

Tiny krill have scientists stirred up

Do shrimp-like creatures have effect on global warming?

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Oceanographers at the University of Victoria say vast swarms of krill are stirring up the ocean.

Those two-centimetre-long shrimp-like creatures are likely bringing up valuable nutrients when they swim up to the life-rich layer of water near the surface each night to eat, the scientists say.

The studies undertaken by five scientists in the Strait of Georgia have inspired a lot of unanswered questions about whether sea life -- especially small but abundant species such as krill, squid, herring and anchovies -- somehow affect what happens to the gases stored in the ocean.

UVic oceanographer Eric Kunze says it's possible water turbulence caused by sea life may affect the ocean's storehouse of carbon dioxide, one of the gases that most climatologists believe is hastening climate change and global warming.

"It's a potential mechanism for mixing gases from the atmosphere into the ocean," he said in an interview.

"There are potential implications for global warming but it's very uncertain as yet, because we don't know how widespread this phenomenon is."

Krill live in oceans around the world and are a staple food for some whale species, such as humpbacks, blue and fin whales.

During the day, krill stay at a depth of about 100 metres, to avoid being eaten by the bigger marine animals that look for meals in shallower waters. But, just as the sun drops below the horizon, large swarms of krill swim up to a column of water within a few metres of the surface, to feed on a smaller marine organism called phytoplankton.

In June 2006 and April 2005, scientists from UVic dipped a \$100,000 instrument into the waters of Saanich Inlet to measure how much turbulence krill create when they come up in a swarm.

That 1.5 metre-long gadget is shaped like a torpedo or a missile. "It looks like a weapon of mass destruction," Kunze said.

The scientists wanted to check some of the theories developed by a researcher at Florida State University. The U.S. scientist tried to calculate how much 'biomixing' or movement of nutrients was happening in the sea from the swimming motions of marine creatures.

The UVic scientists discovered that, in Saanich Inlet at least, those little krill were really shaking things up. The measured turbulence in the water during the 15-minute rush to

the surface climbed dramatically, by 1,000 to 10,000 times.

"To put it in perspective, if you go just outside of Saanich Inlet into tidal-driven channels, the turbulence there is almost as strong all of the time," he said. "What's unique is that this phenomenon is produced by biology."

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