**Ocean acid threatens food chain**

Lloyd Jones

**ABOARD THE AURORA AUSTRALIS, Southern Ocean, Jan 7 AAP - They call themselves Team Acid and are trawling the Southern Ocean with fine nets to see if the shells of tiny marine snails are thinning because of ocean acidification.**

Scientists label this acid trend "the evil twin of climate change".

And they are concerned that shell-thinning could threaten the survival of many small marine creatures and in turn impact on animals further up the food chain, including fish caught commercially for human consumption.

Aboard the Australian Antarctic Division icebreaker Aurora Australis, a small team of scientists are dropping specially designed nets in a bid to catch pteropods, tiny creatures just visible to the naked eye and a key part of the ocean's food chain.

Marine biologist Donna Roberts says they expect to find evidence of pteropod shell thinning due to ocean acidification, a consequence of carbon absorption in the oceans.

The Antarctic Climate and Ecosystems Cooperative Research Centre in Hobart where she works has already published evidence that the shell weights of other small shelled marine creatures known as foraminifera have decreased by up to 35 per cent.

The uptake of carbon dioxide into the oceans drives a change in ocean chemistry, changing hydrogen levels and the concentration of carbonate ions that pteropods and other organisms use to build their calcium carbonate shells.

The higher acidity also eats away at the organisms' shells.

"Southern Ocean waters are absorbing more carbon dioxide than anywhere else on the planet so if we are going to see an effect on the biology were going to see it first in the Southern Ocean," Dr Roberts told AAP.

Acidification is expected to increase significantly over the next century.

"We often call it the evil twin of climate change," Dr Roberts said.

"The little critters that have got shells that are going to be eaten away by the acid, they're in trouble.

"We're really worried about whether they are going to be here in the future and how that will change the Southern Ocean food chain because it's the biggest ocean in the world.

"It's not that they're insignificant organisms, they're the basis of the food chain for whales, seals, penguins and commercial fish, which is probably the more important thing to the Australian government."

Dr Roberts said research in the Arctic indicated pteropods made up to 90 per cent of the diet of salmon, mackerel, herring and cod, which were important commercial fisheries.

In recent trawls on the Aurora Australis, Team Acid pulled up many jellyfish-like creatures such as salps.

Dr Roberts said there was a theory that with the disappearance of pteropods and other similar creatures, the seas could become dominated by such jellyfish-like creatures.

"If it becomes a jelly ocean, we don't know what fish will think of that as their diet."

Dr Roberts said pteropods were a sentinel organism for the Southern Ocean and her research team hoped to continue to monitor them and their shell sizes over the coming years.

"If we can see changes there then we'll be able to inform on marine protected areas and policies and perhaps add to the debate about reducing emissions, not just for climate change's sake but for saving food chains."