

# Tiffany June Nay

---

Citizenship: American

Current Residence: Townsville, QLD, Australia

[Tiffany.nay@my.jcu.edu.au](mailto:Tiffany.nay@my.jcu.edu.au)

## Education:

---

### Ph.D. in Marine Science

January 2016-present

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

Dissertation title: Physiological and behavioural strategies used by fish to mitigate effects of ocean warming.

Supervisors: Dr. Andrew Hoey, Prof. Morgan Pratchett, Dr. Jacob Johansen

### M.Sc. in Marine Biology and Ecology

December 2015

James Cook University, Townsville, Australia

Thesis title: Behavioural thermoregulation in a temperature-sensitive coral reef fish, the five-lined cardinalfish (*Cheilodipterus quinquelineatus*)

Supervisors: Dr. Jodie L. Rummer, Dr. Jacob Johansen

GPA: 5.92

### B.S. in Marine Biology

May 2013

University of West Florida, Pensacola, Florida, USA

GPA: 3.09

## Research Interests:

- Physiological and behavioural strategies used by fish to mitigate the effects of ocean warming.
- Maintaining physiological performance during and following environmental stress

## Publications:

---

Nay TJ, Johansen JL, Habary A, Steffensen JF, Rummer JL. (2015) Behavioural thermoregulation in a temperature-sensitive coral reef fish, the five-lined cardinalfish (*Cheilodipterus quinquelineatus*). *Coral Reefs* 34(4): 1261-1265. doi: 10.1007/s00338-015-1353-4.

IF: 3.095, Citations: 9, Altmetric: 8

Habary A, Johansen JL, Nay TJ, Steffensen JF, Rummer JL. (2016) Adapt, move or die – what are the real options for a tropical coral reef fish? *Global Change Biology* 23(2): 566-577. Doi: 10.1111/gcb.13488

IF: 8.997, Citations: 9, Altmetric: 118

Gervais C, **Nay T**, Renshaw G, Johansen JL, Steffensen JF, Rummer JL. (2018) Too hot to handle? Using movement to alleviate effects of elevated temperatures in a benthic elasmobranch, *Hemiscyllium ocellatum*. *Marine Biology* 165(11): 162.

IF: 2.215, Citations: 0

**Nay TJ**, Gervais CR, Hoey AS, Johansen JL, Steffensen JF, Rummer JL. (2018) The emergence emergency: a mudskipper's response to temperature. *Journal of Thermal Biology* 78: 65-72.

IF: 2.093, Citations: 0

Spady BL, **Nay TJ**, Rummer JL, Munday PL, Watson SA. Aerobic scope of two tropical cephalopod species unaltered by projected near-future CO<sub>2</sub> levels. (In review in *Conservation Physiology*)

IF: 3.460

**Nay TJ**, Johansen JL, Rummer JL, Steffensen JF, Hoey AS. Do fish prefer friends? The effect of conspecifics, heterospecifics, and predator presence on temperature preference in a coral reef fish. (In prep for *Global Change Biology*)

**Nay TJ**, Hoey AS, Rummer JL, Steffensen JF, Johansen JL. The effect of habitat complexity on temperature preference in a coral reef fish. (In prep)

**Nay TJ**, Longbottom RJ, Gervais CR, Johansen JL, Rummer JL, Steffensen JF, Hoey AS. Microhabitat use and temperature utilization in a coral reef flat specialist. (In prep)

#### **Grants/Awards:**

---

Society for Experimental Biology, Company of Biologist Travel Fund (\$455 AUD) To attend Australian Marine Science Association Conference	2018
ARC Centre of Excellence for Coral Reef Studies HDR Enhancement Scheme (\$2250 AUD) James Cook University, Townsville, Queensland, Australia	2017
Society for Experimental Biology, Company of Biologist Travel Fund (\$295 AUD) To attend Australian Society for Fish Biology/Oceania Chondrithyan Society Conference	2016
ASFB John Glover Travel Fund (\$400 AUD) To attend Australian Society for Fish Biology/Oceania Chondrithyan Society Conference	2016
ARC Centre of Excellence for Coral Reef Studies HDR Enhancement Scheme	2016

(\$2500 AUD)  
James Cook University, Townsville, Queensland, Australia

ARC Centre of Excellence for Coral Reef Studies Symposium and Student Retreat (\$1100 AUD) James Cook University, Townsville, Queensland, Australia	2015
Friday Harbor Laboratories, University of Washington (\$3000 USD) Friday Harbor Laboratories, University of Washington, Washington, USA	2015
Office of Undergraduate Research (\$340 USD) University of West Florida, Pensacola, Florida, USA	2013
Distinguished Biology Department Presentation Award University of West Florida Student Scholar Symposium, Pensacola, Florida, USA	2012
Office of Undergraduate Research (\$2400 USD) University of West Florida, Pensacola, Florida, USA	2011

**Scholarship:**

---

James Cook University Postgraduate Research Scholarship James Cook University, Townsville, Queensland, Australia	2016
---	------

