ROBERT MCDONALD
Senior Scientist for Sustainable Land-Use
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Research Themes: Ecosystem service supply and demand in urban areas; Land-use planning and conservation; Energy policy and land-use change; Sustainable agriculture.

EDUCATION

DOCTOR OF PHILOSOPHY, May 2004
University Program in Ecology
The Graduate School
Duke University, Durham, NC

Dissertation: Forest fragmentation and forest response in the North Carolina Piedmont.

Concentration: Carbon sequestration, forest conservation, land-use change, landscape ecology, remote sensing.

Awards: Aleane Webb Fellowship for excellence in Duke University Doctoral Research, 2003; NASA-MSU Travel Grant, International Association of Landscape Ecology Annual Meeting, 2002; National Science Foundation Pre-Doctoral Research Fellowship, 2001-2004; James B. Duke Fellowship for Academic Excellence, 2000; Bill and Melinda Gates Fellowship for Interdisciplinary Research, 2000.

BACHELOR OF SCIENCE, *cum laude*, June 2000
University of North Carolina at Chapel Hill

Major: Biology *Minor*: Chemistry.

Honors thesis: Increased dominance by *Acer rubrum* and the decline of the *Quercus-Carya* climax in the North Carolina Piedmont.

Honors: J.N. Couch Award for Excellence in Undergraduate Research, 2000; F.J. LeClair Award for Excellence in Botanical Research, 2000; Phi Beta Kappa, 1999; Order of the Golden Key, 1999.

PROFESSIONAL EXPERIENCE

Lead scientist, The Nature Conservancy (TNC)
Lead scientist for the Conservancy's urban conservation strategy, which works to both preserve biodiversity near cities and to maintain ecosystem services that urban dwellers depend on. Also provides science support to our energy policy team, particularly thinking about how energy policy will affect land-use, water-use, and biodiversity. 2008- Present.

Major achievements at TNC:

- Lead the development of the organization's first global agriculture strategy. Helped raise funds from corporate donors to launch the global agriculture program and hire the program's director.
- Conducted a major scientific research project looking at how US energy policy, particularly with regard to climate change mitigation, would affect land-use and biodiversity. Presented this report on Capitol Hill, where it had a significant effect on the political debate around a potential cap-and-trade bill. The report was mentioned on the Senate floor during debate, as well as in an op-ed in the Wall Street Journal.
- Started TNC's first urban conservation initiative. Helped raise funds from several donors. The initiative now works in 13 cities in the United States, and continues to expand. Now lead scientist for the program.

David H. Smith Conservation Biology Fellow, GSD, Harvard University
Researched the implications of urbanization on ecosystem services and biodiversity, at scales ranging from the local to the global. Particular focus on the implications of urban growth for conservation planning, in conjunction with scientists at The Nature Conservancy. Full responsibility for project and budget management. Taught courses

to landscape architects, teaching them fundamental ecological principles to use in their design. 2006 – 2008.

Postdoctoral Fellow, Harvard Forest, Harvard University
Lead a research project examining the landscape-scale effects of forest harvesting and forest conversion on biodiversity and invasive species spread in western Massachusetts. Designed a research protocol to meet the diverse needs of the scientists involved with the project, which addressed the heterogeneity of forest harvesting practices in the state. Implemented the protocol, managing a crew of five and insuring that adequate resources and logistical support were available. 2004-2006.

Christine Mirzayan Science Policy Intern, National Academy of Sciences
Synthesized research on the effects of land-use change, nitrogen deposition, and carbon fertilization on terrestrial carbon sequestration. Designed a workshop to explore the implications of limited scientific knowledge of these effects for the development of national carbon inventories, and prioritized further research to be funded. Summer 2003.

Triangle Research Initiative Research Associate, Duke University
Compiled and organized a geospatial database of information relevant to a broad array of economists, land-use planners, and ecologists who do research in the Raleigh-Durham metropolitan area. Converted all data layers to a common geographic projection, and generated metadata where needed. Classified a time-series of Thematic Mapper images for use by a variety of researchers. 2000-2003.

