

Carmacks Area Juvenile Chinook Salmon Project July and September 2018

During the summer of 2018 youth from the Little Salmon Carmacks First Nation (LSCFN) and students from Carmacks Tantulus School participated in a minnow trapping program that targeted juvenile chinook salmon (jcs). The program was conducted in locations easily accessed from the town of Carmacks and within the LSCFN Traditional Territory. Assessments were conducted on two separate occasions the first during early July and the second during early September.

The sample periods were conducted with the participation of a youth group in July and an elementary school group in September. Both groups were successfully engaged in observing jcs and in documenting the relative abundance and growth during the 2018 season. This project was made possible through funding provided by the LSCFN and the Salmon Restoration and Enhancement fund. The fish assessments were conducted under the authority of License XR 215 2018 issued by the Department of Fisheries and Oceans, Whitehorse, Yukon.

This project is part of a larger mandate of the LSCFN to maintain the communities connection to salmon and to build capacity while maintaining traditional values associated with chinook salmon in the traditional territory.

Objectives

This project had 2 main objectives;

- 1) To involve community (school and youth groups) in field activities that exposed them to wild salmon as a way to maintain a personal link between the youth and the salmon.
- 2) To document the extent of juvenile chinook salmon utilization in the Carmacks area on an annual basis in order to observe the year to year fluctuations.

The program ran the first year of a program designed to be repeated on an annual basis. The intent is to build a data set suitable for classroom presentation that will engage the youth of tomorrow and today.

Methods

The locations for minnow trapping sites were chosen on the basis of ease of access and the ability to produce jcs. The sites selected were re-evaluated after the July sampling period. Trapping was conducted at 13 sites during the July sample period and three sites that were all farther from the community and did not produce jcs were dropped from the program and the remaining 10 sites were sampled during the September sample period. The sites were all within LSCFN traditional territory. Minnow traps were set at four locations close to town on the mainstem Yukon River, at five sites on the Nordenskiold River, three sites at Tatchun Creek and one site at MacGregor Creek.

At each site a set of eight G-type minnow traps (¼” baited with Yukon River salmon roe) were set for an overnight soak period. Traps were set in shoreline areas with moving water and depths greater than 0.3 meters. Traps were not set in water that was moving greater than 0.5 m/sec in an effort to reduce mortality.

Captured fish were handled very gently and students were shown how to handle live fish without stressing any more than necessary. All captured fish were enumerated and a sub-sample of the jcs were live sampled for length and weight before being released back to the water at the site of capture. Students assisted in releasing the captured fish without handling them. P. Sparling conducted the physical handling during sampling with the assistance of the youth being note taking and bringing the fish to the sample stations. The youth were taught to respect the live fish at all times. Anesthetics were not used.

RESULTS

The programs principle result and greatest success was the participation of students and youth from the community of Carmacks. During the July sampling event the youth training group, consisted of teenagers from ages ranging from 14 to 16 years of age. During the September sampling period Tantalus school group assisted. 15 students from Grades 8, 9, & 10 assisted in the field program. Three of the students participated in both sample periods.

The sampling program also had great success in identifying locations that were suitable for educational purposes. The sample site selection was modified based on the experiences of the July sampling period. Most of the sites on the lower Nordenskiold River proved to be valuable jcs habitat and easily accessible, sites farther upstream on the Nordenskiold, Nordenskiold #3 and at airport lake were dropped from the September sampling period due to a lack of jcs at the locations and a prohibitive distance from town. MacGregor Creek was also dropped for the September sample period as no jcs were captured there in July and it was a prohibitive distance from Carmacks to make it an easily accessible location.

Jcs were found well distributed through the sample areas, a summary of the average number of jcs caught per trap at each site for both sample periods has been presented in Figure 1. The highest abundance of jcs were found in the Yukon River at the Klaza Road and Coalmine Campground sites during the July sample period. The Coalmine campground had the most consistent catches during both July and September sampling periods.

The captured jcs had a wide range of sizes (length and weight) during both sample periods (figure 2) and showed even growth between sample periods at all the sites. Calculations of condition factor (figure 3) showed the jcs in the area to have an average condition factor of near a value of “1” which indicates the fish in the area are healthy and not under weight.

