

6201 Vulnerability Assessment of Ice Polar Bear Habitats of the Eastern Sector of the Russian Arctic

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East-Siberian and Chukchi Seas of Russian Arctic is the part of range for polar bears. The vastness of territory, outdated or incomplete results of previous researches of marine mammals in the Russian Arctic, the uncertainty of adaptability and vulnerability of polar bears under the climate changes, the increasing interaction between polar bears and people in result of industrial and recreation activity in the Arctic - all these problems were the reasons for development of the Program for polar bear study in the Russian Arctic. The main goal of the multidisciplinary approach of the Program appears in the three topics.

1. Distribution, space use and population structure of polar bears. Shipboard and stationary observations, questionnaire design of native and worker people in the Arctic, traditional ecological knowledge are used to estimate distribution of polar bears. Satellite biotelemetry and observations data indicates polar bears' space use for sea ice and terrestrial habitats.
2. Population welfare. Starvation, proximity to people and domestic animals could result in high susceptibility of polar bears to the broad range of pathogens. Change in nutrition is an obvious indicator of population and individuals' health. Non-invasive methods are used for samples collection in the collaboration with conservation organizations and inter-disciplinary specialists.
3. Habitat vulnerability. Sea ice characteristics and seasonality change under environmental forcing. The understanding such mechanisms contributes development forecast and hindcast models for polar bear habitat. Satellite imagery, observed and derived spatiotemporal data are used to estimate habitat characteristics.