

# RESEARCH DIRECTIONS

## Decompression Trauma on Fish

**Dr Sandra Diamond from the Ecology and Environment Research Group (EERG) together with the NSW Department of Primary Industries have been awarded a UWS Research Partnership Program grant to determine key effects of barotrauma on fish health and survival.**

'Barotrauma (decompression trauma) is the physical, physiological, or behavioural damage caused by catch and release fishing of deep water species, which is often due to fishery regulations. Although these regulations are enacted to protect fish, many fish do not survive after release,' says Dr Diamond. 'This project will use CT scans to determine key effects of barotrauma on snapper and mulloway, two important but declining commercial/recreational species in NSW. This research will provide information on mortality resulting from regulations, aid in formulating better regulations for catching snapper and mulloway, and will result in more sustainable Australian fisheries.'

Fish of similar sizes in each depth category will be sought from commercial fish traps and line methods. Following capture, notes will be made on fish behaviour including the ability to orient (i.e. ability to swim in a tub of seawater) and general condition. Signs of barotrauma including bulging eyes, inflated swim bladder, everted stomach, protruding intestines, presence of gas bubbles escaping from the gills, and haemorrhaging will also be recorded and scored as to extent. Two different 64-slice human body CT scanners will be used to capture images of the internal structures to be evaluated using 3-D volume rendering virtual imaging software.

The project will provide data to assess the minimum size limits used in the management of declining fish



species and to contribute new information on discard mortality to the stock assessments for these species. The long-term goal of the partnership is to understand the individual and population consequences of discarding fish, with a view towards improving fishery management in Australia.

**Project Title:** Diagnostic Radio-ichthyology: Using CT scans to explore the effects of barotrauma on fish

**Funding has been set at:** \$8,356

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**For more information on UWS Research Partnership Program, check:**

[http://www.uws.edu.au/research/ors/funding\\_opportunities/internal\\_research\\_grants](http://www.uws.edu.au/research/ors/funding_opportunities/internal_research_grants)