Episodic dumping of ice rafted organisms on the Amundsen shelf, Antarctica

MINKYOUNG KIM[1] EUN JIN YANG[2] HYUNG JEEK KIM[3]
DONGSEON KIM[3] SANGHOON LEE[2] JEOMSHIK HWANG[1]

[1]School of Earth and Environmental Sciences/Research Institute of Oceanography, Seoul National University, Seoul, South Korea
[2]Korea Polar Research Institute, Incheon, South Korea
[3]Korea Institute of Ocean Science & Technology, Ansan, South Korea

We found the Parborlasia corrugatus, a common benthic species, were intercepted episodically in the sediment trap cups, deployed 130 and 567 m above the sea floor, respectively, on bottom tethered moorings in the sea ice zone and near the Dotson Ice Shelf inside the Amundsen Sea Polynya in the Amundsen Sea.

The organic carbon flux derived from the P. corrugatus was equivalented to 40 % and 500 % of the corresponding organic carbon flux of fine sinking particles. A likely mechanism may be acquisition of these organisms by anchor ice on the McMurdo Sound, and/or the ice scouring by fast ice along the coastline of Bear Peninsula and eastern coast of the Amundsen Shelf. Considering the probability of the individuals being caught by the sediment traps, the transport of benthic organisms by this mechanism may be prevalent in this region.