

ABSTRACT

THE INFLUENCE OF BIOTIC AND ABIOTIC FACTORS ON ZOOPLANKTON COMMUNITY STRUCTURE IN FISHLESS LAKES

by Shelley E. Arnott

Factors preventing the successful invasion of small-bodied zooplankton species into fishless bog lakes were studied using a series of field manipulations. Competition with *Daphnia pulex*, predation by *Chaoborus americanus* and *Diaptomus leptopus*, and abiotic conditions including pH were examined. Abiotic conditions inhibited population growth of 70% of the small-bodied zooplankton species introduced into fishless lakes. Fewer small-bodied zooplankton were inhibited in fishless lakes when pH was raised to 7. Predation by *Chaoborus americanus* and *Diaptomus leptopus* primarily reduced the density of crustaceans and rotifers, respectively. Competition between small-bodied zooplankton and *D. pulex* was not detected. Results suggest that an interaction between predation by *C. americanus* and *D. leptopus* and abiotic factors are important in determining community structure. Further studies investigating how biotic interactions are influenced along abiotic gradients are warranted.