The program worked hard at and the students were encouraged to keep a zero mortality rate through trap placement and fish handling. Unfortunately a total of 7 jcs captured during the program died, all from exhaustion in the traps prior to their release.

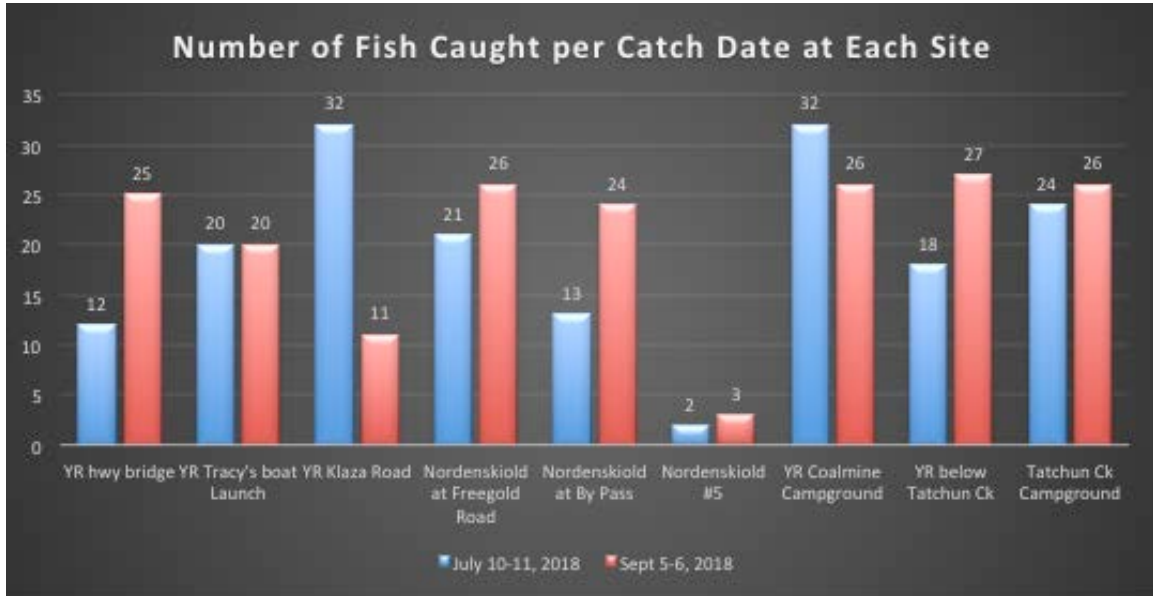


Figure 1: Summary of juvenile chinook salmon captured, by site, during minnow trapping in the Carmacks area during July and September of 2018.

