

Dr Peter F. Cowman

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APPOINTMENTS

ARC DECRA Fellow	ARC Centre of Excellence for Coral Reef Studies, James Cook University, 2017–present
Research Fellow	ARC Centre of Excellence for Coral Reef Studies, James Cook University, 2016–present
Postdoctoral Associate	Dept. of Ecology and Evolutionary Biology, Yale University, 2014–2016
Postdoctoral Fellow	Division of Ecology, Evolution and Genetics, The Australian National University (ANU), 2012–2013

QUALIFICATIONS

PhD	James Cook University, Marine & Tropical Biology, 2012
MS/GrDipRes	James Cook University, Marine & Tropical Biology, 2008
BSc	National University of Ireland, Galway, Marine Science, 2006

FELLOWSHIPS AND AWARDS

2017-2020	ARC Discovery Early Career Researcher Award (\$372,000)
2014-2016	Gaylord Donnelley Postdoctoral Fellowship (\$104,000)
2008-2011	International Postgraduate Endeavour scholarship (\$75,000)
2008-2011	JCU Stipend scholarship (\$20,000 per annum)

POSTGRADUATE SUPERVISION

I have co-mentored 1 Masters student (UFSC Brazil) and 1 Honours students (UCLA, USA). I currently co-supervise two PhD students, and will be the primary supervisor of a PhD student commencing in June 2017 (JCU).

PUBLICATIONS

I have published 22 articles (one *in press*) with over 40 co-authors from 26 institutions in 9 countries. h-index 11; Citations - Scopus 452; Google Scholar 681 - <http://bit.ly/PFCscholar>; Detailed Altmetrics - <http://bit.ly/PFCimpact>

PEER REVIEWED JOURNALS

Floeter SR, Bender M, Siqueira AC, & **Cowman PF** (2017). Phylogenetic perspectives on reef fish functional traits. *Biological Reviews*. doi: 10.1111/brv.12336 (*IF* = 10.7)

Cowman PF, Parravicini V, Kulbicki M, Floeter, SR (2017). The biogeography of tropical reef fishes: endemism and provinciality through time. *Biological Reviews*. doi: 10.1111/brv.12323 (*IF* = 10.7)

Siqueira AC, Oliveira-Santos LGR, **Cowman PF**, & Floeter, SR (2016). Evolutionary processes underlying latitudinal differences in reef fish biodiversity. *Global Ecology and Biogeography* 25 (12), 1466-1476 (*IF* = 5.8)

Leprieur F, Descombes P, Gaboriau T, **Cowman PF**, Parravicini V, Kulbicki M, *et al.*, (2016). Plate tectonics drive tropical reef biodiversity dynamics. *Nature Communications* 7. (IF = 11.4)

Mouillot D, Parravicini V, Bellwood DR, Leprieur F, Huang D, **Cowman PF**, Albouy C, Hughes TP, Thuiller W, and Guilhaumon F. (2016) Global marine protected areas do not secure the evolutionary history of tropical corals and fishes. *Nature Communications*. (IF = 11.4)

- **Extensive media coverage and highlighted by Nature (Jan 2016)**

Leprieur F, Colosio S, Descombes P, Parravicini V, Kulbicki M, **Cowman PF**, Bellwood DR, Mouillot D, and Pellissier L. (2015) Historical and contemporary determinants of global phylogenetic structure in tropical reef fish faunas. *Ecography* 39, 825–835. (IF = 5.3)

Hua, X, **Cowman PF**, Warren D, Bromham L. (2015) Longevity is linked to mitochondrial mutation rates in rockfish: a test using Poisson regression. *Molecular Biology & Evolution*. (IF = 11.28)

Bromham L, Hua X, Lanfear R, **Cowman PF** (2015) Exploring the relationships between mutation rates, life history, genome size, environment and species richness in flowering plants. *American Naturalist*. 185. (IF = 3.52)

Cowman, PF (2014) Historical factors that have shaped the evolution of tropical reef fishes: a review of phylogenies, biogeography, and remaining questions. *Front. Genet.* 5, 1–15. (IF = 3.38)

Pellissier L, Leprieur F, Parravicini V, **Cowman PF**, Kulbicki M, Litsios G, Olsen SM, Wisz MS, Bellwood DR, and Mouillot D (2014) Quaternary coral reef refugia preserved fish diversity. *Science* 344 (6187): 1016–1019. (IF = 13.12)

