ABSTRACT

Roberts, M.J. and N. Downey (2005)

Determining the influence of bottom turbidity and upwelling on chokka squid spawning and behaviour.

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Several studies suggest that the environment influences the successful formation of inshore spawning aggregations and hence chokka squid catches. Acoustic tag telemetry offers a means to determine behavioural response of spawners to changes in the environment. In November 2004, six *Vemco* VR2 hydrophone instruments were moored in Kromme Bay (St Francis Bay) in a circle around an active spawning aggregation. A seventh instrument was placed in the center. Twelve squid were caught on jigs and tagged with V8 acoustic pressure telemetry tags. All animals released were followed by SCUBA divers using video to verify successful re-integration of the animal into the spawning aggregation. Data showed that only one animal (male) stayed in the area throughout the 13 day experiment, albeit, intermittently. All other tagged animals had disappeared within 4 days. The squid showed a mixed diurnal presence/ absence pattern in the spawning area with some animals having moved off the egg beds during the day and other staying throughout the nights, in contradiction with the findings of an earlier telemetry experiment. Pressure sensor data showed that both males and females stayed persistently near the seabed during the day, regularly making excursions to the seabed. At night this pattern was broken with common activity higher up in the water column. CTD and thermistor data indicated the occurrence of an upwelling event, four days into the experiment, during which those squid present disappeared, with one male returning after the upwelling event.