

Changes in sedimentation rates and sources of organic materials in Lake Baikal (Russia) and Lake Hovsgol (Mongolia) sediment cores

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Lake Baikal (southern Siberia) and Lake Hovsgol (northern Mongolia) sediment cores were dated by radiocarbon measurements using accelerator mass spectrometry (AMS) system at Nagoya University. In the VER99G12 core, dating reversals were observed in the three sediment layers during the climate transition period. These fluctuations of radiocarbon ages in the Lake Baikal cores could be caused by rapid environmental changes and/or changes in sources of organic materials in the sediments. In the Lake Hovsgol sediment cores, relatively high sedimentation rates were observed during cool period (up to 12.1 cm/1000 yr, Figure 1). The sedimentation rates during cool period in the Lake Hovsgol sediment cores are 4-7 times higher than those of warm period (after ca. 10 ka BP). These results could be due to low water levels in the Lake Hovsgol during the cool period.

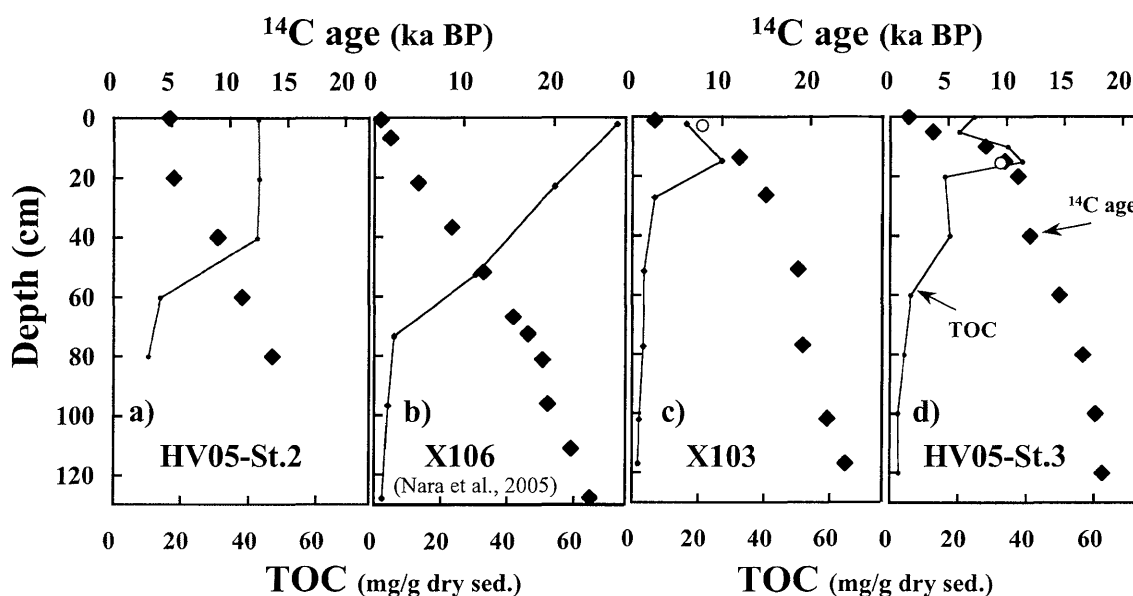


Figure 1 Vertical distributions for total organic carbon (TOC) content, ¹⁴C age of total organic carbon (TOC) and plant residues (wood fragment) in sediment cores from the southwestern part of basin floor (HV05-St.2 and X106) and the southeastern part of basin floor (X103 and HV05-St.3) in Lake Hovsgol, Mongolia. Radiocarbon ages of TOC and wood fragment are shown as filled diamonds and open circles, respectively. TOC content is shown as filled circles.