

January 24, 2013

## **CURRICULUM VITAE**

**BRIAN ALAN MAURER**

### **PERSONAL**

Born: August 18, 1954.  
Address: Department of Fisheries and Wildlife  
Michigan State University  
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### **EDUCATION**

Brigham Young University, Provo, UT, B.S., 1977  
Major: Zoology

West Virginia University, Morgantown, WV, M.S., 1980  
Major: Wildlife Management  
Thesis Topic: Avian foraging and habitat structure.

University of Arizona, Tucson, AZ, M.S., 1982  
Major: Statistics  
Thesis Topic: Repeated measures in bioassay.

University of Arizona, Tucson, AZ, Ph.D., 1984  
Major: Wildlife Ecology  
Minor: Ecology and Evolutionary Biology  
Dissertation Topic: Environmental heterogeneity and avian community structure.

### **ACADEMIC POSITIONS**

Graduate Research Assistant, 1978 - 1980  
Division of Forestry  
West Virginia University

Graduate Assistant, 1980  
Department of Statistics  
Brigham Young University

## **ACADEMIC POSITIONS (cont.)**

Statistical Programming Consultant, 1981 - 1983

College of Agriculture  
University of Arizona

Visiting Assistant Professor and Research Associate, 1984 - 1986

Department of Ecology and Evolutionary Biology  
University of Arizona

Assistant Professor, 1986 - 1992

Associate Professor, 1992 - 1999

Department of Zoology  
Brigham Young University

Visiting Scientist, 1988

Lanzhou University  
People's Republic of China

Research Associate in Community Ecology, 1994-1995

Museum of Natural History  
University of Kansas

Distinguished Researcher in Residence, 1997

Mountain Research Center  
Montana State University

Associate Professor, 1999 – 2008

Professor, 2008 - present

Department of Fisheries and Wildlife  
Michigan State University

Director, 2012 – present

Center for Statistical Training and Consulting  
Michigan State University

## **RESEARCH AND TEACHING INTERESTS**

Population and community ecology of vertebrates

Conservation biology

Macroecology and macroevolution

Ecological and evolutionary theory

Statistical ecology and biometry

Nonlinear dynamics and fractals in ecological systems

## PROFESSIONAL AFFILIATIONS

American Ornithologists' Union, Elective Member 1993  
Ecological Society of America

## EDITORIAL APPOINTMENTS

Contributing editor, *Studies in Avian Biology* 13, 1993.  
Associate Editor, *Great Basin Naturalist*, 1990-1993.  
Editorial board, *Biodiversity Letters*, 1992-1997.  
Editorial board, *Diversity and Distributions*, 1997-1998  
Board of Editors, *Ecology and Ecological Monographs*, 1995-1997.  
Editorial Board, *Global Ecology and Biogeography*, 1999 - 2003  
Board of Editors, *Ecological Applications*, 2000 - 2003  
Editorial Board, *Ecology Letters*, 2001-2004  
Editorial Board, *Evolutionary Ecology Research*, 2001 – present

## SUPPORTED RESEARCH

Brigham Young University, College of Biology and Agriculture, 1986-1999, \$46,000.

University of Wyoming - National Park Service Research Center, 1989, \$10,800.

Brigham Young University, grant to host Ames group meeting, 1991-1992, \$10,000.

Environmental Protection Agency, R81-8358-010, 1991-1993, \$189,203.

National Science Foundation, DEB - 9424615, 1995-1997, \$120,000; REU supplement, 1996, \$4,800; REU supplement, 1997, \$5,000.

National Center for Ecological Analysis and Synthesis, 1998-1999, Working group on Analyzing the Demographic Structure of Geographic Ranges, \$11,140.

Environmental Protection Agency, Office of Research and Development, National Center for Environmental Research and Quality Assurance, STAR grant # G9A10014, 1999-2000, \$133,622.

Michigan Department of Natural Resources, Michigan GAP modeling, 2000-2003, \$240,000

Michigan SeaGrant Program, Modeling temporal dynamics of coastal wetlands, 2003-2004, \$10,549.

Michigan Department of Natural Resources, Habitat models for forest planning, 2003-2005, \$124,508.

Michigan Department of Natural Resources, Refining wildlife habitat models for land use decision support, 2005-2008, \$227,606.

Center for Statistical Training and Consulting, Michigan State University, 2012, \$30,000

## **GRADUATE STUDENTS**

David Pennock, MS, Brigham Young University, 1990  
 Tara Williams, MS, Brigham Young University, 1990  
 Greg Heywood, MS, Brigham Young University, 1992  
 Mark Grover, MS, Brigham Young University, 1992  
 Marianne Hopp, MS, Brigham Young University, 1995  
 Leslie Clifford, MS, Brigham Young University, 1995  
 Eric Linder, PhD, Brigham Young University, 1999  
 Katherine Kahl, MS, Michigan State University, 2003  
 Genevieve Nesslage, PhD, Michigan State University, 2005  
 Jennifer Skillen, PhD, Michigan State University, 2005  
 Erica Mize, MS, Michigan State University, 2009  
 Jason Karl, PhD, Michigan State University, 2009  
 Jay Roberts, PhD, Michigan State University, 2009  
 Anne Axel, PhD, Michigan State University, 2011  
 Andrea Dechnar, PhD, Michigan State University, current  
 Lindsay Hunt, MS, Michigan State University, current

## **POSTDOCTORAL ASSOCIATES**

Marc-André Villard, Brigham Young University, 1992-1993  
 Elise Schmidt, Brigham Young University, 1993-1994  
 Brian McGill, Michigan State University, 2004-2006

## **BOOKS**

Maurer, B.A. 1994. *Geographical population analysis: tools for the analysis of biodiversity*. Blackwell Scientific, Oxford.

