Antarctic waters changing due to climate: study

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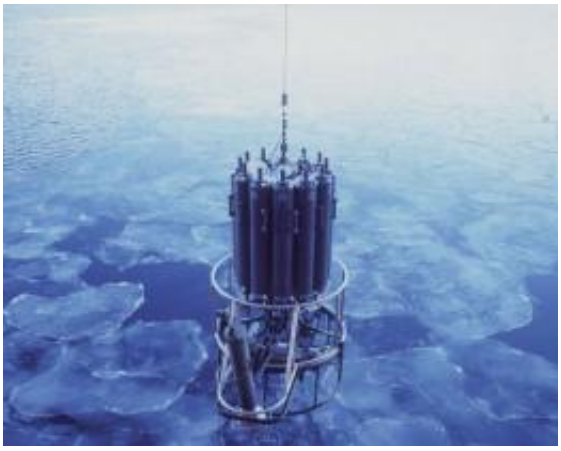

Ocean-measuring instruments are lowered through pancake ice to sample water at various levels from the seafloor to the surface. The densest waters of Antarctica have reduced dramatically over recent decades, in part due to man-made impacts on climate, Australian scientists said on May 4, 2012.

The densest waters of Antarctica have reduced dramatically over recent decades, in part due to man-made impacts on the climate, Australian scientists said Friday.

Research suggests that up to 60 percent of "Antarctic Bottom Water", the dense water formed around the edges of Antarctica that seeps into the deep sea and spreads out through the world's oceans, has disappeared since 1970.

"This is a response to changes that are happening to climate in the polar regions, both natural and human causes," lead researcher Steve Rintoul, from the Australian government's science body the Commonwealth Scientific and Industrial Research Organisation, told AFP.

"It's not driving changes in climate, it's responding to changes in climate. So it's a signal to us that things are changing around Antarctica."

Scientists are not sure what is causing the phenomenon but Rintoul said the leading hypothesis is that as more of the ice on Antarctica melts around the edges of that continent, it adds fresh water to the ocean.

He said this could be causing the "sinking" of the dense water at high latitudes, a process that has been linked to major changes in climate in the past.

"We're tracking these water masses to see if changes like have happened in past climates might be coming again in the future," he said.

"We don't see them yet, but this... contraction of the dense water around Antarctica might be the first indication that we're on the way to do that."

The research was done by Australian and US scientists onboard the Australian Antarctic Division's vessel Aurora Australis, which sailed to Commonwealth Bay, west along the Antarctic coast, and returned into Fremantle in Australia.

They took temperature and salinity samples at stages of the journey to the Earth's southernmost continent, also revealing that the dense water around Antarctica has become less salty since 1970.

Rintoul said the change was "likely reflecting both human impact on the planet as well as natural cycles".

"And the human impact includes both the increase in greenhouse gases but also the ozone hole over Antarctica," he said, adding that this hole had caused winds of the Southern Ocean to strengthen.

Rintoul said it was important to resolve why the changes were occurring because it was relevant to how fast sea levels may rise in the future.

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