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Response of neritic copepod, *Acartia omorii* to climate related changes in Tokyo Bay, Japan

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We investigated interannual variation of neritic zooplankton in the Tokyo Bay, central part of Japan. Samples collected by NORPAC net during 1981-2010 was analyzed with focus on copepod species responses to environmental variability. The total copepod abundance gradually declined with short term periodical fluctuation, which was mainly attributed to that of dominant species, *Acartia omorii*. This species increase from winter to spring and disappear in mid-summer to fall, because population is maintained as resting eggs in warm season. We found that *A. omorii* indicated phenological change in peak abundance and in dormancy period, which associated with climate change. The warming of water temperatures in winter influenced the production rate and short term fluctuation of *A. omorii*. Furthermore, extension of dormancy period was induced by the enhancement of stratification in summer and bottom temperature in fall. The hypoxic water mass develops below thermocline in this season, therefore, extended dormancy period cause the decrease of *A. omorii* population stock in Tokyo Bay. The response in population dynamics would be linked to changes in zooplankton community structure.

Keywords: phenology change, *Acartia omorii*, water temperature, hypoxic water, resting egg

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