Maurer, B.A. 1999. *Untangling Ecological Complexity: the Macroscopic Perspective*. University of Chicago Press, Chicago.

## **PEER-REVIEWED PUBLICATIONS**

Maurer, B.A. and R.C. Whitmore. 1981. Foraging of five bird species in two forests with different vegetation structure. *Wilson Bull.* 93: 478-490.

Maurer, B.A. 1982. Statistical inference for MacArthur-Levins niche overlap. *Ecology* 63: 1712-1719.

Maurer, B.A. 1983. Overlap and competition in avian guilds. *Amer. Nat.* 121: 903-907.

Maurer, B.A. 1984. Interference and exploitation in bird communities. *Wilson Bull.* 96: 380-395.

- Maurer, B.A. 1985. Avian community dynamics in desert grasslands: observational scale and hierarchical structure. *Ecol. Monogr.* 55: 295-312.
- Maurer, B.A. 1985. On the ecological and evolutionary roles of competition. *Oikos* 45: 300-302.
- Maurer, B.A. 1986. Predicting habitat quality for grassland birds using density-habitat correlations. *J. Wildl. Manage.* 50: 556-566.
- Brown, J.H. and B.A. Maurer. 1986. Body size, ecological dominance, and Cope's rule. *Nature* 324: 248-250.
- Brown, J.H. and B.A. Maurer. 1987. Evolution of species assemblages: effects of energetic constraints and species dynamics on the diversification of the North American avifauna. *Amer. Nat.* 130: 1-17.
- Maurer, B.A. 1987. Scaling of biological community structure: a systems approach to community complexity. *J. Theor. Biol.* 127: 97-110.
- Maurer, B.A. and J.H. Brown. 1988. Distribution of energy use and biomass among species of North American terrestrial birds. *Ecology* 69: 1923-1932.
- Brown, J.H. and B.A. Maurer. 1989. Macroecology: the division of food and space among species on continents. *Science* 243: 1145-1150.
- Maurer, B.A. 1989. Diversity dependent species dynamics: incorporating the effects of population level processes on species dynamics. *Paleobiology* 15:133-146.
- Maurer, B.A., E.A. Webb, and R.K. Bowers. 1989. Nest characteristics and nestling development of Cassin's and Botteri's Sparrows in southeastern Arizona. *Condor* 91:734-736.
- Maurer, B.A. and J.H. Brown. 1989. Distributional consequences of spatial variation in local demographic processes. *Annales Zoologici Fennici* 26:121-131.
- Brooks, D.R., J.D. Collier, B.A. Maurer, J.D.H. Smith, and E.O. Wiley. 1989. Entropy and information in evolving biological systems. *Biology and Philosophy* 4:407-432.
- Maurer, B.A. 1990. *Dipodomys* populations as energy processing systems: regulation, competition, and hierarchical organization. *Ecol. Modelling* 50:157-176.
- Maurer, B.A. 1990. Extensions of optimal foraging theory for insectivorous birds: implications for community structure. *Stud. Avian Biol.* 13:455-461.
- Raphael, M.G. and B.A. Maurer. 1990. Biological considerations for study design. *Stud. Avian Biol.* 13:123-125.

- Maurer, B.A. 1990. The relationship between distribution and abundance in a patchy environment. *Oikos* 58: 181-189.
- Demetropolous, C.L., L.F. Braithwaite, B.A. Maurer, and D. Whiting. 1990. Foraging and dietary strategies of two sublittoral cottids, *Jordania zonope* and *Artedius harringtoni*. *J. Fish Biology* 37: 19-32.
- Maurer, B.A. 1991. Concluding remarks: birds, body size, and evolution. *Acta XX Cong. Int. Ornith.* 2:835-837.
- Maurer, B.A., H.A. Ford, and E.H. Rapoport. 1991. Extinction rate, body size, and avifaunal diversity. *Acta XX Cong. Int. Ornith.* 2:826-834.
- Maurer, B.A. 1991. Ecological aspects of macroevolution. *Advances in Ecology* 1:29-39.
- Parrish, J.R. and B.A. Maurer. 1991. Injury to a Merlin (*Falco columbarius*) from discarded fishing tackle. *J. Raptor Research* 25:136-139.
- Maurer, B.A., J.H. Brown, and R.D. Rusler. 1992. The micro and macro in body size evolution. *Evolution* 46:939-953.
- Sites, J.W., Jr., S.K. Davis, D.W. Hutchinson, B.A. Maurer, and G. Lara. 1993. Parapatric hybridization between chromosomal races of the *Sceloporus grammicus* complex (Phrynosomatidae). II. Structure of the Tulancingo transect. *Copeia* 1993:341-366.
- Maurer, B.A. and S.G. Heywood. 1993. Geographic range fragmentation and abundance in neotropical migratory birds. *Conservation Biology* 7:501-509
- Maurer, B.A. and M.-A. Villard. 1994. Geographic variation in abundance of North American birds. *Research & Exploration* 10:306-317.
- Villard, M.-A., G. Merriam, and B.A. Maurer. 1995. Dynamics in spatially-divided populations of neotropical migratory birds in fragmented temperate forests. *Ecology* 76:27-40.
- Conroy, J.J., Y. Cohen, F.C. James, Y.G. Matsinos, and B.A. Maurer. 1995. Parameter estimation, reliability, and model improvement for spatially-explicit population models. *Ecological Applications* 5:17-19.
- Maurer, B.A., and M.-A. Villard. 1996. Continental scale ecology and neotropical migratory birds: how to detect declines amid the noise. *Ecology* 77:1-2.
- Villard, M.-A., and B.A. Maurer. 1996. Geostatistics as a tool for examining hypothesized declines in migratory songbirds. *Ecology* 77:59-68.
- Maurer, B.A., and R.D. Holt. 1996. Effects of chronic pesticide stress on wildlife populations in complex landscapes: processes at multiple scales. *Environmental Toxicology and Chemistry* 15:420-426.

