

Association for the Sciences of Limnology and Oceanography





Home

Members

Libraries

Publications

Meetings

Employment

Activities

Search

Nutritional quality of food resources for zooplankton (Daphnia) in a tidal freshwater system (Sacramento[San Joaquin River Delta)

Müller-Solger, Anke B., Alan D. Jassby, Dörthe C. Müller-Navarra

Limnol. Oceanogr., 47(5), 2002, 1468-1476 | DOI: 10.4319/lo.2002.47.5.1468

ABSTRACT: We examined the relative nutritional values of natural phytoplankton and particulate detritus for zooplankton growth in a detritus-rich environment. Seston was collected seasonally from four different habitat types in a tidal freshwater system and fed to juvenile *Daphnia magna* under controlled culture conditions by use of a flow-through design. Seston particulate organic carbon (POC) and chlorophyll a contents ranged from ~330 to 3,800 µg L⁻¹ POC and 1.4 to 45 µg L⁻¹ Chl a. A partial residual analysis revealed that detrital carbon concentrations were only weakly related to *Daphnia* growth, whereas Chl a proved to be highly predictive of *Daphnia* growth rates across all investigated habitat types. Overall, habitat type had a strong effect on growth rates, whereas season of seston collection did not, but differences among habitats could be attributed to differing Chl a concentrations. The results from this study imply that, even in systems with overwhelming amounts of detrital carbon from a variety of sources, nutritional factors associated with phytoplankton can be dominant in regulating zooplankton growth.

Article Links

Download Full-text PDF

Return to Table of Contents

Please Note

Articles in L&O appear in PDF format. Open access articles may be freely downloaded by anyone. Other articles are available for download to subscribers only, or may be purchased for \$10 per article. All L&O articles are moved into Open Access after three years.