



Latitudinal patterns in the size distribution and seasonal dynamics of new world, freshwater cladocerans

Gillooly, James F., Stanley I. Dodson

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ABSTRACT: Analysis of zooplankton communities in over 1,100 water bodies spanning the Western Hemisphere (77° S, 81° N latitude) revealed latitudinal patterns in cladoceran body size and *Daphnia* seasonal dynamics. The mean body length of cladoceran species occurring at different latitudinal intervals was greatest in north temperate regions, declining in size toward the poles and equator. Thus, mean cladoceran size was greatest in regions where the mean annual surface temperatures of lakes ranged from 6 to 8° C in both the Northern and Southern Hemispheres. The date of maximum *Daphnia* abundance and the period of minimum *Daphnia* abundance in lakes of North America was positively, linearly related to the latitudinal position of the lakes. The date of maximum abundance increased with latitude such that *Daphnia* peaked during nearly all months of the year depending on latitude, but usually within the same, narrow temperature range (15 - 20° C). The period of minimum *Daphnia* abundance decreased linearly with latitude such that abundance generally was minimal when water temperatures exceeded 20° C.

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