) Lee, J, Marshall, J.C., Schmitz O.J. and A. Caccone. 2006. Genetic divergence of Connecticut *Melanoplus femurrubrum* populations. *Journal of Heredity* 97:290-293.
- 106) Schmitz, O.J. 2006. Predators have large effects on ecosystem properties by changing plant diversity not plant biomass. *Ecology* 86:1432-1437. **Featured on F1000 Biology** <http://www.f1000biology.com/article/id/1033531/evaluation>.
- 107) Schmitz, O.J., E.L. Kalies and M.G. Booth. 2006. Alternative dynamic regimes and trophic control of plant succession. *Ecosystems* 9:659-672.

---

**2005**

- 108) Grear, J. and O.J. Schmitz. 2005. Linking spatial distribution of a forest floor insect to grouping behavior and scattering effects of predators. *Ecology* 86:960-971.
- 109) Schmitz, O.J. 2005. Scaling from plot experiments to landscapes: studying grasshoppers to inform forest ecosystem management. *Oecologia* 145:225-234.

---

**2004**

- 110) Krivan, V. and O.J. Schmitz. 2004. Trait and density mediated indirect interactions in simple food webs. *Oikos* 107:239-250.
- 111) Ovadia, O. and O.J. Schmitz. 2004. Scaling from individuals to food webs: the role of size-dependent predation risk. *Israel Journal of Zoology* 50:273-298.
- 112) Ovadia, O. and O.J. Schmitz. 2004. Weather variation and trophic interaction strength: sorting the signal from the noise. *Oecologia* 140:398-406.
- 113) Schmitz, O.J. 2004. Perturbation and abrupt shift in trophic control of biodiversity and productivity. *Ecology Letters* 7: 403-409.
- 114) Schmitz, O.J., V. Krivan and O. Ovadia. 2004. Trophic cascades: the primacy of trait-mediated indirect interactions. *Ecology Letters* 7:153-163.

---

**2003**

- 115) Bolker, B., M. Holyoak, V. Krivan, L. Rowe and O.J. Schmitz. 2003. Connecting theoretical and empirical studies of trait-mediated interactions. *Ecology* 84:1101-1114.
- 116) Burns, C.E., K.M. Johnston and O.J. Schmitz. 2003. Global climate change and mammalian species diversity in US National Parks. *Proceedings of the National Academy of Sciences USA* 100: 11474-11477.
- 117) Krivan, V. and O.J. Schmitz. 2003. Adaptive foraging and flexible food web topology. *Evolutionary Ecology Research* 5:623-652.
- 118) Schmitz, O.J. 2003. Top predator control of plant biodiversity and productivity in an old field ecosystem. *Ecology Letters* 6:156-163.
- 119) Schmitz, O.J., F.R. Adler and A.A. Agrawal. 2003. Linking Individual-scale trait plasticity to community dynamics. *Ecology* 84: 1081-1082.
- 120) Schmitz, O.J. E. Post, C.E. Burns and K.M. Johnston. 2003. Ecosystem responses to global climate change: moving beyond color-mapping. *BioScience* 53: 1199-1205.

---

**2002**

- 121) Ovadia, O. and O.J. Schmitz. 2002. Linking individuals with ecosystems: experimentally identifying the relevant organizational scale for predicting trophic abundances. *Proceedings of the National Academy of Sciences USA* 99:12927-12931.
- 122) Schmitz, O.J. and L. Sokol-Hessner. 2002. Linearity in the aggregate effects of multiple predators on a food web. *Ecology Letters* 5:168-172.
- 123) Sokol-Hessner, L. and O.J. Schmitz. 2002. Aggregate effects of multiple predator species on a shared prey. *Ecology* 83:2367-2372.

---

**2001**

- 124) Schmitz O.J 2001. From interesting details to dynamical relevance: on effective use of empirical insights in theory development. *Oikos* 94:39-50. (Invited contribution: Proceedings of the Nordic Oikos Seminar "Costs and Gains of Recent Progress in Ecology" Hällnäs, Sweden, October 1999)
- 125) Schmitz, O.J. and K.B. Suttle. 2001. Effects of top predator species on the nature of indirect effects in an old field food web. *Ecology* 82: 2072-2081.

---

**2000**

- 126) Luttbegg, B. and O.J. Schmitz. 2000. Predator and prey models with flexible individual behavior and imperfect information. *American Naturalist* 155:669-683.
- 127) Schmitz, O.J. 2000. Combining field experiments with individual-based modeling to identify the dynamically-relevant organizational scale in a field system. *Oikos* 89:471-484.

- 128) Schmitz, O.J., P. Hambäck and A.P. Beckerman. 2000. Trophic cascades in terrestrial systems: a review of the effect of top predator removals on plants. *American Naturalist* 155:141-153.

---

**1999/98**

- 129) Abrams, P.A. and O.J. Schmitz. 1999. The effect of risk of mortality on the foraging behavior of animals faced with time- and gut-capacity constraints. *Evolutionary Ecology Research* 1:285-301.
- 130) Schmitz, O.J. 1998. Direct and indirect effects of predation and predation risk in old-field interaction webs. *American Naturalist* 151:327-342.
- 131) Schmitz, O.J., J.L. Cohon, K.D. Rothley and A.P. Beckerman. 1998. Reconciling variability and optimal behavior using multiple criteria in optimality models. *Evolutionary Ecology* 12: 73-94.
- 132) Uriarte, M. and O.J. Schmitz. 1998. Trophic control across a natural productivity gradient with sap-feeding herbivores. *Oikos* 82:552-560.

