

## PROFESSIONAL INTERESTS & SKILLS

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I am a quantitative marine ecologist who is passionate about integrating statistical, mathematical, experimental, and computational approaches to unify evolutionary ecology across scales. My overarching research goal entails the use of theory-driven, fundamental science to better inform decision-making processes and ecosystem management in an ever-changing world.

Transparent and reproducible open science are at the core of my daily working routine, and I mostly use the R programming environment to code my projects. I was trained as a programming instructor by The Carpentries, and as such I organise my data, and maintain my projects under version control following standard practice.

## EDUCATION

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- 2011–2016 Ph.D. Biological Sciences. Macquarie University, Australia.
- 2009–2011 M.Sc. Ecology. UFSC - Universidade Federal de Santa Catarina, Brazil.
- 2004–2008 B.Sc. Biology. UFSC - Universidade Federal de Santa Catarina, Brazil.

## PROFESSIONAL EXPERIENCE

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- 2020–present Ecological Statistician. Australian Institute of Marine Science, Australia.
- 2020–present Adjunct Senior Research Fellow. The University of Western Australia, Australia.
- 2019–2020 Lecturer in Marine Ecology. Centre for Ecology and Conservation, College of Life and Environmental Sciences, University of Exeter, UK.
- 2018 Post-doctoral Research Fellow. Evolutionary and Ecological Physiology Lab. Employer: Prof Frank Seebacher, The University of Sydney, Australia.
- 2018 Casual Academic. Institute for Marine and Antarctic Studies. Employer: Dr Rick Stuart-Smith, The University of Tasmania, Australia.
- 2015–2017 Post-doctoral Research Fellow. Centre for Geometric Biology. Employer: Prof Dustin Marshall, Monash University, Australia.
- 2015 Technology and software solution development in fieldwork management and WHS compliance. Employer: Adam Wilkins, Field Friendly.
- 2014–2015 Software development: Adaptation and aftereffects in perception of tactile motion. Employer: Dr Tatjana Seizova-Cajic, The University of Sydney, Australia.
- 2012–2015 Database management and package development: A Biomass and Allometry Database for Woody Plants. Employer: Dr Daniel Falster, Macquarie University, Australia.
- 2010–2011 Fieldwork management and web design: SISBIOTA-Mar: Brazilian National Research Network on Marine Biodiversity. Employer: Prof Sergio Floeter, UFSC, Brazil.
- 2007 Database Management: Global Marine Species Assessment. IUCN Red List Assessment Workshop: Eastern Tropical Pacific Fishes. STRI, Panama. Employer: Conservation International.

## RESEARCH GRANTS (PI)

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- 2019 Predicting the effects of warming: from individual physiology to emergent ecosystem function (5 years, *Declined*). *NERC Independent Research Fellowship*. GBP 892,994
- 2019 Long-term mesocosm facility. *College of Life and Environmental Sciences Strategic Development Fund, University of Exeter*. GBP 58,000
- 2019 Visiting Scholar at Universidade Federal de Santa Catarina. *CAPES PrInt*. BRL 9,600
- 2019 Scaling herbivory from individuals to populations. *CONFAP - CNPq - Newton Fund: The UK Academies Research Mobility Fellowship*. BRL 21,000
- 2008 Ecologia alimentar e influência bentônica do peixe-donzela *Stegastes fuscus* (Cuvier, 1830) no Parque Municipal Marinho do Recife de Fora. *Coral Vivo*. BRL 5,570

## TRAVEL GRANTS

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- 2018 Society for Experimental Biology / Company of Biologists Travel Fund. GBP 320
- 2018 Frontiers in Ecology and Evolution Travel Fund. USD 750
- 2018 Gordon Research Seminar and Conference Unifying Ecology Across Scales (Biddeford, ME, USA). USD 730
- 2016 Gordon Research Seminar and Conference Unifying Ecology Across Scales (Biddeford, ME, USA). USD 1,515
- 2016 Society for Experimental Biology / Company of Biologists Travel Fund. GBP 400
- 2014 Macquarie University Postgraduate Funds for overseas lab visits and research conferences. AUD 3,851
- 2014 IBS Student Award for the International Biogeography Society Early Career Conference 2014 (Canberra, Australia). AUD 250
- 2012 ISRS Student Award to attend the 12<sup>th</sup> International Coral Reef Symposium (Cairns, Australia). AUD 1,000

## AWARDS

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- 2015 Research Excellence Awards in Higher Degree Research: Engineering, Medicine and Science (AUD 3,000), Macquarie University, Australia.
- 2014 Best student talk. Biogeography Society Early Career Conference, ANU, Australia.
- 2013 Highly commended talk. Annual Higher Degree Research Conference, Macquarie University, Australia.
- 2008 Best Oral Presentation at the 18<sup>th</sup> Scientific Initiation Program Meeting. UFSC, Brazil.
- 2008 Academic Excellence: Undergraduate GPA > 9 (from 0 to 10). UFSC, Brazil.

