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Title: *Climate-induced changes in the sea currents ranges, zooplankton communities and Little Auk feeding ecology and distribution in Spitsbergen*

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The effects of global warming are accentuated particularly in the Arctic. Here we present results on the Little Auk (LA) *Alle alle*, which is a keystone species in the Arctic ecosystems due to its huge numbers. LA deposit large amounts of organic matter of marine origin near breeding colonies, thus increasing production and diversity of ornithogenic tundra. LA inhabits the west coast of Spitsbergen, but their distribution differs dramatically - the largest colonies are situated in the SW and NW parts of the island. This pattern quite precisely reflects the range and influence of cold Arctic waters and its preferable prey - large energy-rich Arctic calanoid - *Calanus glacialis*. Enlarged inflow of warm Atlantic water results in dominance of fine Atlantic *C. finmarchicus* in the Arctic zooplankton and in consequence less efficient feeding of LAs' chicks. Indication of LAs adverse respond to climate changes is negative correlation between its median hatching dates with spring ground T in the colony and positive relationship with sea-ice concentration in the feeding grounds. Further climate warming may force northward shift of the LA breeding range and have serious negative consequences for the ecosystem. The southernmost LA populations in Greenland and Iceland have already collapsed after warming period following the "Little Ice Age".