

Wild steelhead conservation planning in the Lower Mainland Region

CHILLIWACK RIVER ADULT STEELHEAD SAMPLING PROGRAM

SNORKEL COUNTS

SPRING 2001

prepared for the
Ministry of Water, Land and Air Protection,
Fish and Wildlife Science and Allocation
Surrey, BC



ARL report no. 369-4
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by

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SUMMARY

We conducted four snorkel floats of various sections of the Chilliwack/Vedder River between February 8 and April 12, 2001. The maximum count, 1204 steelhead, was obtained over a 26.5 km section, between April 10 and 12. This is the largest count over the 16 years of record for this system, and a six-fold improvement over the maximum count in 2000 (209 steelhead). As the reaches floated in each year have varied considerably, we compared the number of steelhead observed per kilometre surveyed. Our April 10 – 12 count was again the maximum for 2001 (45.5 fish / km), but was comparable to results for some earlier years. The 2001 count per kilometre represents a substantial increase over our best count in 2000 (5.3 fish / km).

Our surveys provide an index of returns in 2001, rather than an estimate of total escapement. As a stock assessment tool, snorkel floats are limited by a number of constraints. Floaters see only a proportion of fish present, and efficiency is strongly influenced by conditions encountered. Only selected sections are surveyed, and the number of floats conducted is limited by budget constraints and visibility conditions. Floats provide snapshot counts as fish numbers increase and decline over the course of the run. Unless residence time information is available, the proportion of fish also counted on previous surveys is not known. Between-year comparisons are complicated because timing and number of floats, as well as sections surveyed, vary considerably.

Limited observer efficiency data for the Chilliwack River suggest that snorkel floats detect 20 – 30% of fish present. About 20 km of the 61 km length of the system can be floated on a routine basis. More of the drainage can be surveyed under exceptionally favourable discharge and visibility conditions. We obtain a conservative index of adult abundance by ignoring processes that remove fish from the system (kelting and death). The index used is the maximum count per kilometre surveyed for each year assessed.

The snorkel count index suggests a marked increase in 2001 recruitment. Improved abundance provides a useful test of other available stock indices, including juvenile density assessments and measures of angler success. Data for comparison is available from Fall 2001 juvenile surveys, and the 2000/2001 Steelhead Harvest Analysis. Although correlation between the three indices is weak, historical juvenile and creel data, as well as past snorkel float results, suggest a persistent, long-term decline in Chilliwack steelhead recruitment. Although 2001 returns are encouraging, low escapement in previous years will continue to affect Chilliwack drainage steelhead stocks. Continued monitoring, and development of a conservation action framework, are required to ensure long term sustainability.

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Chilliwack River snorkel floats are a portion of ongoing work under the *Lower Mainland Wild Steelhead Conservation Plan Development* project. The *Habitat Conservation Trust Fund* (HCTF) supported program is designed to develop conservation targets and long-term monitoring protocols for steelhead in selected Lower Mainland rivers.

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1 INTRODUCTION

This data report presents results of snorkel float assessments of adult steelhead trout (*Oncorhynchus mykiss*) in the Chilliwack/Vedder River near Vancouver, BC. We conducted four surveys of various portions of the river over 12 field days between February 8 and April 12, 2001. Although snorkel floats do not provide a total escapement estimate, they furnish a useful index of stock performance.

1.1 Background

The Chilliwack system supports the largest population of winter steelhead trout in the Lower Mainland region, and the most intensive recreational steelhead fishery in British Columbia. Habitat degradation and low steelhead ocean survival have raised concerns over the long-term management of the stock. The BC Ministry of Water, Land and Air Protection (BC MWLAP) has managed steelhead in the system as an ‘augmented’ run since 1980. Augmented management refers to the release of hatchery steelhead for the purpose of providing a harvest fishery. Returns of adult hatchery fish are not intended to contribute to natural production, although spawning of hatchery fish does occur (Nelson *et al.* in prep.).

Stock health concerns, coupled with heavy recreational use and the hatchery program, require active management of Chilliwack steelhead. In 1997, regional biologists selected the system as one of six Lower Mainland steelhead streams with pressing conservation management concerns. To address these concerns, the *Lower Mainland Wild Steelhead Conservation Plan Development* program was undertaken, with *Habitat Conservation Trust Fund* (HCTF) support.

The program is designed to develop escapement targets and annual monitoring programs for Chilliwack steelhead. Targets are based on estimates of total system productive capacity and provide a concrete management objective, in terms of fry densities or returning adults. Annual monitoring of abundance is required to measure performance against conservation targets. Juvenile surveys can be used to estimate fry standing stock and measure fry habitat utilisation. These data can be used to predict smolt and adult production using survival assumptions, and to back-calculate adult escapement (the number of parents required to produce observed fry densities). Adult assessments are useful because conservation limits are most often defined in terms of returning adults.

To suggest preliminary escapement objectives, we collated available stock status information and modelled available freshwater habitat using a map-based tool

(van Dishoeck *et al.* 1998). Adult snorkel counts and juvenile density surveys have been conducted in the Chilliwack drainage over the past two decades. While this information provides baseline steelhead population data, further research was necessary to develop robust, long-term monitoring protocols. In establishing index programs, both juvenile and adult survey techniques are being explored.

1.2 Snorkel floats

Snorkel counts provide an index of steelhead abundance, rather than an escapement estimate because swimmers miss some fish, some sections of river are not floated, and the entire period of steelhead migration is not assessed. Additionally, we cannot determine how many of the fish seen are unique individuals (as opposed to repeat counts of fish observed on previous floats). Escapement estimates using the area under the curve methodology (AUC; Hilborn *et al.* 1999) can be developed if the following data are available:

1. observer efficiency: the proportion of fish missed in sections floated;
2. fish numbers in sections not floated;
3. the number of fish present before and after floats are done, and;
4. residence time, the average time spent by fish in the survey area.

These parameters can be estimated using a radio telemetry program in conjunction with snorkel floats. Radio tagged fish are also externally marked. The number of marks seen by floaters is compared with the number of marks known to be present (from tracking). The proportion of fish in sections not surveyed can be extrapolated from tracking data. Survey life and a run-timing curve are also estimated from fish capture and radio tracking information.

A radio telemetry project was completed in the Chilliwack system in 1999 and 2000 (Nelson *et al.* in prep). Concurrent snorkel floats were conducted in 2000 (van Dishoeck 2001). However, development of population estimates from these data has proven complex. No Chilliwack radio tracking was conducted in 2001. The AUC method has been applied to snorkel and telemetry data for the Cheakamus River, a nearby southern BC steelhead stream, in 2000 and 2001 (Korman and Ahrens 2000, Korman *et al.* 2002).

2 METHODS

2.1 Study area

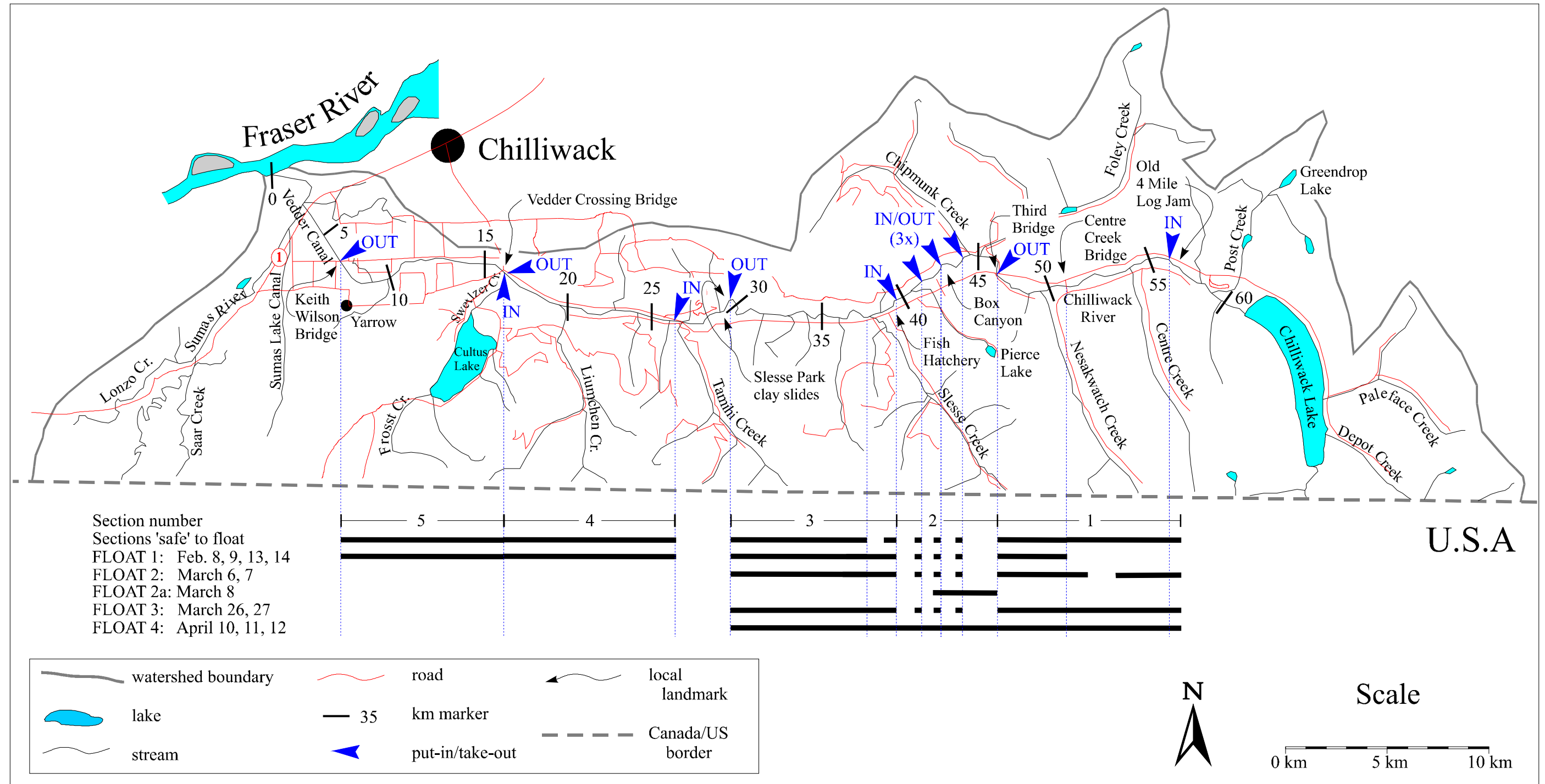
The Chilliwack/Vedder River system is located east of Vancouver. The mainstem river originates in Chilliwack Lake, with a portion of the watershed south of the Canada-US border. The watershed has a total drainage area of about 1,877 km² and is largely of the Coastal Western Hemlock bio-geoclimatic zone (Northwest 1994, MoF 1992). Physiographically, the drainage straddles the transition between the Fraser Lowlands region and the Cascade Mountains, and about half is over 1,100 m elevation (Northwest 1994, McLean 1980). In addition to wild and hatchery stocks of steelhead, the Chilliwack system supports significant populations of nine other salmonids, as well as a diverse assemblage of other fish species (van Dishoeck *et al.* 1998).

A map of the Chilliwack/Vedder drainage is provided in Figure 2.1. River kilometres indicated are distance upstream of the confluence with the Fraser River and are used throughout this report. Put-in and take-out locations for floats are also indicated, as are names of local landmarks relevant to counts. Bars below the map represent sections considered ‘safe to float’ on a routine basis, at usual spring discharge. Sections covered by the four 2001 floats are also indicated. Note that surveys in 2000 covered only the ‘safe to float’ sections; 2001 floats included some areas not surveyed in 2000.

The mainstem Chilliwack River, downstream of Chilliwack Lake, extends approximately 61 km to its confluence with the Fraser River. While there are numerous tributary streams, most are steep, with short anadromous reaches. The majority of steelhead spawning and rearing habitat is located in the mainstem river, and associated side channels. Slesse Creek is a major tributary stream with some anadromous habitat. Downstream of Slesse Creek, the river is characterised by generally large channel widths, a braided, meandering pattern and high substrate mobility. Upstream of Slesse Creek the mainstem river is more confined and channel variation between years is much lower.

Conditions in Slesse Creek, and at two bank failures (“clayslides”) on the mainstem critically affect water clarity for floats. The clayslides are located near river kilometre 29.5 (Figure 2.1). High flows or other changes that disturb sediment (rainfall, freeze/thaw cycles) preclude snorkel counts below this point. Additionally, steelhead returning to the system after the onset of spring freshet cannot be counted, due to high flows and poor visibility throughout the system.

Figure 2.1. Map of the Chilliwack/Vedder watershed study area, including river kilometres, put-in/take-out locations and selected local landmarks. Reaches floated are indicated by black bars below the map.



2.2 Discharge data

Discharge critically affects snorkel floats. Usually, low flow is associated with good visibility, and turbidity increases with discharge. Higher flows also produce more bubbles, which make it hard to see fish, and swimmers move more quickly, reducing efficiency. For example, downstream of the clay slides, discharge and visibility conditions were suitable for only one, early season float (Section 2.3.1). Thereafter, turbidity was so high that we did not consider floats viable. Discharge data for the Chilliwack River are available from Water Survey of Canada (WSC) gauges 08MH001 “Chilliwack River at Vedder Crossing” and 08MH103 “Chilliwack River above Slesse Creek”.

2.3 Sampling methodology

We enumerated all fish seen by snorkel floats of various sections of the Chilliwack River. Methods were identical to our 2000 floats (van Dishoeck 2001). Surveys conducted in previous years have used similar methods, have covered similar reaches (Appendix III), and are assumed to be comparable.

A team of three swimmers, equipped with dry suits and masks with snorkels, conducted floats. A safety driver met the crew at pre-arranged meeting points. Swimmers split the width of the river into three lanes, and attempted to maintain lanes and stay abreast. We stopped periodically, where we were unlikely to miss or disturb fish, to regroup, compare counts and record numbers. Total counts were determined by consensus to prevent double counts (fish counted by two swimmers). Numbers were recorded on waterproof slates and later relayed to the safety driver. In pools with large numbers of fish, we often conducted two counts. Recounts were recorded separately. For analyses, we used the highest count. We saw steelhead, resident rainbow trout, Dolly Varden/bull trout, whitefish and suckers. We assumed that *O. mykiss* smaller than 50 cm fork length were river-resident rainbow trout, and that those greater than 50 cm were anadromous steelhead. On our final float (April 10-12), we recorded hatchery or wild origin for fish that could be distinguished. Differentiation between Dolly Varden char and bull trout was often difficult, and we did not identify suckers to species.