## SCHOLARSHIPS

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- 2011–2015 PhD Scholarship (Macquarie University, iMQRES). 3.5 years, ≈ AUD 80,000.
- 2011 Technician Scholarship, SISBIOTA-Mar: Brazilian National Research Network on Marine Biodiversity (CNPq). 6 months, BRL 18,000.
- 2009–2011 Master of Science Scholarship (CAPES). 2 years, BRL 28,800.
- 2007–2008 Scientific Initiation Program Scholarship (PIBIC-CNPq, UFSC, Brazil). Project: Estrutura da comunidade de peixes recifais de ilhas catarinenses costeiras, com ênfase em conservação. 1 year, BRL 3,600.
- 2006–2007 Scientific Initiation Program Scholarship (PIBIC-CNPq, UFSC, Brazil). Project: Atividade forrageamento de peixes herbívoros territoriais no estado de Santa Catarina e comparações ao longo da costa brasileira. 1 semester, BRL 1,800.
- 2005–2006 Scientific Initiation Program Scholarship (PIBIC-CNPq, UFSC, Brazil). Project: Caracterização dos hemócitos de camarões do gênero *Macrobrachium* e avaliação, por abordagem genômica, da ocorrência de peneidinas nestas células. 1 year, BRL 3,600.

2004–2005 Scientific Initiation Program Scholarship (PIBIC-CNPq, UFSC, Brazil). Project: Detecção de peptídeos antimicrobianos (PAM) nas células da hemolinfa de crustáceos e moluscos por imunofluorescência indireta. 1 semester, BRL 1,800.

## TEACHING

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### *Postgraduate*

2019 Integrating physiology from individuals to ecosystems, and applications under climate change scenarios (36 h). *Visiting Lecturer*. UFSC, Brazil.

2019 BIOM4013: Marine Biodiversity and Conservation (2 h). *Guest Lecturer*. University of Exeter, UK.

### *Undergraduate*

2018 BIOL3045: Animal Ecological Physiology (4 h). *Guest Lecturer* (4 lectures on Metabolic Ecology). The University of Sydney, Australia.

2015 BIO114: Biodiversity and Evolution (9 h / week). *Tutor*. Macquarie University, Australia.

2014 BIOL379: Reef Evolution and Dynamics (54 h). *Field Tutor*. Heron Island Research Station, Heron Island, Great Barrier Reef. Macquarie University, Australia.

2014 BIOL369: Vertebrate Evolution (1 h). *Guest lecturer* (1 lecture on Osteichthyes evolution). Macquarie University, Australia.

2012 BIO115: Thread of Life (12 h / week). *Tutor*. Macquarie University, Australia.

2009 OCN7001: Introdução à Oceanografia (1 h). *Guest Lecturer*. UFSC, Brazil.

2009 ECZ7015: Zoologia de Vertebrados I (4 h). *Guest Lecturer*. UFSC, Brazil.

2009 ECZ7028: Conservação Biológica (10 h). *Guest Lecturer*. UFSC, Brazil.

### *Workshops*

2019 Exeter data analytics: Open Science and Reproducible Research in R (8 h). *Instructor*. University of Exeter, UK: [Content & Lessons](#).