---

**1997**

- 133) Beckerman, A.P., M. Uriarte and O.J. Schmitz. 1997. Experimental evidence for a behavior-mediated trophic cascade in a terrestrial food chain. *Proceedings of the National Academy of Sciences USA* 94: 10735-10738.
- 134) Johnston, K.M. and O.J. Schmitz. 1997. Wildlife and climate change: assessing the sensitivity of selected species to simulated doubling of atmospheric CO<sub>2</sub>. *Global Change Biology* 3: 531-544.
- 135) Rothley, K.D., O.J. Schmitz and J.L. Cohon. 1997. Foraging to balance conflicting demands: novel insights from grasshoppers under predation risk. *Behavioral Ecology* 8: 551-559.
- 136) Schmitz, O.J. 1997. Press perturbations and the predictability of ecological interactions in a food web. *Ecology* 78: 55-69.
- 137) Schmitz, O.J. 1997. Commemorating 30 years of optimal foraging theory. *Evolutionary Ecology* 11:631-632.
- 138) Schmitz, O.J., A.P. Beckerman and S. Litman. 1997. Functional responses of adaptive consumers and community stability with emphasis on the dynamics of plant-herbivore systems. *Evolutionary Ecology* 11:773-784.
- 139) Schmitz, O.J., A.P. Beckerman and K. O'Brien. 1997. Behaviorally-mediated trophic cascades: effects of predation risk on food web interactions. *Ecology* 78:1388-1399.
- 140) Schmitz, O.J. and G. Booth. 1997. Modeling food web complexity: the consequences of individual-based, spatially explicit behavioral ecology on trophic interactions. *Evolutionary Ecology* 11:379-398.

---

**1996/95**

- 141) Johnson, K.H., K.A. Vogt, H.J. Clark, O.J. Schmitz and D.J. Vogt. 1996 Biodiversity and the productivity and stability of ecosystems. *Trends in Ecology and Evolution* 11:372-377.

142) Schmitz, O.J. 1995. Functional responses of optimal consumers and the potential for regulation of resource populations. *Wildlife Research* 22:101-113.

143) Sinclair, A.R.E., D.S. Hik, O.J. Schmitz, G.G.E. Scudder, D.H. Turpin and N.C. Larter. 1995. Biodiversity and the need for habitat renewal. *Ecological Applications* 5:579-587.

---

**1994**

144) Schmitz, O.J. 1994. Resource edibility and trophic exploitation in an old-field food web. *Proceedings of the National Academy of Sciences USA* 91:5364-5367.

145) Schmitz, O.J. and T.D. Nudds. 1994. Parasite-mediated competition in deer and moose: how strong is the effect of meningeal worm on moose? *Ecological Applications* 4:91-103.

146) Belovsky, G.E. and O.J. Schmitz. 1994. Plant defenses and optimal foraging by mammalian herbivores. *Journal of Mammalogy* 75:816-832.

---

**1993**

147) Schmitz, O.J. 1993. Trophic exploitation in grassland food chains: simple models and a field experiment. *Oecologia* 93:327-335

148) Belovsky, G.E. and O.J. Schmitz 1993. Owen-Smith's evaluation of herbivore foraging models: what is constraining? *Evolutionary Ecology* 7: 525-529.

---

**1992**

149) Schmitz, O.J. 1992. Exploitation in model food chains with mechanistic consumer-resource dynamics. *Theoretical Population Biology* 41:161-183.

150) Schmitz, O.J. 1992. Optimal diet selection by white-tailed deer: balancing reproduction with starvation risk. *Evolutionary Ecology* 6:125-141.

151) Schmitz, O.J., D.S. Hik and A.R.E. Sinclair. 1992. Plant chemical defense and twig selection by snowshoe hare: an optimal foraging perspective. *Oikos* 65:295-300.

---

**1991**

152) Schmitz, O.J. 1991. Thermal constraints and optimization of winter feeding and habitat choice by white-tailed deer. *Holarctic Ecology* 14:104-111.

153) Schmitz, O.J. and M.E. Ritchie. 1991. Optimal diet selection with variable nutrient intake:balancing reproduction with starvation risk. *Theoretical Population Biology* 39:100-114.

154) Belovsky, G.E., O.J. Schmitz, J.B. Slade and T.J. Dawson. 1991. Effects of thorns and spines on Australian herbivores of different body sizes. *Oecologia* 88:520-528.

---

**1990**

- 155) Schmitz, O.J. 1990. Wildlife management implications of foraging theory: evaluating deer supplemental feeding. *Journal of Wildlife Management* 54:522-532.
- 156) Lavigne, D.M. and O.J. Schmitz. 1990. Global warming and increasing population density: a prescription for seal plagues. *Marine Pollution Bulletin* 21:280-284.

