Yukon River Panel Project
CRE 47-02
Teslin River Sub-Basin Community Stewardship and Beaver Management

Prepared by:
White Mountain Consulting
For:
Teslin Tlingit Council

Paul Sparling

April 7, 2003

ABSTRACT

This project monitored natal tributaries in the Teslin drainage basin for natural obstructions to Chinook salmon. In addition, the project also collected information from tributaries such as instantaneous discharge measurements and the extent of utilization by juvenile Chinook salmon. Three tributaries were found to have barriers or potential barriers. Swift River (south) and Sidney Creek both had previously identified barriers; both of these tributaries were monitored during August. Neither of these obstructions became barriers to fish. Deadman Creek did have an active beaver dam that did become a barrier to fish passage in mid-August. Because this tributary is not a natal tributary no action was taken to remove the barrier, the barrier was monitored during August.
This project also provided stewardship training opportunities to Teslin Tlingit members. This project was expanded with additional funding from other sources to extend the training and experiences for the crew. The result being three, summer long work positions were created with this project being the core position.

CRE-47-02 Teslin Stewardship and Beaver Management

Project Summary, summer, 2002

The two main objectives of this project; to provide stewardship for chinook salmon spawning areas in tributaries to the Teslin River drainage and to provide a capacity building fisheries training opportunity for members of the Teslin Tlingit Council have been realized.

The individuals hired for this position also assisted in other fisheries related projects in the Teslin area requiring field assistants during 2002. This expanded the positions described in the work plan CRE-47-02 and created a longer term educational opportunity with a diversity of fisheries related work experiences. The project leader, Mike Gergel and two assistants, Gus Morberg and Gus Jules formed the crew.

TABLE 1: Summary of field crew activities and projects conducted during summer 2002. Including work conducted as part of R&E project 47-02 and all other projects members of the crew hired for 47-02 participated in.

July 23	Over flight in fixed wing aircraft of tributaries to Teslin and Nisutlin Rivers and Teslin Lake; P. Sparling and M. Gergel
July 29,30	Field equipment and camp gear organization, and field groceries purchase; M. Gergel
July 31	Hire field crew assistants Gus Morberg and Gus Jules.
Aug 5,6	Initial field assessment at Deadman Creek; P. Sparling initial training and project introduction, M. Gergel, G. Morberg and G. Jules.
Aug. 7-9	Investigate tributaries to the Nisutlin River including; Rose River, Thirty Mile Creek, and Sidney Creek. Access from Canol Road; M. Gergel, G. Morberg and G. Jules.
Aug. 12-16	Investigate tributaries to Teslin River, including Swift River, 100 Mile Creek and Squanga Creek. Implement remedial prescriptions. Access by boat. , M. Gergel, G. Morberg and G. Jules.
Aug. 19,20	Deadman Creek re-assessment; P. Sparling, M. Gergel, G. Morberg
Aug. 20	CRE-45-02, helicopter survey, Teslin River; P. Sparling, M. Gergel, G. Morberg
Aug 21-24	CRE-45-02. Boat crew assistance for Teslin River chinook salmon spawning location and snorkel survey. , M. Gergel, G. Morberg and G. Jules.
Sept. 3-8	CRE-42-02. Field assistance for chinook salmon incubation and distribution assessment, Swift River BC. G. Morberg and G. Jules
Sept. 25-29	Squanga whitefish HSP elders gathering at Squanga Lake, camp assistants; G. Morberg and G. Jules
Oct. 7-10	Squanga whitefish distribution evaluation in Tarfu, Seaforth, Summit and two unnamed lakes G. Morberg.

CRE-47-02 PROJECT SUMMARY

As described in the original project description tributaries to Teslin Lake, Teslin River and the Nisutlin River were investigated for obstructions to upstream migration of adult chinook salmon, juvenile chinook utilization and instantaneous discharge. The tributaries investigated included creeks with obstructions noted in past years and tributaries that had new obstructions reported within the last year. Obstructions investigated consisted of either beaver dams or logjams.

The following tributaries were investigated: Rose River, Thirty Mile Creek (Nisutlin River), Sidney Creek, Deadman Creek, Swift River (Teslin River), Hundred Mile Creek (Teslin River) and Squanga Creek.

An aerial assessment on July 23, prior to the field investigations, by fixed wing aircraft was conducted over the study area to help pre-determine the extent of current obstructions. During the field investigation of each tributary with known obstruction locations were visited and notes were taken. Additional information recorded consisted of a measurement of instantaneous discharge using the floating object method and minnow trapping effort to determine current year utilization by juvenile chinook salmon. The following section describes each creek investigated, and relevant findings.

