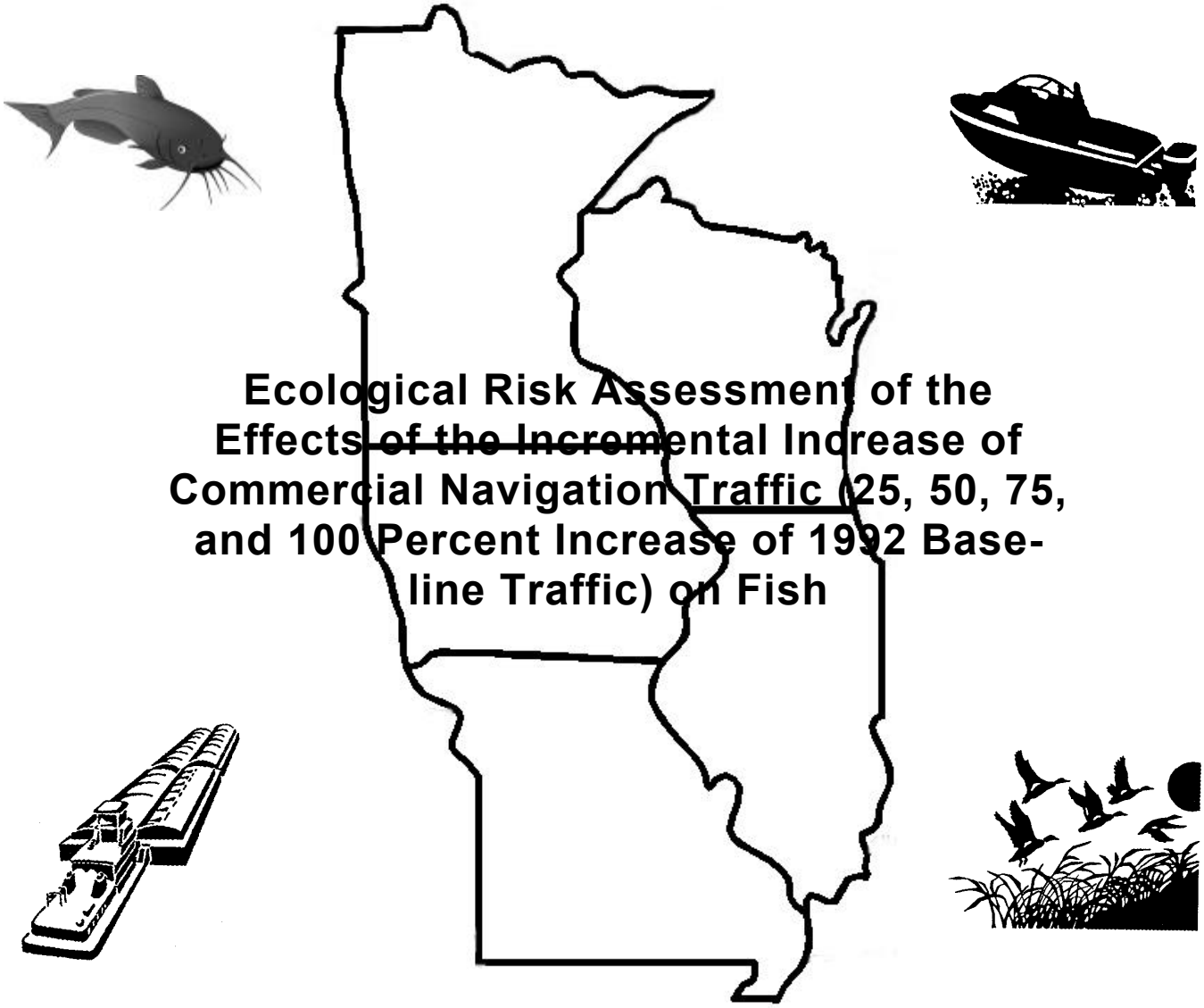
ENV Report 16

Interim Report For The Upper Mississippi River - Illinois Waterway System Navigation Study



Ecological Risk Assessment of the Effects of the Incremental Increase of Commercial Navigation Traffic (25, 50, 75, and 100 Percent Increase of 1992 Baseline Traffic) on Fish

July 2000

Rock Island District
St. Louis District
St. Paul District

US Army Corps of Engineers

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Upper Mississippi River - Illinois Waterway System Navigation Study

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Ecological Risk Assessment of the Effects of the Incremental Increase of Commercial Navigation Traffic (25, 50, 75, and 100 Percent Increase of 1992 Baseline Traffic) on Fish

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Interim report

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Preface

The work reported herein was conducted as part of the Upper Mississippi River - Illinois Waterway (UMR-IWW) System Navigation Study. The information generated for this interim effort will be considered as part of the plan formulation process for the System Navigation Study.

The UMR-IWW System Navigation Study is being conducted by the U.S. Army Engineer Districts of Rock Island, St. Louis, and St. Paul under the authority of Section 216 of the Flood Control Act of 1970. Commercial navigation traffic is increasing, and in consideration of existing system lock constraints, will result in traffic delays that will continue to grow in the future. The system navigation study scope is to examine the feasibility of navigation improvements to the Upper Mississippi River and Illinois Waterway to reduce delays to commercial navigation traffic. The study will determine the location and appropriate sequencing of potential navigation improvements on the system, prioritizing the improvements for the 50-year planning horizon from 2000 through 2050. The final product of the System Navigation Study is a Feasibility Report which is the decision document for processing to Congress.

The authors appreciate the many helpful discussions and comments from Mr. Daniel B. Wilcox, U.S. Army Engineer District, St. Paul; Dr. Thomas M. Keevin, U.S. Army Engineer District, St. Louis; Dr. Steve Gutreuter, U.S. Geological Survey, Upper Mississippi Science Center; Dr. John W. Barko, Center for Water Quality and Aquatic Plant Research and Technology, Environmental Laboratory (EL), U.S. Army Engineer Research and Development Center (ERDC); and Mr. Kenneth A. Barr, U.S. Army Engineer District, Rock Island, during the course of this study. Data were provided by Dr. John Dettmers, Dr. Gutreuter, Dr. Sandra K. Knight, Chief, Navigation Branch, Navigation and Harbors Division, Coastal and Hydraulics Laboratory (CHL), ERDC; Dr. M. Rose Kress, Environmental Characterization Branch, Natural Resources Division, EL; Mr. Kevin J. Landwehr, Rock Island District; and Dr. Stephen T. Maynord, Navigation Branch. The fish distribution and abundance maps and the power plant location map were created by Ms. Cathy Jo Lewis, SENES Oak Ridge, Inc. Project management support was provided by Messrs. Barr and Richard Fristik, Rock Island District, Dr. Keevin, and Mr. Bob Vanderjack, retired, formerly of Rock Island District. Thanks to Ms. Cynthia Lovelock, The Cadmus Group, Inc., for editorial assistance as well as for

reviewing and summarizing the large amount of information on power plants with water intake structures located in the Upper Mississippi River and Illinois Waterway, including the fish entrainment and impingement data. Mr. Fristik, Dr. Keevin, Dr. Glenn F. Cada, Environmental Sciences Division, Oak Ridge National Laboratory, Dr. A. L. Jensen, retired, and Bill Bertrand, Illinois Department of Natural Resources, provided helpful review comments on an earlier version of this report.

Mr. Robert C. Gunkel, Jr., EL, ERDC, was responsible for coordinating the necessary activities leading to publication. Dr. John W. Keeley was Acting Director, EL.

At the time of publication of this report, Dr. James R. Houston was Director of ERDC. COL James S. Weller, EN, was Commander.

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