

# Study finds loss of sea ice causes ecological changes

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A new paper co-written by UM associate professor Mark Hebblewhite details ecological changes caused by a loss of Arctic sea ice.

The paper concludes that the loss of sea ice obviously will impact the [marine food web](#) and the marine mammals that depend on sea ice habitat. Other major ecological changes in adjacent land-based habitats and species also will occur because of warming oceans.

The findings were published in the Aug. 2 issue of *Science* magazine.

Wildlife species like the polar bear are symbolic of how animals are vulnerable to loss of sea ice. Other wildlife species also will be indirectly affected. For example, arctic fox populations will become more genetically isolated, pathogens like the phocine distemper virus will pass more easily between currently separated species in Arctic Canada and changed [migration patterns](#) may increase parasites in caribou herds and increase their risk of drowning as they migrate across weakened ice.

Loss of sea ice also will cause changes to plant growth in areas such as Greenland, which influences food availability for wildlife like caribou. Hebblewhite notes these vegetation changes are especially important because of how closely Arctic tundra is coupled with the marine system.

Most importantly, human activity in the area will increase. These impacts include on and off-shore mining exploration, increased shipping traffic through the once un-navigable Northwest Passage, and

construction of new deep-[sea ports](#). This increased activity is likely to bring increased oil spills and other disturbances never seen in the region.

Hebblewhite notes the importance of the findings by saying "In July 1991, when I was 18, I first stood on the sea ice of Hudson Bay. Little did I know that 20 years later Hudson Bay sea ice, and all the species that depend on it, would be gone nearly one month earlier each year because of human-induced climate change. Our paper makes the point that loss of sea ice is a form of habitat destruction that rivals or even exceeds the rate at which the Amazon rain forest has been destroyed in the past two decades. The loss of sea ice will have effects that cascade far beyond the iconic polar bear. This will transform the Arctic."

Provided by University of Montana

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