

ICES/PICES 6ZPS 2016/W1

Impact of the 2011 Tohoku earthquake tsunami on zooplankton community in Otsuchi Bay, northeastern Japan

Yuichiro Nishibe, Aiko Tachibana and Atsushi Tsuda

Atmosphere and Ocean Research Institute, University of Tokyo, 5-1-5 Kashiwanoha, Kashiwa, Chiba 277-8564, Japan

A huge tsunami generated by the 2011 off the Pacific coast of Tohoku Earthquake struck the eastern coast of Japan and induced significant alterations in coastal habitats. Here we report seasonal changes in abundance and distribution of mesozooplankton in Otsuchi Bay on the Pacific coast of northeastern Japan during the 2 years after the tsunami (from May 2011 to May 2013), and discuss the impact of the tsunami on plankton communities. Mesozooplankton abundance and composition showed similar seasonal variation in each of the 2 years after the tsunami. Comparison with pre-tsunami data for communities from the bay showed that seasonality in dominant taxa, such as copepods, appendicularians and cladocerans, did not change before and after the tsunami. In addition, there were no observable differences in the seasonal species composition of copepods between pre- and post-tsunami periods. *Acartia hudsonica*, a dominant copepod in the bay, which has a benthic resting stage, was observed with high abundance immediately after the tsunami (May 2011) as well as 1 and 2 years later (May 2012 and May 2013, respectively). These findings suggest that there were no significant and lasting influences of the huge tsunami on the holozooplankton taxa. In contrast, planktonic larvae of bivalves, gastropods and polychaetes showed reduced abundance at the inner part of the bay in May 2011, possibly reflecting the damage due to the tsunami on their benthic populations.

Keywords: tsunami; Tohoku; Otsuchi Bay; copepods; planktonic larvae of benthic invertebrates

Contact author: Yuichiro Nishibe, Atmosphere and Ocean Research Institute, University of Tokyo
E-mail: ynishibe@aori.u-tokyo.ac.jp