1999

Characterization of Lake Littoral Zone Habitats and Invertebrate Communities in Northern Glaciated Plains and Northwestern Glaciated Plains Ecoregions

Corey W. Braskamp
South Dakota State University

N. H. Troelstrup Jr.
South Dakota State University, nels.troelstrup@sdstate.edu

CHARACTERIZATION OF LAKE LITTORAL ZONE HABITATS AND INVERTEBRATE COMMUNITIES IN NORTHERN GLACIATED PLAINS AND NORTHWESTERN GLACIATED PLAINS ECOREGIONS

Corey W. Braskamp and Nels H. Troelstrup Jr.
Department of Biology and Microbiology
South Dakota State University
Brookings, SD 57007

ABSTRACT

The objective of this project was to characterize lake littoral habitat and macroinvertebrate community structure among two ecoregions in eastern South Dakota. Water temperature, conductance, dissolved oxygen, pH, substrate particle size, vegetation biomass, shoreline slope and invertebrate samples were collected from twelve lake basins in the Northern Glaciated Plains (NGP, n=8) and Northwestern Glaciated Plains Ecoregions (NWGP, n=4). Five random locations were sampled from each basin during the growing season on one date in 1996 and two dates in 1997 and 1998. Over half of all habitat and invertebrate measurements displayed greater coefficients of variability from NGP sites. Higher percentages of cobble and boulder substrate were found in lake littoral areas of NGP basins while silt and clay fractions were found in greater proportions from NWGP basins. Vegetation dry weight and ash free dry weight biomass were significantly greater in NWGP basins. Total invertebrate abundance ranged from 0 to 9235 individuals per 3 minute sweepnet (mean = 1739). Insecta and Annelida were numerically most abundant, contributing on average 61% and 11% of total numbers, respectively. Invertebrate total abundance was not found to vary significantly between ecoregions. However, Insecta and Nematoda abundances were greater from NGP sites and Mollusca abundance was greater from NWGP sites. Results of this effort demonstrate significant differences in littoral habitat and invertebrate community structure between these two landscape regions.