2014 Software Carpentry: R, git, shell (bash) and reproducibility (16 h). *Instructor*. The University of Sydney, Australia: [Content](#), [Lessons](#) & [Code](#)

2014 Software Carpentry: R, git, shell (bash) and reproducibility (16 h). *Instructor*. UFSC, Brazil: [Content](#), [Lessons](#) & [Code](#)

2014 Software Carpentry: R, git, shell (bash) and reproducibility (16 h). *Instructor*. Dalhousie University, Canada: [Content](#), [Lessons](#) & [Code](#)

2014 Software Carpentry: R, git, shell (bash) and reproducibility (16 h). *Instructor*. UTS, Australia: [Content](#), [Lessons](#) & [Code](#)

2014 Software Carpentry: R, git, shell (bash) and reproducibility (16 h). *Instructor*. UNSW, Australia: [Content](#), [Lessons](#) & [Code](#)

2013 Software Carpentry: R, git, shell (bash) and reproducibility (16 h). *Instructor*. Pasteur Institute, France: [Content](#), [Lessons](#) & [Code](#)

2013 Software Carpentry: Python, testing, git, documentation and reproducibility (24 h). *Instructor*. University of Adelaide, Australia: [Content](#)

## PUBLICATIONS

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### *Published*

Nunes LT<sup>†</sup>, **Barneche DR**<sup>†</sup>, Lastrucci NS, Fraga AA, Nunes JACC, Ferreira CEL, Floeter SR (2021) Predicting the effects of body size, temperature and diet on animal feeding rates. *Functional Ecology*, in press. doi: [10.1111/1365-2435.13872](https://doi.org/10.1111/1365-2435.13872). <sup>†</sup> = Equal authorship. [[GitHub repository](#)]

Quimbayo JP, Mendes TC, **Barneche DR**, Dias MS, Grutter AS, Furtado M, Leprieur F, Pellissier L, Mazzei R, Narvaez P, Sasal P, Soares MC, Parravicini V, Sazima I, Kulbicki M. Patterns of taxonomic and functional diversity in the global cleaner reef fish fauna. *Journal of Biogeography*, in press. doi: [10.1111/jbi.14214](https://doi.org/10.1111/jbi.14214).

