

# Apparent Exclusion of the Cladoceran *Bosmina longirostris* by Invertebrate Predator *Chaoborus americanus*

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**ABSTRACT:** Zooplankton communities were sampled in 22 lakes in the Upper Peninsula of Michigan. The cladoceran *Bosmina longirostris* was present in 16 of 17 lakes with fish, but absent from the five without fish. The phantom midge larva species *Chaoborus americanus* was present only in the fishless lakes. *In situ* competition and predation experiments were conducted in a fishless lake, Tender Bog, in which *Daphnia pulex*, *Diaptomus leptopus* and *C. americanus* larvae were the dominant zooplankters. *Bosmina* grew well alone and when reared with *Daphnia*, but suffered significantly greater predation by *Chaoborus* larvae when offered as prey together with the other two species. From 8-12 months elapsed before *Bosmina* colonized a lake from which it had been absent. The absence of *Bosmina* from fishless lakes with the Tender Bog zooplankton community appears to be due not to local environmental conditions, or interspecific competition, but rather to low immigration rates and intense predation by *Chaoborus* larvae.