



Professor Martin Genner
B.Sc.(Liv.), M.Sc.(Aberd.), Ph.D.(Soton.)

Professor in Evolutionary Ecology

Area of research

Fish Ecology and Evolution

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Summary

I am interested in the ecological and evolutionary processes that have shaped spatial and temporal patterns of biological diversity, primarily in aquatic environments. I have mainly worked on two systems: European marine fishes, and African freshwater fishes .

Topics currently being pursued include:

- Speciation and adaptive radiation of cichlid fishes
- Historical phylogeography of African freshwater fishes
- Influence of climate change and fishing on marine fish assemblages
- Conservation genetics of European marine fishes

Biography

I tackle fundamental questions about the origins of diversity (speciation and adaptive radiation), how it is maintained (species coexistence) and how it is influenced by changing environments (climate and invasive species). I work mainly on fishes of African water bodies and European seas. I use a range of methods from field surveys of biodiversity, to analyses of long-term fisheries data, experimental field tests, quantitative observations of behaviour, analyses of stable isotope ratios, and application of molecular markers for phylogenetics and population genetics. Recent work includes the development of methods for measuring and predicting effects of climate change on European fish assemblages (Montera-Serra *et al.* 2014 *Global Change Biology*, Rutterford *et al.* 2015 *Nature Climate Change*), quantifying spatial structure of European marine fish diversity using molecular markers (Griffiths *et al.* 2010 *Proc Roy Soc*; Jolly *et al.* 2012 *Mar Biol*), and contributions to our knowledge of a major vertebrate adaptive radiation, African cichlid fishes (Genner & Turner 2012 *Mol Biol Evol*; Winkelmann *et al.* 2014 *Nature Comms*). My research on African fish ecology and evolution develops with a Leverhulme Trust Research Fellowship (2014-2015) and Royal Society-Leverhulme Trust Africa Award (2014-2017). A developing research focus is the use of genome-wide data for inferring phylogeny and identification of genes under selection during cichlid fish evolution.

Teaching

Level 1: Vertebrate evolution

Level 2: Marine Ecology and Physiology

Level 2: Tropical Ecology Fieldcourse

Level 3: Evolutionary Ecology

Keywords

- Adaptive radiation
- speciation
- environmental change
- fish biology

Memberships

Organisations

[School of Biological Sciences](#)

Research groups

- [Evolutionary Biology](#)
- [Ecology and Environmental Change](#)

Labs

- [Fish Ecology and Evolution](#)

Links

-  [Lab webpage](#)

Recent publications

- Freer, J, Tarling, GA, Collins, MA, Partridge, J & Genner, MJ, 2019, '[Predicting future distributions of lanternfish, a significant ecological resource within the Southern Ocean](#)'. *Diversity and Distributions*, vol 25., pp. 1259-1272
- Ford, AGP, Bullen, TR, Pang, L, Genner, MJ, Bills, R, Flouri, T, Ngatunga, BP, Rüber, L, Schliwen, UK, Seehausen, O, Shechonge, A, Stiasny, MLJ, Turner, GF & Day, JJ, 2019, '[Molecular phylogeny of Oreochromis \(Cichlidae, Oreochromini\) reveals mito-nuclear discordance and multiple colonisation of adverse aquatic environments](#)'. *Molecular Phylogenetics and Evolution*, vol 136., pp. 215-226
- Shechonge, A, Ngatunga, BP, Bradbeer, SJ, Day, JJ, Freer, JJ, Ford, AG, Kihedu, J, Richmond, T, Mzighani, S, Smith, AM, Sweke, EA, Tamatamah, R, Tyers, AM, Turner, GF & Genner, MJ, 2019, '[Widespread colonisation of Tanzanian catchments by introduced Oreochromis tilapia fishes: the legacy from decades of deliberate introduction](#)'. *Hydrobiologia*, vol 832., pp. 235-253
- Erpenbeck, D, Steiner, M, Schuster, A, Genner, MJ, Pronzato, R, Ruthensteiner, B, van den Spiegel, D, van Soest, R & Worheide, G, 2019, '[Minimalist barcodes for sponges: a case study classifying African freshwater Spongillida](#)'. *Genome*, vol 62., pp. 1-10
- Dornan, T, Fielding, S, Saunders, RA & Genner, MJ, 2019, '[Swimbladder morphology masks Southern Ocean mesopelagic fish biomass](#)'. *Proceedings of the Royal Society B: Biological Sciences*, vol 286.
- Collins, R, Bakker, J, Wangenstein, O, Soto, A, Corrigan, L, Sims, D, Genner, MJ & Mariani, S, 2019, '[Non-specific amplification compromises environmental DNA metabarcoding with COI](#)'. *Methods in Ecology and Evolution*.
- Shechonge, A, Ngatunga, BP, Tamatamah, R, Bradbeer, SJ, Sweke, E, Smith, A, Turner, GF & Genner, MJ, 2019, '[Population genetic evidence for a unique resource of Nile tilapia in Lake Tanganyika, East Africa](#)'. *Environmental Biology of Fishes*, vol 102., pp. 1107-1117
- Edgley, D & Genner, MJ, 2019, '[Adaptive Diversification of the Lateral Line System during Cichlid Fish Radiation](#)'. *iScience*, vol 16., pp. 1-11
- Bradbeer, SJ, Harrington, J, Watson, H, Warraich, A, Shechonge, A, Smith, A, Tamatamah, R, Ngatunga, BP, Turner, GF & Genner, MJ, 2019, '[Limited hybridization between introduced and critically endangered indigenous tilapia fishes in Northern Tanzania](#)'. *Hydrobiologia*, vol 832., pp. 257-268
- Sainsbury, NC, Genner, MJ, Saville, GR, Pinnegar, JK, O'Neill, CK, Simpson, SD & Turner, RA, 2018, '[Changing storminess and global capture fisheries](#)'. *Nature Climate Change*, vol 8., pp. 655?659

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