

GONÇALO FERRAZ

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APPOINTMENTS

2012- Assistant Professor, *Universidade Federal do Rio Grande do Sul*, Brazil

POSTDOCTORAL POSITIONS

2004-2007 Regional Scientific Development Fellow, *Instituto Nacional de Pesquisas da Amazônia*, Brazil

2007-2008 Visiting Researcher, *Fiocruz* – Department of Health, Brazil

2008-2012 Post-doctoral Fellow, *Smithsonian Tropical Research Institute*, Panama-Brazil

EDUCATION

Licenciatura in Biology, University of Lisbon, Portugal, 1995

Advanced Certificate in Environmental Policy, Columbia University, 2002

M.A. Ecology and Evolutionary Biology, Columbia University, 2003

M.Phil. Ecology and Evolutionary Biology, Columbia University, 2003

Ph.D. Ecology and Evolutionary Biology, Columbia University, 2004

PUBLICATIONS

Peer-reviewed:

Figueira, L., J. L. Tella, U. M. Camargo, and **G. Ferraz** (2015) Autonomous sound monitoring shows higher use of Amazon old growth than secondary forest by parrots. *Biological Conservation* 184: 27-35 (*graduate student 1st author*)

Abad-Franch, F., E. Zamora-Perea, **G. Ferraz**, S. D. Padilla-Torres, and S. L. B. Luz (2015) Mosquito-disseminated pyriproxyfen yields high breeding-site coverage and boosts juvenile mosquito mortality at the neighborhood scale. *PLoS Neglected Tropical Diseases* 9: e0003702

Soares, L., F. Abad-Franch, and **Ferraz, G.** (2014) Epidemiology of cutaneous leishmaniasis in central Amazonia: a comparison of sex-biased incidence among rural settlers and field biologists. *Tropical Medicine and International Health* 19: 988-995, 2014 (*graduate student 1st author*)

Ferraz, G. (2013) *Island Biogeography Theory*. Oxford Bibliographies Online. Oxford, UK, Oxford University Press.

Padilla-Torres, S., **G. Ferraz**, S. L. B. Luz, E. Zamora-Perea, and F. Abad-Franch (2013) Modeling dengue vector dynamics under imperfect detection: three years of site-occupancy by *Aedes aegypti* and *Aedes albopictus* in urban Amazonia. *PLoS One* 8: e58420 (*graduate student 1st author*)

Baccaro, F. B. and **G. Ferraz** (2013) Estimating density of ant nests using point-transect sampling. *Insectes Sociaux* 60: 103-110

Cerqueira, M. C., M. Cohn-Haft, C. F. Vargas, C. E. Nader, C. B. Andretti, T. V. V. Costa, M. Sberze, J. E. Hines and **G. Ferraz** (2013) Rare or elusive? A test of expert opinion about rarity of Amazon forest birds. *Diversity and Distributions* 19: 710-721 (*graduate student 1st author*)

