Oral (please delete as appropriate).

Special issue: no (please delete as appropriate).

Theme: 3

Presenter Last Name: Downie

**Monitoring the pulse of intermediate trophic groups using bioacoustics.**

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Physical and biological oceanographers have made recent advancements in understanding how large-scale oceanographic processes influence seasonal primary production cycles within Australia’s marine estate. However knowledge gaps exist on how primary production is assimilated to higher trophic groups at similar scales. Calibrated bioacoustic observing platforms have the ability to provide data streams that will assist in addressing this gap. For example moored and autonomous platforms fitted with multi-frequency bioacoustic sensors are capable of mapping the acoustic density of intermediate trophic groups and how they respond to seasonal production cycles, mesoscale oceanographic features and anomalous weather events. Biomass estimates of respective trophic groups can be derived from acoustic data if taxonomic details of the community are known. Integrating these observations into marine ecosystems models is an active area of research. In this presentation I provide an overview of how bioacoustics can be used in the coastal domain, the importance of calibration, and a look at some data from the trial deployment of a moored multi-frequency bioacoustic platform at IMOS’ Maria Island National Reference Station.