- Curnutt, J.L., S.L. Pimm, and B.A. Maurer. 1996. Population variability of sparrows in space and time. *Oikos* 76:131-144.
- Maurer, B.A. 1996. Relating human population growth to the loss of biodiversity. *Biodiversity Letters* 3:1-5.
- Maurer, B.A. 1998. Ecological science and statistical paradigms: at the threshold. *Science* 279: 502-503.
- Maurer, B.A. 1998. Evolution of body size in birds, I: evidence for directionality. *Evolutionary Ecology* 12: 925-934.
- Maurer, B.A. 1998. Evolution of body size in birds, II: the role of reproductive power. *Evolutionary Ecology* 12: 935-944.
- Maurer, B.A. 2000. Macroecology and consilience. *Global Ecology and Biogeography* 9:275-280.
- Linder, E. T., M.-A. Villard, B. A. Maurer, and E. V. Schmidt. 2000. Geographic range structure in North American landbirds: variation with migratory strategy, trophic level, and breeding habitat. *Ecography* 23:678-686.
- Hadly, E.A., and B.A. Maurer. 2001. Spatial and temporal patterns of species diversity in montane mammal communities of western North America. *Evolutionary Ecology Research* 3:477-486.
- Barnosky, A.D., E.A. Hadly, B.A. Maurer, and M. Christie. 2001. Temperate terrestrial vertebrate faunas in North and South America: the interplay of ecology, evolution, and geography with biodiversity. *Conservation Biology* 15:658-674.
- Gammon, D.E., and B.A. Maurer. 2002. Evidence for non-uniform dispersal in the biological invasions of two naturalized North American bird species. *Global Ecology and Biogeography* 11:155-162.
- Maurer, B.A., and M.L. Taper. 2002. Connecting geographical distributions with population processes. *Ecology Letters* 5:223-231.
- Ernest, S.K.M., B.J. Enquist, J.H. Brown, E.L. Charnov, J.F. Gillooly, V.M. Savage, E.P. White, F.A. Smith, E.A. Hadly, J.P. Haskell, S.K. Lyons, B.A. Maurer, K.J. Niklas, and B. Tiffney. 2003. Thermodynamic and metabolic effects on the scaling of production and population energy use. *Ecology Letters* 6:990-995.
- Riley, S.J., G.M. Nessler, and B.A. Maurer. 2004. Dynamics of early wolf and cougar eradication efforts in Montana: implications for conservation. *Biological Conservation* 119:575-579.
- Smith, F.A., J.H. Brown, J.P. Haskell, S.K. Lyons, J. Alroy, E.L. Charnov, T. Dayan, B.J. Enquist, S.K.M. Ernest, E.A. Hadly, D. Jablonski, K.E. Jones, D.M. Kaufman, P.A.