Duke Forest Data Archivist, University of North Carolina
Served as the archivist for all long-term forestry data from the Duke Forest, an active research site since 1938. Filled in data gaps, and converted records to a common electronic format. Designed SAS programs to automate further updates of the database and to provide common analysis products in a timely fashion. 1998-2000.

Forest Ecology Research Assistant, Hampshire College
Mapped locations of old growth-forests in Massachusetts, and prepared an extensive bibliography and course materials for a class on the subject. Studied decomposition rates in compost piles under different conditions. 1997-1998.

TEACHING EXPERIENCE

Lecturer, Harvard University
Landscape Ecology: Techniques for applying landscape ecology principles to the design of more sustainable cities and urban regions. Emphasis on the practical application of fundamental principles in real world design problems. Class included field studies at the Sargent Center, New Hampshire. Full responsibility for designing the course syllabus to be relevant to landscape architects and urban planners.
Occasional guest lectures: Delivered by request of faculty in the Graduate School of Design (Richard Forman, PAES Professor of Advanced Environmental Studies in Landscape Ecology) and Harvard Engineering & Applied Science (Sumeeta Srinivasan, Lecturer on Engineering Sciences). Topics include the effects of urbanization on ecological systems, and modeling species habitat using GIS systems.

Student mentor, Harvard University
Harvard Forest: Mentored four undergraduates participating in Harvard Forest's Research Experience for Undergraduate program, helping them perform innovative scientific research, conduct an analysis of their choosing, and present their results at a professional seminar. One of these undergraduates has continued to collaborate, and went on to expand the analysis into an honors thesis at her university.
Graduate School of Design: Regular work serving on studio review panels for landscape architecture and urban planning students, to provide an ecological criticism of their work. Occasional mentoring of doctoral candidates in the department who need ecological expertise.

Graduate Teaching Assistant, Duke University
Landscape Ecology: Emphasis on the role of spatial heterogeneity in terrestrial systems: its detection and description, agents of pattern formation, landscape dynamics and models, and the implications of heterogeneity for populations, communities, and ecosystems.
Spatial Analysis in Ecology: Techniques for interpreting spatial data, including scaling techniques, pattern analysis, indices of patchiness (adjacency, contagion), and inferential methods (cross-correlation, permutation procedures).
Multivariate Analysis in Community and Landscape Ecology: Statistical methods for interpreting multivariate ecological datasets, with an emphasis on using modern UNIX and PC-based statistical software.

FUNDING

Moore Foundation. Funded development of the global City Water Map, which maps where and how 400 cities obtain their drinking water. Part of a larger grant from the Moore Foundation, to fund development of an Atlas of Global Conservation. 2012-present.

Social Environmental Synthesis Center (SeSynC). Funded analysis of global City Water Map. 2012-present.

Private, corporate and foundation donors. Served on Nature Conservancy teams that won numerous large grants from donors, totaling more than $12 million. Grants funded research and advocacy into global agricultural sustainability, the effects of energy production on the environment, and urban sustainability, including the development of our urban conservation program. 2008-present.

National Center for Ecological Analysis and Synthesis (NCEAS). Funded working group to look at urban dependence on ecosystem services, particularly for clean air and water. 2009-2010.

D. H. Smith Postdoctoral Research Fellowship, 2006-2008.

National Science Foundation Pre-Doctoral Research Fellowship, 2001-2004

MEDIA

Washington Post: What we're doing to the environment may be costing us our drinking water
Reuters: Conservation Solutions Can Improve Water Quality for More Than 700 Million People Around the World

CCTV America (video): Robert McDonald on global urban water supply

New York Academy of Sciences (video): Cities and Climate After Sandy: How Should We Prepare?

Scientific American: Climate Change Could Leave 1 Billion Urbanites High and Dry by 2050

Australian Broadcasting Corporation (audio): Water shortages looming across Asia.

Aspen Ideas Festival (video): Is energy efficiency a false promise?

