

ROBERT H. GARDNER
Professor, University of Maryland System

University of Maryland Center for Environmental Science
Appalachian Laboratory
301 Braddock Road
Frostburg, MD 21532

Phone: (301) 689-7125
FAX (301) 689-7200
E-mail: gardner@al.umces.edu
<http://www.al.umces.edu/people/faculty/bobgardner.htm>

EDUCATION:

1963 BA Biology Taylor University, Upland, Indiana
1967 MA Biology The College of William and Mary, Williamsburg, Virginia
1975 Ph.D. Zoology North Carolina State University Raleigh, North Carolina

EMPLOYMENT EXPERIENCE:

1965-1968 Biology Instructor The American International School, The Hague, The Netherlands
1968-1970 Biology Instructor Swampscott Public High School, Swampscott, MA, USA.
1974-1980 Research Associate Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN, USA.
1980-1988 Research Staff Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN, USA.
1983-1994 Adjunct Professor Department of Ecology, University of Tennessee, Knoxville, TN, USA.
1988-1994 Senior Research Scientist Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN, USA.
1988-1992 Group Leader Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN, USA.
1994- Professor, The University of Maryland Center for Environmental Science, Appalachian Laboratory, Frostburg, MD, USA.
2004-2005 Interim Director, Appalachian Laboratory, The University of Maryland Center for Environmental Science, Frostburg, MD, USA.
2005- Director, Appalachian Laboratory, The University of Maryland Center for Environmental Science, Frostburg, MD, USA.

AWARDS:

1987 Environmental Sciences Division, Scientific Achievement Award
1988 Martin Marietta Energy Systems, Technical Achievement Award
1989 Elected a Fellow of the American Association for the Advancement of Science
1994 Award for Distinguished Landscape Ecologist, International Association of Landscape Ecology, U.S. Regional Chapter
1998 Distinguished Statistical Ecologist Award, INTERCOL Statistical Ecology Group, VII International Congress of Ecology, Florence, Italy July 1998

PROFESSIONAL INTERESTS:

Evaluation of the adequacy and reliability of environmental data and models. Development of new approaches for predicting ecological dynamics in spatially heterogeneous systems. Implementation of risk-based approaches for assessing effects of natural disturbances, land-use and global change on sustainability of ecological systems. Analysis and prediction of changes in ecosystem dynamics with changes in scale.

SOCIETY MEMBERSHIPS:

The American Association for the Advancement of Science.
 The Ecological Society of America.
 The International Association for Landscape Ecology
 The American Society of Naturalists

SELECTED ACTIVITIES (2001-2007):

Invited participant, USGS Aquatic and Terrestrial Landscape Ecology Workshop, November 13-14, 2007, Leetown, VA.
 Invited seminar, Pennsylvania State University, Department of Geography, November 2006
 President, US Chapter of International Association of Landscape Ecologists. 2006-2008.
 President-elect, US Chapter of International Association of Landscape Ecologists. 2005-2006
 Director, Chesapeake Watershed Cooperative Ecosystem Study Unit, 2004-present.
 Symposium Co-organizer, *Alternative principles for landscape management*, IALE World Congress, Wageningen, Netherlands, July 2007
 Chair, H. John Heinz Center for Science, Economics and Environment Peer Review Panel, April 2006
 Organizer, workshop and report, *NEON Land use and habitat alteration*, Belmont Conference Center, Maryland, August 25-26, 2004
 Invited participant, NCEAS workshop: *Global Change Impacts on Landscape Fires*, Santa Barbara January, 2003.
 Co-Chair, Mid-Atlantic Research Organization (MAREO, a NEON activity), 2003-2006.
 Invited presentation, *Landscape structure and analysis*. IALE World Congress, Darwin, Australia. June 2003.
 Invited speaker and workshop participant, *Scale and extrapolation in heterogeneous landscapes*. University of Wageningen, Wageningen, Netherlands. November, 2003.
 Co-organizer, *Observation, manipulation, experimentation and extrapolation: Limitations and opportunities in ecosystem-level studies*. A symposium at the annual meeting of the Ecological Society of America meetings, Madison, Wisconsin. August, 2001.
 Invited participant, *Understanding ecosystems: The role of quantitative models in observation, synthesis, and prediction*. Cary Conference IX, Institute of Ecosystem Studies, Millbrook, NY, May, 2001.
 Member, NSF IGERT Preproposal Review Panel, Alexandria, VA, October, 2001.
 Editorial Board, *Landscape Ecology*. 1999-2004
 Subject Editor, *Conservation Ecology*, An electronic journal of the Ecological Society of America. 1996-2003.

GRADUATE STUDENT COMMITTEES (* indicates major advisor)

D. E. Weller *	1983	Ph.D.	University of Tennessee, Knoxville, TN, USA
H. I. Jager*	1987	M.A.	University of Tennessee, Knoxville, TN, USA
J.-P. Hettelingh	1989	Ph.D.	Free University, Amsterdam, The Netherlands
S. Lavorel	1991	Ph.D.	Center for Environmental Research, Montpellier, France
K. Minser	1993	M.A.	University of Tennessee, Knoxville, TN, USA
S. Walters *	2002	Ph.D.	University System of Maryland, MD, USA
D. Scheurer*	2006	Ph.D.	University System of Maryland, MD, USA
L. Wainger	1998	Ph.D.	University System of Maryland, MD, USA
C.-C. Chen	1998	Ph.D.	University System of Maryland, MD, USA
J. Benetiz	2001	Ph.D.	University System of Maryland, MD, USA
B. Sturtevant	2001	Ph.D.	University System of Maryland, MD, USA
R. Chastain	2004	Ph.D.	University System of Maryland, MD, USA
C. Jantz	2005	Ph.D.	University of Maryland, College Park, MD, USA
J. Farrari	2005	M.S.	University of Maryland, College Park, MD, USA
K. Kalasz	2005	M.S.	Frostburg State University, Frostburg, MD, USA
M. Kendall	2007	Ph.D.	University System of Maryland, MD, USA

PUBLICATIONS:

