

Life, Earth & Environment Seminar Series

When: Friday July 21st , 11 am - noon

Where: Natural Resources Building, Small Lecture Theatre (EM2)

The role of cryptobenthic fishes on coral reefs

Dr Christopher Goatley

University of New England, Palaeoscience Research Centre

Reef ecosystems around the world are dominated by small fishes. In fact, on the Great Barrier Reef the average length of a reef fish is less than 45mm and 50% of all reef fish individuals belong to species that remain smaller than this for their whole lives. These species are known as cryptobenthic reef fishes, defined as small, camouflaged, bottom-dwelling fishes. While hugely abundant, we know remarkably little about the ecological roles of these little fish



may play a critical role in coral reef ecosystem dynamics, particularly as abundant prey items and as links in complex trophic webs. In this presentation, I will begin by providing a brief synopsis of what we currently know about the ecological roles of cryptobenthic reef fishes. I will first discuss recent findings regarding the dynamics and drivers of the extremely high predation rates suffered by cryptobenthic fishes. Then, I will focus on how we can apply new tools to develop an understanding of how cryptobenthic fishes fuel these fast growth rates. Understanding where these little fishes gain their nutrition is of critical importance, as their diets may ultimately affect populations of larger, economically valuable species. Rather than conducting complex dietary analyses on individual fishes, I will demonstrate the potential for computer based morphological and biomechanical analyses which may allow us to infer critical dietary information about species across entire assemblages.



Biography

Originally from the UK, Chris moved to Australia in 2007 to study marine ecology at James Cook University, Townsville. In January 2017 he began a 3-year UNE postdoctoral research fellowship working on the ecology and function of small, cryptic reef fishes. Working in the FEAR lab he combines 3D imaging, shape analysis and biomechanical techniques with field work on eastern Australian reef ecosystems to determine what highly abundant, small fishes 'do' in reef ecosystems.