

ACG032-04

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Surface environment changes off Shimokita Peninsula in the Holocene

Takuya Sagawa^{1*}, Kentaro Tsuruoka², Michinobu Kuwae¹, Hidetaka Takeoka³, Koichi Iijima⁴,
Tatsuhiko Sakamoto⁴, Minoru Ikehara⁵, Masafumi MURAYAMA⁵

¹SRFC, Ehime University, ²Ehime University, ³CMES, Ehime University, ⁴JAMSTEC, ⁵CMCR, Kochi University

We conducted measurements of physical property, elemental analysis by XRF core-logger, carbonate concentration, and oxygen isotope of benthic and planktonic foraminifers of sediment core SK-2, which is taken from off Shimokita Peninsula, in order to reconstruct Holocene surface environmental changes in the subarctic North Pacific. A sediment core SK-2 mainly consist of homogeneous silty caly and is intercalated by several volcanic ashes. The age of SK-2 is constructed by radiocarbon dating of planktonic foraminifer. We divide sediment faces into three units based on oxygen isotope of benthic foraminifer and physical properties. The benthic oxygen isotope gradually decreases in the unit III (>600 cm), indicating the rising sea level. In this unit, carbonate concentration decreases and lithogenic increases. This is because the enhancement of lithogenic transportation by Tsugaru warm current due to sea level rising. In the unit II (300-600 cm), high frequent variation of color, magnetic susceptibility and carbonate concentration can be observed, implying the variable sedimentary condition in the mid-Holocene. In the unit I (<300 cm), the carbonate concentration is low. This may be explained by the degradation of carbonate preservation by enhanced organic matter settlement due to high productivity.

Keywords: Planktonic foraminifer, Oxygen isotope, Sediment core, Paleoceanography