

# Sadie J. Ryan – Curriculum Vitae

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**ASSISTANT PROFESSOR, Dept. Environmental Science and Forestry, SUNY-ESF** 2011-  
**VISITOR, Dept. Geography, University of California Santa Barbara** 2010 -  
**POSTDOCTORAL FELLOW, National Center for Ecological Analysis and Synthesis (NCEAS)** 2009-2011

## PREVIOUS POSITIONS

**POSTDOCTORAL FELLOW, NSF Biological Informatics, Stanford University and McGill University** 2006-2009  
**LECTURER, Department of Anthropology, Stanford University** 2008

## EDUCATION

**PhD, University of California at Berkeley** Fall 2006  
Department of Environmental Science, Policy and Management (ESPM) & Museum of Vertebrate Zoology (MVZ)  
**BA, Princeton University** June 1998  
Department of Ecology and Evolutionary Biology (EEB)

## AWARDS

**NCEAS (National Center for Ecological Analysis and Synthesis) Postdoctoral Fellowship - \$135,000** 2009-  
**NIMBioS short-term visitor award: "Using GIS to inform spatial epidemic models"** 2010  
**NSF Postdoctoral Research Fellowship in Biological Informatics - \$120,000** 2006-2008  
**EPA STAR (Science to Achieve Results) Fellowship - \$98,772** 2004-2007  
**FLAS (Foreign Language and Area Studies) Fellowship (x2) - \$38,169** 2002-2004

## TEACHING

**ANSCI 178/278: Past and Present Pestilence: an interdisciplinary examination of zoonotic diseases** 2008  
**ESPM 298: Foundations of Ecology, Seminar co-facilitator** 2003  
**ESPM 114: Wildlife Ecology, Graduate Student Instructor, Lecturer** 2003, 2006  
**ESPM 104: Modeling and Management of Biological Resources, Reader, Instructor** 2004, 2005  
**Workshop: Introduction to GIS for Habitat Analysis and Home Range Estimation. SCB/SCGIS** June 2006  
**Institute and workshop on Conservation Biology, DIMACS/MBI, S. Africa, Kenya** July 2010, Jan 2011

## SYNERGISTIC ACTIVITIES

### Working Groups (participant)

**NIMBioS: "Modeling the Impact of Cattle Movements on Transmission Dynamics of Bovine TB in the US"** 2009  
**NCEAS: "Efficient wildlife disease control: From social network self-organization to optimal vaccination"** 2008 -  
**Conservation International: "Parasite Diversity and Mammalian Conservation"** 2006

### Software and Tools development and dissemination

With J. Ladau of the Santa Fe and Gladstone Institutes: developing software tools for community ecologists to examine species presence/absence datasets to detect structure from competitive interactions at various scales. *Mpower* quantifies error rates for standard co-occurrence statistics, *CoOccur* implements robust tests based on hypotheses of processes structuring a community, and *FixIt* is a correction algorithm for standard null model tests.

### Service to Scientific Community

**Student Affairs Committee and Chapters Liaison, Society for Conservation Biology (SCB)** 2010-  
**Coordinator and host, AIC theory workshop, taught by David Anderson, NCEAS** 2009  
**Founding Co-President, Central California Coast Chapter of SCB** 2008-2009  
**Member, UC Berkeley Animal Care and Use Committee (ACUC)** 2000-2005  
**Co-President, Berkeley Chapter of the Society for Conservation Biology (SCB)** 2003-2005  
**Organizer of the Bay Area Conservation Biology Symposium** 2004, 2008

### Professional Societies

**Sigma Xi, Society for Conservation Biology (SCB) (N. America, Africa Sections, Student Affairs Committee), The Wildlife Society (TWS), American Association of Geographers (AAG), Ecological Society of America (ESA)**

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## Reviewer

**Journals:** *Ecology*, *Koedoe*, *J Appl Ecol*, *J Anim Ecol*, *Phil Trans Roy Soc*, *Proc Roy Soc B*, *Ecol Mod*, *J Zool*, *Cons Letters*, *Am J Primatol*, *J Mamm*, *J Env Mod and Assmt*, *J Afr Ecol (Intl. Rev. Panel)*, *PLoS ONE*, *J Am Stat Assoc*, *Oikos*, *Polar Biol*, *Anim Cons*, *Biol Cons*, *J Appl Geog*, *J Trop Ecol*, *Biol J Linnean Soc*

