

Shelly Creek Smolt Trap 2011

Introduction:

Shelly Creek begins near the base of Little Mountain and flows northeast into the Englishman River. Shelly Creek enters the Englishman River ~2Km from the ocean and just 200m upstream of the Island Highway Bridge. This channel is about 10Km long; this includes its tributaries and headwater ditches. Shelly Creek has been impacted in its lower reaches by agriculture and urbanization. Resident cutthroat can be found in Shelly Creek up to its headwaters; however trout migration has become limited due to several man made obstructions. Anadromous access ends 1000m from the confluence at a 5m falls.

The 2011 trap project was funded or assisted by the Pacific Salmon Foundation and Department of Fisheries and Oceans as well as various donations of labour and equipment by private citizens.

Objective:

This report covers the installation and operation of the Shelly Creek smolt trap in 2011.

Methods:

The smolt trap was located approximately 200m upstream from the confluence with the Englishman River (Fig. 1). It was placed just downstream of Martindale Road in Parksville at the outflow of a large pond. The objective of this location was to get an idea of anadromous fish use in this channel during high-flow months.

Figure 1. Shelly Creek, Parksville BC Trap Location

DR Clough Consulting
Shelley Creek Smolt Trap
Apr. - Jun. 2011



A V-weir design was chosen for this location. The trap was composed of wood panels placed in the bed of the creek. The panels were 4 feet high and 8 feet long and composed of a 2x4 wooden frame covered with ¼ inch galvanized mesh (Fig. 2). The trap was anchored into the stream bed via sandbags and wooden backstays.

The panels were angled to encourage smolts to enter a 4 inch collection pipe located in the middle of the trap. The pipe discharged into a 3ft x 4ft wooden trap box. The water velocity of Shelly Creek was not high enough to require baffles within the trap box. During trap inspections, the screens were cleaned to prevent build up of debris. Debris build-up can cause increased water pressure on the trap and is a common cause of trap failure.

The trap box was checked daily. The principal operators of this trap were members of the Mid Vancouver Island Habitat Enhancement Society.

Figure 2. Shelly Creek Smolt Trap



Results:

The trap was operated through the spring from April 22nd to June 4th, 2011. Total fish counted through the trap during operation was 2881. The total salmonid smolts counted were 2638 fish. Total trout counted was 37 fish. The peak of smolt migration occurred on May 15th, 2011 (Fig. 3).

Figure 3. Daily Salmonid Smolt Inventory at Shelly Creek

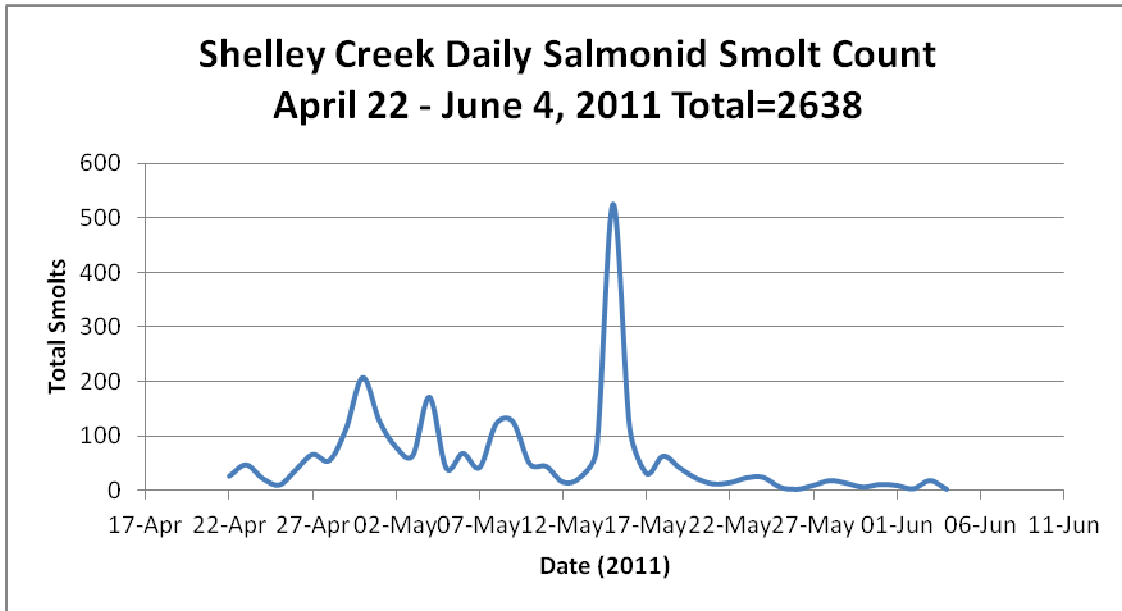
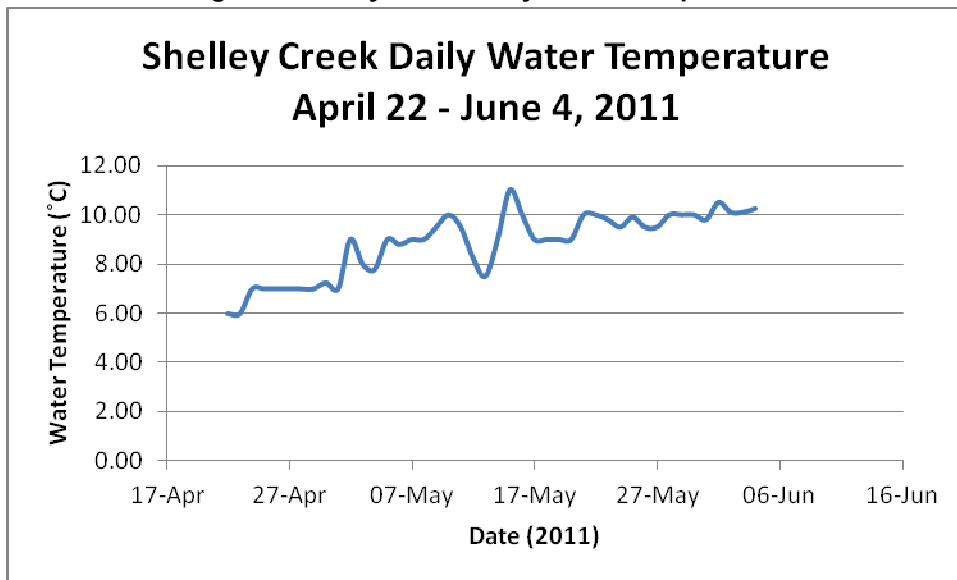


