

# Researchers trace octopuses' family tree

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Megaleledon setebos, the closest living relative of the octopuses' common ancestor. Credit: Census of Marine Life

Many of the world's deep-sea octopuses evolved from species that lived in the Southern Ocean, according to new molecular evidence reported by researchers at Queen's University Belfast.

The findings of a study funded by the National Environment Research Council and led by Dr Louise Allcock at Queen's School of Biological Sciences and colleagues from Cambridge University and British Antarctic Survey will be reported at a conference in Spain this week.

The World Conference on Marine Biodiversity is taking place in

Valencia between 11 and 15 November.

The Queen's research forms part of a decade-long global research programme to learn more about the world's oceans.

Octopuses started migrating to new ocean basins more than 30 million years ago as Antarctica cooled and large ice-sheets grew.

These huge climatic events created a 'thermohaline expressway' - a northbound flow of deep cold water, providing new habitat for the animals previously confined to the sea floor around Antarctica.

Isolated in new habitat conditions, many different species evolved. Some octopuses lost their defensive ink sacs because there was no need for the defence mechanisms in the pitch black waters more than two kilometres below the surface.

Dr Allcock, who was assisted on the study by Dr Jan Strugnell and Dr Paulo Prodöhl from Queen's, said: "It is clear from our research that climate change can have profound effects on biodiversity, with impacts even extending into habitats such as the deep oceans which you might expect would be partially protected from it.

"If octopuses radiated in this way, it's likely that other fauna did so also, so we have helped explain where some of the deep-sea biodiversity comes from."

This revelation into the global distribution and diversity of deep-sea fauna, to be reported this week in the respected scientific journal *Cladistics*, was made possible by intensive sampling during International Polar Year expeditions.

The findings form part of the first Census of Marine Life (CoML), set to

be completed in late 2010. It aims to assess and explain the diversity, distribution and abundance of marine life in the oceans, past, present and future.

The project, which began in 2000, involves more than 2,000 scientists from 82 nations.

Source: Queen's University Belfast

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