US Army Corps
of Engineers
Waterways Experiment
Station

# Zebra Mussel Research Technical Notes



May 1994

## Reports of Zebra Mussel Attachment to Ohio River Division Water Quality Monitors

**Introduction**

The District offices of the U.S. Army Engineer Division, Ohio River (ORD), maintain a network of monitors which allow real-time determination of temperature, pH, dissolved oxygen concentration, and specific conductance. Zebra mussels were sighted in the Ohio River at Paducah, KY (Ohio River Mile 940) in late 1991. They have been sighted as far north in the Ohio River as Pike Island Locks and Dam (Ohio River Mile 84.2). Because the water quality monitors remain in the water during the season when zebra mussel proliferation is most active, the Ohio River Division Zebra Mussel Control Committee singled out the water quality monitors as particularly vulnerable to infestation. After investigating zebra mussel infestation at water quality monitors within ORD, two districts (Huntington and Louisville) reported the need for implementing control strategies.

**Additional information**

This technical note was written by Dr. Lisa Barnese, Louisville District; Mr. Richard Meyer, Huntington District; and Dr. Joseph E. Svirbely, Ohio River Division. For more information, contact Dr. Barnese, (502) 582-5878. Dr. Ed Theriot, U.S. Army Engineer Waterways Experiment Station, (601) 634-2678, is Manager of the Zebra Mussel Research Program.

**Huntington District**

On July 21, 1993, adult zebra mussels less than 10 mm in length were found attached to the water quality monitor at Meldahl Locks and Dam (Ohio River Mile 436.2). Two mussels were attached to the casing, and four mussels were attached to the probe assembly. The monitor had previously been inspected on 17 May 1993.

**Louisville District**

On October 21, 1993, the water quality monitors at Cannelton Locks and Dam and Newburgh Locks and Dam were inspected. Several hundred juvenile zebra mussels, 3 to 5 mm in length, were found attached to the water quality monitor at Cannelton Locks and Dam (Ohio River Mile 720.7). On the same day, thousands of juvenile zebra mussels were found attached to the water quality monitor at Newburgh Locks and Dam (Ohio River Mile 776.1). At the latter facility, mussels were attached to all moveable parts of the monitor as well as cable and casing. It is not known if mussel attachment caused loss of movement of these

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parts or if mussels attached after the parts had stopped moving due to accumulation of debris. Monitors at both locks and dams had been inspected 4 weeks prior, at which time no zebra mussels were observed.

On November 9-10, 1993, the water quality monitors at Smithland Locks and Dam and Uniontown Locks and Dam were inspected. At Smithland Locks and Dam (Ohio River Mile 918.5), 75 juvenile zebra mussels, 3 mm in length, were found attached to the monitor. On the monitor at Uniontown Locks and Dam (Ohio River Mile 846.0), zebra mussels less than 1 mm in length were found at densities approximating 20 individuals per square inch. These monitors had been inspected in October, less than 4 weeks before.

## Conclusions

As anticipated, water quality monitors in the Ohio River Division are likely candidates for colonization by zebra mussels. The Ohio River Division has requested recommendations from districts on dealing with this problem. For the present, the Huntington and Louisville Districts will increase the frequency of inspections as an initial strategy to prevent impact to the monitors. Further technical notes on the success of ORD's efforts to prevent impact to water quality monitors are anticipated.