

The Telegram (St. John's)

Fish waste helps neutralize CO2 levels in oceans: study

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The world's oceans are getting help controlling harmful acid levels from an unseemly source, according to a new study that found fish waste plays a key role in neutralizing carbon dioxide in the marine environment.

oceans.

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Canadian scientists discovered that when fish drink seawater they excrete calcium as calcium carbonate - a chalky substance that can make seawater more alkaline and diminish the carbon dioxide in the water.

The unusual finding is helping researchers understand the marine carbon cycle and how nature works to reduce CO2 levels that can raise sea temperatures and harm sea life.

"It's going to be critical that we understand how much carbon dioxide the oceans can absorb," said Pat Walsh, a University of Ottawa marine biologist who co-wrote the study that appears in the journal *Science* today.

"What we've done is taken another step forward in understanding another piece of that oceanographic puzzle and how the oceans can absorb CO2."

The teams of researchers from Ontario, British Columbia, the United States and the U.K. discovered that the bulk of the world's fish species, excluding sharks and rays, produced the carbonate to counter the salt they ingested in seawater.

Walsh said they knew before that something in the water was producing carbonate, but believed it came from other sources such as microscopic marine plankton near the bottom of the food chain.

But they didn't understand why they were seeing so much of the carbonate at shallower depths.

Walsh said the discovery helps explain that phenomenon and has given them a clearer idea as to how much carbonate fish are producing.

"Our most conservative estimates suggest three to 15 per cent of the oceans' carbonates come from fish, but this range could be up to three times higher," said lead author Rod Wilson of the University of Exeter.

The researchers, some of whom spent three years working on the project, also came up with the first estimate of the total number of bony fish, which comprise about 90 per cent of the marine species.

Villy Christensen, a fisheries professor at the University of British Columbia, said they used two models to determine that there are between 812 million and 2,050 million tonnes of fish in the