



Coral Reef Futures

2017 Symposium Program



SYMPOSIUM

15-16 June 2017
The Shine Dome, Canberra

A 2-day symposium on Thursday 15th and Friday 16th June with more than 30 presentations by leading scientists. The symposium is aimed at a general audience of scientists in related fields, natural resource managers, conservationists, and policy makers. The symposium will be held at The Shine Dome Canberra.



PUBLIC FORUM

Thursday 15th June 2017
The Shine Dome, Canberra

A Public Forum commencing at 6.00pm (refreshments from 5.30pm), Thursday 15th June. Hosted by Dr Karl, popular Australian science communicator, broadcaster extraordinaire, and author, this event is for everyone: the general public, teachers and school children (older than about 10) as well as scientists, resource managers and policy-makers.

WELCOME

Welcome to **Coral Reef Futures**, the 10th annual symposium sponsored by the *Australian Research Council Centre of Excellence for Coral Reef Studies*. We are delighted to be conducting our annual symposium at the National Heritage-listed Shine Dome in Canberra, home of the Australian Academy of Science since 1959.

The 2-day symposium will feature presentations from over 30 national and international researchers in the ARC Centre, Great Barrier Reef Marine Park Authority, WorldFish and the University of Exeter to provide an insight into the future of the world's coral reefs.

The symposium objectives are to:

- present the latest science which supports the sustainable management of coral reefs, in Australia, our region and globally
- focus on coral reef research, management and policy developments
- Examine the effects of global environmental change on coral reef ecosystems.

Globally, more than 300 million people depend on the ecosystem services that coral reefs provide, for their livelihoods and food security. In Australia, the Great Barrier Reef alone generates \$6 billion per annum in income from tourism and fisheries, yet coral reefs are rapidly degrading due to multiple pressures such as climate change, overfishing and pollution.

Coral bleaching due to record breaking temperatures during the 2015/2016 El Niño event affected the world's coral reefs. Australia was one of the worst affected regions, and the science and reef management community responded on an unprecedented scale. Just 12 months later, in April 2017, scientists again recorded severe coral bleaching across huge tracts of the Great Barrier Reef. There has never been a greater or more urgent need for trans-disciplinary and policy-relevant coral reef research.

Please also join us at Thursday evening's Public Forum, also at the Shine Dome. Hosted by Dr Karl, popular Australian science communicator, broadcaster extraordinaire, and author, this event will feature the research of five ARC Centre researchers. The Forum is for everyone: the general public, teachers and school children (older than about 10) as well as scientists, resource managers and policy-makers. Refreshments will be served from the end of the day session on Thursday before the Forum's 6.00pm start.

We once again give a special welcome to the student contingent attending this symposium. Students are the future of coral reef research and it is heartening to see their enthusiastic interest and engagement.

Finally, I sincerely thank the many people who have made this symposium possible, particularly our distinguished guest speakers. I hope that you will have a rewarding and enjoyable time at the symposium and I look forward to talking with many of you over the next couple of days.



