

## Curriculum Vitae

### Peter B. Pearman

**Academic Address** Peter B. Pearman  
Ikerbasque Researcher  
Department of Botany and Ecology  
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**Citizenship** Swiss  
**ISI h-factor** 32

#### Education

- 1991 Duke University. Doctor of Philosophy, Zoology. Dissertation: Ecology of Patchy Habitat: Effects of Pond Size on Experimental Tadpole Populations.
- 1988 Duke University. Master of Arts, Zoology. Minor: Mathematics (Statistics). Thesis: Dynamics of Populations Exploiting a Subdivided, Uniform Resource: A Simulation Model.
- 1981 University of Colorado, Boulder. Bachelor of Arts, Biology, with distinction.

#### Non-degree Education

- 2017 CELTA Intensive Certification Course, Flying Teachers, Zürich, Switzerland
- 2016 Data Science Intensive, Springboard
- 2012 Swiss Federal Research Institute WSL, 'Integral Projection Models'
- 2006 University of Zurich, Zoological Institute. 'Hierarchical modeling'
- 2002 Marine Biological Laboratory, Woods Hole, Massachusetts. 'Workshop in Molecular Evolution'.
- 1989 Organization for Tropical Studies, Costa Rica. 'Tropical Biology'.

#### Research in Progress

My research addresses the factors that influence the distributions of species and other components of biodiversity, in ecological, paleo, phylogeographic, phylogenetic, and conservation contexts. Much of my work has examined the relationship between species and changing climate. I focus equally on animals and plants, and although much of my current publication stream addresses work on plant systems, including shrubs and forest trees.

- 2005-present Study of ecological niche, its intraspecific structure, evolutionary history and potential; use of the niche concept and tools in paleoecology of European trees and shrubs, use of phylogenetic and phylogeographic data to construct genetic constraints in species distribution and community analysis; comparative

analysis of the evolution of ecological characters and functional traits over geographical regions; study of the potential response of dominant species to climate change; identification of geographic patterns in the evolution of biological diversity and adaptation, and human impacts upon them.

### Research Support to P. B. Pearman

- 2016 Co-investigator. Terrestrial Plant Diversity. Gobierno Vasco. Award to Javier Loidi, PI, University of the Basque Country. Own use: €117,327.
- 2014 Co-Investigator. ADAPT--Life in a cold climate: the adaptations of cereals to new environments and the establishment of agriculture in Europe. ERC Senior Award to Terry Brown, PI, University of Manchester. Own use: €93,214.72.
- 2014 Co-Principal Investigator, Landscape-scale functional diversity of plant, butterfly and bird communities along the Swiss elevation gradient. Swiss National Fund SFr. 281,105, with V. Amrhein (PI) and E. Allan.
- 2009 Lead proposal author and project coordinator, Spatially Explicit Evolution of Diversity, SPEED. Swiss National Fund SFr. 964,000, with N. Salamin, F. Forest, C. Lexer, and N. Zimmermann.
- 2008 Lead proposal author and project coordinator, Evolutionary Niche dynamics of Invasive Species, ENNIS. Swiss National Fund SFr. 240,000, with N. Salamin.
- 2006 Evaluation of biodiversity monitoring data as a basis for predicting impacts of climate change on Swiss biodiversity patterns SFr. 34,600.
- 2005 Ecological distribution of the state-listed salamander, *Ambystoma texanum*. Michigan Department of Natural Resources USD \$43,000.
- 2004 Genetic Rescue and The Interactions Among Population Genetics, Environmental Toxins and Disease in The Endangered Frog, *Rana latastei*. (with T. W. J. Garner), Declining Amphibian Populations Task Force (DAPTF) seed grant, USD \$2,000.
- 2003 Comprehensive wildlife conservation plan - monitoring concept. Michigan Department of Natural Resources – Wildlife Division. USD \$29,982.
- 1998-2001 Research expense and personnel support of approximately SFr. 7,000/year, Department of Ecology, University of Zürich, Switzerland.
- 1993-95 Center for Conservation Biology, Stanford University, Development of Methods of Multi-taxonomic Monitoring for Conservation, with funds from the MacArthur Foundation. USD \$50,000.
- 1992 Center for Conservation Biology, Stanford University, Ecology of an Amazonian Herpetofauna. USD \$10,000.

1991, 1992 World Wildlife Fund/USAID, 'Population Ecology and Conservation Biology: A Postgraduate Field Course', (co-PI). USD \$45,000.