**Professional Experience:**

---

Laboratory Technician, James Cook University, Townsville, Australia	2015
<ul style="list-style-type: none"><li>Responsibilities: training new students and volunteers, organizing volunteers, equipment care and maintenance, laboratory care and maintenance, animal husbandry</li><li>Supervisor: Dr. Jodie Rummer</li></ul>	
Fish Swimming Course, Friday Harbor Laboratories, Washington, USA	2015
<ul style="list-style-type: none"><li>Determined whether boldness or shyness determines position of fish in schools</li><li>Supervisors: Dr. Paolo Domenici, Prof. John Steffensen, Dr. Jacob Johansen</li></ul>	
MSc Minor Research Project, James Cook University, Townsville, Australia	2015
<ul style="list-style-type: none"><li>Determined temperature preference of five-lined cardinalfish, <i>Cheilodipterus quinquelineatus</i>, exposed to current and end-of-century predicted temperatures</li><li>Supervisors: Dr. Jodie Rummer and Dr. Jacob Johansen</li></ul>	
Volunteer, James Cook University, Townsville, Australia	2014
<ul style="list-style-type: none"><li>Animal husbandry, including feeding, cleaning, and maintaining water quality</li><li>PhD candidates: Lauren Nadler, Geoffrey Collins</li></ul>	

Internship, South African Shark Conservancy, Hermanus, South Africa 2013

- Participated in boat and shore based whale watching surveys, I3S software analysis from BRUV (Baited Remote Underwater Video), and assisting in creation of Kleinmond River Estuary clean-up project

Independent Research, University of West Florida, Pensacola, Florida, USA 2013

- Compared the effects of temperature on metabolic rates in sand and water environments on the coquina clam, *Donax variabilis*
- Supervisor: Dr. Jane Caffrey

Research Assistant, Operation Wallacea, Hoga Island, Indonesia 2010-2011

- Determined resistance to evaporative water loss in the crab-eating frog using gravimetric wind tunnel techniques
- Examined tolerance of water loss and evaporative water loss on common and barred mudskipper fishes
- Determined total oxygen uptake into pulmonary and cutaneous components using a bimodal respirometer of yellow-lipped sea kraits
- Supervisor: Dr. Wayne Bennett

Research Assistant, University of West Florida, Pensacola, Florida, USA 2010

- Bioenergetics and thermal sensitivity of sergeant major and cocoa damselfishes living in hyperthermal beachrock pools
- Used flow-through respirometry techniques to indirectly quantify caloric consumption and measure the costs of living in extreme tidepool habitats
- Supervisor: Dr. Wayne Bennett

### **Presentations:**

---

These fins were made for walking. Using movement to mitigate exposure to elevated temperatures in a benthic elasmobranch, *Hemiscyllium ocellatum*,  
2018 January and July Public outreach at Heron Island Resort, Queensland, Australia

Do fish prefer friends? The effect of conspecifics, heterospecifics, and predator presence on temperature preference in a coral reef fish,  
2018 AMSA Conference, Adelaide, South Australia, Australia

Too hot to handle? Using movement to mitigate exposure to elevated temperatures in a benthic elasmobranch, *Hemiscyllium ocellatum*,  
2017 ACRS Conference, Townsville, Queensland, Australia

The intersection between fish physiology and behaviour in regulating microhabitat use,

2016 ASFB/OCS Conference, Hobart, Tasmania, Australia

2015 MSc Presentation, James Cook University, Townsville, Queensland, Australia

Comparing the effects of temperature on metabolic rates in water and sediment for the  
coquina clam, *Donax variabilis*,

2013 Students Scholar Symposium, University of West Florida, Pensacola, Florida, USA

The price of living in two worlds: Water economy adaptations of mudskipper fishes from  
Hoga Island, Indonesia,

2012 Student Scholar Symposium, University of West Florida, Pensacola, Florida, USA

### **Teaching Experience:**

---

Mentor, visiting international undergraduate students, James Cook University,  
Townsville, Australia November 2014, January 2015, April 2015, July –  
August 2015

Instructor & Assistant, Schools Coral Reef Ecology, Hoga Island Marine Research  
Laboratory

June 2013 – August 2013, Operation Wallacea

Schools Coordinator, Hoga Island Marine Research Laboratory

June 2012 – August 2012, Operation Wallacea

Teaching Assistant, 2009 UWF Summer Camps, University of West Florida, Pensacola, FL

### **Skills and Certifications:**

---

2018            Emergency First Response CPR, First Aid, and O<sub>2</sub> Administrator

2013            PADI Dive master, Pensacola, Florida, USA, Certification Date: May 2013

2013            Visual Inspection Procedures Specialty, Scuba Diving International

2010- 2013    Dive master at MBT Divers, Pensacola, FL

2010            NAUI Dive master, Pensacola, Florida, USA,  
Certification Date: February 2010

2007            Master Scuba Diver,  
Research Diver, and  
Underwater Photography (PADI)

2006            Enriched Air Diver,

Wreck Diver,  
Night Diver,  
Underwater Naturalist,  
Equipment Specialist, and  
Boat Diver (PADI)