The New York Times: Study Warns of Energy Sprawl

NPR (audio): Renewable Energy Needs Land, Lots of Land

The New York Times: The 17% problem and the perils of domestication.

PUBLICATIONS

McDonald, R. I. 2016. Putting biodiversity and ecosystem services into urban planning and conservation. In K. Seto & W. D. Solecki (eds.), *Handbook on urbanization and global environmental change*. Okon, UK: Taylor & Francis

McDonald, R. I. 2016. Urban ecology for the urban century. *Ecosystem Health and Sustainability* 2(7): 10.1002/ehs2.1221.

McDonald, R. I., K. F. Weber, J. Padowski, T. Boucher, and D. Shemie. 2016. Estimating watershed degradation over the last century and its impact on water-

treatment costs for the world's large cities. *Proceedings of the National Academy of Sciences* 113:9117-9122.

McDonald, R.I. 2016. The watershed conservation screening tool: A resource for large water users. *American Water Works Association* 108(6):18-20.

Pennino, M.J., R.I. McDonald, P.R. Jaffe. 2016. Watershed-scale impacts of stormwater green infrastructure on hydrology, nutrient fluxes, and combined sewer overflows in the mid-Atlantic region. Science of the Total Environment 565:1044-1053.

McDonald, R. I. 2015. The effectiveness of conservation interventions to overcome the urban-environmental paradox. *Annals of the New York Academy of Sciences* 1:1-14.

Reddy, S., R. I. McDonald, A. S. Maas, A. Rogers, E. H. Girvetz, J. Molnar, T. Finley, G. Leathers, and J. DiMuro. 2015. Industrialized watersheds have elevated risk and limited opportunities to mitigate risk through water trading. *Water Resources and Industry* 11:27-45.

McDonald, R.I. 2015. *Conservation for cities: How to plan & build natural infrastructure.* Washington, DC: Island Press. Reviewed in numerous professional journals, including: Landscape Architecture, Civil Engineering, and American Society of Landscape Architecture (The Dirt).

Reddy, S., R. I. McDonald, A. S. Maas, A. Rogers, E. H. Girvetz, J. North, J. Molnar, T. Finley, G. Leathers, and J. DiMuro. 2015. Finding solutions to water scarcity: Incorporating ecosystem service values into business planning at The Dow Chemical Company's Freeport, TX facility. *Ecosystem Services* 12:94-107.

McDonald, R. I., Guneralp, B., Zipperer, W., & Marcotullio, P. 2014. The future of global urbanization and the environment. *Solutions* November/December: 60-69.

Reddy, S.W, R.I. McDonald, A.S. Maas, A. Rogers, E.H. Girvetz, S.Wood, J. Molnar, T. Finley, G. Leathers, J. DiMuro. 2015. Characterizing Water Risk and Informing Business Strategies in Industrialized Watersheds: Case Study of the Brazos River Basin, TX. *Ecosystem Science* 12:94-107.

Tallis, H., J. Lubchenco, R.I. McDonald, and 237 more co-authors. 2014. Working together: A call for inclusive conservation. *Nature* 515(7525): 27-28.

McDonald, R.I., and D. Shemie. 2014. *Urban water blueprint: Mapping conservation solutions to the global water challenge*. Washington, DC: The Nature Conservancy.

McDonald, R.I., K. Weber, J. C. Padowski, M. Florke, C. Schneider, P. Green, T. Gleason, S. Eckman, B. Lehner, D. Balk, T. Boucher, G. Grill, and M. Montgomery. 2014. Water on an urban planet: Urbanization and the reach of urban water infrastructure. *Global Environmental Change* 27:96-105.