Measurements of flow stage were taken at the Water Survey of Canada gauge in the Box Canyon (WSC gauge 08MH103). Visibility was estimated as the distance between two swimmers at the extent of fish detection. We also recorded the weather for each day of floats.

2.3.1 Snorkel float sections

We divided the floatable reaches of the Chilliwack River into five sections, based on our 2000 float experience (Table 2.1). Each section took a day to complete. In 2000, only spot checks were conducted in the canyon section (“2a”). When spot checks are done, they can be completed on the same day as the Section 1 float. In 2001, we successfully floated the entire canyon section (“2”) on a trial basis. Physical characteristics of sections are described in van Dishoeck (2001).

Table 2.1. Chilliwack River float sections.

| | Put-in | | Take-out | Section length (km) |
|-----|---------------------------------------------|----|---------------------------------|----------------------------|
| 1. | Upper Log Jam (56.0 km) | to | Third Bridge (46.5 km) | 9.5 |
| 2. | Third Bridge (46.5 km) | to | Hatchery Intake (39.5 km) | 7.0 |
| 2a. | Canyon spot checks (42.5, 44.0 and 44.8 km) | | | ~ 0.5 |
| 3. | Hatchery Intake (39.5 km) | to | Slesse Park Clayslide (29.5 km) | 10.0 |
| 4. | Tamihi Bridge (26.4 km) | to | Vedder Crossing (15.5 km) | 10.8 |
| 5. | Vedder Crossing (15.5 km) | to | Keith Wilson Bridge (6.2 km) | 9.3 |

Values in brackets indicate river kilometre.

Due to visibility and discharge conditions encountered, not all sections were surveyed on all floats. As noted, Sections 4 and 5 are downstream of clayslides and can only be surveyed under unusual clarity conditions. Upstream of the Upper Log Jam, the river is too dangerous to float. Similarly, the section between the Slesse Park Clayslide and Tamihi Bridge, which includes the Tamihi Rapids, was not surveyed. Surveys completed in 2001 are summarised in Section 3 of the report and are indicated on Figure 2.1.

2.4 Analysis

We compared results between 2001 surveys, and with data from our 2000 floats. Results were also compared with available historical snorkel data. As different reaches were surveyed in each year, and on each of our floats, we standardised counts by distance floated. We calculated fish observed per kilometre of stream surveyed by summing total steelhead observed on a given survey and dividing by the total distance swum¹. Often, a survey was completed over several days.

¹ As opposed to averaging steelhead/km values for each section reported.

For 2001, we also reported results for a “comparable reach” surveyed on most float - the 20 km section including: Upper Log Jam to Third Bridge, the three canyon spot checks, and Hatchery Intake to the clayslides (Table 2.1; Figure 2.1).

Results were also compared to other available indices of steelhead abundance, including the provincial Steelhead Harvest Analysis (SHA) and Chilliwack River juvenile density surveys. The SHA is an annual survey of angler effort and success conducted since 1967/68. Results are based on questionnaires mailed to a subset of steelhead anglers, and are known to overestimate effort and catch. Results are also affected by changes in regulations and angler behaviour. Data are considered most consistent after 1979/80, when imposition of catch and release regulations began (as recapture of released fish may affect results). The SHA is based on the fiscal year, ending March 31. In consequence, March and April catch from the same calendar year is reported in different SHA periods.

Juvenile density surveys have been completed in the Chilliwack drainage for the years 1983, 1985-1991, 1993-1996, and 1998-2001. The surveys have focussed on the assessment of fry densities in shallow habitats suitable for juvenile steelhead. Mean densities provide an index of juvenile abundance. We compared these data with snorkel float and SHA data to examine the utility of juvenile surveys as an index of adult escapement the preceding spring.

We compared standardised maximum snorkel float results with SHA results and pooled whole river fry data. We used wild and hatchery steelhead catch per angler day (CpAD) from the SHA, as both wild and hatchery fish are observed on floats. Most adult steelhead return to the Chilliwack River before March 31, so we used creel data for the fiscal year ending in the year snorkel surveys occurred (2001 float results were compared to creel data from fiscal 2000/01). For juvenile data, we used measured values for fry², pooled over all mainstem river sites sampled

² ‘Adjusted densities’, obtained using depth/velocity use curves were not used, because recent changes to use curves could not be applied to historical data.

3 RESULTS

3.1 Discharge data

Discharge information for the Chilliwack River, for 1998 – 2001, is graphed in Figures 3.1 and 3.2. Data are not available for the Vedder Crossing gauge for May 1998 through May 1999. Circles mark discharge on float days.

Figure 3.1. Discharge data for the Chilliwack River at Vedder Crossing, 1998-2001.

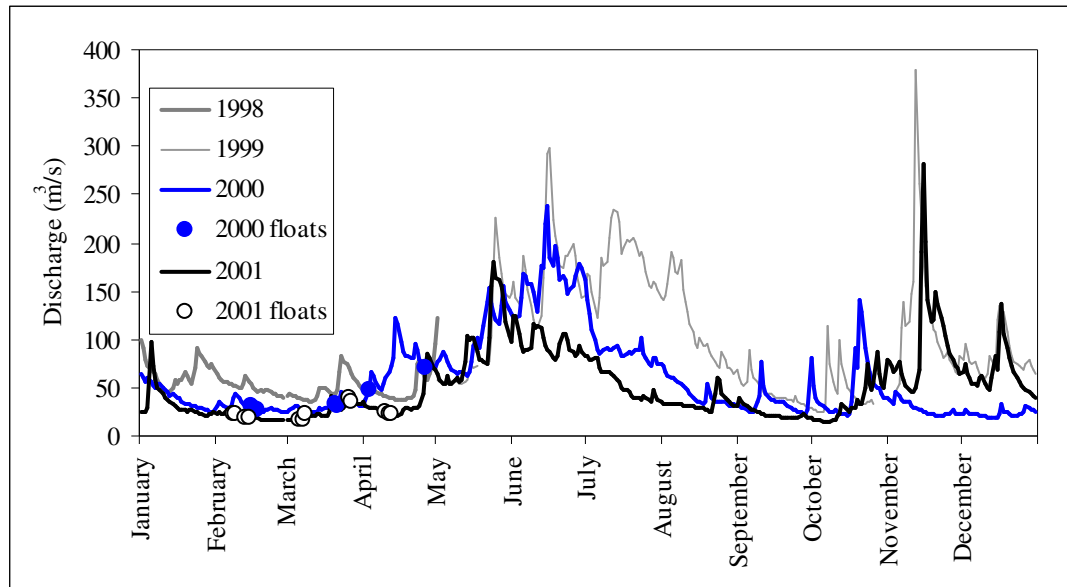
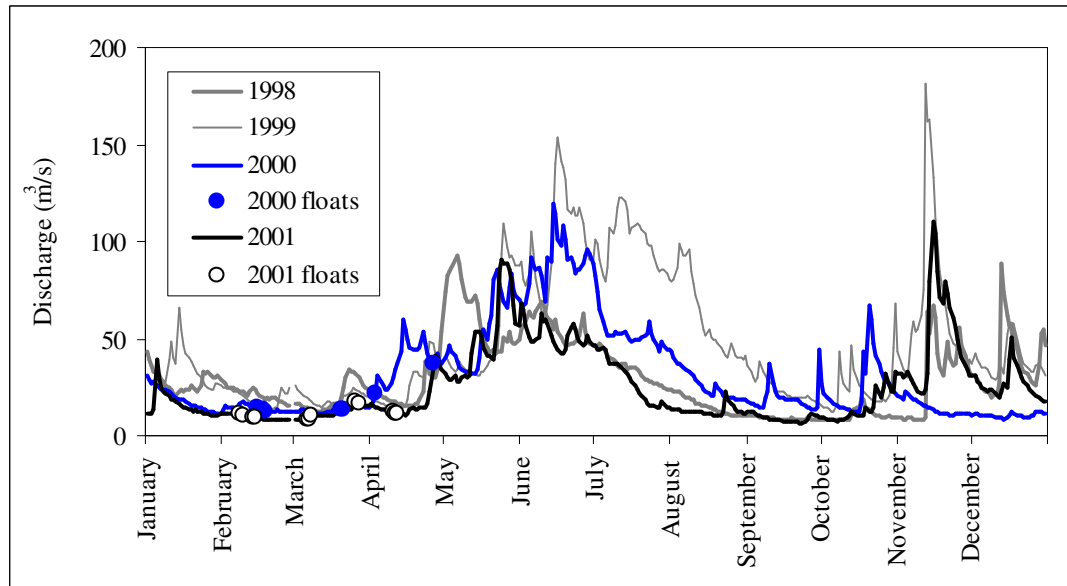


Figure 3.2. Discharge data for the Chilliwack River above Slesse Creek, 1998-2001.



In 2001, discharge remained unusually low and stable throughout the period of snorkel floats. Discharge was slightly elevated for Float 3 on March 26 and 27 (see Section 3.2). Discharge in 2001 was marginally lower than over the period of floats in 2000. Freshet (and the end of useful snorkel floats) usually arrives in late April or May each year. Flows remained stable until after our last float in 2001. In contrast, in 2000, a high flow event occurred before the final float.

3.2 2001 snorkel float results

3.2.1 Sections surveyed

We completed four floats of the Chilliwack River system over the course of twelve field days in 2001. Floats were conducted in mid-February, early March, late March, and mid-April. Discharge and visibility conditions downstream of the Slesse Park clayslides precluded floats of this lowermost section after February. Otherwise, conditions experienced in 2001 were favourable for counts. Surveys completed are summarised in Table 3.1.

Table 3.1. Snorkel float surveys completed in 2001.

| | Date | Put-in | | Take-out |
|-----|-------------|---------------------------------------------------------------|----|---------------------------------|
| 1. | Feb. 9 | Centre Creek Bridge (50.5 km) | to | Third Bridge (46.5 km) |
| | | <i>plus three canyon spot checks (42.5, 44.0 and 44.8 km)</i> | | |
| | Feb. 8 | Hatchery Intake (39.5 km) | to | Slesse Park Clayslide (29.5 km) |
| | Feb. 14 | Tamihi Bridge (26.4 km) | to | Vedder Crossing (15.5 km) |
| | Feb. 13 | Vedder Crossing (15.5 km) | to | Keith Wilson Bridge (6.2 km) |
| 2. | March 7 | Upper Log Jam (56.0 km) | to | Centre Creek intake (53.4 km) |
| | | Centre Creek outlet (51.7 km) | to | Third Bridge (46.5 km) |
| | | <i>plus three canyon spot checks (42.5, 44.0 and 44.8 km)</i> | | |
| | March 6 | Hatchery Intake (39.5 km) | to | Slesse Park Clayslide (29.5 km) |
| 2a. | March 8 | Third Bridge (46.5 km) | to | Chipmunk Pool (43.8 km) |
| 3. | March 27 | Upper Log Jam (56.0 km) | to | Third Bridge (46.5 km) |
| | March 26 | Hatchery Intake (39.5 km) | to | Slesse Park Clayslide (29.5 km) |
| | | <i>plus three canyon spot checks (42.5, 44.0 and 44.8 km)</i> | | |
| 4. | April 11 | Upper Log Jam (56.0 km) | to | Third Bridge (46.5 km) |
| | April 12 | Third Bridge (46.5 km) | to | Hatchery Intake (39.5 km) |
| | April 10 | Hatchery Intake (39.5 km) | to | Slesse Park Clayslide (29.5 km) |

On Float 1, we started at the Centre Creek Bridge (50.5 km) because flows above this point were very low, and no fish were expected so early in the season. The section below Tamihi Creek was surveyed once only in 2001, on this first float.

On Float 2, we began at the Upper Log Jam, but did not survey the 1.7 km section between the Centre Creek watershed restoration project (WRP) intake (53.4 km) and the WRP outlet (51.7 km), again due to low flows. We conducted canyon spot checks on March 7, and attempted the entire canyon section (between Third Bridge and the Hatchery Intake) on March 8. However, we abandoned the March 8 float at Chipmunk Creek (43.8 km) due to poor visibility ('Float 2a').

Float 3 covered all usual sections upstream of the clayslides, with spot checks conducted in the canyon.

On Float 4, we again surveyed all usual sections upstream of the clayslides. However, we surveyed the complete canyon section rather than conducting spot checks. In the canyon only, we used three swimmers plus a backup swimmer, who followed the regular crew and recorded numbers separately. The canyon contains significant hazards and should be surveyed at favourable discharges only.

3.2.2 Steelhead counts

Total numbers of steelhead observed during 2001 surveys are summarised in Table 3.2. On Float 4, we identified hatchery or wild origin for 156 of the fish observed; of these, eight (5%) were hatchery steelhead.

Table 3.2. Chilliwack River snorkel count: steelhead results, February - April 2001.

| Float | Dates | Number of steelhead | Length of reach floated | Steelhead per km surveyed |
|-------|-----------------------|---------------------|-------------------------|---------------------------|
| 1. | February 8, 9, 13, 14 | 458 | 34.7 km | 13.2 |
| 2. | March 6 – 8 | 697 | 20.6 km | 33.8 |
| 3. | March 26 – 27 | 415 | 20.0 km | 20.8 |
| 4. | April 10 – 12 | 1204 | 26.5 km | 45.4 |

Float conditions and other species observed are presented Table 3.3. In Table 3.4, results are standardised to the 20 km “comparable reach” that includes Upper Log Jam to Third Bridge, the three canyon spot checks, and the Hatchery Intake to the clayslides. Section by section results for 2001 surveys are included as Appendix I.

Table 3.3. Chilliwack River snorkel count results, February - April 2001. See Figure 2.1 for sections floated.

| Float | Dates | Discharge ¹ (m ³ /s) | Stage ² (m) | Visibility ³ (m) | Length of reach floated ⁴ | Steelhead | Resident rainbow trout | Dolly Varden | Bull trout | Cutthroat trout | Whitefish | Suckers |
|-------|----------------|-----------------------------------------------|---------------------------|--------------------------------|--------------------------------------------|-------------|------------------------------|-----------------|---------------|--------------------|-----------|---------|
| 1. | Feb. 8,9,13,14 | 19.0 – 22.7 | 0.72 | 1 – 15 | 34.7 km | 458 | 123 | 16 | 8 | 1 | 277 | 155 |
| 2. | Mar. 6 - 8 | 16.3 – 22.0 | 0.60 | 3 – 15 | 20.6 km | 697 | 289 | 37 | 2 | 0 | 102 | 0 |
| 3. | Mar. 26 - 27 | 35.7 – 28.9 | 0.95 | 5 – 8 | 20.0 km | 415 | 175 | 17 | 0 | 0 | 141 | 0 |
| 4. | Apr. 10 - 12 | 23.1 – 24.9 | 0.75 | 5 – 10 | 26.5 km | 1204 | 432 | 36 | 1 | 32 | 393 | 0 |

Notes: 1. range of mean daily discharge experienced over course of complete float, (at WSC station 08MH001 Chilliwack River at Vedder Crossing).
 2. stage measured at staff gauge in Box Canyon.
 3. range of visibility experienced over course of complete float.
 4. summed length of subsections surveyed over course of complete float.

