

Rampart Rapids Summer Catch Per Unit Effort Video Monitoring, 2001-2003 Using a Fishwheel on the Yukon River, Alaska

Fishwheels have been used to harvest fish in the Yukon River since the early 1900's. They are now commonly used as platforms for the collection of biological data for in river fisheries. Recently, the concern over possible negative impacts to fish handled and released from fishwheels has lead to attempts to minimize the handling stress associated with this sampling technique. The 2001 to 2003 video monitoring project was designed to collect run timing and assessment information for Chinook salmon (*Oncorhynchus tshawytscha*) and other migratory fish species through the development of a video capture system that met the project objectives and minimized the handling stress to the fish sampled. The video camera capture system was developed for application in the remote field site at the Rampart Rapids fish camp on the Yukon River and collects run timing, and CPUE data on Chinook and chum salmon (*Oncorhynchus keta*), sheefish (*Stenodus leucichthys*), humpback whitefish (*Coregonus pidschian*), broad whitefish (*C. nasus*), and cisco spp (*C. laurettae* and *C. sardinella*). The video capture system has also been applied to a mark fall chum recapture project and is able to identify individually marked fish. This video capture system has evolved substantially and "fish friendly" improvements have been made to the fishwheels. Through a better understanding of the factors affecting the capture efficiency, the project provided specifications on fishwheel components and operation that improved the comparability of CPUE results between years. The final report includes assessments of counting methods, equipment used, and further recommendations on the use of the video system.

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