



**CAIRNS
CONVENTION
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PASSION IS IN OUR NATURE

LIFE SCIENCE FACT SHEET

The Great Barrier Reef is the largest living structure on earth at 348,700 km² and was awarded UNESCO World Heritage Site inscription in 1981. Home to over 9,000 species of marine life, the reef as we know it today, sits on top of ancient coral which is estimated to be over 20 million years old in places. Consisting of 2,900 separate coral reefs, there are more than 1,050 islands within the area. Here you'll find 1,625 species of fish, 3,000 species of molluscs, six of the seven different types of marine turtles and 30 species of whales and dolphins, to name but a few.

With such a rich, biodiverse environment, it is no surprise that Cairns has become one of the leading places to conduct research within the Marine Science field. Many of the world's leading researchers have delivered ground-breaking discoveries which have helped address some of the health challenges faced not only by those living in the tropics, but across the globe.



“We have some of the best researchers and groups in the world based here in Cairns, and they are doing some amazing work.”

JAMIE SEYMOUR
ASSOCIATE PROFESSOR
AITHM, JAMES COOK UNIVERSITY



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The Importance of Jellyfish

Unlocking envenoming

Associate Professor Jamie Seymour has been researching and working with venomous and dangerous animals for over 20 years, with his present interest focussing on why animals have venom. Based at James Cook University, Jamie is uniquely placed to study the ecology and biology of Australia's venomous species. He teaches at all levels at James Cook University, which is one of the top 5% of research universities in the world.

He has been successfully involved in programs designed to decrease the envenomings of humans by jellyfish with his research being directly responsible for changes in the present treatment protocol for Australian jellyfish stings.

Research

Professor Seymour established (and is the director of) the Tropical Australian Venom Research Unit (TASRU) which is now recognised as one of the premier research groups in the world for the study of the ecology and biology of box jellyfish, and research into medical treatment of box jellyfish envenomings. Professor Seymour also sits on the research review panel for Queensland Emergency Medical Research Foundation and supervises research in the Emergency Department of Cairns Hospital. He is a joint program leader for the centre for Biodiscovery and Molecular Development of Therapeutics in the faculty of Health and Molecular Sciences at JCU.

Having published extensively, some of Jamie's key papers include research on the following topics:

- Tracing the triggers and impacts of preeclampsia
- Understanding and diagnosing tuberculosis in Papua New Guinea
- The influence of ecological factors on cnidarian venoms

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The Reef Restoration Foundation

Establishing the Great Barrier Reef Nursery

The Reef Restoration Foundation is a not-for-profit social enterprise which collaborates with coral restoration projects in Florida and the Caribbean. Having successfully grown the first generation of corals, the importance of the work has led to the establishment of a nursery at Fitzroy Island, located just off the coast of Cairns.

Coral Trees

The reef restoration process mimics natural coral behaviours and involves taking a small number of cuttings from healthy corals and attaching them to frames which accelerate their growth. These are checked every 7-10 days to ensure there are no signs of disease. The coral tree frames are cleaned and the corals are regularly measured to monitor development.

After 6-12 months of growth, the fragments are attached back to a reef to regenerate damaged sections and strengthen resilience. The coral tree frames are then re-stocked with coral fragments that are cut from the mother colonies. From one small cutting, The Reef Restoration Foundation creates thousands of new and hardier corals, allowing thousands of new corals to be created from the initial coral cutting.



RYAN DONNELLY
CEO, THE REEF RESTORATION
FOUNDATION

“The process is very similar to taking cuttings from plants to grow new plants and provides a sustainable source of corals. Helping protect the Great Barrier Reef is key to maintaining ocean health”

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Size Matters

Stretching 2,300 kilometres along two thirds of Queensland's coast, the Great Barrier Reef is the only living structure that can be seen from space.

Spawning Season

November signals the impressive annual coral spawning event, coral spawning event. Releasing eggs and sperm into the ocean at exactly the same time, cloud-like plumes rise to the surface to fertilise.

Unique Study Environment

Two UNESCO World Heritage sites, the Wet Tropics Rainforest and the Great Barrier Reef, meet at Cape Tribulation.

World Renowned Documentary Makers

With a region biodiverse as Cairns and the surrounding areas, it's no surprise that it has captured the interest of leading, high profile documentary makers and wildlife experts such as Sir David Attenborough and the late Steve Irwin.

Almost 60 years after his first visit to the Great Barrier Reef, David Attenborough returned to explore the enormous living structure that had enthralled him decades earlier. With a focus on protecting the Reef, the three-part documentary series entitled 'David Attenborough's Great Barrier Reef' explores the differences between his two visits and what needs to be done to protect the ecosystem.

Wildlife conservationist and educator, Steve Irwin helped raise awareness of the importance of protecting and preserving our planet and the life that exists on it during his life. With an interest in the Great Barrier Reef, his unique, engaging style helped viewers appreciate the wonder of the world in which we live, inspiring many to follow a career path in marine science.

Cairns has a thriving marine precinct, including 3 shipyards as well as HMAS Cairns naval base and Defence contractors. In addition to servicing the needs of defence, Cairns is home to a large and diverse marine sector that includes a world-renowned tourism reef fleet, commercial fishing and shipping and plays host to superyachts and cruise ships.

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