

**THE ROLE OF TEMPERATURE AND FOOD LIMITATION  
IN THE POPULATION DYNAMICS OF THE CLADOCERAN ZOOPLANKTON  
IN FAIRFIELD RESERVOIR, TEXAS**

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A One year study undertaken at Fairfield Reservoir, Texas, revealed several unique aspects in its zooplankton population dynamics. Diel sampling at six sites throughout the reservoir showed spatial heterogeneity in vertical migrations of several zooplankton, including copepoda nauplii, and the rotifers *Polyarthra* and *Brachionus*. This sampling also showed extreme clustering of various zooplankton; this clustering could not be related to the invertebrate predators, *Chaoborus* or *Asplanchna*. *Daphnia lumholtzi*, the dominant cladoceran zooplankton, was used in laboratory experiments to determine food limitation in the reservoir, and food limiting effects were evident in the winter months. The cyclomorphosis which *D. lumholtzi* experiences throughout the year is described and related to the presence of both invertebrate and vertebrate predators. The presence of *Chaoborus* had no effect on the growth of the head spine while fish did cause positive allometric growth of the head spine.

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