---

**1987-1984**

- 157) Schmitz, O.J. and D.M. Lavigne. 1987. Factors affecting body size in sympatric Ontario Canis. *Journal of Mammalogy* 68:92-99.
- 158) Lavigne, D.M., S. Innes, G.W. Worthy, K.M. Kovacs, O.J. Schmitz and J.P. Hickie. 1986. Metabolic rates of seals and whales. *Canadian Journal of Zoology* 64:279-284
- 159) Schmitz, O.J. and G.B. Kolenosky. 1985. Wolves and coyotes in Ontario: morphological relationships and origins. *Canadian Journal of Zoology* 63:1130-1137.
- 160) Schmitz, O.J. and G.B. Kolenosky. 1985. Hybridization between wolf and coyote in captivity. *Journal of Mammalogy* 66:402-405.
- 161) Schmitz, O.J. and D.M. Lavigne. 1984. Intrinsic rate of increase, body size and specific metabolic rate in marine mammals. *Oecologia* 62:305-309

**Peer-Reviewed Book Chapters**

- 162) Schmitz, O.J. 2019. Sustaining humans and nature as one: Ecological science and environmental stewardship. Ch. 1 In D. Esty (Ed) *A Better Planet: 40 Big Ideas for a Sustainable Future*. Yale University Press.
- 163) Burghardt, K.T. and O.J. Schmitz. 2015. Influence of plant defenses and nutrients on trophic control of ecosystems. Ch. 9 In T. Hanley and K. LaPierre (Eds.) *Trophic Ecology: Bottom-Up and Top-Down Interactions across Aquatic and Terrestrial Systems*. Cambridge University Press.
- 164) Schmitz, O.J. and A.E. Trainor 2014. Adaptation approaches for conserving ecosystems services and biodiversity in dynamic landscapes caused by climate change. In: Sample, V. A. and Bixler, R. P. (eds.). 2014. *Forest Conservation and Management in the Anthropocene: Conference Proceedings*. Proceedings. RMRS-P-71. Fort Collins, CO: US Department of Agriculture, Forest Service. Rocky Mountain Research Station. 494 p.
- 165) Schmitz, O.J. 2013. Terrestrial food webs and vulnerability of the structure and functioning of ecosystems to climate. In R. Pielke Sr., T. Seastedt and K. Suding Eds. *Climate Vulnerability: Understanding and Addressing Threats to Resources*. Elsevier Publishing.
- 166) Trussell, G.C. and O.J. Schmitz. 2012. Species functional traits, trophic control, and the ecosystem consequences of adaptive foraging in the middle of food chains In: Ohgushi, T., O.J. Schmitz and R.D. Holt (Eds.) *Trait-Mediated Indirect Interactions: Ecological and Evolutionary Perspectives*. Cambridge University Press.

- 167) Seto, K., S. Bringezu, R. deGroot, K. Erb, T. Graedel, N. Ramankutty, A. Reenberg, O. Schmitz and D. Skole. 2009. Land: stocks, flows and prospects. In: T. Graedel and E. van der Voet (eds.) Linkages of Sustainability. Strüngman Forum Report, volume 4: Cambridge, MIT Press.
- 168) Schmitz O.J. 2009. Perspectives on sustainability of ecosystem services and functions. In: T. Graedel and E. van der Voet (eds.) Linkages of Sustainability. Strüngman Forum Report, volume 4: Cambridge, MIT Press.
- 169) Schmitz O.J. 2005. Behavior of predators and prey and links with population level processes. Pages 256-278 In: P. Barbosa and I. Castellanos (eds.) Ecology of Predator-Prey Interactions: Oxford University Press.
- 170) Schmitz O.J., 2004. From mesocosms to the field: the role and value of cage experiments in understanding top-down effects in ecosystems. Pages 277-302 In: W.W. Weisser and E. Siemann (eds.) Insects and Ecosystem Function, Springer Series in Ecological Studies. Springer-Verlag, Berlin
- 171) Belovsky, G.E., J.M. Fryxell and O.J. Schmitz. 1999. Natural selection and herbivore nutrition: optimal foraging theory and what it tells us about the structure of ecological communities. 5th International Symposium on the Nutrition of Herbivores. American Society of Animal Science.
- 172) Schmitz, O.J. and A.R.E. Sinclair 1997. Rethinking the role of deer in forest ecosystem dynamics. In: W.J. McShea, J. Rappole and B. Underwood (eds.) The Science of Overabundance: Deer Ecology and Population Management. Smithsonian Press.
- 173) Belovsky, G.E. and O.J. Schmitz. 1991. Mammalian herbivore optimal foraging and the role of plant defenses. In R.T. Palo and C.T. Robbins (eds.) Plant chemical defenses and mammalian herbivory. CRC Press, Boca Raton.

#### **Peer Reviewed Invited Encyclopedia and Bibliographic Contributions**

- 174) Schmitz, O.J. 2013. Predators and community organization. Oxford Bibliographies in Ecology. In D Gibson Ed. New York: Oxford University Press, forthcoming.
- 175) Miller, J.R. and O.J. Schmitz. 2012. Food Webs. In: R. Craig, J. Nagle, B. Pardy, O. Schmitz and W. Smith (Eds.) Encyclopedia of Sustainability Vol. 5: Ecosystem Management and Sustainability, Berkshire Publishing.
- 176) Schmitz, O.J., H.P. Jones and B.T. Barton. 2008. Scavengers. In: S.E. Jorgensen (ed.) Encyclopedia of Ecology.
- 177) Schmitz O.J. 2007. Indirect effects in communities and ecosystems. In: S. Levin (ed.) The Princeton Guide to Ecology.
- 178) Schmitz, O.J. and A.P. Beckerman. 2007. Food webs. In: Encyclopedia of Life Sciences. John Wiley & Sons, Ltd: Chichester <http://www.els.net/> [DOI: 10.1002/9780470015902.a0003740]
- 179) Vogt, K.A., O.J. Schmitz, K.H. Beard, J.L. O'Hara and M. Booth. 2000. Conservation biology — contemporary issues. In: S Levin (ed.) Encyclopedia of Biodiversity, Academic Press

