

Recovery of the West Fork White River following a major fish kill in 1999, Indiana

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Oral Presentation

The West Fork White River (WFWR) rises as a creek near the Ohio border in central Indiana and winds 502 km westward through several large municipalities; including Indianapolis, IN, to join with the Wabash River. In December 1999, a fish kill devastated the WFWR starting at the outfall of the Anderson Waste Water Treatment Plant in Anderson, Indiana. All fish were killed from an estimated 69 km of river below Anderson with a partial kill extending another 19 miles downstream killing an estimated 4.3 million fish weighing 180 tons. From 2000 to 2005, 13 species totaling nearly 1.15 million fish were stocked throughout the kill zones. Recovery of the fish populations throughout the WFWR has been monitored since January 2000 when initial stream surveys were conducted. Fall surveys were conducted continuously at 16 stations in 2001 to 2004, 2006, 2007, and then in 2011 as a final evaluation of the fishery. Of the 16 stations, 2 stations were above the contamination area, 8 stations were in the total kill zone, and 6 stations were in the partial kill zone. In the initial survey in January 2000, an average of 5.3 species per station were collected in the total kill zone and by fall of 2002 that number had risen to an average of 20.9 species per station. A final survey was conducted in fall 2011 where a total of 57 species and 1 hybrid, representing 12 families, were collected at the 16 stations. Bluegill were the most numerous species collected followed by longear sunfish and spotfin shiner. Game species comprised about 12.4% of the total catch and included largemouth bass, smallmouth bass, channel catfish, rock bass, and sauger. No significant differences in average number of species per station were found between the reference, total kill zone, and partial kill zone for 2011. The average number of species per station was significantly different in January and March of 2000 but by July 2000 the community was recovering and the average number of species was not significantly different from subsequent sampling events. The average Index of Biotic Integrity for the total fish kill zone was the greatest since the fish kill at 52 (60 being the maximum score). Game species have also rebounded with largemouth bass and smallmouth bass stock density indices improving. The RSD-Q for smallmouth bass was 13 in 2001 and has increased to 43 in 2011 while RSD-Q for largemouth bass was 37 in 2001 and has increased to 57 in 2011. Exploitation for smallmouth and largemouth bass was 2% and 7%, respectively. The WFWR has recovered with the help of fish stockings, monitoring, habitat improvements, and public awareness and provides an important recreational opportunity for anglers. It also provides insight on river recovery following a major fish kill.