- Gardner, R. H. and C. R. Terman. 1970. The relationship between age of grouping and weight of selected organs of prairie deer mice. *Research on Population Ecology*, 12: 1-18.
- Smith, M. H., R. H. Gardner, J. B. Gentry, D. W. Kaufman, and M. J. O'Farrell. 1975. Density estimation of small mammal populations. pp. 25-54. IN: Golley, F. G., K. Petroszewicz, and L. Ryszkowski (eds), *Small Mammals: Their Productivity and Populations Dynamics*. Cambridge University Press, New York.
- Gardner, R. H., J. B. Mankin, and H. H. Shugart. 1976. The COMEX computer code: Documentation and description. EDFB/IBP-76/4. Oak Ridge National Laboratory.
- Mankin, J. B., R. H. Gardner, and H. H. Shugart. 1976. The COMEX computer code: Monte Carlo analysis of ecosystem attributes. *Proceedings of 1976 Summer Computer Simulation Conference*. p. 433-436. Simulation Councils, Inc., LaJolla, California.
- Comiskey, C. E., G. S. Henderson, R. H. Gardner, and F. W. Woods. 1977. Patterns of organic matter transport on Walker Branch Watershed. pp. 439-467. IN: Correll, D. L. (ed.), *Watershed Research in the Eastern United States*. Chesapeake Bay Center for Environmental Studies, Smithsonian Institution, Edgewater, Maryland.
- Garten, C. T., Jr. R. H. Gardner, and R. C. Dahlman. 1978. A linear compartment model of plutonium dynamics in a deciduous forest ecosystem. *Health Physics*, 34: 611-619.
- DeAngelis, D. L., R. H. Gardner, J. B. Mankin, W. M. Post, and J. H. Carney. 1978. Energy flow and the number of trophic levels in ecological communities. *Nature* 273: 406-407.
- Carney, J. H., R. H. Gardner, J. B. Mankin, and D. L. DeAngelis. 1979. Cycling indices for ecosystem models. *Proceedings of 1979 Summer Computer Simulation Conference*. p. 389-393. Simulation Councils, Inc., LaJolla, California.
- O'Neill, R. V., and R. H. Gardner. 1979. Sources of uncertainty in ecological models. IN: B. P. Zeigler, M. S. Elzas, G. J. Kliv, T. I. Oren (eds.), *Methodology in Systems Modelling and Simulation*. p. 447-463. North-Holland Publishing Co.
- Gardner, R. H., J. B. Mankin and W. R. Emanuel. 1980. A comparison of three carbon models. *Ecological Modelling*, 8: 313-332.
- O'Neill, R. V., R. H. Gardner, and J.B. Mankin. 1980. Analysis of parameter error in a nonlinear model. *Ecological Modelling*, 8: 297-311.
- Gardner, R. H., J. E. Pinder, III and R. S. Wood. 1980. Monte Carlo estimation of percentiles for the multi-sample Smirnov test. *Journal of Statistical Computation and Simulation*, 10: 243-249.
- *Gardner, R. H., R. V. O'Neill, J. B. Mankin and D. Kumar. 1980. Comparative error analysis of six predator-prey models. *Ecology*, 61: 323-332.
- Gardner, R. H., D. D. Huff, R. V. O'Neill, J. B. Mankin, J. Carney, J. Jones. 1980. Application of error analysis to a marsh hydrology model. *Water Resources Research*, 16(4): 659-664.
- Gardner, R. H., and J. B. Mankin. 1980. Analysis of biomass allocation in forest ecosystems of the IBP. IN: D. E. Reichle (ed.), *Dynamic Properties of Forest Ecosystems*. Cambridge University Press, Malta. pp 451-497.
- DeAngelis, D. L., R. H. Gardner and H. H. Shugart. 1981. Productivity of forest ecosystems studied during the IBP: The woodlands data set. IN: D. E. Reichle (ed.), *Dynamic Properties of Forest Ecosystems*. Cambridge University Press, Malta. pp 567-672.
- O'Neill, R. V., R. H. Gardner, F. O. Hoffman and G. Schwarz. 1981. Effects of parameter uncertainty on estimating radiological dose in man: A Monte Carlo approach. *Health Physics*, 40: 760-764.
- O'Neill, R. V., R. H. Gardner, S. W. Christensen, W. Van Winkle, J. H. Carney and J. B. Mankin. 1981. Some effects of parameter uncertainty in density-independent and density-dependent Leslie models for fish populations. *Canadian Journal of Aquatic Sciences*, 38: 91-100.

- Gardner, R. H., R. V. O'Neill, J. B. Mankin and J. H. Carney. 1981. A comparison of sensitivity analysis and error analysis based on a stream ecosystem model. *Ecological Modelling*, 12: 177-194.
- Carney, J. H., D. L. DeAngelis, R. H. Gardner, J. B. Mankin and W. M. Post. 1981. Calculation of probabilities of transfer, recurrence intervals, and positional indices for linear compartment models. ORNL/TM-7379. Oak Ridge National Laboratory. 70 pp.
- Carney, J. H., R. H. Gardner, J. B. Mankin and R. V. O'Neill. 1981. SEAP: A computer program for the error analysis of a stream model. ORNL/TM-7694. Oak Ridge National Laboratory.
- Gardner, R. H., R. V. O'Neill, and J. H. Carney. 1981. Spatial patterning and error propagation in a stream ecosystem model. *Proceedings of 1981 Summer Computer Simulation Conference*. p. 391-395. Simulation Councils, Inc., LaJolla, California.
- Gardner, R. H., R. V. O'Neill and F. O. Hoffman. 1981. Assessing model uncertainties. IN: D. C. Kocher (ed.), *Proceedings of the Symposium on Uncertainties Associated with the Regulation of Geologic Disposal of High Level Radioactive Waste*. March 9-13, 1981, Gatlinburg, TN. PP 199-208 CONF-810372.
- O'Neill, R. V., R. H. Gardner, and J. H. Carney. 1982. Parameter constraints in mass-balance models: Incorporation of a priori information in Monte Carlo error analysis. *Ecological Modelling*, 16: 51-65.
- Gardner, R. H., W. G. Cale and R. V. O'Neill. 1982. Robust analysis of aggregation error. *Ecology*, 63: 1771-1779.
- O'Neill, R. V., R. H. Gardner, L. W. Barnthouse, G. W. Suter, S. G. Hildebrand and C. W. Gehrs. 1982. Ecosystem risk analysis: A new methodology. *Environmental Toxicology and Chemistry*, 1: 167-177.
- O'Neill, R. V., R. H. Gardner and D. E. Weller. 1982. Chaotic models as representations of ecological systems. *American Naturalist*, 120: 259-263.
- Barnthouse, L. W., D. L. DeAngelis, R. H. Gardner, R. V. O'Neill, C. D. Powers, G. W. Suter and D. S. Vaughan. 1982. Methodology for Environmental Risk Assessment of Synfuels Technologies. ORNL/TM-8167. Oak Ridge National Laboratory.
- Barnthouse, L. W., S. M. Bartell, D. L. DeAngelis, R. H. Gardner, R. V. O'Neill, C. D. Powers, G. W. Suter, II., G. P. Thompson, D. S. Vaughan. 1982. Preliminary environmental Risk Analysis for indirect coal liquefaction. Report to the Environmental Protection Agency, June 1982.
- Powers, C. D., G. W. Suter, II, L. W. Barnthouse, D. L. DeAngelis, G. P. Thompson, R. H. Gardner. Glossary for Environmental Risk Analysis. Report to the Environmental Protection Agency, June 1982.
- Hoffman, F. O., R. H. Gardner, and K. F. Eckerman. 1982. Variability in dose estimates associated with the food chain transport and ingestion of selected radionuclides. NUREG/CR-2612, U. S. Nuclear Regulatory Commission.
- Bartell, S. M., R. V. O'Neill, and R. H. Gardner. 1982. Aquatic ecosystem models for risk assessment. IN: W. K. Lauenroth, G. V. Skogerboe, M. Flug, (eds). *Developments in Environmental Modelling*, 5. Analysis of Ecological Systems: State-of-the-Art in Ecological Modelling. Elsevier, Amsterdam.
- Giddings, J. M., A. J. Stewart, R. V. O'Neill, R. H. Gardner. 1983. An efficient algal bioassay based on short-term photosynthetic response. *Aquatic Toxicology and Hazard Assessment: Sixth Symposium, ASTM STP 802*, W. E. Bishop, R. D. Cardwell, and B. B. Heidolph, Eds., American Society for Testing and Materials, Philadelphia, 1983. pp. 445-459.
- O'Neill, R. V., R. H. Gardner, and F. O. Hoffman. 1983. Reply to Sawitzki. Letter to the Editor, *Health Physics*.
- Gardner, R. H., and R. V. O'Neill. 1983. Parameter uncertainty and model predictions. IN: M. B. Beck and G. van Straten (eds.), *Uncertainty and Forecasting of Water Quality*. Springer Verlag. New York. p. 245-257.
- Cale, W. G., R. V. O'Neill, and R. H. Gardner. 1983. Aggregation error in nonlinear ecological models. *Journal Theoretical Biology* 100: 539-550.
- Bartell, S. M., R. H. Gardner, R. V. O'Neill and J. M. Giddings. 1983. Error analysis of predicted fate of anthracene in a simulated pond. *Environmental Toxicology and Chemistry* 2: 19-28.

