Differences in Excretion by Dreissenid Congeners: Implications for Nearshore Ecosystems.

Since the invasion of zebra mussels (*Dreissena polymorpha*) and littoral and profundal ecotypes of quagga mussels (*D. bugensis*) into the Great Lakes, little effort has focused on their ability to impact lake ecosystems by excretion of soluble ammonia and phosphate. Therefore, we compared rates of ammonia and phosphate excretion by Lake Erie dreissenids but found no difference in ammonia excretion between zebra and littoral ecotypes of quagga mussels (7.34 and 7.04 µgN/mg dry weight/day, respectively). However, profundal quaggas excreted ammonia and phosphate at higher rates (9.82 µgN/mg/day and 1.02 µgP/mg/day) than did the others. Zebra mussels excreted P at higher rates than did littoral quaggas (0.62 and 0.44 µgP/mg/day, respectively). Combined N and P excretion results suggest no difference in the N:P ratio between profundal quagga and zebra mussel excreta, but these two taxa excrete at significantly lower N:P ratios than do littoral quaggas. Thus the high rates of dreissenid N and P excretion and the relatively low N:P ratios can alter the nutrient balance in nearshore areas where these taxa are abundant and where high mixing and flushing rates widely distribute their excreta.