

## Springtime renewal of *Calanus glacialis* populations in the Chukchi Sea

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The Chukchi Sea population of the copepod *Calanus glacialis* is primarily comprised of animals that have been advected northwards from the Northern Bering Sea through Bering Strait. Whether this population persists in-situ in the Chukchi Sea or is renewed annually following harsh, overwintering conditions remains unclear. Here we use data from two bio-physical surveys of the Chukchi Sea -- one in early-winter 2011 and the other in late-spring 2014 -- to describe the distributions of *C. glacialis* and relate them to the seasonal hydrographic conditions. *Calanus glacialis* populations showed differences in population structure and abundance between Canada Basin water types versus Chukchi Sea Winter Water and Bering Sea water. Abundances of *C. glacialis* were extremely low during the early part of the spring cruise, suggesting that the population had been substantially reduced over winter through predation, starvation, or advection off of the shelf to the north. During the latter portion of the late-spring cruise, high abundances of the previously absent *C. glacialis* copepodid stages, and meroplankton, were observed in the mid-Chukchi Sea associated with northward flowing water. Respiration rates coupled to lipid contents from the early-winter cruise suggested that most *C. glacialis* in the Chukchi Sea might have insufficient lipid supplies to sustain them through winter. This population appears to be replenished each spring from the Bering Sea, resulting in a prevalence of genetically distinct Bering Sea haplotypes and relatively low abundances, and thus grazing impacts, in the Chukchi Sea.

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