**Essays and blogs**

- 180) Schmitz, O.J. 2020. Rethinking humanity's ties to nature. Scientific American <https://blogs.scientificamerican.com/observations/rethinking-humanitys-ties-to-nature/>
- 181) Schmitz, O.J. 2018. Earth environmentalism and jazz. Princeton University Press Blog <http://blog.press.princeton.edu/2018/04/17/oswald-schmitz-earth-environmentalism-jazz/>
- 182) Schmitz, O.J. 2017. Reflecting on hope for life in the anthropocene. March for Science Blog <http://blog.press.princeton.edu/2017/04/21/oswald-schmitz-reflecting-on-hope-for-life-in-the-anthropocene/>
- 183) Schmitz, O.J. 2017. Sustaining a high tech economy using inspiration from nature. Scientific American <https://blogs.scientificamerican.com/guest-blog/sustaining-a-high-tech-economy-using-inspiration-from-nature/>
- 184) Schmitz, O.J. 2016. How 'Natural Geoengineering' can help slow global warming. Yale e360 [http://e360.yale.edu/feature/how\\_natural\\_geo-engineering\\_can\\_help\\_slow\\_global\\_warming/2951/](http://e360.yale.edu/feature/how_natural_geo-engineering_can_help_slow_global_warming/2951/)
- 185) Tallis, H. et al. 2014. A call for inclusive conservation. Nature 515: 27-28.
- 186) Schmitz, O.J. and T. Graedel. 2010. The consumption conundrum: driving destruction abroad. Yale e360 <http://e360.yale.edu/content/feature.msp?id=2266>.

**Book Reviews**

- 187) Schmitz, O.J. 2018. Defending biodiversity in the age of humans. Review of Defending biodiversity: environmental science and ethics by J.A. Newman, G. Varner and S. Linqvist. Ecology 99:22412-2413.
- 188) Schmitz, O.J. 2015. Review of: The Predator Paradox: Ending the War with Wolves, Bears, Cougars and Coyotes by J. Shivik. Quarterly Review of Biology 90: 329.
- 189) Schmitz, O.J. 2005. Pushing the boundaries of ecosystems. *Essay review* of: Food Webs at the Landscape Level by G.A. Polis, M.E. Power and G.R. Huxel. Perspectives on Science and Medicine 48:301-306.
- 190) Schmitz, O.J. 2001. Review of Partnerships for Protection: New Strategies for Planning and Management of Protected Areas edited by S. Stolton and N. Dudley. Natural Resources Forum.
- 191) Schmitz, O.J. 1993. Review of Mammoths Mastodonts and Elephants: biology, behavior and the fossil record by G. Haynes. Journal of Evolutionary Biology 6:147-148.

**Additional publications supported by funding to my lab**

*\*Articles arising from my students' doctoral dissertation work. I do not require that doctoral students list me as a coauthor on publications arising from their dissertation work.*

- Booth, G. 1997. Gecko: a continuous 2-D world for ecological modeling. Artificial Life 3:147-163.

- \*Rothley, K.D. 1999. Designing bioserve networks to satisfy multiple conflicting demands. *Ecological Applications* 9:741-750.
- \*Beckerman, A.P. 2000. Counterintuitive outcomes of interspecific competition between two grasshopper species along a resource gradient. *Ecology* 81:948-957.
- Hambäck, P. 2001. Direct and indirect effects of herbivory: Feeding by spittlebugs affects pollinator visitation rates and seed set of *Rudbeckia hirta*. *Ecoscience* 8: 45-50.
- \*Koenig, S.E. 2001. The breeding biology of Black-billed Parrot *Amazona agilis* and Yellow-billed Parrot *Amazona collaria* in Cockpit Country, Jamaica. *Bird Conservation International* 11: 205-225.
- \*Rothley, K.D. 2001. Manipulative, multi-standard test of a white-tailed deer habitat suitability model. *Journal of Wildlife Management* 65:953-963.
- \*Beckerman, A.P. 2002. The distribution of *Melanoplus femurrubrum*,: fear and freezing in Connecticut *Oikos* 99:131-140.
- \*Rothley, K.D. 2002. Use of multiobjective optimization models to examine behavioural trade-offs of white-tailed deer habitat use in forest harvesting experiments. *Canadian Journal of Forest Research* 32:1275-1284.
- Ovadia, O. and H. zu Dohna. 2003. The effect of intra- and inter-specific aggression on patch residence time in Negev Desert gerbils: a competing risk analysis. *Behavioral Ecology* 14:583-591.
- Ovadia, O. 2003. Ranking hotspots of varying sizes: a lesson from the nonlinearity of the species-area relationship. *Conservation Biology* 17:1-3.
- \*Booth, M.G. 2004. Mycorrhizal networks mediate overstorey-understorey competition in a temperate forest. *Ecology Letters* 7: 538-546.
- \*Burns, C.E., B.J. Goodwin and R.S. Ostfeld 2005. A prescription for longer life? Bot fly parasitism of the white-footed mouse. *Ecology* 86:753-761.
- \*Burns, C.E. 2005. Behavioral ecology of disturbed landscapes: The response of territorial animals to relocation. *Behavioral Ecology* 16:898-905.
- \*Gear, J. and C.E. Burns. 2007. Evaluating effects of low quality habitats on regional population growth in *Peromyscus leucopus*: Insights from field-parameterized spatial matrix models. *Landscape Ecology* 22: 45-60.
- \*Burns, C.E. and J. Gear. 2008. Effects of habitat loss on white-footed mice: Testing matrix model predictions with landscape-scale perturbation experiments. *Landscape Ecology* 17:817-831.
- Stamieszkin, K., J. Wielgus and L.R. Gerber. 2009. Management of a marine protected area for sustainability and conflict resolution: lessons from Loreto Bay National Park (Baja California Sur, Mexico). *Ocean and Coastal Management* 52:449-458. Based in part on Masters of Environmental Science research conducted under my supervision.

