

The Great Barrier Reef: An Ecosystem Worth Saving

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As the salty, ocean breeze whipped their hair into a dance, students from Virginia Tech, the College at Brockport of New York, and St. Mary's College of Maryland, traveled from Port Douglas, Northern Queensland Australia, to the Outer Great Barrier Reef.

Hearts thumped and nerves tingled in excitement. Soon the 25 students and three faculty members would don their snorkels and masks to journey into the crystal waters of the Great Barrier Reef World Heritage Site. This two-day voyage, led by John Rumney and Paul O'Dowd of Eye to Eye Marine Encounters and the Great Barrier Reef Legacy Institute, enlightened students on the immense biodiversity of this ecosystem, the dire threats facing its survival, and the organization determined to reduce these threats and save the reef.

The Great Barrier Reef covers an area half the size of Texas and contains approximately 3,000 reefs, 150 inshore mangrove islands, and 600 continental islands. It's depth ranges from 114 feet to 1.2 miles deep and incorporates habitats above the glistening waters. Thousands of fish, dolphin, sea snakes, whale, coral, and other species make this ecosystem extraordinarily bio-diverse (*GBRMPA, 2016*).

There is a vital interconnectivity between rainforest, mangrove, and coral ecosystems -- without one, the other two will fail (*personal communication, Paul O'Dowd, Eye to Eye Marine Encounter, 12 June 2016*). Many people have not conceptualized how vital this substantial reef ecosystem is to the Earth's species.

Yet, the magnificent Great Barrier Reef's health and very survival is threatened. Escalating greenhouse gas emissions are causing rising sea surface temperatures and ocean acidification, negatively impacting the reefs' skeleton of hard and soft corals. These substrate species form the intricate, unique structures that many vertebrate and invertebrate species use for shelter and feeding. They rely on photosynthetic algae (zooxanthellae) living within their tissues for nourishment.

However, as waters warm and acidify, this algae produces toxic chemicals, forcing their expulsion by corals. The detrimental result: bleached corals (*personal communication, John Rumney, Legacy Institute, 15 June 2016*). As the students swam amongst the fish and corals of Snow, a site within the Opal Reef, their hearts saddened. They were looking upon a reef that, 100 percent alive two weeks before, was now 26 percent bleached.

John Rumney of the [Great Barrier Reef Legacy Institute](#) is determined to save this ecosystem and reduce these negative impacts of climate change that harm its health

and resilience. He and his team of marine biologists, multi-media professionals, engineers, and business professionals are gathering donations to create an “Innovative Research Institute with a fully crewed state-of-the-art research vessel”.

The GBR Legacy will become a continuous, self-sustaining research, education, and multi-media institution. It will live to protect the long-term survival of one of the world’s greatest wonders (*GBRMPA, 2016*).

How can the every-day person help battle against climate change and the destruction of the Great Barrier Reef? It seems so daunting and impossible to become actively involved. However, John Rumney and his team members have a suggestion: “Join us, the future of the world’s reefs depend on having you as part of our team” (*GBRMPA, 2016*). With even the smallest donation, a person can help breath this institute, and its efforts to protect the Great Barrier Reef, to life.

Literature Cited

1. Great Barrier Reef Marine Park Authority (GBRMPA). 2016. Facts about the Great Barrier Reef. [Online.]. Great Barrier Reef Marine Park Authority, Townsville, QLD. Available at: <http://www.gbrmpa.gov.au/>
2. Our Plan. c2016. Port Douglas (Australia): Great Barrier Reef Legacy; [accessed 2016 July 16]. <http://www.scientificstyleandformat.org/Tools/SSF-Citation-Quick-Guide.html>