Shark Tank Re-Fit Lends Teeth To Research Into Prehistoric Seas.

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Scientists are filtering through bags of gravel from the bed of the ocean display at Blackpool Sea Life Centre, and expect a final haul of more than 12,000 shark teeth.

Oxygen atoms in the discarded teeth can reveal the temperature the sharks lived in, and a University of Birmingham research team hopes by studying them it can perfect the technique for use on fossil shark teeth.

Establishing the prevailing sea temperatures can help explain sudden crashes of marine species as well as sudden evolutionary spurts in prehistoric times.

'The principle has already been used by several research groups,' said research lead Dr Ivan Sansom, a senior lecturer in palaeobiology from the University of Birmingham.

'By examining the teeth of sharks whose water temperature has been carefully recorded, we can refine the technique to make fossil studies more reliable,' he added.

Dr Sansom's students began their probe a year ago using just the few teeth collected occasionally by Sea Life centre scuba divers. Now the emptying of Blackpool Sea Life's ocean display for the first time in 23 years has delivered a windfall that meets all their research needs. The Sea Life display is being treated to new windows and a major refurbishment and its resident sharks have moved to temporary quarters in London and Weymouth.

'We have teeth from every shark species that lived in the tank, including lots of sand tiger teeth, a species that hasn't featured in the display for over eight years,' said Dr Sansom. *'Most sharks have rows of teeth and shed them regularly. The biggest number we have are from black-tipped reef sharks, but that's hardly surprising since this species sheds a whole row of over 40 teeth every month.'*

The research project, funded by the EU Marie Curie scheme, has already discovered that distinct layers within individual teeth vary in their oxygen isotopic composition.

'The new specimens we are getting from Blackpool will validate these preliminary observations and help refine research with fossil teeth,' added Dr Sansom.

The ultimate aim is to better understand how cooling waters in prehistoric times drove evolutionary change while warming waters led to extinctions.

'Current evidence from the past suggests we are going to see mass extinctions as our own oceans warm up.'

Blackpool Sea Life's tropical sharks will move back into their new-look home in March, along with more than 300 shoaling fish.

Dr Sansom hopes to publish the detailed results of his team's findings in scientific journals this summer.

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