

Dr. Toby Alan Gardner

CURRENT INSTITUTIONAL AFFILIATIONS

NERC Fellow, Department of Zoology, University of Cambridge, United Kingdom

Research Associate, Biology Department, Federal University of Lavras, MG, Brazil

✉: tobyagardner@gmail.com

Website: <http://www.tropicalforestresearch.org/People/tgardner.aspx>

Date and Place of Birth: York, United Kingdom (29 May 1978)

Nationality: British

Marital Status: Single

EDUCATION

2004-2007: PhD, School of Environmental Sciences "Understanding the consequences of habitat change for tropical forest biodiversity" Conferred 5th October 2007.

2001-2002: MSc Applied Ecology and Conservation (Distinction), University of East Anglia: Thesis "Coral reefs of the tropical western Atlantic: a quantitative survey of recent temporal change and the relative importance of hurricane impacts".

1997-2001: Ecological Science (Ecology) BSc 1st Class (Hons), University of Edinburgh. Thesis: "Tree-grass coexistence in the Brazilian cerrado: a modeling approach".

ACADEMIC AWARDS

July 2007: First Place Award Student Presentation; Society for Conservation Biology Annual Meeting, Port Elizabeth, South Africa.

June 2001: Elizabeth Sinclair Irvine Prize (Most Distinguished Ecologist, University of Edinburgh 2001 Honours Class)

June 2001: Botanical Society Scotland Prize (Most Distinguished Botanical Thesis, Scotland)

PAST POSITIONS

Jan 08 – April 08. Visiting Scholar, Ecology Centre, University of Queensland, Australia.

August 2007 – December 2007: Senior Research Associate, University of East Anglia. UK Government Darwin Initiative: "Devising strategies to integrate biodiversity conservation into plantation dominated landscapes". Currently coordinating a 10-year ecological monitoring program of the largest managed forest landscape in the neotropics (Jari, Brazilian Amazonia).

August 2003 – December 2003: Research Associate, Tyndall Centre for Climate Change, University of East Anglia: “Vulnerability of the Caribbean coastal zone to climate change”

EXTRA-CURRICULA RESEARCH EXPERIENCE

August 2002 – June 2003: Principle Investigator, Katavi Conservation Project, Western Tanzania, East Africa. Responsible for coordinating biodiversity surveys for five taxonomic groups across a 2 million hectare multiple-use woodland-savannah mosaic landscape. This was the first multi-taxa assessment of protected area performance in East Africa.

June-August 2000 & 2001: Expedition Leader, Project Anuran, Chiquibul Forest, Belize. A five-year research project focused on monitoring neo-tropical amphibian populations. Work conducted with the Declining Amphibian Population Task Force (IUCN).

LANGUAGES

Swahili (fluent), Portuguese (fluent)

PROFESSIONAL DUTIES

I regularly review scientific manuscripts for a wide range of journals, including; *Biological Conservation*, *Biotropica*, *Journal of Applied Geography*, *Global Change Biology*, *Ecology*, *Coral Reefs*, *Insect Diversity and Conservation*, *Journal of Applied Ecology*, *Environmental Management*, *Conservation Letters*, *Global Ecology and Biogeography*, *PLoS ONE*, *Diversity and Distributions*, *South American Journal of Herpetology*, *African Journal of Ecology*, and *Zoological Science*

I have also reviewed for the *Convention on Biological Diversity (CBD)*, the *Caribbean Coral Reef Research Institute*, and *IUCN*.

PUBLICATIONS

IN PRESS

Nichols, E., T. A. **GARDNER**, C. A. Peres, and S. Spector. In press. Co-declining mammals and dung beetles: an impending ecological cascade. *Oikos*.

Caro, T., T. A. **GARDNER**, C. Stoner, E. B. Fitzherbert, and T. R. B. Davenport. in press. Assessing the effectiveness of protected areas: paradoxes call for pluralism in evaluating conservation performance *Diversity and Distributions*.

Hawes, J., J. Barlow, T. A. **GARDNER**, and C. Peres. in press. The value of forest strips for understory birds in an Amazonian plantation landscape *Biological Conservation*.

