

Reconstruction of Paleo-environment at coastal lakes along the Soya Coast, Antarctica, using fossil diatom assemblages

KANG, Ijin^{1*} ; KASHIMA, Kaoru² ; SETO, Koji³ ; TANI, Yukinori⁴ ; MATSUMOTO, Genki I.⁵

¹Department of Earth and Planetary Sciences, Graduate School of Sciences, Kyushu University, ²Department of Earth and Planetary Sciences, Graduate School of Sciences, Kyushu University, ³Research Center for Coastal Lagoon Environments, Shimane University, ⁴Institute of Environmental Sciences, University of Shizuoka, ⁵School of Social Information Studies, Otsuma Women's University

Soya Coast, located at East Antarctica distribute wide ice-free areas such as Langhovde, Skarvsnes, Skallen and Rundvagshetta. The research areas of this study are five lakes in the ice-free coast as follows; Lake Nurume-ike and Lake Yukidori-ike at Langhovde, Lake Oyako-ike at Skarvsnes and Lake Maruwan-minami-ike and Lake Maruwan-oike at Rundvagshetta.

Matsumoto et al.2014 described the Holocene paleo-limnological changes at Lake Oyako-ike. They described soft-x-ray analysis, carbon 14 dating, elemental analyses, Chlorophyll compounds and carotenoids, and algae and cyanobacteria analyses. The paleo-environment of the lake shifted from the open coastal environment, through stratified saline lake, and then to high productive fresh water lake during these two thousand years. They presume that these environmental changes have been affected by isostatic uplift by retreating continental glaciers.

Diatom fossil assemblages at the lake deposit (Ok4C-1) divided into five assemblages zones, from Zone 1 to Zone 5 to upward. The dominated species of each zone is as follows. Zone 1:*Paralia sulcata*, marine species, Zone 2:*Staurosira construens*, Zone3:*Tryblionella littoralis*, marine species, Zone4:*Chamaepinnularia cymatopleura*, brackish species and Zone 5:*Amphora oligotraphent* *Navicula gregaria*, *Diadsmis* spp., freshwater species. The shifts of diatom assemblages presumed the lake water environment shifted from coastal marine environment through freshwater lake environment. This result was fitted to the results of the previous study. Now, we are analyzing other four lake sediment cores.

Keywords: Antarctic coastal lakes, paleolimnology, diatom, the Holocene, Sediment core