Terry Hughes
Centre Director

PROGRAM

THURSDAY 15TH JUNE

TIME	THEME/TOPIC	PRESENTER
8.30am	Registration and Coffee	
9.00am	Welcome	Terry Hughes
	Official Opening	Leanne Harvey <i>Acting CEO</i> Australian Research Council
9.20am	Future of Coral Reefs	Chair: Kate Brown
	Coral reefs in the Anthropocene	Terry Hughes
	Subtropical bleaching event along the eastern Australian coastline	John Pandolfi
	Complexity and effectiveness in Great Barrier Reef governance	Tiffany Morrison
10.20am	Morning Tea	
10.50am	Intervention and adaptive management in the Great Barrier Reef World Heritage Area	Mark Read
	Corals in a perturbed world – Adapt, acclimatize and re-assemble	Greg Torda
	Disparity between life history traits and conservation status assessments in reef corals	Tom Bridge
	Biological process of coral mortality during severe marine heatwaves	Tracy Ainsworth
12.10pm	Lunch	
1.30pm	Fisheries and Fish	Chair: Jodie Rummer
	Parrotfish write their own ecological rule book and it's messy	Peter Mumby
	Retracing long and lonely journeys of reef fish families	Michael Bode
	Connecting reefs in the Anthropocene: managing Australia's coral reefs for recovery and persistence	Hugo Harrison
	Marine protected area (MPA) design for both conservation and fisheries	Nils Krueck
	Can collaborative fisheries management improve social-ecological fit in the Coral Triangle?	Rebecca Weeks
3.10pm	Afternoon Tea	
3.40pm	Small-scale fisheries; spanning scales and disciplines	Pip Cohen
	Multiple communities, one Reef: redefining community based on place attachment in a connected world	Georgina Gurney
	Market influence on social behaviour and its implication for the environment	Cristian Rojas
	Solution spaces for navigating coral reefs through the Anthropocene	Josh Cinner
5.00pm	End	

THURSDAY 15TH JUNE (EVENING SESSION)

Public Forum, hosted by Dr Karl Kruszelnicki will be held at 6.00pm (5.15pm for refreshments).



FRIDAY 16TH JUNE

TIME	THEME/TOPIC	PRESENTER
9.00am	Welcome and introductory comments	
9.10am	Future of Coral Reefs	Chair: Maja Adamska
	What futures for coral reef peoples?	Kate Brown
	Cumulative effect of multiple impacts on seagrass connectivity in the Great Barrier Reef	Alana Grech
	Novel methods for monitoring sub-lethal impacts in corals and other marine organisms	Bill Leggatt
	Management of terrestrial pollution for the Great Barrier Reef: Current failure versus what could be done for success	Jon Brodie
10.40am	Morning Tea	
11.00am	Global Change	Chair: Alana Grech
	Student presentation: Virginia Chadwick award intro	Alana Grech
	Student presentation: Defining microbiome in coral's microbial soup	Alejandra Hernandez
	The <i>Achilles Heel</i> of coral calcification	Malcolm McCulloch
	Connections between tropical and subtropical coral symbioses: implications for species tolerance range limits	Eugenia Sampayo
	Transgenerational plasticity of a coral reef fish to ocean warming	Jenni Donelson
	The epigenetic landscape of transgenerational acclimation to ocean warming	Heather Veilleux
	Effect of pH variability and flow on the response of corals and coralline algae to ocean acidification	Steeve Comeau
1.00pm	Lunch	
2.00pm	Assessing and predicting the future of coral reef coastlines	Ryan Lowe
	Towards a theory of social-ecological collapse	Graeme Cumming
2.40pm	Ecology and Evolution	Chair: Sean Connolly
	Whole body regeneration in sponges: cellular and molecular mechanisms	Maja Adamska
	The phylogenetic history of coral reef biodiversity: What do we know? Where should we go?	Peter Cowman
	Coral degradation affects how fish assess risk	Mark McCormick
3.40pm	Conclusion	

PRESENTERS



ASSOCIATE PROFESSOR MAJA ADAMSKA

Maja is a leader of Program 3 in the ARC Centre of Excellence for Coral Reef Studies. From 2007-2015, she was a group leader at the Sars International Centre for Marine Molecular Biology in Bergen, Norway. She is now a Group Leader and Associate Professor in the Research School of Biology, Australian National University. Her group uses calcareous sponges to gain insight into the evolutionary origin of a variety of key developmental processes, including segregation of germ layers and axial patterning of embryos and adults. Maja is also interested in major transitions in animal evolution, such as emergence of multicellularity and morphological complexity, and their relationship to genomic complexity.



