Great Barrier Reef focus of international genome sequencing project

The Sea-quence project will study how corals respond to climate change, gathering the genomes of corals in the Great Barrier Reef and the Red Sea.

Tim Dean (Australian Life Scientist) | **08 November, 2012 13:12**

Corals worldwide are under threat from climate change, particularly those along Australia's famous Great Barrier Reef.

Now an international sequencing project, Sea-quence, will dive into the genomes of 10 corals and other coral symbionts to gain an understanding of how corals respond to climate change.

The project, launched today in Brisbane, is a joint initiative between Australian and Saudi Arabian researchers, and is supported by the ReFuGe 2020 Consortium, Rio Tinto and Bioplatforms Australia, and is convened by the Great Barrier Reef Foundation.

Researchers will gather genome sequences from 10 coral host species across six different coral types on the Great Barrier Reef.

At present there are only two coral genomes that have been produced – one of *Acropora millipora*, by scientists at James Cook University.

The project will also sequence four algal symbionts, for which there are currently no sequence data available, and it will develop a new suite of microbial symbiont sequence data.

One aim is to study how corals react to climate change. "Unfortunately our knowledge of coral resilience, their capacity to adapt and the circumstances under which they can adapt to climate change is limited," said Great Barrier Reef Foundation Chairman, Dr John Schubert AO.

"Through Sea-quence we can start to bridge this critical knowledge gap by generating data on a wide scale across the Great Barrier Reef and the Red Sea."

Xabier Irigoyen, Director of the Red Sea Center at King Abdullah University of Science and Technology (KAUST), will be heading up the effort to sequence Red Sea corals.

"Red Sea corals live in extreme conditions compared to those on the Great Barrier Reef and comparative information between these will enhance our understanding of how and why some corals are more resilient."

Bioplatforms Australia facilities, such as the Australian Genome Research Facility, will work with the coral research community to deliver much needed coral DNA data repositories.

Rio Tinto is providing cash investment through the Great Barrier Reef Foundation to help fund the Sea-quence initiative.