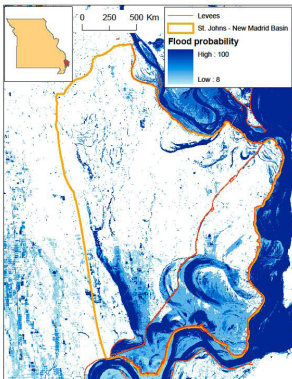


## Shorebird Habitat in Southeastern Missouri



- **The Challenge:** Proposed completion of the earthen levee surrounding the New Madrid Basin, and installation of water pumping stations that are capable of transporting accumulating headwaters over the protective levee is expected to reduce flooding within the St. Johns and New Madrid Basins. This hydrologic change is expected to reduce that area and temporal availability of shallow floodwaters used as foraging habitat by migrant shorebirds. However, the historical extent and temporal distribution of shallow floodwater and mudflat habitat has not been identified nor documented.



- **The Science:** This project seeks a linkage between digital models of surface elevation within the St. Johns and New Madrid Basins and the historical changes in the flood stage of the Mississippi River. Using these linkages, coupled with knowledge of rising or falling river levels, the area of potential shorebird foraging habitat will be estimated for each day within spring and fall migration periods. Annual change in seasonally available area of floodwater and mudflat will be compared to assess long-term availability of shore shorebird foraging habitat



- **The Future:** Using models developed from historical data, the predicted future availability of similar habitats will be assessed based on flood regimes anticipated after completion of levees and installation of water pumping stations. Differences between historical and predicted future habitat may provide a foundation upon which to base mitigation for loss of shorebird foraging habitat due to the proposed flood reduction project.