D'agata S, Mouillot D, Kulbicki M, Andréfouët, S, Bellwood DR, Cinner, JE, **Cowman PF**, Kronen, M, Pinca S, and Vigliola L (2014) Human-mediated loss of phylogenetic and functional diversity in coral reef fishes. *Current Biology* 25 (5): 555-560. (IF = 5.21)

Cowman PF, and Bellwood DR (2013) Vicariance across major marine biogeographic barriers: temporal concordance and the relative intensity of hard vs. soft barriers. *Proceedings of the Royal Society, Biology* 280 (1768): 20131541. (IF = 4.08)

- **Journal cover photo**

Cowman PF, and Bellwood DR (2013) The historical biogeography of coral reef fishes: global patterns of origination and dispersal. *Journal of Biogeography* 40: 209–224. (IF = 4.33)

- **Faculty of 1000 reviewed; featured on the journal homepage (Aug 2013).**

Bromham L, **Cowman PF**, Lanfear R (2013) Parasitic plants have increased rates of molecular evolution across all three genomes. *BMC Evolutionary Biology* 13 (1): 126. (IF = 3.37)

Mitchell MD, **Cowman PF**, and McCormick MI (2012) Are chemical alarm cues conserved within the coral reef fish family Pomacentridae? *PLoS ONE* 7 (10): e47428. (IF = 3.32)

Leprieur F, Albouy C, De Bortoli J, **Cowman PF**, Bellwood DR, and Mouillot D (2012) Quantifying phylogenetic beta diversity: distinguishing between 'true' turnover of lineages and phylogenetic diversity gradients. *PLoS ONE* 7 (8): e42760. (IF = 3.32)

Cowman PF, and Bellwood DR (2011) Coral reefs as drivers of cladogenesis: expanding coral reefs, cryptic extinction events, and the development of biodiversity hotspots. *Journal of Evolutionary Biology* 24 (12): 2543-2562 (IF = 2.85)

- **Journal cover photo**

Bellwood DR, Klanten S, **Cowman PF**, Pratchett MS, Konow N, and van Herwerden L (2010) *Evolutionary history of the butterflyfishes (f: Chaetodontidae) and the rise of coral feeding fishes. Journal of Evolutionary Biology* 23 (2): 335-349. (IF = 2.85)

Cowman PF, Bellwood DR, and van Herwerden L (2009) Dating the evolutionary origins of wrasse lineages and the rise of trophic novelty on coral reefs. *Molecular Phylogenetics & Evolution* 52 (3): 621-631. (IF = 3.85)

- **Virginia Chadwick Award for best student publication, 2009**

BOOK CHAPTER

Bellwood DR, Goatley CHR, **Cowman PF**, and Bellwood O (2015) The evolution of fishes on coral reefs: fossils, phylogenies and functions. Chapter in: *Ecology of fishes on coral reefs* by Cambridge University Press (Ed. Mora C).

OTHER

Huang D, Reimer JD, Timmers M, **Cowman PF**, Hodge J (2016). Summary of Session 7: Biodiversity. Biogeography and evolution of coral reef organisms. *Proceedings of the 13th International Coral Reef Symposium, Honolulu*: 24-26

Saslis-Lagoudakis CH, **Cowman PF**, Cardillo M, Catullo RA, Rosauer DF, and Warren DL (2014). Biogeography: multidisciplinary approaches in space and time. *Frontiers in Biogeography* 6.

Cowman PF (2013). Book Review: *Discovery of Australia's Fishes: A History of Australian Ichthyology to 1930*, Brian Saunders. 2012 (hard cover). *Copeia* 2013 (4): 786–788.

MEDIA COVERAGE

I have communicated my research to the general public via media interviews with the New York Times and ABC Science. My research has generated 33 news mentions over the last seven years, including:

- *When coral reefs thrive, so does variety in fish* - **New York Times** (<http://bit.ly/reefrefuge>)
- *Ancient reefs helped shape fish diversity* - **ABC Science** (<http://bit.ly/ancientreefs>)
- *Coral reef fish face barriers when it comes to evolution* - **ANU Newsroom** (<http://bit.ly/fishbarrier>)
- *Lessons in coral reef survival from deep time* - **ARC Centre of Excellence for Coral Reef Studies** (<http://bit.ly/fishevol>)

SCIENTIFIC AND PUBLIC ENGAGEMENT

I have presented my research in oral submissions at 8 international and 4 national conferences.