Table 3.4. Chilliwack River snorkel count results, February - April 2001. Comparable reach¹.

| Float | Dates | Discharge (m ³ /s) | Stage (m) | Visibility (m) | Length of reach floated | Steelhead | Steelhead per km (20 km section) | Resident rainbow trout | Dolly Varden | Bull trout | Cutthroat trout | Whitefish |
|-------|--------------|----------------------------------|--------------|-------------------|-------------------------------|------------|----------------------------------------|------------------------------|-----------------|---------------|--------------------|-----------|
| 1. | Feb. 8 - 9 | 21.9 – 22.7 | 0.72 | 4 – 15 | 14.5 km ² | 373 | 18.7 | 120 | 15 | 8 | 1 | 81 |
| 2. | Mar. 6 - 7 | 16.3 – 17.2 | 0.60 | 5 – 15 | 18.3 km ³ | 649 | 32.5 | 240 | 31 | 2 | 0 | 81 |
| 3. | Mar. 26 - 27 | 35.7 – 28.9 | 0.95 | 5 – 8 | 20.0 km | 415 | 20.8 | 175 | 17 | 0 | 0 | 141 |
| 4. | Apr. 10 - 12 | 23.1 – 24.9 | 0.75 | 5 – 10 | 20.0 km | 966 | 48.3 | 259 | 26 | 1 | 12 | 324 |

Notes: 1. “Comparable reach” includes Upper Log Jam to Third Bridge, three canyon spot checks, and Hatchery Intake to clayslides (Figure 2.1).
 2. A 5.5 km section of the “comparable reach” was not surveyed on February 8 – 9, but steelhead numbers in this section assumed = zero.
 3. A 1.7 km section of the “comparable reach” was not surveyed on March 6 – 7, but steelhead numbers in this section assumed = zero.

On Float 1, the uppermost 5.5 km of the “comparable reach” was not surveyed, but we assume that no steelhead were present so early in the run. Similarly, on Float 2, a 1.7 km section of the “comparable reach” with very low flows was not surveyed. We again assume that no steelhead were present. The assumption is supported for Float 2: no fish were seen during swims of the sections immediately above and below the area not swum. Calculations of steelhead observed per kilometre surveyed for the standardised reach are based on a 20 km section, rather than the distance actually swum.

Counts increased between Floats 1 and 2, both in terms of total numbers of fish and in fish per km surveyed. This was expected as the spawning run progressed. However, counts decreased on Float 3. This was likely the result of reduced observer efficiency. Discharge increased, and visibility decreased at the time of the float. However, reduced counts may have resulted from kelts leaving the system³, deaths, or emigration to sections not surveyed. The 2001 maximum count occurred on Float 4 (1204 fish, 45.4 fish / km). Note that this survey included the entire canyon section between Third Bridge and the Hatchery Intake. On earlier floats, only spot checks were done in this section. A total of 238 steelhead were seen in canyon areas not usually floated. Therefore, the standardised “comparable reach” maximum count was 966 fish (48.3 fish / km).

Results for Float 4 also include 51 steelhead observed under a log jam not usually assessed. At river kilometre 30, the mainstem divides into two braids. The log jam is located in the northern braid, which was too dangerous to survey in 2000 (all swims were of the south channel). In 2001, the north braid was safe to survey, but the log jam could be assessed on Float 4 only. Such changes in observer efficiency, related to discharge and visibility conditions, are expected to occur between floats. However, the observation of these fish underscores this limitation of the technique and suggests that steelhead may often take cover in features usually too dangerous to assess. The standardised “comparable reach” count for Float 4, with the 51 log jam fish removed, was 915 fish (45.8 fish / km).

³ Evidence from radio telemetry tracking in 1999 and 2000 suggests that kelts begin to leave the Chilliwack system in March, although the vast majority of fish did not leave until May (Nelson *et al.* in prep.).

4 DISCUSSION

Adult surveys provide a useful index of steelhead abundance, although results are dependent on float conditions. Multiple floats are required each season to monitor the progress of the spawning run. Chilliwack run timing and turbidity conditions are highly variable, so a single float might miss the run peak or be washed out by poor visibility. Index quality is expected to vary from year to year, based on conditions encountered. Analysis of survey results must recognise limitations inherent to the technique. For example, floats downstream of the Slesse Park clayslides are unlikely in most years, due to the suspended sediment levels usually present. However, about half of the anadromous length is below this point, and large numbers of steelhead hold and spawn in this habitat (Nelson *et al.* in prep.).

These constraints apply to 2001 results. Early season surveys suggested a strong recruitment year, but the maximum count was not until the final float. The exceptionally high count, relative to past surveys, probably represents increased escapement, but may also reflect improved sampling conditions. Additionally, fish arriving after the last float were not assessed, as conditions precluded further surveys. Only one count of the lower river section was conducted, very early in the season. The extent of steelhead use of this reach in 2001 is unclear.

4.1 Observer efficiency

. Radio telemetry programs are useful to determine the proportion of fish that are seen. Data from combined floats and telemetry surveys in 2000 suggested a mean observer efficiency of 23% (van Dishoeck 2001). However, efficiency varied widely, with none of the available tags seen in some sections, and all seen elsewhere. Unsurprisingly, higher efficiency was associated with low discharge, clear conditions early in the season.

The 2000 efficiency estimate included data from the more turbid lower reach, downstream of the clayslides. Although data were limited, mid-season results for the sections above the clayslides, suggested efficiency of about 30% at low, clear flows. Application of this estimate to the maximum count for 2001 suggests that about 4000 fish were present, in the section surveyed, between April 10 and 12, 2001 (1204/30%). This rough estimate is for the survey section only, for a two day period. The total 2001 run size was larger, as the estimate does not include other sections, or fish leaving before or arriving after the survey.

Combined snorkel and telemetry surveys have also been conducted on the Cheakamus River, in 2000 and 2001. Raw observed versus detected tag results suggest mean observer efficiency for that river of between 34 and 41% (Korman and Ahrens 2000, Korman et al. 2002). Higher efficiency is expected for the Cheakamus River, as it is smaller and less turbulent than the Chilliwack River. Korman et al. (2002) and Korman (2002) develop more rigorous models of observer efficiency for the Cheakamus River.

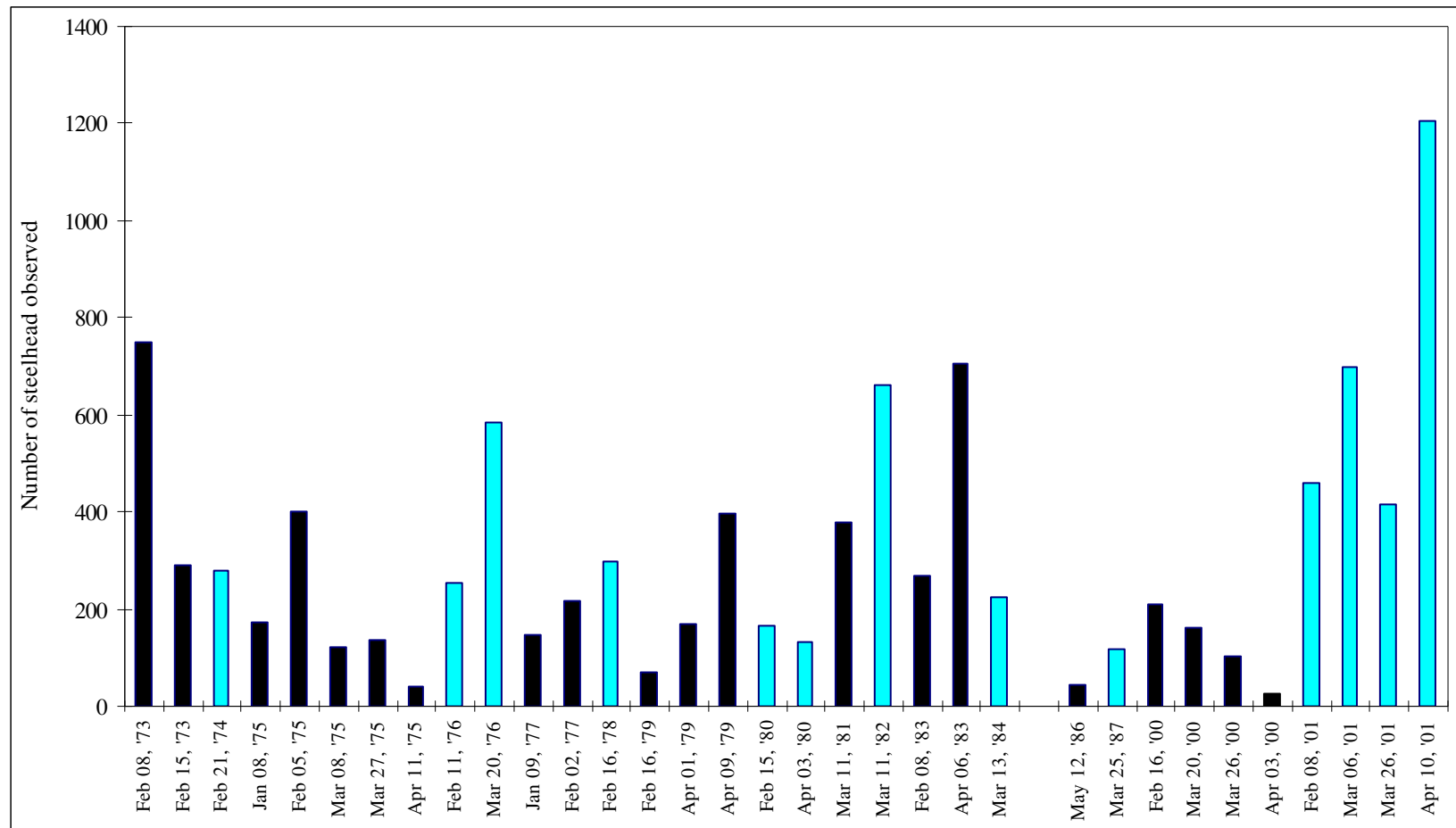
4.2 Comparison with previous snorkel float results

Snorkel float results suggest that the 2001 steelhead return to the Chilliwack River was exceptional in comparison to others years surveyed. The maximum count in 2001 was 1204 fish, six times greater than our best count the previous year (209 fish). However, the length of the reaches covered was markedly different, so we standardised maximum counts by distance surveyed to permit comparisons (Section 4.2.1). Interestingly, the 2001 maximum occurred at the end of the season (April 10 – 12), while the highest count in 2000 was obtained between February 15 and 18.

Historical data for comparison are available from 25 Chilliwack River floats conducted over the 15 year period between 1973 and 1987. Variability is extreme, ranging between 39 (April 11, 1975) and 751 fish (February 8, 1973). Much of the variability is the result of huge differences in the length of reaches surveyed. Results are also affected by changes in escapement, as well by float conditions, time of survey, and number of surveys per year. Within-year variability (for years with multiple surveys) indicates the importance of repeat counts over the progress of the run, as both fish numbers and float conditions change over time. Confidence in data for years with only one survey is low.

All available data for Chilliwack River snorkel floats are presented in Figure 4.1. Adjacent bars of the same colour represent floats conducted in the same year. No floats were conducted between 1988 and 1999, and these years are not included on the graph. Detailed float data are provided in Appendices II and III. Appendix III includes schematic representation of sections floated on each survey.

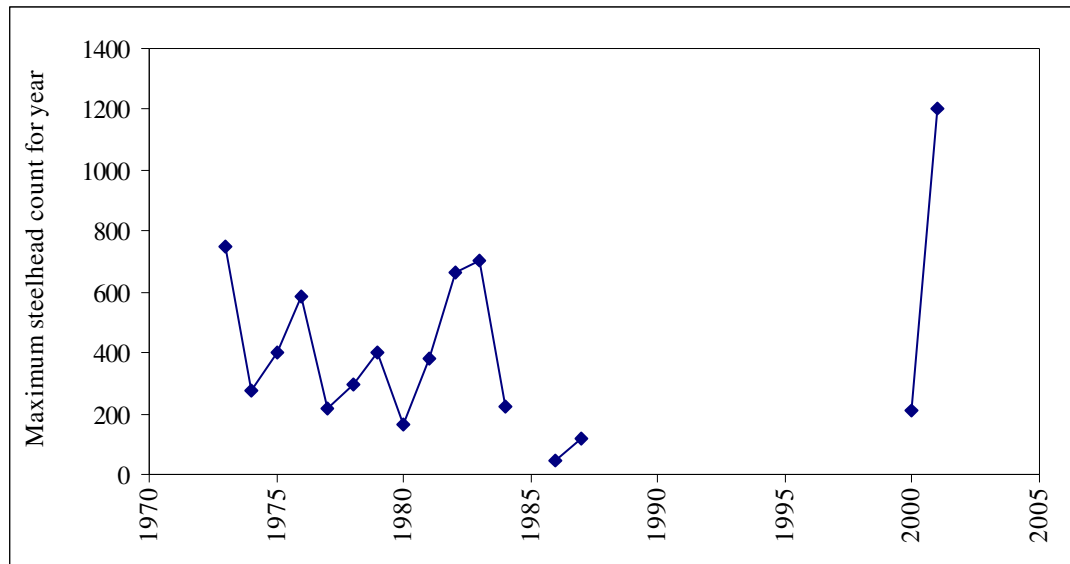
Figure 4.1. Chilliwack River snorkel counts – 1973 through 2001.



Note: Adjacent bars of the same colour indicate swims completed in the same year.
 There is no gap to indicate 12 years with no floats (1988 and 1999).
 See Appendix II for full details, and Appendix III for the reaches floated in each year.

The highest count obtained for each of the years sampled is presented in Figure 4.2. No attempt is made to account for differences in float timing or sections surveyed. High variability and the lack of recent information is evident from the figure. As noted, results for some years are based on a single float only.