DR TRACY AINSWORTH

Tracy is a Principal Research Fellow in the ARC Centre of Excellence for Coral Reef Studies. Tracy's research focuses on coral biology, host-microbe interactions, symbiosis, and the responses of these interactions to environmental change. This research aims to determine how host-microbe interactions influence organism physiology, adaptation and acclimation. Tracy's research also investigates corals across diverse ocean habitats including shallow, mesophotic, deep and cold water systems, and she also investigates the microbial connectivity in the benthic habitat. Tracy was previously an ARC Super Science Fellow and ARC Postdoctoral Fellow in the Centre after completing her PhD at the University of Queensland.



PROFESSOR KATE BROWN

Kate is Professor of Social Science at the University of Exeter, UK, working at the interface between international development, environmental change and resilience. Her research focuses on how individuals and societies understand and respond to change, and their different capacities for adaptation and transformation. Committed to interdisciplinary research on sustainability, she has led several international research teams to examine environmental change and poverty alleviation in developing countries. Her 2016 book, 'Resilience, Development and Global Change' develops a human-centred perspective on resilience for development, highlighting resistance, rootedness and resourcefulness.



DR MICHAEL BODE

Michael is a Principal Research Fellow in Computational Biology at the ARC Centre of Excellence for Coral Reef Studies. He completed a PhD in mathematics at the University of Queensland, under Prof. Hugh Possingham. His thesis research ranged from marine fisheries to global conservation funding allocation, in close collaboration with government and NGO conservation organisations. After submitting his thesis Michael finished two ARC fellowships that focused on insular and marine conservation, and was a Chief Investigator on the ARC Centre of Excellence for Environmental Decisions and the NESP Threatened Species Hub. In June 2017 he was awarded an ARC Future Fellowship for his project *New methods for conserving dispersing species on coral reefs*. His research focuses on the development of quantitative methods in spatial ecology and conservation.



DR TOM BRIDGE

Tom is originally from Sydney, Australia, and completed an honours degree in Marine Science at the University of Sydney in 2005. He completed his PhD research on the benthic ecology of mesophotic coral ecosystems on the Great Barrier Reef. Tom has a broad interest in the biodiversity and biogeography of corals reefs, and his current research is focused on understanding coral reef biodiversity in deeper waters beyond SCUBA diving depth, the relationship between deep and shallow reef habitats and utilising new technologies to better understand marine ecosystems. Tom is currently Senior Curator of Corals at the Queensland Museum Network, co-appointed with the ARC Centre of Excellence for Coral Reef Studies at JCU.

**PROFESSOR JON BRODIE**

Jon is a Professorial Research Fellow in the ARC Centre of Excellence for Coral Reef Studies. Jon's research focusses on the sources of pollutants in catchments, transport of pollutants to the marine environment, the dispersal of land-based pollutants in coastal and marine environments and the effects of terrestrial pollutants on marine ecosystems. Jon is also heavily involved in policy advice to Australian governments regarding management of water quality issues for the Great Barrier Reef. He was the lead author of the Scientific Consensus Statement documenting the status of knowledge and management for water quality issues affecting the Great Barrier Reef for the Queensland and Australian Governments in 2008, 2013 and 2016/2017 leading groups of more than 50 scientists and policy experts.

**PROFESSOR JOSH CINNER**

Josh's research explores how social, economic, and cultural factors influence the ways in which people use, perceive, and govern natural resources. His background is in human geography and he often works closely with ecologists to uncover complex linkages between social and ecological systems. He has worked on human dimensions of resource management in Australia, Jamaica, Mexico, Papua New Guinea, Kenya, Madagascar, Tanzania, Mauritius, Seychelles, Indonesia, Mozambique, and the USA and has published >115 peer-reviewed journal articles. Josh is an ARC Future Fellow, a recipient of the 2015 Pew Fellowship in Marine Conservation, and received the 2017 Elinor Ostrom Award on collective governance of the commons.

