Yukon River Restoration and Enhancement Fund

CRE 28 02

Mica Creek Salmon Habitat Restoration

September 29, 2003

Submitted by
Styd Klugie, Renewable Resources Manager
Dorothy Bradley Selkirk Renewable Resources Council
Mark O'Donoghue, Northern Tuchone Regional Biologist
Paul Sparling, White Mountain Enviromental

Abstract:

Mica Creek has been an important creek for salmon and historically provided a subsistence fishery to the Selkirk First Nations. The creek is small and subject to damming by beaver. Deadfall from a major forest fire, which occurred in 1969, results in log jams. The dams and logjams result in obstructions to adult and juvenile Chinook salmon. This project included the maintenance of the monitoring trail adjacent to the creek, the monitoring of the creek for obstructions, the mapping, assessment and breaching of dams and logjams, the sampling of juvenile Chinook salmon, and the mapping of Chinook salmon redds. All these components were conducted successfully. Trapping of beaver was not conducted due to high water levels. Implementation of the project extended over a two-year period due to staff turnover. Long-term stewardship of Mica Creek, with the participation of youth, is recommended.

Introduction:

In March 2000 a Beaver Management Workshop was held in Pelly Crossing. The outcome was a draft plan that identified the present situation, management goals and management needs for both Willow and Mica Creek. The goal for Willow Creek was to restore the salmon run from the mouth to the rapids. For Mica Creek, the management goals were to restore the salmon habitat from the mouth to Towhata Lake and to restore the Tezra (broad whitefish) spawning migrations up to Ta'tla Mun Lake.

Mica Creek was investigated in 1998 under Yukon River Restoration and Enhancement Fund project RE-33-98 (Wilson, 1999). In the summer of 2000, restoration began up Mica Creek. Juvenile salmon were found to utilize only the lower reaches of Mica Creek even though barriers were breeched. Adults were found considerable distances further upstream in 2000 than in 1998. The low flow survey also indicated that water flow on Mica Creek decreased dramatically. Barriers removed in Willow Creek in 1999 and 2000 resulted in an increase of juvenile Chinook salmon densities

Mica Creek was investigated in 1998 under Yukon River Restoration and Enhancement Fund project RE-33-98. The 2001 project focused on monitoring the access for salmon and mapping distribution and abundance of juveniles. A trail along the creek to be used for monitoring was extended to just below Towhata Lake. A low flow survey established the winter habitat suitability of both creeks.

In addition to the work in the past years, during 2003, Selkirk First Nation included the trapping of juvenile salmon, maintaining the trail beside the creek to Towhata Lake, as well as the creek survey monitor for post spawning redds, breeching the obstructions, and the trapping of the beavers.

Methods:

1. Fry Trapping:

During September of 2003 a set of 15 minnow traps were set within Mica Creek

3. Survey Spawning Redds:

An individual was hired to 4-wheel from the mouth of Mica Creek to Towhata Lake mapping beaver dams, and logjams to make recommendations for the path of the maintenance trail.

4. Breech Obstructions:

During the trail maintenance, the crew breached any notable obstructions in the creek to provide the flow of water (spring & early summer for juveniles, later for adults) in the spring for the salmon run. Figure B is a map of the breached dams

5. Trap Beavers:

With the guidance of the elder, the crew also trapped any beavers in the creek. The elder taught the crew the procedure of trapping beavers in creeks.

Results:

1. Fry Trapping:

In 2003, 15 minnow traps were set in the lower reaches of the creek to determine the size and levels of utilization of juvenile Chinook salmon at onset of winter. A total of 47 Chinook juveniles were captured along with 1 slimy sculpin, one lake chub and 2 juvenile long nose suckers. Chinook catches ranged from 3 traps with 0 Chinook to one trap with 24. The trap furtherest upstream had the highest count.
The captured juvenile Chinook ranged in length from 57 to 92 mm.

1. Trail Maintenance:

The trail along side Mica Creek from the mouth to just below Towhata Lake was cleared more to provide ongoing restoration & maintenance. Sections of the trail were groomed away from the creek banks because of swampy wet ground condition although pinpointing obstruction sites was achieved by cutting additional trails from the main trail directly to the obstruction sites.

2. Survey Possible Obstructions and Spawning Redds:

On September 16 and 17, 2003 Mica Creek was investigated for the presence of Chinook salmon spawning areas from the outlet at Pelly River to a point 2 km due south. Spawning areas were easily identified by new digging in the substrates. Clean gravel piles at the head of small rapids were the most obvious and usually the largest spawning areas. Smaller areas in deeper water side areas may also have been spawning areas but were only marked if it was a known site or very obvious.
A total of 22 different spawning areas were recorded. The spawning areas ranged in size from 2 meters x 2 meters x 2 meters to 5 meters by 9 meters, at least 6 of the spawning areas consisted of a series of nests 5 to 20 meters apart (Figure A)

3. Breach Obstructions:

The breeching of some obstructions in the creek was successful by the crew. (See appendix C) Six dams have been breached to date.

