Facilitating coastal management in NSW by building the research capacity of underwater citizen scientists

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Summary

This project emerged from two primary observations: firstly, the distinct lack of reliable data to inform the sustainable management of marine habitats and biota in NSW; and secondly, many thousands of motivated people dive at locations across NSW every week. The objective was to provide a mechanism to bring these observations together to provide sound data to inform management.

Facilitated by three years of funding from the coastal Catchment Management Authorities, this project linked existing voluntary underwater research activities and established new hubs in key areas, under the Underwater Volunteers NSW (UVNSW) banner. With the assistance of two steering committees (covering the north and south of the state), data requirements by managers were identified, training packages in research protocols were generated and state-wide research programs focusing on marine debris and fish assemblages were implemented.

To date more than 300 volunteers have participated in the program, generating quantitative data, mostly on marine debris from more than 80 sites across the state from the Tweed River in the North to Eden in the South.

Background

There is currently a mismatch between the need for sound quantitative data for marine management and the ability of the scientific community to provide this data in a timely fashion. This has been exacerbated by funding cuts to state agencies charged with facilitating and funding science to support management decisions. At the same time, environmental awareness amongst the wider community, and, in particular recreational divers, is increasing, partly fueled by increased networking opportunities through social media. This project was developed to fill the gap between data needs and the ability of scientists to fill them. The project provided broad education about marine resources, to increase the capacity of citizens to tangibly contribute to conservation management. Through capacity building, this project improved the skills of underwater volunteers and provided them with a clear purpose for their diving activities. It also generated data that has been used to allocate scarce resources for maximum environmental benefit. The communication strategy has highlighted the broader need for the wider community to take responsibility for the health of estuarine and marine habitats.

Learning

Learning outcomes were assured by intensive training programs which required acceptable proficiency, subject to assessment through the UVNSW website, before participation in field activities. A train-the-trainer program was also implemented to ensure the continuation of the learning process within groups at the conclusion of the project. Thus, the project not only delivered learning outcomes to all participants, but created capacity in the system for ongoing impact.

Outcomes

Key outcomes included the formation of the Underwater Volunteers NSW (UVNSW), an umbrella group comprising 11 underwater research groups, two of which were established as part of the program (in the Hunter region and on the south coast). More than 300 participants were trained in standardised scientific protocols and groups were subsequently funded to collect...
quantitative data from high-priority sites. This enabled the collected of marine debris data from more than 80 sites between Eden and the Tweed River.

Data was also collected on the abundance of a “watch-list” of fish from approximately 25 sites across the same region. This data was compiled on a custom-designed online portal ensuring centralisation of data for future, comprehensive analysis.

A number of public presentations conducted and generated media articles across the state and a series of public lectures took place to further highlight the potential for citizen science approaches to marine management.

The adoption (by the Hunter-Central Rivers CMA) of the sampling protocols, and engagement with the regional underwater research groups, to deliver a large marine debris project with Federal funding (Caring For Our Country).

The work has prompted successful bids for funding by voluntary groups with plans for further SCU-led research over the next 3 years.

**Impact**

The significant contribution to raising awareness about sources, fates and impacts of marine debris and the community-led efforts to quantify this resulted in changes to attitudes and behaviour by all participants.

The UVNSW website and Facebook pages have catalysed further networking and exchange of ideas amongst groups separated by considerable distances.

Volunteers have been provided with mechanisms to actively contribute to the management of their local sites, as well as tangible opportunities for life-long learning with at least two participants have subsequently enrolled at SCU to further their education (one at Bachelor level, one at Masters level).

Southern Cross University and its National Marine Science Centre are widely regarded as the leaders amongst NSW universities in the delivery of citizen science projects. For example, the UVNSW project led to spin-off work with the Earthwatch Institute (marine debris project at Rottnest Island – delivered Feb 2012; the Sydney Harbour Marine Debris Project – pilot work undertaken in October 2012).

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**Award Category**

Community Engaged Research

**Good practice principles**

Citizen science, capacity building, research, collaboration, reciprocity

**Recognition**

In 2012, this project was the recipient of the Excellence in Community Engagement Award for Community Engaged Research. It was also awarded the Vice Chancellor’s Award for Excellence in Community Engagement for 2012.

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