Lo-Man-Hung, N. F., T. A. **GARDNER**, M. A. Ribeiro Jr, J. Barlow, and A. B. Bonaldo. in press. The value of primary, secondary and plantation forests for Neotropical epigeic arachnids. *Journal of Arachnology*.

Ribeiro Jr, M. A., T. A. **GARDNER**, and T. C. S. Avila-Pires. in press. Evaluating the effectiveness of herpetofaunal sampling techniques across a habitat change gradient in a neotropical forest landscape. *Journal of Herpetology*.

Leite, R. N., M. N. F. da Silva, and T. A. **GARDNER**. in press. New records of *Neusticomys oyapocki* (Ichthyomyini, Sigmodontinae) from a human-dominated forest landscape in northeastern Brazilian Amazonia. *Mastozoologia Neotropical*.

IN PRINT

J. Jones and T.A. **GARDNER**. 2008. An unprecedented opportunity for biodiversity conservation: Hopes and fears surrounding international payments for ecosystem services. *Oryx* 42: 5

Barlow, J., I. S. Araujo, W. L. Overal, T. A. **GARDNER**, F. da Silva Mendes, I. Lake, and C. A. Peres. 2008. Factors affecting abundance and richness of fruit-feeding butterflies in tropical Eucalyptus plantations. *Biodiversity and Conservation* 17: 1089-1104.

GARDNER, T. A., M. M. I. Hernández, J. Barlow, and C. Peres. 2008. Understanding the biodiversity consequences of habitat change: the value of regenerating and planted forests for neotropical dung beetles. *Journal of Applied Ecology* 45: 883-893.

GARDNER, T. A., J. Barlow, C. Peres *and 22 others*. 2008. The cost-effectiveness of biodiversity surveys in tropical forests. *Ecology Letters* 11: 139-150.

GARDNER, T. A., T. Caro, E. B. Fitzherbert, T. Banda, and P. Lalbhai. in press. Conservation value of multiple-use areas in East Africa. *Conservation Biology*. 21: 1516-1525.

GARDNER, T. A., J. Barlow, L. T. W. Parry, and C. A. Peres. 2007. Predicting the Uncertain Future of Tropical Forest Species in a Data Vacuum. *Biotropica* 39:25-30.

GARDNER, T. A., J. Barlow, and C. A. Peres. 2007. Paradox, presumption and pitfalls in conservation biology: consequences of habitat change for amphibians and reptiles. *Biological Conservation* 138:166-179.

GARDNER, T. A., E. B. Fitzherbert, R. C. Drewes, K. M. Howell, and T. Caro. 2007. Spatial and temporal patterns of abundance and diversity of an East African amphibian fauna. *Biotropica* 39:105-113.

GARDNER, T. A., M. A. Ribeiro Jr, J. Barlow, T. A. S. Ávila-Pires, M. Hoogmoed, and C. A. Peres. 2007. The value of primary, secondary and plantation forests for a neotropical herpetofauna *Conservation Biology* 21:775-787.

Barlow, J., T. A. **GARDNER**, C. Peres. *and 22 others*. 2007. Quantifying the biodiversity value of tropical primary, secondary and plantation forests. *Proceedings of the National Academy of Sciences of the United States of America* 104: 18555-18560.

Barlow, J., T. A. **GARDNER**, L. V. Ferreira, and C. A. Peres. 2007. Litter fall and decomposition in primary, secondary and plantation forests in the Brazilian Amazon. *Forest Ecology and Management* 247:91-97.

Barlow, J., L. A. M. Mestre, T. A. **GARDNER**, and C. A. Peres. 2007. The value of primary, secondary and plantation forests for Amazonian birds. *Biological Conservation* 126:212-231.

Barlow, J., W. L. Overal, I. S. Araujo, T. A. **GARDNER**, and C. A. Peres. 2007. The value of primary, secondary and plantation forests for fruit-feeding butterflies in the Brazilian Amazon. *Journal of Applied Ecology* 44:1001-1012.