- \*Barton B.T. 2010. Climate warming and predation risk during herbivore ontogeny. *Ecology* 91:2811-2818.
- \*Jones, H.P. 2010. Prognosis for ecosystem recovery following rodent eradication and seabird restoration in an island archipelago. *Ecological Applications* 20:1204-1216. ***Recommended by Faculty 1000 Biology***
- \*Jones, H.P. 2010. Seabird islands take mere decades to recover following rat eradication. *Ecological Applications*. 20:2075-2080
- \*Barton, B.T. 2011. Local adaptation to temperature conserves top-down control in a grassland food web. *Proceedings of the Royal Society London B* 278: 3102-3107.
- Glick, H.B. 2014. Modeling cougar habitat in the Northeastern United States. *Ecological Modelling* 285:78-89.
- \*Donihue, C.M., and M.R. Lambert. 2015. Adaptive evolution in urban ecosystems. *Ambio* 44: 194-203.
- \*Miller, J.R.B. 2015. Mapping attack hotspots to mitigate human-carnivore conflict: Approaches and applications of spatial predation risk modeling. *Biodiversity and Conservation* 24: 2887-2911.
- \*Donihue, C.M., K.M. Brock, J. Foufopoulos, and A.R. Herrel. 2015. Feed or fight: testing the impact of food availability and intraspecific aggression on the functional ecology of an island lizard. *Functional Ecology* DOI: 10.1111/1365-2435.12550.
- \*Donihue, C. M. 2016. Aegean wall lizards switch foraging modes, diet, and morphology in a human-built environment. *Ecology and Evolution* 6:7433–7442.
- \*McLean, K.A, A.M. Trainor, G.P. Asner, MC. Crofoot, M.E. Hopkins, C.J. Campbell, R.E. Martin, D. E. Knapp, P.A. Jansen. 2016. Movement patterns of three arboreal primates in a Neotropical moist forest explained by LiDAR-estimated canopy structure. *Landscape Ecology* 31(8): 1849-1862.
- Buchkowski, R.W. 2016. Top-down consumptive and trait-mediated control do affect soil food webs: It's time for a new model. *Soil Biology and Biochemistry* 102: 29-32.
- Smith-Ramesh, L.M. 2017. Invasive plant alters community and ecosystem dynamics by promoting native predators. *Ecology* 98: 751–761.
- \*Moore, A.C. 2018. Context-dependent consumer control in New England tidal wetlands. *PLoS ONE* 13(5):e0197170.
- Rosenblatt, A.E. 2018. Shifts in plant nutrient content in combined warming and drought scenarios may alter reproductive fitness across trophic levels. *Oikos* doi.org/10.1111/oik.05272.
- Buchkowski, R.W., A.N. Shaw, D. Sihi, G.R. Smith, A.D. Keiser. 2019. Constraining carbon and nutrient

flows in soil with ecological stoichiometry. *Frontiers in Ecology and Evolution*.

\*Moore, A.C. 2019. What is the role of ecosystem engineers in New England salt marshes? A mesocosm study of the Fidler Crab and Purple Marsh Crab. *Wetlands* 39: 371-379.

Monk, J.D., E. Giglio, A. Kamath, M.R. Lambert and C.E. McDonough. 2019. An alternative hypothesis for the evolution of same-sex sexual behavior in animals. *Nature Ecology and Evolution* 3:1622-1631.

Guiliano, S., C. Karr, N. Sommer, and R.W. Buchkowski. 2020 Woodlice change the habitat use of spiders in a different food chain. *Peer J* 8:e9184.

*\*Articles arising from my students' doctoral dissertation work. I do not require that doctoral students list me as a coauthor on publications arising from their dissertation work.*

## RESEARCH GRANTS & CONTRACTS

2020-2025	Collaborative Research: Adaptation and resiliency of food web structure and functioning to environmental change. DEB 2011884. \$998,833; Yale portion \$586,777.
2017-2018	RAHSS supplement to DEB-1354762 The macrophysiology of food chain dynamics. \$8,064
2016-2017	REU Supplement to DEB-1354762 The macrophysiology of food chain dynamics. \$6000
2014-2019	The macrophysiology of food chain dynamics. NSF DEB-1354762. \$509,320
2014-2016	Doctoral Dissertation Improvement Grant of Karin Burghardt: Linking phenotypic variation in plant anti-herbivore defense to spatial variation in soil nutrient pools NSF DEB-1404120. \$21,645
2011-2013	Yale Mapping Framework for Wildlife Conservation and Climate Adaptation. Co-Funded by Doris Duke Charitable Foundation, Kresge Foundation & Wilburforce Foundation. \$1,400,000
2010-2011	Climate warming, species interactions and transformation of ecosystem carbon cycling. Yale Climate and Energy Institute \$94,675 (Co-PI with M. Bradford)
2009-2010	Vertebrates on the Move: Managing Cascadia Wildlife in the Face of Climate Change. US National Park Service 1 H9471091063 \$6800.
2009-2010	Doctoral Dissertation Improvement Grant of Holly Jones: Quantifying a chronosequence of seabirds and island ecosystem recovery after rat eradication. NSF OISE 0853846 \$15,000.
2009-2010	Doctoral Dissertation Improvement Grant of Brandon Barton: How will climate change affect trophic interactions? NSF DEB 0910047 \$13,000.

