

## CV: Mike McWilliam

### PERSONAL

Email: [mjmcwilliam@outlook.com](mailto:mjmcwilliam@outlook.com)

Citizenship: British (J1 Exchange Visitor to the US)

[Website](#) | [Twitter](#) | [GitHub](#)

### CURRENT POSITION

18.08.2019 to

Present

Postdoctoral Research Fellow in Quantitative Ecology

Hawaii Institute of Marine Biology, University of Hawaii Manoa, USA

Project: *The demographic dimensions of coral reef diversity*

Funding: Professorial start-up grant to Prof. Joshua Madin

### PRIOR POSITIONS

03.09.2018 to

12.07.2019

Research Associate in Coral Reef Biodiversity

ARC Centre of Excellence for Coral Reef Studies, James Cook University, Australia

Project: *The functional biogeography of the Pacific Ocean*

Funding: Laureate fellowship to Prof. Terry Hughes

### EDUCATION

05.01.2015 to

03.09.2018

PhD (*Cum Laude*), Natural and Physical Sciences

ARC Centre of Excellence for Coral Reef Studies, James Cook University, Australia

Thesis title: [The functional diversity and redundancy of corals](#)

Supervisors: Prof. Terry Hughes, Associate Prof. Mia Hoogenboom

Funding: Australian Postgraduate Research Scholarship

09.10.2009 to

15.06.2012

BA (Hons 1<sup>st</sup> Class) Biological Sciences

University of Oxford, UK

Dissertation: *Evolutionary radiations of Antarctic Hydrocorals*

### RESEARCH INTERESTS

Demography

Trade-offs in demographic rates; comparative demography and traits <sup>9</sup>

Biogeography

Global patterns of biodiversity using spatial and functional trait data <sup>2,5</sup>

Resilience

Long-term dynamics; disturbance, recovery and regime shifts <sup>7</sup>

Climate Change

Response of populations and ecosystems to warming; coral bleaching <sup>1,3</sup>

Ecosystem function

Diversity-productivity relationships; facilitation and response diversity <sup>4,8</sup>

### PUBLICATIONS - [Google Scholar](#)

- 2020 <sup>8</sup> Pratchett, M. S., **McWilliam, M. J.**, & Riegl, B. (2020). Contrasting shifts in coral assemblages with increasing disturbances. *Coral Reefs*, 1-11 ➡
- <sup>7</sup> Chase, T. J., Pratchett, M. S., **McWilliam, M. J.**, Hein, M. Y., Tebbett, S. B., & Hoogenboom, M. O. (2020). Damselfishes alleviate the impacts of sediments on host corals. *Royal Society Open Science*, 7(4), 192074. ➡
- <sup>6</sup> **McWilliam, M.**, Pratchett, M. S., Hoogenboom, M. O., & Hughes, T. P. (2020). Deficits in functional trait diversity following recovery on coral reefs. *Proceedings of the Royal Society B*, 287(1918), 20192628. ➡
- 2019 <sup>5</sup> Doszpot, N. E., **McWilliam, M. J.**, Pratchett, M. S., Hoey, A. S., & Figueira, W. F. (2019). Plasticity in Three-Dimensional Geometry of Branching Corals Along a Cross-Shelf Gradient. *Diversity*, 11(3), 44. ➡

- 2018 <sup>4</sup> **McWilliam, M.**, Chase, T.J., Hoogenboom, M.O. (2018). Neighbor Diversity Regulates the Productivity of Coral Assemblages. *Current Biology* 28.22 (2018): 3634-3639 \*Cover feature \*F1000 recommended ⇒
- <sup>3</sup> Hughes, T. P., Kerry, J. T., Baird, A. H., Connolly, S. R., Dietzel, A., Eakin, C. M., ... & **McWilliam, M. J.** (2018). Global warming transforms coral reef assemblages. *Nature*, 556.7702 (2018): 492 \*F1000 recommended ⇒
- <sup>2</sup> **McWilliam, M.**, Hoogenboom, M. O., Baird, A. H., Kuo, C. Y., Madin, J. S., & Hughes, T. P. (2018). Biogeographical disparity in the functional diversity and redundancy of corals. *Proceedings of the National Academy of Sciences*, 115 (12) 3084-3089 ⇒
- 2017 <sup>1</sup> Hughes, T. P., Kerry, J. T., Álvarez-Noriega, M., Álvarez-Romero, J. G., Anderson, K. D., Baird, A. H., ... & **McWilliam, M.J.** (2017). Global warming and recurrent mass bleaching of corals. *Nature*, 543(7645), 373 \*Cover feature ⇒

## MEDIA COVERAGE

- 2020 Recovery study<sup>6</sup> featured in 'When reef ecosystems fail to recover' [China Daily](#).
- 2019 Reef productivity study<sup>4</sup> highlighted on [F1000 Prime](#).
- 2018 Coral bleaching study<sup>3</sup> reaches the 2018 [Altmetric Top 100](#) (#9); over 200 news articles  
Biogeography study<sup>2</sup> in a [PNAS featurette](#) 'Diversity in tropical reef ecosystems'  
Biogeography study<sup>2</sup> in a [Coral COE](#) article, 'Redundancy offers reassurance to reefs'
- 2017 Coral bleaching study<sup>1</sup> reaches the 2017 [Altmetric Top 100](#) (#21); over 350 news articles
- 2016 '13 Messages from Marine Biologists Fighting for the Great Barrier Reef' [Buzzfeed](#)

