

# Keeping on top of wildlife threats

**One of Australia's greatest conservation challenges in protecting the Great Barrier Reef and other natural assets is staying one jump ahead of both the movement of protected species and the emergence of new and unforeseen threats.**

Working out ways to give local communities as well as conservation managers the power to do this is the work of Professor Bob Pressey of the ARC Centre of Excellence for Coral Reef Studies.

Bob specialises in systematic conservation planning – the development of strategies that keep endangered species and habitats going in the long term. His research has been cited by over 3000 scientific publications worldwide.

“We’ve long known you can’t just put a fence round wildlife and expect it to survive. It moves in response to many factors, especially changing climate. And new threats emerge,” he says. “We have to find ways of protecting our native species that allow both for movements by the species and changes in the nature of the pressures and threats they face.”

Bob has summarised current scientific thinking about these challenges in a review paper titled “Conservation planning in a changing world”, soon to be published in the prestigious journal *Trends in Ecology and Evolution*.

The Great Barrier Reef is a case in point, he says. As climate change advances, scientists expect that its corals will become increasingly stressed and start to migrate towards environments that suit them better, meaning that protected areas may have to shift also.

While we are gaining a good understanding of the range of threats the Reef faces today – rising water temperature, runoff and sediment from the land, man-made toxins, overfishing and development pressures – new ones, such as the gradual acidifying of the world’s oceans due to CO<sub>2</sub>, are likely to emerge.

“It means you can’t afford to stand still if you want to hand your children the natural wonders you yourself love and value,” Prof. Pressey says.

Working in threatened environments worldwide from southern Africa to the Amazon floodplain, Prof. Pressey says that local people are enormously important to the successful protection of their environment.

“My job is to give them tools to understand the changes that are taking place, both in the protected species or ecosystems themselves and in the threats and pressures they face – and to look into the future to see where these might lead.

“For example, the Green (no-fishing) Zones of the GBR will benefit Fisheries. But what we do on land is also immensely important to their long-term health and survival. You can still harm the Reef in other ways besides overfishing.”

The important thing, he argues, is to give local communities choices about how they plan their future – and ways to visualise the results they might achieve from various courses of action.

“If you can see how a certain development or activity might affect native species decades into the future you might decide to explore other options that are just as economically fruitful, but which save more wildlife,” he suggested. “Or if you find that one area is absolutely vital to the survival of a particular species, you may ask: where else can we locate our industries or developments””

Prof. Pressey’s research aims to build practical planning tools that enable local communities to anticipate

both movement in native species and take a precautionary approach to the emergence of new risks. Behind these tools there is the sophisticated and complex science of understanding and modelling changes in natural and human systems, and predicting how they affect one another.

He is presently designing a new software system that can be used by local communities, agencies, and non-government organisations to guide decisions about conservation investments, on the land and in the sea. The new system will build on lessons from his C-Plan system that was used extensively in New South Wales in the late 1990s to help stakeholders negotiate new forest reserves. The system has also been used extensively in other countries.

Source: James Cook University

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