- Hoffman, F. O., and R. H. Gardner. 1983. Evaluation of uncertainties in environmental radiological assessment models. pp 11-1 - 11-55. IN: Radiological Assessment: A Textbook on Environmental Dose Assessment, J. E. Till and H. R. Meyer (eds.), United States Nuclear Regulatory Commission, Washington, D.C. NUREG/CR-3332, ORNL-5968.
- Jager, H. I., R. H. Gardner, D. L. DeAngelis and W. M. Post. 1983. A simulation approach to understanding the processes that structure food webs. ORNL/TM-8904. Oak Ridge National Laboratory, Oak Ridge, TN.
- Suter, G. W., II, D. S. Vaughan, and R. H. Gardner. 1983. Risk assessment by analysis of extrapolation error: a demonstration for effects of pollutants on fish. *Environmental Toxicology and Chemistry*, 2: 369-378.
- O'Neill, R. V., S. M. Bartell, and R. H. Gardner. 1983. Patterns of toxicological effects in ecosystems: a modeling study. *Environmental Toxicology and Chemistry*, 2: 451-461.
- Gardner, R. H., B. Rödger, U. Bergström. 1983. PRISM: A systematic method for determining the effect of parameter uncertainties on model predictions. Studsvik Energiteknik AB report/NW-83/555, Nyköping Sweden.
- Bartell, S. M., R. H. Gardner, R. V. O'Neill. 1983. The fates of aromatics model (FOAM): Description, application, and analysis. *Ecological Modelling*, 22: 109-121.
- Suter, II, G. W., L. W. Barnthouse, C. F. Baes, III, S. M. Bartell, M. G. Cavendish, R. H. Gardner, R. V. O'Neill, and A. E. Rosen. 1984. Environmental Risk Analysis for Direct Coal Liquefaction. ORNL/TM-9074. Oak Ridge National Laboratory, Oak Ridge, TN.
- Bartell, S. M., R. V. O'Neill, and R. H. Gardner. 1984. Modeling effects of toxicants on aquatic systems. pp 82-85. In: Water for Resource Development, D. L. Schreiber, ed. American Society of Civil Engineers, N.Y.
- Gardner, R. H. 1984. A unified approach to sensitivity and uncertainty analysis. In: Applied simulation and modelling, M. H. Hamza, ed. Proceedings of the IASTED International Symposium, San Francisco, U.S.A., June 4-6, 1984. ACTA Press, Anaheim, Ca. pp. 155-157.
- Bouche, M. B. and R. H. Gardner. 1984. Earthworm functions: VIII. Population estimation techniques. *Revu de Ecologi et de Biologie du Sol*. 21: 37-63.
- Suter, II, G. W., L. W. Barnthouse, J. E. Breck, R. H. Gardner, and R. V. O'Neill. 1984. Extrapolating from the laboratory to the field: How wrong can you be? Aquatic Toxicology and Hazard Assessment: Seventh Symposium, ASTM STP 854. R. D. Cardwell, R. Purdy and R. C. Bahner, Eds., American Society for Testing and Materials, Philadelphia, 1984, pp. 400-413.
- Downing, D. J., R. H. Gardner, and F. O. Hoffman. 1985. An examination of response-surface methodologies for uncertainty analysis in assessment models. *Technometrics*, 27: 151-163.
- Gardner, R. H., J. R. Trabalka. 1985. Methods of Uncertainty Analysis for a Global Carbon Dioxide Model. Department of Energy Technical Report. DOE/OR/21400-4.
- Petersen, H., R. V. O'Neill, and R. H. Gardner. 1985. The use of an ecosystem model for testing ecosystem responses to inaccuracies of root and microflora productivity estimates. In: *Ecological Interactions in Soil* (ed. A. H. Fitter), Special Publication Number 4 of the British Ecological Society. Blackwell Scientific Publications, Oxford. pp 233-242.
- Weller, D. E., R. H. Gardner and H. H. Shugart. 1985. A mathematical and statistical analysis of the $-3/2$ power rule of self-thinning in even-aged plant populations. ORNL/TM-9548. Oak Ridge National Laboratory, Oak Ridge, TN.
- Barnthouse, L. W., G. W. Suter, II, C. F. Baes, III, S. M. Bartell, M. G. Cavendish, R. H. Gardner, R. V. O'Neill, and A. V. Rosen. 1985. Environmental Risk Analysis for Indirect Coal Liquefaction. ORNL/TM-9120. Oak Ridge National Laboratory, Oak Ridge, TN.
- Trabalka, J. R., J. A. Edmonds and J. Reilly, R. H. Gardner, L. D. Voorhees. 1985. Human alterations of the global carbon cycle and the projected future. Chapter 10. In: *Atmospheric Carbon Dioxide and the Global Carbon Cycle* (J. R. Trabalka, ed), pp 247-287. DOE/ER-0239. United States Department of Energy, Washington, D.C.