### Journal Publications (Peer-reviewed)

- Hernández Plágaro, A., P. B. Pearman and V. R. Kaberdin. In-Press. Defining the transcription landscape of the Gram-negative marine bacterium *Vibrio harveyi*. *Genomics*. doi:10.1016/j.ygeno.2018.10.013
- Roth, T., E. Allan, **P. B. Pearman**, and V. Amrhein. 2018. Functional ecology and imperfect detection of species. **Methods in Ecology and Evolution** 9:917-928.
- Hudson, L. N. et al. 2017. The database of the PREDICTS (Projecting Responses of Ecological Diversity In Changing Terrestrial Systems) project. **Ecology and Evolution** 7:145-188.
- Cheddadi, R., M. B. Araujo, L. Maiorano, M. Edwards, A. Guisan, M. Carre, M. Chevalier, and **P. B. Pearman**. 2016. Temperature range shifts for three European tree species over the last 10,000 years. **Frontiers in Plant Science** 7: article 1581, doi 10.3389/fpls.2016.01581
- Wüest, R. O., G. Litsios, F. Forest, C. Lexer, N. E. Zimmermann, P. L. Linder, N. Salamin, and **P. B. Pearman**. 2016. Reseeder-resprouter ratio in Restionaceae assemblages varies with climate and soil type. **Functional Ecology** 30:1583-1592.
- Kostikova, A., D. Silvestro, P. B. Pearman and N. Salamin. 2016. Bridging inter- and intraspecific trait evolution with a hierarchical Bayesian approach. **Systematic Biology** 65:417-431.
- Call, A., Y.-X. Sun, D. T. Thomas, **P. B. Pearman**, R. Trigiano, I. Carbone, and Q.-Y.(J.) Xiang 2016. Population structure and post-glacial expansion of *Cornus florida* L. (Cornaceae): Integrative evidence from phylogeography, population demographic history, and species distribution modeling. **Journal of Systematics and Evolution**. doi: 10.1111/se.12171
- Silvestro, D., A. Kostikova, G. Litsios, **P. B. Pearman**, and N. Salamin. 2015. Measurements errors should always be incorporated in phylogenetic comparative analysis. **Methods in Ecology and Evolution** 6:340-346.
- Schiffers, K., F. Schurr, J. Travis, A. Duputie, V. Eckhart, S. Lavergne, G. Mcinerney, K. Moore, **P. B. Pearman**, W. Thuiller, R. Wüest, and R. Holt. 2014. Landscape structure and genetic architecture jointly impact rates of niche evolution. **Ecography** 37:1218-1229.
- Litsios, G., **P. B. Pearman**, D. Lanterbecq, and N. Salamin. 2014. The radiation of clownfishes has two geographical replicates. **Journal of Biogeography** 41:2140-2149.

- Hettyey, A., B. Vági, T. Kovács, J. Ujszegi, P. Katona, M. Szederkényi, **P. B. Pearman**, M. Griggio and H. Hoy. 2014. Reproductive interference between *Rana dalmatina* and *R. temporaria* affects reproductive success in natural populations. **Oecologia** 176:457-464.
- Lexer, C., R. Wüest, S. Mangili, M. Heuertz, K. N. Stölting, **P. B. Pearman**, F. Forest, N. Salamin, N. Zimmermann, and E. Bossolini. 2014. Genomics of the speciation continuum in an African plant biodiversity hotspot, I: Drivers of population divergence in *Restio capensis* (Restionaceae). **Molecular Ecology** 23:4373-4386.
- Kostikova, A., N. Salamin and **P. B. Pearman**. 2014. The role of climatic tolerances and seed traits in reduced extinction rates of temperate Polygonaceae. **Evolution** 68:1856-1870.
- Kostikova, A., G. Litsios, S. Burgy, L. Milani, **P. B. Pearman**, and N. Salamin. 2014. Scale-dependent adaptive evolution and morphological convergence to climate niche in the Californian eriogonoids (Polygonaceae). **Journal of Biogeography** 41:1326-1337. (Note: last two authors are co-senior authors)
- Hanspach, J., O. Schweiger, I. Kühn, M. Plattner, **P. B. Pearman**, N. E. Zimmerman, and J. Settele. 2014. Host plant availability potentially limits butterfly distribution under cold environmental conditions. **Ecography** 37:301-308.
- Pearman, P. B.**, S. Lavergne, C. Roquet, R. Wüest, N. E. Zimmermann, and W. Thuiller. 2014. Phylogenetic patterns of climatic, habitat, and trophic niches in a European avian assemblage. **Global Ecology and Biogeography** 23:414-424.
- Litsios, G., R. O. Wüest, A. Kostikova, F. Forest, C. Lexer, H. P. Linder, **P. B. Pearman**, N. E. Zimmermann and N. Salamin. 2014. Effects of a fire response trait on diversification in replicated radiations. **Evolution** 68:453-465.
- Willerslev, E., and 51 co-authors. 2014. Fifty thousand years of arctic vegetation and megafauna diet. **Nature** 506:47-51.
- Bryson, R. W. Jr., L. Prendini, W. E. Savary and **P. B. Pearman**. 2014. Caves as microrefugia: Pleistocene phylogeography of the troglomorphic North American scorpion *Pseudouroctonus reddelli*. **BMC Evolutionary Biology** 14:9.
- Thuiller, W., S. Pironon, A. Psomas, M. Barbet-Massin, F. Jiguet, S. Lavergne, **P. B. Pearman**, J. Renaud, L. Zupan, and N. E. Zimmermann. 2014. The functional tree of life of European avifauna in face of global change. **Nature Communications** 5:3118, doi: 10.1038/ncomms4118
- Kostikova, A., G. Litsios, N. Salamin, and **P. B. Pearman**. 2013. Linking life history traits, ecology and niche breadth evolution in the North American eriogonoids (Polygonaceae). **American Naturalist** 182:760-774.