**DR PIP COHEN**

Pip is an interdisciplinary researcher who focuses on the governance of small-scale fisheries in developing countries. Pip began her career in fisheries in Tasmania, but then escaped the cold for the tropical Pacific – Tonga, Fiji and then Solomon Islands. Pip has now worked in the Pacific region for over ten years. In 2013 Pip completed her PhD at the ARC Centre of Excellence for Coral Reef Studies. Pip is now employed as a scientist for WorldFish, and is an adjunct research fellow at the Centre. Pip's research examines governance at local to regional scales, and particularly focuses on understanding community-based fisheries management for improving food security in the Pacific.

**DR STEEVE COMEAU**

Steeve is a Research Fellow at the ARC Centre of Excellence for Coral Reef Studies and the University of Western Australia. His research focuses on understanding how and why coral reefs are affected by changes in oceanic carbonate chemistry. He also studies the effects of climate change on the link between processes occurring on reefs at micro-scale and larger scale. In 2016, Steeve was awarded an ARC Discovery Early Career Researcher Award to study the effects of climate change on coral calcification mechanisms.

**PROFESSOR SEAN CONNOLLY**

Sean is a Leader of Research Program 2 in the ARC Centre of Excellence for Coral Reef Studies. Sean combines mathematical and statistical modelling with fieldwork and laboratory experiments to study the dynamics of biological turnover at all scales, including ecophysiology, population dynamics, species interactions and biodiversity, and macroevolution. Sean has >100 publications in leading international journals, including 6 papers in *Science* or *Nature*. In 2008, he was awarded an ARC Australian Professorial Fellowship (2008-2012), and in 2009, the *Fenner Medal* of the Australian Academy of Science, which honours outstanding research in the biological sciences by a scientist under 40.

**DR PETER COWMAN**

Peter joined the ARC Centre of Excellence for Coral Reef Studies in 2016 as Research Fellow in Ecosystem Dynamics. In 2017, he was awarded an ARC Discovery Fellowship (DECRA). Previously, he has held a postdoctoral position at the Australian National University and the Gaylord Donnelley Fellowship at the Yale Institute for Biospheric Studies (YIBS). His research has leveraged large genetic databases to explore the evolutionary history of reef fish assemblages and to examine correlations between life history, environmental factors and genomic change across the Tree of Life. In his DECRA research, Peter is generating new genomic data for corals and fishes to reconstruct their evolutionary history using phylogenetic methods.

PRESENTERS



PROFESSOR GRAEME CUMMING

Graeme is a coral reef research leader in the ARC Centre of Excellence for Coral Reef Studies. He joined the Centre from the University of Cape Town in South Africa. He has a diverse range of interests that are centered on the relevance of broad-scale pattern-process dynamics for ecosystem (and social-ecological system) function and resilience. His current research focuses on scale and the applications of landscape ecology and complexity theory to questions of the sustainability of natural resource management systems, particularly protected areas. His background is primarily in terrestrial and freshwater ecology and over the next few years he is hoping to find innovative ways of bridging some of the analytical gaps between marine and terrestrial landscapes.



DR JENNI DONELSON

Jenni is Research Fellow at the ARC Centre of Excellence for Coral Reef Studies, in collaboration with the King Abdullah University of Science and Technology (KAUST). Jennifer's research focuses on exploring the plastic capacity of reef fish to environmental change. She is particularly interested in how exposure of previous generations influences the phenotype of the current generation, and more broadly how this could impact species responses to future climate change.



DR ALANA GRECH

Alana is Assistant Director of the ARC Centre of Excellence for Coral Reef Studies. The goal of her research is to inform the management of Australia's natural and cultural environment through spatial information science and conservation planning. Her research covers three themes: spatial predictions of coastal and marine features; cumulative impact and risk assessments in geographic information systems (GIS); and conservation planning and Indigenous Australia. Alana was previously a Senior Lecturer at Macquarie University, and Postdoctoral Research Fellow at the Centre.