Elmqvist, T., M. Fragkias, J. Goodness, B. Güneralp, P.J. Marcotullio, R.I. McDonald, S. Parnell, M. Schewenius, M. Sendstad, K.C. Seto, C. Wilkinson, M. Alberti, C. Folke, N. Frantzeskaki, D. Haase, M. Katti, H. Nagendra, J. Niemelä, S. Pickett, C. Redman, K. Tidball. 2013. Stewardship of the biosphere in the urban era. In Elmqvist, T., M. Fragkias, J. Goodness, B. Güneralp, P.J. Marcotullio, R.I. McDonald, S. Parnell, M. Schewenius, M. Sendstad, K.C. Seto, and C. Wilkinson (eds.). 2013. *Urbanization, biodiversity, and ecosystem services: Challenges and opportunities*, Springer, New York, NY.

Güneralp, B., R.I. McDonald, M. Fragkias, J. Goodness, P.J. Marcotullio, K.C. Seto. 2013. Urbanization forecasts, effects on land use, biodiversity, and ecosystem services. In Elmqvist, T., M. Fragkias, J. Goodness, B. Güneralp, P.J. Marcotullio, R.I. McDonald, S. Parnell, M. Schewenius, M. Sendstad, K.C. Seto, and C. Wilkinson (eds.). 2013. *Urbanization, biodiversity, and ecosystem services: Challenges and opportunities*, Springer, New York, NY.

McDonald, R.I., P.J. Marcotullio, and B. Güneralp. 2013. Urbanization and trends in biodiversity and ecosystem services. In Elmqvist, T., M. Fragkias, J. Goodness, B. Güneralp, P.J. Marcotullio, R.I. McDonald, S. Parnell, M. Schewenius, M. Sendstad, K.C. Seto, and C. Wilkinson (eds.). 2013. *Urbanization, biodiversity, and ecosystem services: Challenges and opportunities*, Springer, New York, NY.

McDonald, R.I. and E. Girvetz. 2013. Two Challenges for U.S. Irrigation Due to Climate Change: Increasing Irrigated Area in Wet States and Increasing Irrigation Rates in Dry States. *PLOS One. 8(6): e65589. doi:10.1371/journal.pone.0065589.*

McDonald, R.I. 2013. The implications of urbanization for conservation and biodiversity protection. In S. Levin (Ed.). *Encyclopedia of biodiversity, 2nd edition,* Elsevier, New York, NY.

Girvetz, E., R.I. McDonald, M. Heiner, J. Kiesecker, G. Davaa, C. Pague, M. Burnin, and E. Oidov. 2012. Eastern Mongolia Grassland Steppe. In Hilty, J.A., C. Chester, and M. Cross (eds). *Climate and conservation: Landscape and seascape science, planning, and action*, Island Press, Washington, DC.

Vaux, H. D. Balk, E. Cook, P. Gleick, W. Lau, M. Levy, E. Malone, R.I. McDonald, D. Shindell, L. Thompson, J. Wescoat, M. Williams, R. Matthew, M. Walser, L. Helsabeck, M. Majmundar, S. Freeland. 2012. *Himalayan glaciers: Climate change, water resources, and water security.* The National Academies Press, Washington, DC.

Christensen, J., R. McDonald, C. Denning. 2012. Ecological urbanism for the 21st century. *Chronicles of Higher Education*. January 22.

McDonald, R.I., J. Olden, J. Opperman, W. Miller, J. Fargione, C. Revenga, J. Higgins, J. Powell. 2012. Energy, Water and Fish: Biodiversity Impacts of Energy-Sector Water Demand in the United States Depend on Efficiency and Policy Measures. *PLoS One 7(11): e*50219.

McDonald, R.I. and P. Marcotullio. 2011. Global effects of urbanization on ecosystem services. In J. Niemelä (ed.). *Handbook of Urban Ecology*, Oxford University Press, Oxford, UK.

McDonald, R.I. 2011. The coming global urbanization: What it means for freshwater provision. Journal of the American Water Works Association. October: 20-21.

McDonald R.I., Green P., Balk D., Fekete B., Revenga C., Todd M. & Montgomery M. 2011. Urban growth, climate change, and freshwater availability. *Proceedings of the National Academy of Sciences*, 108(15):6312-6317.

McDonald, R.I., and T. Boucher. 2011. Global development and the future of the protected area strategy. *Biological Conservation* 144: 383-392.

