

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

R&M# 07-07

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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. The Nenana video project targets Yukon River salmon bound for upper Tanana River spawning grounds (primarily Chinook, summer and fall chum, and coho salmon). In addition, the 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. This project is a great success story, 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 R&M project provides funding for this support.

Specific project objectives include:

- 1) Assist in set-up and break-down of all video equipment on site; and
- 2) Provide technical assistance and equipment repair, if necessary, during the summer/fall field season for the Nenana video project.

Summary:

Set-up and break-down assistance for all video equipment on site.

On July 2-5, 2007, the Nenana video project was visited by the proposal proponent, David Daum, 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. Break-down of all equipment at the in-river site took place on October 1, 2007. On October 9, all components were cleaned and transported back to Fairbanks for storage.

Technical assistance and equipment repair, if necessary, during the summer/fall field season for the Nenana video project.

The proposal proponent, David Daum, USFWS, made on-site visits during the summer/fall season to troubleshoot electrical and video problems at the fish wheel site. On August 9, unexplained electrical disruptions to the video system were reported and investigated. After extensive inspection, an intermittent short produced by a 400 W inverter was diagnosed. A new inverter was purchased and installed on site. On September 20, a video sync problem was reported and investigated. During simultaneous passage of multiple fish, the triggering device would not record all video frames in a capture sequence. Testing was done on site, but no definitive cause was found. Since this problem was not persistent and few captured fish were missed from the daily video count, the equipment was transported to Fairbanks following the counting season. During the winter, the system will be testing and any deficiencies repairs. Also, numerous phone and e-mail correspondences were made throughout the field season, discussing various aspects and operations of the project with the operator and ADF&G project biologists.