Squid-tags provide key insights into the behaviour of the Southern Ocean giant squid (*Architeuthis* sp.).

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Giant squid are elusive, deep water species, eliciting great interest when occasionally reported as stranded or caught in the nets of trawlers. Because opportunities to study these creatures are so rare, little is known about the foraging behaviour of giant squid and their trophic role in the Southern Ocean ecosystem. We developed a remotely deployed submersible capable of attracting giant squid using custom pheromone attractants and once attracted, deploying SquidTags (Cephalopod Research Centre, Bottom of the World National Science Institute) on giant squid at depth. These tags are capable of building 3-dimensional tracks via depth, magnetic and accelerometer recorders, whilst also collecting information on water temperature, conductivity, prey fields and beak movement. Four giant squid were tagged with SquidTags off the west coast of Great Penguin Island for a period of 90 days. Throughout this period the squid all remained on Sealers Plateau, dispersing for extended periods before re-uniting for several days at a time. Diving behaviour alternated between clear diurnal diving interspersed by periods of shallow diving in surface waters. Predatory behaviour could be clearly identified by rapid bursts of acceleration followed by a spiral diving pattern and rapid movement of the beak. Prey field data indicate that giant squid are opportunistic predators consuming a mixture of penguins and seal pups (associated with shallow diving behaviour) and myctophids (associated with diurnal diving behaviour). These data suggest giant squid may be a key source of mortality for penguins and seal pups in the Southern Ocean.

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