McDonald, R. I., I. Douglas, N. B. Grimm, R. Hale, C. Revenga, J. Gronwall, and B. Fekete. 2011. Global Urban Growth and the Geography of Water Availability, Quality, and Delivery. *Ambio* 40:437-447.

Denning, C., R.I. McDonald, and J. Christensen. 2010. Did land protection in Silicon Valley reduce the housing stock? *Biological Conservation* 143:1087-1093.

McDonald, R.I., R.T.T. Forman, and P. Kareiva. 2010. Open space loss and land inequality in United States' cities, 1990-2000. *PLoS One* 5(3):e9509.

McDonald, R.I. 2009. The promise and pitfalls of systematic conservation planning. *Proceedings of the National Academies of Science 106(36):* 15101-15102.

McDonald, R.I., J. Fargione, J. Kiesecker, W. Miller, and J. Powell. 2009. Energy sprawl or energy efficiency: climate policy impacts on natural habitat for the United States of America. *PLoS One* 4(8):e6802.

McDonald, R. I., R. Forman, P. Kareiva, R. Neugarten, D. Salzer, and J. Fisher. 2009. Urban effects, distance, and protected areas in an urbanizing world. *Landscape and Urban Planning* 93:63-75.

McDonald, R. I. 2009. Ecosystem service demand and supply along the urban-to-rural gradient. *Journal of Conservation Planning* 5: 1-14.

McDonald, R.I. 2009. Ecopolis: architecture and cities for a changing climate (book review). *Landscape Ecology* 24(6): 849-850.

McDonald, R.I., P. Kareiva, and R.T.T. Forman. 2008. The Implications of Current and Future Urbanization for Global Protected Areas and Biodiversity Conservation. *Biological Conservation* 141:1695-1703.

Minor, E.S., R.I McDonald, E.A. Treml, and D.L. Urban. 2008. Uncertainty in spatially explicit population models. *Biological Conservation* 141:956-970.

McDonald, R.I., G. Motzkin, and D.R. Foster. 2008. Assessing the influence of historical factors, contemporary processes, and environmental conditions on the distribution of invasive species. *Journal of the Torrey Botanical Society* 135(2):259-270.

McDonald, R.I., G. Motzkin, and D.R. Foster. 2008. The effect of logging on vegetation composition in Western Massachusetts. *Forest Ecology and Management* 255:4021-4031.

McDonald, R.I. 2008. Global urbanization: Can ecologists identify a sustainable way forward? *Frontiers in Ecology and the Environment* 6(2):99-104.

McDonald, R.I. 2008. Why Conservation is Failing (book review). *Landscape Ecology* 23:373-374.

McDonald, R.I., C. Yuan-Farrell, C. Fievet, M. Moeller, P. Kareiva, D. Foster, T. Gragson, A. Kinzig, L. Kuby, and C. Redman. 2007. Estimating the effect of protected lands on the development and conservation of their surroundings. *Conservation Biology* 21 (6): 1526-1536.

McKnight, M.W., P.S. White, R.I. McDonald, J.F. Lamoreux, W. Sechrest, R.S. Ridgely, and S.N. Stuart. 2007. Putting Beta-Diversity on the Map: Broad-Scale Congruence and Coincidence in the Extremes. *Public Library of Science- Biology* 5(10): e272. doi:10.1371/journal.pbio.0050272.

McDonald, R.I. 2007. The Land We Share (book review). *Landscape Ecology 22:1107-1108.*

Kareiva, P., S. Watts, R.I. McDonald, and T. Boucher. 2007. Domesticated Nature: Shaping Landscapes and Ecosystems for Human Welfare. *Science 316: 1866-1869.*

Forman, R.T.T., and R.I. McDonald. 2007. A Massive Increase In Roadside Woody Vegetation: Goals, Pros, and Cons. *Proceedings of International Conference on Ecology and Transportation.*

McDonald, R.I., P.N. Halpin, and D.L. Urban. 2007. Monitoring succession from space: A case study from the North Carolina Piedmont. *Applied Vegetation Science 10:193-203.*

Soininen, J., R.I. McDonald and H. Hillebrand. 2007. The distance decay of similarity in ecological communities. *Ecography 30: 3-12.*

McDonald, R.I. 2007. A world of the city, by the city, for the city. In J. Harf, M. Lombardi (Eds.). *Taking Sides: Clashing views in global issues*, 4th Edition. McGraw-Hill, New York.