- Ferraz, G.** (2012) Twelve guidelines for studying fauna in Brazilian environmental licensing. *Natureza & Conservação* 10: 20-26
- Ewers, R. M., R. K. Didham, L. Fahrig, **G. Ferraz**, A. Hector, R. D. Holt, V. Kapos, G. Reynolds, W. Sinun, J. L. Snaddon and E. C. Turner (2011) A large-scale forest fragmentation experiment: the Stability of Altered Forest Ecosystems Project. *Philosophical Transactions of the Royal Society B* 366: 3292-3302
- Abad-Franch, F., **G. Ferraz**, C. Campos, F. S. Palomeque, M. J. Grijalva, H. M. Aguilar, and M. A. Miles (2010) Modeling disease vector occurrence when detection is imperfect: infestation of Amazonian palm trees by Triatomine bugs at three spatial scales. *PLoS Neglected Tropical Diseases* 4: e620
- Ferraz, G.**, M. Sberze, and M. Cohn-Haft (2010) Response: Using occupancy estimates to fine-tune conservation concerns. *Animal Conservation* 13: 19-20
- Sberze, M., M. Cohn-Haft, and **G. Ferraz**. (2010) Old growth and secondary forest site occupancy by nocturnal birds in a neotropical landscape. *Animal Conservation* 13: 3-11 (*feature paper, graduate student 1st author*)
- Martin, J., J. D. Nichols, C. L. McIntyre, **G. Ferraz**, and J. E. Hines. (2009) Perturbation analysis for patch occupancy dynamics. *Ecology* 9: 10-16
- Ferraz, G.**, C. E. Marinelli, and T. E. Lovejoy (2008) Biological monitoring in the Amazon: Recent progress and future needs. *Biotropica* 40: 7-10
- Ferraz, G.**, J. D. Nichols, J. E. Hines, P. C. Stouffer, R. O. Bierregaard, Jr., and T. E. Lovejoy (2007) A large-scale experiment in tropical deforestation: effects of habitat area and isolation on Amazon forest birds. *Science* 315: 238-241
- Clark, J. S., **G. Ferraz**, N. Oguge, H. Hays, and J. DiCostanzo (2005) Hierarchical Bayes for structured, variable populations: from recapture data to life-history prediction. *Ecology* 86: 2232-2244.
- Ferraz, G.**, G. J. Russell, P. C. Stouffer, R. O. Bierregaard, Jr., S. L. Pimm, and T. E. Lovejoy (2003) Rate of species loss from Amazonian forest fragments. *Proceedings of the National Academy of Sciences of the United States of America* 100: 14069-14073
- Sears, R. R., L. M. Dávalos, and **G. Ferraz** (2001) Missing the forest for the profits: the role of multinational corporations in the international forest regime. *Journal of Environment and Development* 10: 345-364

Book chapters:

- Ferraz, G.** (2013) Sobre o uso de ‘fragmentação’. In C. A. Peres, I. Vieira, T. Gardner & J. Barlow (eds) *Conservação de Biodiversidade em Paisagens Florestais Antropizadas*. Fundação O Boticário and Editora da Universidade Federal do Paraná, pp. 515-531. (*In Portuguese*)

Book translation:

- Gotelli, N. (2007) *Ecologia*. Editora Planta. Londrina (*Translation of Nicholas Gotelli's "A Primer of Ecology" to Portuguese*)

Popular articles:

- Guix, J. C., X. Ruiz, M. Martín, and **G. Ferraz** (2000) Ciudades y pueblos son centros de exportación de semillas exóticas. *Quercus* 172: 6-7 (*In Spanish*)
- Beja, P., F. Moreira, J. Palmeirim, and **G. Ferraz** (1995) Invernada de aves em biótopos agrícolas da costa Sudoeste Portuguesa. *Ciência e Natureza* 2: 14-17 (*In Portuguese*)
- Silva, J. M., and **G. Ferraz** (1992) Que ciência para Portugal? *Ciência* 2: 5-9 (*In Portuguese*)

Submitted manuscripts and relevant research reports:

- Soares, L., F. Abad-Franch, and **G. Ferraz** (Submitted) Exposure time predicts male-biased cutaneous leishmaniasis in two human populations of central Amazonia. (*graduate student 1st author*)

Ferraz, G., J. D. Nichols, J. E. Hines, R. O. Bierregaard, Jr., and T. E. Lovejoy (Submitted) SLOSS revisited: bird species richness in Amazon forest patches of varied sizes.

Freitas, S. M., U. M. Camargo, M. C. Cerqueira, and **G. Ferraz** (Submitted) Secondary forest still impoverished after 25 years of regrowth: a multi-species study of site-occupancy by Amazon birds. (*graduate student 1st author*)

Ferraz, G. (2004) Do birds of a feather flock together? An experimental study of hetero-specific flocking. (*Research report submitted to the Frank M. Chapman Memorial Fund*)

TEACHING

Graduate:

- 2013- Population Ecology, Graduate class, 25-30 students/year
Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil
- 2005-2015 Population Ecology, Graduate class, 25-30 students/year for eleven years
Instituto Nacional de Pesquisas da Amazônia, Manaus, AM, Brazil
- 2009-2010 Population Ecology, Graduate class, 10-20 students per year for two years
Universidade de São Paulo, São Paulo, SP, Brazil
- 2009 Population Ecology, Graduate class co-taught with Prof. Fernando Fernandez, 10-20 students
Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ, Brazil
- 2006 Population Ecology, Graduate class, 20-30 students
Universidade Federal de Mato Grosso, Cuiabá, MT, Brazil
- 2002 Population Ecology, Graduate class co-taught with Prof. Stuart L. Pimm, 10-20 students
Nicholas School of the Environment, Duke University, Durham, NC, USA.

