

ENV Report 34 - *Effects of pressure changes induced by commercial navigation traffic on mortality of fish early life stage*, by Thomas Keevin

ABSTRACT

Mortality of fish early life stages was measured in a pressure vessel to simulate pressure changes associated with entrainment in the propwash of the towboat and subsequent vertical displacement within the water column. Mortality was measured for three pressure regimes for five fish species: larval bigmouth buffalo *Ictiobus cyprinellus*, larval blue catfish *Ictalurus furcatus*, larval walleye *Stizostedion vitreum*, early juvenile bluegill *Lepomis macrochirus*, and early juvenile largemouth bass *Micropterus salmoides*. The maximum pressure change tested, 344.8 kPa, equivalent to a 35.2 m displacement of fish within the water column, did not cause significant mortality of larvae or juveniles. Since 35.2 m exceeds depths in the Upper Mississippi River navigation channel, the range of pressure changes that could be experienced by early life stages during towboat mixing of the water column will not result in significant mortality.