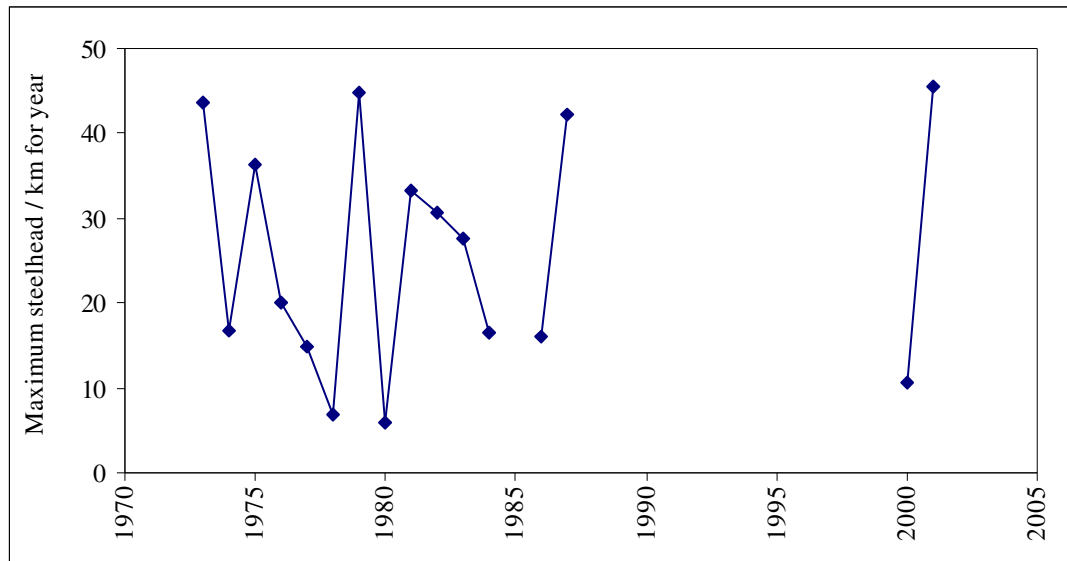
Figure 4.2. Maximum snorkel counts for years sampled: 1973 through 2001.



4.2.1 Steelhead per kilometre of stream

Maximum standardised counts may not result from the maximum count for a given year, due to differences in section lengths. During some sampling events, spot checks of known holding pools resulted in very high counts over short sections of river: standardised counts for these surveys are very high. For example, on March 8, 1975, 120 fish were observed in pools totalling less than 1 km of river. In contrast, other surveys included all water between such pools, and so include long sections of relatively unsuitable steelhead habitat. Standardised counts in these situations are much lower, but may not represent any change in the true escapement.

Figure 4.3 presents maximum standardised counts for each year sampled. Results from 1975 spot checks are not included. Lengths of surveyed reaches were estimated in some cases for which explicit distances were not recorded. For February 16, 1979, only results upstream of Slesse Creek were included, because section length for the lower section could not be estimated.

Figure 4.3. Maximum number of steelhead observed / km surveyed: 1973 - 2001.

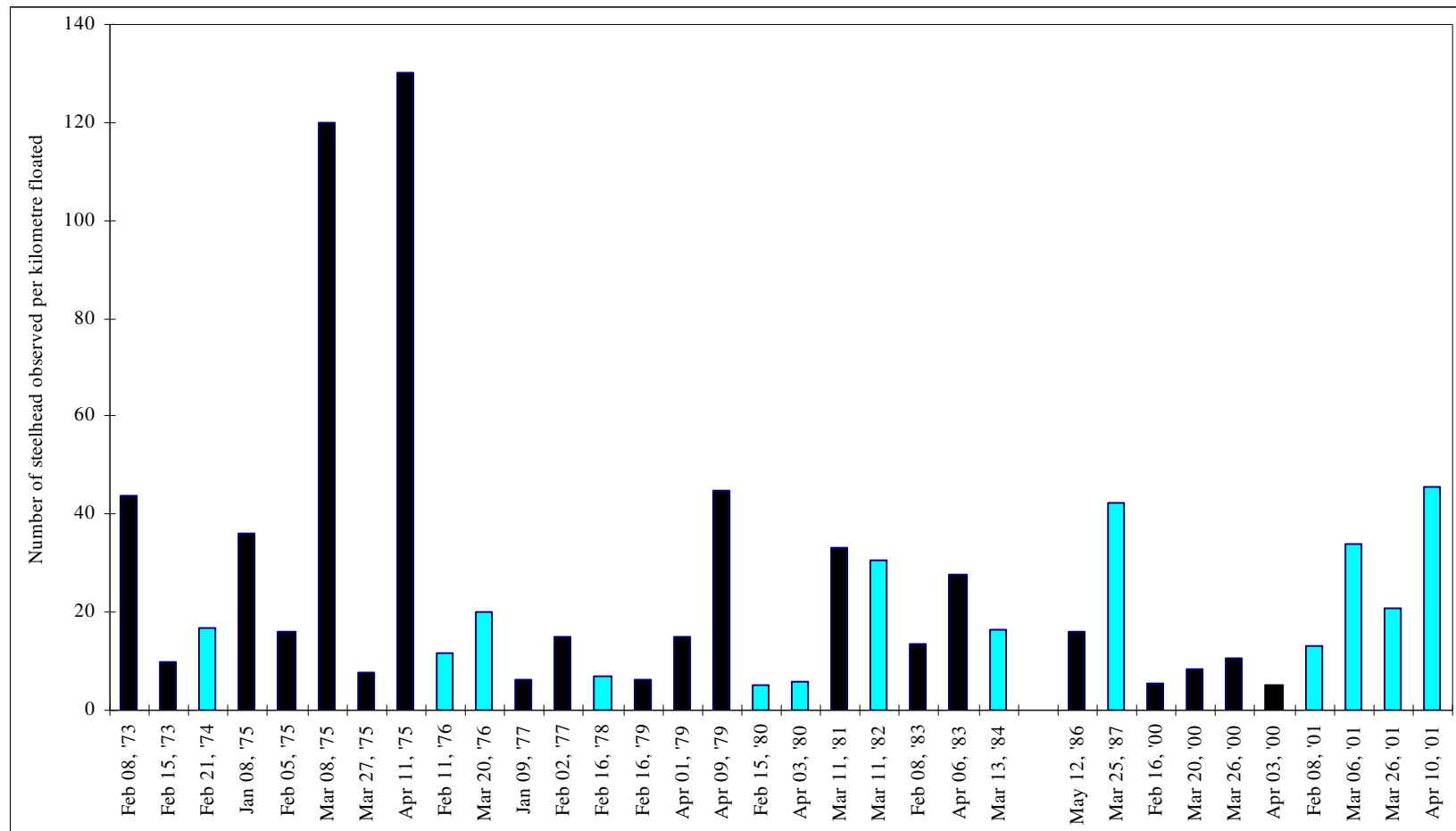
Notes: *not including* 1975 spot checks.

Survey length estimated for February 16, 1979, April 1, 1979 and March 11, 1981.

Maximum standardised counts are also highly variable. As for maximum counts, some of this variability is the result of sampling error (float conditions and timing, sections surveyed, number of surveys per year). However, standardised counts should be more representative of changes in escapement than are raw counts.

Standardised results for all floats conducted to date are presented in Figure 4.4. Results for 2001 compare favourably with most other floats. Two 1975 values are exceptionally high because very short, productive reaches were swum (spot checks as described).

Figure 4.4. Steelhead observed per kilometre of river surveyed; Chilliwack River, 1973 through 2001.

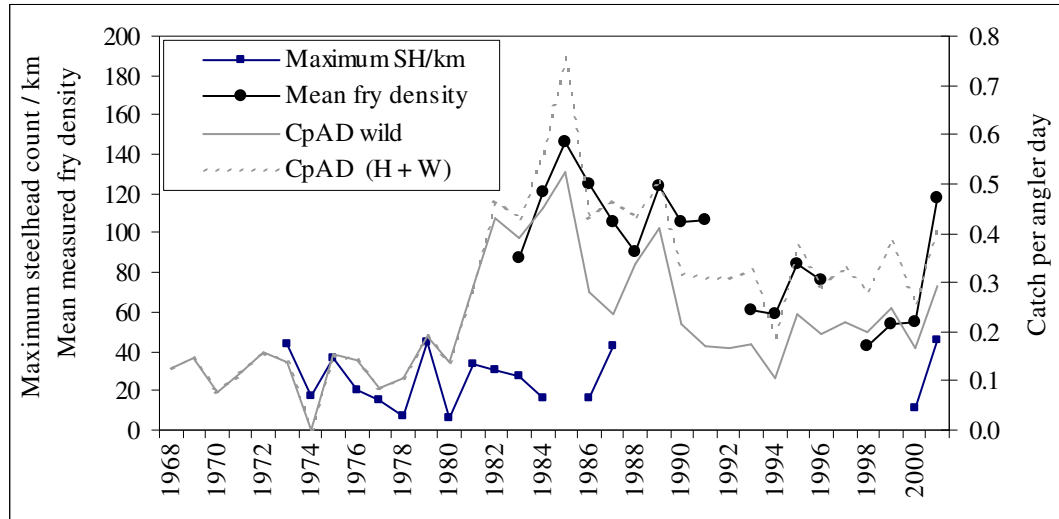


Notes: March 8 and March 11, 1975 were spot checks of good holding areas.
 The reach length surveyed is estimated for February 16 and April 1, 1979 and for March 11, 1981.
 There is no gap to indicate 12 years with no floats (1988 and 1999).

4.3 Correlation with other indices of abundance

Maximum standardised snorkel count data are compared with pooled whole river measured fry results and with SHA results in Figure 4.5. SHA capture data for both wild and hatchery fish are included because both are counted during floats.

Figure 4.5. Whole river fry densities, maximum count/km, and catch per angler day.



Only six years of data are available with both juvenile and snorkel float indices of abundance. Although this data set is too limited for rigorous comparisons, agreement between the two indices to date has been very poor (Figure 4.6). Correlation is somewhat weaker if densities are adjusted using the weighted useable area procedure (data on file). For the four years of ARL surveys, juvenile and adult data overlap in two years only, 2000 and 2001. Between 2000 and 2001, spring adult counts increased dramatically, suggesting sharp improvements in escapement over previous years. This increased abundance appears to have resulted in higher juvenile steelhead numbers, as sampled by juvenile surveys.

More years of data are available to compare snorkel floats with captures reported to the Harvest Analysis. However, much of the concurrent data are from years prior to the imposition of catch and release regulations in 1979/80. Correlation between the two indices, when all years of data are included, is poor. However, the correlation is worse when only data after 1979/80 are included (Figure 4.7).

Figure 4.6. Whole river mean fry densities and maximum steelhead count / km.

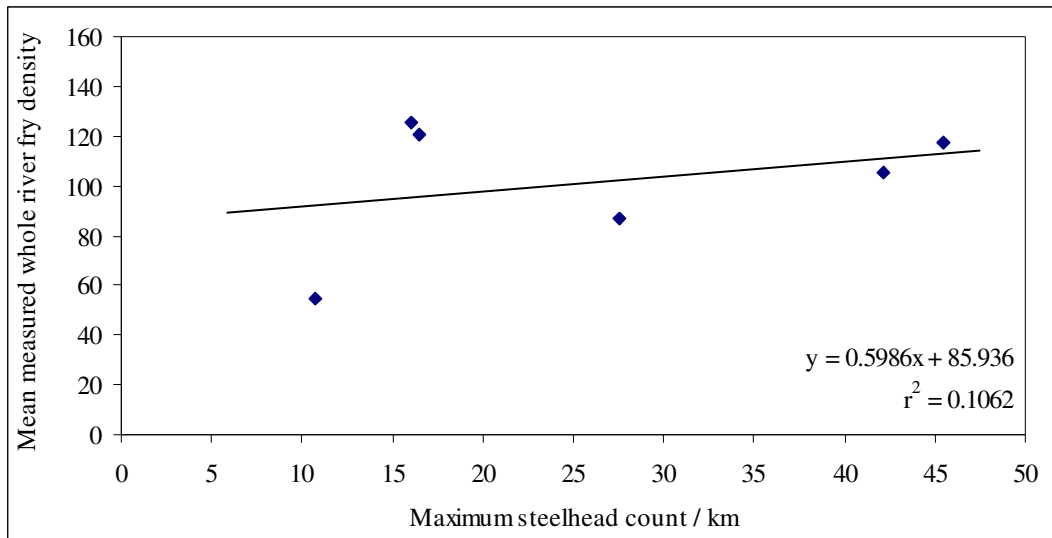
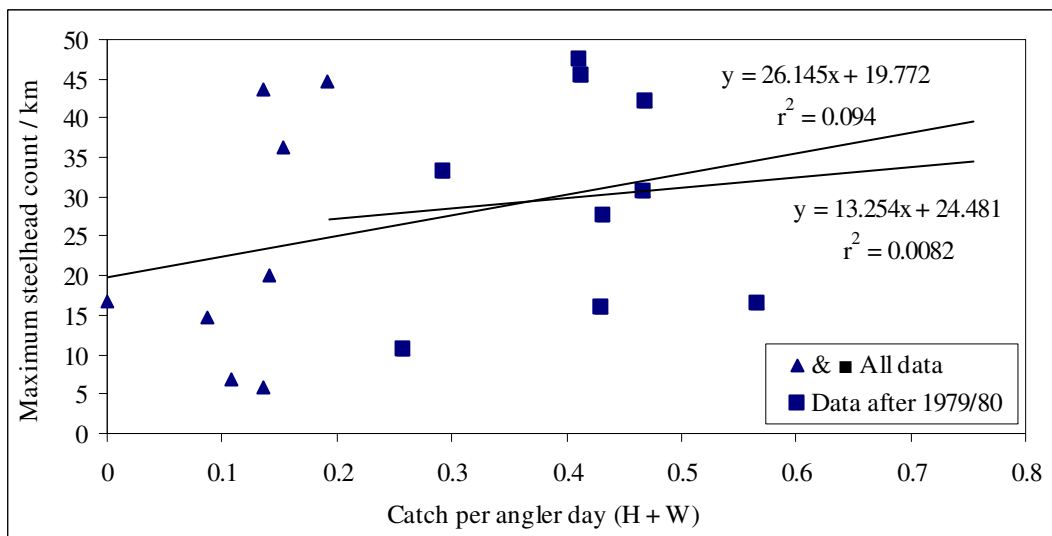


Figure 4.7. Maximum steelhead count / km and SHA catch per angler day.