Undergraduate:

- 2014- Introduction to Ecology and Evolutionary Medicine, 60 Nursing and Biomedicine students/year
Population Biology, 10 Biology students/year
- 2013 Introduction to Ecology for the Biomedical Sciences, 90 Nursing and Physiotherapy students
Introduction to Ecology for Agronomists, co-taught with Prof. Valério Pillar, 90 students
Foundations of Applied Ecology, 15 Electrical Engineering students
Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil,

Workshops and short courses:

- 2013 Occupancy Estimation for Research and Management, Graduate class,
Universidade Federal do Mato Grosso, Cuiabá, MT, Brazil, 10-20 students.
- 2010 Occupancy Estimation for Research and Management, Graduate class,
UNICAMP, Campinas, SP, Brazil, 10-20 students.
- 2009 Population Sampling and Occupancy Estimation in Environmental Licensing, 5-day Workshop,
EPE, Ministry of Mines and Energy, Rio de Janeiro, RJ, Brazil, 20-30 students.
- 2008 Occupancy Estimation in Space and Time, 5-day Workshop,
IBAMA, Ministry of the Environment, Brasília, DF, Brazil, 10-20 students.
- 2007 2nd TEAM Analytical Workshop, 3-day Workshop with James D. Nichols, James E. Hines, Steve
Buckland and Tim O'Brien
Smithsonian Tropical Research Institute, Panama, 10-20 students.

GRADUATE STUDENTS

Advisor:

- 2007-2009 Mônica Sberze (MS), *A floresta secundária como habitat de aves noturnas: comparações de ocorrência entre a mata primária e ambientes perturbados na Amazônia Central.*
- 2007-2009 Marconi C. Cerqueira (MS), *Quantificação de um critério de conservação: raridade de aves de terra firme na Amazônia Central.*
- 2008-2010 Leticia Soares (MS), *Fatores de risco de Leishmaniose cutânea em duas populações humanas da Amazônia Central.*
- 2008-2010 Carlos E. Nader (MS), *Dinâmica de ocorrência de papa-formigas (Aves: *Thamnophilidae*) em uma parcela de floresta primária de terra firme.*
- 2009-2011 Sandra M. de Freitas (MS), Comparison of primary and secondary forest site occupancy by diurnal understory birds.
- 2009-2011 Ulisses M. Camargo (MS), Comparison of tree-fall gap and closed forest site occupancy by understory birds.
- 2010-2012 Tatiana Straatman (MS), Model home range and individual movements of two understory bird species with different hypothetical movement patterns.
- 2010-2012 Aída Rodrigues (MS), Multi-state mark-recapture modeling of ant-follower survival and movement between primary and secondary forest sites.
- 2011-2013 Thiago Couto (MS), Site occupancy by stream fish along a flow gradient in a tropical forest micro-basin.
- 2011-2013 Francisco Carvalho Diniz (MS), A comparison of frequency of lek-formation among lekking birds in old-growth and secondary forest sites of an upland Amazon rainforest area.
- 2011-2013 Gabriel McCrate (MS), Spatial distribution and individual identification of Tinamous *Tinamus major* and *Crypturellus variegatus* based on autonomous recording data.
- 2012-2014 Luiza Figueira (MS), Use of old-growth and secondary-forest by parrots of upland Amazon rainforest near Manaus.
- 2012-2014 Vanessa F. Vindica (MS), When to find birds in the Central Amazon: Variation of vocal activity on two time scales.
- 2012-2014 Humberto Mohr (MS), Effects of distance and forest type on vocalization parameters of four upland Amazon rainforest species.
- 2013-2015 Carolina Schuch de Oliveira (MS), Host population density and prevalence of Malaria parasites among understory birds of an upland Amazon rainforest.