Deadman Creek

Beaver dams in the lower reaches of Deadman Creek have been monitored since 1996. The location of the beaver dams has annually migrated upstream as much as 500 meters per year. The beaver activity has created large areas of shallow water with woody debris and extensive sedimentation, caused the creation of several new channels and created barriers to juvenile Chinook salmon movements.

During 2002 investigations, the beaver dam grew between August 5 and 19. On August 5 the dam presented only a partial barrier with flow moving through the original channel and in two new channels. By August 19 the beavers had completely dammed the creek creating 1.3 meters of head behind the dam. Juvenile chinook salmon had been observed on the upstream side of the dam in early August however became very scarce above the dam after the completion of the dam later in August. Consultation with Al Von Finster of DFO did occur in mid August at which time it was decided to continue to monitor the obstruction and associated salmon distribution, but not to action the removal of the dam.

On August 5 the instantaneous discharge was estimated at 2.3m^3/sec. and minnow traps and electro-fishing were used to determine the distribution of chinook juveniles. Minnow traps set in Deadman creek below the beaver dam on August 5 had a average catch per unit of effort (CPUE) of 11 jcs/24hrs . Ten traps set above the beaver dam on August 19 captured 6 jcs. A summary of minnow trapping effort and catch has been presented in Table 2.

Sidney Creek

A logjam formed on Sidney Creek during 2001 several hundred meters upstream of the Canol Road crossing. This logjam does not appear to be an obstruction to fish passage as a new channel has cut around and under it. The logjam does not create any ponding on the upstream side and after on site investigation was considered not a barrier to fish passage.

Field investigations at Sidney Creek were conducted on August 7 and 8, 2002. Investigations consisted of setting minnow traps near the highway crossing and upstream as far as Iron Creek. Traps from Sidney Creek had an average CPUE of 8 jcs/24hrs. and Iron Creek had an average CPUE from 2 traps of 4.5 jcs/24hrs(Table 2). Instantaneous discharge estimate for Sidney Creek was 4.8 m^3/sec. and for Evelyn Creek it was 3.6 m^3/sec.. The log jam obstruction was also investigated and it was determined that this log jam did not comprise a barrier to fish passage.

Rose River

A new logjam on Rose River was reported in early 2002. This obstruction was located a short distance downstream of the Canol Road crossing. During the aerial assessment it was noted that this obstruction had been removed. The reach of Rose River with the obstruction receives a high level of boat traffic as access to the upper Nisutlin River. Obstructions to boat traffic in the Rose River do not appear to last long as boaters consistently remove them.

Field investigations on the Rose River were very minimal and consisted only of floating down the river past the site of the obstruction and into the Nisutlin River on August 9, 2002. The log jam barrier was almost non-existent at the time.

Swift River (Tributary to Teslin River)

In the past, beaver caused obstructions on Swift River have impeded adult salmon migrations to known spawning areas in the upper reaches of this river. No new beaver caused obstructions in the Swift River were recorded during the 2002 field investigations. The River was investigated from the ground on August 14, 15, 2002, a ground survey was conducted upstream for 3.5 km, a single adult chinook salmon carcass was observed in the creek, and numerous adult chinook were observed congregated in the mix water zone of the Teslin River. Five minnow traps set in the Swift River had an average CPUE of 59 jcs/24hrs, discharge was estimated at 4.23 m^3/sec.

Aerial surveys by helicopter on August 20, 2002 counted 11 adult chinook and 2 chinook carcasses in Swift River and no salmon were observed in the confluence with the Teslin River. The known spawning areas in the upper reaches had no chinook on them and did not appear to have been utilized during 2002. A large grizzly bear was observed at the downstream end of the main spawning area and may have affected distribution and visibility at the time of the aerial survey.

Hundred Mile Creek (Teslin River)

This creek, although not a natal creek supports an extensive and well used spawning area at the confluence with the Teslin River. This creek was investigated from the air on July 23, at this time it was noted that Hundred Mile Creek did not have any existing beaver dams. Large areas of flooded trees and many abandoned beaver dams were observed in the lower reaches of the creek.

The creek was investigated by ground crews on August 14. The instantaneous discharge was estimated at 1.44 m^3/sec., minnow traps had an average CPUE of 38.6 jcs/24hrs. Snorkel surveys conducted at the outlet area during the chinook spawn on August 21 recorded counts as high as 65 adult chinook in a 400 meter reach on the upstream side of the creek outlet.

Thirty Mile Creek (Nisutlin River)

Thirty Mile Creek was investigated from the air on July 23, it was noted that extensive beaver dams were in place within 1 km of the Nisutlin River. On August 9 crews accessed the creek by boat. Thick vegetation and low flow in the creek prevented accessing the beaver dams.

Squanga Creek

Squanga Creek was investigated on three different occasions; August 16, 23 and 31, 2002. No beaver caused or log jam obstructions were observed and no adult salmon were observed in the traditional spawning area.