All available juvenile and adult indices of steelhead abundance are highly variable, and are subject to uncertainty as a result of sampling limitations. Poor correlation between the available indices reflects this variability and uncertainty. The lack of agreement between stock status measures emphasises the difficulties encountered in developing such tools.

5 CONCLUSIONS

The Chilliwack River steelhead snorkel count in 2001 was higher than for any other year in which floats have been conducted. However, the total river length sampled has varied considerably over the history of surveys. The 2001 counts per kilometre surveyed were similar to results from some previous years, and were lower than 1975 counts in very short, productive sections.

Snorkel floats are limited by clarity and flow conditions over the course of the steelhead run. Floats provide an index of returns, rather than a total escapement estimate because not all of the fish are seen, some reaches are not floated, and fish may be recounted on subsequent floats. Limited observer efficiency data for the Chilliwack suggests that floats detect 20 – 30% of the fish present. About half of the length of the system can be surveyed in two days, including spot checks of a canyon section. The entire canyon can be surveyed at favourable discharge levels, but a third day is required. Exposed clay banks near Slesse Park mean that surveys of the lower river are unlikely in most years. When possible, two days are required to survey the two sections downstream of this point.

Due to variability in discharge, clarity and run timing, a single, annual float is unlikely to provide a robust measure of stock status. Repeated surveys are required, although it may be possible to limit each survey to a representative, one day section. Surveyed four times annually, this section would be used as the index measure. As few fish are present in the upper river early in the season, the section from the Hatchery to Slesse Park, plus the canyon spot checks, is the best candidate. Confidence in the index would decline later in the season, as fish move into reaches upstream. Without upstream surveys, we could not determine rates of immigration to and emigration from this index section. Application of an index section will be examined after completion of 2002 floats.

Snorkel floats appear to provide a useful index of steelhead abundance for the Chilliwack River. Exceptional 2001 adult counts were reflected in subsequent Fall 2001 juvenile surveys: juvenile densities increased dramatically between 2000 and 2001, but remained below results recorded in the mid-1980s. Angler catch, as indexed by the Steelhead Harvest Analysis, also increased dramatically between 2000 and 2001. However, longer-term correlation between these three indices of steelhead abundance is very poor.

Despite strong adult results in 2001, conservation concerns remain for the Chilliwack system. The long term trend is one of marked and persistent declines.

Brood years prior to 2001 have been weak, and uncertainty remains about oceanic steelhead survival rates. Data to 2001 has suggested very weak ocean survival in comparison to years of strong recruitment through the 1980s (Ward 2000, B.Ward, BC MWLAP, Vancouver). Continued stock assessment is required to track population status and to measure the impact of management decisions. We must continue to develop conservation plans to ensure the long term sustainability of the Chilliwack River steelhead stock.

Further analysis of all stock assessment data will be completed following the completion of sampling activities planned under the Lower Mainland Wild Steelhead Conservation initiative.

5.1 Recommendations

- repeat annual steelhead snorkel counts.
- establish representative index section.
- continue juvenile assessment study.

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Aquatic Resources Limited

Pier van Dishoeck

Chilliwack River Snorkel Floats 2001

604.266.1113

February 8, 2001 to February 14, 2001

Crew: Pier van Dishoeck, CEJ Mussell, Steve Latham

| Date | River km | Local name | Steelhead | Rainbow | Dolly Varden | Bull trout | Cut-throat | White-fish | Suckers | Unknown |
|--------------|--------------|--------------------------------------------------|-----------|---------|--------------|------------|------------|------------|---------|---------|
| not swum | 56.0 to 55.5 | Upper Log Jam to Old 4 Mile Log Jam | | | | | | | | |
| not swum | 55.6 | Old 4 Mile Log Jam | | | | | | | | |
| not swum | 55.5 to 53.4 | Old 4 Mile Log Jam to Centre Crk WRP intake | | | | | | | | |
| not swum | 53.4 to 53.0 | Centre Crk WRP intake to Centre Crk overflow | | | | | | | | |
| not swum | 53.0 to 52.0 | Centre Crk overflow to Centre Crk camping spot | | | | | | | | |
| not swum | 52.0 to 51.7 | Centre Crk camping spot to Centre Crk WRP outlet | | | | | | | | |
| not swum | 51.7 to 51.0 | Centre Crk WRP outlet to Centre Crk trail | | | | | | | | |
| not swum | 51.0 to 50.5 | Centre Crk trail to Centre Crk bridge | | | | | | | | |
| Feb. 9, 2001 | 50.5 to 48.0 | Centre Crk Bridge to Middle Creek turnaround | 1 | 25 | 1 | | | 9 | | |
| Feb. 9, 2001 | 48.0 to 46.5 | Middle Creek turn around to 3rd Bridge | 2 | 13 | 1 | | | 3 | | |
| Feb. 9, 2001 | 46.5 | 3rd Bridge Pool | 4 | 4 | 1 | | | 2 | | |
| Feb. 9, 2001 | 44.8 | Old Bridge Crossing | | | | | | | | |
| Feb. 9, 2001 | 44.2 | First Upper Box Canyon Pool | 2 | | | | | | | |
| Feb. 9, 2001 | 44.1 | Second Upper Box Canyon Pool | | | | | | | | |
| Feb. 9, 2001 | 44.0 | Third Upper Box Canyon Pool | 2 | | | | | | | |
| Feb. 9, 2001 | 43.9 | Chipmunk Pool | 3 | | | | | | | |
| Feb. 9, 2001 | 42.5 | Cable Car Box Canyon Pool | 54 | | | | | 2 | | |

| Date | River km | Local name | Steelhead | Rainbow | Dolly Varden | Bull trout | Cut-throat | White-fish | Suckers | Unknown |
|---------------|--------------|------------------------------------------------------|-----------|---------|--------------|------------|------------|------------|---------|---------|
| Feb. 8, 2001 | 39.5 | Station 6 | 25 | 20 | 3 | | | | | |
| Feb. 8, 2001 | 39.5 to 38.7 | Hatchery storage area to 2 nd intake hole | 29 | 31 | | | | | | |
| Feb. 8, 2001 | 38.6 | Upper Hatchery Hole | 1 | | | | | | | |
| Feb. 8, 2001 | 38.4 | Hatchery Hole | 3 | | | | | | | |
| Feb. 8, 2001 | 38.4 to 37.9 | Below Hatchery Hole to Slesse Confluence | 60 | 7 | | | | | | |
| Feb. 8, 2001 | 37.9 to 37.7 | Limits Hole to Below Limits Hole | 27 | 4 | 4 | | | 1 | | |
| Feb. 8, 2001 | 37.7 to 37.1 | Below Limits Hole to Glide Above Ranger Run | 40 | 1 | 2 | | | 1 | | |
| Feb. 8, 2001 | 36.7 | Ranger Run | 25 | 2 | | | | | | |
| Feb. 8, 2001 | 36.6 to 34.8 | Below Ranger Run to Butterfly Run | 88 | 9 | 3 | 1 | 1 | 57 | | |
| Feb. 8, 2001 | 34.7 to 32.7 | Below Butterfly Run to Cedars | 6 | 4 | | 7 | | 6 | | |
| Feb. 8, 2001 | 32.6 to 29.5 | Below Cedars to Slesse Park clayslide | 1 | | | | | | | |
| Feb. 14, 2001 | 26.4 | Above Tamihi Bridge (section not floated in 2000) | 1 | | | | | | | |
| Feb. 14, 2001 | 26.3 | Below Tamihi Bridge | | | | | | | | |
| Feb. 14, 2001 | 25.8 | Boulder Hole | 8 | | | | | 1 | | 1 |
| Feb. 14, 2001 | 25.5 | Station 3 Run | | | | | | | | |
| Feb. 14, 2001 | 25.3 | Shelf Below Bourne Rd | | | | | | | | 2 |
| Feb. 14, 2001 | 24.8 | Culvert Above Sheller's Bridge | 7 | 1 | | | | 5 | | |
| Feb. 14, 2001 | 24.5 | Run Above Sheller's Island | | | | | | 7 | | |
| Feb. 14, 2001 | 24.0 | North Split Above Sheller's | | | | | | | | |
| Feb. 14, 2001 | 23.7 | Upper Sheller's Bridge Run | 2 | 1 | | | | 15 | | |
| Feb. 14, 2001 | 23.4 | Lower Sheller's Tailout | | | | | | | | |
| Feb. 14, 2001 | 23.0 | Top of Way's Field Rapids | 4 | | | | | 21 | | |
| Feb. 14, 2001 | 22.2 | Pool Below Way's Corner | | | | | | | | |
| Feb. 14, 2001 | 21.7 | Outside Bend of Way's Field | | | | | | | | |

| Date | River km | Local name | Steelhead | Rainbow | Dolly Varden | Bull trout | Cut-throat | White-fish | Suckers | Unknown |
|---------------|----------|----------------------------|-----------|---------|--------------|------------|------------|------------|---------|---------|
| Feb. 14, 2001 | 21.2 | Glide Above Twin Cedars | 12 | | | | | 47 | | |
| Feb. 14, 2001 | 20.7 | Twin Cedars | | | | | | | | |
| Feb. 14, 2001 | 19.8 | Liumcheen Crk | 2 | | | | | 1 | | |
| Feb. 14, 2001 | 19.0 | Above Swoolie Dike | | | | | | | | |
| Feb. 14, 2001 | 18.9 | Riffle Before Swoolie Dike | 3 | | | | | 10 | | |
| Feb. 14, 2001 | 18.4 | Top of Swoolie Pool | | | | | | | | |
| Feb. 14, 2001 | 17.1 | Above Swoolie Cedars | | | | | | | | |
| Feb. 14, 2001 | 16.9 | Swoolie Cedars Log Jam | | | | | | | | |
| Feb. 14, 2001 | 16.5 | Below Stella's Rock | | | | | | | | |
| Feb. 14, 2001 | 15.7 | Teskey Rock | 3 | | | | | 1 | | |
| Feb. 13, 2001 | 15.5 | Vedder Crossing | 12 | | | | | 5 | | |
| Feb. 13, 2001 | 14.7 | Above Rock Quarry | 9 | | | | | 7 | 8 | |
| Feb. 13, 2001 | 14.2 | Above Peach Rd | | | | | | | | |
| Feb. 13, 2001 | 13.9 | Peach Rd | | | | | | | 1 | |
| Feb. 13, 2001 | 13.6 | Below Peach Rd | | | | | | | | |
| Feb. 13, 2001 | 13.2 | Above Lickman Rd | | | | | | | | |
| Feb. 13, 2001 | 12.6 | Above Ernie's Hole | 10 | | | | | 22 | 1 | |
| Feb. 13, 2001 | 12.4 | Lickman Rd | | | | | | | | |
| Feb. 13, 2001 | 12.3 | Lower Lickman | | | | | | | | |
| Feb. 13, 2001 | 12.1 | Upper Brown Rd | | | | | | | | |
| Feb. 13, 2001 | 11.8 | Brown Rd | 4 | | | | | 8 | | |
| Feb. 13, 2001 | 11.3 | Tom's Tailout | | | | | | | | 3 |
| Feb. 13, 2001 | 10.2 | Above Hydro Bridge | 4 | | | | | 20 | 2 | |
| Feb. 13, 2001 | 9.3 | Wilson Rd | | | | | | | | |

| Date | River km | Local name | Steelhead | Rainbow | Dolly Varden | Bull trout | Cut-throat | White-fish | Suckers | Unknown |
|---------------|----------|---------------------------|------------|------------|--------------|------------|------------|------------|------------|----------|
| Feb. 13, 2001 | 9.1 | Six Fish Run | | | | | | | | |
| Feb. 13, 2001 | 8.7 | VTV Spot | 3 | | | | | 5 | 53 | |
| Feb. 13, 2001 | 8.4 | Above Sawween | | | | | | | | |
| Feb. 13, 2001 | 8.3 | Sawween | | | | | | | | |
| Feb. 13, 2001 | 8.1 | Below Sawween | | | | | | | | |
| Feb. 13, 2001 | 8.0 | Ernie's Corner | 1 | | 1 | | | 21 | 63 | |
| Feb. 13, 2001 | 7.0 | Vedder Canal | | | | | | | | |
| Feb. 13, 2001 | 6.4 | Above Keith Wilson Bridge | | 1 | | | | | 27 | |
| Feb. 13, 2001 | 6.2 | Keith Wilson Bridge | | | | | | | | |
| Total: | | | 458 | 123 | 16 | 8 | 1 | 277 | 155 | 6 |

| | | |
|-------------------|--------|--------------------------------------------------------------------------------------------|
| Weather | Feb 8 | overcast and snowing |
| | Feb 9 | overcast in am but clearing and sunny in afternoon |
| | Feb 13 | clear and sunny |
| | Feb 14 | overcast |
| Visibility | Feb 8 | 10-15 m u/s Borden Split, 6-10 m d/s Borden Split |
| | Feb 9 | 10+m in Box Canyons, 3-4m u/s of 3rd Bridge due to rocks and bubbles but 10+ in calm water |
| | Feb 13 | 2-4m, some pools in which bottom not visible |
| | Feb 14 | 1-3m, some pools in which bottom not visible |
| Gauge | Feb 8 | 0.72m |

