

## UQ scientists ready to learn from coral bleaching

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If a coral bleaching event hits Australia's Great Barrier Reef this year, marine biologists from [The University of Queensland](#) will be ready to document the action.

[Dr Selina Ward](#), a researcher from UQ's [Centre for Marine Studies](#), has, for the past three years, closely observed 122 corals located near the [Heron Island Research Station](#).

"I think when things are changing as much as they are it's really important to monitor closely, and to work out what normally happens," Dr Ward said.

"Also, we lay down tape between know markers and take photos all the way along.

"From those high-resolution photos you get an enormous amount of information because you can zoom in, look at the species of every coral, look at how much they've grown over time, what's died, what algae's come in, what's bleached and what's recruited.

"The monitoring project is particularly important this year because we may get a bleaching event here so we want to see how that bleaching affects the survival of recruits."

When Dr Ward is not at Heron Island documenting the state of the reef, she can usually be found at the University's St Lucia Campus investigating the impact of ocean acidification.

"Coral reefs are in trouble because they're affected by climate change in so many different ways, but it's the increase of carbon dioxide in the air which causes ocean acidification," she said.

"The more carbon dioxide you put in the air, the more the ocean takes up – it's like a big sponge sucking up vast quantities of it.

"Half of all the carbon dioxide that's been added since industrial times has been taken up by the sea – it's about a tonne per person per day, which is a huge amount.

"When the sea takes up vast quantities of carbon dioxide, the chemistry of the water changes, and that's already started to happen – the Ph of the ocean has dropped about 0.1 of a Ph unit."

By conducting manipulative experiments in the lab, Dr Ward hopes to assess how corals might cope with changes predicted by the [Intergovernmental Panel on Climate Change](#).

While the experiment is still underway, early results suggest corals may have trouble adapting to a more acidic environment.

"It looks like Ph is not going to be good for the early life of corals," she said.

"As you change the Ph, I've been finding quite big differences in the success of fertilisation, in the amount that will settle and in the way that first skeleton develops.

"Essentially you've got all these different steps of reproduction and if any one of those steps fails then you're not going to get them recruiting, so they won't grow."

Like many UQ researchers, Dr Ward's work was affected by the fire which broke out at the Heron Island Research Station in 2007, forcing her to transfer some projects to the close-by One Tree Island.



Dr Ward monitoring the coral near Heron Island

After a \$9 million makeover, [HIRS officially reopened on February 20](#), and Dr Ward said she was glad to be back.

"I know of no other marine research station that has such good lab facilities, and the permanent staff are so helpful, there's so much you can do," she said.

"There are so many good machines and microscopes, the boats are fantastic, and it's great because the reef is so accessible."

**Media: Dr Ward (07 3365 3307, [s.ward@cms.uq.edu.au](mailto:s.ward@cms.uq.edu.au)) or Penny Robinson at UQ Communications (07 3365 9723, [penny.robinson@uq.edu.au](mailto:penny.robinson@uq.edu.au))**

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