## PRESENTATIONS & WORKSHOPS

- 2021 Session Host (confirmed): "Can functional studies provide a sustainable future for coral reefs?" International Coral Reef Symposium (ICRS), Bremen, Germany
- 2020 Species Choice Workshop, Virtual workshop to apply trait-based ecology for the selection of species to be used in assisted evolution and restoration.  
Presenter: "Navigating coral trait space" Department of Biology Seminar Series, University of Hawaii Manoa
- 2019 Coral Demography Workshop, Boone Center for Science and Environmental Leadership at the Wrigley Marine Science Center on Santa Catalina Island
- 2018 Presenter: "The functional diversity and redundancy of corals", PhD Exit Seminar, ARC Centre of Excellence for Coral Reef Studies; [[video](#)]
- 2017 Session Host: "Species, traits and Coral Reef Processes" European Coral Reef Symposium (ECRS), Oxford, United Kingdom.  
Presenter: "Linking coral assemblages to community productivity", European Coral Reef Symposium (ECRS), Oxford, United Kingdom.  
Presenter: "Regional disparity in the diversity and redundancy of coral functional roles." Australian Coral Reef Society (ACRS) Conference, Townsville, Australia.
- 2016 Presenter: "Functional collapse on Caribbean Coral Reefs.", International Coral Reef Symposium (ICRS), Honolulu, Hawai'i, USA.

## FUNDING

- 2021 Leverhulme Early Career Research Fellowship (GBP 345,378), University of St Andrews
- 2015 JCUPRS Scholarship, Postgraduate Research Scholarship (AUD 204,872)

## AWARDS

- 2019 Australian Marine Science Association (AMSA, NQ Division) Award for Research
- 2018 Virginia Chadwick Award for outstanding publication in an international journal
- 2017 Vikki Harriot Award for outstanding conference presentation
- 2012 Brasenose Travel Grant (GBP 500, for coral reef ecology workshop, Bermuda)  
Bermuda Institute Of Ocean Sciences Scholarship (GBP 2000)
- 2009 Brasenose Travel Grant (GBP 500, for a research work placement, Indonesia)

## RESEARCH EXPEDITIONS

- 2019 [16] Kaneohe Bay, Oahu (Bleaching surveys, multiple surveys over 6 months); [15] Palau (Coral trait variation study, duration: 21 Days)
- 2018 [14] Southern Coral Sea (Coral Sea Monitoring, duration: 20 Days); [13] Orpheus Island (Coral recruitment study, duration: 7 Days); [12] Central Coral Sea (Coral Sea Monitoring, duration: 17 Days)
- 2017 [11] Palm Island Reefs, Great Barrier Reef (AIMs expedition, duration: 10 days), [10] Whitsunday Island Reefs (Coral recruitment study, duration: 6 days); [9] Central Great Barrier Reef (AIMs expedition, duration: 15 days); [8] Orpheus Island, Australia (Reef productivity study, 2 Months)
- 2016 [7] Great Barrier Reef, Cairns to Cooktown (Bleaching Mortality Surveys, duration: 28 days), [6] Heron Island, Great Barrier Reef (Fish behaviour study; duration; 21 days); [5] Opal Reef, Great Barrier Reef (Fish behaviour study; duration: 4 days); [4] Great Barrier Reef, Cairns to Cooktown (Bleaching surveys, duration: 28 days)
- 2015 [3] Palm Island Reefs (Cross-shelf growth study, duration: 7 days), [2] Orpheus Island, Great Barrier Reef (Pre-bleaching surveys; duration: 14 days); [1] Lizard Island, Great Barrier Reef (Fish movement study; duration; 21 days).

## TEACHING

- 2021 Instructor – Emerging technologies in coral reef conservation, Hawaii Institute of Marine Biology
- 2020 Instructor – Data visualisation in *ggplot2*, R coding workshop for the University of Hawaii Manoa Student Association
- 2019 Co-supervisor for Masters Research Project – *Oxygen Uptake and Ionoregulatory Development in Early Life Stages of Two Coral Reef Fishes* (Leteisha Prescott, JCU).

## POLICY REPORTS

- 2017 Briefing to MP's on Great Barrier Reef Bleaching, delivered to MP's at 'Science Meets Parliament' in Canberra, Australia
- 2016 [Advancing Climate Action in Queensland](#) and [Science-based policy plan for the Great Barrier Reef](#), written and submitted to MP's for the Australian Coral Reef Society

## OTHER SKILLS & ACTIVITIES

- SCUBA Instructor Marine Science and PADI SCUBA Instructor (15/06/2012-05/01/2015) at dive shops in the Caribbean, the Maldives, the Great Barrier Reef, and Southern Australia
- Reviewer Reviewer of manuscripts for *Proceedings of the Royal Society B*, *Functional Ecology*, *Ecology & Evolution*, *Coral Reefs*, *Biological Conservation*, *Marine and Freshwater Research*, and *Biodiversitas*; *Indonesian Journal of Biodiversity*. Reviewer of grant proposals for the National Science Foundation (NSF) and Centre de synthèse et d'analyse sur la biodiversité (CESAB).