McDonald, R. I. 2006. Rates of environmental problem generation: Thoughts on a new research direction. *The Environmentalist* 26: 221-225.

McDonald, R.I. 2006. Sustainable development as freedom. *International Journal of Sustainable Development and World Ecology* 13: 445-447.

McDonald, R.I., M.S. Bank, D.B. Kittredge, G. Motzkin, and D.R. Foster. 2006. Forest Harvesting and Deforestation Relationships over Two Decades in Massachusetts. *Forest Ecology and Management* 227:31-41.

McDonald, R. I., and D. L. Urban. 2006. Edge Effects on Species Composition and Exotic Species Abundance in the North Carolina Piedmont. *Biological Invasions* 8:1049-1060.

Urban, D. L., R. I. McDonald, E. S. Minor, and E. A. Treml. 2006. Causes and consequences of land use change in the North Carolina Piedmont. In J. Wu, B. Jones, H. Li, and O.L. Loucks (Eds.). *Scaling and Uncertainty Analysis in Ecological Studies*, Springer, Dordrecht, The Netherlands.

McDonald, R.I., and D.L. Urban. 2006. Spatially varying rules of landscape change: lessons from a case study. *Landscape and Urban Planning* 74(1): 7-20.

Mansfield, C., S. Pattanayak, W. McDow, R. I. McDonald, and P. N. Halpin 2005. Shades of green: Measuring the value of urban forests in the housing market. *Journal of Forest Economics* 11(3): 177-199.

McDonald, R.I., M. McKnight, D. Weiss, E. Selig, M. O'Connor, C. Violin, and A. Moody. 2005. Species compositional similarity and ecoregions: Do ecoregion boundaries represent zones of high species turnover? *Biological Conservation* 126: 24-40.

McDonald, R. I., and D. L. Urban. 2004. Forest edges and tree growth rates in the North Carolina Piedmont. *Ecology* 85(8): 2258-2266.

Taverna, K., D.L. Urban, and R.I. McDonald. 2004. Modeling landscape vegetation pattern in response to historic land-use: A hypothesis-driven approach for the North Carolina Piedmont. *Landscape Ecology* 20: 689-702.

McDonald, R. I., R. K. Peet, and D. L. Urban. 2003. Spatial pattern of oak regeneration limitation in a complex forest environment. *Journal of Vegetation Science* 14:441-450.

McDonald, R. I., R. K. Peet, and D. L. Urban. 2002. Environmental correlates of oak decline and red maple increase in the North Carolina Piedmont. *Castanea* 67:84-95.

PRESENTATIONS

McDonald, R.I. 2015. Investing in source watershed conservation: when and where it makes sense for cities. International Water Association global meeting, Amman, Jordan (Invited talk).

McDonald, R.I. 2015. Conservation for cities. SPUR. San Francisco, CA. (Invited book talk).

McDonald, R.I. 2015. Conservation for cities. George Washington University, Washington, DC (Invited book talk and panel discussion).

McDonald, R.I. 2015. Conservation for cities. Duke University, Durham, NC (Invited book talk and classroom discussion).

McDonald, R.I. 2015. Conservation for cities. Peabody Museum, Yale University, New Haven, CT (Invited book talk).

McDonald, R.I., B. Tellman, J. Goldman. 2015. Securing clean water and reducing flood risk for cities with investments in watershed services. Ecological Society of America meeting, Baltimore, MD (Talk in organized session).

McDonald, R.I. 2015. Investing in source watershed conservation: where it makes sense for USAID. US Agency for International Development, Washington, DC (Invited talk).