DR GEORGINA GURNEY

Georgina is an Environmental Social Science Research Fellow at the ARC Centre of Excellence for Coral Reef Studies. Her research focuses broadly on understanding the socioeconomic conditions that influence opportunities for collaborative management of marine common-pool natural resources, and the multiple socioeconomic and environmental outcomes of such initiatives. Georgina takes a transdisciplinary approach to her research, drawing on theories and methods from a range of disciplines including political science, social psychology, and human geography. She has undertaken most of her research in the context of coral reef management in the Asia-Pacific region, including in Indonesia and Fiji, where she is working closely with resource managers.



DR HUGO HARRISON

Hugo is molecular ecologist working at the interface of coral reef ecology, fisheries sciences and population genetics. Hugo's work on larval dispersal has led to major advances in our understanding of movement patterns in marine fishes, which is relevant to the optimal design of networks of marine protected areas. His research brings a unique perspective and a unique set of tools to resolve the population dynamics of marine organisms that have real impact in the conservation of marine ecosystems and the sustainable use of marine resources. In 2016, Hugo was awarded an ARC DECRA Fellowship for the development of a mechanistic understanding of connectivity and dispersal in marine organisms. His research aims to identify critical regions that will enhance the value of marine resources and identify vulnerable regions in the conservation and management of the Great Barrier Reef Marine Park and Coral Sea Commonwealth Marine Reserve.



ALEJANDRA HERNANDEZ

Alejandra is an awardee of the Australia Awards Scholarship, pursuing a PhD in the ARC Centre of Excellence for Coral Reefs Studies at James Cook University. She is interested in coral microbial ecology, and microbial contributions to coral success and functioning. To investigate these topics, Alejandra is analyzing bacterial communities in various coral species along different environments in the Great Barrier Reef and the Coral Sea. She is coupling multiple approaches employed at other complex bacterial-host systems where microbial contributions have been well established. By doing so she expects to pinpoint the bacterial role in corals, while disentangling its complexity, and building foundations for a convergent overview of coral microbial ecology.

**PROFESSOR TERRY HUGHES**

Terry is the Director of the ARC Centre of Excellence for Coral Reef Studies and an Australian Laureate Fellow (2012-2017). His research focuses on the linkages between the ecology of reefs and their importance for societies and economies. He has worked extensively in Australia, the Coral Triangle Region, and in the Caribbean. An important aspect of his research is understanding the dynamics and resilience of coral reefs, and translating this knowledge into innovative and practical solutions for improved reef management. Terry is a Fellow of the *Australian Academy of Science* and the Beijer Institute for Ecological Economics, Stockholm. He is an *ISI Highly Cited Researcher*, and was recognized in 2008 by the *International Coral Reef Society*, with the award of the society's Darwin Medal.

**DR NILS KRÜECK**

Nils was born and raised in Germany. He moved to Australia in 2007 to complete a MSc in Marine Biology. He continued with a PhD in Marine and Fisheries Science at the University of Queensland. Nils has a broad interest in marine ecology and natural resource management, particularly in fish population dynamics and spatial fisheries management. His current work aims at advancing the theory of marine reserve network design in order to support both coral reef conservation as well as the productivity of reef fisheries. Nils' work is focused on reef fisheries and conservation in the Coral Triangle region, specifically in the Indonesian Sunda Banda seascape.

**ASSOCIATE PROFESSOR BILL LEGGAT**

Bill is an Associate Professor in the Discipline of Molecular and Cellular Biology and a Researcher in the ARC Centre of Excellence. His research interests include the impact of anthropogenic impacts, such as global warming and acidification, on corals and other marine organisms. In particular, his research group focuses on including linking molecular response to phenotypic and organismal traits and how these responses change under altered environmental conditions.

**PROFESSOR RYAN LOWE**

Ryan is a Program Leader of the ARC Centre of Excellence for Coral Reef Studies, and a Professor at the University of Western Australia. He has a unique background in coastal oceanography and environmental engineering that enables him to tackle complex (and often multidisciplinary) research problems in coral reef systems. Major areas of research focus include: understanding how ocean dynamics drive physical and other environmental variability within coral reefs; how these dynamics influence a range of complex biophysical processes, and finally how these processes can be numerically predicted and accurately forecast into the future.

