

Technical Assistance, Development, and Support to the Tanana River Fish Wheel Salmon Monitoring Projects using Remote Video Technology

R&M# 03-06

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1. Introduction:

Objectives:

Video systems (originally developed by USFWS in 2000) are now an integral part of many fish wheel related projects throughout the Yukon River drainage. Video projects include salmon population estimates and catch monitoring projects on the Yukon and Tanana rivers, totaling over \$250,000 in annual project costs. The advantages of the video system over traditional fish wheels with live-boxes are reduced handling and holding time for captured fish; improved counting accuracy; unattended operation; and lower labor costs. Local fishermen presently operate two video projects, with technical assistance provided by David Daum, USFWS. These projects target Yukon River salmon bound for Tanana River spawning grounds (primarily Chinook, summer and fall chum, and coho salmon). These projects are great success stories, building local biological capacity within rural Alaskan communities. Because of the technical nature of video technology and the extensive training needed for newer operators, there is a continued need for mentorship, technical assistance, and support throughout the annual video project operations. This proposal would provide funding for this support. This proposal meets many of the goals and objectives set down in the US/Canada Joint Technical Committee Plan and R&M Fund.

Specific project objectives include:

- 1) provide technical assistance during the summer/fall field season to both video projects (Y5A and Nenana video projects);
- 2) assist in post-season data analysis and annual report review for the Y5A operator (URM-04);
and
- 3) implement computer and video system training for the Y5A operator (URM-04).

The Y5A video project near Tanana Village (URM-04), targets Yukon River salmon bound for Tanana River spawning grounds, primarily Chinook, summer and fall chum, and coho salmon. Since 1993, this site has been used to collect fish wheel daily catch-per-unit-effort data to help manage Yukon River subsistence and commercial fisheries. The operator, Pat Moore, is fairly new to the video project, having first run the video system in 2005 with assistance from the previous operator, Bill Fliris, and D. Daum, USFWS. Data analysis and reporting requirements set down by the R&M Fund have been the responsibility of P. Moore with assistance from D. Daum. In 2005, initial training was provided by D. Daum to operate and maintain the video system and associated computer software.

The Nenana video project collects daily catch-per-unit-effort data for Chinook, summer and fall chum, and coho salmon bound for the upper Tanana River. In addition, the Nenana video project functions as the tag recovery site for the ADF&G Tanana mark/recapture population estimate for fall chum salmon. Data from the Nenana video project is managed and analyzed by ADF&G, with reporting requirements fulfilled by the Department. The video/fish wheel operator, Paul Kleinschmidt, has operated the video system since 2003 with training provided by D. Daum, USFWS.

Summary:

Technical in-season assistance for both video projects: Y5A(URM-04) and Nenana video projects).

The proposal proponent, David Daum, USFWS, made on-site visits to both projects during the 2006 field season. Also, numerous phone and e-mail correspondences were made throughout the field season, discussing various aspects and operations of the two projects with the operators and ADF&G project biologists. The Y5A video project (URM-04) was visited on June 21-27 and August 7-8, 2006. The first visit was to assist with set-up, testing, and operation of the video system pre-season. Repairs were made to aging electrical components. Pre-season Excel spreadsheets were provided to the operator for fish species tallied from individual video files, daily data summary information, and e-mail requirements. The second visit included a system check of all video equipment, spreadsheet data integrity check, and evaluation of proper operating procedures. The Nenana video project was visited two times during the 2006 season. The first visit was on July 1-3, 2006. All equipment was transported from Fairbanks to Nenana. Video components were installed and checked for functionality. A desktop computer was setup in the operator's home and all video counting procedures and current spreadsheets were made available. All video procedures were re-introduced from the previous season and explained to the operator. The second visit occurred on October 3-4, 2006. All components were uninstalled and transported back to Fairbanks. An electrical short in the system was diagnosed and faulty parts brought back to Fairbanks for repair.

Post-season data analysis and annual report review for the Y5A Video Project (URM-04).

The proposal proponent, David Daum (USFWS) furnished post-season assistance with the Y5A video project data analysis requirements (URM-04). Post-season data analyses included water temperature data (download, analyze, and present), data integrity check (two months of video catch data), report review, statistical help, report editing, and future proposal review. This component led to a finished, scientifically accurate, annual technical report submitted under URM-04 and titled – Annual catch-per-unit-effort data collected by the Yukon River Sub-district Y5A test fish wheel project, 2006 by P. Moore and D. Daum.

Technical computer and video system training for the Y5A operator (URM-04).

On-site training was provided to the Y5A project operator (URM-04) during both in-season visits to Tanana in 2006. The operator was trained in all aspects of the video project, including video system troubleshooting, installation, and computer software operation. The operator is fairly new to the video project, having operated the video system in 2005 with assistance from the previous operator, Bill Fliris, and D. Daum, USFWS. Further training was provided in word processing using Microsoft Word and spreadsheet development and graphical data representations using Microsoft Excel.