- Barnthouse, L. W., G. W. Suter, II, C. F. Baes, III, S. M. Bartell, R. H. Gardner, R. E. Millemann, R. V. O'Neill, C. D. Powers, A. E. Rosen, L. L. Sigal, D. S. Vaughn. 1985. Unit Release Risk Analysis for Environmental Contaminants of Potential Concern in Synthetic Fuels Technologies. ORNL/TM-9070. Oak Ridge National Laboratory, Oak Ridge, TN.
- Downing, D. J., R. H. Gardner and F. O. Hoffman. 1986. Response to Robert G. Easterling: Letter to the Editor. *Technometrics*, 28: 92-93.
- Bartell, S. M., J. E. Breck, and R. H. Gardner, A. L. Brenkert. 1986. Individual parameter perturbation and error analysis of fish bioenergetics models. *Canadian Journal of Fisheries and Aquatic Science*, 43: 160-168.
- Trabalka, J. R., J. A. Edmonds, J. M. Reilly, R. H. Gardner and D. E. Reichle. 1986. Atmospheric CO₂ projections with globally averaged carbon cycle models. Chapter 26. In: *The Changing Carbon Cycle: A Global Analysis* (J. R. Trabalka and D. E. Reichle, eds), pp 534-560. Springer-Verlag, New York.
- Hoffman, F. O., R. H. Gardner, and S. M. Bartell. 1986. The significance of environmental exposure pathways for technetium. pp 359 - 376. In: *Technetium in the Environment*, G. Desmet, C. Myttenaere, ed. Elsevier Science Publishers, New York.
- Bartell, S. M., R. H. Gardner and R. V. O'Neill. 1986. The influence of bias and variance in predicting the effects of phenolic compounds in ponds. *Proceedings for the 1986 Eastern Simulation Conference*, B. T. Fairchild, (ed.), Vol 17, no. 2: Supplementary Proceedings, pp 173-176.
- Edmonds, J. A., J. M. Reilly, R. H. Gardner, and A. Brenkert. 1986. Uncertainty in future global energy use and fossil fuel CO₂ emissions 1975 to 2075. United States Department of Energy, Office of Energy Research. DOE/NBB-0081
- Barnthouse, L. W., G. W. Suter II, S. M. Bartell, J. J. Beauchamp, R. H. Gardner, E. Linder, R. V. O'Neill and A. E. Rosen. 1986. User's manual for ecological risk assessment. ORNL-6251. Oak Ridge National Laboratory.
- Kamari, J., M. Posh, R. H. Gardner and J.-P. Hettelingh. 1986. A model for analyzing lake water acidification on a large regional scale. Part 2: Regional application. WP-86-66. International Institute for Applied Systems Analysis, A-2361 Laxenburg, Austria.
- Dale, V. H. and R. H. Gardner. 1987. Assessing regional impacts of growth declines using a forest succession model. *Journal of Environmental Management* 24: 83-93.
- Reilly, J. M., J. A. Edmonds, R. H. Gardner and A. Brenkert. 1987. Uncertainty analysis of the IEA/ORAU CO₂ emissions model. *The Energy Journal*, 8(3): 1-29.
- Krummel, J. R., R. H. Gardner, G. Sugihara, R. V. O'Neill and P. R. Coleman. 1987. Landscape patterns in a disturbed environment. *Oikos*, 48: 321-324.
- Pastor, J., R. H. Gardner, V. H. Dale and W. M. Post. 1987. Successional changes in nitrogen availability as a potential factor contributing to spruce declines in boreal North America. *Canadian Journal of Forest Research*, 17: 1394-1400.
- Gardner, R. H., B. T. Milne, M. G. Turner, and R. V. O'Neill. 1987. Neutral models for the analysis of broad-scale landscape pattern. *Landscape Ecology*, 1: 19-28.
- Gardner, R. H. 1988. TAM3: A program demonstrating Monte Carlo sensitivity and uncertainty analysis. BIOMOVS report, NIRP, Swedish National Institute of Radiation Protection, Stockholm, Sweden.
- Hettelingh, J.-P. and R. H. Gardner. 1988. The trade off between the complexity, input data and scale of application of the RAINS-lake model: A statistical analysis. Paper 88-104.1 In: *Proceedings of the 81st Annual Meeting of APCA*, Dallas, TX, June 20-24, 1988.
- Franklin, R. L. A., R. H. Gardner, V. H. Dale and P. S. White. 1988. PLOTSAM: A simulation of systematic and random sampling. ORNL/TM-10670.
- Bartell, S. M., R. H. Gardner and R. V. O'Neill. 1988. An integrated fates and effects model for estimation of risk in aquatic systems. *Aquatic Toxicology and Hazard Assessment*. 10th Volume, ASTM STP 971, American Society for Testing and Materials, Philadelphia, pp. 261-274.

