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INFESTATION AND IMPACT OF ZEBRA MUSSELS ON THE NATIVE UNIONID POPULATION
AT PRESQUE ISLE STATE PARKE, ERIE, PA

In June, July, and September 1990 and July 1991 a capture-recapture study of unionid mussels was initiated at four sites near a recurved sandspit of eastern Lake Erie known as Presque Isle. This area is a unique geological feature that has substantial numbers of unionids with over 21 species, including eight species of endangered Pennsylvania unionids. Based on the evidence observed in western Lake Erie, it is believed that the unionid populations of Presque Isle are in danger of increased mortality or extinction due to infestations by the exotic zebra mussel, *Dreissena polymorpha*. To date, over 1,000 unionid have been collected by SCUBA divers, marked, and returned to their collection sites. Zebra mussels were counted and measured from a representative sample of unionids. Dead shells of unionids were also collected. The most abundant unionid species were *Lampsilis siliquoidea*, *Potamilus alatus*, *Anodonta grandis*, *Leptodea fragilis* and *Amblema plicata*. The capture-recapture methodology of Lincoln-Peterson indicates that the Presque Isle population of unionids is composed of approximately 6,000 individuals. The infestation of unionids by zebra mussels at Presque Isle is occurring at a rapid rate and parallels that observed in western Lake Erie with a time lag of about two years. In early 1990, one-year-old zebra mussels were present at only one of the sites at Presque Isle. By the end of 1990, young-of-the-year zebra mussels were found on unionids at all four of the study sites. In July 1991, zebra mussels were found on 484 of the 485 unionids collected. In addition, infestation rates increased from 121 zebra mussels per unionid in 1990 to 234 per unionid in 1991. Similar data of infestation of the unionids in western Lake Erie occurred in 1989 just prior to exponential increases in numbers of zebra mussels throughout the basin. Fortunately, observations indicate that as of late July, few young-of-the-year zebra mussels were settling in unionids near Presque Isle. However, dramatic increases in densities of zebra mussels is occurring in the area and it is believed that it is only a matter of time before the zebra mussels will begin to have a negative influence on the unionid populations near Presque Isle.