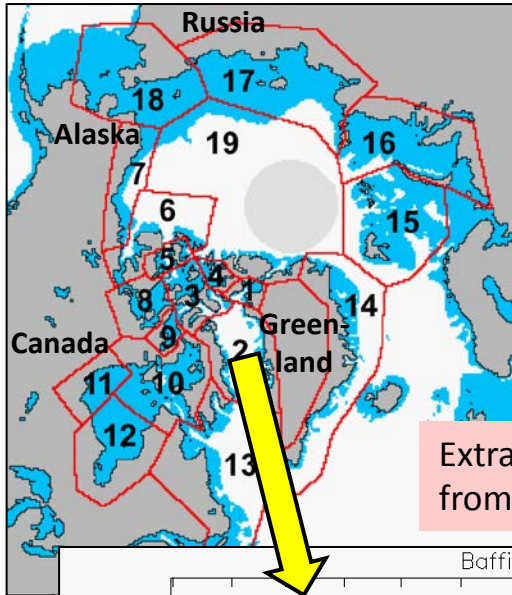


The Timing of Arctic Sea-Ice Advance and Retreat as an Indicator of Ice-Dependent Marine Mammal Habitat



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Polar Science Center, Applied Physics Laboratory, University of Washington, Seattle



Arctic marine mammals such as polar bears, seals, belugas, and narwhals depend on the sea-ice cover as an integral part of their existence.

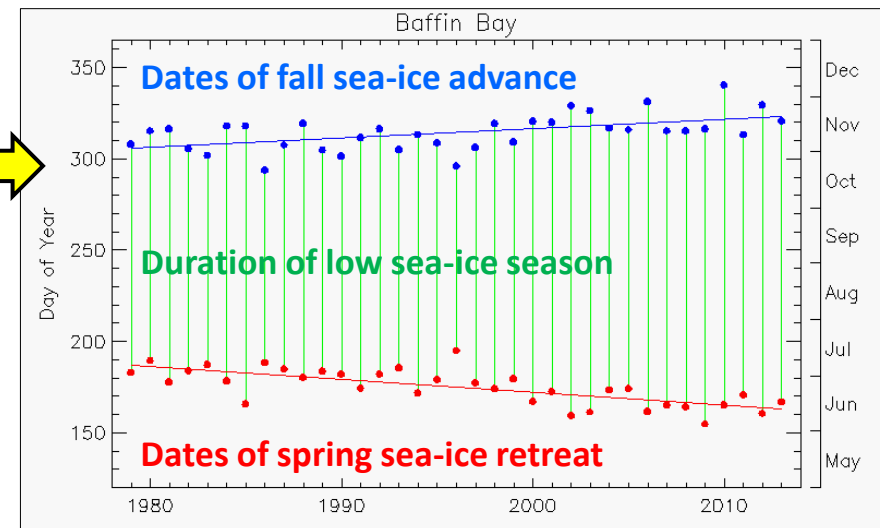
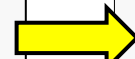
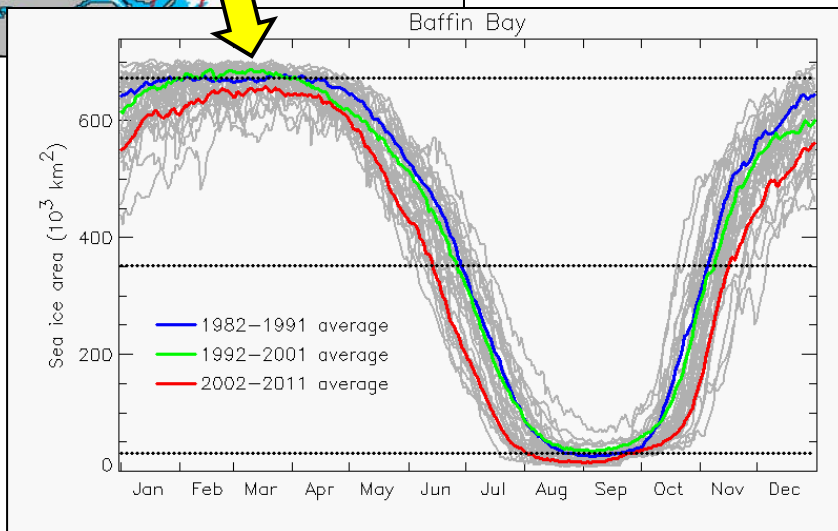
The dates of spring sea-ice retreat and fall sea-ice advance are key indicators of climate change for ice-dependent marine mammals.

1

Extract time series of sea-ice area from satellite data in Arctic regions

2

Calculate dates in spring and fall when sea-ice area crosses the 50% threshold

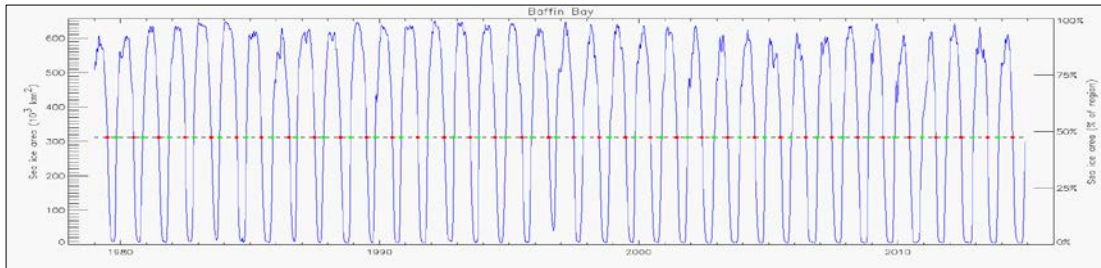
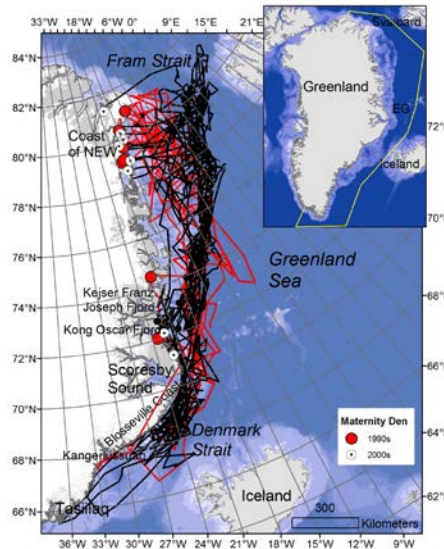


