Copepod community in the southwestern Okhotsk Sea during spring of 2011–2013

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It is well known that copepods predominates marine zooplankton assemblages both in number and biomass over the world oceans. Copepods play a role of the secondary producers, who transfers energy and materials from the large phytoplankton such as diatoms to higher trophic levels such as fishes. It is important to understand the relationship between copepod dynamics at species level and hydrographic conditions denoted by temperature and salinity. However, available ecological information of copepods in the area is very limited. The present study aimed to clear the relationship between copepod abundances and oceanographic conditions in the southwestern Okhotsk Sea during spring of 2011–2013. Sampling were conducted at 8 stations (St. S1, S2, S3, S4, N1, N2, N3, N4) in the southwestern Okhotsk Sea during spring of 2011 (2–3 June), 2012 (30 May–5 June) and 2013 (30 May-10 June) by RV Hokko-maru, Japan Fisheries Research and Education Agency. Zooplankton samples were collected verticaly with a NORPAC net (with a mesh aperture of 0.33 mm). Collected zooplankton samples were preserved in 5% buffered seawater formalin. Copepods was sorted under a dissecting microscope and then classified to species, and then individual number was counted. The profiles of temperature and salinity were determined using a CTD at each station. From a view point of vertical profiles of water temperature and salinity, at the coastal stations (Sts. S1 and N1), Soya Warm Current (SWC) was distributed from surface to bottom layer. At St. S2, higher salinity waters originated from SWC was found at the deeper than subsurface layer. It was judged that water masses at other 5 stations (S3, S4, N2, N3, N4) were originated from Okhotsk sea. In the present study, *Pseudocalanus newmani*, *Metridia pacifica* and *M. okhotensis* dominated in the copepod community at three years, when contribution of sum of three copepods were more than 49% at three years. In coastal stations, *P. newmani* abundances were higher than those in offshore stations. Abundances of *P. newmani* in 2011 (1102 ind./m^3 at St. N1) and 2013 (1046 ind./m^3 at St. S1) were higher than that in 2012 (686 ind./m^3 at St. N1). Abundances of *M. pacifica* in coastal stations also were higher than those in offshore stations. Abundances of *M. pacifica* in 2011 (974 ind./m^3 at St. S1) and 2012 (1193 ind./m^3 at St. S1) were higher than that in 2013 (290 ind./m^3 at St. N1). As opposed to *P. newmani* and *M. pacifica*, *M. okhotensis* abundances were higher in offshore stations than those in coastal stations. Abundances of *M. okhotensis* in 2011 (296 ind./m^3 at St. N4) and 2012 (270 ind./m^3 at St. N3) were higher than that in 2013 (122 ind./m^3 at St. N4). Among the three years, distributional patterns of abundances were different between *M. pacifica* and *M. okhotensis*, but interannual changes of their highest abundance showed a similar pattern.