McDonald, R.I. 2015. Natural Infrastructure and urban resilience: An applied perspective. Security and Sustainability Forum, Phoenix, AZ (Invited talk and panel discussion, online).

McDonald, R.I. 2015. Urban Water Blueprint: Mapping conservation solutions to the global water challenge. Briefing for congressman and staff, Capitol, Washington, D.C. (Invited talk).

McDonald, R.I. 2014. Quantifying the value of natural habitats in minimizing flooding risk. Yale University, New Haven, CT (Invited plenary talk at ecosystem services and city symposium).

McDonald, R.I. 2014. Water on an urban planet. University of Tennessee, Knoxville, TN (Invited talk)

McDonald, R.I. 2014. Water on an urban planet. Ecological Society of America meeting, Sacramento, CA.

McDonald, R.I. 2013. TNC: Interfacing ecosystem services with planning. Workshop on putting ecosystem services into urban planning, Duke University, Durham, NC (Invited talk).

McDonald, R.I. 2013. Ecosystem services, cities, and The Nature Conservancy. Workshop on cities and ecosystem service provision, Stanford University, CA (Invited talk).

McDonald, R.I. 2013. Adapting Cities to Climate Change in a Post-Sandy World (panel discussion). New York Academy of Sciences, New York, NY (Invited talk).

McDonald, R.I. 2012. Urban growth, climate change, and freshwater ecosystem services. Ecological Society of America, Portland, OR.

McDonald, R.I. 2012. Nature and the city: What good is urban conservation? New York Academy of Sciences, New York, NY (Invited talk).

McDonald, R.I. 2011. Getting freshwater to another 3 billion urbanites. Population Council, New York, NY (Invited talk).

McDonald, R.I. 2011. Is energy efficiency a false promise? Aspen Ideas Festival, Aspen, CO (Invited talk).

McDonald, R.I. 2011. Urbanization and ecosystem services. World Water Week, Stockholm, Sweden.

McDonald, R.I. 2011. Creating a global database on how different populations within cities get their water. World Wildlife Fund science seminar, Washington, DC (Invited talk).

McDonald, R.I. 2010. Urban Growth, Climate Change, and Freshwater Availability. Ecological Society of America, Pittsburg, PA.

McDonald, R.I. 2010. Conservation planning at The Nature Conservancy- from global to local. Fish and Wildlife Service, Arlington, VA (Invited talk).

McDonald, R.I. 2009. Sustainable Development and Agriculture (A Conservationist Perspective). BIO Conference, Atlanta (Invited talk).

McDonald, R.I. 2008. Positive and Negative Effects of Urban Areas on Conservation Areas. Society for Conservation Biology, Chattanooga.

McDonald, R.I. 2008. Global urbanization: Can ecologists identify a sustainable way forward? Resilience 2008 Conference, University of Stockholm, Sweden (Invited talk).

McDonald, R.I. 2007. The Implications of Urban Growth for Global Protected Areas and Biodiversity Conservation. Society for Conservation Biology, Port Elizabeth, South Africa.

McDonald, R.I. 2007. Estimating the effect of protected lands on the development and conservation of their surroundings. International Association of Landscape Ecology, Ede, The Netherlands (Poster).

McDonald, R.I. 2007. Environmental conservation in an urbanizing world. Landscape Lunchbox Seminar Series, Graduate School of Design, Harvard University, Cambridge (Invited talk).

McDonald, R. I. 2006. Forest harvesting and land conversion over two decades in Massachusetts. International Association of Landscape Ecology, US Chapter, San Deigo.

McDonald, R. I. 2006. Land-use legacies, present-day fragmentation, and invasive species. Society for Conservation Biology, San Jose.

McDonald, R. I. 2005. Urban sprawl and its effects on forest harvesting and forest processes. Institute of Ecosystem Studies, Millbrook (Invited talk with honorarium).

McDonald, R. I. 2005. Species compositional similarity and ecoregions. Ecological Society of America, Montreal.

