



## Climate change impacts on seals and whales in the North Atlantic Arctic and adjacent shelf seas.

<https://arctichealth.org/en/permalink/ahliterature95508>

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Source: Sci Prog. 2008;91(Pt 2):117-50

Date: 2008

Language: English

Publication Type: Article

Keywords: Animals

Arctic Regions

Atlantic Ocean

Ecosystem

Greenhouse Effect

Ice

Pinnipedia - physiology

Population Dynamics

Whales - physiology

Abstract:

In a warmer Arctic, endemic marine mammal species will face extreme levels of habitat change, most notably a dramatic reduction in sea ice. Additionally, the physical environmental changes, including less ice and increased water (and air) temperatures will result in alterations to the forage base of arctic marine mammals, including density and distributional shifts in their prey, as well as potential losses of some of their traditionally favoured fat-rich prey species. In addition they are likely to face increased competition from invasive temperate species, increased predation from species formerly unable to access them in areas of extensive sea ice or simply because the water temperature was restrictive, increased disease risk and perhaps also increased risks from contaminants. Over the coming decades it is also likely that arctic marine mammals will face increased impacts from human traffic and development in previously inaccessible, ice-covered areas. Impacts on ice-associated cetaceans are difficult to predict because the reasons for their affiliation with sea ice are not clearly understood. But, it is certain that ice-breeding seals will have marked, or total, breeding-habitat loss in their traditional breeding areas and will certainly undergo distributional changes and in all probability abundance reductions. If species are fixed in traditional spatial and temporal cycles, and are unable to shift them within decadal time scales, some populations will go extinct. In somewhat longer time frames, species extinctions can also be envisaged.

PubMed ID: 18717366 [View in PubMed](#)