

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

R&M# 07-11

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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 catch monitoring projects on the Yukon and Tanana rivers, totaling over \$100,000 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 three 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 2011 project objectives include:

- 1) provide technical assistance during the summer/fall field season to the Nenana Video Project (ADF&G funded) and fall season for the Y-5A Video Project (RM-06-11);
- 2) assist in post-season data analysis and annual report review for the Y-5A operator (RM-06-11); and
- 3) implement computer and video system training for Y-5A operator (RM-06-11) and new Nenana operator.

Summary:

Technical in-season assistance for both video projects: Nenana and Y-5A (RM-06-11) Video Projects.

On July 6 – 15, 2011, the Nenana video project was visited by the project investigator (PI) David Daum for initial set-up and training. All equipment was transported from Fairbanks to Nenana. Video components were installed and checked for functionality at the in-river site. A desktop computer and generator were setup at the operator's camp and all video counting procedures and current spreadsheets were made available. All video procedures were introduced to the new operator. Numerous trips to Nenana were

made throughout the season to help the new operator operate the video equipment and software. On September 19, the project was visited to fix the “counting” computer in the operator’s camp. Break-down of all equipment at the in-river site took place on September 30, 2011. All components were cleaned and transported back to Fairbanks for storage. The video system operated smoothly for the majority of the season, though system shutdowns occurred in late July and late August due to operational errors. Data loss was kept to a minimum during these times by operating the fish wheel’s live box using dip net counts. Additionally, 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.

On August 10 – 16, 2011, the Y-5A video project was visited by the PI for initial set-up. Video components were installed and checked for functionality at the in-river site. New spreadsheet templates for the 2011 season were created and installed on the operator’s home computer in Tanana. The video system ran smoothly for most of the season, except on two occasions. Problems with the generator and shut-off switch were diagnosed over the phone and by e-mail. A new timer switch was air freighted to Tanana and the repairs were made to the electrical system on the fish wheel. After repairs, the video system operated error free for the remainder of the season. Also, numerous phone and e-mail correspondences were made throughout the field season discussing various aspects and operations of the Y-5A project with the operator and ADF&G project biologists.

Post-season data analysis and annual report review for the Y-5A Video Project (RM-06-11). Data analysis and report review were completed for the Y-5A Video Project (RM-06-11) by January 20, 2012. Post-season data analysis included video data integrity check, report review, statistical help, annual report editing, and 2012 proposal review. Water temperature data from a data logger installed at the fish wheel were downloaded, summarized, and included in the Y-5A Video Project 2011 annual report.

Technical computer and video system training for the Y-5A operator (RM-06-11) and new Nenana operator. On-site training was provided to the Nenana operator throughout the season. The operator was new to the project and required additional training in both video operation at the fish wheel, and counting and data storage procedures at his camp. Training was also provided to the Y-5A project operator (RM-06-11) during the August site visit. Training included video system troubleshooting, installation, and computer software operation. Current spreadsheets were provided, and video counting procedures and e-mail summary reports were also explained.