- Barneche DR**, Coleman G, Fermor D, Klein E, Robinson T, Smith J, Sheehan JL, Dowley S, Ditton D, Gunn K, Ericson G, Logan M, Rehbein M (2021) dataaims: An R Client for the Australian Institute of Marine Science Data Platform API which provides easy access to AIMS Data Platform. *Journal of Open Source Software*, 6: 3282. doi: [10.21105/joss.03282](https://doi.org/10.21105/joss.03282). [[R Package GitHub repository](#)]
- Pie MR, Divieso R, Caron FS, Siqueira AC, **Barneche DR**, Luiz OJ (2021) The evolution of latitudinal ranges in reef-associated fishes: Heritability, limits and inverse Rapoport's rule. *Journal of Biogeography*, online early. doi: [10.1111/jbi.14150](https://doi.org/10.1111/jbi.14150).
- Carlot J, Kayal M, Lenihan HS, Brandl SJ, Casey JM, Adjeroud M, Cardini U, Mercière A, Espiau, B, **Barneche DR**, Rovere A; Hédouin L, Parravicini V (2021) Juvenile corals underpin coral reef carbonate production after disturbance. *Global Change Biology*, 27: 2623–2632. doi: [10.1111/gcb.15610](https://doi.org/10.1111/gcb.15610).
- Barneche DR**, Hulatt CJ, Dossena M, Padfield D, Woodward G, Trimmer M, Yvon-Durocher G (2021) Warming impairs trophic transfer efficiency in a long-term field experiment. *Nature*, 592: 76–79. doi: [10.1038/s41586-021-03352-2](https://doi.org/10.1038/s41586-021-03352-2). [[GitHub repository](#)]
- O'Connor MI, **Barneche DR**, González AL, Messier J (2020) Editorial: Unifying Ecology Across Scales: Progress, Challenges and Opportunities. *Frontiers in Ecology and Evolution* (section Biogeography and Macroecology), 8: 610459. doi: [10.3389/fevo.2020.610459](https://doi.org/10.3389/fevo.2020.610459).
- Schiettekatte NMD, **Barneche DR**, Villéger S, Allgeier JE, Burkepile DE, Brandl SJ, Casey JM, Mercière A, Munsterman KS, Morat F, Parravicini, V (2020) Nutrient limitation, bioenergetics and stoichiometry: a new model to predict elemental fluxes mediated by fishes. *Functional Ecology*, 34: 1857–1869. doi: [10.1111/1365-2435.13618](https://doi.org/10.1111/1365-2435.13618). [[GitHub repository](#)] [[lay summary](#)]
- Kattge J, Bönnisch G, Díaz S, Lavorel S, Prentice IC, Leadley P, Tautenhahn S, Werner GDA, [...], **Barneche DR**, [...], Wirth C (2020) TRY plant trait database - enhanced coverage and open access. *Global Change Biology*, 26: 119–188. doi: [10.1111/gcb.14904](https://doi.org/10.1111/gcb.14904).
- Barneche DR**, Jahn M, Seebacher F (2019) Warming increases the cost of biosynthesis in a model vertebrate. *Functional Ecology*, 33: 1256–1266. doi: [10.1111/1365-2435.13348](https://doi.org/10.1111/1365-2435.13348). [[GitHub repository](#)] [[lay summary](#)]
- Marshall DJ, Gaines S, Warner R, **Barneche DR**, Bode M (2019) Underestimating the benefits of marine protected areas for the replenishment of fished populations. *Frontiers in Ecology and the Environment*, 17: 407–413. doi: [10.1002/fee.2075](https://doi.org/10.1002/fee.2075).
- Barneche DR**, Rezende EL, Luiz OJ, Ferreira CEL, Parravicini V, Maire E, Edgar G, Stuart-Smith RD, Green AL, Rodríguez-Zaragoza FA, Arias-González JE, Friedlander AM, Vigliola L, Kulbicki M, Floeter SR (2019) Body size drives global species packing of reef fishes across spatial scales. *Global Ecology and Biogeography*, 28: 315–327. doi: [10.1111/geb.12851](https://doi.org/10.1111/geb.12851). [[GitHub repository](#)]
- Audzijonyte A, **Barneche DR**, Baudron AR, Belmaker J, Clark TD, Marshall CT, Morrongiello JR, van Rijn I (2019) Is oxygen limitation in warming waters a valid mechanism to explain decreased body sizes in aquatic ectotherms? *Global Ecology and Biogeography*, 28: 64–77. doi: [10.1111/geb.12847](https://doi.org/10.1111/geb.12847).
- Barneche DR**, Robertson DR, White CR, Marshall DJ (2018) Fish reproductive-energy output increases disproportionately with body size. *Science*, 360: 642–645. doi: [10.1126/science.aao6868](https://doi.org/10.1126/science.aao6868). [[GitHub repository](#)]
- Barneche DR**, Burgess SC, Marshall DJ (2018) Global environmental drivers of marine fish egg size. *Global Ecology and Biogeography*, 27: 890–898. doi: [10.1111/geb.12748](https://doi.org/10.1111/geb.12748). [[GitHub repository](#)]
- Barneche DR**, Allen AP (2018) The energetics of fish growth and how it constrains food-web trophic structure. *Ecology Letters*, 21: 836–844. doi: [10.1111/ele.12947](https://doi.org/10.1111/ele.12947). [[GitHub repository](#)]
- Lagos ME, **Barneche DR**, White CR, Marshal DJ (2017) Do low oxygen environments facilitate invasion? Relative tolerance of native and invasive species to low oxygen conditions. *Global Change Biology*, 23: 2321–2330. doi: [10.1111/gcb.13668](https://doi.org/10.1111/gcb.13668). [[GitHub repository](#)]
- Olito C, White CR, Marshal DJ, **Barneche DR** (2017) Estimating monotonic rates from biological data using local linear regression. *Journal of Experimental Biology*, 220: 759–764. doi: [10.1242/jeb.148775](https://doi.org/10.1242/jeb.148775). [[GitHub repository](#)]