- Schorr, G., **P. B. Pearman**, A. Guisan, and J. W. Kadereit. 2013. Combining palaeodistribution modelling and phylogeographical approaches for identifying glacial refugia: Implication for the geography of Quaternary speciation in alpine *Primula*. **Journal of Biogeography** 40:1947-1960.
- Normand, S., and 14 co-authors. 2013. A greener Greenland? Climatic potential and long-term constraints on the future expansion of trees and shrubs across a large Arctic region. **Philosophical Transactions of the Royal Society B**. 368:UNSP 20120479.
- Lexer, C., K. Stoelting, S. Mangili, F. Forest, E. Bossolini, **P. B. Pearman**, N. E. Zimmermann and N. Salamin. 2013. Next generation' biogeography: towards understanding the drivers of species diversification and persistence. **Journal of Biogeography** 40:1013-1022.
- Maiorano, L. and 16 co-authors. 2013. Building the niche through time: Using 13,000 years of data to predict the effects of climate change on three tree species in Europe. **Global Ecology and Biogeography** 22:302-317.
- D'Amen, M., N. E. Zimmermann, and **P. B. Pearman**. 2013. Conservation of phylogeographic lineages under climate change. **Global Ecology and Biogeography** 22:93-104.
- Litsios, G., C. Sims, **P. B. Pearman**, R. O. Wüest, N. E. Zimmermann, and N. Salamin. 2012. Mutualism with sea anemones triggered the adaptive radiation of clownfish. **BMC Evolutionary Biology** 12:212.
- Litsios, G., L. Pellissier, F. Forest, **P. B. Pearman**, N. E. Zimmermann, and N. Salamin. 2012. Trophic specialization influences the rate of environmental niche evolution in damselfishes (Pomacentridae). **Proceedings of the Royal Society. B. Biological Sciences** 279:3662-3669.
- Schorr, G., A. Guisan, N. Holstein, **P. B. Pearman** and J. W. Kadereit. 2012. Integrating species distribution models (SDMs) and phylogeography for two species of alpine *Primula*: widespread nunatak survival and discordance of phylogeographic and modeled refugia. **Ecology and Evolution** 2:1260-1277.
- Broennimann, O., M. Fitzpatrick, **P. B. Pearman**, B. Petitpierre, L. Pellissier and A. Guisan. 2012. Measuring ecological niche overlap from occurrence and spatial environmental data. **Global Ecology and Biogeography** 21: 481-497. (Note: *first 3 authors contributed equally to this paper*).
- Engler, R. and 19 additional co-authors. 2011. 21<sup>st</sup> century climate change threatens mountain flora unequally across Europe. **Global Change Biology** 17:2330-2341.
- D'Amen, M., P. Bombi, **P. B. Pearman**, D. R. Schmatz, N. E. Zimmermann, and M. A. Bologna. 2011. Will climate change reduce the efficacy of protected areas for amphibian conservation in Italy? **Biological Conservation** 144:989-997.

- Pearman, P. B.**, A. Guisan, and N. E. Zimmermann. 2011. Impacts of climate change on Swiss biodiversity: an indicator species approach. **Biological Conservation** 144:866-875.
- Zimmermann, N. E., T. C. Edwards Jr., C. H. Graham, **P. B. Pearman** and J.-C. Svenning. 2010. New trends in species distribution modelling. **Ecography** 33:985-989.
- Svenning, J.-C., M. C. Fitzpatrick, S. Normand, C. H. Graham, **P. B. Pearman**, L. R. Iversen, and F. Skov. 2010. Geography, topography, and history affect realized-to-potential tree species richness patterns in Europe. **Ecography** 33:1070-1080.
- Meier, E. S., F. Kienast, **P. B. Pearman**, J.-C. Svenning, W. Thuiller, M. B. Araujo, A. Guisan, and N. E. Zimmermann. 2010. Biotic and abiotic variables show little redundancy in explaining tree species distributions. **Ecography** 33:1038-1048.
- Pearman, P. B.**, M. D'Amen, C. Graham, W. Thuiller, and N. E. Zimmermann. 2010. Within-taxon niche structure: Niche conservatism, divergence and predicted effects of climate change. **Ecography** 33:990-1003. (Note: *first two authors contributed equally to this paper.*)
- Salamin, N., R. O. Wüest, S. Lavergne, W. Thuiller and **P. B. Pearman**. 2010. Assessing rapid evolution in a changing environment. **Trends in Ecology and Evolution** 25:692-698.
- Zimmermann, N. E., N. G. Yoccoz, T. C. Edwards Jr., E. S. Meier, W. Thuiller, A. Guisan, D. R. Schmatz and **P. B. Pearman**. 2009. Climatic extremes improve predictions of spatial patterns of tree species. **Proceedings of the National Academy of Sciences USA** 106:19723-19728.
- Randin, C. F., R. Engler, S. Normand, M. Zappa, N. E. Zimmermann, **P. B. Pearman**, P. Vittoz, W. Thuiller, and A. Guisan. 2009. Climate change and plant distribution: local models predict high-elevation persistence. **Global Change Biology** 15:1557-1569.
- Pearman, P. B.**, C. F. Randin, O. Broennimann, P. Vittoz, W. O. van der Knaap, R. Engler, G. Le Lay, N. Zimmerman and A. Guisan. 2008a. Prediction of plant species distribution across six millennia. **Ecology Letters** 11:357-369.
- Pearman, P. B.**, A. Guisan, O. Broennimann and C. F. Randin. 2008b. Niche dynamics in space and time. **Trends in Ecology and Evolution** 23:149-158.
- Pearman, P. B.** and D. Weber. 2007a. Common species determine richness patterns in biodiversity indicator taxa: errata. **Biological Conservation** 141:5.
- Pearman, P. B.** and D. Weber. 2007b. Common species determine richness patterns in biodiversity indicator taxa. **Biological Conservation** 138:109-119.