**PROFESSOR MARK MCCORMICK**

Mark is a world expert on processes that regulate fish communities, particularly within coral reefs. He is known for his novel, innovative research that explores the mechanisms underlying population processes and how they scale to community dynamics. He has contributed greatly to our understanding of the interconnections among different parts of the complex life cycle of marine organisms and how small changes to the processes at early life stages can have major repercussions for the numbers entering subsequent life stages and their relative fitness. More recently, he has been focusing attention on how the changing thermal environment and ocean chemistry affect population processes and the ability of fishes to acclimate or adapt to these conditions.

**PROFESSOR MALCOLM MCCULLOCH**

Malcolm is a Deputy Director of the ARC Centre and an Australian Laureate Fellow (2013-2018) at the University of Western Australia. Malcolm's research interests focus on the modern part of the geologic record using isotopic and trace element geochemical methods to determine how climate and anthropogenic processes have influenced both past and present environments with particular emphasis on coral reefs. Malcolm has received a number of prestigious awards, in 2010 he was elected as a Fellow to The Royal Society. In 2009 he was awarded the Jaeger Medal for his career achievement in the Earth Sciences and has Fellowships of the Australian Academy of Science (2004), the Geological Society of Australia (2007), the Geochemical Society (2008) and the American Geophysical Union (2002). Malcolm is an ISI Highly Cited Researcher and has published over 250 scientific papers in leading international journals including 23 in *Science* and *Nature*.

PRESENTERS



DR TIFFANY MORRISON

Tiffany is a political geographer and Associate Professor at the ARC Centre of Excellence for Coral Reef Studies, Australia. Her research focuses on the design and implementation of complex environmental governance regimes. She has worked extensively in Australia, Asia, and the US. Prior to joining the ARC Centre of Excellence, Tiffany was on faculty at the University of Queensland where she co-led a team of ecologists, geographers, planners, economists, and lawyers on an ARC Super Science project on the complex governance of climate adaptation. The current focus of her program is on uncovering hidden levers for improving the design and implementation of polycentric regimes. She has published on this topic in *Nature*, *PNAS*, and *Global Environmental Change*.



PROFESSOR PETER MUMBY

Peter is a Chief Investigator in the ARC Centre of Excellence, and a Professor in the School of Biological Sciences at the University of Queensland. He is a reef ecologist and uses both experimental and modelling approaches to answer questions about the functioning of coral reefs and the influence of management. His current research focuses on ecosystem resilience, processes influencing coral recovery, ecosystem-based fisheries, MPA network design, and the management of ecosystem services. Peter is a Pew Fellow of Marine Conservation. In 2015, the International Society for Reef Studies awarded him a Fellowship and inaugural 'Mid Career Scientist' award in recognition of contributions to reef science in the last decade. Peter is happiest underwater.



PROFESSOR JOHN PANDOLFI

John is a Program Leader in the ARC Centre of Excellence for Coral Reef Studies, and is a Professor in the School of Biological Sciences, and Centre for Marine Science, The University of Queensland. He has broad research interests in marine palaeoecology, with emphasis on the effects of anthropogenic impacts and climate change on the recent past history of modern coral reefs. His research on the ecology of the Great Barrier Reef provides insight into how past marine ecosystems function in the absence of humans, providing reef managers with important historical context. He has published over 150 scientific articles in leading international journals, including *Science* and *Nature*. John was recently elected Fellow of both the Paleontological Society and the International Society for Reef Studies.