- Bender MG, Leprieur F, Mouillot D, Kulbicki M, Parravicini V, Pie MR, **Barneche DR**, Oliveira-Santos LGR, Floeter SR (2017) Isolation drives taxonomic and functional nestedness in tropical reef fish faunas. *Ecography*, 40: 425–435. doi: [10.1111/ecog.02293](https://doi.org/10.1111/ecog.02293).
- Cantor M, Pires MM, Marquitti FMD, Raimundo RLG, Sebastián-González E, Coltri P, Perez SI, **Barneche DR**, Brandt DYC, Nunes K, Daura-Jorge FG, Floeter SR, Meyer D, Guimarães Jr. PR (2017) Nestedness across biological scales. *PLOS One*, 12: e0171691. doi: [10.1371/journal.pone.0171691](https://doi.org/10.1371/journal.pone.0171691). [Bitbucket repositories: [1](#) and [2](#)]
- Barneche DR**, White CR, Marshal DJ (2017) Temperature effects on mass-scaling exponents in colonial animals: a manipulative test. *Ecology*, 98: 103–111. doi: [10.1002/ecy.1624](https://doi.org/10.1002/ecy.1624). [GitHub repository]
- Hachich NF, Bonsall MB, Arraut EM, **Barneche DR**, Lewinsohn TM, Floeter SR (2016) Marine Island Biogeography. Response to Comment on Island biogeography: patterns of marine shallow-water organisms. *Journal of Biogeography*, 43: 2515–2519. doi: [10.1111/jbi.12863](https://doi.org/10.1111/jbi.12863).
- Barneche DR**, Kulbicki M, Floeter SR, Friedlander AM, Allen AP (2016) Energetic and ecological constraints on population density of reef fishes. *Proceedings of the Royal Society B*, 283: 20152186. doi: [10.1098/rspb.2015.2186](https://doi.org/10.1098/rspb.2015.2186). [DRYAD data repository]
- Liedke AMR, **Barneche DR**, Ferreira CEL, Segal B, Nunes LT, Burigo AP, JA Carvalho, Buck S, Floeter SR (2016) Abundance, diet, foraging and nutritional condition of the banded butterflyfish (*Chaetodon striatus*) along the western Atlantic. *Marine Biology*, 163: 6. doi: [10.1007/s00227-015-2788-4](https://doi.org/10.1007/s00227-015-2788-4). [GitHub repository]
- Hachich NF, Bonsall MB, Arraut EM, **Barneche DR**, Lewinsohn TM, Floeter SR (2015) Island biogeography: patterns of marine shallow-water organisms in the Atlantic Ocean. *Journal of Biogeography*, 42: 1871–1882. doi: [10.1111/jbi.12560](https://doi.org/10.1111/jbi.12560).
- Barneche DR**, Allen AP (2015) Embracing general theory and taxon-level idiosyncrasies to explain nutrient recycling. *PNAS*, 112: 6248–6249. doi: [10.1073/pnas.1506305112](https://doi.org/10.1073/pnas.1506305112).
- Falster DS, Duursma RA, Ishihara MI, **Barneche DR**, *et al.* (2015) BAAD: a Biomass and allometry database for woody plants. *Ecology*, 96: 1445. doi: [10.1890/14-1889.1](https://doi.org/10.1890/14-1889.1). [GitHub repository]
- Luiz OJ, Mendes TC, **Barneche DR**, Ferreira CGW, Noguchi R, Villaça RC, Rangel CA, Gasparini JL, Ferreira CEL (2015) Community structure of reef fishes on a remote oceanic island: the relative influence of abiotic and biotic variables. *Marine and Freshwater Research*, 66: 739–749. doi: [10.1071/MF14150](https://doi.org/10.1071/MF14150).
- Anderson AB, Bonaldo RM, **Barneche DR**, Hackradt CW, Félix-Hackradt FC, García-Chartón JA, Floeter SR (2014) Recovery of grouper assemblages indicates effectiveness in a Marine Protected Area in Southern Brazil. *Marine Ecology Progress Series*, 514: 207–215. doi: [10.3354/meps11032](https://doi.org/10.3354/meps11032).
- Barneche DR**, Kulbicki M, Floeter SR, Friedlander AM, Maina J, Allen AP (2014) Scaling metabolism from individuals to reef-fish communities at broad spatial scales. *Ecology Letters*, 17: 1067–1076. doi: [10.1111/ele.12309](https://doi.org/10.1111/ele.12309). [GitHub repository]
- Lobato FL, **Barneche DR**, Siqueira AC, Liedke AR, Lindner A, Pie MR, Bellwood DR, Floeter SR (2014) Diet and diversification in the evolution of coral reef fishes. *PLOS One*, 9: e102094. doi: [10.1371/journal.pone.0102094](https://doi.org/10.1371/journal.pone.0102094).
- Barneche DR**, Floeter SR, Ceccarelli DM, Frensel DMB, Dinslaken DF, Mário HFS, Ferreira CEL (2009) Feeding macroecology of territorial damselfishes: (Perciformes: Pomacentridae). *Marine Biology*, 156: 289–299. doi: [10.1007/s00227-008-1083-z](https://doi.org/10.1007/s00227-008-1083-z).
- Barneche DR**, Anderson AB, Floeter SR, Silveira M, Dinslaken DF, Carvalho-Filho A (2009) Ten new records of reef fish on the coast of Santa Catarina State, Brazil. *Marine Biodiversity Records*, 2: e143. doi: [10.1017/S1755267209990613](https://doi.org/10.1017/S1755267209990613).