4. Trap Beavers:

There were no beaver caught in March of 2003 as the flood levels were high which made it difficult to set traps in the proper places. (See appendix D) However another attempt should be made in spring of 2004 to trap as many as possible.

Recommendations;

Selkirk First Nation, Lands and Resources would recommend developing stewardship of the Chinook salmon resources of Mica Creek through monitoring of the creek and the

salmon utilizing it, maintaining access for salmon, and investigations of interactions between salmon and beaver. L&R would recommend building a community capacity for salmon stewardship, particularly in the youth, through youth involvement in the project and through this, to encourage interest in fisheries and aquatic sciences in youth.
Continuing to trap beaver in the spring would protect the fry from predation and stop the continued rebuilding of dams. Continued monitoring the fish activities, checking turbidity, trapping fry and counting spawning salmon provides an excellent educational possibility. This project could be incorporated with a study of salmon in the schools and raising salmon fry in Eliza Van Bibber School for ages eight through eighteen.

References: de Graff, 2001; Wilson, 1999;

Appendix: **Juvenile Fish Trapping Field Data Sheet**

Stream Name: **MICA CREEK**

Figure A

Trap #	Location	Time set Sept 16	Time retrieved Sept.17	Species/z
1	160m D/S of bridge	1400	1310	2 jcs
2	140m D/S of bridge	1400	1310	7 jcs
3	60m D/S of bridge	1405	1320	4 jcs, 1ss
4	20m D/S of bridge	1410	1320	2 jcs
5	20m U/S of bridge	1415	1310	2 jcs, 2 lns
6	140m U/S of bridge	1440	1255	1 jcs
7	170m U/S of bridge	1450	1255	1 jcs
8	190m U/S of bridge	1455	1300	1 chub
9	220m U/S of bridge	1500	1305	0
10	220m U/S of bridge	1505	1305	3 jcs
11	500m U/S of bridge	1530	1240	0
12	520m U/S of bridge	1535	1240	0
13	520m U/S of bridge	1535	1245	3 jcs
14	540m U/S of bridge	1540	1245	24 jcs

Figure A

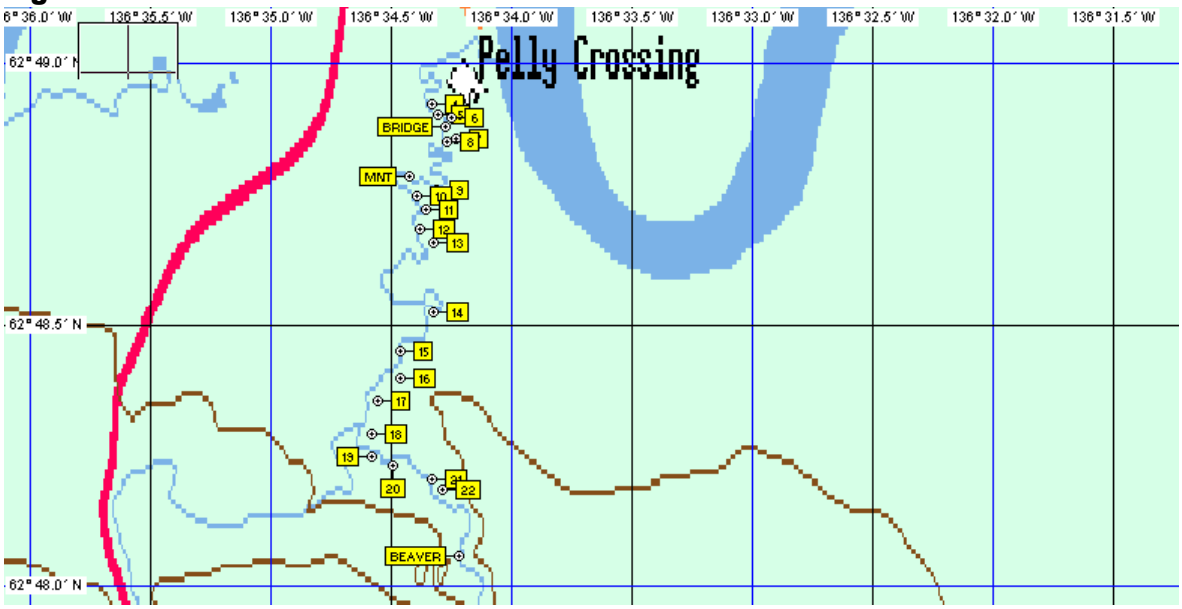

Figure. B. Map of Mica Creek showing the Chinook salmon spawning locations documented on September 16 and 17, 2003. The upstream beaver dam was active and represents a barrier to fish passage.