- Marquet, B.A. Maurer, K.J. Niklas, W.P. Porter, K. Roy, B. Tiffney, and M.R. Willig. 2004. Similarity in mammalian body size across the taxonomic hierarchy and across space and time. *American Naturalist* 163:672-691.
- Marquet, P.A., F.A. Labra, and B.A. Maurer. 2004. Metabolic ecology: linking individuals to ecosystems. *Ecology* 85:1794-1796.
- Maurer, B.A., J.H. Brown, T. Dayan, B.J. Enquist, S.K.M. Ernest, E.A. Hadly, J.P. Haskell, D. Jablonski, K.E. Jones, D.M. Kaufman, S.K. Lyons, K.J. Niklas, W.P. Porter, K. Roy, F.A. Smith, B. Tiffney, and M.R. Willig. 2004. Similarities in body size distributions of small-bodied flying vertebrates. *Evolutionary Ecology Research* 6:783-797.
- Maurer, B.A., and B.J. McGill. 2004. Neutral and non-neutral macroecology. *Basic and Applied Ecology* 5:413-422.
- Fortin, M.J., T.H. Keitt, B.A. Maurer, M.L. Taper, D.M. Kaufman, and T.M. Blackburn. 2005. Species' geographic ranges and distributional limits: pattern analysis and statistical issues. *Oikos* 108:7-17.
- Holt, R.D., T.H. Keitt, M.A. Lewis, B.A. Maurer, and M.L. Taper. 2005. Theoretical models of species' borders: single species approaches. *Oikos* 108:18-27
- Maurer, B.A. 2005. Statistical mechanics of complex ecological aggregates. *Ecological Complexity* 2:71-85.
- McGill, B.J., B.A. Maurer, and E.A. Hadly. 2005. Community inertia of Quaternary small mammal assemblages in North America. *Proceedings of the National Academy of Sciences (USA)* 102:16701-16706.
- McGill, B.J., B.A. Maurer, and M.D. Weiser. 2006. Empirical evaluation of neutral theory. *Ecology* 87:1411-1423.
- McGill, B.J., R.S. Etienne, J.S. Gray, D. Alonso, M.J. Anderson, H.K. Benecha, M. Dornelas, B.J. Enquist, J.L. Green, F. He, A.H. Hurlbert, A.E. Magurran, P.A. Marquet, B.A. Maurer, A. Ostling, C.U. Soykan, K.I. Ugland, and E.P. White. 2007. Species abundance distributions: moving beyond single prediction theories to integration within an ecological framework. *Ecology Letters* 10:995-1015.
- Nesslage, G.M., B.A. Maurer, and S.H. Gage. 2007. Gypsy moth response to landscape structure differs from neutral model predictions: implications for invasive species monitoring. *Biological Invasions* 9:585-595.
- Morlon, H., E. White, R. Etienne, J. Green, A. Ostling, D. Alonso, B. Enquist, F. He, A. Hurlbert, A. Magurran, B.A. Maurer, B. McGill, H. Olf, D. Storch, and T. Zillio. 2009. Taking species abundance distributions beyond individuals. *Ecology Letters* 12:488-501.
- Klepac-Ceraj, V., K.P. Lemon, T.R. Martin, M. Allgaeir, S.W. Kembel, A.A. Knapp, S. Lory, E.L. Brodie, S.V. Lynch, B.J.M. Bohannan, J.L. Green, B.A. Maurer, and R. Kotler.



2010. Relationship between cystic fibrosis respiratory tract bacterial communities and age, genotype, antibiotics, and *Psuedomonas areuginosa*. *Environmental Microbiology* 12:1293-1303.
- Karl, J.W. and B.A. Maurer. 2010. Multivariate correlations between imagery and field measurements across scales: comparing pixel aggregation and image segmentation. *Landscape Ecology* 25:591-605.
- Karl, J.W. and B.A. Maurer. 2010. Spatial dependence of predictions from image segmentation: a variogram-based method to determine appropriate scales for producing land-management information. *Ecological Informatics* 5:194-202.
- Lindell, C.A., and B.A. Maurer. 2010. Patch quality and landscape connectivity effects on patch population size: implications for metapopulation sizes and studies of landscape value. *Evolutionary Ecology Research* 12:249-258.
- Axel, A.C., and B.A. Maurer. 2011. Lemurs in a complex landscape: mapping species density in subtropical dry forests of southwestern Madagascar using data at multiple levels. *American Journal of Primatology* 73:38-52.
- Mize, E.L., J.I. Tsao, and B.A. Maurer. 2011. Habitat correlates with the spatial distribution of ectoparasities on *Peromyscus leucopus* in southern Michigan. *Journal of Vector Ecology* 36:308-320.
- Maurer, B.A., S.W. Kembel, A.J. Rominger, and B.J. McGill. 2013. Estimating metacommunity extent using data on species abundances, environmental variation, and phylogenetic relationships across geographic space. *Ecological Informatics* 13: 114-122.

## PEER REVIEWED BOOK CHAPTERS

- Maurer, B.A., L.B. McArthur and R.C. Whitmore. 1981. Habitat associations of birds breeding in clearcut deciduous forests in West Virginia. Pp. 167-172 in Capen, D.E., ed. *The use of multivariate statistics in studies of wildlife habitat*. USDA For. Ser. Gen. Tech. Rep. RM-87.
- Maurer, B.A. 1983. Sensitivity analysis of a simulation model of bird-insect interactions in a deciduous forest ecosystem. Pp. 227-237 in Lauenroth, W.K., G.V. Skogerboe, and M. Flug. *Analysis of ecological systems: State-of-the-art in ecological modelling*. Elsevier, Amsterdam.
- Sowls, L.K. and B.A. Maurer. 1985. Characteristics of harvested collared peccaries in relation to rainfall patterns in southeastern Arizona. Pp. 249-259 in Beasom, S.L. and S.F. Roberson. *Game harvest management*. Caesar Kleberg Wildlife Research Institute, Kingsville, TX.
- Wright, D.H., D.J. Currie, and B.A. Maurer. 1993. Energy supply and patterns of species richness on local and regional scales. Pp. 66-74 in Ricklefs, R., and D. Schluter, eds. *Species diversity in ecological communities*. University of Chicago Press, Chicago.

