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

R&M# 07-08

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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 $300,000 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 USFWS, targeting Yukon River salmon bound for upper Yukon and 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.

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 Y5A operator (RM-06-08); and
3) implement computer and video system training for Y5A operator (RM-06-08).

Summary:

Technical in-season assistance for both video projects: Y5A (RM-06-08) and Nenana (RM-09-08) Video Projects

On June 20-25, 2008, the Y5A video project was visited by the project investigator (PI), David Daum, for initial set-up. Video components were installed and checked for functionality at the in-river site. Since the project was not run in 2007, considerable repair was needed on the video system installed on the fish wheel. The old desktop computer used for video counting at the operator's home was not functioning and a new computer was setup with software and current spreadsheets. The project was again visited on September 1-3, 2008. Systems were checked for operational integrity and spreadsheets were checked for accuracy. Also, numerous phone and e-mail correspondences were made throughout the field season, discussing various aspects and operations of the Y5A project with the operator and ADF&G project biologists.

On July 1-3, 2008, the Nenana video project was visited by the PI for initial set-up. All equipment was transported from Fairbanks to Nenana. Video components were installed and checked for functionality at the in-river site. 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. On August 20, 2008 the project was visited to replace the magnetic switch and troubleshoot video system. Break-down of all equipment at the in-river site took place on September 28-29, 2008. All components were cleaned and transported back to Fairbanks for storage. A glitch in a component of the video system was detected that occasionally caused a skip in video capture, allowing some video frames to be missed. The system will be troubleshot over the winter and new hardware, if needed, will be installed. Also, numerous phone and e-mail correspondences were made throughout the field season, discussing various aspects and operations of the Nenana project with the operator and ADF&G project biologists.

Post-season data analysis and annual report review for the Y5A Video Project (RM-06-08)
The PI will be available to assistance with the Y5A Video Project data analysis requirements (RM-06-08). Post-season data analysis provided by PI will include video data (download, analyze, and write-up), data integrity check, report review, statistical help if needed, annual report editing, and proposal review. Data from a temperature data logger installed at the fishwheel was downloaded post-season. After downloading, the data logger was determined to have malfunctioned in-season.

Technical computer and video system training for the Y5A operator (RM-06-08*)*
On-site training was provided to the Y5A project operator (RM-06-08) during the multiple visits to the site. Training included video system troubleshooting, installation, and computer software operation. Current spreadsheets, video counting procedures, and e-mail summary reports were also explained.