- Hettyey, A. and **P. B. Pearman**. 2006. Testing experimental results in the field: comment on Ficetola and DiBernardi (2005). **Ethology** 112:930-931.
- Pearman, P. B.**, E. Schools, M. Penskar, and H. Enander. 2006. Identifying potential indicators of conservation value using Natural Heritage occurrence data. **Ecological Applications** 16:186-201.
- Pearman, P. B.** and T. W. J. Garner. 2005. Susceptibility of Italian Agile Frog populations to an emerging strain of *Ranavirus* parallels population genetic diversity. **Ecology Letters** 8:401-408.
- Pearman, P. B.**, T. W. J. Garner, M. Straub, and U. F. Greber. 2004. Response of the Italian agile frog (*Rana latastei*) to a *Ranavirus*, frog virus 3: a model for viral emergence in naive populations. **Journal of Wildlife Diseases** 40:600-609.
- Garner, T. W.J., **P. B. Pearman**, P. T. Gregory, G. Tomio, S. G. Wischniowski and D. J. Hosken. 2004. Microsatellite markers developed from *Thamnophis elegans* and *Thamnophis sirtalis* and their utility in three species of garter snakes. **Molecular Ecology Notes** 4:369-371.
- Garner, T. W. J., **P. B. Pearman** and S. Angelone. 2004. Genetic diversity across a vertebrate species' range: A test of the central-peripheral hypothesis. **Molecular Ecology** 13:1047-1053.
- Garner, T. W. J., S. Angelone, and **P. B. Pearman**. 2003. Genetic depletion in Swiss populations of *Rana latastei*, conservation implications. **Biological Conservation** 114:371-376.
- Hettyey, A., and **P. B. Pearman**. 2003. Social environment and reproductive interference affect reproductive success in the frog *Rana latastei*. **Behavioral Ecology** 14:294-300.
- Sommer, S. and **P. B. Pearman**. 2003. Quantitative genetic analysis of larval life history traits in two alpine populations of *Rana temporaria*. **Genetica** 118:1-10.
- Pearman, P. B.** 2002. Developing regional conservation priorities using red lists: A hypothetical example from the Swiss lowlands. **Biodiversity and Conservation** 11:469-485.
- Pearman, P. B.** 2002. The scale of community structure: Habitat variation and avian guilds in tropical forest understory. **Ecological Monographs** 72:19-39.
- Pearman, P. B.** 2002. Interactions between *Ambystoma* salamanders: Evidence for competitive inequality. **Herpetologica** 58:156-165.
- Pearman, P. B.** 2001. The conservation value of independently evolving units: Sacred cow or testable hypothesis? **Conservation Biology** 15:780-783.

- Wilson C. R. and **P. B. Pearman**. 2000. Sampling characteristics of aquatic funnel traps for monitoring populations of adult rough-skinned newts (*Taricha granulosa*) in lentic habitats. **Northwestern Naturalist** 81:31-34.
- Pearman, P. B.** 1997. Correlates of amphibian diversity in an altered landscape of Amazonian Ecuador. **Conservation Biology** 11:1211-1225.
- Marsh, D. M. and **P. B. Pearman**. 1997. Effects of habitat fragmentation on the abundance of two species of Leptodactylid frog in an Andean montane forest. **Conservation Biology** 11:1323-1328.
- Pearman, P. B.** 1995a. An agenda for conservation research and its application, with a case-study from Amazonian Ecuador. **Environmental Conservation** 22:39-43.
- Pearman, P. B.** 1995b. Effects of pond size and consequent predator density on two species of tadpoles. **Oecologia** 102:1-8.
- Pearman, P. B.**, A. M. Velasco and A. López. 1995. Herpetofauna monitoring: a comparison of methods for detecting inter-site variation in species composition. **Herpetologica** 51:325-337.
- Pearman, P. B.** 1993. Effects of habitat size on tadpole populations. **Ecology** 74(7):1982-1991.
- Pearman, P. B.** and H. M. Wilbur. 1990. Changes in population dynamics resulting from oviposition in a subdivided habitat. **American Naturalist** 135:708-723.

*Manuscript currently in-preparation (first or subsequent draft available)*

- Wüest, R. O., F. Forest, C. Lexer, P. Linder, G. Litsios, N. Salamin, N. E. Zimmermann, and **P. B. Pearman**. **In-prep**. Grime revisited: Assemblages of South African Restionaceae along an environmental gradient.
- Pearman, P. B.**, M. Edwards, R. Chedaddi, M. M. Tollefsrud, M. D'Amen, S. Normand, A. Psomas and N. E. Zimmermann. **In-prep**. Ensemble niche models support widely-distributed maritime glacial refugia in NW Europe. **Journal of Biogeography**
- Roth, T., E. Allan, D. B. B. Flynn, F. Altermatt, M. Moretti, M. Fischer, B. Schmid, M. Plattner, **P. B. Pearman** and V. Amrhein. **In-prep**. Plant community assembly in human dominated landscapes.

### Book Chapters

- Pearman, P. B.** and N. E. Zimmermann. 2012. Biodiversity indicators—species. *In* D. Fogel, S. Fredericks, L. Harrington and I. Spellerberg (Eds.), *The Encyclopedia of Sustainability*, Vol. 6. Measurements, Indicators and Research Methods for Sustainability, pp. 26-31. Berkshire Publishing, Great Barrington, MA, USA.

Randin C. F., **P.B. Pearman**, O. Broennimann, Y. Hautier and N. Lecomte. 2010. La compétition interspécifique. In: *Biologie Evolutive*, Chapter: Evolution des interactions entre espèces. F. Thomas, T. Lefevre and M. Raymond (eds). De Boeck.

Randin, C. F., R. Engler, **P. B. Pearman**, P. Vittoz and A. Guisan. 2009. Using georeferenced databases to assess the effect of climate change on alpine plant species and diversity. Pages 149-163 in C. Körner and E. Spehn (eds.) *Data Mining for Global Trends in Mountain Biodiversity*. Taylor & Francis Group, Boca Raton, Florida.

Guralnick, R. and **P. B. Pearman**. 2009. Using species occurrence databases to determine niche dynamics of montane and lowland species since the last glacial maximum. Pages 125-135 in C. Körner and E. Spehn (eds.) *Data Mining for Global Trends in Mountain Biodiversity*. Taylor & Francis Group, Boca Raton, Florida.