## DATASETS AND CODE

- Nunes LT<sup>†</sup>, **Barneche DR**<sup>†</sup>, Lastrucci NS, Fraga AA, Nunes JACC, Ferreira CEL, Floeter SR (2021) [dbarneche/redlip\\_bites](https://github.com/dbarneche/redlip_bites): Accepted version of paper data and code of manuscript: Predicting the

- effects of body size, temperature and diet on animal feeding rates (Functional Ecology). *Zenodo*. doi: [10.5281/zenodo.5003045](https://doi.org/10.5281/zenodo.5003045).
- Barneche DR**, Hulatt CJ, Dossena M, Padfield D, Woodward G, Trimmer M, Yvon-Durocher G (2021) [dbarneche/nature20200508666](https://doi.org/10.5281/zenodo.4468371): Accepted version of paper data and code of manuscript: Warming impairs trophic transfer efficiency in a long-term field experiment (Nature). *Zenodo*, doi: [10.5281/zenodo.4468371](https://doi.org/10.5281/zenodo.4468371).
- Schiettekatte NMD (2020) [nschiett/FishStoichModel](https://doi.org/10.5281/zenodo.3894509): Code to reproduce figures and tables of Schiettekatte et al. (2020) (Version v1.0). *Zenodo*, doi: [10.5281/zenodo.3894509](https://doi.org/10.5281/zenodo.3894509).
- Barneche DR**, Jahn M, Seebacher F (2019) [dbarneche/zebrafishCostOfGrowth](https://doi.org/10.5281/zenodo.2634100): Published version of paper data and code: Warming increases the cost of growth in a model vertebrate (Version v1.0.0). *Zenodo*, doi: [10.5281/zenodo.2634100](https://doi.org/10.5281/zenodo.2634100).
- Barneche DR**, Rezende EL, Luiz OJ, Ferreira CEL, Parravicini V, Maire E, Edgar G, Stuart-Smith RD, Green AL, Rodríguez-Zaragoza FA, Arias-González JE, Friedlander AM, Vigliola L, Kulbicki M, Floeter SR (2018) [dbarneche/geb12851](https://doi.org/10.5281/zenodo.1484591): Published version of paper data and code: Body size, reef area, and temperature predict global reef-fish species richness across spatial scales (Version v1.0.0). *Zenodo*, doi: [10.5281/zenodo.1484591](https://doi.org/10.5281/zenodo.1484591).
- Barneche DR**, Robertson DR, White CR, Marshall DJ (2018) Data and code from: Fish reproductive-energy output increases disproportionately with body size. *Zenodo*, doi: [10.5281/zenodo.1213118](https://doi.org/10.5281/zenodo.1213118).
- Barneche DR**, Burgess SC, Marshall DJ (2018) Data and code from: Global environmental drivers of marine fish egg size. *Zenodo*, doi: [10.5281/zenodo.1204618](https://doi.org/10.5281/zenodo.1204618).
- Barneche DR**, Allen AP (2018) Data and code from: The energetics of fish growth and how it constrains food-web trophic structure. *Zenodo*, doi: [10.5281/zenodo.1194499](https://doi.org/10.5281/zenodo.1194499).
- Barneche DR**, White CR, Marshall DJ (2016) Data and code from: Temperature effects on mass-scaling exponents in colonial animals: a manipulative test. *Zenodo*, doi: [10.5281/zenodo.159736](https://doi.org/10.5281/zenodo.159736).
- Barneche DR**, Kulbicki M, Floeter SR, Friedlander AM, Allen AP (2016) Data from: Energetic and ecological constraints on population density of reef fishes. *DRYAD*, doi: [10.5061/dryad.j2qr4](https://doi.org/10.5061/dryad.j2qr4).