- 2008-2013 Complexity and stability in an old-field ecosystem: the role of asymmetrical interaction strengths and food web topology. NSF DEB-0816504 \$474,346.
- 2007 REU Supplement to DEB 0515014 Predator identity and trophic control of biodiversity and ecosystem function. \$4,500
- 2006-2009 OARE: Online Access to Research in the Environment--provides developing world free or greatly discounted access to the scholarly environmental record of the world's leading scientific publishers through a secure internet portal. Co-funded: William and Flora Hewlett Foundation and John D. and Catherine T. MacArthur Foundation \$500,000.
- 2005-2009 Predator identity and trophic control of biodiversity and ecosystem function. NSF DEB 0515014 \$475,017
- 2003-2004 Doctoral Dissertation Improvement Grant of Michael Booth: Do common mycorrhizal networks limit plant competition and species exclusion in temperate forests? NSF DEB 0309225 \$10,080
- 2002 REU Supplement to NSF DEB 0107780 \$5938
- 2001-2005 Perturbation and recovery of an old-field food web. NSF DEB 0107780 \$212,833
- 2001-2002 Assessing sensitivity of wildlife species to anticipated climate change in parks and protected areas in the continental United States. Edward John Noble Foundation \$100,000.
- 2000 Computational Ecology: teaching implementation phase. Yale University Library and Information Technology Services Faculty Support Grant \$10,000
- 1999 Understanding the role of individual-scale processes in community-level dynamics. NSF-National Center for Ecological Analysis and Synthesis (NCEAS): \$34,560.
- 1998-1999 A computer-based learning environment for teaching community ecology. Yale University Library and Information Technology Services Faculty Support Grant \$10,000
- 1998-1999 Doctoral Dissertation Improvement Grant of Andrew Beckerman: The distribution of a grasshopper species among New England Fields: population ecology along an environmental gradient. NSF DEB-9801665 \$5672
- 1997-1999 Modelling the industrial ecosystem CoPI with T. Graedel and L. Bennett NSF BES-9729295 \$100,000
- 1996-1999 Adaptive management of boreal ecosystems for productivity and diversity: Applying exploitation ecosystems concepts to forestry and forest management MISTIK Forest Management Ltd., Saskatchewan, Canada \$240,000
- 1996 REU Supplement to NSF DEB-9508604 \$4,688
- 1995-1997 Organizational complexity in ecological food webs: experimental analysis of interaction strength in an old-field system NSF DEB-9508604 \$50,000

- 1994-1997 Multiscale models in computational biology. CoPI with G. Wagner and L. Buss, Yale Center for Computational Ecology NSF BIR-9400642 \$165,230
- 1993-1995 Influence of global climate change on the distribution and population dynamics of selected wildlife species. Electric Power Research Institute \$104,651
- 1986-1987 Development of cost effective management of wintering deer. Ontario Ministry of Natural Resources Renewable Resources Research Grants. \$20,000.

### CONFERENCE SYMPOSIA ORGANIZED

- O.J. Schmitz and Christopher Wilmers. Animating the carbon cycle. Ecological Society of America, Portland, OR, August, 2017.
- O.J. Schmitz, P. Beier and A. Trainor. Towards conservation assessments for climate adaptation: presentation and evaluation of a framework. North America Congress for Conservation Biology. Oakland, CA, July 15-18, 2012.
- A.P. Beckerman and O.J. Schmitz. Food webs and climate change. Ecological Society of America, Pittsburgh, August 1-6, 2010.
- T. Oghushi, O.J. Schmitz and R. Holt. Trait-mediated indirect effects in insect communities. International Congress of Entomology, Durban, South Africa, July 5-12, 2008.

### CONFERENCE PRESENTATIONS

- Schmitz, O.J. Trophic control from the middle out: the evolutionary ecology of coupled plant-based and detritus-based food webs. **Keynote talk** Plant-herbivore Interaction Gordon Research Conference, Ventura CA, February 2019.
- Schmitz, O.J. The macrophysiology of food web interactions. **Invited presentation** in the Revealing Food Web Rewiring Under Ecosystem Change Session, Canadian Society of Ecology and Evolution Annual Meeting, Guelph, ON, July 2018.
- Schmitz, O.J. The evolutionary ecology of ecosystem functioning: Functional traits, trophic interactions, and ecosystem nutrient cycling. **Keynote address** 3rd Workshop on Trait-Based Approaches to Ocean Life, Bergen, Norway, August 2017.
- Schmitz, O.J., and C.C. Wilmers. A conceptual framework for integrating animal effects into analyses of ecosystem carbon cycling and storage. Animating the Carbon Cycle Symposium, Ecological Society of America, Portland, OR, August, 2017.
- Schmitz, O.J. Toward a community ecology of landscapes. **Keynote address** Symposium on Frontiers in Resource and Habitat Selection Analysis, Canadian Society of Ecology and Evolution Annual Meeting, Saskatoon, SK, May 2015.
- Schmitz, O.J. and S.J. Leroux. The evolutionary ecology of predator-driven elemental cycling: a stoichiometrically explicit approach. Ecological Society of America Annual meeting August 2014.
- Schmitz, O.J. Developing a cohesive, holistic view of predator-prey interactions. **Invited Presentation** Gordon Research Conference on Predator-Prey Interactions, Ventura, CA, January 2014.

