

Preliminary reconstruction of Lake-level changes based on fossil diatom assemblages in Lake Biwa

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This is a preliminary report of a research for reconstruction of lake-level change history of Lake Biwa based on the transfer function of diatom assemblage into water depth of surface sediment. We investigated diatom assemblages in drilling core sample from the lake bottom and surface sediment samples from the lake bottom from 5 m to 30 m in depth off estuary of Echi River, Lake Biwa. Rate of planktonic species and water depth can be changed into the transfer function. The transfer function applied to drilled sediment from Lake Biwa into lake-level change history. The result shows that lake-level changes in Lake Biwa reflects climate changes. Before 1.5 ka, water depth rose under relatively cold conditions. During the last 1.5 ka, water depth rose under relatively warm conditions. The difference of response to climate condition suggests that snowfall in winter depending on East Asian winter monsoon and rainfall in summer depending on East Asian summer monsoon influence water balance of Lake Biwa.

Keywords: Lake Biwa, off estuary of Echi River, drilling core, planktonic diatom, transfer function, lake-level change