- Jager, H. I. and R. H. Gardner. 1988. A simulation experiment to investigate food web polarization. *Ecological Modelling*, 41: 101-116.
- O'Neill, R. V., B. T. Milne, M. G. Turner, and R. H. Gardner. 1988. Resource utilization scales and landscape pattern. *Landscape Ecology*, 2: 63-69.
- Brenkert, A. L., R. H. Gardner, S. M. Bartell and F. O. Hoffman. 1988. Uncertainties associated with estimates of radium accumulation in lake sediments and biota. IN: *Reliability of Radioactive Models*. G. Desmet, ed. pp 185-192, 1988.
- Dale, V. H., H. I. Jager, R. H. Gardner and A. E. Rosen. 1988. Using Sensitivity and uncertainty analysis to improve predictions of broad-scale forest development. *Ecological Modelling*, 42: 165-178.
- O'Neill, R. V., J. Krummel, R. H. Gardner, G. Sugihara, B. Jackson, D. L. DeAngelis, B. Milne, M. G. Turner, B. Zygmunt, S. Christensen, R. Graham, and V. H. Dale. 1988. Indices of landscape pattern. *Landscape Ecology*, 1: 153-162.
- Bartell, S. M., W. G. Cale, R. V. O'Neill, and R. H. Gardner. 1988. Aggregation error, research objectives, and relevant community structure. *Ecological Modelling*, 41: 157-168.
- Turner, M. G., R. H. Gardner, V. H. Dale and R. V. O'Neill. 1988. Landscape pattern and the spread of disturbance. Pp. 373-382 In M. Ruzicka, T., Hrciarova, and L. Miklos, Eds. *Proc. VIIIth International Symposium on Problems of Landscape Ecology Research*, Vol. 1. Institute of Experimental Biology and Ecology, CBES SAS, Bratislava, CSSR.
- Bartell, S. M., A. L. Brenkert, R. V. O'Neill, and R. H. Gardner. 1988. Temporal variation in regulation of production in a pelagic food web model. pp 101-118. In: *Complex Interactions in Lake Communities*. S. R. Carpenter, ed. Springer-Verlag, New York.
- Gardner, R. H., M. G. Turner and V. H. Dale. 1989. Predicting across scales: A meeting review. *Bulletin of the Ecological Society of America*, 70(2): 153-155.
- Hettelingh, J.-P., R. H. Gardner, K. A. Rose and A. L. Brenkert. 1989. Broad-scale effects of sulfur deposition: A response surface analysis of a complex model. pp 267-277. In: *Regional Acidification Models*, J. Kamari, D. F. Brakke, A. Jenkins, S. A. Norton and R. F. Wright, eds. Springer-Verlag, Berlin.
- Dale, V. H., R. H. Gardner and M. G. Turner. 1989. Predicting across scales: Comments of the Guest Editors of *Landscape Ecology*. *Landscape Ecology*, 3: 147-151.
- Turner, M. G., R. H. Gardner, V. H. Dale and R. V. O'Neill. 1989. Predicting the spread of disturbance across heterogeneous landscapes. *Oikos*, 55: 121-129.
- Turner, M. G., R. V. O'Neill, R. H. Gardner and B. T. Milne. 1989. Effects of changing spatial scale on the analysis of landscape pattern. *Landscape Ecology*, 3: 153-162.
- Gardner, R. H., R. V. O'Neill, M. G. Turner and V. H. Dale. 1989. Quantifying scale-dependent effects of animal movement with simple percolation models. *Landscape Ecology*, 3:217-227.
- Turner, M. G., V. H. Dale and R. H. Gardner. 1989. Predicting across scales: Theory development and testing. *Landscape Ecology*, 3: 245-252.
- Gardner, R. H., J.-P. Hettelingh, J. Kamari and S. M. Bartell. 1990. Estimating the reliability of regional predictions of aquatic effects of acid deposition. pp 185-207. In: *Impact Models to Assess Regional Acidification*, J. Kamari, ed. Kluwer Academic Publishers, London.
- Hunsaker, C. T., R. L. Graham, G. W. Suter, II, R. V. O'Neill, L. W. Barnhouse and R. H. Gardner. 1990. Assessing ecological risk on a regional scale. *Environmental Management*, 14: 325-332.
- Gardner, R. H., V. H. Dale, and R. V. O'Neill. 1990. Error propagation and uncertainty in process modeling. *Process Modeling of Forest Growth Responses to Environmental Stress*. pp 208-219. IN: R. K. Dixon, R. S. Meldahl, G. A. Ruark and W. G. Warren, eds. Timber Press, Portland, Oregon

- Turner, M. G. and R. H. Gardner, eds. 1990. *Quantitative Methods in Landscape Ecology. The analysis and interpretation of landscape heterogeneity.* Ecological Studies Series, Springer-Verlag, New York.
- Turner, M. G., and R. H. Gardner. 1990. *Quantitative Methods in Landscape Ecology: An Introduction.* pp 3-14. In: Turner, M. G. and R. H. Gardner, eds. *Quantitative Methods in Landscape Ecology. The analysis and interpretation of landscape heterogeneity.* Ecological Studies Series, Springer-Verlag, New York.
- Gardner, R. H. and M. G. Turner. 1991. *Future Directions in Quantitative Landscape Ecology.* pp 519- 525. In: Turner, M. G. and R. H. Gardner, eds. *Quantitative Methods in Landscape Ecology. The analysis and interpretation of landscape heterogeneity.* Ecological Studies Series, Springer-Verlag, New York.
- Gardner, R. H. and R. V. O'Neill. 1991. *Pattern, process and predictability: The use of neutral models for landscape analysis.* pp 289-307. In: Turner, M. G. and R. H. Gardner, eds. *Quantitative Methods in Landscape Ecology. The analysis and interpretation of landscape heterogeneity.* Ecological Studies Series, Springer-Verlag, New York.
- Rose, K. A., E. P. Smith, R. H. Gardner, A. L. Brenkert, S. M. Bartell. 1991. *Parameter sensitivities, Monte Carlo filtering, and model forecasting under uncertainty.* *Journal of Forecasting*, 10: 117-133.
- Rose, K. A., A. L. Brenkert, R. B. Cook, R. H. Gardner and J. P. Hettelingh. 1991. *Systematic comparison of ILWAS, MAGIC, and ETD watershed acidification models: 11. Mapping among model inputs and deterministic results.* *Water Resources Research*, 27: 2577-2598.
- Rose, K. A., A. L. Brenkert, R. B. Cook, R. H. Gardner and J. P. Hettelingh. 1991. *Systematic comparison of ILWAS, MAGIC, and ETD watershed acidification models: 2. Monte Carlo analysis under regional variability.* *Water Resources Research* 27: 2591-2603.
- Dale, V. H., R. L. A. Franklin, W. M. Post, and R. H. Gardner. 1991. *Sampling spatially distributed ecological information.* *Ecological Modelling*, 57: 1-10.
- Dale, V. H., R. H. Gardner, D. L. DeAngelis, C. Eager, and J. W. Webb. 1991. *Elevation-mediated effects of balsam woolly adelgid on southern Appalachian spruce-fir forests.* *Canadian Journal of Forest Research*, 21: 1639-1648
- O'Neill, R. V., R. H. Gardner, B. T. Milne, M. G. Turner and B. Jackson. 1991. *Heterogeneity and spatial hierarchies.* pp. 85-96. In: Kolasa, J. and S. T. A. Pickett (eds.). *Ecological Heterogeneity.* Springer-Verlag, New York.
- Gardner, R. H., M. G. Turner, R. V. O'Neill, and S. Lavorel. 1991. *Simulation of the scale-dependent effects of landscape boundaries on species persistence and dispersal.* pp 76-89. In: *The Role of Landscape Boundaries in the Management and Restoration of Changing Environments*, M. M. Holland, P. G. Risser and R. J. Naiman (eds.), Chapman and Hall, NY.
- O'Neill, R. V., R. H. Gardner, M. G. Turner and W. H. Romme. 1992. *Epidemiology theory and disturbance spread on landscapes.* *Landscape Ecology*, 7: 19-26.
- O'Neill, R. V., R. H. Gardner and M. G. Turner. 1992. *A hierarchical neutral model for landscape analysis.* *Landscape Ecology*, 7: 55-61.
- Gardner, R. H., V. H. Dale, R. V. O'Neill and M. G. Turner. 1992. *A percolation model of ecological flows.* In: *Landscape Boundaries: Consequences for Biotic Diversity and Ecological Flows*, pp. 259-269. In: A. J. Hansen and F. di Castri (eds.), Springer-Verlag, NY.
- Turner, M. G., R. H. Gardner and R. V. O'Neill. 1992. *Potential responses of landscape boundaries to global environmental change.* pp 52-75. In: *The Role of Landscape Boundaries in the Management and Restoration of Changing Environments*, M. M. Holland and R. Naiman (eds.), Springer-Verlag, NY.
- Bartell, S. M., R. H. Gardner and R. V. O'Neill. 1992. *Ecological Risk Estimation.* Lewis Publishers, Boca Raton, USA.
- Hettelingh, J.-P., R. H. Gardner, and L. Hordijk. 1992. *A statistical approach to the regional use of critical loads.* *Environmental Pollution*, 77: 177-183.

