

**FACT SHEET**  
**CHIEF OF THE DEFENCE FORCE AND SECRETARY'S**  
**ENVIRONMENT AND HERITAGE AWARDS 2008**

**DEFENCE SCIENTIST WINS ENVIRONMENT AWARD FOR WORK ON**  
**MARINE ANIMALS**

A Defence scientist responsible for providing expert advice on minimising the impacts of underwater sound on marine animals is a winner of this year's Chief of the Defence Force and Secretary's Environment and Heritage Awards.

Dr. Doug Cato's "exceptional" research on management of acoustic disturbance has led the Royal Australian Navy's mitigation strategies to be internationally recognised as among the world's best.

Dr Cato's research and advice has enabled Navy to continue its vital training activities at sea without significantly impacting on the marine environment.

Dr Cato's award encourages and promotes excellence in environmental and heritage management across all areas of Defence.

A lead researcher with the Defence Science and Technology Organisation and Adjunct Professor at the University of Sydney, Dr. Cato's work on "sounds in the ocean" spans several decades resulting in an advanced understanding of marine mammal acoustics, the effects of noise and their use of sound for communication.

Dr. Cato has extensive relationships with scientists in world-leading research institutes which allows him to keep abreast of the latest research and to develop and maintain interaction with environment interest groups and the broader community.

**Background - Dr Doug Cato**  
**Defence Science and Technology Organisation**

Dr Doug Cato has been working in the underwater acoustics field since the mid-1960s.

Starting out as a scientist with the RAN, he moved across to DSTO when Defence laboratories were amalgamated in the 1970s.

His work has involved research into the way the ocean environment affects sonar performance, particularly the effects of all the other sounds in the ocean. This was partly to assist submariners identify what was 'out there' as they rely primarily on what they can hear through their passive sonars when submerged below periscope depth. Sounds come from a variety of man-made and many other natural sources, such as breaking waves, lightning, underwater eruptions and various marine animals.

Dr. Cato has greatly influenced underwater acoustic research in Australia. His legacy is a family of underwater acoustic specialists in Australia, who are all current or former students.

In addition to his work with DSTO, Dr. Cato is Adjunct Professor at the University of Sydney, where he supervises post-graduate research students.

Highlights of Dr. Cato's career include:

- Dr. Cato and Professor Mike Banner from UNSW were the first scientists in the world to discover how breaking waves make noise – as heard when underwater.
- Dr. Cato produced the Ambient Noise Prediction Methods for sonar that have been in use for more than 30 years by the RAN.
- He has been working collaboratively with former student Dr. Mike Noad (University of Queensland) to study the effect of noise on whales in world leading experiments. This is partly funded by the Department of Defence, the Department of Environment, Water, Heritage and the Arts and the United States Office of Naval Research.
- Dr. Cato was the first person to determine the characteristics of the intricate song of Australian humpback whales.

He has been involved in high profile collaborative research projects, particularly through The Technical Cooperation Program with the USA, UK, Canada and New Zealand.

Dr. Cato has conducted collaborative research with scientists at key academic institutions including Sydney University, Curtin University, and the University of Queensland in Australia, the University of Saint Andrews in Scotland, and the Scripps Institution of Oceanography, Woods Hole Oceanographic Institution, and Massachusetts Institute of Technology in the United States.

He has also interacted with environment and interest groups on a range of projects,, including the International Fund for Animal Welfare and the Whale and Dolphin Conservation Society.