

Paleoenvironmental change during the middle to late Holocene in the Lake Maruwan-oike on the Rundvagshetta, Antarctica

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Lake Maruwan-oike is located on the Rundvagshetta area, Rutzow-Holm Bay. In this lake, water temperature shows around 2 degree C, and salinity is less than 0.01 psu.

Sediment cores (Mw-4 core and Mw4C-1) are collected in the Lake Maruwan-oike used by hand-pushing piston corer. Coring site is located at north part of lake, which the water depth is 9.8m and 15.0m. Core of 187cm is recovered at Mw-4. This core is divided to 4 sedimentary unit based on sediment facies. Unit I (0-55cm) consists of laminated clay with cyanobacteria and moss. Unit II (55-66cm) consists of laminated cyanobacterial deposits. Unit III (66-150cm) is diatomaceous deposits including marine benthic foraminifer.

Unit IV (150-187cm) is diatomaceous deposits with lamination including marine benthic foraminifer. Calculating from sedimentation ratio and ^{14}C AMS dating, the boundary age between Unit I and II is estimated with 2300yr.B.P., and II and III is estimated with 3400yr.B.P. Unit III shows marine diatom flora. Unit II is cyanobacterial flora under the salt lake condition. Unit I is cyanobacteria and moss flora under the fresh water lake condition. Inflow of melt water started from the upper part of unit II, and two-layer structure is formed to salt lake during this unit.