Publications and Work in Progress

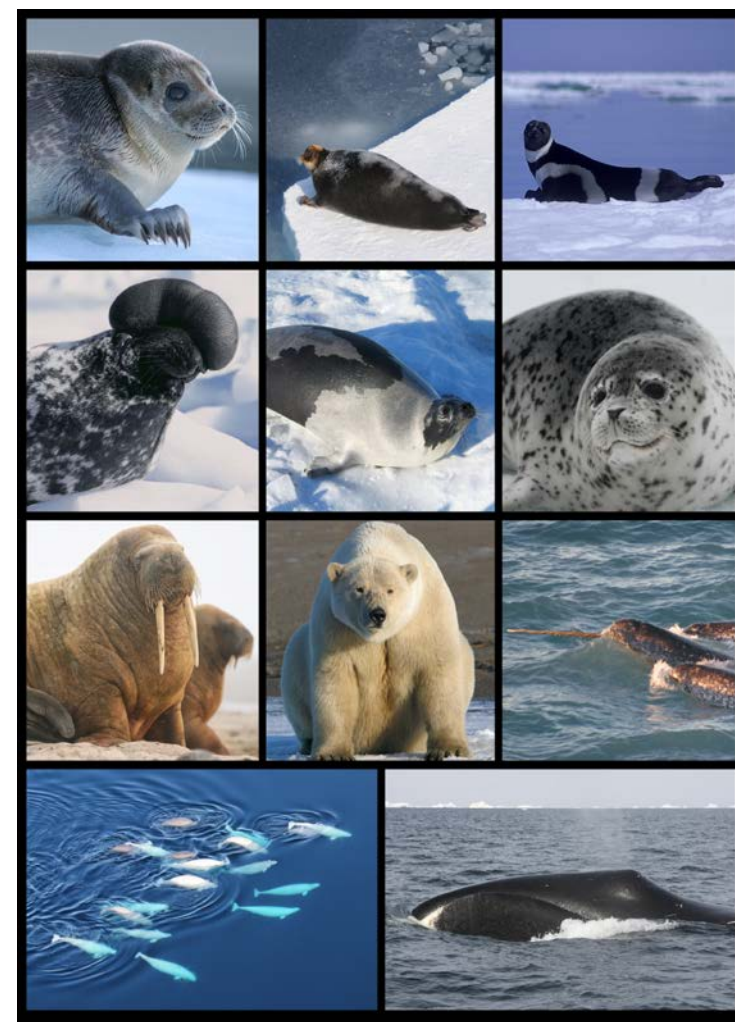
Laidre, K. L., H. Stern, K. M. Kovacs, L. Lowry, S. E. Moore, E. V. Regehr, S. H. Ferguson, Ø. Wiig, P. Boveng, R. P. Angliss, E. W. Born, D. Litovka, L. Quakenbush, C. Lydersen, D. Vongraven, F. Ugarte. (2015). A circumpolar assessment of Arctic marine mammals and sea ice loss, with conservation recommendations for the 21st century. *Conservation Biology*, in press.

Laidre, K. L., E. W. Born, P. Heagerty, Ø. Wiig, R. Dietz, H. Stern, J. Aars, M. Andersen. (2015). Shifts in habitat use by female polar bears (*Ursus maritimus*) in East Greenland. *Polar Biology*, in review.

Stern, H., and K. L. Laidre. (2015). The timing of Arctic sea-ice advance and retreat as an indicator of polar bear habitat. In preparation.



Hauser, D.W., K.L. Laidre, H. Stern, R.S. Suydam, P.R. Richard. (2015). Sea-ice habitat selection by Pacific Arctic beluga whales. In progress.



Presentation and Adoption of the Sea-ice Indicator

Scientific Working Group of the Canada Greenland Joint Commission on Polar Bears

Seattle, Washington / January 13-15, 2014

Indicator used for Baffin Bay and Kane Basin polar bear assessments by Canada, Nunavut, and Greenland.



IUCN/SSC Polar Bear Specialist Group

International Union for Conservation of Nature / Species Survival Commission

Fort Collins, Colorado / June 8-12, 2014

Indicator presented and accepted by the PBSG of the IUCN for use in PBSG Status Table, to be published annually on PBSG web site.



IUCN Red List Meeting

Oslo, Norway / November 2014

Indicator presented and accepted by the Red List team for use in global assessment of polar bears. Modeling to be conducted Feb-May 2015 and final assessment in summer.



CAFF Arctic Biodiversity Congress

Conservation of Arctic Flora and Fauna

Trondheim, Norway / December 2-4, 2014

Oral presentation: Circumpolar trends in abundance of Arctic marine mammals



Alaska Marine Science Symposium

Anchorage, Alaska / January 19-23, 2015

Poster presentation: Arctic Marine Mammal Population Status, Sea Ice Habitat Loss, and Conservation Recommendations for the 21st Century

