

**ENV Report 40 – Upper Mississippi River and Illinois Waterway Cumulative Effects Study  
– Volume 2: Ecological Assessment**

**ABSTRACT**

The methods and results of a detailed evaluation of the cumulative ecological effects from select physical and biological changes that have occurred since construction of the 9-foot Channel Project are presented. Predictions of changes between the present and 2050, given current management protocols and planned or anticipated habitat enhancement projects, are also made. Physical habitat changes evaluated include plan form, current velocity, sediment types and water depths. Twenty-three guilds of aquatic organisms are identified and used in this analysis. The analyses are generally representative of summer low-flow habitat conditions and adult aged organisms. To evaluate changes in the guilds, their major habitat requirements are compared with the amount of increase or decrease in suitable habitat. The percent change in the area of available habitats is assumed to proportionally affect the abundance of individuals within each guild. Best professional judgment is used to account for changes due to contamination, sedimentation, harvest and other stressors. Lack of data precluded analysis of certain habitats, such as floodplains and formal risk assessment is not made because of the limitations of both physical and ecological information.