## INVITED TALKS

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| 2019 | Reproducible research tools and Bayesian analyses in Ecology. Host: Prof Valeriano Parravicini (CRIOBE, France).   |
| 2019 | Integrating ecology across scales of biological organization. Host: Dr Samraat Pawar (Imperial College London, UK).  |
| 2018 | Unifying ecology across scales of biological organization (2x). Hosts: Prof Frank Seebacher (University of Sydney, Australia); Dr Daniel Falster (UNSW, Australia).    |
| 2017 | Fish energetics and life history. Host: Dr Rowan Trebilco (UTAS, Australia).   |
| 2016 | Energetics from individuals to ecosystems. Host: Prof Gabriel Yvon-Durocher (University of Exeter, UK).  |
| 2015 | Scaling fish energetics from individuals to ecosystems (2x). Hosts: Dr Joseph Maina (UQ, Australia); Dr Thomas Bridge (JCU, Australia); <a href="#">YouTube link</a> . |
| 2014 | Scaling fish metabolism from individuals to communities. Host: Dr Mauricio Cantor (Dalhousie University, Canada).  |
| 2007 | Panamá: mergulhando em dois oceanos separados há três milhões de anos. Host: Prof Sergio Floeter (UFSC, Brazil).   |

## REFEREE FOR

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Nature Ecology & Evolution, Science, Journal of Fish Biology, Fish and Fisheries, Trends in Ecology and Evolution, Journal of Biogeography, Ecology Letters, Oikos, PNAS, Coral Reefs, PLOS Biology, Evolutionary Ecology, Global Ecology and Biogeography, Evolutionary Ecology Research, Functional Ecology, Marine Ecology Progress Series, Scientific Reports, PeerJ, Ecography, Journal of Comparative

Physiology B, Ecology, Hydrobiologia, Evolution, N American Journal of Fisheries Management, PLOS Computational Biology, Marine Biodiversity Records.

## EDITOR FOR

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- 2020–present Associate Editor for Functional Ecology.  
2018–2019 Frontiers in Ecology and Evolution **Special Issue:** [Unifying Ecology Across Scales: Progress, Challenges and Opportunities](#).

## SELECTED SCIENTIFIC MEETINGS AND WORKSHOPS

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- 2019 I University of Exeter’s Centre for Ecology and Conservation Annual Symposium. Princess Pavilion & Gyllyngdune Gardens, Falmouth, UK.  
2019 Blue Belt Overseas Symposium. University of Exeter, Penryn, UK.  
2019 III International Island Biology Conference. Université de La Réunion, La Réunion, France.  
2019 British Ecological Society Macroecology Special Interest group. University of Exeter, Penryn, UK.  
2019 Reproducible research, Bayesian analyses, and network in Ecology. CRIOBE, Perpignan, France.  
2018 Unifying Ecology Across Scales (**Gordon Research Seminar Co-Chair**). University of New England, Biddeford, ME, USA.  
2017 The 2<sup>nd</sup> rOpenSci OzUnconf. Melbourne, Australia.  
2017 The XI<sup>th</sup> International Larval Biology Symposium. Ala Moana, Honolulu, HI, USA.  
2016 97<sup>th</sup> Annual Meeting of the Western Society of Naturalists. Hyatt Regency, Monterey, CA, USA.  
2016 Unifying Ecology Across Scales (Gordon Research Seminar and Conference). University of New England, Biddeford, ME, USA.  
2014 Complex Systems Summer School. St. John’s College / Santa Fe Institute, Santa Fe, NM, USA. (Duration: 1 month)  
2014 Unifying Ecology Across Scales (Gordon Research Seminar and Conference). University of New England, Biddeford, ME, USA.  
2014 International Biogeography Society Early Career Conference. Canberra, Australia.  
2013 GASPAR: General Approach to Species-Abundance Relationships in a context of global change, reef fish species as a model. Aix en Provence, France.  
2012 The 12<sup>th</sup> International Coral Reef Symposium. Cairns, Australia.  
2012 Workshop: Multivariate Analysis for Biologists, Ecologists and Environmental Scientists. Massey University, Auckland, New Zealand.  
2011 III Congresso Brasileiro de Biologia Marinha. Natal, Brazil.  
2009 XIII Congresso Latino-Americano de Ciências do Mar. Havana, Cuba.  
2009 II Congresso Brasileiro de Biologia Marinha. Armação de Búzios, Brazil.  
2007 Workshop: Global Marine Species Assessment. IUCN Red List Assessment Workshop: Eastern Tropical Pacific Fishes (Facilitator). Panama, Panama.  
2007 XVII Encontro Brasileiro de Ictiologia. Itajaí, Brazil.  
2006 XXVI Congresso Brasileiro de Zoologia. Londrina, Brazil.