Aquatic Resources Limited
Chilliwack River Snorkel Floats 2001

Pier van Dishoeck
 604.266.1113

March 6, 2001 to March 7, 2001

Crew: Pier van Dishoeck, CEJ Mussell, Steve Latham

| Date | River km | Local name | Steelhead | Rainbow | Dolly Varden | Bull trout | Whitefish | Notes |
|---------------|--------------|--------------------------------------------------|-----------|---------|--------------|------------|-----------|-------|
| March 7, 2001 | 56.0 to 55.5 | Upper Log Jam to Old 4 Mile Log Jam | | 6 | | | 2 | |
| March 7, 2001 | 55.6 | Old 4 Mile Log Jam | | | | | | |
| March 7, 2001 | 55.5 to 53.4 | Old 4 Mile Log Jam to Centre Crk WRP intake | | 6 | | | 2 | |
| not swum | 53.4 to 53.0 | Centre Crk WRP intake to Centre Crk overflow | | | | | | 1 |
| not swum | 53.0 to 52.0 | Centre Crk overflow to Centre Crk camping spot | | | | | | 2 |
| not swum | 52.0 to 51.7 | Centre Crk camping spot to Centre Crk WRP outlet | | | | | | |
| March 7, 2001 | 51.7 to 50.5 | Centre Crk WRP outlet to Centre Crk bridge | | 2 | | | | |
| March 7, 2001 | 50.5 to 48.0 | Centre Crk Bridge to Middle Creek turnaround | 7 | 35 | 2 | | 23 | |
| March 7, 2001 | 48.0 to 46.5 | Middle Creek turn around to 3rd Bridge | 9 | 11 | | 1 | 3 | |
| March 7, 2001 | 46.5 | 3rd Bridge Pool | 4 | 6 | | | 2 | |
| March 7, 2001 | 44.8 | Old Bridge Crossing | 65 | | | | | |
| March 7, 2001 | 44.2 | First Upper Box Canyon Pool | 30 | | | | | 3 |
| March 7, 2001 | 44.1 | Second Upper Box Canyon Pool | | 6 | | | | |
| March 7, 2001 | 44.0 | Third Upper Box Canyon Pool | 30 | 2 | | | 6 | |
| March 7, 2001 | 43.9 | Upper Chipmunk Pool | 76 | | 1 | | | |
| March 7, 2001 | 43.8 | Lower Chipmunk Pool | 40 | 7 | | | | 4 |
| March 7, 2001 | 42.5 | Cable Car Box Canyon Pool | | | | | | 5 |

| Date | River km | Local name | Steelhead | Rainbow | Dolly Varden | Bull trout | Whitefish | Notes |
|--------------------------------------------------------------------|--------------|---------------------------------------------------|------------|------------|--------------|------------|------------|-------|
| March 6, 2001 | 39.5 | Station 6 | 17 | 13 | | | | |
| March 6, 2001 | 39.5 to 38.7 | Hatchery storage area to 2nd intake hole | 39 | 62 | | 1 | 2 | |
| March 6, 2001 | 38.6 | Upper Hatchery Hole | | | | | | |
| March 6, 2001 | 38.4 | Hatchery Hole | 5 | 10 | | | 1 | |
| March 6, 2001 | 38.4 to 37.9 | Hatchery Hole to Slesse Confluence | 48 | 31 | | | 2 | 6 |
| March 6, 2001 | 37.9 to 37.7 | Limits Hole to Below Limits Hole | | | | | | |
| March 6, 2001 | 37.7 to 37.1 | Below Limits Hole to Glide Above Ranger Run | 39 | 18 | 8 | | 28 | |
| March 6, 2001 | 36.7 | Ranger Run | 21 | 4 | 8 | | 1 | 7 |
| March 6, 2001 | 36.6 to 34.8 | Below Ranger Run to Butterfly Run | 189 | 12 | 5 | | 6 | |
| March 6, 2001 | 34.7 to 32.7 | Below Butterfly Run to Cedars | 15 | 7 | 7 | | 3 | |
| March 6, 2001 | 32.6 to 29.5 | Below Cedars to Slesse Park clayslide | 6 | 1 | | | | |
| March 6, 2001 | 30.0 | Split above Slesse Park (N split not swum before) | 9 | 1 | | | | |
| not swum | 26.3 to 6.2 | Below Tamihi Br. To Keith Wilson Br. | | | | | | |
| Total: | | | 649 | 240 | 31 | 2 | 81 | |
| Plus fish in sections floated March 8 (but not floated March 7) | | | 48 | 49 | 6 | 0 | 21 | |
| Grand total: | | | 697 | 289 | 37 | 2 | 102 | |

Note that the full section between 3rd Bridge and Lower Chipmunk Pool was floated on March 8 (see next page). This section is not usually floated, but could safely be done at very low 2001 discharge levels

The intent was to swim 3rd Bridge to Hatchery Intake, and to compare March 7 and March 8 results for pools floated both days, and to count fish in pools in this section not usually swum. However, overnight rain reduced visibility

Counts in pools swum both days were drastically different. 48 steelhead were seen in pools *not* floated March 7.

see notes below

| | | |
|-------------------|-------|-----------------------------------------------------------------------|
| Weather | Mar 6 | sunny and hot |
| | Mar 7 | sunny and hot |
| Visibility | Mar 6 | Slesse Creek: 10+m u/s, +/-6 m d/s, 5-8 m d/s Thurston |
| | Mar 7 | 15+m in Box Canyon Pools, 8-15 m from Old 4 mi. Log Jam to 3rd Br. |
| Gauge | Mar 7 | 0.6m |

Notes

-
- 1 river so low that water into intake reduces mainstem flow.
 - 2 drove from Centre Creek Watershed Restoration Project intake to outlet.
 - 3 20 of these fish were in the upstream end of this pool, which has not been floated in previous ARL floats
 - 4 as we spooked fish out of the upper pool, these 40 - 50 fish are probably those from the pool above (we only saw 29 in the upper pool on the second float, with good conditions [50+29 = 79 ~ 76]).
 - 5 ideal float conditions, zero fish.
 - 6 1 fish called brown trout by Steve, who would know, but might have been a cutthroat.
 - 7 plus one DEAD steelhead.

Aquatic Resources Limited

Pier van Dishoeck

Chilliwack River Snorkel Floats 2001

604.266.1113

March 8, 2001

Crew: Pier van Dishoeck, CEJ Mussell, Steve Latham

| Date | River km | Local name | Steelhead | Rainbow | Dolly Varden | Whitefish |
|--------------------------------------|--------------|--------------------------------------------------|------------|-----------|--------------|-----------|
| not swum | 56.0 to 46.5 | Upper Log Jam to 3rd Bridge | | | | |
| March 8, 2001 | 46.5 | 3rd Bridge Pool | 4 | 3 | | 1 |
| March 8, 2001 | 46.5 to 45.7 | 3rd Bridge to LWD corner | 21 | 31 | 3 | 15 |
| March 8, 2001 | 45.7 to 44.8 | LWD corner to Old Bridge Crossing | 5 | 16 | 3 | 4 |
| March 8, 2001 | 44.8 | Old Bridge Crossing | 37 | 4 | | 11 |
| March 8, 2001 | 44.8 to 44.3 | Old Bridge Crossing to Upper Box Canyon Pools | 22 | 2 | | 2 |
| March 8, 2001 | 44.2 | First Upper Box Canyon Pool | | 2 | | |
| March 8, 2001 | 44.1 | Second Upper Box Canyon Pool | | 3 | | 2 |
| March 8, 2001 | 44.0 | Third Upper Box Canyon Pool | 4 | | | |
| March 8, 2001 | 43.9 | Upper Chipmunk Pool | 33 | 2 | | |
| March 8, 2001 | 43.8 | Lower Chipmunk Pool | 2 | | | 1 |
| not swum | 42.5 to 6.2 | Cable Car Box Canyon Pool to Keith Wilson Bridge | | | | |
| Total: | | | 128 | 63 | 6 | 36 |
| Sections not floated March 7: | | | 48 | 49 | 6 | 21 |

This section is not usually floated, but could safely be done at very low 2001 discharge levels.

Weather light rain; heavy rain overnight

The intent was to compare March 7 and March 8 results for pools floated both days, and to count fish in sections not usually swum. However, overnight rain reduced visibility.

Visibility +/- 8m u/s Chipmunk Creek
visibility very poor d/s of Chipmunk Creek
- takeout at Chipmunk FSR.

Drastic reduction in visibility at confluence with Chipmunk Creek u/s of Upper Box Canyon pools

Counts in pools swum both days very different. 48 steelhead seen in pools *not* floated March 7.

Gauge ?

Aquatic Resources Limited

Pier van Dishoeck

Chilliwack River Snorkel Floats 2001

604.266.1113

March 26, 2001 to March 27, 2001

Crew: Pier van Dishoeck, CEJ Mussell, Steve Olson

| Date | River km | Local name | Steelhead | Rainbow | Dolly Varden | Whitefish | Juvenile salmonids | Unknown (SH ?) | Notes |
|----------------|--------------|-----------------------------------------------|-----------|---------|--------------|-----------|--------------------|----------------|-------|
| March 27, 2001 | 56.0 to 55.5 | Upper Log Jam to Old 4 Mile Log Jam | 2 | 6 | | | | | |
| March 27, 2001 | 55.6 | Old 4 Mile Log Jam | 1 | | | | | | |
| March 27, 2001 | 55.5 to 53.4 | Old 4 Mile Log Jam to Centre Crk WRP intake | 20 | 12 | | 1 | 1 | | |
| March 27, 2001 | 53.4 to 50.5 | Centre Crk WRP intake to Centre Crk bridge | 28 | 13 | | 1 | | | |
| March 27, 2001 | 50.5 to 48.0 | Centre Crk Bridge to Middle Creek turnaround | 77 | 55 | 8 | 23 | | | |
| March 27, 2001 | 48.0 to 46.5 | Middle Creek turn around to 3rd Bridge | 54 | 8 | 1 | 13 | | | |
| March 27, 2001 | 46.5 | 3rd Bridge Pool | 11 | 6 | 2 | 5 | | | |
| not swum | 46.5 to 44.8 | 3rd Bridge to Old Bridge Crossing | | | | | | | |
| March 26, 2001 | 44.8 | Old Bridge Crossing | 60 | 8 | 1 | 14 | | | 1 |
| not swum | 44.8 to 44.3 | Old Bridge Crossing to Upper Box Canyon Pools | | | | | | | |
| March 26, 2001 | 44.2 to 44.0 | First to Third Upper Box Canyon Pools | 9 | 2 | | | | | |
| March 26, 2001 | 43.9 | Upper Chipmunk Pool | 6 | 1 | | 1 | | | |
| March 26, 2001 | 43.8 | Lower Chipmunk Pool | 8 | 2 | | 5 | | | |
| March 26, 2001 | 42.5 | Cable Car Box Canyon Pool | 11 | 2 | | | | | |
| March 26, 2001 | 39.5 | Station 6 | 4 | 10 | | | | | |
| March 26, 2001 | 39.5 to 38.7 | Hatchery storage area to 2nd intake hole | 15 | 24 | | 2 | | | |

| Date | River km | Local name | Steelhead | Rainbow | Dolly Varden | Whitefish | Juvenile salmonids | Unknown (SH ?) | Notes |
|----------------|--------------|----------------------------------------------------|------------|------------|--------------|------------|--------------------|----------------|-------|
| March 26, 2001 | 38.6 | Upper Hatchery Hole | 6 | 4 | | 2 | | | |
| March 26, 2001 | 38.4 | Hatchery Hole | 4 | 5 | | 2 | | | |
| March 26, 2001 | 38.4 to 37.9 | Hatchery Hole to Slesse Confluence | 11 | 3 | | 1 | | | |
| March 26, 2001 | 37.9 to 37.7 | Limits Hole to Below Limits Hole | | | | | | | |
| March 26, 2001 | 37.7 to 37.1 | Below Limits Hole to Glide Above Ranger Run | 10 | 2 | 1 | 4 | | | |
| March 26, 2001 | 36.7 | Ranger Run | 9 | 1 | | 2 | | | |
| March 26, 2001 | 36.6 to 34.8 | Below Ranger Run to Butterfly Run | 40 | 7 | 2 | 45 | | | |
| March 26, 2001 | 34.7 to 32.7 | Below Butterfly Run to Cedars | 7 | 3 | 2 | 5 | | 3 | |
| March 26, 2001 | 32.6 to 30.0 | Below Cedars to split above Slesse Park clayslide | | | | | | | |
| March 26, 2001 | 30.0 | Split above Slesse Park (N split not swum in 2000) | 14 | | | 2 | | | |
| March 26, 2001 | 30.0 to 29.5 | to Slesse Park clayslide | 8 | 1 | | 13 | | | |
| not swum | 26.3 to 6.2 | Below Tamihi Bridge to Keith Wilson Bridge | | | | | | | |
| Total: | | | 415 | 175 | 17 | 141 | 1 | 3 | |

| Weather | Date | Local name | Notes |
|------------|--------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| | Mar 26 | Rain overnight, but dry in am; high snow. Overcast with a mix of sun, showers and clouds | |
| | Mar 27 | Cloudy in am, snow starting at 1400 | 1 Large group of fish in this pool, but difficult to assess because the water is higher and there are bubbles throughout the pool. |
| Visibility | Mar 26 | Slesse Ck.: 5-6 u/s, 4-6 d/s, 7+ in Box Canyons | Two groups of 35 and 36 fish may have been the same bunch wheeling past twice, and so our best assessment was 60 fish. |
| | Mar 27 | Centre Ck. Br.: 8m u/s, 6m d/s, +/- 5m by Third Bridge | |
| Gauge | Mar 26 | 0.95m | |

Aquatic Resources Limited

Pier van Dishoeck

Chilliwack River Snorkel Floats 2001

604.266.1113

April 10 to April 12, 2001

Crew: Pier van Dishoeck, CEJ Mussell, Steve Latham

| Date | River km | Local name | Steelhead | Rainbow | Dolly Varden | Bull trout | Cutthroat | Whitefish | Juv. | Fry | Notes |
|---------------|--------------|-----------------------------------------------|-----------|---------|--------------|------------|-----------|-----------|------|-----|-------|
| Apr. 11, 2001 | 56.0 to 55.5 | Upper Log Jam to Old 4 Mile Log Jam | 3 | 8 | | | | | | | |
| Apr. 11, 2001 | 55.6 to 53.4 | Old 4 Mile Log Jam to Centre Crk WRP intake | 20 | 14 | 1 | | | 6 | 1 | | |
| Apr. 11, 2001 | 53.4 to 50.5 | Centre Crk WRP intake to Centre Crk Bridge | 37 | 23 | | | 1 | 2 | | | 1 |
| Apr. 11, 2001 | 50.5 to 48.0 | Centre Crk Bridge to Middle Creek turnaround | 84 | 58 | 3 | 1 | 1 | 30 | 4 | 1 | |
| Apr. 11, 2001 | 48.0 to 46.5 | Middle Creek turn around to 3rd Bridge | 66 | 23 | 1 | | | 29 | | | |
| Apr. 11, 2001 | 46.5 | 3rd Bridge Pool | 25 | 5 | 2 | | | 11 | | | |
| Apr. 12, 2001 | 46.5 | 3rd Bridge Pool (day 2, April 12) | 18 | 2 | 8 | | | 2 | | | 2 |
| Apr. 12, 2001 | 46.5 to 45.5 | 3rd Bridge Pool to LWD Corner | 59 | 29 | 1 | | 1 | 27 | | | |
| Apr. 12, 2001 | 45.5 to 44.8 | LWD Corner to Old Bridge Crossing | 30 | 15 | 6 | | 5 | 1 | | | |
| Apr. 12, 2001 | 44.8 | Old Bridge Crossing | 59 | 10 | 2 | | | 15 | | | |
| Apr. 12, 2001 | 44.8 to 44.2 | Old Bridge Xing to Upper Box Canyon Pools | 55 | 11 | | | 1 | 3 | | | |
| Apr. 12, 2001 | 44.2 to 43.9 | Upper Box Canyon Pools | 38 | 14 | | | 1 | 9 | | | |
| Apr. 12, 2001 | 43.9 | Upper Chipmunk | 19 | 1 | 1 | | 1 | | | | |
| Apr. 12, 2001 | 43.8 | Lower Chipmunk | 14 | 1 | | | 1 | | | | |
| Apr. 12, 2001 | 43.8 to 43.2 | Lower Chipmunk to Fisherman's Pool | 8 | 20 | 2 | | 3 | 9 | | | |
| Apr. 12, 2001 | 43.2 | Fisherman's Pool | 14 | | | | | | | | |
| Apr. 12, 2001 | 43.2 to 42.5 | Fisherman's Pool to Cable Car Box Canyon Pool | 5 | 12 | 1 | | 1 | 1 | 1 | | |
| Apr. 12, 2001 | 42.5 | Cable Car Box Canyon Pool | 36 | 4 | | | | 23 | | | |
| Apr. 12, 2001 | 42.5 to 40.5 | Cable Car Box Canyon Pool to Sandbar Campsite | 57 | 59 | | | 9 | 20 | 1 | | |

