

**4 August, 2017**

**FOR IMMEDIATE RELEASE**

## **AIMS National Sea Simulator in fish saving research**

INTERNATIONAL researchers have travelled to Townsville to the National Sea Simulator (SeaSim) at the Australian Institute of Marine Science (AIMS) as part of cutting edge research to help save the world's fish.

University of Miami's School of Marine and Atmospheric Science Professor of physiology and toxicology Martin Grosell has travelled to Townsville to look at how changes in the brain chemistry of small reef fish can change their behaviour.

Dr Grosell and fellow University of Miami marine biologist Dr Rachael Heuer are guests at AIMS, working alongside researchers from James Cook University's ARC Centre for Excellence for Coral Reef Studies, and the King Abdullah University of Science and Technology.

The research is a collaboration of physiology, behaviour and gene expression to understand how rising carbon dioxide (CO<sub>2</sub>) levels in sea water will affect the behaviour of fish, to see what the Great Barrier Reef may look like in 2100.

Dr Grosell said fish living with higher carbon dioxide levels in sea water had shown patterns of altered behaviour including disorientation, similar to Dory in the movie Finding Nemo.

"Normally fish would swim away or hide from a predator or alarm cues, but researchers are finding that high CO<sub>2</sub> levels cause the fish to instead be attracted to these cues and so the fish is putting itself in danger," Dr Grosell said.

"We believe it is because the acid-base balance in the brain is altered and when they start making everyday life decisions under those conditions, those decisions are poor, which may compromise their survival.

"What we are hoping is they will adapt, but if CO<sub>2</sub> levels continue to rise, we want to see how populations will respond in the future."

Dr Grosell said the AIMS' National Sea Simulator at Cape Ferguson was the only place in the world where this type of detailed research could be undertaken.

He said the SeaSim created the natural CO<sub>2</sub> fluctuations found on the reef and then simulates conditions predicted to occur in the future under various climate scenario levels, allowing his team to study reef fish in simulated naturally occurring conditions.

"I am really impressed with the facilities here, it is mind blowing, there really isn't anywhere else we can do this scope of study with this accuracy."

"Using the SeaSim we can fluctuate CO<sub>2</sub> levels which occur naturally to get a more accurate picture of what it could look like in 80 years."

AIMS SeaSim precinct manager Craig Humphrey said the research team had been working around the clock for the past 10 days, with sampling being undertaken at intervals from 2am up to 6pm each day.

"In the SeaSim we aim to create conditions in the aquarium that more closely match those found on the reef than was previously available in experimental aquarium facilities," he said.

"This includes seasonal and diel [24-hour] variation in temperature and ocean acidification with an ability to simulate the conditions predicted under future climate scenarios."

**Media contact:** Emma Chadwick 4753 4409 or 0412 181 919. Photos/vision available.