MEDIA RELEASE

NEWS FROM THE UNIVERSITY OF TASMANIA
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ATTENTION: Chiefs of Staff, News Directors

Fish-killing, red-tide algae found for first time in Southern Ocean

Fish-killing, red-tide causing algae are among six new species of algae which have been discovered in the middle of the Southern Ocean by University of Tasmania scientists.

Research Fellow (Marine Biotechnology) Dr Miguel de Salas, from the School of Plant Science, made the discovery from microscopic samples collected in 2006 and 2007, for which the results have just been published.

“Discovering six entirely new species is exciting enough, but we have also found that they are quite abundant and at least two of them are toxic - this is the first time that fish-killing, red-tide causing algae have been discovered in the Southern Ocean,” Dr de Salas said.

Red tide blooms occur naturally, and some are toxic to fish. Some of these algae can cause problems for people when they bloom close to beaches or estuaries and people come in contact with the water, causing irritation, rashes and sores.

“In some parts of the world they get picked up by the wind as sea spray and cause breathing difficulties for people with conditions such as asthma,” Dr de Salas said.

Dr de Salas said it was unclear whether a red tide would occur in the Southern Ocean. Red tides are usually linked with higher than normal nutrient levels, such as farm fertiliser being washed into an estuary, or nutrient enrichment when deep water comes to the surface.

“The main reason we don't know if a red tide would occur is that we don't know enough about what causes the algae to bloom into red tide proportions,” he said.

Each of the new species contains a pigment different to that which algae in its group were expected to have. Pigments are used to classify algae into groups to measure ocean productivity.

“This means that a significant part of what we thought was contributing to the food chain in the Southern Ocean might not be doing so at all,” Dr de Salas said.

The toxicity of the algae means that their predators often learn to spit them out and the algae, while abundant, are no longer a food source. The toxic algae also eat other algae that would otherwise contribute to the food chain.

Dr de Salas said his findings could have an impact on determining future levels of sustainable fishing in the Southern Ocean.

“If we don't take all of this into account when calculating what the sustainable fishing levels are, we're probably coming up with the wrong results and this can lead to over-fishing,” Dr de Salas said.

“We know little of the impact on humans at this early stage, but the impact on other marine life higher on the food chain is important – if we have miscalculated how much we can fish, we will also be affected,” he said.

Dr de Salas and Dr Simon Wright, of the Australian Antarctic Division, are working on identifying pigments that are unique to the new algae so data can be re-analysed correctly. Models that better reflect the natural environment will improve management of primary production and fish stocks in the Southern Ocean.

Dr de Salas’ published results were co-authored by Aitor Laza-Martinez, of Basque Country University, Spain, and Professor Gustaaf Hallegraeff, also from the UTAS School of Plant Science.

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