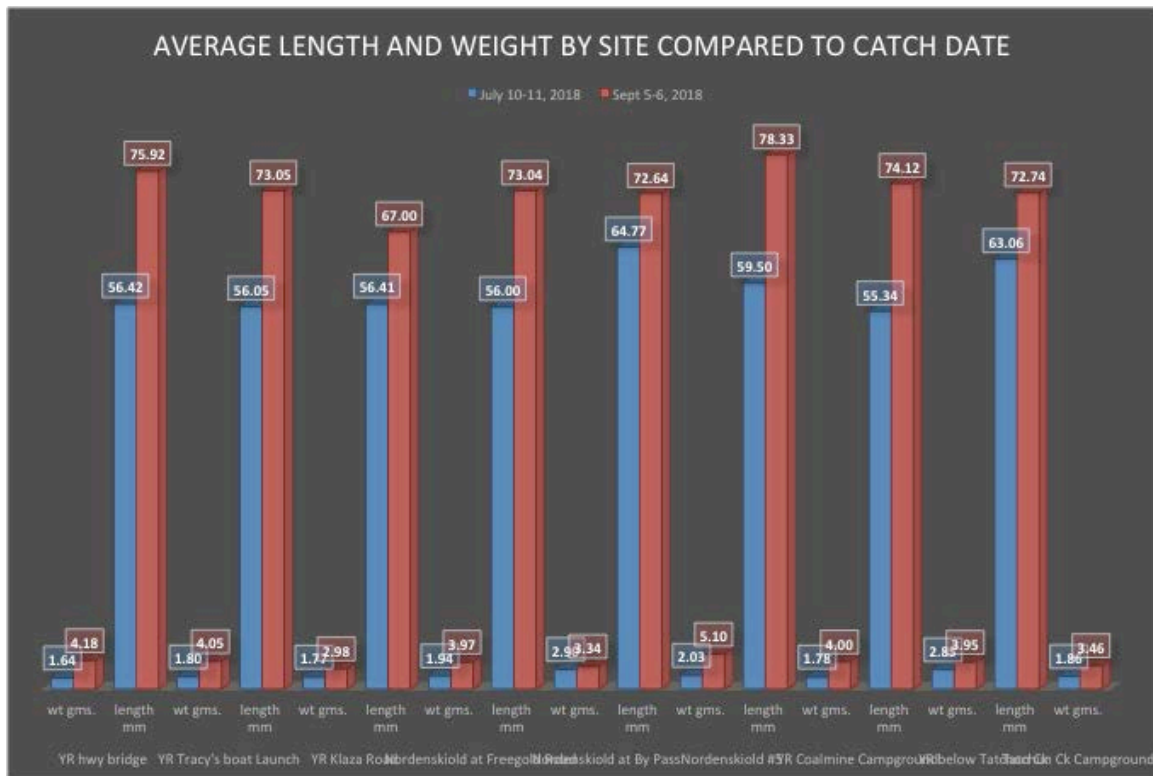


Figure 2: Summary of size of juvenile chinook salmon captured during minnow trapping in the Carmacks area during 2018.

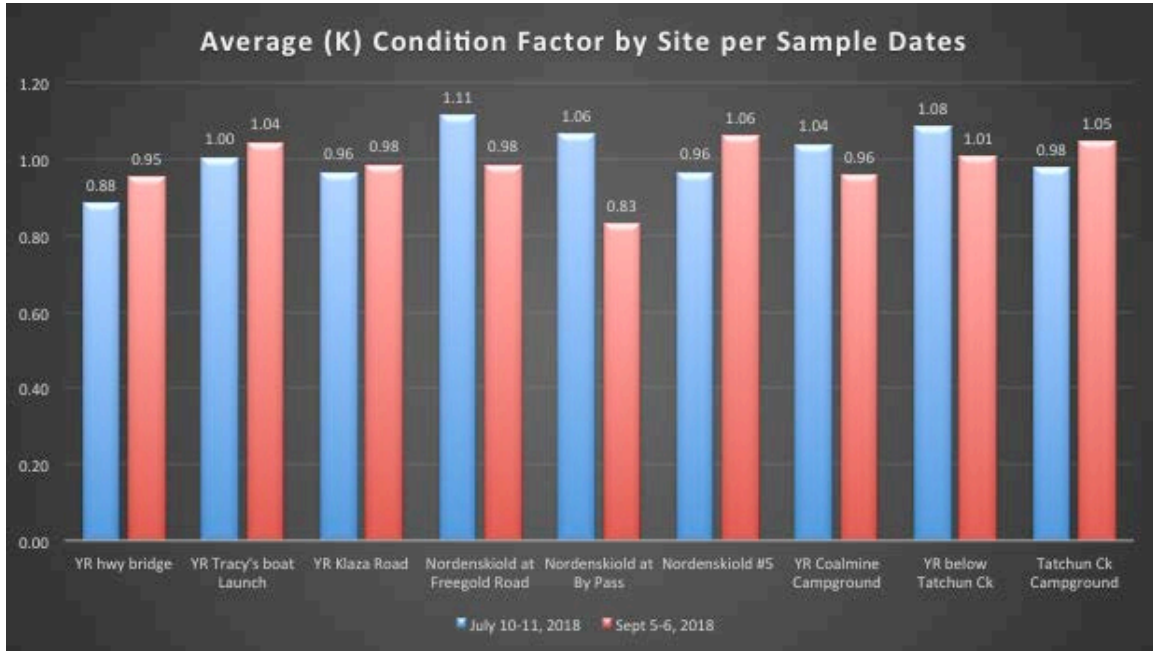


Figure 3: Summary of condition factor (K) for juvenile chinook salmon captured by minnow trapping in the Carmacks area during 2018.