TABLE 2: Summary of fishing effort and catch data for field investigations conducted under CRE-47-02

Date	Site	Effort (hrs)	JCS	SS	BB	Comments
5/8/2002	D.C. #1 u/s	20.5	3	0	0	Deadman Creek highway access 1, u/s bridge; #1.
5/8/2002	D.C. #2 u/s	20.5	12	0	0	Deadman Creek 30m u/s #1.
5/8/2002	D.C. #3 u/s	20.66	2	2	0	Deadman Creek 45m u/s #1.
5/8/2002	D.C. #4 u/s	20.5	21	0	0	side of channel below riffle 45m u/s #1, LUB.
5/8/2002	D.C. #5 u/s	20.5	1	0	0	60m u/s #1 RUB.
5/8/2002	D.C. #6 u/s	20.5	13	0	1	Deadman Creek highway access 2, u/s bridge 30m d/s new channel
5/8/2002	D.C. #7 u/s	20.66	14	1	1	RUB O/L of new channel
5/8/2002	D.C. #8 u/s	20.75	16	0	0	inside new channel, LUB
5/8/2002	D.C. #9 u/s	20.5	20	0	0	Bottom old logjam, 50m u/s new channel
5/8/2002	D.C. #10 u/s	20.66	38	0	0	Top old logjam
5/8/2002	D.C. #11 u/s	20.25	5	0	0	2002 new channel around old logjam
5/8/2002	D.C. #12 u/s	20.25	18	0	0	2002 new channel around old logjam
5/8/2002	D.C. #13 u/s	20.33	0	2	0	Gravel pit path end #13
5/8/2002	D.C. #14 u/s	20.33	0	0	0	10m u/s # 13
5/8/2002	D.C. #15 u/s	20.33	0	1	0	20m u/s #13
5/8/2002	D.C. #16 u/s	20.41	0	1	0	1 water shrew; 20m u/s # 13
7/8/2002	S.C. #1	18	2	2	0	Sydney Creek, LUB 60m u/s

7/8/2002	S.C. #2	17.9	17	0	0	bridge Sydney Creek, RUB 150m u/s
7/8/2002	S.C. #3	19	6	0	0	bridge Sydney Creek, LUB 50m d/s
7/8/2002	S.C. #4	18	10	1	0	bridge Sydney Creek, LUB 90m d/s
7/8/2002	S.C. #5	18	7	0	0	bridge Sydney Creek, 150m d/s
7/8/2002	I.C. #1	20.08	1	0	0	bridge Iron Creek, below waterfall (height approx. 6m); deep pool below waterfall; approx. 1 km up from Sydney Creek.
7/8/2002	I.C. #2	20.08	8	0	0	
13/8/2002	S.R. #1	24.16	37	0	2	100m u/s Teslin River
13/8/2002	S.R. #2	24	58	0	1	200m u/s Teslin River
13/8/2002	S.R. #3	24.08	24	0	0	275m u/s Teslin River
13/8/2002	S.R. #4	24.16	152	1	0	300m u/s Teslin River
13/8/2002	S.R. #5	24.16	24	1	0	400m u/s Teslin River
14/8/2002	100 Mile R. #1	19.91	98	0	0	100m u/s Teslin River
14/8/2002	100 Mile R. #2	19.83	17	0	0	200m u/s Teslin River
14/8/2002	100 Mile R. #3	19.91	8	0	0	320m u/s Teslin River
14/8/2002	100 Mile R. #4	19.91	61	0	0	430m u/s Teslin River
14/8/2002	100 Mile R. #5	20	9	0	0	500m u/s Teslin River
19/8/2002	D.C. #1 d/s	27.08	1	0	0	75m d/s gravel pit path in small side channel, RUB
19/8/2002	D.C. #2 d/s	27.08	0	0	0	80m d/s path behind stick jam at side channel, RUB
19/8/2002	D.C. #3 d/s	27.08	1	0	0	90m d/s path under alder; side eddy, LUB
19/8/2002	D.C. #4 d/s	23	0	0	0	200m d/s path corner pool with alder cover
19/8/2002	D.C. #5 d/s	23	0	0	0	245m d/s path; 25m d/s side channel, RUB
19/8/2002	D.C. #6 d/s	23.16	0	0	0	240m d/s path; 10m d/s side channel, LUB
19/8/2002	D.C. #7 d/s	23.08	0	0	0	300m d/s path; small eddy pool with fallen willow, RUB
19/8/2002	D.C. #8 d/s	22.91	0	1	0	450m d/s path; corner pool; old beaver dam, RUB
19/8/2002	D.C. #9 d/s	23	2	0	0	450m d/s path; corner pool; old beaver dam, LUB
19/8/2002	D.C. #10 d/s	23.08	1	0	0	500m d/s path below started new beaver dam (constricts 60% of creek; photo taken)