### *Oral presentations*

- Barneche DR** (2019) Energy flows and their efficiency in aquatic ecosystems. In: I University of Exeter’s Centre for Ecology and Conservation Annual Symposium. Falmouth, UK.  
**Barneche DR** (2019) Energy packing of reef fish communities in isolated oceanic islands. In: III International Island Biology Conference. La Réunion, France.  
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- Barneche DR**, Kulbicki M, Floeter SR, Friedlander AM, Maina J, Allen AP (2014) Scaling metabolism from individuals to reef-fish communities at broad spatial scales. In: International Biogeography Society Early Career Conference, Canberra, Australia.
- Barneche DR**, Floeter SR, Ferreria CEL, Luiz OJ, Rodríguez-Zaragoza F, Arias-González, JE, Friedlander AM, Kulbicki M (2012) Global species' packing of coral-reef fishes. In: The 12<sup>th</sup> International Coral Reef Symposium, Cairns, Australia.
- Barneche DR**, Floeter SR (2008) Estrutura da comunidade de peixes recifais de Ilhas catarinenses costeiras, com ênfase em conservação. In: 18<sup>o</sup> Seminário de Iniciação Científica da UFSC, Florianópolis, Brazil.

## OUTREACH / MEDIA ENGAGEMENT

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- [Interview](#) with *Ecoando Sustentabilidade: Caminhos da ciência* (in Portuguese).
- [Outreach](#) of our paper Marshall *et al.* (2019) in *Frontiers in Ecology and the Environment*.
- [Outreach](#) of our paper Barneche *et al.* (2019) in *Functional Ecology*.
- Barneche DR** (2019) Warming increases the cost of growth. *Functional Ecologists blog*.
- Barneche DR**, Marshall DJ (2019) Fishy limits. *Alert Diver*, 35: 110–112.
- Barneche DR**, Floeter SR (2018) Why are there more species packed in some places than others, and why does it matter? *Science Trends*.
- [Outreach](#) (e.g. NPR, Washington Post) of our paper Barneche *et al.* (2018) in *Science*.
- [Interview](#) at Radio Marinara 3RRR in Melbourne, Australia.
- Barneche DR** (2018) The fish that should have got away. *Australasian Science*, 39: 26–28.
- [Um mar com muitas informações](#): Outreach of our Project (Projeto Ilhas do Sul) in the local newspaper, Diário Catarinense.
- [Outreach](#) of our paper Anderson *et al.* (2014) in *MEPS*.

## R PACKAGES

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- [fishgrowbot](#) Fish growth curves through back-calculation of otoliths rings in a Bayesian framework.
- [bayesnec](#) Bayesian Concentration-Response modelling and estimation of No-Effect-Concentrations.
- [gisaimsr](#) Great Barrier Reef GIS data.
- [dataaimsr](#) Access to data sets from the AIMS Data Platform API.
- [LoLinR](#) Local Linear Regression for Estimating Monotonic Biological Rates in R.
- [noaaErddap](#) R interface to three NOAA marine data sources.
- [envPred](#) Environmental predictability for time series data.
- [UNODF](#) Nestedness metric for one-mode networks.

## LANGUAGES

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- Portuguese* Mother tongue.
- English* Fluent speaking, reading, and writing.
- Spanish* Fluent speaking and reading; basic writing.
- R* Fluent speaking, reading, and writing.
- Git* Fluent speaking, reading, and writing.
- Python* Basic speaking, reading, and writing.
- Bash* Basic speaking, reading, and writing.



## **ADMINISTRATIVE ROLES**

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2019 Penryn International & Development Group for the College of Life and Environmental Sciences. University of Exeter, UK.

## **FIELDWORK EXPERIENCE**

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I have joined multiple field trips along the Brazilian coast (Santa Catarina, Arraial do Cabo, Abrolhos Archipelago, Porto Seguro, Fernando de Noronha Archipelago), Central America (Panama and Cuba) and Australia (One Tree Island Research Station and the coast of New South Wales). These trips required intensive SCUBA diving, where I conducted fish transects, tallying individuals, species and sizes. I also collected specimens for myriad measurements including otolith ring counts, gut content analyses and genetic material. Some of this work was done in remote locations (Fernando de Noronha in Brazil and Jardines de la Reina in Cuba) – I have been trained by the Brazilian Navy to resist stressful and starvation situations at sea, including spending one entire day adrift under the sun without food or water supply.