

Executive summary

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R2000/0584 STR Winter project

AFMA funded research project R2000/0584 has been completed. This project, with the working title "*Survey of the Orange Roughy Spawning, South Tasman Rise, 2000*", was conducted in July and August 2000. Using the fishing vessel *Saxon Onward*, researchers from Biospherics Pty Ltd conducted a series of acoustic and biological surveys of the orange roughy spawning event on the South Tasman Rise (STR) Fishery approximately 200 nautical miles south of Hobart.

The STR fishery is jointly managed by the governments of Australia and New Zealand and is one of the main orange roughy fisheries accessed by the Australian industry.

Over a three week voyage, the two researchers on board the *Saxon Onward* tracked the spawning event through a combination of acoustic and biological sampling regimes. The data collected have refined our knowledge of the timing and location of the spawning event on the STR which increase our understanding of the fish stocks, and will help reduce the cost of future research on the fishery. It is also hoped that the data collected could form the basis of a time series which could eventually lead to a quantitative stock assessment of the fishery.

While on the STR, the researchers also took environmental data including logging the temperature at depth through the water column. These data aid our understanding of the ecology of orange roughy, their spawning dynamics, and the broader ecology of deep sea mounts.

Funded by AFMA, this project was developed in close cooperation with stakeholders in the fishery including the South Tasman Rise Australian Trawl Association (STRATA), the orange roughy assessment group (ORAG), AFFA and BRS.

The project was also another important step in the development of the use of industry acoustics as a methodology for surveying deep water fish species. Under this process, a normal fishing vessel is equipped with an acoustic logging system enabling them to survey stocks with minimal fish catches. It is hoped that this process will compliment the acoustic research conducted by CSIRO and reduce research costs for orange roughy, and other deep water species managed by AFMA.

The findings from this research have been reported to industry, AFMA and ORAG and have been incorporated into the ongoing management of the fishery.

R2000/0172 STR Monitoring Project

AFMA funded research project R2000/0172 has been completed. This project, with the working title "*Industry Survey of Orange Roughy Stocks on the South Tasman Rise Fishery, 2000*", was conducted during the regulatory year for the fishery which

ran from March 2000 to February 2001. Using a number of industry vessels, researchers from Biospherics Pty Ltd maintained an observer presence on the South Tasman Rise (STR) throughout the year.

Working closely with the Australian fishing industry, on board observers collected biological and environmental data on orange roughy, associated by-product and by-catch species, interactions with sea birds and mammals, and the ecology of deep sea mounts.

The STR fishery is jointly managed by the governments of Australia and New Zealand and is one of the main orange roughy fisheries accessed by the Australian industry.

These data will improve our knowledge of the fishery and will assist in the future management of the fishery.

In particular, the project tracked the spawning status of the orange roughy stocks, watching the annual build up to the spawning event. These data are important in improving our understanding of the dynamic of the fishery.

Funded by AFMA, this project was developed in close cooperation with stakeholders in the fishery including the South Tasman Rise Australian Trawl Association (STRATA), the orange roughy assessment group (ORAG), AFFA and BRS.

The at sea data collected by this project was complimented by data collected on shore from unobserved voyages. This aspect of the project was made possible through the cooperation of the fishing industry and helped scientists collect good quality data at reduced costs.

The findings from this research have been reported to industry, AFMA and ORAG and have been incorporated into the ongoing management of the fishery.