I have co-ordinated and chaired two symposiums at two international conferences.

I have presented my research as an invited speaker in the departmental seminars series at 6 institutions in 3 countries (Brazil, USA, Australia). In 2014, I presented for the biology department at the *University of California LA*. This seminar has accumulated > 90 views on YouTube (<http://bit.ly/uclaEEB>). In May 2017, I will be speaking at the biology departmental seminars of *University of Auckland* and *Massey University* (New Zealand).

As a YIBS Donnelley Postdoctoral Fellow, I was interviewed for a video series highlighting the Donnelley Fellowship and my research. This video is hosted on the YIBS Donnelley application information page for prospective Donnelley applicants (>90 views; <http://yibs.yale.edu/scholar-programs/donnelley-and-yibs-postdoctoral-environmental-fellows>)

Social Media: I maintain a personal website where I highlight my research and current activities of my lab group (<http://petercowman.weebly.com>). I regularly share and interact with other researchers and the public on Twitter (@pete_cowman, 452 followers). I also highlight research and news on the topics of biodiversity hotspots and macroevolutionary science from the Twitter handle @BioHotspotEvol. During the International Biogeographic Society (IBS) Early Career Researcher Conference (Canberra, 2014), I managed the official social media for the conference through Twitter (@ibs2014).

Research Impact: In total, my research has generated 33 news mentions over the last seven years, and has been cited as supporting information in two Wikipedia articles describing the fish Family Labridae ([Wrasses](#)), and the parasitic plant Family [Orobanchaceae](#).

LECTURING, WORKSHOPS AND OUTREACH

LECTURING

During my PhD at JCU, and as a Postdoctoral Fellow at ANU and JCU, I have given lectures to core 1st year to 3rd year science and biology students. Subject themes include *evolution, biodiversity and biogeography of marine organisms; reef fish ecology; molecular methods in marine ecology*. I have designed and taught a practical component on using phylogenetic methods in marine ecology for a postgraduate intensive course “*Molecular methods in Marine ecology*” (JCU). In 2012, I was a teaching assistant for the course “*Quantitative methods in biology*” (JCU) running the computer practical components.

WORKSHOPS

In March 2014 and April 2015, I participated in a NesCENT working group on the genetic diversity of reef organisms in the Indo-Pacific. This working group was subsequently funded by the National Science Foundation (USA) to form the Diversity in the Indo-Pacific Network (DIPnet - <http://diversityindopacific.net>). During the 2014 IBS early career conference in Canberra, I helped co-ordinate and co-instruct workshops on “*An Introduction to R for Beginners*” and “*Biogeographic analyses in R with BioGeoBEARs*”.

OUTREACH

In 2014, I co-organised the Early Career Researcher Conference for the International Biogeography Society hosted by The National Australian University and CSIRO in Canberra. The 3-day meeting attracted 130 attendees from 18 countries, mostly students and early career researchers, with oral and poster presentations covering 3 symposia themes - *species’ distributions, phylogenetic methods and biodiversity turnover*. The presentations were preceded by a day of workshops on the same topics.

As a Research Fellow at the *ARC Centre of Excellences for Coral Reef Studies* I have run workshops for staff and students on using the R statistical environment for manipulating and plotting biological data. I have also run “R hacking meet-ups” to explore better ways to analyses data in R. In August 2017, I am co-ordinating a 2-day workshop on how to using phylogenetic and bioinformatics software for ecologists.

PROFESSIONAL SERVICE

PEER-REVIEWER

I have reviewed papers submitted for publication to the following journals: *Biology Letters, Proceedings of the Royal Society B, Evolution, Nature Ecology & Evolution, Ecography, Scientific Reports, Journal of Biogeography, Biological Reviews, Integrative Comparative Biology, PLOS One, Journal of Fish Biology* (see my publon profile for more details - <http://bit.ly/publonPFC>)

GRANT REVIEWER

I have acted as a grant reviewer for the National Science Foundation (USA).