

# The Arctic And Global Warming

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A warmer Arctic Ocean may mean less food for the birds, fish, and baleen whales and be a significant detriment to that fragile and interconnected polar ecosystem, and that doesn't bode well for other ocean ecosystems in the future. That's the word from University of Miami Rosenstiel School's Dr. Sharon Smith.

"We've seen models of global climate change for more than 20 years, and they have shown us that warming associated with increased, man-made carbon dioxide emissions will appear first – and be the most intense – in the Arctic," Smith said. "But what extensive satellite imagery confirms is that this Arctic warming is happening already. Permanent ice is thinning, and the duration of ice-free conditions is extending. This is changing currents and affecting feeding patterns and food source availability for the animal life there."

According to Smith, the match of the physical forcing and the life cycles of Arctic marine organisms is crucial; both need to be relatively predictable in time and space for evolution of this food web to have taken place. Global warming is acting to disrupt predictability, a situation that could cause the rapid demise of marine mammals and birds upon which subsistence human populations depend.

A biological oceanographer, Smith has spent her career examining some of the smallest components of food webs. She is the co-director of the National Science Foundation/National Institute of Environmental Health Science Oceans and Human Health Center that is based at the University of Miami Rosenstiel School of Marine and Atmospheric Science as well

as a professor in marine biology and fisheries there. Her presentation was part of a session titled, Observations of Anthropogenic Climate Change in the Oceans and their Implications for Society II: Arctic and Ecosystem Responses. Dr. Rana A. Fine, also a UM Rosenstiel School faculty member, presided over the session with Dr. Richard Feely from NOAA's Pacific Marine Environmental Laboratory.

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