Past and future viewing from the modern sedimentary process of the Notsukesaki barrier spit system, eastern Hokkaido

*Futoshi Nanayama[1,2], Kazuaki Watanabe[1], Kiyoyuki Shigeno[3], Masayuki Ishii[4], Takeshi Hasegawa[6], Yasuhito Uchida[7], Kazuhito Ishiwata[5]

1. Geological Survey of Japan, AIST, 2. Kumamoto Univ., 3. Meiji consultant Co., Ltd., 4. Ishii Professional Engineer Office, 5. Betsukai municipal museum, 6. Ibaraki Univ., 7. Geological Survey of Hokkaido, HRO

The Notsukezaki barrier spit system (NBS) is part of an active barrier system on the eastern side of Hokkaido, facing Nemuro Strait. There are four clearly defined spit branches within the barrier system that facilitate study of its development. We used topographic and ground-penetrating radar profiles, hand core and trenching, grain size analysis, AMS ^{14}C dating, and tephrochronology to determine the chronology of the development of the four spits of the system. Taking into account the times of their emergence and the present elevations of the landward limits of their backshores, we constructed a relative sea level curve that is reasonably consistent with episodic regional coseismic events that have uplifted coastal areas along the southern Kuril subduction zone by 1.0–2.0 m at intervals of ~500 years since 2800 cal yr BP. These events have interrupted a period of otherwise continuous subsidence in the study area since the 17th century and have led to the development of individual spits within the barrier system. Thus, we have demonstrated the seismotectonic control of the geomorphological evolution of the NBS.

Keywords: geomorphological evolution, Notsukezaki barrier spit system, seismotectonics, southern Kuril trench, eastern Hokkaido, Japan

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