

Listening for whales

The underwater calls of six whale species – some of which are rarely seen let alone heard – were recorded using remote listening devices during a recent survey of the Southern Ocean.

Marine biologist Dr Jason Gedamke, of the Australian Government Antarctic Division, used 142 drifting sonobuoys and two acoustic recording packages – moored to the sea floor near the Antarctic coast – to survey a one million square kilometre ocean region for the presence and distribution of whales.

Whales were recorded at 64 sites. While endangered blue whales were recorded at 47 of these sites not one was sighted during the survey. At the other end of the spectrum, minke whales were recorded at only one site, despite numerous visual observations. Other recorded species included sperm whales at 44 sites, fin whales at 14, humpback and sei whales at two sites each, and leopard and Ross seals at 14 sites each.

The research demonstrates that these remote recording devices are valuable tools for surveying marine mammals in difficult to study areas such as the Southern Ocean.

'They have great potential to help us understand the distribution patterns of whales and other marine mammals across geographic locations and seasons,' Dr Gedamke said.

'This is important if we are to understand as much as possible about the populations and life histories of these animals, given the increasing pressure from 'scientific' whaling and moves to reintroduce commercial whaling.'

The drifting sonobuoys, which detect a wide range of sound (5-2500 Hz) and the direction it came from, can be used over large areas for short time periods. This provides information on the presence and relative numbers of different whale species in a region at a particular time. The acoustic recording packages, which detect low frequency sounds (less than 250Hz) produced by baleen whales, are anchored to the sea floor for up to one year and provide information on the seasonal occurrence of whales.

'In this study we were able to see a seasonal acoustic presence of both blue and fin whales, with peaks in relative abundance occurring between April and June,' Dr Gedamke said.

During the study Dr Gedamke also deployed three new acoustic recording packages in a line between south-west Tasmania and the Antarctic coastline, just off the French Antarctic station Dumont d'Urville.

Dr Gedamke hopes to record whales as they migrate north later this year.

This research was presented in a poster entitled *Use of passive acoustic techniques to assess relative distribution and seasonality of Antarctic marine mammals*, at the Scientific Committee on Antarctic Research Open Science Conference in July. The poster was selected as the Best Open Science Conference Poster from 350 scientific posters displayed. Congratulations to the authors, Jason Gedamke, Sarah Robinson and Nick Gales, of the Australian Government Antarctic Division, and John Hildebrand and Sean Wiggins of the Scripps Institute of Oceanography.



Dr Jason Gedamke deploys a sonobuoy.