Figure.C

Breached Beaver Dams

Waypoint 006 N62* 46.717 W136* 33.182

waypoint 007 N62* 47.703
W136* 33.138

waypoint 009 N62* 46.025
W136* 131.774

waypoint 011 N62* 45.981
W 136* 31.721

waypoint 014 N62* 45.390
W136* 31.205

waypoint 013 N 62* 45.903 W 136* 31.484

Waypoints of Breached and new Dams

Figure B

waypoint	*latitude*	*longitude*	*notes*
6	062.77862	-136.55303	Breached dam with debris
7	062.77838	-136.55230	Breached dam with debris
8	062.77362	-136.53138	Clear breached dam
9	062.76708	-136.52957	Clear breached dam
10	062.76667	-136.52890	Small new dam
11	062.76635	-136.52868	Small new dam
12	062.76635	-136.52780	Clear breached dam
13	062.76505	-136.52473	Clear breached dam
14	062.75650	-136.52008	Clear breached dam
15	062.74368	-136.51268	Breached dam with debris
16	062.74368	-136.46857	Beaver house

Figure.D **Trapping Beaver**

These pictures show the depth of ice, the placement of the hole cut in relation to the bank and how the trap is set in the water and held.

Waypoint for Chinook redds on Mica Creek

```
OziExplorer Waypoint File Version 1.1
WGS 84
Reserved 2
magellan
   1,BRIDGE        ,  62.814665,-136.571272,37886.45060,  0, 1, 3,
0,     65535,                                          , 3, 0,    0,   -
777, 6, 0,17
   2,BEAVER        ,  62.800953,-136.570334,37886.45321,  0, 1, 3,
0,     65535,                                          , 3, 0,    0,   -
777, 6, 0,17
   3,MNT           ,  62.813077,-136.573773,37886.47037,  0, 1, 3,
0,     65535,                                          , 3, 0,    0,   -
777, 6, 0,17
```

```
   4,4            ,  62.815387,-136.572210,37886.47697,  0, 1, 3,
0,     65535,                                          , 2, 0,    0,   -
777, 6, 0,17
   5,5            ,  62.815026,-136.571741,37886.47748,  0, 1, 3,
0,     65535,                                          , 2, 0,    0,   -
777, 6, 0,17
   6,6            ,  62.814954,-136.570803,37886.47782,  0, 1, 3,
0,     65535,                                          , 2, 0,    0,   -
777, 6, 0,17
   7,7            ,  62.814304,-136.570491,37886.48158,  0, 1, 3,
0,     65535,                                          , 2, 0,    0,   -
777, 6, 0,17
   8,8            ,  62.814160,-136.571116,37886.48242,  0, 1, 3,
0,     65535,                                          , 2, 0,    0,   -
777, 6, 0,17
   9,9            ,  62.812644,-136.571897,37886.57614,  0, 1, 3,
0,     65535,                                          , 2, 0,    0,   -
777, 6, 0,17
  10,10           ,  62.812428,-136.573148,37886.57679,  0, 1, 3,
0,     65535,                                          , 2, 0,    0,   -
777, 6, 0,17
  11,11           ,  62.811995,-136.572523,37886.57739,  0, 1, 3,
0,     65535,                                          , 2, 0,    0,   -
777, 6, 0,17
  12,12           ,  62.811417,-136.572992,37886.57970,  0, 1, 3,
0,     65535,                                          , 2, 0,    0,   -
777, 6, 0,17
  13,13           ,  62.810984,-136.572054,37886.58256,  0, 1, 3,
0,     65535,                                          , 2, 0,    0,   -
777, 6, 0,17
  14,14           ,  62.808747,-136.572054,37886.58427,  0, 1, 3,
0,     65535,                                          , 2, 0,    0,   -
777, 6, 0,17
  15,15           ,  62.807520,-136.574398,37886.58544,  0, 1, 3,
0,     65535,                                          , 2, 0,    0,   -
777, 6, 0,17
  16,16           ,  62.806654,-136.574398,37886.58657,  0, 1, 3,
0,     65535,                                          , 2, 0,    0,   -
777, 6, 0,17
  17,17           ,  62.805932,-136.575961,37886.58764,  0, 1, 3,
0,     65535,                                          , 2, 0,    0,   -
777, 6, 0,17
  18,18           ,  62.804850,-136.576274,37886.58823,  0, 1, 3,
0,     65535,                                          , 2, 0,    0,   -
777, 6, 0,17
  19,19           ,  62.804128,-136.576274,37886.58910,  0, 1, 3,
0,     65535,                                          , 3, 0,    0,   -
777, 6, 0,17
  20,20           ,  62.803839,-136.574867,37886.58952,  0, 1, 3,
0,     65535,                                          , 1, 0,    0,   -
777, 6, 0,17
  21,21           ,  62.803406,-136.572210,37886.59019,  0, 1, 3, 0,
65535,                                        , 2, 0,    0, -777, 6, 0,17
  22,22           ,  62.803046,-136.571429,37886.59086,  0, 1, 3,
0,     65535,                                          , 2, 0,    0,   -
777, 6, 0,17
```