- Lavorel, S., R. H. Gardner and R. V. O'Neill. 1993. Analysis of patterns in hierarchically structured landscapes. *Oikos* 67: 521-528.
- Gardner, R. H., R. V. O'Neill and M. G. Turner. 1993. Ecological implications of landscape fragmentation. pp 208-226. In: *Humans as Components of Ecosystems: The Ecology of Subtle Human Effects and Populated Areas*. S. T. A. Pickett and M. J. McDonnell (eds.), Springer-Verlag, NY.
- Plotnick, R. E., R. H. Gardner, R. V. O'Neill. 1993. Lacunarity indices as measures of landscape texture. *Landscape Ecology*, 8: 201-211.
- Gardner, R. H. (editor). 1993. *Lectures on Mathematics in the Life Sciences: Predicting Spatial Effects in Ecological Systems*, volume 23. American Mathematical Society, Providence, RI.
- Plotnick, R. E. and R. H. Gardner. 1993. Lattices and Landscapes. In: *Lectures on Mathematics in the Life Sciences: Predicting Spatial Effects in Ecological Systems*, volume 23 (R. H. Gardner, editor), pp 129-157. American Mathematical Society, Providence, RI.
- Gardner, R. H. 1993. Concluding Remarks. In: *Lectures on Mathematics in the Life Sciences: Predicting Spatial Effects in Ecological Systems*, volume 23 (R. H. Gardner, editor), pp 159-162. American Mathematical Society, Providence, RI.
- Turner, M. G., W. H. Romme, R. H. Gardner, R. V. O'Neill and T. K. Kratz. 1993. A revised concept of landscape equilibrium: disturbance and stability on scaled landscapes. *Landscape Ecology*, 8: 213-227.
- Müller, H., W. Friedland, G. Pröhl and R. H. Gardner. 1993. Uncertainty in the ingestion dose calculation. *Radiation Protection Dosimetry*, 50: 353-357
- Gardner, R. H., A. W. King, and V. H. Dale. 1993. Interactions between forest harvesting, landscape heterogeneity, and species persistence. In: D. C. LeMaster and R. A. Sedjo, eds. *Modeling Sustainable Forest Ecosystems*, Proceedings of a 1992 workshop in Washington, DC. Published by American Forests, Washington, DC.
- Turner, M. G., R. H. Gardner, R. V. O'Neill, and S. M. Pearson. 1993. Multiscale organization of landscape heterogeneity. pp 81-87 IN: *Eastside Forest Ecosystem Health Assessment, Volume II. Ecosystem Management: Principles and Applications*. M. E. Jensen and P. S. Bourgeron, eds. Forest Service Research Report, United States Department of Agriculture.
- Turner, M. G., W. H. Romme, and R. H. Gardner. 1994. Landscape disturbance models and the long-term dynamics of natural areas. *Natural Areas Journal*, 13: 3-11.
- Lavorel, S., R. V. O'Neill, and R. H. Gardner. 1994. Spatio-temporal dispersal strategies and annual plant species coexistence in a structure landscape. *Oikos* 71: 75-88.
- Turner, M. G., W. W. Hargrove, R. H. Gardner and W. H. Romme. 1994. Effects of fire on landscape heterogeneity in Yellowstone National Park, Wyoming. *Journal of Vegetation Science* 5: 731-742.
- Tinker, B. D., W. H. Romme, W. W. Hargrove, R. H. Gardner and M. G. Turner. 1994. Landscape-scale heterogeneity in lodgepole pine serotiny. *Canadian Journal of Forest Research*, 24: 897-303.
- Turner, M. G., R. H. Gardner and R. V. O'Neill. 1995. Ecological dynamics at broad scales. *BioScience Supplement* 1995: 29-35.
- O'Neill, R. V., C. T. Hunsaker, D. Jones, J. M. Klopatek, V. H. Dale, M. G. Turner, R. H. Gardner, and R. Graham. 1995. Sustainability at landscape and regional scales. pp. 137-143. In: *Defining and Measuring Sustainability: The Biogeophysical Foundations*. M. Munasinghe and W. Sherer, eds. The United Nations University and the World Bank, Washington, D.C.
- Lavorel, S., R. H. Gardner and R. V. O'Neill. 1995. Dispersal of annual plants in hierarchically structured landscapes. *Landscape Ecology* 10: 277-289.
- Dale, V. H., H. Offerman, R. Frohn, and R. H. Gardner. 1995. Landscape characterization and biodiversity research. In: *Measuring and Monitoring Biodiversity in Tropical and Temperate Forests*, Proceedings of a IUFRO Symposium held at Chiang Mai, Thailand, August 27 - September 2, 1994. T. J. B. Boyle and B. Boontawe, Eds. Center for International Forestry Research, Bogor, Indonesia.