DR MARK READ

Mark works at the Great Barrier Reef Marine Park Authority in the jointly-funded Field Management Program assisting with the delivery of on-ground actions to manage island and marine habitats and the species that rely on them within the Great Barrier Reef World Heritage Area. Mark completed a PhD on the nutritional physiology of post-hatchling estuarine crocodiles and then spent nearly twelve years working as a wildlife biologist and manager in the Queensland Parks and Wildlife Service. Mark started working at the Great Barrier Reef Marine Park Authority nearly ten years ago and has been focussed on developing both strategic policy and practical on-ground actions to support the conservation, management and sustainable use of species and habitats. Mark is currently acting as the Director of the Reef Recovery section.



DR CRISTIAN ROJAS

Cristian is a postdoctoral Research Fellow at the ARC Centre of Excellence for Coral Reef Studies. He completed his PhD in Environmental Economics at the University of Wyoming. Cristian is interested in the integration of human and natural systems (bio-economic models) and their interaction; the development of mechanisms to increase the efficiency of coupled human-natural systems; and the incorporation of psychological insights into economic analysis. His current research focuses on the use of economic field and laboratory experiments to understand how markets, and market structure, changes people's preferences for environmental sustainability.

**DR JODIE RUMMER**

Jodie is a Principal Research Fellow at the Centre of Excellence for Coral Reef Studies. Since joining the centre in late 2011, Jodie has been awarded two ARC fellowships (Super Science and Early Career Discovery) as well as accolades including 2015 L'Oréal-UNESCO women in science fellowship for Australia and New Zealand, the Society for Experimental Biology's President's medal in 2016, and she was honoured as one of Australia's top 5 scientists under 40 in 2016 by the ABC, Radio National, and UNSW. Her research program addresses climate change and the physiological and biochemical adaptations that will be required of coral reef fishes, including several species of sharks and rays, with climate change and other human-induced stressors.

**DR EUGENIA SAMPAYO**

Eugenia is a Centre Research Fellow at the University of Queensland. Eugenia's research focuses on the ecology and functional significance of the symbiotic dinoflagellates (*Symbiodinium*) that associate with many marine invertebrates, including scleractinian corals. She is particularly interested in symbioses ecology and evolution, species ranges and flexibility of symbiotic partnerships in the context of climate change. Her recent work investigates the connections between tropical and high latitude coral communities to explore if the coral symbionts contribute to limiting their hosts' distribution ranges.

**DR GREG TORDA**

Greg is a joint Postdoctoral Research Fellow at the ARC Centre of Excellence for Coral Reef Studies, and the Australian Institute of Marine Science; and holder of a prestigious Lizard Island Postdoctoral Fellowship. With a background in genetics, and behavioural, spatial and marine ecology, he worked extensively on the science-policy interface and in conservation management before completing a PhD at James Cook University in 2013. In his current research, Greg uses molecular techniques to study the pace and variability of genetic adaptation and transgenerational plasticity in coral species, and how these may translate into changes in assemblage composition with progressing climate change.

**DR HEATHER VEILLEUX**

Heather is Postdoctoral Fellow at the ARC Centre of Excellence for Coral Reef Studies, in collaboration with the King Abdullah University of Science and Technology (KAUST). Heather's research focuses on identifying the genomic mechanisms that allow some populations of coral reef fish to acclimate to climate change, with particular interest in epigenetic inheritance. More broadly, she uses next-generation sequencing and qRT-pCR to answer a range of questions relating to how climate change affects marine animals at the molecular level.

**DR REBECCA WEEKS**

Rebecca is a Research Fellow with the ARC Centre of Excellence for Coral Reef Studies at James Cook University. Rebecca's research interests broadly concern the design and implementation of management strategies aimed at conserving biodiversity and ensuring the sustainability of fisheries on coral reefs in tropical developing countries. Her current projects focus on the potential of collaborative governance arrangements to resolve problems related to social-ecological misfit; incorporating reef fish movement ecology into the design of marine protected area networks, understanding local preferences for fisheries management strategies; and improving the efficacy of conservation planning processes.



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Coral Reef Studies

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