

TIFFANY SIH

Tiffany.Sih@my.jcu.edu.au

PhD candidate, 2013 to 2016

School of Marine and Tropical Biology

JCU Postgraduate Research Scholarship

Supervised by:

Prof. Michael Kingsford (JCU)

Dr. Mike Cappel (AIMS)

Dr. Ashley Williams (Secretariat of the Pacific Community)

Diving into the deep-end: Investigating Queensland's tropical deep reef fish

Originally hailing from California, Tiffany completed a BSc In Biological Sciences at the University of Southern California in 2006. She worked as a fishery observer in the Alaskan groundfish fisheries in the Bering Sea, a marine naturalist in Maui, Hawaii, underwater research diver and PADI SCUBA Instructor and earned her U.S. Coast Guard's 100-ton captain's license before returning to academic studies. Tiffany finished a MAppSci at James Cook University in 2012, which included a research project using laser ablation inductively-coupled plasma mass spectrometry of newly-settled reef fish otoliths. Tiffany began her PhD in 2013 researching tropical deepwater fishes.

Off the Queensland coast, there has been limited scientific exploration beyond the SCUBA accessible depths, and there is currently inadequate information on tropical deepwater (>100m) fish assemblages and ecosystems. Tiffany's research will contribute to the demographic information of deepwater fish stocks and will look at multiple spatial scales, including the greater Southwest Pacific distribution range, for stock identification.

While many of these fishes are commercially valuable worldwide, currently there is limited commercial and recreational fishing off the Queensland shelf, however, fishing pressure on deepwater ecosystems is expected to increase. Tiffany's project will contribute greatly to both local and regional conservation and management decisions of deepwater resources.

Tiffany's research blends traditional fishery science techniques with complementary advances in technology to gain greater insight into the biology and ecology of deepwater fishes, and overcome the challenges of working at great depths.

Tiffany employs AIMS' deepwater Baited Remote Underwater Video Stations to get in situ information. In 2014, she will be collaborating with researchers using multibeam sonar technology and autonomous underwater vehicles to look at fish-habitat associations. Detailed otolith chemistry will be used to look for region-wide stock discrimination, useful for management decisions.

Tiffany has liaised with local fishermen and fish markets for samples, and was met with great enthusiasm. Recreational and commercial fishermen realise their vested interest in maintaining healthy fish stocks.



Publication

Camus, T. & Zeng, C., 2008. Effects of photoperiod on egg production and hatching success, naupliar and copepodite development, adult sex ratio and life expectancy of the tropical calanoid copepod *Acartia sinjiensis*. *Aquaculture*, 280(1-4), pp.220–226. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S0044848608003475>