



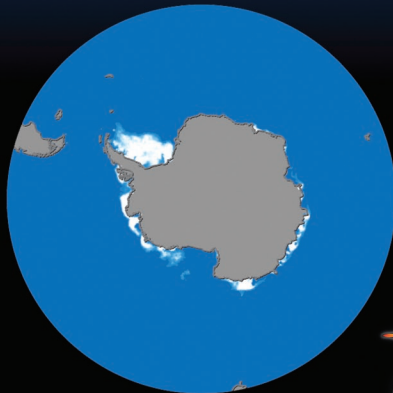
Arctic Sea Ice



February 2006



Antarctic Sea Ice

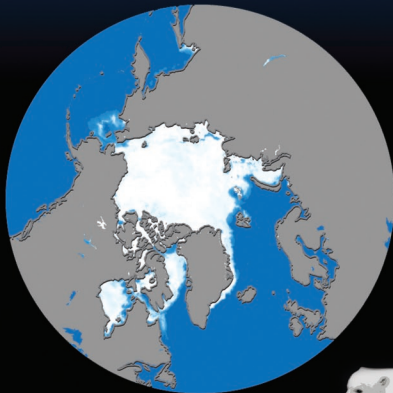


February 2006





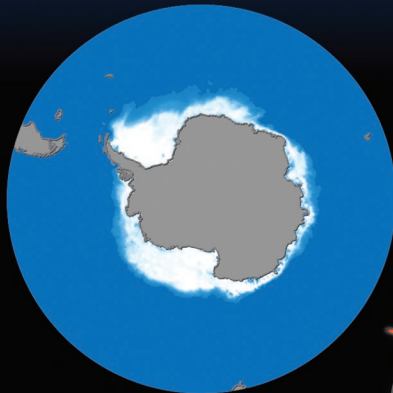
Arctic Sea Ice



May 2006



Antarctic Sea Ice

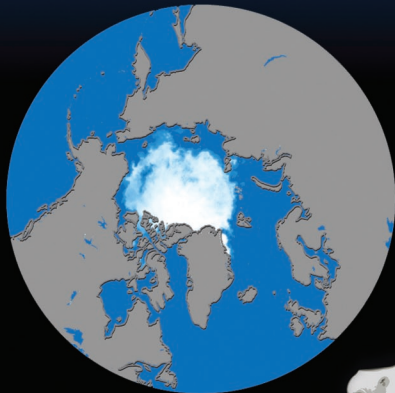


May 2006





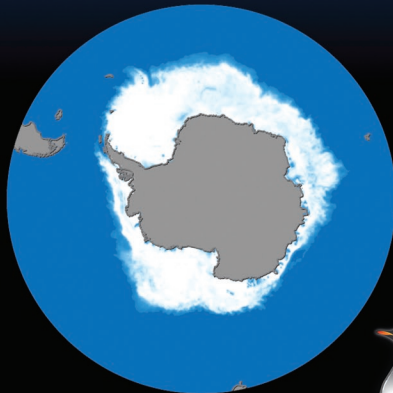
Arctic Sea Ice



August 2006



Antarctic Sea Ice

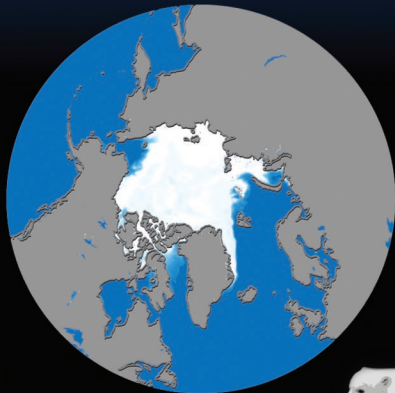


August 2006





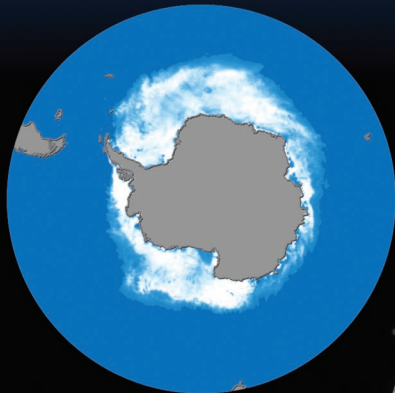
Arctic Sea Ice



November 2006



Antarctic Sea Ice



November 2006



SEA ICE

Sea Ice, which forms from the freezing of sea water, extends over vast areas of the polar regions, with wintertime sea ice coverage in either region far exceeding the area of either the United States or Canada. This vast ice coverage has multiple impacts, including restricting heat exchanges between the ocean and the atmosphere, reflecting solar radiation back away from the Earth's surface, and serving as a platform for some polar species and a hindrance for other species. With its many impacts, sea ice is a key component of the polar climate system in both the Arctic and the Antarctic.

Sea ice undergoes strong seasonal cycles in both polar regions, as illustrated here with data from 2006. In the Arctic, the February (mid-winter) 2006 ice coverage is approximately 14 million square kilometers, and the August (mid-summer) ice coverage is approximately 6.4 million square kilometers. In the Antarctic, with the seasons reversed, the mid-summer February ice coverage is approximately 2.6 million square kilometers, and the mid-winter August ice coverage is approximately 18 million square kilometers.

In addition to the seasonal contrast, the two polar regions have markedly contrasting geographies, with the central north polar region dominated by the Arctic Ocean, with its sea ice cover, but the central south polar region dominated by the Antarctic continent, with land ice instead, surrounded by sea ice. The continents surrounding the Arctic Ocean restrict the expansion of the ice cover in winter and contribute, along with features like the Gulf Stream, to the very asymmetric distribution of the Arctic sea ice.

Satellites have been monitoring the polar ice covers since the 1970s and have been key in establishing that the Arctic ice cover has, overall, been decreasing since the late 1970s but the Antarctic ice cover has not been decreasing. These are important pieces of the larger climate-change puzzle.