**Grants:** EPA STAR, Acad Sci Czech Rep, Graduate Women in Science (GWIS), National Geographic R&E Grant, EEIS

## WORK HISTORY

**Conservation & Research Associate**, Department of Conservation and Science, Lincoln Park Zoo 1998-2002

Conducted research on risk of herpes transmission in Asian and African elephants  
Participated in team development of stage based demographic models for AZA  
Researched the effects of hand-rearing on captive gorilla reproductive success  
Web site and web survey for TB (contract of the AAZV and the Audubon Society)  
Developed standard method to use studbook databases to quantify disease exposure

**Researcher**, Environmental and Conservation Program, Chicago Field Museum 1998

Field research and data collection, Yasuni National Park, Ecuador  
Amazonian woody plant classification, identification and documentation, Chicago Field Museum

## PUBLICATIONS (most as pdfs at [www.nceas.ucsb.edu/~sjryan/pubs](http://www.nceas.ucsb.edu/~sjryan/pubs))

### ARTICLES

- Stampone, M.D., Hartter, J., Chapman, C.A., **Ryan, S.J.** 2011. Localized Precipitation Trends in and around a Forest Park in Equatorial East Africa. *Research Journal of Environmental and Earth Sciences* 3(1):14-23
- Petorelli, N., **Ryan, S.J.**, Mueller, T., Bunnefeld, N., Jedrzejska, B., Lima, M., Kausrud, K. 2011. The Normalized Difference Vegetation Index (NDVI) in ecology: a decade of unforeseen successes. *Climate Research* 46:15-27
- Hartter, J. and **Ryan, S.J.** 2010. Top-down or bottom-up? Decentralization, natural resource management and usufruct rights in the forests and wetlands of Western Uganda. *Land Use Policy* 27(3): 815-826
- Ladau, J. and **Ryan, S.J.** 2010. MPowering ecologists: community assembly tools for community assembly rules. *Oikos* 119(7): p. 1064-1069
- Bar-David, S, Bar-David, I, Cross, P.C. **Ryan, S.J.**, Knechtel, C.U., Getz, W.M. 2009. Methods for assessing movement path recursion with application to African buffalo in South Africa. *Ecology* 90(9) 2467-2479
- Sánchez, M.S., Lloyd-Smith, J.O., Williams, B.G., Porco, T.C., **Ryan, S.J.**, Borgdorff, M.W., Mansoer, J., Dye, C. and Getz, W.M. 2009. Incongruent HIV and tuberculosis co-dynamics in Kenya: Interacting epidemics monitor each other. *Epidemics* 1(1):14-20
- Ryan, S.J.**, Starks, P.T., Milton, K. and Getz, W.M. 2008. Intersexual conflict and group size in mantled howler monkeys: a 23-year evaluation. *International Journal of Primatology* 29:405-420
- ‡Gusset, M\* & **Ryan, S.J.\***, Hofmeyr, M., Van Dyk, G., Davies-Mostert, H.T., Graf, J.A., Owen, C., Szykman, M., Macdonald, D.W., Monfort, S.L., Wildt, D.E., Maddock, A.H., Mills, M.G.L., Slotow, R., Somers, M.J. 2008. Efforts going to the dogs? Evaluating attempts to re-introduce endangered wild dogs in South Africa. *Journal of Applied Ecology* 45:100-108
- Ryan, S.J.**, Knechtel, C.U. and Getz, W.M. 2007. Ecological cues, gestation length and birth timing in African Buffalo (*Syncerus caffer*). *Behavioral Ecology* 18:635-644.
- Getz W.M., Fortmann-Roe S, Cross P.C., Lyons A.J. **Ryan, S.J.**, et al. 2007. LoCoH: Nonparametric kernel methods for constructing home ranges and utilization distributions. *PLoS ONE* 2:online
- Ryan, S.J.** 2006. The role of culture in conservation of small or endangered populations. *Conservation Biology* 20:1321-1324.
- Ryan, S.J.**, Knechtel, C.U. and Getz, W.M. 2006. Range and habitat selection of African buffalo in South Africa. *Journal of Wildlife Management* 70: 764-776
- Redfern, J.V., **Ryan, S.J.** and Getz, W.M. 2006. Defining herbivore assemblages in the Kruger National Park: a correlative coherence approach. *Oecologia* 146:632-640
- ‡ Featured in "Dog days for evidence" *Journal Watch Online*, Society for Conservation Biology, July 31, 2007 <http://journalwatch.conservationmagazine.org/2007/07/31/dog-days-for-evidence/>