Co-Advisor:

- 2005-2007 Carlos R. Abrahão (MS) Spatial distribution of the lancehead, *Bothrops atrox*, in Reserva Ducke, Manaus. Supervisor Dr. Albertina Lima.
- 2010-2012 Samael Padilla-Torres (MS) A test of *Aedes aegypti* and *A. albopictus* mosquito population control with the juvenile hormone analogue pyriproxyfen. Supervisor: Dr. Fernando Abad-Franch.
- 2011-2013 Juliana Bonanomi (MS) Relation between moonlight phase and vocal activity of nocturnal birds in primary and secondary forest sites. Supervisor: Dr. Renato Cintra.
- 2013-2015 Gilberto Josimar Fernández (MS) Identification of core and peripheric mixed-species flock members from bioacoustics and mistnetting data.

Committee Member:

- 2004-2006 Emiliano E. Ramalho (MS) *O uso do habitat e a dieta da Onça-pintada (Panthera onca) na várzea, Reserva de Desenvolvimento Sustentável Mamirauá, Amazonas, Brasil.*
- 2008-2010 João V. C. Silva (MS) *Considerações sobre o uso de florestas secundárias por aves de sub-bosque em uma paisagem fragmentada na Amazônia Central.*

HONORS AND AWARDS

- 1996 SUNY Stony Brook, Master's Scholarship.
- 1997-2004 Fulbright fellowship for doctoral studies.
- 1997-2004 Columbia University, CERC Partial Doctoral Scholarship.
- 1998-2002 Portuguese Government / European Union, PRAXIS XXI Partial Doctoral Scholarship.
- 2000 Frank M. Chapman Memorial Fund, AMNH, Research Grant, "An experimental assessment of the effects of predation and food availability on the frequency of mixed-species flock formation".
- 2006 Smithsonian Tropical Research Institute, Postdoctoral Research Award, "Demographic and ecological predictors of vulnerability to fragmentation in Amazon forest birds."
- 2008 Amazonas State Government, *FAPEAM Programa Primeiros Projetos* Research Grant, "*Dinâmica populacional e vulnerabilidade ao desmatamento em aves do sub-bosque na Amazônia Central*".
- 2010 Smithsonian Tropical Research Institute, Center for Tropical Forest Science Research Grant, "Predicting occurrence of cavity-nesting birds from tree-demographic data", co-PI Cintia Cornelius.

CONTRIBUTED PAPERS IN SCIENTIFIC MEETINGS

- EURING Analytical Meeting & Workshop, April-May 2013, Athens, Georgia, USA. **G. Ferraz**, J. D. Nichols, J. E. Hines, R. O. Bierregaard, Jr., and T. E. Lovejoy. Birds species richness in Amazon forest patches of varied sizes: a re-evaluation of the SLOSS problem. (*Presented by J. D. Nichols*)
- ISEC 2012 – International Statistical Ecology Conference, July 2012, Krokkleiva, Norway. **G. Ferraz**, B. Gardner, and J. A. Royle. Inference about survival and movement in marked animals using multi-state models with spatially indexed states.
- 49th Annual Meeting of the Association for Tropical Biology and Conservation (ATBC), June 2012, Bonito, Brazil. **G. Ferraz**, A. Rodriguez, and T. Straatman. What does 'being there' mean? Using individual bird movements to help interpret site-occupancy results.
- IX Congresso de Ornitologia Neotropical*, November 2011, Cusco, Peru. **G. Ferraz**, M. C. Cerqueira, M. Sberze, J. V. C. Silva, U. M. Camargo, and S. M. Freitas. Natural history with numbers: quantitative tests of rarity and habitat use for central Amazon birds.
- 8th Conference of the European Ornithologist's Union, August 2011, Riga, Latvia. B. Gardner, J. V. Campos e Silva, and **G. Ferraz**. Incorporation of spatial information in capture-recapture modeling: comparing movement patterns of adults and juveniles. (*Presented by B. Gardner*)
- IV Workshop de Genética e Biologia Molecular de Insetos Vectors de Doenças Tropicais*, September 2010, Recife, Brazil. S. B. Luz, F. Abad-Franch, and **G. Ferraz**. Sensitivity of Ovitrap and Adultraps® for detecting household infestation by the Dengue vectors *Aedes aegypti* and *Aedes albopictus*.
- 25th International Ornithological Congress, August 2010, Campos do Jordão, Brazil. M. C. Cerqueira, M. Cohn-Haft, and **G. Ferraz**. Quantifying rarity in Amazonian birds. (*Graduate student 1st author*)
- American Ornithologist's Union, August 2008, Portland, OR. **G. Ferraz**, J. D. Nichols, J. E. Hines, R. O. Bierregaard, Jr., and P. C. Stouffer. SLOSS revisited: Bird species richness in Amazon forest patches.
- World Congress of Herpetology, August 2008, Manaus, Brazil. C. Abrahão, A. Lima, and **G. Ferraz**. Where are the Lanceheads? Environmental covariates of occupancy in a cryptical snake. (*Graduate student 1st author*)

