

12th ITRS Symposium Abstract

Talk

Theme: Natural and Anthropogenic Impacts / Anthropogenic & natural disturbances

Title: Effective local protection from fishing disturbance depends on ecological and human factors.

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Fishing is a major human disturbance to marine communities on temperate rocky reefs. The Hawkesbury bioregion, on the east coast of Australia, has one of the highest human population densities in the country, and a correspondingly-high level of fishing impact. The region also contains ten small Marine Protected Areas (MPAs), most of which are open to some form of fishing. This study uses Reef Life Survey and site attribute data to assesses the natural and human factors which may reduce the impact of fishing at a local scale. We find that policy protection level, aspect (natural protection from wave exposure), habitat complexity and algal canopy are important predictors of marine communities. Most of the region does not have effective protection from fishing disturbance as indicated by biodiversity, abundance and biomass measures. Our findings suggest that the effects of fishing can be reduced at a local scale, but only if full sanctuary protection is implemented in a sheltered location with complex habitat structure and positive community involvement to provide informal enforcement and stewardship. These results provide a baseline for robust assessment of management actions to reduce the impact of fishing disturbance at local scales, with the potential to inform policy in other regions.

Key words: Overfishing, Biodiversity, Management, Reef Life Survey