

Sea ice loss associated with increased summer land use by Chukchi Sea polar bears

November 18 2015



Polar Bear (*Ursus maritimus*) near Kaktovik, Barter Island, Alaska. Credit: Alan Wilson/Wikipedia.

Polar bears' use of land during substantial summer sea ice loss in the Chukchi Sea increased by 30 days, according to a study published November 18, 2015 in the open-access journal *PLOS ONE* by Karyn Rode from the U.S. Geological Survey, Alaska, and colleagues.

Recent observations suggest that [polar bears](#) increasingly use land habitats, where they have minimal access to their preferred prey, likely in response to loss of their [sea ice](#) habitat associated with climatic warming. The authors of this study used location data from female polar bears fit with satellite radio collars to compare land use patterns in the Chukchi Sea, northwest of Alaska, between two periods (1986-1995 and 2008-2013) when substantial summer sea [ice loss](#) occurred.

In both time periods, polar bears predominantly occupied sea ice, although land was used during the summer sea-ice retreat, and during the winter for maternal denning. However, the proportion of bears on land for more than 7 days between August and October increased between the two periods from 20.0% to 38.9%, and the average duration on land increased by 30 days. The majority of bears that used land in the summer and for denning came to the Russian Wrangel and Herald Islands, highlighting the importance of these northernmost land habitats to Chukchi Sea polar bears.

Implications of increased land use for Chukchi Sea polar bears are unclear, because a recent study observed no change in body condition or reproductive indices between the two periods. This result suggests that the ecology of this region may provide a degree of resilience to sea ice loss. However, projections of continued sea ice loss suggest that polar bears in the Chukchi Sea and other parts of the Arctic may increasingly use land habitats in the future, which has the potential to increase nutritional stress and human-polar bear interactions.

Dr. Rode adds, "The results of our study are consistent with studies in other regions where polar bears have experienced substantial sea ice loss. As [sea ice loss](#) occurs, polar bears are increasingly use land habitats where have minimal to no access to their marine mammal prey and are increasingly likely to interact with humans."

More information: Rode KD, Wilson RR, Regehr EV, St. Martin M, Douglas DC, Olson J (2015) Increased Land Use by Chukchi Sea Polar Bears in Relation to Changing Sea Ice Conditions. *PLoS ONE* 10(11): e0142213. [DOI: 10.1371/journal.pone.0142213](https://doi.org/10.1371/journal.pone.0142213)

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