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MACROINVERTEBRATES IN THE LITTORAL OF A PRAIRIE POTHOLE, OAK LAKE, BROOKINGS COUNTY

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ABSTRACT

Littoral zones are near-shore areas along the perimeter of a lake basin capable of supporting rooted macrophytic vegetation. These are some of the most productive habitats on Earth and focal points of high biodiversity. The objective of this effort was to characterize macroinvertebrate communities within the littoral of an eastern South Dakota prairie pothole. Oak Lake is an intermittently exposed prairie pothole (163 ha) located in northeastern Brookings County, South Dakota. Macroinvertebrate samples were collected from sites around the basin perimeter during four separate projects extending from 1994 to 2006. Samples were collected with a tube sampler in 1994, a standard D-frame net from 1997 to 2000 and a petite net in 2005 and 2006. A total of 212 unique invertebrate taxa were collected, representing 5 phyla, 11 classes, 31 orders, 87 families, and 192 genera. Diptera (Chironomidae: Insecta) (44) contributed the greatest number of genera followed by Trichoptera (20), Coleoptera (16), Hemiptera (16) and Haplotaxida (15). Slightly more than one-quarter of unique taxa were burrowers. However, climbers (15%), clingers (13%), sprawlers (17%) and swimmers (15%) were evenly represented. Most invertebrate genera were gathering-collectors (33%) or predators (37%). Tolerance values to organic pollution ranged from 1-10 and averaged 6.59 among all unique taxa. Results of this effort demonstrate the high taxonomic and functional diversity of a relatively undisturbed prairie pothole littoral invertebrate community. Additional studies are needed to inventory and describe the regional biodiversity within these systems in support of long-term monitoring and management efforts.