Figure 4 shows daily water temperatures for Shelly Creek. Peak smolt migration occurred on May 15th when the water temperature reached 11°C. The average temperature during this period was 8.83°C.

Figure 4. Shelly Creek Daily Water Temperature



Discussion:

The 2011 smolt trap offered increased stewardship involvement with Shelly Creek. It also offered an opportunity for increased community awareness and education about Shelly Creek and the Englishman River Watershed. In conjunction with involving stewardship groups and increasing community awareness the trap also allowed for increased biological knowledge of Shelly Creek.

This is the first year that the trap has been operational on Shelly Creek. It is important to remember that the smolt data should be collected for at least three years on wild fish to determine a trend in production. A 2012 trap is planned for Shelly Creek.

The total smolts caught in the trap were 2638 fish. Shelly Creek only has approximately 1000m of anadromous fish access with relatively poor spawning habitat conditions. The large number of smolts found indicates that Shelly Creek offers spawning and rearing habitat within its lower reach. It is also indicated that it is heavily used as overwintering habitat during high water by migrating fish from the Englishman River.

Acknowledgments:

The Mid Vancouver Island Habitat Enhancement Society and DR Clough Consulting would like to thank Brad Jackson, Gord Almond, Wally Auerbach, Chuck Sigmund, Ian McGregor, Glenn Rogers, John Eyre and Pat Vek for their diligent work with the Shelly Creek Smolt Trap. The 2011 year of operation could not have been done without the help of dedicated individuals like these. The group is also grateful to Dave Davies, DFO, for assisting with materials, design and construction.

Yours truly,

A handwritten signature in black ink, appearing to read "Dave Clough". The signature is fluid and cursive, with the first name "Dave" being more prominent than the last name "Clough".

Dave Clough, RPBio.

Written by Greg Faasse (F.T.)

Reviewed by Dave Clough, RP Bio.

Shelley Creek 2011 Smolt Data

Date	Water Temp. (°C)	Salmonid Smolts	Trout	Other	Total
22-Apr	6.00	27	2	1	30
23-Apr	6.00	48	3	2	53
24-Apr	7.00	23	0	4	27
25-Apr	7.00	11	0	3	14
26-Apr	7.00	39	0	2	41
27-Apr	7.00	67	0	9	76
28-Apr	7.00	56	2	2	60
29-Apr	7.00	114	0	0	114
30-Apr	7.25	208	0	5	213
01-May	7.00	128	0	6	134
02-May	9.00	80	0	3	83
03-May	8.00	65	0	2	67
04-May	7.80	172	0	2	174
05-May	9.00	42	0	3	45
06-May	8.80	69	2	5	76
07-May	9.00	43	0	1	44
08-May	9.00	123	2	4	129
09-May	9.50	127	0	3	130
10-May	10.00	50	0	2	52
11-May	9.50	45	0	2	47
12-May	8.25	16	0	0	16
13-May	7.50	24	0	1	25
14-May	9.00	73	0	1	74
15-May	11.00	526	20	14	560
16-May	10.00	116	2	30	148
17-May	9.00	32	0	28	60
18-May	9.00	64	0	14	78
19-May	9.00	42	1	13	56
20-May	9.00	23	0	4	27
21-May	10.00	13	0	3	16
22-May	10.00	15	0	2	17
23-May	9.80	24	0	3	27
24-May	9.50	25	0	3	28
25-May	9.90	7	0	1	8
26-May	9.50	3	0	3	6
27-May	9.50	10	0	0	10
28-May	10.00	19	3	1	23
29-May	10.00	14	0	2	16
30-May	10.00	7	0	2	9
31-May	9.80	12	0	1	13
01-Jun	10.50	10	0	6	16
02-Jun	10.10	4	0	6	10
03-Jun	10.10	19	0	3	22
04-Jun	10.25	3	0	4	7
Total	8.83	2638	37	206	2881