- Maurer, B.A. 1993. Biological diversity, ecological integrity, and neotropical migrants. Pp. 24-31 in Finch, D.M. and P. Stengel, eds. *Status and management of neotropical migrant birds*. USDA Forest Service Gen. Tech. Report RM 229, Forest and Range Experiment Station, Fort Collins, CO.
- Maurer, B.A. and S.G. Heywood. 1993. Geographic range fragmentation and abundance in neotropical migratory birds. Pp. 158-166 in D. Ehrenfeld, ed. 1995. *The landscape perspective*. Blackwell Science, Cambridge, Mass.
- Maurer, B.A. 1996. Energetics of avian foraging. Pp. 250-279 in Carey, C. *Avian Energetics and Nutritional Ecology*, Chapman & Hall, New York.
- Villard, M.-A., E.V. Schmidt, and B.A. Maurer. 1998. Contribution of spatial modeling to avian conservation. Pages 49-64 in Marzluff, J.M., and R. Sallabanks, eds. *Avian conservation: research and management*. Island Press, Washington, D.C.
- Maurer, B.A., and M.P. Nott. 1998. Geographic range fragmentation and the evolution of biological diversity. Pages 31-50 in McKinney, M.L. and J.A. Drake, eds. *Biodiversity Dynamics: Turnover of Populations, Taxa, and Communities*. Columbia University Press, New York.
- Donovan, T.M., K.E. Freemark, B.A. Maurer, L.J. Petit, S.K. Robinson, and V.A. Saab. 2000. Setting local and regional objectives for persistence of bird populations. Pages 53-59 in Bonney, R., D.N. Pashley, R.J. Cooper, and L. Niles, eds. *Strategies for Bird Conservation: the Partners in Flight Planning Process*. Proceedings RMRS-P-6, USDA Forest Service, Rocky Mountain Research Station, Ogden, UT.
- Maurer, B.A., E.T. Linder, and D.E. Gammon. 2001. A geographical perspective on the biotic homogenization process: implications from the macroecology of North American birds. Pages 157-177 in Lockwood, J.L. and M.L. McKinney, eds. *Biotic Homogenization*, Kluwer Academic, New York.
- Maurer, B.A. 2002. Predicting distribution and abundance: thinking within and between scales. Pages 125-132 in Scott, J.M., P.J. Heglund, M. Morrison, M. Raphael, J. Haufler, and B. Wall, eds. *Predicting Species Occurrences: Issues of Scale and Accuracy*. Island Press, Coven, California.
- Kahl, K.J. and B.A. Maurer. 2002. Land cover change and breeding range shifts of Golden-winged Warblers in the lower peninsula of Michigan. Pages in Proceedings from International Association of Landscape Ecology. *Avian Landscape Ecology: Pure and applied issues in the large-scale ecology of birds*. IALE. United Kingdom.
- Maurer, B.A. 2004. Models of scientific inquiry and statistical practice: implications for the structure of scientific knowledge. Pages 17-31 in Taper, M.L., and S.R. Lele, eds. *Scientific Evidence*, University of Chicago Press.

- Maurer, B.A. 2004. Rejoinder. Pages 43-50 in Taper, M.L., and S.R. Lele, eds. *Scientific Evidence*, University of Chicago Press.
- Sudharsan, K., S.J. Riley, B.A. Rudolph, and B.A. Maurer. 2005. Deer-vehicle crash patterns across ecoregions in Michigan. Pages 246-255 in Nolte, D.L., and K.A. Fagerstone, eds. *Proceedings of the 11<sup>th</sup> Wildlife Damage Management Conference*.
- Maurer, B.A. 2006. Ecological restoration from a macroscopic perspective. Pages 303-314 in Falk, D.A., M.A. Palmer, and J.B. Zedler, eds. *Foundations of Restoration Ecology*, Island Press, Washington, DC.
- Skillen, J.J., and B.A. Maurer. 2008. The ecological significance of discontinuities in body-mass distributions. Pages 193-218 in Allen, C.R. and C.S. Holling, eds. *Discontinuities in ecosystems and other complex systems*. Columbia University Press, New York.
- Maurer, B.A. 2009. Species diversity patterns in terrestrial environments. Pages 464-473 in Levin, S.A., ed. *The Princeton Guide to Ecology*, Princeton University Press, Princeton, NJ.
- Roberts, L.J., B.A. Maurer, and M. Donovan. 2011. Choices and strategies for using a resource inventory database to support local wildlife habitat monitoring. Pages xxx in Drew C.A., Y.F. Wiersma, F. Huettmann, eds. *Predictive species and habitat modeling in landscape ecology: concepts and applications*. Springer, NY.
- Maurer, B.A., and B.J. McGill. 2011. Measurement of species diversity. Pages 55-65 in Magurran, A.E. and B.J. McGill, eds. *Biological diversity: frontiers in measurement and assessment*. Oxford University Press, Oxford.
- Maurer, B.A. 2012. Continental scale patterns. Pages 152-155 in Hastings, A., and L.J. Gross, eds. *Encyclopedia of Theoretical Ecology*. University of California Press, Berkeley, CA.
- Maurer, B.A. 2013. Geographic variation in body size distributions of continental avifauna. Pages 81-92 in Smith, F.A., and S.K. Lyons, eds. *Animal body size*. University of Chicago Press.
- Maurer, B.A., and P.A. Marquet. 2013. Processes responsible for patterns in body mass distributions. Pages 166-184 in Smith, F.A., and S.K. Lyons, eds. *Animal body size*. University of Chicago Press.
- Smith, F.A., S.K. Lyons, K.E. Jones, B.A. Maurer, and J.H. Brown. 2013. The influence of flight on patterns of body size diversity and heritability. Pages 185-203 in Smith, F.A., and S.K. Lyons, eds. *Animal body size*. University of Chicago Press.

