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SHORT-TERM CHANGES OF MESOZOOPLANKTON COMMUNITY IN THE CHUKCHI SEA DURING AUTUMN

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In the Chukchi Sea, because of the recent drastic sea-ice reduction during summer, increase of the formation of cyclone is reported. While their importance, the effects of cyclone and/or strong wind events on marine lower trophic level are not fully understood in this region. In the present study, we studied short-term changes in mesozooplankton community at a fixed station in the Chukchi Sea during autumn, and evaluated the effects of strong wind events on the lower trophic level. Zooplankton samples were collected by vertical hauls of a NORPAC net (mouth diameter 45 cm, mesh size 335 μm) from 0–49 m of a fixed station (72°45'N, 168°15'W, depth 56 m) in the Chukchi Sea with interval of 2–4 times per day during 10–25 September 2013 (total of 47 samples during 16 days). Through the study period, temperature, salinity and chlorophyll *a* were ranged -1.5 – 3.3°C , 31.1–32.8 and 0.08–3.25 $\mu\text{g L}^{-1}$, respectively. At day 9 (18 September), strong winds blew. After the strong wind event, integrated mean temperature was decreased from 0.54 to 0.15°C and integrated chlorophyll *a* was increased from 17 to 26 mg m^{-2} . Zooplankton abundance was ranged 482–1,159 ind. m^{-3} , and no obvious changes during the study period. In terms of abundance, copepods was most dominated (mean 60%), and following with the barnacle larvae (31%). Within the copepods, *Pseudocalanus* spp. (62%) and *Calanus glacialis* (29%) were dominated. For large copepod *C. glacialis* C5, gut pigment contents were significantly increased after passage of the cyclone (increased from 2.7 to 4.3 $\text{ng pigment ind.}^{-1}$). This change may be affected by the increase in ambient chlorophyll *a* mentioned above. Positive correlation was detected between gut pigment contents of *C. glacialis* C5 and ambient chlorophyll *a* ($p < 0.05$). This study suggests that the strong wind event in the Chukchi Sea during autumn induces increase of chlorophyll *a*, and provide sufficient food for pre-dormant copepods in this region.