Embargoed for release: 22-Feb-2006 08:00 Eastern US Time

Contact: Jennifer Phillips
j.phillips@abdn.ac.uk
44-122-427-3174
Census of Marine Life

Oceans are 70% shark free

Absence of sharks from abyssal regions of the world's oceans

Marine scientists have discovered that the deepest oceans of the world would appear to be shark free.

In a paper published today, an international team of researchers, led by the University of Aberdeen, reveal that sharks have failed to colonise at depths greater than 3,000 metres.

Sharks occur throughout the world's oceans and it had been hoped that as man explores deeper into the abyss and beyond throughout the largest environment on the planet - new species would be discovered.

However, 20 years of exploration, combined with analysis of records over the past 150 years, has convinced the team of scientists that the world's oceans are 70% shark-free. Their findings are published in Proceedings of The Royal Society, Biological Series.

The average depth of the oceans is 4,000m and bony fishes - relatives of cod - thrive down to around 9,000m depth. Scientists do not know why sharks are absent from the deep but suggest one possible reason could be due to lack of food.

They warn their finding has environmental implications.

Professor Monty Priede, Director of Oceanlab at the University of Aberdeen, said: "Sharks are apparently confined to around 30% of the world's oceans, and all populations are therefore within reach of human fisheries, near the surface and at the edges of deep water, around islands, seamounts and the continents.

"Sharks are already threatened worldwide by the intensity of fishing activity but our finding suggests they may be more vulnerable to over-exploitation than was previously thought."

The scientists based their conclusions on a wide range of data which includes information gathered during a major month long expedition along the Mid-Atlantic Ridge between Iceland and the Azores in 2004.

More than 100 scientists from over 16 countries were involved in the MAR-ECO project which is part of the 10-year Census of Marine Life programme which is exploring the abundance, distribution and diversity of life in the world's oceans.

The team also used findings built up over the last two decades when the University of Aberdeen's Oceanlab started developing landers - remotely operated vehicles - which have been used in deep waters all over the world. Expeditions usinglanders visited the deepest abyssal plain on the planet - North of Hawaii; the South Atlantic off the Falkland Islands; the North West African slopes off Angola, the North East Atlantic Ocean, West of Ireland, and five research cruises in the North East Atlantic.

The scientists say that the deepest confirmed report of a shark is at 3,700m. They believe it is very unlikely that major new populations will be discovered in abyssal regions.

Professor Priede added: "As far as we can see there is no hidden reserve of sharks in the deep sea. All we see, is all there is, it's highly unlikely we are going to find anymore."

###

The Absence of Sharks From Abyssal Regions of the World's Oceans can be seen at www.journals.royalsoc.ac.uk. (doi: rspb.2005.3461).The scientists who collaborated on the paper are from Oceanlab, University of Aberdeen; Leibniz-Institut für Meereswissenschafen, Germany; Marine Biology Research Division, Scripps Institution of Oceanography, USA; Institute of Marine Research, Norway; British Antarctic Survey, Natural Environment Research Council, Cambridge; Møre Research, Norway and FRS Marine Laboratory, Aberdeen.

Notes to Editors/Picture Editors:
More background:
The oceanic abyss – which is where the ocean is deeper than 3,000 metres - is characterised by absence of solar light, high pressures and remoteness from surface food supply. Deep water sharks have oil-rich livers which keep them buoyant, and a high energy demand, which researchers believe cannot be sustained in the extreme conditions of the abyss where there is a lack of food.