## BOOK REVIEWS

- Maurer, B.A. 1987. Hierarchies in ecology and evolution (review of Salthe, *Evolving hierarchical systems*; and O'Neill et al., *A hierarchical concept of ecosystems*). *Trends in Ecol. Evol.* 2: 26-27.

- Maurer, B. A. 1987. Review of Peters, *Ecological implications of body size*. *New Zealand J. Zool.* 14: 431-432.
- Maurer, B. A. 1990. Complexities of ecology (review of Wiens, *The ecology of bird communities*, Vols. 1 & 2). *Science* 249:1449-1450.
- Maurer, B.A. 1996. Review of Lawton and May, *Extinction rates*. *Q. Review Biology* 71:142.
- Maurer, B.A. 1996. Review of Rosenzweig, *Species diversity in space and time*. *Ecology* 77:1314-1315.
- Maurer, B.A. 1996. Review of Price et al., *The summer atlas of North American birds*. *Auk* 133:978.
- Maurer, B.A. 1997. A plethora of conservation biology texts. *Condor* 99:845-847.
- Maurer, B.A. 1998. Review of Clark, *Averting extinction*. *Q. Review Biology* 73:379-380.
- Maurer, B.A. 1998. Review of Hilborn and Mangel, *The ecological detective: confronting models with data*. *Bulletin of Mathematical Biology* 60:612-613.
- Maurer, B.A. 1999. Review of Newton, *Population limitation in birds*. *Condor* 101:926-927.
- Maurer, B.A. 2000. Lizards in the stream (review of Roughgarden, *Anolis lizards of the Caribbean: ecology, evolution, and plate tectonics*). *Amphibian and Reptile Conservation* 3:32.
- Maurer, B.A. 2003. Is biodiversity important in ecosystems? (review of Kinzig et al., *The functional consequences of biodiversity*). *Ecology* 84:1074-1075.
- Maurer, B.A. 2003. Ecology and evolution at large scales. (review of Price, *Macroevolutionary theory on macroecological patterns*). *Ecology* 84:3405-3406.

## OUTREACH PUBLICATIONS

- Maurer, B.A. and R.C. Whitmore. 1980. Foraging changes by canopy-feeding birds in a clearcut forest. *West Virginia For. Notes* 8: 7-12.
- Maurer, B.A., L.B. McArthur and R.C. Whitmore. 1981. Effects of logging on guild structure of a forest bird community in West Virginia. *Amer. Birds* 35: 11-13.
- Brown, J.H. and B.A. Maurer. 1987. Body size, energy use, and ecological dominance (reply). *Nature* 328: 118.
- Maurer, B.A. and T.Y. Williams. 1991. An analysis of potential sensitive plant species for long-term monitoring in Glacier National Park. Report to US National Park Service, Laramie, WY.

- Maurer, B.A. 1993. Mountain goats (*Oreamnos americanus*) in Olympic National Park - a review of Park Service documents and Lyman's hypothesis. Report to Olympic National Park, Port Angeles, WA.
- Maurer, B.A., and P. Marquet. 1997. James H. Brown, President 1996-1997. *Bulletin of the Ecological Society of America* 78:14-15.
- Maurer, B.A. 2000. Ecology needs theory as well as practice. *Nature* 408: 768.
- Maurer, B.A. 2001. Macroecology. In: *Encyclopedia of Life Sciences*. John Wiley & Sons, Ltd: Chichester <http://www.els.net/> [doi:10.1038/npg.els.0003273]
- Maurer, B.A. 2002. Big thinking. *Nature* 415:489-491
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- Maurer, B.A. 2002. Biogeography. Pages 70-71 in *Biology for Students*, Macmillan Reference, USA.
- Wang, H.-Y., G.M. Nessler, A.C. Axel, D.H. Heimberg, B. Skillen, J.J. Skillen, M.L. Donovan, and B.A. Maurer. 2004. Annual Report: A wildlife habitat tool for the IFMAP decision support environment. Department of Fisheries and Wildlife, Michigan State University, East Lansing.
- Donovan, M. L., G. M. Nessler, J. J. Skillen, B.A. Maurer. 2004. The Michigan Gap Analysis Project Final Report. Michigan Department of Natural Resources.
- Roberts, L.J., B.A. Maurer, and M.L. Donovan. 2007. Wildlife habitat mapping for cooperative management and conservation in Michigan. *Jack Pine Warbler* 84:7-8.
- Roberts, L.J., E.L. Mize, and B.A. Maurer. 2007. Refining Wildlife-Habitat Models for Land Use Decision Support: Merging MIGAP Models and IFMAP Inventory Data. Annual report. Department of Fisheries and Wildlife, Michigan State University, East Lansing.
- Maurer, B.A. 2009. Scale. Pages 3154-3159 in Jorgensen, S.E., and B.D. Fath, eds., *Encyclopedia of Ecology*, Volume 4. Elsevier, Amsterdam. (also published online)
- Maurer, B.A. 2009. Ecological complexity. Pages in Meyers, R.A. *Encyclopedia of Complexity and Systems Science*, Springer. (also published online)

## INVITED PAPERS GIVEN AT SCIENTIFIC MEETINGS

- Brown, J.H. and B.A. Maurer. 1984. Statistical analysis of community organization. Symposium on detecting and understanding macroscopic patterns in complex ecological systems. Ecological Society of America, Fort Collins, CO.

