

FY 2001 Study Status Report – 4 Sept. 2001

Title: Population Assessment of Lake Clark Sockeye Salmon
Study Number: FIS01-042
Investigator Information: Dr. Carol Ann Woody, U.S. Geological Survey,
Biological Resources Division, 1011 E. Tudor Rd. Anchorage, AK
99503, 907-786-3314, carol_woody@usgs.gov

Study Objectives and Progress

- Objective** - Radio tag up to 200 sockeye salmon in 2001 to identify any additional contemporary spawning sites in Lake Clark. **Progress** – A total of 157 sockeye salmon were tagged this field season. Fish are currently radio tracked weekly by plane or boat (Figure 1). Remote monitors (Figure 2) established on three tributaries and on the lakeshore collect additional movement data. Spawning will be verified by seining. This work is ongoing and will continue into November. A final map of all contemporary spawning habitats identified through radio telemetry will be completed this winter. Dan Young, a telemetry specialist, was recruited to conduct this portion of the work as part of a Masters program through the University of Alaska, Fairbanks. His main advisor is Dr. Joe Margraph.
- Objective** - Determine run time and movement patterns of different Lake Clark spawning aggregations. **Progress** – Dan Young is currently collecting salmon movement information. Fish tracked throughout the system will have movement data analyzed in 2002 with a new software package called “Animal Movement ArcView Extension” developed by Phil Hooge, USGS, Glacier Bay Research Station (Figure 3).
- Objective** – To characterize Lake Clark sockeye salmon genetic variation within the watershed and to contribute to the Bristol Bay and Pacific Rim analysis by ADFG. **Progress** – Kristina Ramstad, a PhD student through the University of Montana (advisor-Dr. Fred Allendorf), has selected 10 loci for analysis of within lake variation. Five of her selected loci overlap with the ADFG baseline. All DNA from FY2000 samples is extracted. Genotyping of FY2000 samples is underway and will be completed by 30 Oct. Final genetic field collections are currently underway in Lake Clark. Up to 10 additional populations will be sampled in 2001 to complete the genetic survey for Lake Clark. These samples will be processed this winter and a preliminary analysis will be prepared by 1 March 2002.
- Objective** - Continue to identify local Native intern(s), train them in application of scientific fisheries techniques, encourage and assist them in pursuing higher educational goals. **Progress** – Five Native Alaskan youth from Newhalen, Nondalton, and Port Alsworth participated in the intern program this summer. Two of the students, Kristy Balluta and Janell Kukaruk, participated in the intern program last summer. Three students were new hires, Crystal Wassillie, Shavela Stickman, and Gerald Anelon. Julia Vinceguerra, an intern from the University of Michigan, assisted in course development and implementation. Students had 2 weeks of courses including: sockeye salmon life history and ecology; first aid and CPR; bear safety; salmon counting tower techniques, fish handling and sampling techniques. Students were rotated through the various USGS salmon research projects and gained experience in salmon enumeration with counting towers, genetic sample collection, otolith collection, radio tagging techniques, data entry, and a special project of monitoring age and size composition of the subsistence catch in Nondalton (Figures 4-6).

Consultations and Capacity Development

Newhalen/Iliamna - 25 April 2001. Organized and implemented an aquatic education day at the Newhalen school (Principal Bill Franklin, 571-1211). Gave a presentation on salmon ecology and conservation, and discussed research being conducted in Lake Clark National Park. Met in the afternoon and evening with students and their parents to discuss the internship program and assist interested students with the application process.

Nondalton – 26 April 2001. Organized and implemented an aquatic education day. Discussed Lake Clark salmon research at the Nondalton school. Met with students and their parents in the afternoon to discuss the internship program and assist interested students with the application process.

Kijik Corporation – 20 May 2001. Met with Eleanor Johnson, CEO and President of the Kijik Corporation (561-4487) to discuss the telemetry study, coordinate purchase of equipment, and obtain permits for this field season.

Alaska Department of Fish and Game – 20 April 2001. Organized a meeting with the genetics group at ADFG to update them on USGS aspects of genetic research in Lake Clark.

National Park Service – 5 June 01. Presented results of the 2000 salmon research program in Lake Clark and discussed plans for 2001 with Regional and National Park Service Administrators. Answered questions regarding status of Kvichak sockeye salmon populations and possible impacts to Lake Clark sockeye salmon populations relative to the current population decline.

Iliamna/Newhalen/Nondalton Villages- Met with interested interns and assisted them with the application process for USGS.

Nondalton- 1 July – 31 July – Student intern program begins. Taught courses and field techniques to student interns.

These interns participated in the USGS program:

Shavela Stickman, Port Alsworth, 907-781-2268; Janell Kakaruk, Nondalton, 907-294-3329; Kristy Balluta, Nondalton, 907-294-2232; Crystal Wassillie 907-571-1238 and Gerald Anelon, 907-571-1699. Julia Vinceguerra assisted with courses and field collections and was an intern from the University of Michigan.

