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DISTRIBUTIONS OF PHYTOPLANKTON COMMUNITIES AT DIFFERENT REGIONS IN THE ARCTIC OCEAN

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In order to investigate the structure of phytoplankton community at surface in the Arctic Ocean, this study was carried out at various study areas on board ice-breaker and ice-strengthened vessels in the Barents Sea, Kara Sea, Okhotsk Sea, Bering Sea, Chukchi Sea and Canadian Basin from 2003 to 2008.

We collected samples at Barents Sea and Kara Sea by Russian Research vessel '*Ivan Petrov*' from 2003 to 2005. The data, from the Okhotsk Sea were collected on board the Russian academic research vessel '*Lavrentiev*' and in the Bering Sea, Chukchi Sea and Canadian Basin, more data from 2006 to 2008 were obtained on the Japanese training ship '*Oshoro Maru*' and Chinese ice breaker '*Xuelong*'.

Phytoplankton communities were composed of 53 and 23 taxa in the Barents Sea in 2003 and 2004, respectively. 24 taxa were found in the Kara Sea in 2005 and 25 taxa were appeared in the Okhotsk Sea as a subarctic ocean in 2005. Bering Sea (2006, 2007, and 2008), Chukchi Sea (2007 and 2008) and Canadian Basin (2008) had 43, 56, 57, 57, 42 and 26 taxa, respectively. There were high species diversity and low abundance of phytoplankton in the Barents Sea, Bering Sea and Chukchi Sea, whereas in the Kara Sea and Okhotsk Sea low species diversity and high abundance were distinct.

The most abundant species were nano-pico size phytoplankton at most of the study areas, but the second abundant species were variable such as *Dinobryon belgica* in the Barents and Kara seas whereas *Thalassiosira* sp. in the Okhotsk Sea. Overall, the small size phytoplankton 0 20㎛ had higher species diversity and abundance in the Arctic Ocean.