



Why is Sea Ice Important?



This text is based on sea ice research in the projects iAOOS and DAMOCLES, among others

Habitat



Foto: Stephen Hudson



Foto: Sebastian Gerland

Many animal and plant organisms depend on the sea ice. Among these we find polar bears, seals, seabirds, crustaceans and algae. As a result of the greatly reduced sea ice extent in summer over the last decades, polar bears were recently registered as an endangered species.

Climate

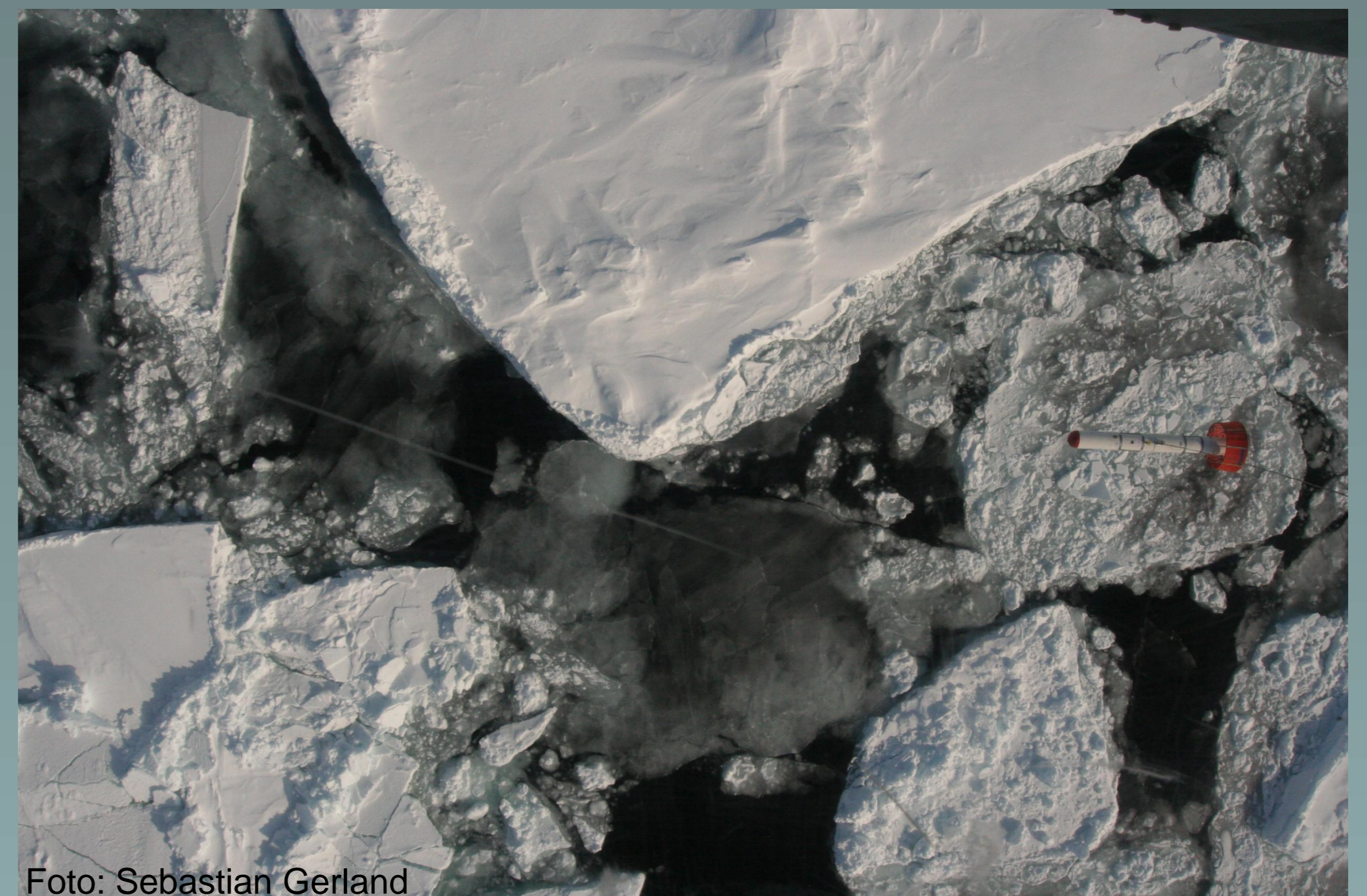
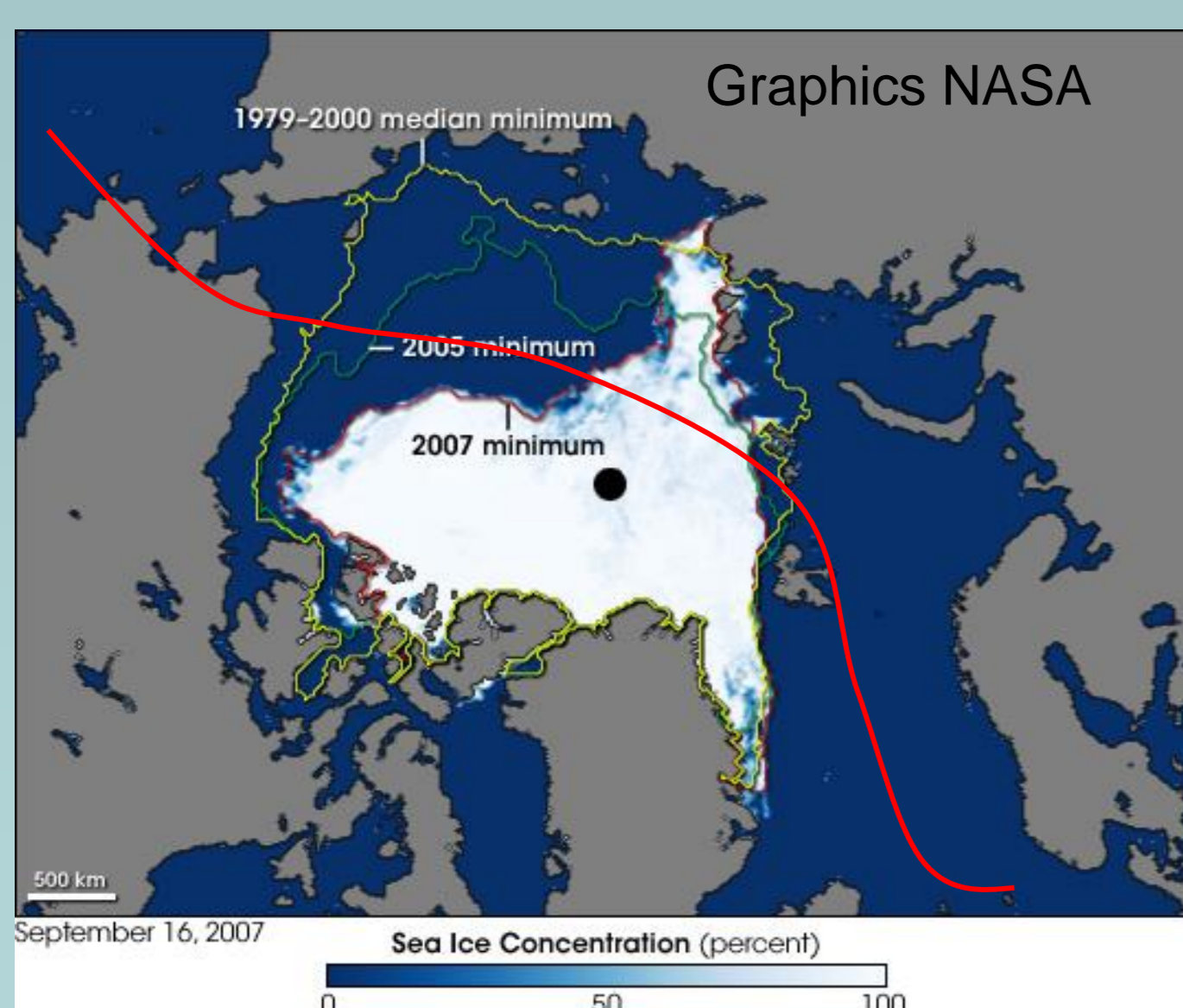


Foto: Sebastian Gerland

The sea ice surface is much lighter than open water surfaces so that a good deal of the sun's radiation is reflected by snow on the sea ice. Thus the ice helps protect the ocean surface from being warmed up in ice-covered waters. The picture shows the ice surface (sea ice and channels) as seen from a height of 25 m, as well as an instrument (EM Bird suspended from a helicopter) which measures the thickness of the ice.

People



For a long time the sea ice has blocked the possibility of shorter sailing routes between Europe, North America and Asia, as well as access to natural resources. Climatic changes and the melting of the Arctic ice are now changing this situation.

The sea ice represents a basis for the traditions and culture of the indigenous people of the Arctic region. Many ethnic groups depend on the sea ice, both as such or as a means of transport for hunting activities, and as a habitat for the animals they hunt.



Foto: Duncan Mercer

The Ocean

When sea water freezes to sea ice a great deal of the salt in the water is separated out. This means that the saline content of the surface water in polar regions increases where sea ice is formed. Water with a higher salinity has higher density (is heavier) than water with lower salinity. Thus the salty water sinks to lower levels in the ocean, while warmer water from the south replaces what used to be surface water. In this way the ice contributes to ocean currents that transport considerable amounts of water between the different oceans.