Bonaldo, A. B., M. A. L. Marques, R. Pinto de Rocha, and T. A. **GARDNER**. 2007. Species richness and community structure of arboreal spider assemblages in fragments of three forest types at Banhado Grande wet plain, Gravataí River, Rio Grande do Sul, Brazil. *Iheringia* 97:143-151.

Fitzherbert, E. B., T. A. **GARDNER**, T. Caro, and P. Jenkins. 2007. Habitat preferences of small mammals in the Katavi ecosystem of western Tanzania. *African Journal of Ecology* 45:249-257.

GARDNER, T. A. 2006. Tree-grass coexistence in the Brazilian cerrado: demographic consequences of environmental instability. *Journal of Biogeography* 33:448-463.

Ribeiro-Junior, M. A., T. A. **GARDNER**, and T. C. S. Avila-Pires. 2006. The effectiveness of glue traps to sample lizards in a tropical rainforest. *South American Journal of Herpetology* 1:131-137.

Côté, I. M., T. A. **GARDNER**, J. A. Gill, D. J. Hutchinson, and A. R. Watkinson. 2006. New approaches to estimating recent ecological change on coral reefs. Pages 293-313 in I. M. Cote, and J. R. Reynolds, editors. *Coral Reef Conservation*. Cambridge University Press, Cambridge.

Côté, I. M., J. A. Gill, T. A. **GARDNER**, and A. R. Watkinson. 2005. Measuring coral reef decline through meta-analyses. *Philosophical Transactions of the Royal Society B-Biological Sciences* 360:385-395.

GARDNER, T. A., J. A. Gill, A. Grant, A. R. Watkinson, and I. M. Côté? 2005. Hurricanes and Caribbean coral reefs: immediate impacts, recovery trajectories and contribution to long-term decline. *Ecology* 86:174-184.

Fitzherbert, E. B., T. A. **GARDNER**, T. R. B. Davenport, and T. Caro. 2006. Butterfly species richness and abundance in the Katavi ecosystem of western Tanzania. *African Journal of Ecology* 44:353-362.

GARDNER, T. A. 2004. Limits to growth? - a perspective on the perpetual debate. *Environmental Sciences* 1:121-138.

Caro, T. M., A. Engilis, E. B. Fitzherbert, and T. A. **GARDNER**. 2004. Preliminary assessment of the flagship species concept at a small scale. *Animal Conservation* 7:1-8.

GARDNER, T. A., I. M. Côté?, J. A. Gill, A. Grant, and A. R. Watkinson. 2003. Coral reef decline in the Caribbean: Response to Buddemeir and Ware. *Science* 302:392-393.

GARDNER, T. A., I. M. Côté?, J. A. Gill, A. Grant, and A. R. Watkinson. 2003. Long-term region wide declines in Caribbean coral reefs. *Science* 301:958-960.

GARDNER, T. A. 2001. Amphibian population declines: a global issue in conservation biology. *Animal Biodiversity and Conservation*. *Animal Biodiversity and Conservation* 24.2:25-44.

GARDNER, T. A., and E. B. Fitzherbert. 2001. Project Anuran: A multi-species monitoring project at the tropical lowland site of Las Cuevas, Chiquibul Forest Reserve, Belize. *Herpetological Bulletin* 78:7-15.

BOOK REVIEWS

GARDNER, T. A. 2001. A field guide to the amphibians and reptiles of the Mayan World. L. Lee. *Biological Conservation* 99:394.

GARDNER, T. A. 2004. Capturing carbon and conserving biodiversity: the market approach. Ed. I. Swingland. *Biological Conservation* 120:599-600.

GARDNER, T. A. 2008. The Ecology and Behaviour of Amphibians. Kentwood D. Wells. . *Biological Conservation* 141:1161-1166.

NATIONAL AND INTERNATIONAL PRESENTATIONS (LEAD AUTHOR)

April 2008. GARDNER, T.A. Challenges and opportunities for biodiversity conservation in the human-dominated tropics. Invited seminar. Imperial College, Silwood Park, London.

