

# WAMSI NODE 4 MILESTONE PROGRESS REPORT (MPR)

## Project Details

Project No. and Title	4.2 Assessment of marine communities and the impact of anthropogenic influences.
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SubProject No. and Title	4.2.4 Cost effective methods
Project Start Date	1/1/08
Project End Date	30/12/09
Due Date for this Milestone	30/12/08
Milestone Description	Comparison of diver vs camera-based techniques for fish and mobile inverts completed. Power analysis on fish data sets completed.

## 1. Executive Summary

### Comparison of diver vs camera-based techniques for fish

- Indicators of finfish population and assemblage structure derived from diver-swum transect and baited video methods were compared in two studies across three biogeographic regions. Both studies used stereo-video techniques to obtain estimates of the lengths of fish sampled.
- The first study found that baited video methods recorded greater number of species and greater abundance of key target and non-target species compared to diver swum transects.
- The second study found that the relative composition of the assemblage sampled by baited stereo-video stations and diver operated stereo-video transects differs over a gradient in latitude that is likely to correspond to variation in the trophic composition of fish communities.
- A cost-benefit analyses showed that baited stereo-video methods were generally more cost-efficient than diver operated stereo-video transects for detecting change in the fish assemblage.
- The study suggests that baited stereo-video stations are, in general, a better method for monitoring fish communities than diver operated stereo-video transects.

### Power analyses of finfish data sets

- A range of indicators of finfish population and assemblage structure were analysed in terms of their power to detect change as part of the methodological comparison.
- Data from both diver-based and stereo-baited remote underwater video (stereo-BRUV) surveys were used.
- In general indicators obtained from stereo-BRUV surveys were found to have greater power to detect change.
- Indicators based on species richness were found to have very good power to detect change, but will not be sensitive to changes in species composition.
- Indicators based on the biomass of trophic groups such and herbivores or generalist carnivores were found to have relatively good power to detect a change and also be likely to be highly sensitive to changes in the community structure.