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- Ryan, S.J.** and Getz, W.M. 2005. A spatial location allocation GIS framework for managing water sources in a savanna nature reserve. *South African Journal of Wildlife Research* 35(2):153-178
- Ryan, S.J.** and Jordaan, W. 2005. Activity patterns of African Buffalo *Syncerus caffer* in the Lower Sabie region, Kruger National Park, South Africa. *Koedoe* 48: 117-124
- Faust, L.J., Thompson, S.D., Earnhardt, J.M., Brown, E., **Ryan, S.J.**, Sherman, M. and Yurenka, M. 2003. Using stage-based system dynamics modeling for demographic management of captive populations. *Zoo Biology*, 22:45-64
- Ryan, S.J.**, Roth, A.M., Thompson, S.D. and Gold, K.C. 2002. Effects of hand rearing on the reproductive success of Western Lowland Gorillas in North America. *Zoo Biology* 21:389-401
- Ryan, S.J.** and Thompson, S.D. 2001. Disease risk and inter-institutional transfer of specimens in cooperative breeding programs: herpes and the elephant Species Survival Plans. *Zoo Biology* 20:89-101

## IN THE PIPELINE

- Ryan, S. J.**, Cross, P.C., Winnie, J, Jr, Hay, C., Bowers, J., Getz, W.M. *in review*. The utility of NDVI as a proxy for forage quality in a savanna landscape.
- Ryan, S.J.**, Brashares, J.S., Chapman, C.A., Milbers, K., Walsh, C., Kilroy, C. *in review*. Gastrointestinal parasites of olive baboons (*Papio anubis*) in human-use areas of Mole National Park, Ghana.
- Ryan, S.J.**, Dobson, A.P. and Jones, J.H. *in review*. The effects of contact structure, demography and movement on disease transmission within a structured primate metapopulation.
- Tildesley, M.J. and **Ryan, S.J.** *in review*. The utility of land cover maps to inform spatial epidemic models of disease transmission in the UK livestock industry.
- Hartter, J.\*, **Ryan, S.J.\***, Southworth, J., and Chapman, C.A. *in review*. Landscapes as continuous entities: forest disturbance and recovery in the Albertine Rift Landscape. *Landscape Ecology*
- Wolf, A., Anderegg, W., **Ryan, S.J.**, Christensen, J. *in review*. Robust detection of plant species range shifts under biased sampling regimes.

## CHAPTERS/PROCEEDINGS/BOOK REVIEWS

- Ryan, S.J.** *in press*. Invited Book Review: Governing Africa's Forests in a Globalized World. *Natural Resources Forum*.
- Hartter, J., **Ryan, S.J.**, Southworth, J., and Chapman, C.A. 2010. "Fortresses and Fragments: Impacts of Fragmentation in a Forest Park Landscape". In Proceedings of IUFRO Landscape Ecology International Conference. Braganca, Portugal.
- Chapman, C.A., Huffman, M.A. **Ryan, S.J.**, Sengupta, R. and Goldberg, T. 2009. "Ways forward in the study of primate parasite ecology". In Primate parasite ecology: the dynamics and study of host-parasite relationships. Huffman, M.A. and Chapman, C.A. , eds. Cambridge Studies in Biological and Evolutionary Anthropology. Cambridge University Press.
- Ryan, S.**, Roth, A.M., Thompson, S.D. and Gold, K.C. 2001. "Effects of hand rearing on the reproductive success of Western Lowland Gorillas in North America". in The Apes: Challenges for the 21st Century. Chicago Zoological Society.
- Dobson, A., Ralls, K., Foster, M., Soule, M., Simberloff, D., Doak, D., Estes, J., Mills, S., Mattson, D., Dirzo, R., Arita, H., **Ryan, S.**, Norse, E., Noss, R., Johns, D. 1999. "Corridors: Reconnecting Fragmented Landscapes", in Continental Conservation. Michael E. Soule & John Terborgh, eds. The Wildlands Project, Island Press.