| Date | River km | Local name | Steelhead | Rainbow | Dolly Varden | Bull trout | Cutthroat | Whitefish | Juv. | Fry | Notes |
|------------------------------------------|--------------|---------------------------------------------------|-------------|------------|--------------|------------|-----------|------------|----------|------------|-------|
| Apr. 12, 2001 | 40.5 to 39.5 | Sandbar Campsite to Hatchery Intake | 10 | 27 | | | | 8 | | | |
| Apr. 10, 2001 | 39.5 | Hatchery Intake | 2 | 10 | | | | 4 | | | |
| Apr. 10, 2001 | 39.5 to 38.7 | Hatchery storage area to 2nd intake hole | 21 | 38 | | | 5 | 2 | | | |
| Apr. 10, 2001 | 38.6 | Upper Hatchery Hole | 7 | 5 | | | | 4 | | | |
| Apr. 10, 2001 | 38.4 | Hatchery Hole | 65 | 14 | 1 | | | 2 | | 150 | |
| Apr. 10, 2001 | 38.4 to 37.9 | Hatchery Hole to Slesse Confluence | 38 | 13 | | | 1 | 4 | | | |
| Apr. 10, 2001 | 37.9 to 37.7 | Limits Hole to Below Limits Hole | 5 | | | | | | | | |
| Apr. 10, 2001 | 37.7 to 37.1 | Below Limits Hole to Glide Above Ranger Run | 48 | 15 | 3 | | | 43 | | | |
| Apr. 10, 2001 | 36.7 | Ranger Run | 44 | 2 | 6 | | | 5 | | | |
| Apr. 10, 2001 | 36.6 to 35.2 | Ranger Run to pool u/s Thurston Meadows | 133 | | 4 | | | 63 | | | 3 |
| Apr. 10, 2001 | 35.2 | Pool u/s Thurston Meadows | 45 | | | | 1 | 6 | | | |
| Apr. 10, 2001 | 35.2 to 34.8 | Thurston Meadows | 3 | | | | | 1 | | | |
| Apr. 10, 2001 | 34.8 to 33.5 | Below Butterfly Run to Upper Thurston | 10 | 1 | 2 | | | 25 | | | |
| Apr. 10, 2001 | 33.5 | Upper Thurston | 75 | | | | | | | | |
| Apr. 10, 2001 | 33.5 to 31.3 | To Allison Pool | 3 | | | | | 21 | | | |
| Apr. 10, 2001 | 31.3 to 30.0 | Split above Slesse Park (N split not swum before) | 10 | | | | | | | | |
| Apr. 10, 2001 | 29.9 | Log Jam in S/C (too dangerous previously) | 51 | | | | | | | | |
| Apr. 10, 2001 | 29.9 to 29.5 | Below Split to Slesse Park clayslide | 5 | | | | | 19 | | | |
| not swum | 26.3 to 6.2 | Below Tamihi Br. to Keith Wilson Br. | | | | | | | | | |
| Total: | | | 1204 | 432 | 36 | 1 | 32 | 393 | 7 | 151 | |
| Fish in canyon section not usually swum: | | | 238 | 173 | 10 | 0 | 20 | 69 | 2 | 0 | |
| Total "usual" count: | | | 966 | 259 | 26 | 1 | 12 | 324 | 5 | 151 | |

see notes below

This float contains sections not floated in previous years (the complete section from 3rd Bridge to Hatchery).

Fourth person on Apr. 12 swam behind regular swimmers and recorded additional fish seen separately.

These fish are totalled below, and are in addition to fish recorded in the complete record:

| Fourth Swimmer Apr. 12 (Allen Hanson) | | Steelhead | Rainbow | Dolly Varden | Cutthroat | Whitefish |
|--------------------------------------------------|--|------------------|----------------|---------------------|------------------|------------------|
| Third Bridge to Lower Chipmunk Pool | | 7 | 7 | | 4 | 9 |
| Lower Chipmunk Pool to Hatchery Intake | | 3 | 9 | 1 | 10 | 4 |
| Total: | | 10 | 16 | 1 | 14 | 13 |

| Weather | | | Notes |
|-------------------|--------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| | Apr 10 | showers overnight; overcast in am; showers at midday; overcast in afternoon | |
| | Apr 11 | clear and cold overnight; sunny all day | 1 One of the trout was a hatchery fish. |
| | Apr 12 | sunny in am; overcast in pm; rain starting after float complete | 2 This pool floated twice (April 11 and 12). Only maximum counts for each species used in totals. |
| Visibility | Apr 10 | 8m by Slesse Creek; 6-7 m by Thurston split; 5 m by Slesse Park | 3 1 fish called brown trout by Steve, who would know, but might have been a cutthroat. |
| | Apr 11 | 10+m, but limited by boulders and bubbles; 8+ at Third Br. in pm | |
| | Apr 12 | 10+m at Third Bridge; 6-7m at Hatchery intake | |
| Gauge | Apr 12 | 0.75m | |

| Date | For | Visibility | TOTAL # of steelhead counted | # of sections | # of crew | Source | Section 1 | Section 2 | Section 3 | Section 4 | Section 5 | Section 6 | Section 7 | Section 8 | Section 9 |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------|---------------|-----------|-----------------|-----------------------------------|-----------------------------------|---------------------------------|-------------------------------|-------------------------------|---------------------------------|-----------------------------|--------------------------|-----------|
| February 8, 1973 | adults | low flow & clear | | 6 | 40 | MoE Surrey file | 4 mi. log jam to Centre Ck. Camp | Centre Ck. Camp to Rearing Pond | Rearing Pond to 3rd Bridge | 3rd Bridge to Box Canyon | Box Canyon to sandbar camp | Sandbar camp to Wells Ranch Br. | | | |
| # Fish Observed | | | 751 | | | | 19 | 36 | 177 | 314 | 37 | 168 | | | |
| February 15, 1973 | adults | | | 6 | 20 BCIT | MoE Surrey file | Slesse Creek to Thurston Camp | Thurston Camp to Tamihi Bridge | Tamihi Bridge to Edwards Road | Edwards Road to Vedder Bridge | Vedder Bridge to Lickman Road | Lickman Road to Vedder Canal | | | |
| # Fish Observed | | | 291 | | | | 86 | 89 | 25 | 9 | 20 | 62 | | | |
| March 21, 1973 | Slesse Creek floated by 5 divers but NO fish were sighted, despite excellent conditions. | | | | | | | | | | | | | | |
| February 21, 1974 | adults | exc. | | 8 | 20 BCIT | MoE Surrey file | Post Ck. to Centre Ck. Br. | Centre Ck. Br. to Centre Ck. Camp | Centre Ck. Camp to Rearing Pond | Rearing Pond to Old Bridge | Old Bridge to 3rd Bridge | Ford Camp to Box Canyon | Box Canyon Pool to Sand Bar | Sand Bar to Slesse Creek | |
| Sect. length (km) | | | | | | | 1.93 | 1.93 | 2.09 | 2.25 | 2.25 | 2.74 | 2.58 | 1.77 | |
| # Fish Observed | | | 278 | | | | 13 | 8 | 33 | 13 | 96 | 81 | 22 | 12 | |
| August 30, 1974 | Spot checks and short swims through Allison Pools to Slesse Park. No SH sighted but 12 RBT > 8" and 157 RBT < 8" (150 fingerlings) sighted. | | | | | | | | | | | | | | |
| January 8, 1975 | adults - tagged fish | exc. | | 4 | | MoE Surrey file | Old Bridge abutment to 3rd Bridge | 3rd Bridge to Reco Br. | Box Canyon spot check | Camp Site Pool spot check | | | | | |
| # Fish Observed | noted. | | 174 | | | | 116 | 31 | 23 | 4 | | | | | |
| January 23, 1975 | Slesse Creek floated by 3 divers. Poor water conditions (visibility=1-2m) prevailed and NO SH were sighted. | | | | | | | | | | | | | | |

| Date | For | Visibility | TOTAL # of steelhead counted | # of sections | # of crew | Source | Section 1 | Section 2 | Section 3 | Section 4 | Section 5 | Section 6 | Section 7 | Section 8 | Section 9 |
|---------------------|------------------------------------------------------------------------------------------------|----------------------|------------------------------|------------------|-------------|------------------------------|---------------------------------------------------|--------------------------------------|-------------------------------------|-----------------------------|----------------------------------|---------------------------|----------------------------------|------------------------------------|-----------------------------------|
| February 5, 1975 | adults | exc. u/s Slesse Park | | 11 & spot checks | 30 (BCI T) | MoE Surrey file, Bech (1986) | Post Ck. hole & 4 mi. log jam to Centre Creek Br. | Centre Ck. Bridge to Centre Ck. Camp | Centre Ck. Camp to Rearing Pond | Rearing Pond to Old Bridge | Old Bridge to 3rd Bridge | Reco Bridge to Box Canyon | Slesse Creek to Borden Creek | Nursery Run to top of Allison Pool | Allison Pool to Slesse Park Store |
| Sect. length (km) | | poor d/s | | | | | 1.61 | 1.29 | 1.93 | 1.77 | 2.25 | 2.59 | 2.90 | 3.54 | 4.83 |
| # Fish Observed | | | 400 | | | | 1 | 3 | 16 | 2 | 73 | 95 | 14 | 91 | 65 |
| February 5, 1975 | same float as above | | | | | | Slesse Park Store to Tamihi Pool (10) | Boulder Hole to Osbourne Road (11) | Post Ck., Ford Camp and Wells Ranch | | | | | | |
| Sect. length (km) | (cont.) | | | | | | 1.93 | 2.58 | spot checks | | | | | | |
| # Fish Observed | | | | | | | 3 | 7 | 30 | | | | | | |
| February 7, 1975 | Attempt to float from Osbourne Road to the dyke at Yarrow failed due to poor water conditions. | | | | | | | | | | | | | | |
| March 8, 1975 | adults | clear | | 7 | 6 + tenders | MoE Surrey file | Middle Ck. Br. abutment (spot check) | Road Run on Middle Ck. (spot check) | Main Br. (Middle Ck.) (spot check) | Reco Bridge (spot check) | Box Canyon (spot check) | Limits Hole (spot check) | Bedrock Run to Allison | | |
| # Fish Observed | | low flow | 120 | | | | 25 | 20 | 20 | 4 | 15 | 1 | 35 | | |
| March 27 & 28, 1975 | adults | ~9m | | 7 | 5 (2 days) | MoE Surrey file | Boom Sticks (Vedder X) to Hopedale | Hopedale Road to Wilson Road | Wilson Road to d/s Meat Hole | d/s Meat Hole to Power line | Schellers Br. to u/s J. Little's | J. Little's to High bank | High bank to Vedder Crossing Br. | | |
| # Fish Observed | | | 135 | | | | 47 | 19 | 26 | 6 | 13 | 14 | 10 | | |

| Date | For | Visibility | TOTAL # of steelhead counted | # of sections | # of crew | Source | Section 1 | Section 2 | Section 3 | Section 4 | Section 5 | Section 6 | Section 7 | Section 8 | Section 9 |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------------------------|---------------|------------|-----------------|------------------------------------------------------|----------------------------------------|-----------------------------------------|---------------------------------|-----------------------------------------|---------------------------------------|--------------------------|---------------------------|-------------------------------------|
| April 9 & 10, 1975 | adults | ~10m | | 9 | 4 (2 days) | MoE Surrey file | Vedder Crossing to Pump House | Pump House to Log Jam (d/s Peach Pool) | Log Jam (Peach Pool) to Lickman Road | Lickman Road to Hopedale Road | Hopedale Road to BCE Bridge | BCE Bridge to Wilson Road | Wilson Road to Meat Hole | Meat Hole to top of Canal | Top of Canal to 400m u/s Power line |
| # Fish Observed | | | 398 | | | | 35 | 151 | 48 | 11 | 15 | 14 | 4 | 116 | 4 |
| April 11, 1975 | adults | <10m | | 3 | 3 | MoE Surrey file | Run d/s Meat Hole | Cutbank run d/s Meat Hole | Meat Hole | | | | | | |
| # Fish Observed | | | 39 | | | | 37 | 1 | 1 | | | | | | |
| April 16, 1975 | 4 divers floated the lower ~8km of the Little Chilliwack R. (Dolly Varden Ck.). A helicopter was required for drops. Excellent water conditions but no SH adults, juveniles or evidence of spawning. Good habitat. | | | | | | | | | | | | | | |
| February 11, 1976 | adults | good (20') | | 12 | 37 | MoE Surrey file | Campsite pool, Wells Ranch & 4 mi log jam spotchecks | 4 mi. log jam to Centre Ck. Br. | Centre Ck. Bridge to Centre Ck. Camp | Centre Ck. Camp to Rearing Pond | Rearing Pond to Middle Ck. Br. abutment | Middle Ck. Br. abutment to 3rd Bridge | 3rd Br. to Reco Br. | Box Canyon | Slesse Ck. Confluence to Borden Ck. |
| Sect. length (km) | | | | | | | | 1.93 | 1.93 | 1.93 | 2.25 | 2.25 | 1.21 | | 2.90 |
| # Fish Observed | | | 252 | | | | 7 | 18 | 3 | 6 | 43 | 99 | 21 | 8 | 5 |
| February 11, 1976 | same float as above | | | | | | Butterfly to Anderson Ck. (10) | Anderson Ck. to Slesse Park Store (11) | Slesse Park Store to Tamihi Bridge (12) | | | | | | |
| Sect. length (km) | (cont.) | | | | | | 3.54 | | | | | | | | |
| # Fish Observed | | | | | | | 15 | 27 | 0 | | | | | | |