- Ecological Society of America, August 2005, Montreal, Canada. **G. Ferraz**. Bird species loss in Amazon forest fragments: implications for conservation practice.
- Association for Tropical Biology and Conservation, July 2005, Uberlândia, Brazil. **G. Ferraz**. Separate effects of patch size and isolation on the local extinction of some Amazonian birds.
- North American Ornithological Conference, September 2002, New Orleans, LA. **G. Ferraz**, G. J. Russell, P. C. Stouffer, R. O. Bierregaard, Jr., S. L. Pimm and T. E. Lovejoy. Rate of species loss from Amazonian forest fragments.
- Society for Conservation Biology, July 2002, Canterbury, England. **G. Ferraz**, G. J. Russell, P. C. Stouffer, R. O. Bierregaard, Jr., S. L. Pimm, and T. E. Lovejoy. Rate of species loss from Amazonian forest fragments.

INVITED PAPERS AND SEMINARS

- IX Research Meeting of the *Parque Nacional da Serra dos Orgãos*, Rio de Janeiro, Brazil, December 2011
- World Bank Environmental Licensing Symposium, Brasília, Brazil, August 2010
- European Science Foundation SIZEMIC Symposium, Barcelona, Spain, June 2010
- ARCADIS Tetraplan Environmental Licensing Workshop, São Paulo, Brazil, August 2009
- Instituto Nacional de Pesquisas da Amazônia*, Manaus, Brazil, April 2009
- Evolutionary Islands 150 Years After Darwin Symposium, Leiden, The Netherlands, February 2009
- University of Missouri, St. Louis, MO, February 2009
- Tupper Talk, Smithsonian Tropical Research Institute, Panama, Panama, October 2007
- Mamirauá* Monitoring Symposium, Tefé, Brazil, June 2007
- Instituto Superior de Agronomia*, Lisbon, Portugal, December 2006
- Smithsonian National Zoological Park, Washington, DC, July 2006
- Bambi Talk, Smithsonian Tropical Research Institute, Barro Colorado Island, Panama, February 2006
- Tupper Talk, Smithsonian Tropical Research Institute, Panama, Panama, February 2006
- 25th Anniversary BDFFP Symposium, Manaus, Brazil, July 2004

REVIEWER FOR

Acta Amazonica, Animal Conservation, Auk, Biological Conservation, Biotropica, Diversity and Distributions, Ecological Applications, Ecology, Journal of Applied Ecology, Journal of Wildlife Management, Methods in Ecology and Evolution, Oikos, PLoS NTDS, PLoS ONE, Restoration Ecology, Revista Brasileira de Zoologia, The Condor, Zoologia

OTHER INFORMATION

Languages

Fluent in Portuguese, English, Spanish, and Catalan

Programming Languages

Regular use of R, WinBUGS and JAGS