

## **ABSTRACT**

**THESIS:** The Change in Flood Extent Over the West Fork of the White River (2005 – 2015)

**STUDENT:** Caitlin Pennington

**DEGREE:** Master of Science

**COLLEGE:** Sciences and Humanities

**DATE:** July 2017

**PAGES:** 84

Flooding is one of the most deadly and costly natural disasters in the world. While improved technology has allowed for increased prediction and warning times, there is still a lack of knowledge and accuracy in the prediction of floods. The focus of this study is to compare average annual flood extent to annual precipitation. This study examines the hypothesis of annual flood extent along the West Fork of the White River increasing during years of higher annual precipitation, and will confirm the hypothesis if flood extent is greater during years of higher annual precipitation. The hypothesis will be rejected if flood extent is less than average during years of high annual precipitation. Inundation maps were produced for Muncie, Anderson, and Indianapolis in Indiana, each of which the West Fork of the White River runs through. These inundation maps and annual precipitation data were compared with synoptic events in order to determine the relationship between flood extent and annual precipitation.