

**THE DEVELOPMENT OF AN ENSO-BASED STREAMFLOW  
MODEL FOR THE ILLINOIS RIVER WATERWAY**

Presented to the  
Department of Geography  
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Master of Arts

## Abstract

The work presented in this thesis details the creation and validation of an ENSO-based model to predict streamflows of the Illinois River Waterway. Data used in the

thesis are gathered from governmental agencies of the Climate Prediction Center, Earth System Research Laboratory, National Climatic Data Center, and United States Geological Survey. The primary statistical analyses used in this thesis are outlier removals, t-tests, autocorrelations, data smoothing/filtering, and cross-correlations. These statistical results are used to construct the model for the Illinois Waterway. Cross-