

# Study warns of mercury in Arctic

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This is a Thursday, July 10, 2008 file photo of a polar bear as it walks along the ice flow in Baffin Bay above the Arctic circle as seen from the Canadian Coast Guard icebreaker Louis S. St-Laurent. Global mercury emissions could grow by 25 percent by 2020, if no action is taken to control them, posing a threat to polar bears, whales and seals and the Arctic communities who hunt them for food, an authoritative international study says.(AP Photo/The Canadian Press, Jonathan Hayward, File)

Global mercury emissions could grow by 25 percent by 2020 if no action is taken to control them, posing a threat to polar bears, whales and seals and the Arctic communities who hunt those animals for food, an authoritative international study says.

The assessment by a scientific body set up by the eight Arctic rim

countries also warns that [climate change](#) may worsen the problem, by releasing mercury stored for thousands of years in permafrost or promoting chemical processes that transform the substance into a more toxic form.

"It is of particular concern that mercury levels are continuing to rise in some [Arctic species](#) in large areas of the Arctic," despite emissions reductions in nearby regions like Europe, North America and Russia, the Arctic Monitoring and Assessment Program, or AMAP, said.

Emissions have increased in other parts of the world, primarily in China, which is now the No. 1 mercury polluter, accounting for nearly half of total emissions, AMAP said.

Its report, "Arctic Pollution 2011," was scheduled for release Friday at a scientific conference in Copenhagen, but The Associated Press obtained a copy in advance from researchers involved with the study.

Another report released earlier this week at the meeting of nearly 400 scientists showed melting ice in the Arctic could help raise global sea levels by as much as 5 feet (1.6 meters) this century, much higher than earlier projections.

Both assessments will be handed to U.S. Secretary of State Hillary Clinton and the foreign ministers of Russia, Canada, Sweden, Norway, Denmark, Finland and Iceland at an Arctic Council meeting next week.

[Polar bears](#), beluga whales and seals are among the species that have shown heightened levels of mercury in parts of Arctic Canada and Greenland, the pollution report said. Meanwhile, mercury levels have dropped in other animals in the high north of Europe.

The reasons are not fully understood, but theories include that the

European animals are closer to regions where mercury emissions are declining.

The impact of climate change, including melting permafrost and longer ice-free seasons, could also be a factor, the report said, adding more research is needed.

Danish researcher Rune Dietz, one of the lead authors of the study, said the impact is likely to vary across the Arctic region. In eastern Greenland, [melting ice](#) may give polar bears easier access to the breeding grounds of seal species with high levels of mercury.

However, at Svalbard in northern Norway, less ice could strand polar bears on land, keeping them away from mercury-rich seafood and forcing them "to eat more plants and terrestrial animals," Dietz told AP on Thursday.

For polar bears, high [mercury levels](#) can lead to a chemical imbalance in the brain that affects all aspects of the animal's behavior, survival and reproduction, the study said.

Traces of mercury are found in almost all fish and shellfish. At certain levels, it can harm the developing nervous system of a fetus or young child if too much tainted seafood is consumed by the mother or child. The World Health Organization says there are higher rates of mental difficulties among children in parts of the world that rely primarily on fish.

Inuit communities in the Arctic are at risk because their traditional diet includes seal, whale and to a lesser extent polar bear - species on top of the food chain that have accumulated high levels of mercury.

The AMAP report urged health authorities to communicate these risks to

Arctic communities, but was cautious about offering diet recommendations because switching to a Western diet - and lifestyle - can lead to other health problems.

"Because the healthy food choices in local stores are quite expensive, if available at all, it is often more affordable but less nutritious processed foods that are chosen," the report said.

Combined with a more "sedentary" Western lifestyle, no longer focused on hunting and fishing, "this new diet increases the risks of developing obesity-related diseases, such as diabetes and coronary heart disease," AMAP said.

The report compiles findings from hundreds of published studies and builds on previous assessments in 1997 and 2002 which found that the pristine Arctic environment is polluted by industries in other parts of the globe.

About 100 tons of man-made mercury emissions are deposited in the Arctic Ocean annually from the air, with a similar amount coming in with ocean currents, rivers and coastal erosion, the report said. Mercury gets into the environment from coal-fired power plants, residential heating systems, waste incinerators and mining operations.

"If measures are not taken to reduce emissions, models suggest that global emissions could increase by 25 percent by 2020," compared to 2005 levels, AMAP said.

But with the best existing technology to reduce emissions, global discharges could instead be lowered by as much as 60 percent, decreasing mercury depositions in the Arctic by 20 percent.

The assessment called for a legally binding global agreement to control

[mercury emissions](#) and avoid further pollution in the Arctic. Negotiations for such a deal are ongoing under the auspices of the U.N. Environment Fund.

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