- Schmitz, O.J. Fields of dreams: rebuilding food web structure to restore grassland ecosystems. **Invited Presentation** Annual Meeting of the Canadian Society for Ecology and Evolution, June 2013.
- Schmitz, O.J. Global climate change and the evolutionary ecology of ecosystem functioning. **Invited Presentation** Climate Change and Species Interactions: Ways Forward, Carey Institute of Ecosystem Studies, Millbrook, NY, Nov 2012.
- Schmitz, O.J. A framework to guide the use of adaptation approaches for conservation of biodiversity in an era of climate change. Towards Conservation Assessments for Climate Adaptation: Presentation and Evaluation of a Framework Session, North America Congress for Conservation Biology. Oakland, CA, July 2012.
- Schmitz, O.J. Climate change, food web reorganization and implications for carbon and nitrogen cycling. **Invited presentation** Biodiversity, Global Change and Insect-Mediated Ecosystem Services Session, Entomological Society of America Annual meeting November 2011.
- Schmitz, O.J. Climate change and the potential for transformation of food web connectedness. Ecological Society of America, Pittsburgh, August 2010.
- Schmitz, O.J. Predator identity and the nature of trait-mediated indirect effects. International Congress on Entomology, Durban South Africa, July 2008.
- Schmitz, O.J. Predator diversity and trophic interactions. **Invited Presentation** Trophic cascades across ecosystems session. Annual Meeting of the Ecological Society of America, San Jose CA, August 2007.
- Schmitz, O.J. Stoichiometry and Food web interactions: what are the questions and how do we answer them? **Invited Presentation** Stoichiometry of terrestrial systems contributed session, Annual Meeting of the Ecological Society of America, Memphis, TN, August 2006.
- Schmitz, O.J. Looking at biodiversity and ecosystem functioning vertically as well as horizontally. **Invited presentation**, International Symposium on Biodiversity and Dynamics of Communities and Ecosystems: Structures, Processes and Mechanisms Osaka, Japan, March 2006.
- Schmitz, O.J. Perturbation and alternate states of trophic control of biodiversity and productivity. Annual Meeting of the Ecological Society of America, Portland OR, August 2004.
- Schmitz, O.J. Evolutionary ecology: the theater and the play. **Invited Presentation:** A Day of Commemoration honoring G. Evelyn Hutchinson on the occasion of his 100<sup>th</sup> birthday. Yale University, October 2003.
- Schmitz, O.J. Biodiversity cascades: effects of top predators on plant diversity mediated by herbivore antipredator behavior. **Invited Presentation:** Trophic Cascades in Terrestrial Systems Symposium, Annual Meeting of the Ecological Society of America, Tucson, AZ, August 2002.
- Schmitz, O.J. Trait variation and direct and indirect effects in an old-field system. **Invited Presentation:** Mini Symposium on structured population dynamics. University of Amsterdam, Amsterdam, The Netherlands, May 2002.
- Schmitz, O.J. Climate change effects on wildlife species distribution and life-history: synthesis and future steps. **Invited Presentation:** Mini-conference on "The big unknowns in global change". Athens, GA, April 2001.

- Schmitz, O.J. Herbivore state-dependence and behavior-mediated trophic interactions: toward generalizable theory for the dynamics of plant-herbivore systems. **Invited presentation:** Gordon Research Conference on Plant-Herbivore Interactions. Ventura, CA, February 2001
- Schmitz, O.J. and K.B. Suttle. Predator hunting mode and emergent indirect effects in old-field interaction webs. Annual Meeting of the Ecological Society of America, Spokane WA, August 1999.
- Luttbeg, B. and O.J. Schmitz. Predator and prey models with flexible individual behavior and imperfect information. International Society for Behavioral Ecology, Monterey, CA, August 1998.
- Schmitz, O.J. Combining mathematical modeling with field experimentation to unravel the nature and strength of species interactions. **Invited Presentation**, Symposium on Theoretical, Empirical and Statistical Approaches to Measuring Interactions Strengths. Annual Meeting of the Ecological Society of America, Albuquerque, NM. August 1997
- Schmitz, O.J. Organizational complexity of old-field food webs. Annual Meeting of the Ecological Society of America, Providence, RI, August 1996.
- Schmitz, O.J. Multiple ecosystem states: rethinking the role of deer in forest ecosystem dynamics. **Invited Presentation** in a symposium entitled "The Science of Overabundance: the ecology of unmanaged deer populations" Smithsonian Institution, Conservation and Research Center, National Zoological Park, November 1994.
- Schmitz, O.J. Optimal foraging and consumer-resource dynamics. **Invited Presentation**, Predation Symposium, 6th International Theriological Congress, Sydney, Australia, August 1993.
- Belovsky, G.E. and O.J. Schmitz. Herbivore optimal foraging and plant defenses. **Invited Presentation**, Plant-herbivore interactions symposium, 6th International Theriological Congress, Sydney, Australia, July 1993.
- Schmitz, O.J. Risk-sensitivity and diet selection by mammals. **Invited Presentation**, Optimal foraging Symposium, 5th International Theriological Congress, Rome, Italy, August 1989.
- Schmitz, O.J. Optimal activity and habitat choice of wintering deer. Annual Meeting of the Ecological Society of America, Toronto Ontario, August 1989.
- Schmitz, O.J. Optimal diet selection by white-tailed deer: balancing reproduction with starvation risk. 2nd International Behavioral Ecology Conference, Vancouver, B.C. October 1989.
- Schmitz, O.J. Risk-sensitive foraging by wintering deer. Annual Meeting of the Ecological Society of America, Columbus, Ohio, August 1988.