- Maurer, B.A. 1985. Observational scale and community analysis: hierarchical perspectives. Symposium on problems of scale in ecology: hierarchy theory applied. Ecological Society of America, Minneapolis, MN.
- Maurer, B.A. 1986. Scaling of biological community structure: a systems approach to community complexity. Symposium on avian community ecology: the importance of scale. Cooper Ornithological Society, Davis, CA.
- Maurer, B.A. 1987. Macroecology: evolutionary ecology of large scale ecological systems. Young Investigators Prize symposium. American Society of Naturalists, Bozeman, MT.
- Maurer, B.A. 1988. Biological and statistical factors affecting estimates of foraging behavior. Symposium on food exploitation in terrestrial birds. Cooper Ornithological Society, Monterey, CA.
- Maurer, B.A. 1989. Empirical estimation of interaction coefficients in systems of linear equations describing biological communities. NSF workshop on natural resource modeling. Glacier Institute, West Glacier, MT.
- Maurer, B.A. 1989. Ecology, historical constraint, and the evolution of species assemblages. Symposium on progress towards a unified theory of evolution, University of Toronto, Toronto, Ontario, Canada.
- Maurer, B.A. and J.H. Brown. 1990. Historical and ecological regulation of diversity in continental bird and mammal assemblages. Symposium on historical and geographical determinants of community diversity. Ecological Society of America, Snowbird, Utah.
- Maurer, B.A. 1990. Victims of scale: studying complex biological communities from limited perspectives. Symposium on non-equilibrium macrosystems in biology. University of Calgary, Calgary, Alberta, Canada.
- Maurer, B.A. 1991. Biological diversity and statistical models of biogeographic processes. DOE workshop on theoretical ecology: progress and prospects. Washington, DC.
- Maurer, B.A. 1991. Conservation at continental and global scales: Why don't we know more? Symposium on the role of scientists in the conservation effort. American Ornithologists' Union, Montreal, Quebec, Canada.
- Maurer, B.A. and N. Pack. 1992. Victims of scale: evolution of information in nonlinear dynamical systems. Symposium on thermodynamics and scale in evolving biological systems. Brigham Young University, Provo, UT.
- Maurer, B.A. 1992. Biological diversity, ecological integrity, and neotropical migrants: new perspectives for wildlife management. National training workshop on status and management of neotropical migratory birds. Estes Park, CO.

- Maurer, B.A. 1992. Responses of birds to global change. Workshop on managing arid and semi-arid lands in the face of global change. Boulder, CO.
- Maurer, B.A. 1993. Energetics of avian foraging. Symposium on avian energetics and nutritional ecology. American Ornithologists' Union, Fairbanks, AK.
- Maurer, B.A. 1993. Geographical responses of birds to global change. Symposium on global change and birds. American Ornithologists' Union, Fairbanks, AK.
- Villard, M.-A, and B.A. Maurer. 1993. Analyzing the spatial and temporal variation in population trends of neotropical migrant birds. Symposium on linking local, regional, and continental population trends in neotropical migrant birds. Ecological Society of America, Madison, WI.
- Maurer, B.A. and M.-A. Villard. 1993. Properties of geographic ranges of neotropical migrant birds and the likelihood of extinction. Symposium on linking local, regional, and continental population trends in neotropical migrant birds. Ecological Society of America, Madison, WI.
- Maurer, B.A. 1994. Relating patterns of geographic range structure in birds to ecological and demographic processes. Workshop on analyzing population data: what's new and what's needed. 1994 North American Ornithological Conference, Missoula, MT.
- Maurer, B.A. 1994. Why are some species more common than others? The importance of geographic range structure for the evolution of biological diversity. Symposium on dynamics of biodiversity: relating metapopulations to the history of life. Ecological Society of America, Knoxville, TN.
- Maurer, B.A. 1996. Can we conserve biological diversity without strategic information? Cooper Ornithological Society, San Diego, CA.
- Maurer, B.A. 1997. Body size and geographic range size of birds: some ecological and evolutionary consequences. Western Society of Naturalists, Monterey, CA.
- Maurer, B.A. 1999. Spatial statistics and the border of geographic ranges: the brave new world. Ecological Society of America, Spokane, WA.
- Maurer, B.A. 1999. Predicting distribution and abundance: thinking within and among spatial scales. Symposium on predicting species occurrences: issues of scale and accuracy. Snowbird, UT.
- Maurer, B.A. 2000. Measurement error in ecology: problems and prospects. Ecological Society of America, Snowbird, UT.
- Maurer, B.A. 2002. Adaptive diversification of body size: the roles of physical constraint, energetics, and natural selection. British Ecological Society, Birmingham, England.

Maurer, B.A., and E.A. Hadly. 2002. Theory for understanding biodiversity at multiple scales. National Research Council of the National Academy of Sciences, Committee on the Geological Record of Biosphere Dynamics, Washington, D.C.

Maurer, B.A., and B.J. McGill. 2004. Some thoughts on the role of metabolism in ecology. Ecological Society of America, Portland, Oregon.

Klepac-Ceraj, V., and B.A. Maurer. 2009. Relationship between cystic fibrosis respiratory tract bacterial communities and age, genotype, antibiotics, and *Pseudomonas aeruginosa*. Ecological Society of America, Albuquerque, NM.