No major problems have been encountered to date regarding field preparation, hiring, or logistics.



Figure 1. Radiotracking fish with Leon Alsworth in the Park Service supercub on the Tlikakila River.



Figure 2. Dan Young and Rita Cochran install a remote solar-powered telemetry receiver and antenna. As radio tagged salmon pass the site, the receiver identifies which fish passed at what time and day.

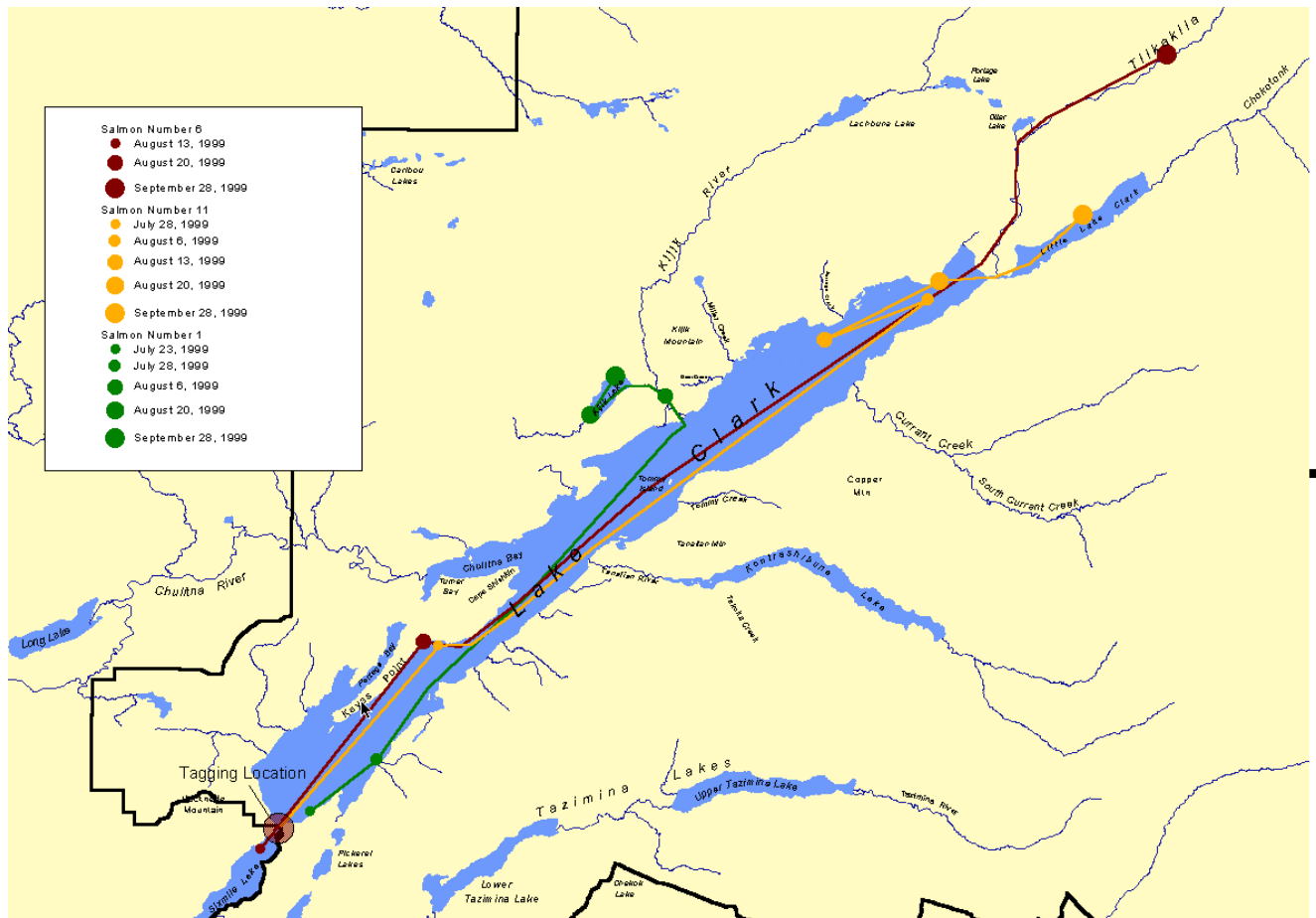


Figure 3. Example of sockeye salmon movement data currently being collected through remote monitors, aerial and boat surveys.



Figure 4. USGS student interns, left to right: Kristy Balluta, Janell Kakaruk, Shavela Stickman and Crystal Wassillie.



Figure 5. Interns Julia Vinceguerra, Shavela Stickman and Kristy Balluta sample the Nondalton subsistence catch for length at age composition.



Figure 6. USGS intern Gerald Anelon prepares to reset his net to capture salmon for the radiotagging study.