### Notable Reports

**Pearman, P. B.**, N.E. Zimmermann, A. Guisan, A. Psomas, D.R. Schmatz. 2014. Biodiversity: Assemblage turnover and richness trends for widely distributed birds and vascular plants. Chapter 7 in C. C. Raible and K. M. Strassmann (eds.) *CH2014 Impacts: Impacts of Climate Change on Switzerland*.

Zimmermann N. E., S. Normand, **P. B. Pearman** and A. Psomas. 2013. Future Ranges in European Tree Species. Pages 15-21 in: Fitzgerald J & Lindner M (eds), *Adapting to Climate Change in European Forests-Results of the MOTIVE Project*. Pensoft Publishers, Sofia, 108 pp.

**Pearman, P.**, L. Maiorano, A. Guisan, N. E. Zimmermann, M. Edwards, R. Cheddadi, H Binney, M. Dury, and L. François. 2012. Hindcasting. Pages 22-23 in M. Edwards, A. Guisan, D. Pock and J. Wesely (eds.) *EcoChange: Challenges in Assessing and Forecasting Biodiversity and Ecosystem Changes in Europe*. SERI Nachhaltigkeitsforschungs und -kommunikations GmbH, Vienna, Austria, 42 pp.

### Invited Talks

- 2013 “Niche and adaptation to changing environment”  
University of the Basque Country, Bilbao, Spain
- “The niche as a window to understanding changing ecosystems”  
University of Edinburgh, Edinburgh, Scotland
- 2012 “The niche: window to the dynamics of organism-environment relationships.”  
University of Manchester, Manchester, United Kingdom
- 2010 “Intra- and inter-specific perspectives on niche evolution.”  
Helmholtz Centre for Environmental Research – UFZ, Halle, Germany
- 2007 “What can predictive modeling tell us about invasive species and plant responses to climate change?”

## Zoological Society of London, United Kingdom

- 2005 “The use of variation at marker loci to form testable hypotheses on potentially adaptive genetic variation in species of conservation concern.”  
Department of Animal Science, University of Turin, Italy
- 2004 “Population genetics and immunocompetence: The case of *Rana latastei*”.  
(Garner, T. W. J. and P. B. Pearman)  
University of Ljubljana, Ljubljana, Slovenia
- 2003 “Genetic diversity and reduced probability of persistence in *Rana latastei*:  
Patterns at marker loci predict immunocompetence in an endangered anuran.”  
Italian Zoological Society Meetings, University of Insubria, Varese,  
Italy
- 2002 “From Gene to landscape: A multidisciplinary approach to wildlife disease.”  
Department of Animal Science, University of Turin, Italy
- “Genetic depletion, reproductive failure, and habitat-specific competitive effects in the endangered anuran, *Rana latastei*.”  
Special lecture. Fourth Italian Congress of Herpetology, Ercolano
- “Behavioral and molecular approaches to conservation biology: The case of a red listed amphibian, *Rana latastei*.”  
University of Galway, Ireland  
Section of Ecology and Systematics, Cornell University, Ithaca, NY  
Department of Biology, Bowling Green University, Ohio
- 2001 “From Gene to landscape: A multidisciplinary approach to wildlife disease.”  
Department of Zoology University of North Dakota, Grand Forks  
Department of Biology, University of New Orleans, Louisiana
- “The scale of community structure: avian guilds in a tropical forest understory.”  
Konrad Lorenz Institute, Vienna, Austria  
Swiss National Bird Observatory, Sempach, Switzerland
- “Experimental and molecular approaches to conservation biology.”  
Institute of Wildlife Ecology, Vienna, Austria
- “Diverse approaches to four central questions in conservation biology.”  
Zoological Institute, University of Basel, Basel, Switzerland
- 1997 “The amphibian fauna of a tropical forest in Amazonian Ecuador.”  
Nisqually National Wildlife Refuge, Nisqually, Washington
- “Local adaptation: Integrating ecological and evolutionary processes in heterogeneous landscapes.”  
Zoological Institute, University of Zurich, Switzerland

- 1996 “Habitat/species diversity relationships: Amphibians in a forest disturbance mosaic.”  
Museum of Vertebrate Zoology, Univ. of California, Berkeley  
Montana State University, Bozeman, Montana
- “How to be an Angiosperm.”  
Evergreen State College, Olympia, Washington
- “La relación hábitat/biodiversidad de especies: Anfíbios en un mosaico forestal.”  
Universidad San Carlos. Ciudad de Guatemala, Guatemala, in Spanish

