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### SEASONAL AND ANNUAL FLUX CHANGES OF MICROZOOPLANKTON (RADIOLARIA) IN THE WESTERN ARCTIC OCEAN: ENVIRONMENTAL INDICES IN A WARMING ARCTIC

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Seasonal flux variations and vertical distribution of radiolarians were investigated by using time series sediment trap system moored at Station NAP (75°00'N, 162°00'W, bottom depth 1,975 m) in the western Arctic Ocean during October 2010–September 2012. Total radiolarian flux in the western Arctic Ocean was comparable to that in the North Pacific Oceans. The dynamics of sea ice was a major factor affecting the productivity, distribution, and composition of radiolarian fauna in the western Arctic Ocean. The radiolarian faunal composition was changed primarily due to the seasonal water mass variations with sea ice formation. *Amphimelissa setosa* and Actinommididae were dominant taxa in the western Arctic Ocean, and had different nutritional niches depending on seasonal ice cover. *Amphimelissa setosa* showed a high dominance under the sea-ice edge which accompanies well-grown ice algae, ice fauna and favorable alternation between stable water masses and deep vertical mixing. On the other hand, Actinommididae showed a high dominance under the sea-ice covered conditions because they were tolerant to oligotrophic and stratified cold water masses and probably could reproduce at the juvenile stage. The radiolarian fauna showed a low productivity but with a high diversity under the sea-ice, associated with the seasonal changes of solar radiation, which introduce algae growing on the ice and other phytoplankton under the sea-ice without high dominance of *Amphimelissa setosa*. Annual variations in the radiolarian faunal composition and fluxes reflected influx of oligotrophic water caused by the recent intensification of currents in the Beaufort Gyre, related to the drastic sea-ice reduction during the last decade.