

Seismic surveys may kill giant squid

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One of the oceans' most mysterious animals, the giant squid, may be being killed by human noises. Unusually high numbers of dead giant squid, washed up on Spanish shores, have led scientists to believe that loud, low-frequency sounds made by oil companies charting the sea bed are killing the creatures.

Fear of damage to marine mammals has resulted in restrictions on low-frequency marine noise in the US, and awareness of the issue in Europe is growing. NATO exercises with high-intensity sonar in 2002 were charged with harming beaked whales in the Canary Islands. Norway rejected demands by environmentalists to limit seismic surveys off the Lofoten Islands in 2003.

Now the giant squid has joined the list of potential victims. The animals grow up to 20 metres in length and are found in deep, cold waters worldwide. Little more is known about them as efforts to observe them in their native habitat have failed, and scientists recorded only dead, stranded specimens.

Normally, only one giant squid per year is found along the coast of Spain, says Angel Guerra of the Institute for Marine Investigations in Vigo, Spain.

Oil and gas

But in the autumn of 2001, five were found stranded ashore or floating dead at sea, along Spain's northern coast on the Bay of Biscay. In 2003, another four were found.

On both occasions, Guerra told **New Scientist**, geologists were conducting offshore seismic surveys nearby for oil and gas that same week, firing 200 decibel pulses of sound below 100 Hertz from an array of 10 air guns. The reflections of such pulses by different geological strata can reveal the structure and potential mineral composition of the seabed.

The nine dead giants included immature and maturing females, and two males - the first ever found in Spain. They were up to 12 metres long, with weights up to 140 kilograms. None had signs of surface damage but all had internal injuries.

In two squid the damage was extensive, with stomachs and hearts ripped open and muscles disintegrated. "Some organs were unrecognisable," says Guerra.

Badly damaged ears

And all the squid had badly damaged ears. Guerra thinks this might have disoriented the giant animals and made them swim to the surface, where they suffocated, as water temperatures there are too warm for the oxygen-carrying molecules in their blood to function. He suspects that in squid with massive internal damage, the blast caused dissolved gases in their tissues to form bubbles, such as those produced by shaking a fizzy drink.

"No one has ever seen this before in giant squid," says Guerra, who fears there might be many more victims.

Local fishermen also reported seeing large numbers of dead fish floating at sea during the surveys. These were the first seismic surveys in the area, but Guerra says the surveyors, led by geologists

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from the University of Oviedo and affiliated with the Spanish oil company Repsol, plan to continue in 2005.

Guerra, in his address to the Annual Science Conference of the International Council for the Exploration of the Sea, which is being held in Vigo, Spain, said he wants a discussion in the region first about how, and if, seismic surveys at sea should be done, in light of this new evidence.

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