### Meeting Presentations

- 2018 Pearman, P. B., O. Lao Grueso, T. S. Alioto, J.-R. P. Trotta, and J. T. Columbus. The spatial structure and history of genomic variation as revealed by GBS in a generalist perennial shrub, *Eriogonum umbellatum* (Polygonaceae). Evolution 2018 Montpellier: Second Joint Congress on Evolutionary Biology.
- 2014 Pearman, P. B. Klimauswirkungen auf die Biodiversität am Beispiel verbreiteter Vogel- und Pflanzenarten. CH2014 Impacts-Oeffentliche abschlussveranstaltung der CH2014-Impacts-Initiative. Universität Bern, Bern, Schweiz.
- D’Amen, M., N. E. Zimmermann, and P. B. Pearman. Lineages under climate change (poster). PACE14, The Yearly Symposium on Plant and Animal Conservation Ecology. Society for Conservation Biology, Europe Section – Swiss Chapter. Geneva, Switzerland.
- 2013 Pearman, P. B., S. Lavergne, C. Roquet, R. Wüest, N. Zimmermann, and W. Thuiller. Phylogenetic patterns of climatic, habitat, and trophic niches in a European avian assemblage. Forty-third Annual Meeting of the Ecological Society of Germany, Austria and Switzerland (Gfö), Potsdam.
- 2012 Wüest, R., 8 additional co-authors, and P. B. Pearman. Regional species pools in a biodiversity hotspot – The case of the Restionaceae in the Cape Floristic Region. Sixth Annual Meeting of the Specialist Group on Macroecology of the Ecological Society of Germany, Austria and Switzerland (Gfö), Frankfurt.
- 2011 Pearman, P. B., S. Lavergne, C. Roquet Ruiz, W. Thuillier, R. Wüest and N. E. Zimmermann. Divergent patterns of niche evolution in western Palearctic birds. Symposium on Niche Evolution; International Congress of Systematic and Evolutionary Biology VII, Berlin.
- Pearman, P. B., S. Lavergne, C. Roquet Ruiz, W. Thuillier, R. Wüest and N. E. Zimmermann. Divergent evolution of the habitat, trophic and climatic niches of western Palearctic birds. Evolution 2011: Annual Meeting of the Society for the Study of Evolution, Norman, Oklahoma.
- Kostiova, A., P. B. Pearman, and N. Salamin. Adaptive evolution and convergence to climate in Eriogonoideae clade, Polygonaceae family.

Evolution 2011: Annual Meeting of the Society for the Study of Evolution, Norman, Oklahoma.

- 2009 Broennimann, O., M. Fitzpatrick, P.B. Pearman, L. Pellissier, B. Petit-Pierre, N. Yoccoz, W. Thuiller, M.-J. Fortin, C. Randin, N. Zimmermann, C. H. Graham, and A. Guisan. A New approach for quantifying change in ecological niches across space and time. Symposium : ‘Niche Evolution-a unifying concept for systematics, ecology, paleontology and conservation biology’. Zurich, Switzerland.
- Pearman, P. B., L. Maiorano, R. Cheddadi, L. Hajar, M. Edwards, A. Guisan, J. Singerayer, and N. E. Zimmermann. Niche dynamics of some European trees during the Holocene. Symposium : ‘Niche Evolution-a unifying concept for systematics, ecology, paleontology and conservation biology’. Zurich, Switzerland.
- 2007 Pearman, P. B. Power comparison of alternative monitoring designs : one- and five-year sampling rotation intervals. International conference ‘Monitoring the effectiveness of nature conservation’. Zurich, Switzerland.
- Pearman, P. B. et al. Modelling climate threat to mountain plants in Europe : the EUROMOUNT project. GBIF-GMBI workshop. Copenhagen, Denmark.
- Pearman, P.B., R. Engler, C. Randin, A. Guisan, N. E. Zimmermann and W. Thuiller. Back projection of plant distributions over six millennia. International Biogeography Society, Tenerife, Spain.
- 2006 Pearman, P. B., et al. Backprojection of mid-Holocene plant distributions in Europe. First European Congress of Conservation Biology, Egger, Hungary.
- 2005 Pearman, P. B. and T. W. J. Garner. Resistance of an emerging lethal virus parallels diversity at microsatellite loci in the red-listed Italian Agile Frog, *Rana latastei*. University of Fribourg, Switzerland.
- 2004 Pearman, P. B., T. W. J. Garner, M. Straub, and U. F. Greber. Susceptibility of a red-listed anuran to an emerging virus predicted by population genetic diversity. Annual Meeting of the Society for Conservation Biology, Columbia University, New York City.
- Penskar, M. R., E. H. Schools, P. B. Pearman, H. D. Enander, M. A. Kost, and D. L. Cuthrell. A resampling method for identifying biological indicators of landscape condition using natural heritage data on rare species. Annual Meeting of the Society for Conservation Biology, Columbia University, New York City.
- Garner, T. W. G, P. B. Pearman, A.A. Cunningham, and M. C. Fisher. Population genetics and disease threats across the entire range of *Rana latastei*. 5th Congresso della Societas Herpetologica Italica, Calci, Pisa, Italy.

- 2003 Pearman, P. B., T. W. J. Garner, S. Angelone, and D. Seglia. Population genetic diversity predicts susceptibility of an endangered anuran to a viral pathogen. First Conservation Genetics Meeting of the American Genetics Association, Front Royal, Virginia, USA.
- 2002 Hettyey A. and P.B. Pearman. Frequency-dependence of sexual isolation in a red-listed frog (*Rana latastei*) - a new factor in the protection of endangered species. Hungarian Conservation Biology Conference, Sopron, Hungary.
- Pearman, P. B., and A. Hettyey. The influence of social environment on the reproductive success of the frog *Rana latastei*. Twentieth Congress of the Italian Ethological Society, Turin, Italy.
- Pearman, P. B., T. W. J. Garner, and S. Angelone. Genetic depletion in *Rana latastei* populations: mechanisms and provisional recommendations. Sixteenth Annual Meeting of the Society for Conservation Biology, Canterbury, England.
- Garner, T. W. J., S. Angelone, P. B. Pearman. Geographic variation in genetic depletion across a species range: The case of the Italian Agile frog, *Rana latastei*. Population Genetics Group Meeting, British Genetics Society, 2002, University of Leeds, UK.
- 2001 Garner, T. W. J., and P. B. Pearman. Reduced genetic variability in Swiss populations of the Red-listed frog, *Rana latastei*. Meetings of the Schweizer Zoologisches Gesellschaft, Neuchatel, Switzerland.
- 1997 Sandler, B. C., P. B. Pearman, M. Guerrero G., and K. Levy. Using a GIS to assess spatial scale of taxonomic richness in Amazonian Ecuador. ESRI User Conference. San Diego, USA
- 1996 Pearman, P. B. Response of amphibians to habitat variation in Amazonian Ecuador. Ecological Society of America Annual Meetings.
- 1995 Pearman, P. B., M. Guerrero G., T. D. Sisk, and D. D. Murphy. Correlation patterns among groups proposed as biological indicators: What do they indicate? Ecological Society of America Annual Meetings.
- Guerrero G., M., P. B. Pearman, C. Canaday, B. Bochan, T. D. Sisk, D. D. Murphy and P. R. Ehrlich. Methods for evaluating avian biodiversity produce uncorrelated results: Implications for avian bioindicators. Ecological Society of America Annual Meetings.
- Guerrero G., M., P. B. Pearman, T. D. Sisk, C. L. Boggs, D. D. Murphy, and P. R. Ehrlich. Training indigenous persons for biodiversity research in the Upper Amazon Basin of Ecuador. Ecological Society of America Annual Meetings.

