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1 September 2010 Last updated at 11:58 GMT

Ancient coral reef uncovered in South Pacific

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An ancient reef found in the Pacific may provide clues to what will happen to coral when sea temperatures rise.

A team of researchers from Australia and New Zealand have discovered a huge 9,000-year-old reef surprisingly far south.

Lord Howe Island is 600km east of the Australian mainland and has a small modern coral reef - the furthest south in the world.

The ancient reef however is nearly 30 times as large as the modern reef.

The scientists, headed by Colin Woodroffe from the University of Wollongong in Australia and researchers from Geoscience Australia, discovered a large ridge about 30m under water in the Tasman Sea.

They have published their work in Geophysical Research Letters.

The team suspected it might be an ancient reef. The size and shape of the ridge can be mapped using a type of sonar called multi-beam echo sounding. The researchers could not be sure it was coral until they had taken samples.

Drilling for samples in the Tasman Sea is very dependent on weather and the seas can be rough - it involves lowering a submersible drill from a boat.

The samples confirmed that it was indeed coral and radiocarbon dating confirmed its age.

Other similar ancient reefs - called relict reefs - have been discovered before, but none as far south as this.

The team think that this reef died when it was flooded as a result of sea levels rising about 7,000 years ago, but the modern temperature at these latitudes also limits coral growth, which is why the relict reef is so much bigger than the modern reef.

Now that sea temperatures are rising, however, reefs may start to grow bigger at higher latitudes.

The relict reef doesn't have an extensive modern reef attached to it but it does have some individual corals which are newer - from the last 2,000 years.

This suggests that there is a suitable habitat for corals which might grow into a larger reef when temperatures rise further.

In the Northern Hemisphere both Florida and Bermuda have small reefs, though they are at the northern limits for warm-water coral life.

It is possible that large relict reefs might also be found in those northern waters. Like the Tasman Sea relict reef, these might be able to support new growth.

Rising sea temperatures are dangerous for coral reefs at hotter tropical latitudes but they may mean we see new reef growth at the far southern, and northern, limits of current reefs.

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