

Water Elevation Changes in the Fox River, Green Bay, Wisconsin

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Abstract:

The Fox River begins at Lake Winnebago and flows northeast for 63 km (39 miles) where it enters Green Bay and Lake Michigan. OU 4 is the lowermost stretch of the Fox River between the De Pere Dam and Green Bay. The Fox River is the site of the largest cleanup of PCBs from a waterway in the US. This investigation builds upon prior studies about sediment transport in the Fox River and an oscillation behavior documented in the Buffalo River (Buffalo, NY). It aims to answer the question: Does the Lower Fox River oscillate and if it does, is its pattern similar or different than the oscillation that occurs in the Buffalo River? To answer these questions, two water level recorders with temperature sensors were deployed in the Fox River from June 21 to November 16, 2013. One recorder was placed near the mouth of the river; the second recorder was placed ~8 km upriver. Measurements were collected every 5 minutes. These data reveal that OU 4 of the Fox River displays several distinct patterns including: seiche-driven changes in river elevation, non-seiche related elevation changes, and minimal variation in river elevation. To explain the cause(s) of these patterns we are utilizing other available data, including wind velocity and direction and river velocities and gage heights recorded at the USGS Oil Tank Depot at Green Bay, WI.