- 1991 Pearman, P. B. Patch-size mediated predation pressure changes the relative larval performance of two anurans. Ecological Society of America Annual Meetings.
- 1990 Pearman, P. B. Spatial and Population Dynamics of Several South American Frogs. Ecological Society of America Annual Meetings.
- Pearman, P. B. Population estimates from mark-recapture data of several Amazonian hylid frogs. Annual Meeting of the American Society for Ichthyology and Herpetology. Charleston, South Carolina.

### Positions

- 2014-present Ikerbasque Research Scientist, Departamento de Biología Vegetal y Ecología, Universidad del País Vasco/Euskal Herriko Unibertsitatea, Bilbao, The Basque Country, Spain; *in joint appointment with* Ikerbasque, The Basque Foundation for Science, Bilbao, The Basque Country, Spain. I have recently conducted collaborative research on the effects of climate change. I have also developed research on adaptation to environment in a perennial shrub, through the use of next-generation DNA sequencing and population genomic analysis.
- 2008- 2014 Research Scientist, Land Use Dynamics, Federal Research Institute WSL. I was responsible for research on species distribution modeling, niche evolution, and community phylogenetic analysis. The research had both applied and pure components. I was project lead on two Swiss National Fund projects, 'SPEED' and 'ENNIS'. These projects used molecular and ecological data to understand aspects of ecological diversification in several plant families, including the Polygonaceae, Restionaceae, and Proteaceae.
- 2006-2007 Research Scientist. Department of Ecology and Evolution, University of Lausanne. I was responsible for research on stability of the species ecological niche and the transferability over time of predictive species distribution models. I conducted additional research on species distribution modeling and on biodiversity distribution and indicators.
- 2003-2005 Program leader-Zoology. Michigan Natural Features Inventory, School of Agriculture and Natural Resources, Michigan State University, Lansing, Michigan. I was responsible for research on rare and declining species, and for directing the zoological program, which included developing program direction and vision. I supervised seven full-time staff zoologists, 15 seasonal employees, and interactions with the Michigan Department of Natural Resources staff. I managed an annual budget that increased from \$270,000 to over \$450,000 USD in two years.
- 1998-2003 Research Associate (Oberassistent), Zoological Institute, University of Zürich, Zürich, Switzerland. I assembled an international team to conduct interdisciplinary research on an IUCN red-listed frog. We discovered genetic depletion in part of species range, and that reproductive interference from a congeneric species led to reproductive failure. I initiated research on susceptibility of frog larvae to viral infection. I also led field exercises, gave lectures, held discussions and mentored students in independent projects

during a 15-week, team-taught course in ecology and conservation biology for graduate students, which was repeated yearly. This position was equivalent to Temporary Assistant Professor in the USA.

- 1996-1998 Assistant Professor, The Evergreen State College, Olympia, WA, USA I was responsible for teaching ecology and conservation biology in team-taught, interdisciplinary programs for undergraduate students. During 1996-97, I taught in an interdisciplinary program on the American West, treating the region's society, ecology and literature. This program was primarily for students in 1st and 2nd years (18-19 year olds) in a university program. During 1997-98, I taught an ecology and conservation component in an interdisciplinary program entitled 'Introduction to Environmental Studies'. This program was for students in the 2nd and 3rd years of a North American university program. During two academic year I supervised nearly 40 student independent projects.
- 1994-1995 Postdoctoral Research Scientist, Center for Conservation Biology, Stanford University I coordinated research (50%) and in-country training (50%) activities in Ecuador. I then had one year in-residence at Stanford to work on the academic component and to publish data resulting from a project.
- 1993-1995 Scientific Adviser for Conservation, the Jatun Sacha Foundation, an Ecuadorian conservation, research, and educational organization (1993, 100%; 1994-5, ad hoc). I organized and implemented a multi-taxonomic biodiversity monitoring program in the Upper Amazon Basin, trained Ecuadorian scientists, worked in association with Amazonian indigenous communities (Quichua) and with indigenous para-biologists. I directed team of 15 field workers. I was responsible for the budget, reports, hiring, logistics, worker supervision and data quality control.
- 1993 Laboratory post-doc and statistical adviser (6 month position) Laboratory of A. Power, Section of Ecology and Systematics, Cornell University. I was responsible for ELISA analysis of an aphid-transmitted virus of wheat. I conducted experiments on effects of genotypic identity on host/parasite interactions and vector competence. This involved analysis of factorial designed experiments using mixed-effect linear models.
- 1991-1992 Co-coordinator and instructor, Population Ecology and Conservation Biology: An intensive postgraduate field course for Latin American scientists, funded by the Biodiversity Support Program (WWF) and the United States Agency for International Development (4-month position/year). Twice I developed curriculum and organized logistics for 18 students, five instructors and 10 resource persons. The course published two course books containing student research results.
- 1991-1992 Research associate, Department of Zoology, Duke University (6 month position). I conducted fund raising for research in Ecuador, with M. Stern, then of U. C. Davis.

