

# DR. DARREN COKER

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**APA**

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## **Importance of live coral habitat for reef fishes**

Upon searching for a different path in life, Darren moved from New Zealand to Australia, where diving on the reef inspired him to study a BSc in Marine Biology at James Cook University.

Climate change is impacting coral reefs globally through increased disturbances like coral bleaching and increased tropical storms. Darren's research has helped us to understand what fishes will be impacted by the loss of live coral habitat and how key ecological processes drive changes in the abundance and diversity of associated fish assemblages.

In his PhD, Darren explored the role of live coral as habitats for many reef associated fishes, namely:

1. How reef fish are impacted by disturbances to corals, such as coral bleaching;
2. The role key ecological processes, such as predation and competition, play in the decline of abundance and diversity;
3. The effects of declining coral cover and structural complexity on the recovery of reef fish assemblages through recruitment.

Key findings were that:

- More fish use coral for habitat than previously thought.
- Disturbances are reducing fish numbers through increased predation, high competition for habitats and poor recovery through recruitment.

Darren Coker made an interesting discovery in the shallow waters off Lizard Island in 2012 finding a Mimic Octopus. This was the first time that this species had been documented in Australian waters.



## Publications

- Coker, D.J., 2013. Documentation of the mimic octopus *Thaumoctopus mimicus* in the Great Barrier Reef, Australia. *Marine biodiversity records*, 6.
- Coker, D.J. et al., 2013. Social group entry rules may limit population resilience to patchy habitat disturbance. *Ecology Progress Series*, 493, pp.237–242.
- Coker, D.J., Graham, N.J. & Pratchett, M.S., 2012. Interactive effects of live coral and structural complexity on the recruitment of reef fishes. *Coral Reefs*, 31(4), pp.919–927. Available at: <http://link.springer.com/10.1007/s00338-012-0920-1>.
- Coker, D.J., Pratchett, M.S. & Munday, P.L., 2009. Coral bleaching and habitat degradation increase susceptibility to predation for coral-dwelling fishes. *Behavioral Ecology*, 20(6), pp.1204–1210.
- Reviewed in Nature -<http://www.nature.com/news/2009/091021/full/news.2009.1023.html>
- Coker, D.J., Pratchett, M.S. & Munday, P.L., 2008. Does body colouration influence predation risk of coral-dwelling reef fish in bleached landscapes?, *Proceedings of the 11th ICRS international coral reef symposium*, Ft. Lauderdale, Florida. (Session 25).
- Coker, D.J., Pratchett, M.S. & Munday, P.L., 2012. Influence of coral bleaching, coral mortality and conspecific aggression on movement and distribution of coral-dwelling fish. *Journal of Experimental Marine Biology and Ecology*, 414-415, pp.62–68. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S0022098112000263>.
- Coker, D.J., Wilson, S.K. & Pratchett, M.S., 2013. Importance of live coral habitat for reef fishes. *Reviews in Fish Biology and Fisheries*. Available at: <http://link.springer.com/10.1007/s11160-013-9319-5>.
- Linares, C., Pratchett, M.S. & Coker, D.J., 2011. Recolonisation of *Acropora hyacinthus* following climate-induced coral bleaching on the Great Barrier Reef. *Mar Ecol Prog Ser*, 438, pp.97–104.
- Pratchett, M.S., Bay, L.K., et al., 2012. Effects of climate change on reef-building corals and associated fishes. In P. Hutchings & D. Lunney, eds. *Royal Zoological Society of New South Wales Forum. Wildlife & climate change : towards robust conservation strategies for Australian fauna*. Mosman, Royal Zoological Society of New South Wales.
- Pratchett, M.S., Hoey, J., et al., 2012. Interdependence between reef fishes and scleractinian corals. In *Proceedings of the 12th International Coral Reef Symposium*. pp. 9–13.
- Pratchett, M.S. et al., 2008. Protracted declines in coral cover and fish abundance following climate-induced coral bleaching on the Great Barrier Reef. *Proceedings of the 11th ICRS international coral reef symposium*, Ft. Lauderdale, Florida. (Session 25).
- Pratchett, M.S., Coker, D.J., et al., 2012. Specialization in habitat use by coral reef damselfishes and their susceptibility to habitat loss. *Ecology and evolution*, 2(9), pp.2168–80. Available at: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=3488668&tool=pmcentrez&rendertype=abstract>.