

Title:

Smallmouth Bass Predation on Salmonids

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Summary of Presentation:

We estimated the number of salmonids that smallmouth bass ate during the spring of 2002 in the Yakima River. Predator surveys were conducted every other week from mid March to mid April and then weekly through June 15 in two sections of the lower Yakima River. Abundance was estimated using a relationship between catch per unit effort and population estimates, which were calculated using maximum likelihood estimators of mark and recapture data. Diet was determined by lavaging smallmouth bass and identifying fish in the lab by examining diagnostic bones. Daily consumption was calculated by estimating the average number of salmonids that a bass ate per day and extrapolating that number to the number of bass in the lower 68 kilometers of the Yakima River. Daily consumption was then added to yield consumption during the spring. Abundance of bass >149 mm increased during the spring from a low of about 2,900 in March to a high of 33,967 on June 3 and then declined to 24,840 on June 15. The increase in abundance was primarily due to immigration of fish from the Columbia River. Daily consumption of salmonids was relatively low until late April and peaked in late May. Smallmouth bass ate an estimated 159,798 salmonids from March 22 to June 10. Only 2,570 of these were estimated to be spring chinook. The remainder was mostly fall chinook salmon. The weekly abundance estimates were similar to the estimates during 1999 and 2000. Average water temperature and percent of smallmouth bass consuming salmonids was also similar to 1999 and 2000. Our estimates of consumption of salmonids by smallmouth bass have been similar during all years of our study and during various flow and temperature regimes. We will not continue this study in 2003.