- 1991 Conservation consultant. I worked to mitigate effects of pipeline development on habitat of the endangered Desert Tortoise in the Mojave Desert of southern California (2-month position). This involved on-the-ground conservation of tortoise habitat and removal of tortoises from harm's way.
- 1989-1991 Research assistant, Department of Zoology, Duke University. I conducted theoretical research in population ecology, with Dr. Henry Wilbur (30% per year, during dissertation research).

### Students Mentored

- M. Iraeta Azpiazu, 2016. Trabajo fin de Grado: Bayesian methods for phylogenetic inference. Departamento de Matemática Aplicada, Universidad del País Vasco.
- A. Zabala Urrestarazu, 2016. Trabajo fin de Grado: Reconstrucción de la relación filogenética del género *Viburnum* mediante la inferencia Bayesiana. Departamento de Biología Vegetal y Ecología, Universidad del País Vasco.
- A. Kostikova, 2014. Ph.D. dissertation: Evolution of intraspecific variation: a comparative phylogenetic approach., co-advised by N. Salamin, University of Lausanne.
- R. Wüest, 2013. Ph.D. dissertation: "Plot-level to large-scale effects of ecological diversification and environment on biodiversity". University of Zurich.
- Angelone, S. 2002. Masters thesis: "Population genetic analysis of *Rana latastei*: a comparison of genetic structure in central and peripheral populations". University of Zürich.
- Sommer, S. 2000. Masters thesis: "Control of larval development in the Common frog, *Rana temporaria*". A quantitative genetic analysis. University of Zürich.
- Marsh, D. 1995. Effects of habitat fragmentation on Andean frogs. Non-degree research student.

### Ph.D. Examination Committees

- Iturbide, M. 2017. Background sampling in species distribution models and transferability in climate change conditions. Universidad del País Vasco.
- Alberdi, A. 2014. Ecology, Biogeography, and Evolutionary history of the alpine long-eared bat, *Plecotus macrobullaris*. Universidad del País Vasco.
- Bled, F. 2010. Tests d'hypothèses en dynamique des populations fragmentées: développement et applications de modèles d'occupation des sites. Université de Toulouse.
- D'Amen, M. 2010. Impacts of climate change on amphibians: Past declines, predicted trends, and future perspectives. University of Rome III.

Carboni, M. 2010. Understanding patterns of invasions on Mediterranean coastal dunes: From environmental filtering to biotic interactions across scales. University of Rome III.

### **Additional Teaching Experience**

- 2005 Zoological Institute, University of Zurich, Switzerland. “Scientific writing”. 2-credit hours
- Zoological Institute, University of Bern, Switzerland. “Experimental design and statistical analysis in Ecology”. 4-credit hours
- 2004 Department of Fisheries and Wildlife, Michigan State University. Graduate seminar: “Current topics in conservation biology”. 1-credit hour
- 1995 Co-Instructor. Field methods in biodiversity research for indigenous (Quichua) para-biologists, taught in Spanish. Jatun Sacha Biological Station, Ecuador
- 1993-1995 Mentoring of Latin American scientists, Jatun Sacha Foundation, Quito, Ecuador. Advising students (in Spanish) on research on biodiversity patterns in a mixed forest-agricultural landscape
- 1988 Part-time teacher in the sciences and mathematics in poor and disadvantaged schools in the Durham City and County School Districts, North Carolina, USA
- 1984-1987 Teaching assistant in numerous college biology courses, including ecology, population biology, physiology, and introductory biology, Department of Zoology, Duke University
- 1982-3 Instructor. Cornell Outdoor Program, Cornell University, Ithaca, New York. Courses in wilderness activities and natural history for 18-22 year old college students
- 1981 Practicum in Elementary School Science Education, Boulder, Colorado

### **Collegiate Honors**

- 1981 Phi Beta Kappa
- 1976-1981 Dean's List of students with ‘A’ average, University of Colorado, 8 semesters
- 1976-1981 Chancellor's List, perfect marks, University of Colorado, 7 semesters

### **Professional Societies**

European Society for Evolution  
International Biogeography Society  
Systematics Association

### **Committees/Professional Service since 1990**

- 2010-present Associate editor, Journal of Biogeography
- 2011 Co-organizer, Symposium on Niche Evolution; International Congress of Systematic and Evolutionary Biology VII, Berlin
- 2010 Special editor, Ecography

- 2009 Special editor, Journal of Biogeography  
2009 Co-organizer, Symposium on Niche Evolution, Zurich  
2005 Policy committee member, European Section, Society for Conservation Biology  
2004 Organizer of the invited symposium “Amphibian and reptile conservation in human-dominated landscapes: Patterns, processes, and solutions” Annual Meeting of the Society for Conservation Biology, New York City  
2002-2003 Secretary, Board of Governors, European Section, Society for Conservation Biology  
1990- 2017 Editorial referee for technical articles in professional scientific journals  
1993 Research Review Committee, Jatun Sacha Biological Station, Ecuador  
1993 Biodiversity sampling design workshop member, SUBIR Project, Ecuador  
1991 Chairperson, Awards Committee, Sigma Xi, Duke Chapter

### **Social Media**

<http://www.ehu.eus/en/web/bgppermp>

### **Languages**

English, mother language; Spanish, written and spoken (good), Standard German (functional), and Swiss German dialect (good)

### **Hobbies**

Photography, hiking, backpacking

Updated 6 July 2019