DIEL VERTICAL MIGRATION OF ARCTIC COPEPODS UNDER SEA ICE IN THE CANADA BASIN

Hyoung Sul La[1], Koji Shimada[2], Eun Jin Yang[1], Sun-Yong Ha[1], Eri Yoshizawa[2], Jun-Oh Min[1], Sung-Ho Kang[1], Ho Kyung Ha[3]*

[1] Korea Polar Research Institute, Incheon, South Korea
[2] Tokyo University of Marine Science and Technology, Tokyo, Japan
[3]Department of Ocean Sciences, Inha University, Incheon, South Korea
hsla@kopri.re.kr

ABSTRACT

The vertical migration of zooplankton is essential component of the 'biological pump in the Arctic as they actively export carbon out of the productive surface waters to the bottom. Arctic copepods of the genus *Calanus*, which are the dominant herbivores in Arctic seas, play a key role in pelagic food webs. We investigated the vertical migration of Arctic copepods under sea ice during summer using a 300-kHz acoustic Doppler current profiler (ADCP). Three sediment traps were moored at 15-m depth from under sea ice to verify the zooplankton species. These were supplemented by environmental data collected with a conductivity, temperature and depth (CTD) profiler. The *Calanus hyperboreus* was predominant with about 5 mm total lengths. The acoustic backscatter showed a typical diel vertical behavior with a significant correlation with surface solar radiation, even if the region was covered by sea ice. This study could provide important information what factors determine the migration behavior of *Calanus hyperboreus* under Arctic sea ice during summer.