

Decapod larvae community assemblages in the Bering and Chukchi Seas during summers of 2007 and 2008

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Arctic Pacific is experiencing profound ecosystem changes. Warming and reduction of summer sea-ice cover have large implications for the ecosystem functioning. The new scenario opens new fishery perspective, since northern unexploited areas are now more accessible to the fishing vessels. Therefore, it is necessary to study the current state of the Arctic populations to predict ongoing changes related with both global warming and fishing pressure. This study analyzes zooplankton samples from Bering Sea to Chukchi Sea during the consecutive summers of 2007 and 2008 to evaluate changes in decapod larvae community. Our results show that the abundance and diversity were greater during 2008 than 2007. Most of the species occurred throughout the region, while *C. bairdi* was restricted to the southeastern Bering Sea. We observed a spatial mismatch between the distribution of the larvae and food (phyto-zooplankton) that may lead to lower larval survival. The most abundant species, *C. bairdi*, *C. opilio*, and *Hyas* spp. dominated by earlier developmental stages in 2008 than those of 2007. The body size of *C. opilio* larvae showed a clear latitudinal pattern, in which larger body occurred at higher latitudes. Annual changes in abundance and developmental stage structure seem to be related to the one-month delay in sampling period and not by the contrast environmental conditions observed in both years. Currently, we are extending the temporal study period to track community alterations related with climate changes and fisheries in the Arctic examining samples collected in 1991 and 1992.

Keywords: decapod larvae, Arctic Pacific, distribution, phenotypic plasticity, global warming, fisheries.

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