Polar bears ill from accumulated environmental toxins

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New doctoral thesis documents that industrial chemicals are transported from the industrialized world to the Arctic via air and sea currents. Here, the cocktail of environmental toxins is absorbed by the sea's food chains which are so rich in fats and of which the polar bear is the top predator.

On Friday 14 October 2011, Christian Sonne, Senior Scientist at Aarhus University, defends his doctoral thesis at LIFE - Faculty of Life Sciences, University of Copenhagen.

"The accumulated industrial chemicals cause diseases in the polar bears which do not lead to their immediate deaths. On the other hand, the toxins damage the bones and organs of the polar bears, their immune systems and not least their reproductive systems. However, the harm suffered by the population of polar bears in eastern Greenland is not yet fully understood," says Christian Sonne.

Together with researchers from LIFE – the Faculty of Life Sciences and Aarhus University, Christian Sonne has undertaken the first meta study of ten years of research conducted up until 2010 into the effects of contaminants on the health of the species. At the same time, he has analysed tissue and bone samples from about 100 east Greenlandic polar bears.

Christian Sonne and his colleagues from LIFE – the Faculty of Life Sciences have previously conducted controlled experiments on the effects of environmental toxins on Arctic foxes and Greenlandic sled

dogs. Both species top the Arctic food chain and are genetically and developmentally closely related to the polar bear.

The experiments showed that the damage seen in the polar bears was also evident in the groups of Arctic foxes and dogs which were fed environmental toxins, but not in the control groups.

Provided by University of Copenhagen