## **PROFESSIONAL DEVELOPMENT WORKSHOP ATTENDANCE**

### **1. Teaching**

NSF Workshop on teaching modeling methods in biological resource management, funded with stipend, University of Montana, Missoula, 1988-1989.

NSF Workshop on quantitative sciences curriculum for life sciences students. Knoxville, TN 1994.

Workshop on teaching evolution to undergraduates, American Society of Naturalists and Society for the Study of Evolution. Madison, WI, 1999.

Hybrid Courses 101. Workshop on developing hybrid models for college teaching. Michigan State University, East Lansing, MI. 2005.

### **2. Research**

DOE Workshop on theoretical ecology: progress and prospects. Gaithersburg, MD, 1991.

USDA Forest Service Workshop on conservation biology of the California Spotted Owl. Sacramento, CA, 1991.

National Training Workshop on status and management of neotropical migratory birds. Estes Park, CO, 1992.

USDA Forest Service/National Center for Atmospheric Research Workshop on managing arid and semi-arid lands in the face of global change. Boulder, CO, 1992.

Institute of Ecology Workshop on the application of spatially-explicit models to conservation and management of animal populations. Athens, GA, 1992.

North American Research Workshop on the ecology and management of cowbirds. Austin, TX, 1993.

Partners in Flight Workshop: building consensus for action. Cape May, NJ, 1995.



Ecological and Evolutionary Dynamics of Species' Borders. National Center for Ecological Analysis and Synthesis, Santa Barbara, CA, 1997-1999.

Sampling Curves in Ecology and Evolution. National Center for Ecological Analysis and Synthesis, Santa Barbara, CA, 1998.

Analyzing the Demographic Structure of Geographic Ranges. National Center for Ecological Analysis and Synthesis, Santa Barbara, CA, 1998-1999.

The Evidence Project - Supporting Scientific Claims. National Center for Ecological Analysis and Synthesis, Santa Barbara, CA, 1998-2000.

Predicting Species Occurrences: Issues of Scale and Accuracy. Snowbird, UT, 1999.

Body Size in Ecology and Paleoecology. National Center for Ecological Analysis and Synthesis, Santa Barbara, CA. 1999-2002.

Species Abundance Distributions. National Center for Ecological Analysis and Synthesis, Santa Barbara, CA. 2006-2008.

## **COURSES TAUGHT**

Fundamentals of Ecology and Evolution, University of Arizona, 1984-1985

Biometry, University of Arizona, 1985

Natural History of Wildlife, Brigham Young University, 1986-1988

Evolutionary Science, Brigham Young University, 1988-1999

Conservation Biology, Brigham Young University, 1996

Ecological Theory, Brigham Young University, 1990

Quantitative Ecology, Brigham Young University, 1990

Terrestrial Ecosystems, Brigham Young University, 1992

Ornithology, Brigham Young University, 1992-1999

Ecological Data Analysis, Brigham Young University, 1994-1999

Introductory Biology, Brigham Young University, 1997-1999

Biogeography, Michigan State University, 2001-present

Landscape Ecology, Michigan State University, 2005

Applications of Organismal and Environmental Biology, Michigan State University, 2005-2012

Applied Multivariate Statistical Methods, Michigan State University, 2004-present.

## **CONTRIBUTED PAPERS GIVEN AT SCIENTIFIC MEETINGS**

1979-1985 13 papers

1986-1990 10 papers

2011-present 2 papers

1991-1995 11 papers

1996-2000 9 papers

2001- 2005 6 papers

2006-2010 7 papers

## PROFESSIONAL SERVICE

Murray Buell Award Committee, Ecological Society of America, 1986.

Student Awards Committee, Cooper Ornithological Society, 1989.

Ad hoc reviews of proposals for NSF, 1986-present.

Review of manuscripts for *Ecology*, *J. Wildl. Manage.*, *Evolution*, *Amer. Nat.*, *Auk*, *Condor*, *Wilson Bull.*, *Oikos*, *Wildl. Monogr.*, *Ecol. Monogr.*, *Trends Ecol. Evol.*, *Wildl. Soc. Bull.*, *J. Field Ornithology*, *Ornis Scandinavica*, *Biol. Conservation*, *Western J. Appl. Forestry*, *Ecol. Appl.*, *Phil. Transactions of the Royal Society*, *Science*, *Nature*, *Functional Ecology*

Panel member (ecological specialist), AIDS and Related Research, AIDS -like viruses in natural rodent populations, NIH, 1989.

Proposal Review Panel, U.S. EPA, Environmental Research Laboratory 1991.

Program Review, DOE Theoretical Ecology Program, 1991.

Technical Assistance and Review Panel, BLM and Idaho Army National Guard, 1991-1996.

Research Working Group, Neotropical Migratory Bird Conservation Program, 1991-1995.

Conservation biologist review group, California Spotted Owl, USDA Forest Service, 1991.

Review of Park Service policies on mountain goats in Olympic National Park, 1993.

Ecological consultant for Rocky Mountain Arsenal, 1994-1995.

NSF Graduate Research Training Grants Panel, 1995-1996.

NSF Postdoctoral Fellowships in Bioinformatics Panel, 1998-2000.

NRC Board of Earth Sciences and Resources, Presentation to committee on the geological record of biosphere dynamics, 2002

NSF Cyber-Enabled Discovery and Innovation Program, Panel, 2011

**PROFESSIONAL REFERENCES**

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