- Gustafson, E. J. and R. H. Gardner. 1996. The effect of landscape heterogeneity on the probability of patch colonization. *Ecology*, 77: 94-107.
- Plotnick, R. E., R. H. Gardner, W. W. Hargrove, K. Prestegard, and M. Perlmutter. 1996. Lacunarity analysis: a general technique for the analysis of spatial patterns. *Physical Review E*, 53: 1-8.
- Gustafson, E. J. and R. H. Gardner. 1996. Dispersal and mortality in a heterogeneous landscape matrix. Electronic publication: http://ncgia.ucsb.edu/conf/sf_papers/gustafson_eric/ncgia_ht.html
- Pearson, S. M., M. G. Turner, R. H. Gardner, and R. V. O'Neill. 1996. An organism-based perspective of habitat fragmentation. Pp. 77-95 in R. C. Szaro (ed), *Biodiversity in managed landscapes: theory and practice*. Oxford University Press; Covelo, California.
- Gardner, R. H., M. S. Castro, R. P. Morgan, and S. W. Seagle. 1996. Nitrogen dynamics in forested lands of the Chesapeake Basin. In: *STAC Perspectives on the Chesapeake Bay*. Edgewater, Maryland: Chesapeake Research Consortium, Inc., Publ. No. 151, 36 pp. <http://www.chesapeake.org/stac/pubs/litsyns/gardner/gardner.html>
- Gardner, Robert H., Hargrove, W.W., Turner, M.G., and Romme, W.H. 1996. Climate change, disturbances and landscape dynamics. Pp. 149-172. In: *Global Change and Terrestrial Ecosystems* (Ed. by B.H. Walker and W.L. Steffen), IGBP Book Series No. 2, Cambridge University Press, Cambridge.
- With, K. A., R. H. Gardner, and M. G. Turner. 1997. Landscape connectivity and population distributions in heterogeneous environments. *Oikos* 78: 151-169.
- Romme, W. H., M. G. Turner, R. H. Gardner, W. W. Hargrove, G. A. Tuskan, D. G. Despain, and R. A. Renkin. 1997. A rare episode of sexual reproduction in aspen (*Populus tremuloides* Michx.) following the 1988 Yellowstone fires. *Natural Areas Journal* 17: 17-25.
- Turner, M. G., W. H. Romme, R. H. Gardner and W. W. Hargrove. 1997. Effects of fire size and pattern on early post-fire succession in subalpine forests of Yellowstone National Park, Wyoming. *Ecological Monographs*, 67:411-433.
- Pitelka, L. F. and the Plant Migration Workshop Group. 1997. Plant migration and climate change. *American Scientist*, 85: 464-473.
- Hart, D. R. and R. H. Gardner. 1997. A spatial model for the spread of invading organisms subject to competition. *Journal of Mathematical BioScience*, 35: 935-948.
- Pearson, S. M. and R. H. Gardner. 1997. Neutral models: Useful tools for understanding landscape patterns. Pp 215-230 In: J. A. Bissonette, ed. *Wildlife and Landscape Ecology: Effects of Pattern and Scale*. Springer Verlag, New York.
- Gardner, R. H. 1998. Pattern, process and the analysis of spatial scales. Pp 17-34 In: D. L. Peterson and V. T. Parker (eds.), *Ecological Scale: Theory and Applications*. Columbia University Press, NY
- Castro, M. S., K. N. Eshleman, R. P. Morgan II, S. W. Seagle, R. H. Gardner, and L. F. Pitelka. 1998. Nitrogen dynamics in forested watersheds of the Chesapeake Bay. Chesapeake Bay Program, STAC Publication 97-3.
- Goudriaan, J. H. H. Shugart, H. Bugmann, W. Cramer, A. Bondeau, R. H. Gardner, L. A. Hunt, W. K. Lauenroth, J. J. Landsberg, S. Linder, I. R. Noble, W. J. Parton, L. F. Pitelka, M. Stafford Smith, R. W. Sutherst, C. Valentin and F. I. Woodward. 1999. Global Change, Biodiversity and Ecological Complexity. Pages 106-140 in B. H. Walker, W. S. Steffen, J. Canadel, and J. Ingram, editors. *The Terrestrial Biosphere and Global Change: Implications for natural and managed ecosystems*. Cambridge University Press, Cambridge. [UMEEES 3248]
- Cramer, H. H. Shugart, I. R. Noble, F. I. Woodward, H. Bugmann, A. Bondeau, J. A. Foley, R. H. Gardner, w. K. Lauenroth, L. F. Pitelka and R. W. Sutherst.. 1999. Global Change, Biodiversity and Ecological Complexity. Pages 190-228 in B. H. Walker, W. S. Steffen, J. Canadel, and J. Ingram, editors. *The Terrestrial Biosphere and Global Change: Implications for natural and managed ecosystems*. Cambridge University Press, Cambridge. [UMEEES 3250]

- Sala, O. E., F. S. Chapin, R. H. Gardner, W. K. Lauenroth, H. A. Mooney, and P. S. Ramakrishnan. 1999. Global Change, Biodiversity and Ecological Complexity. Pages 305-328 in B. H. Walker, W. S. Steffen, J. Canadel, and J. Ingram, editors. *The Terrestrial Biosphere and Global Change: Implications for natural and managed ecosystems*. Cambridge University Press, Cambridge. [UMCEES ES-73-00]
- Klopatek, J. M. and R. H. Gardner, editors. 1999. *Landscape Ecological Analysis: Issues and Applications*. Springer-Verlag, New York. [UMCEES ES-75-00]
- Gardner, R. H. 1999. RULE: Map generation and spatial analysis program. Pages 280-303 in: *Landscape Ecological Analysis: Issues and Applications*, J. M. Klopatek and R. H. Gardner, editors. Springer-Verlag, New York. [UMCEES ES-74-00]
- Gardner, R. H., W. H. Romme and M. G. Turner. 1999. Predicting forest fire effects at landscape scales. Pp. 163-185. In Mladenoff, D. J., and W. L. Baker, Eds. *Spatial modeling of forest landscapes: Approaches and applications*. Cambridge University Press.
- Eshleman, K. N., R. H. Gardner, S. W. Seagle, N. M. Castro, D. A. Fiscus, J. R. Webb, J. N. Galloway, F. A. Deviney, and A. T. Herlihy. 2000. Effects of disturbance on nitrogen export from forested lands of the Chesapeake Bay watershed. *Environmental Monitoring and Assessment* **63**:187-197.
- Hargrove, W. W., R. H. Gardner, M. G. Turner, W. H. Romme, and D. G. Despain. 2000. Simulating fire patterns in heterogeneous landscapes. *Ecological Modelling* **135**:243-263.
- Turner, M. G., W. H. Romme, and R. H. Gardner. 2000. Prefire heterogeneity, fire severity, and early postfire plant reestablishment in subalpine forests of Yellowstone National Park, Wyoming. *International Journal of Wildland Fire* **9**:21-36.
- Seagle, S. W., K. N. Eshleman and R. H. Gardner. 2000. Nitrate export from small forested watersheds in the Chesapeake Bay region. [UMCEES TS-231-00]
- Gardner, R. H., W. M. Kemp, V. S. Kennedy, and J. E. Petersen. 2001. *Scaling relations in experimental ecology*. Columbia University Press., New York.
- Kemp, W. M., J. E. Petersen, and R. H. Gardner. 2001. Scale-dependence and the problem of extrapolation: Implications for experimental and natural coastal ecosystems. Pages 3-57 in R. H. Gardner, W. M. Kemp, V. S. Kennedy, and J. E. Petersen, editors. *Scaling relations in experimental ecology*. Columbia University Press, New York.
- King, A. W., R. H. Gardner, C. A. Hatfield, S. Naeem, J. E. Petersen, and J. Wiens. 2001. Terrestrial perspectives on issues of scale in experimental ecology. Pages 281-298 in R. H. Gardner, W. M. Kemp, V. S. Kennedy, and J. E. Petersen, editors. *Scaling relations in experimental ecology*. Columbia University Press, New York.
- Turner, M. G., R. H. Gardner, and R. V. O'Neill. 2001. *Landscape Ecology in Theory and Practice: Pattern and Process*. Springer Verlag, New York.
- Gardner, R. H., and S. Walters. 2001. Identifying patches and connectivity of landscapes. In: S. E. Gergel and M. G. Turner, eds. *Learning Landscape Ecology: A Practical Guide to Concepts and Techniques*. Springer Verlag., New York (UMES Contribution No. 3210)
- Plotnick, R. E., and R. H. Gardner. 2002. A general model for simulating the effects of landscape heterogeneity and disturbance on community patterns. *Ecological Modelling*, 147: 171-197. (UMCES Contribution No. 3554).
- Gardner, R.H., and D.L. Urban. 2003. Model validation and testing: Past lessons, present concerns, future prospects. Pp. 184-203 In: Canham, C.D., J.J. Cole, and W.K. Lauenroth, editors. *Models in Ecosystem Science*. Princeton (NJ): Princeton University Press.
- Aber, J.D., E.S. Bernhardt, F.A. Dijkstra, R.H. Gardner, K.H. Macneale, W.J. Parton, S.T.A. Pickett, D.L. Urban, and K.C. Weathers. 2003. Standards of practice for review and publication of models: Summary of discussion. Pp. 204-210 In: Canham, C.D., J.J. Cole, and W.K. Lauenroth, editors. *Models in Ecosystem Science*. Princeton (NJ): Princeton University Press.

