

Benthos community of the dumping area during liquid natural gas plant construction: effects of technical impacts or natural changes?

Andrey D. Samatov, Vyacheslav S. Labay*

Sakhalin Fisheries and Oceanography Research Institute, P. O. Box 693020, Russia, Yuzhno-Sakhalinsk,
Komsomolskaya str. 196

E-mail: labay@sakhniro.ru

During the construction of oil and liquid natural gas (LNG) terminals in Aniva Bay (south coast of Sakhalin) carried out dredging and dumping operations. Hydrobiological studies in the dumping zone aimed to specify the forecast estimation of impact for benthos community and also the process restoring original abundance and structure on the destroyed area, which was done in Environment Impact Assessment of TEO-C “Sakhalin-2 Project”.

Benthos was sampled in August 2003 – before ground dumping; in October and December 2004, May 2005 – during the operations; in August 2005, 2006, 2007 after all the works. Stations located at 300, 800 and 2000 m off the central point to the north, east, south and west. Benthos was sampled from the R/V “Dmitry Peskov” using a Van-Veen grab (0,2 m²).

During all the period of dumping operation, benthos was characterized by a rather high diversity and quantitative indices. Bivalves (*Nuculana pernula pernula*) dominated eastward, northward and southward of the Dumping point. Sipunculids prevailed westward of the Dumping point. In August 2005 and 2006, there was observed a similarity of quantitative indices, including the length of the species list, with the data of the background phase (August 2003). In August 2007 there all quantitative characteristics are decrease and *Nuculana pernula* transported in the north part of the dumping area. The community structure was close to that at the background phase as well. On the whole, the dumping impact on bottom community was less significant than expected. In natural in Aniva bay migration of the community *Nuculana pernula* occurs aside reduction of depth and is accompanied by break of an areal last 60 years.

Abbreviate title: Benthos community monitoring of the dumping area