



U.S. Fish & Wildlife Service

Chandalar River Sonar Project

Fairbanks Fish & Wildlife Field Office

The salmon stocks in the Chandalar River are an important resource of the Yukon Flats National Wildlife Refuge, and support subsistence and commercial fisheries in the Yukon River drainage. The fall chum salmon population in the Chandalar is recognized as the largest stock of fall chum salmon in the Yukon River drainage.

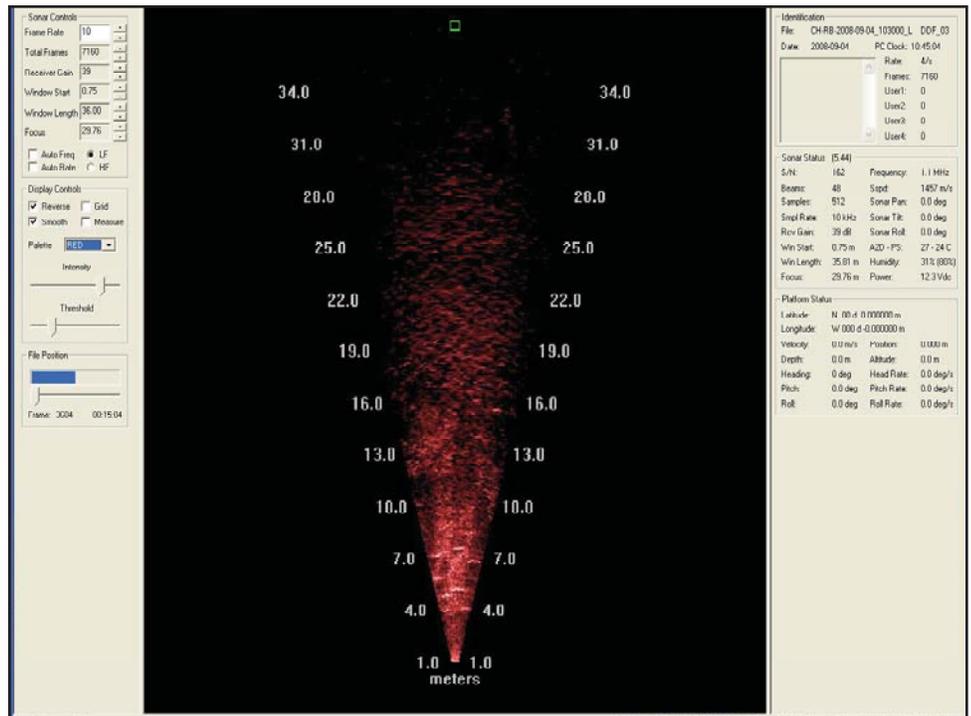
The Fairbanks Fish and Wildlife Field Office first began monitoring the Chandalar River fall chum salmon run in 1987 using Bendix sonar. The Bendix project was discontinued after 1990.

The field office returned to the Chandalar River with, what was at the time, state-of-the-art split-beam sonar. The ability of split-beam sonar to determine the position of targets in three dimensions improved the ability to identify upstream swimming fish.

The split-beam sonar remained in use through 2006, after which it was replaced with a newer sonar technology,



A DIDSON unit ready to deploy.



A DIDSON image showing fish passing through at 4 to 7 meters.

ogy, DIDSON. The DIDSON (Dual frequency IDentification SONAr), is a higher frequency multi-beam sonar that uses a lens system to focus the beams, yielding a much greater resolution than other sonar technologies. In addition to higher resolution, the DIDSON provides a more intuitive, easily interpreted image and can be deployed over a wider range of site conditions than the split-beam.

Two DIDSON units, one on each river bank, are deployed and aimed perpendicular to the river current. Targets are placed on the river bottom, and drifted through the beams to help adjust the aim. The systems run continuously from August 8 through September 26 each year. All data is saved to files on a computer, then manually reviewed to

produce fish counts. Counts from the sonar are reported back to the field office by satellite phone daily.

Beach seining and gill netting have been used to evaluate the presence of other species during sonar operation. Other species that are present are either relatively low in abundance, or are smaller in size and can be distinguished from chum salmon with the DIDSON.

Estimates of Fall chum salmon passing the sonar site since 1995 have ranged from approximately 65,000 during 2000 to greater than 490,000, in 2005. These estimates help managers make management decisions, and assist them in preparing outlooks for future salmon returns and management strategies.