- Petersen, J. E., W. M. Kemp, W. R. Boynton, C-C Chen, J. C. Cornwell, R. H. Gardner, D. Hinkle, E.D. Houde, V.S. Kennedy, T.C. Malone, W.P. Mowitt, L. Murray, M.R. Roman, L.P. Sanford, J.C. Stevenson, K.L. Sundberg, S.E. Suttles. 2003. Multi-scale experiments in coastal ecology: Improving realism and advancing theory. *BioScience* 53: 1181-1197.
- Gardner, R. H. and Gustafson, E. J., 2004. Simulating dispersal of reintroduced species within heterogeneous landscapes. *Ecological Modelling*, 171: 339-358.
- Peters, D. P. C., Urban, D. L., Gardner, R. H., Breshears, D. D. and Herrick, J. E., 2004. Strategies for ecological extrapolation. *Oikos* 106: 627-636.
- Shen, W., G. D. Jenerette, J. Wu and R. H. Gardner. 2004. Evaluating empirical scaling relations of pattern metrics with simulated landscapes. *Ecography* 27: 459-469.
- Keane, R. E., Cary, G. J., Davies, I. D., Flannigan, M. D., Gardner, R. H., Lavorel, S., Lenihan, J. M., Li, C., Rupp, S. T. 2004. A classification of landscape fire succession models: spatial simulations of fire and vegetation dynamics. *Ecological Modelling* 179: 3-27.
- Cary, G. J., R. E. Keane, R. H. Gardner, S. Lavorel, M. D. Flannigan, I. D. Davies, C. Li, J. M. Lenihan, T. S. Rupp, and F. Mouillot. 2006. Comparison of the sensitivity of landscape-fire-succession models to variation in terrain, fuel pattern, climate and weather. *Landscape Ecology* 21:121-137.
- Gardner, R. H. and Urban, D. L. 2007. Neutral models for testing landscape hypotheses. *Landscape Ecology*, 22: 15-29.
- Keane, R. E., Cary, G. F., Davies, I. D., Flannigan, M. D., Gardner, R. H., Lavorel, S., Lenihan, J. M., Li, C., Rupp, T. S. 2007. Understanding global fire dynamics by classifying and comparing spatial models of vegetation and fire dynamics. p. 129-148. In: *Terrestrial Ecosystems in a Changing World*, J. Canadell, D. Pataki, L. Pitelka, eds. Springer-Verlag, Berlin. p. 336.
- Lookingbill, T., Gardner, R. H., Townsend, P. A., Carter, S. 2007. Conceptual models as hypotheses for adaptive monitoring of urban landscapes. *Environmental Management*, 40: 171-182.
- Hilderbrand, R. H., R. H. Gardner, M. J. Ratnaswamy, and C. E. Keller. 2007. Demographic analysis and estimates of extinction risk for the Delmarva Fox Squirrel. *Biological Conservation*, 137: 70-77.
- Gardner, R. H. 2007. Measurement, scale, and prediction: Caveat emptor (book review). *BioScience*, 57: 451-452.
- Gardner, R. H., Forester, J. D. and Plotnick, R. E., 2007. Determining pattern-process relationships in heterogeneous landscapes. In: Wu, J. and Hobbs, R. J. (Eds.), *Key Topics and Perspectives in Landscape Ecology*. Cambridge University Press, pp 92-114.
- Sá, A. C. L., Pereira, J. M. C., and Gardner, R. H. 2007. Analysis of the relationship between spatial pattern and spectral detectability of areas burned in southern Africa using satellite data. *International Journal of Remote Sensing*, 29: 3583-3601.
- Lookingbill, T. R., R. H. Gardner, L. A. Wainger, C. L. Tague. *in press*. *Landscape Modelling*. *Encyclopedia of Ecology*, S. E. Jorgensen, ed. Elsevier.
- Gardner, R. H., T. R. Lookingbill, P. A. Townsend, and J. Ferrari. submitted. A general approach for the analysis of multiple resolution landscape imagery. *Landscape Ecology*.
- Gardner, R. H. and K. A. N. Engelhardt. 2007. Spatial processes that maintain biodiversity in plant communities. *Perspectives in Plant Ecology Evolution and Systematics*, *in press*
- Turner M.G., Barrett G.W., Gardner R.H., Iverson L.R., Risser P.G., Wiens J.A. & Wu J.G. (2007) In memoriam - Frank B. Golley (1930-2006). *Landscape Ecology*, 22, 1-3.