February-April 2008. GARDNER, T.A. Quantifying biodiversity patterns in human-dominated tropical forests: challenges and opportunities for conservation science. Invited seminar circuit in Australia and Singapore, including: Ecology Centre, University of Queensland; Fenner School of Forestry, National

University of Australia; School of Botany, University of Melbourne; Australian Centre for Biodiversity, Monash University; National University of Singapore, Singapore.

- November 2007.** GARDNER, T.A. Triage in conservation: overview of a three-day symposium. Invited. Institute of Zoology, London.
- September 2007.** GARDNER, T.A. Biodiversity assessments in tropical forest landscapes. Invited seminar for the MSc in Biodiversity, Conservation and Management at the Oxford University Centre for the Environment (OUCE).
- August 2007.** GARDNER, T.A., J. Barlow, C.A. Peres. Eficiencia de levantamentos de biodiversidade em florestas tropicais (in Portuguese). Invited seminar presentation, University of Sao Paulo, 8th August 2007.
- July 2007.** GARDNER, T.A. Amostrando a herpetofauna nas florestas tropicais: desafios frente a avaliacos das mudancas da estrutura de habitat (in Portuguese). Invited speaker, Round Table discussion on Rapid Biodiversity Assessments, 3rd Brazilian Conference of Herpetology, Belem, Brazil 15-18th July 2007.
- July 2007.** GARDNER, T.A, J. Barlow, and C.A. Peres. The cost-effectiveness of biodiversity research in tropical forests. Society for Conservation Biology Annual Meeting, Student Awards Finalist (First Place), Port Elizabeth, South Africa, 1-6th July 2007.
- March 2007.** GARDNER, T.A, J. Barlow, and C.A. Peres. The cost-effectiveness of biodiversity research in tropical forests. Student Conference for Conservation Science, Cambridge, 28-29th March 2007.
- Oct 2006.** GARDNER, T.A. and 23 others. Evaluating the effectiveness of biodiversity sampling in tropical forest landscapes: a cost benefit analysis from a multi-taxa project in the Brazilian Amazon. International Congress on Cultivated Forests: Symposium on Ecosystem Goods and Services. Bilbao, Spain 3rd-7th October 2006.
- July 2006.** GARDNER, T.A., T. Caro, E.B. Fitzherbert, T. Banda, and P. Lalbhai. Are national parks enough? Conservation value of lightly protected areas in East Africa. Society for Conservation Biology, San Jose, USA.
- Nov 2005.** GARDNER, T.A., M.I.M. Hernández, J. Barlow, and C.A. Peres. Dung beetle communities of primary, secondary and plantation forests in the Brazilian Amazon: a preliminary analysis. Invited presentation. Scarabaeinae Research Network, Fort Lauderdale, USA.
- July 2005.** GARDNER, T.A., M.A.R. Riberio, T.C.S. Avila-Pires, J. Barlow, M. Hoogmoed, and C. Peres. The herpetofauna of primary, secondary and plantation forests in the Brazilian Amazon. Association for Tropical Biology and Conservation, Uberlandia, Brazil.
- Sept 2003.** GARDNER, T.A. Tree-grass coexistence in the Brazilian cerrado: a modelling approach. Invited presentation. International Conference on Tropical Savannas and Seasonally Dry Forests – Royal Botanic Gardens Edinburgh.
- Sept 2003.** GARDNER, T.A., I.M. Côté, J.A. Gill, A. Grant, and A.R. Watkinson. Long-term region-wide declines in Caribbean corals. British Ecological Society Winter Meeting – Manchester Metropolitan University.

GRANTS AWARDED POST 2002 (> £5000 in value)

May 2006. UK Government Darwin Initiative. £50,004. Co-investigator: Devising strategies to integrate biodiversity conservation in plantation dominated landscapes.

May 2005. Conservation Food and Health Foundation. \$12,000. Co-investigator: Land-use change and biodiversity in the Amazon

May 2005. National Geographical Society. \$15,000. Co-investigator: Biodiversity and functional value of primary, secondary and plantation forests in the Brazilian Amazon

Jan 2004. Natural Environment Research Council (UK). £16, 515. Lead-investigator (PhD Studentship Award): Biodiversity value of carbon sequestration projects in tropical forests.