#### INVITED SEMINARS

- 2020 Department of Plant Sciences and Landscape Architecture, University of Connecticut
- 2019 Department of Biology, University of Massachusetts-Amherst
- 2018 Department of Biology, Western University (Ontario)  
Department of Ecology, Evolution, and Marine Biology, UC Santa Barbara
- 2017 Ecology Program, University of Wisconsin

- Carnegie Institute, Stanford University  
 Department of Biological Sciences, Northern Illinois University  
 Department of Biological Science, University of Alabama
- 2016 Department of Marine and Environmental Sciences, Northeastern University  
 Department of Biological Sciences, Mississippi State University
- 2014 Curriculum for the Environment and Ecology, University of North Carolina-Chapel Hill  
 Ecology, Evolutionary Biology, and Behavior Program, Michigan State University  
 Harvard Forest, Harvard University  
 W.K. Kellogg Biological Station, Michigan State University  
 Department of Ecology and Evolutionary Biology, Princeton University  
 Institute of Ecology, Friedrich Schiller University (Germany)
- 2013 Department of Ecology and Evolution, Stony Brook University  
 Department of Biological Sciences, Northern Illinois University  
 Department of Ecology and Evolution, University of California—Davis  
 Department of Ecology, Evolution and Behavior, Hebrew University (Israel)  
 Department of Biodiversity, Earth and Environmental Science, Drexel University
- 2012 Department of Integrative Biology, University of Guelph  
 Netherlands Institute of Ecology, Wageningen (Netherlands)
- 2011 Department of Zoology, Miami University of Ohio  
 Department of Biology, Case Western Reserve University  
 School of Forest Resources and Environmental Science, Michigan Technological  
 University  
 Department of Ecology, Evolution and Conservation Biology, University of Nevada-Reno
- 2010 Department of Organismal and Evolutionary Biology, Harvard University  
 Department of Biology, Duke University  
 School of Biology, Georgia Institute of Technology  
 Division of Biology, University of California—San Diego  
 Department of Animal and Plant Sciences, University of Sheffield (UK)  
 Ecology and Evolution Section, Imperial College—Silwood Park (UK)
- 2009 Department of Biological Sciences, Florida International University  
 College of the Environment and Life Sciences, University of Rhode Island  
 Department of Entomology, University of Maryland  
 Department of Biology, Wesleyan University  
 Department of Biology, North Carolina State University
- 2008 Department of Biological Sciences, Stanford University  
 Department of Biology, University of Houston  
 Department of Ecology, Evolution and Natural resources, Rutgers University  
 Department of Biological Science, Florida State University
- 2007 Department of Zoology and Physiology, University of Wyoming  
 School of Forestry, Northern Arizona University  
 Department of Ecology, Evolution, and Environmental Biology, Columbia University  
 Department of Biology, University of Montana  
 Department of Biology, University of Pennsylvania  
 Department of Biology, Syracuse University  
 Department of Ecology and Evolutionary Biology, University of Michigan

- 2006 Department of Ecology and Evolution, University of Tennessee  
Department of Integrative Biology, University of Guelph  
Department of Biology, McGill University
- 2005 Department of Biology, Laval University  
Department of Integrative Biology, University of California Berkeley  
Department of Entomology, Cornell University  
Department of Entomology, and Organismal and Evolutionary Biology,  
University of Massachusetts—Amherst
- 2004 Department of Ecology and Environmental Science, Umeå University (Sweden)  
Department of Biological Sciences, University of Pittsburgh  
Department of Biology, Fordham University  
Department of Zoology, University of New Hampshire  
Institute for Biospheric Studies, Yale University
- 2003 Department of Biological Science, Simon Fraser University
- 2002 Department of Zoology, Miami University of Ohio  
Institute of Biodiversity and Ecosystem Dynamics, University of Amsterdam  
Department of Ecology and Evolutionary Biology, Yale University  
Interdisciplinary Bioethics Project, Yale University
- 2000 Department of Entomology, University of Maryland
- 1998 Department of Ecology and Evolution, University of California, Davis  
Department of Zoology, University of Toronto
- 1997 Department of Ecology and Evolution, University of Chicago  
Department of Ecology and Evolution, SUNY Stony Brook  
Department of Biology, Brown University  
Department of Biological Sciences, Dartmouth College
- 1996 Institute of Ecosystem Studies, Millbrook New York
- 1995 Department of Computer Science, University of Michigan  
Department of Biology, Boston University  
Ecosystem Group, Woods Hole Oceanographic Institute
- 1994 Department of Computer Science, University of Michigan  
Department of Zoology, University of Guelph  
Department of Animal Ecology, Swedish University of Agricultural Science, Uppsala  
(Sweden)
- 1992 Department of Fisheries and Wildlife, Utah State University