McDonald, R.I. 2005. Causes and Consequences of Forest Fragmentation in the North Carolina Piedmont. International Urban-Rural Interfaces Conference, Atlanta.

McDonald, R.I. 2005. Urban sprawl and its effect on forest harvesting in Massachusetts. Assumption College, Worcester (Invited talk with honorarium).

McDonald, R.I. 2004. Causes and Consequences of Forest Fragmentation. The Woods Hole Research Center, Woods Hole (Invited talk).

McDonald, R.I. 2004. Causes and Consequences of Forest Fragmentation: Lessons from a landscape ecology perspective. Boston University Geography Department, Boston (Invited talk).

McDonald, R.I., P.N. Halpin, and D.L. Urban. 2004. Observing succession from space: a case study from the North Carolina Piedmont. International Association of Landscape Ecology, US Chapter, Las Vegas.

McDonald, Robert and D.L. Urban. 2003. Effects of Forest Edges on Woody Plant Composition in the North Carolina Piedmont: A Landscape Approach. Society for Conservation Biology, Duluth.

McDonald, Robert and D.L. Urban. 2003. Effects of Forest Edges on Plant Growth Rates. Ecological Society of America, Savannah.

PROFESSIONAL ACTIVITIES

Affiliate Faculty, Conservation Biology Program, University of Maryland. Serves as advisor to graduate students and helped connect them with internship opportunities at The Nature Conservancy.

Editor of a global assessment of the impact of cities on biodiversity and ecosystem services, requested by the Convention on Biological Diversity and other international agencies. This assessment brought together more than 200 scientists, and has helped reshape the discussion about urban issues at the United Nations. http://cbobook.org/

Participant in a project funded by the Keck Futures Initiative, working with urban planners to put ecosystem services into urban planning, particularly comprehensive plans.

Serves on the selection committee of the David H. Smith Conservation Biology Fellows program, reviewing dozens of applicants' research proposals and selecting those that have the most potential to influence real-world conservation.

Invited participant in the Cary Conference, 2007 (Institute of Ecosystem Studies, Millbrook, NY), helping bridge the gap between urban ecology and urban design.

Invited participant in an EPA-funded Workshop on Scaling and Uncertainty Analysis in Ecological Studies

Invited participant in an NSF-funded Workshop on Journalists/Scientists Science Communications and the News Media.

Attended a meeting of the Society of Conservation Biology Board of Governors as a non-voting representative of the Smith Fellows Program, Port Elizabeth, South Africa.

Reviewer for *Biological Conservation, Conservation Biology, Conservation Letters, Ecography*, *Ecological Applications*, *Ecological Modeling, Environmental Research Letters, Frontiers in Ecology and Environment, Global Environmental Change, Journal of Ecology, Journal of Applied Ecology, Journal of Vegetation Science*, *Landscape Ecology*, *Nature Geosciences, Proceedings of the National Academies of Science, Water Resources Research,* and the National Science Foundation.

Gained extensive field experience on community ecology studies in Big Bend National Park (TX), Sequoia/Kings Canyon National Park (CA), and Everglades National Park (FL). Led multiple research crews working on resurveying a network of long-term forest research plots in the Duke Forest (NC). 1997-2003.

ADDITIONAL INFORMATION

Skilled in the use of ESRI GIS products, ERDAS IMAGINE, UNIX operating systems, Splus, R, SAS, Excel, PowerPoint, and EndNote. Competent in FORTRAN, C, Visual Basic, and HTML.
Proficient in French.
Tweets @RobIMcDonald.
Blogs regularly. Selected essays:
In Some Places, Environmentalists Should Be Arguing for More Development. Here's Why

Hot Times, Summer in the City: Understanding the Urban Heat Wave
Lou Reed made me a conservationist
Farming, Adapting to Climate Change & the Limits of Imagination
Population Bomb or Population Crash: A Tale of Two Worlds
After the End of Nature: An Essay
The Green Conundrum: Can Small Actions Add Up to Collective Change?
Jevons Paradox: When Doing More with Less Isn't Enough