## SELECTED TALKS

- Ryan, S.J.** 2010. *Guest Lecture*, "Agent and individual based models for ecology", ESM 232, Bren School, USCB.
- Ryan, S.J.** 2010. *Invited*. "From politics to parasites: assessing health in African parks landscapes". Department of Geography Colloquium, UC Santa Barbara.
- Ryan, S.J.** and J. Hartter. 2010. "Politics to parasites: health in African park landscapes." Student Conference on Conservation Science New York 2010. American Museum of Natural History. November 3-5, 2010. New York City, NY.
- Hartter, J., **Ryan, S.J.**, Southworth, J., Goldman, A.C., Binford, M.W., and C.A. Chapman. 2010. "Fortresses and Fragments: Impacts of Fragmentation in a Forest Park Landscape." IUFRO Landscape Ecology International Conference. September 21-27, 2010. Bragança, Portugal.

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- Ryan, S.J.** 2010. *Invited* “The consequences of non-intervention for infectious disease in African great apes.” DIMACS/MBI US – African BioMathematics Initiative: Workshop on Conservation Biology. August 11-13, 2010. South African Wildlife College, Limpopo, South Africa.
- Hartter, J. and **S.J. Ryan**. 2010. *Invited*: “A Social and Ecological Landscape Analysis for Africa’s Albertine Rift Region.” DIMACS/MBI US – African BioMathematics Initiative: Workshop on Conservation Biology. August 11-13, 2010. South African Wildlife College, Limpopo, South Africa.
- Ryan, S.J.** 2009. *Invited*. “A Zoonotic Buffet: a survey of the diseases we share with animals”. *Ecolunch*, NCEAS.
- Ryan, S.J.** 2009. *Invited*. “NDVI, forage quality and variation in reproductive patterns of African Buffalo (*Syncerus caffer*) in South Africa.” Symposium: *The use of satellite-based data in assessing ecological responses to environmental change*. International Mammal Congress, Mendoza Argentina
- Ryan, S.J.** 2009. *Invited*. “The effects of contact structure, demography and movement on disease transmission within a primate metapopulation” *Spring Ecology and Evolution Colloquium*, Dept of Biology at San Francisco State Univ.
- Ryan, S.J.** and Hartter, J. 2009. “The Social Impacts of landscape change around a fortress park in Uganda” American Association of Geographers (AAG) Annual Meeting, Las Vegas.
- Hartter, J., **Ryan, S.J.** and Southworth, J. 2008. “Examining change in forests and wetlands in and around Kibale National park, Uganda”. XXI Meeting of the Society for Conservation Biology (SCB), Chattanooga, TN.
- Ryan, S.J.** 2008. *Invited*. “A structured model for disease transmission in primate populations”. *Environmental Seminar Series*, Santa Clara University.
- Ladau, J. and **Ryan, S.J.** 2008. “Null model tests of species co-occurrence patterns”. *Species Interaction Workshop*, Stanford University.
- Ryan, S.J.**, Nunn, C.L. and Dobson, A.P. 2005. *Invited*. “Socially directed disease transmission in primates: a modeling approach”. Symposium on emerging zoonoses in mammals, 9th International Mammalogical Congress, Sapporo, Japan.
- Ryan, S.J.**, Knechtel, C.U. and Getz, W.M. 2005. “Seasonal and interannual variation in home range and habitat selection of African buffalo: a long-term study in the Klaserie Private Nature Reserve, South Africa”. 2<sup>nd</sup> Annual Scientific Networking Meeting, Kruger National Park, South Africa.
- Ryan, S.J.** 2004. “Spatial models for focal water source management in South Africa.” UC Berkeley Breslauer Graduate Symposium on Natural Resource Issues in Africa. (**Awarded Honorarium for Presentation**)
- Ryan, S.J.** 2003. “Introduction of a spatial location-allocation model (SLAM) to assess potential dry season impacts on focal water sources: a case study of the Klaserie Private Nature Reserve, South Africa.” GIS Day 2003: Public Interest GIS, UC Berkeley. (**Awarded Prize for Best Student Presentation**)

## OTHER SKILLS

**Languages:** Intermediate French, Spanish, Afrikaans

**Software:** *GIS/Remote Sensing:* ArcView, ArcGIS 8&9, ArcINFO, DIVA-GIS, ERDAS Imagine;

*statistical:* JMP SAS, Splus, Matlab, R;

*collections:* ARKS/SPARKS, ISIS, Paradox, MS Access, MySQL;

*coding:* rudimentary Java, Netlogo, HTML.