Sport Fishing Catch and Effort and an Economic Analysis of the Lower St. Joseph River Fishery

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Abstract.–During 1974–1991, five fish ladders were constructed at hydroelectric dams on the lower St. Joseph River as part of an unusual state-federal interstate project to test fishway designs in the Midwest and allow upstream movement of potamodromous salmonids from Lake Michigan to the Twin Branch Dam. Large-scale stocking programs for Rainbow Trout, Chinook and Coho Salmon, Brown Trout, and Walleye were established to enhance fishing opportunities in this system, which was impaired and fragmented by a series of privately owned dams. To evaluate returns from this substantial investment, Michigan Department of Natural Resources and Indiana Department of Natural Resources conducted creel surveys at eight sites on the lower St. Joseph and Dowagiac rivers during 1985–2006. Fishing effort estimates from these surveys were used to calculate annual economic benefits for the fisheries in Michigan and Indiana. The mean annual fishing effort for all creel survey sites (combined) was 335,219 angler hours during 1999–2004. Approximately two-thirds of the fishing effort occurred in Michigan, but the distribution of fishing effort varied seasonally. Sixty-two percent of the total fishing effort was directed toward salmonids and 11% was directed toward Walleye. Rainbow Trout was the most abundant species in the catch. From 1993 through 2004, only 19% of the steelhead catch (harvest plus release) occurred during the summer, and the summer steelhead fishery was concentrated in the Michigan portion of the river. Chinook Salmon, Coho Salmon, and Brown Trout composed 10% of the total harvest. Bluegill, Walleye, Channel Catfish, and Smallmouth Bass also were notable components of the fishery. Steelhead and Coho Salmon catch rates in the St. Joseph River were similar to or greater than those recorded for the fisheries in the Manistee and Muskegon rivers. Harvest rates for Walleye and catch rates for Smallmouth Bass were average for Michigan waters. Due to continued impairment and fragmentation by private dams and insufficient numbers of fishways at each dam in this test watershed, the economic analysis unsurprisingly indicated that while the St. Joseph River fishery yielded net annual economic benefits in both Michigan and Indiana, it will take many years to recoup the initial capital investments for fish ladder and hatchery construction unless full passage mitigation is provided by the private dam owners. The steelhead fishery in the lower St. Joseph and Dowagiac rivers may be enhanced by stocking Michigan-strain fish instead of Skamania-strain steelhead.