| Date | For | Visibility | TOTAL # of steelhead counted | # of sections | # of crew | Source | Section 1 | Section 2 | Section 3 | Section 4 | Section 5 | Section 6 | Section 7 | Section 8 | Section 9 |
|--------------------------|-------------------|-----------------------------|------------------------------|---------------|------------|-----------------|---------------------------------------|--------------------------------------|-----------------------------------|---------------------------------------|-------------------------------------|------------------------------------|--------------------------------------|------------------------------------|----------------------------------------|
| March 20 & April 4, 1976 | adults | ~8m u/s Slesse Pk. <1m d/s. | | 9 | 8 (2 days) | MoE Surrey file | Post Ck. to Centre Ck. Br. | Centre Ck. Br. to Rearing Pond | Rearing Pond to 3rd Br. | 3rd Br. to Box Canyon | Wellhead (?) to Slesse Ck. | Slesse Ck. to Borden Ck. | Borden Ck. to Allison Railing | Allison to Slesse Park Store | J. Little's to Vedder Crossing |
| # Fish Observed | | | 584 | | | | 2 | 87 | 233 | 98 | 32 | 27 | 71 | 2 | 32 |
| | | | | | | | 552 + 32 (VC) = 584 steelhead | | | | | | | | |
| January 9, 1977 | adults | | | | | MoE Surrey file | Allison to Yarrow | | | | | | | | |
| # Fish Observed | | | 148 | | | | 148 | | | | | | | | |
| February 2, 3 & 4, 1977 | adults & res. RBT | exc. low flow | | 3.5 °C | | MoE Surrey file | 4 mi. log jam (spot check) | Centre Ck. to F.S. Campsite | Middle Ck. abutment to 3rd Bridge | 3rd Bridge to Peter's (?) Bridge | Box Canyon (spot check) | Sandbar Campsite (spot check) | Slesse Creek to Borden Creek | Borden Ck. to Anderson Ck. | |
| # Fish Observed | | | 216 | | | | 0 | 12 | 62 | 39 | 50-75 (?) | 0 | 3 | 50 | |
| February 16, 1978 | adults | | | 18 | 43 | MoE Surrey file | 4 mi. log jam to Centre Creek Bridge | Centre Ck. Bridge to Centre Ck. Camp | Centre Ck. Camp to Riverside Camp | Riverside Camp to Middle Ck. abutment | Middle Ck. abutment to 3rd Bridge | 3rd Bridge to Reco Bridge | Upper Box Canyon to Lower Box Canyon | Sandbar Campsite to Borden Ck. (?) | Borden Ck. to Anderson Ck. |
| # Fish Observed | | | 297 | | | | 9 | 5 | 13 | 7 | 42 | 6 | 53 | 45 | 2 |
| February 16, 1978 | (cont.) | | | | | | Anderson Ck. to Slesse Pk. Store (10) | Slesse Pk. Store to Tamihi Br. (11) | Tamihi Br. to Osbourne Rd. (12) | Osbourne Rd. to J. Little's (13) | J. Little's to Vedder Crossing (14) | Vedder Crossing to Peach Road (15) | Peach Road to Log Jam (16) | Log Jam to Meat Hole (17) | Meat Hole to head of Vedder Canal (18) |
| # Fish Observed | | | | | | | 2 | 11 | 1 | 16 | 5 | 18 | 12 | 17 | 33 |
| February 16, 1979 | adults | | | | | Bech (1986) | Downstream of Slesse Creek | Upstream of Slesse Creek | | | | | | | |
| # Fish Observed | | | 99 | | | | 30 | 69 | | | | | | | |

| Date | For | Visibility | TOTAL # of steelhead counted | # of sections | # of crew | Source | Section 1 | Section 2 | Section 3 | Section 4 | Section 5 | Section 6 | Section 7 | Section 8 | Section 9 |
|--------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|---------------|-----------|-----------------|---------------------------------------|--------------------------------------------|--------------------------------------|---------------------------------------|-----------------------------------|---------------------------|----------------------------------|--------------------------------------|--------------------------------|
| April, 1979 | adults | | | | | Bech (1986) | Upstream of Slesse Creek | | | | | | | | |
| # Fish Observed | | | 169 | | | | 169 | | | | | | | | |
| February 15, 1980 | adults | > 10 m | | 11 | 42 | MoE Surrey file | Chilliwack Lk. to Centre Ck. Br. | Centre Ck. Bridge to Centre Ck. Camp | Centre Ck. Camp to Riverside Camp | Riverside Camp to Middle Ck. abutment | Middle Ck. abutment to 3rd Bridge | 3rd Bridge to Reco Bridge | Reco Br. to Lower Box Canyon | Lower Box Canyon to Slesse Creek | Slesse Creek to Borden Creek |
| # Fish Observed | | | 167 | | | | 11 | 1 | 0 | 3 | 32 | 17 | 40 | 17 | 2 |
| February 15, 1980 | (cont.) | | | | | | Borden Creek to Anderson Culvert (10) | Anderson Culvert to Slesse Park Store (11) | | | | | | | |
| # Fish Observed | | | | | | | 26 | 18 | | | | | | | |
| February 15, 1980 | | Slesse Creek floated from Box Canyon (?) to confluence with the Chilliwack River. One report says no steelhead, another says one steelhead sighted. | | | | | | | | | | | | | |
| April 3 & 16, 1980 | adults | ~3m | | 4 | 8 | MoE Surrey file | Post Ck. [Hole] | 4 mi. log jam to Centre Ck. Bridge | Centre Ck. Bridge to Centre Ck. Camp | Left Channel Middle Creek | Riverside Campsite to 3rd Bridge | 3rd Bridge to Reco Bridge | Reco Bridge to Slesse Confluence | Slesse Confluence to Butterfly Falls | Butterfly Falls to Slesse Park |
| # Fish Observed | | | 132 | | | | 1 | 11 | 13 | 2 | 27 | 3 | 32 | 19 | 24 |
| March 11, 1981 | adults | | | | | Bech (1986) | Upstream of Slesse Creek | | | | | | | | |
| # Fish Observed | | | 380 | | | | 380 | | | | | | | | |

| Date | For | Visibility | TOTAL # of steelhead counted | # of sections | # of crew | Source | Section 1 | Section 2 | Section 3 | Section 4 | Section 5 | Section 6 | Section 7 | Section 8 | Section 9 |
|-------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------|------------------------------|---------------|------------|-----------------|---------------------------------------------------|--------------------------------------|---------------------------------------|-------------------------------------------|------------------------------------------------|---------------------------------------|--------------------------------------|---------------------------------------|--------------------------|
| March 11, 16, 17, 24, 26 & 31, 1982 | adults | | | 11 | | MoE Surrey file | 4 mi. log jam to Centre Creek Bridge | Centre Ck. Bridge to Centre Ck. Camp | Centre Ck. Camp to Riverside Camp | Riverside Camp to Middle Ck. abutment | Middle Ck. abutment to 3 rd Bridge | 3 rd Bridge to Reco Bridge | Upper Box Canyon to Lower Box Canyon | Sandbar Campsite to Thermograph | Thermograph Hole & Run |
| # Fish Observed | | | 663 | | | | 48 | 23 | 32 | 15 | 166 | 75 | 72 | 3 | 50 |
| March 11, 16, 17, 24, 26 & 31, 1982 | (cont.) | | | | | | Chilliwack Hatchery to Thurston Camp (10) | Thurston Camp to Slesse Park (11) | | | | | | | |
| # Fish Observed | | | | | | | 120 | 59 | | | | | | | |
| February 8, 10 & 14, 1983 | adults; water cond. poor for Lower R. float | 75m(!) u/s Slesse; 3-4 m d/s | | 11 | 3 (4 days) | MoE Surrey file | Post Ck. hole & 4 mi. log jam to Centre Creek Br. | Centre Ck. Bridge to Centre Ck. Camp | Centre Ck. Camp to Riverside Campsite | Riverside Camp to Middle Ck. Br. abutment | Middle Ck. Br. abutment to 3 rd Br. | 3 rd Br. to Reco Br. | Upper & Lower Box Canyon | Sandbar Campsite to Slesse Confluence | Slesse Ck. to Borden Ck. |
| # Fish Observed | | | 270 | | | | 20 | 12 | 32 | 10 | 28 | 8 | 22 & 22 | 45 | 26 |
| February 8, 10 & 14, 1983 | (cont.) | | | | | | Borden Creek to Thurston Camp (10) | Thurston Camp to Allison Pool (11) | | | | | | | |
| # Fish Observed | | | | | | | 43 | 2 | | | | | | | |
| February ??, 1983 | Slesse Creek floated from release site to confluence with the Chilliwack River. No steelhead were sighted. | | | | | | | | | | | | | | |

| Date | For | Visibility | TOTAL # of steelhead counted | # of sections | # of crew | Source | Section 1 | Section 2 | Section 3 | Section 4 | Section 5 | Section 6 | Section 7 | Section 8 | Section 9 |
|-------------------------------------------------------|------------------------|---------------|------------------------------|---------------|------------|-----------------|---------------------------------------------------|--------------------------------------|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------|--------------------------|---------------------------------------|--------------------------|
| April 6, 8, 13 & 14, 1983 | adults: Lower R. float | >5m | | 13 | 3 (4 days) | MoE Surrey file | 4 mi. log jam to Centre Creek Br. | Centre Ck. Bridge to Centre Ck. Camp | Centre Ck. Camp to Riverside Campsite | Riverside Camp to Middle Ck. Br. abutment | Middle Ck. Br. abutment to 3rd Br. | 3rd Br. to Reco Br. | Upper & Lower Box Canyon | Sandbar Campsite to Slesse Confluence | Slesse Ck. to Borden Ck. |
| # Fish Observed | float | | 705 | | | | 40 | 46 | 57 | 70 | 65 | 30 | 56 | 68 | 60 |
| April 6, 8, 13 & 14, 1983 | (cont.) | | | | | | Borden Creek to Thurston Camp (10) | Thurston Camp to Anderson Creek (11) | Anderson Creek to Slesse Park Store (12) | Slesse Park Store to Boulder Hold (13) | | | | | |
| # Fish Observed | | | | | | | 106 | 29 | 64 | 14 | | | | | |
| March 13 & 15, 1984 | adults | | | 8 | 9 | MoE Surrey file | Post Ck. hole & 4 mi. log jam to Centre Creek Br. | Centre Ck. Bridge to Centre Ck. Camp | Centre Ck. Camp to Riverside Campsite | Riverside Camp to Middle Ck. Br. abutment | Middle Ck. Br. abutment to 3rd Br. | 3rd Br. to Reco Br. | Upper & Lower Box Canyon | Sandbar Campsite to Slesse Confluence | |
| # Fish Observed | | | 223 | | | | 2 & 9 = 11 | 13 | 13 | 26 | 41 | 13 | 22 & 48 = 70 | 36 | |
| May 12, 1986 Note: Latest (spring) float on record | adults | ~3m, low flow | | 3 | 3 | MoE Surrey file | Abutment to 3rd Bridge | Lower Box Canyon | Upper Box Canyon | | | | | | |
| # Fish Observed | | | 45 | | | | 25 | 18 | 2 | | | | | | |
| March 25, 1987 | adults; late | exc. to OK | | 3 | 3 | MoE Surrey file | Abutment to 3rd Bridge | Upper Box Canyon | Lower Box Canyon (Thermograph) | Recommends that future floats spot check Upper & Lower Box Canyons w/out floating the middle section ("as no fish are ever seen there"). | | | | | |
| # Fish Observed | | | 118 | | | | 77 | 20 | 21 | | | | | | |

| Date | For | Visibility | TOTAL # of steelhead counted | # of sections | # of crew | Source | Section 1 | Section 2 |
|--------------------|-----------------------|-----------------------------------|------------------------------|---------------|-----------|-----------------|---------------------------------------------------|-----------------------------------------|
| August 25, 1988 | adult res. RBT | 35-50% of fish thought to be seen | | 2 | 3 | MoE file | 4 mi. log jam | Middle Ck. Br. abutment to 3rd Bridge |
| Sect. length (km) | | | | 2.6 | | | 0.7 | 1.9 |
| # Fish Observed | | | 51 RBT | | | | 8 RBT 30cm+, 11 RBT 40cm+ | 11 RBT 30cm+, 21 RBT 40cm+ |
| September 1, 1989 | adult res. RBT | 4m | | 2 | 3 | MoE file | 4 mi. log jam | Middle Ck. Br. abutment to 3rd Bridge |
| Sect. length (km) | | | | 3.1 | | | 0.7 | 1.9 |
| # Fish Observed | | low flow | 42 RBT | | | | 2 RBT 30cm+ | 18 RBT 30cm+, 19 RBT 40cm+, 3 RBT 50cm+ |
| September 27, 1990 | adult res. RBT | 4m | | 2 | 3 | MoE Surrey file | Middle Ck. Br. abutment to 3rd Bridge | 3rd Bridge to Foley Creek |
| Sect. length (km) | | 12° C | | 3.1 | | | 1.9 | 1.2 |
| # Fish Observed | | low flow | 67 RBT | | | | 17 RBT 20cm+, 15 RBT 30cm+, 10 RBT 40cm+ | 12 RBT 20cm+, 9 RBT 30cm+, 4 RBT 40cm+ |
| September 23, 1991 | adult res. RBT | 6m | | 2 | 3 | MoE Surrey file | Middle Ck. Br. abutment to 3rd Bridge | 3rd Bridge to Foley Creek |
| Sect. length (km) | | 11° C | | 3.1 | | | 1.9 | 1.2 |
| # Fish Observed | | | 62 RBT | | | | 20 RBT 20cm+, 13 RBT 30cm+, 1 RBT 40cm+ | 21 RBT 20cm+, 6 RBT 30cm+, 1 RBT 40cm+ |
| October 13, 1992 | adult res. RBT | 4m | | 2 | 3 | MoE Surrey file | Middle Ck. Br. abutment to 3 rd Bridge | 3 rd Bridge to Foley Creek |
| Sect. length (km) | | 13° C | | 3.1 | | | 1.9 | 1.2 |
| # Fish Observed | | | 93 RBT | | | | 11 RBT 20cm+, 21 RBT 30cm+, 5 RBT 40cm+ | 28 RBT 20cm+, 20 RBT 30cm+, 8 RBT 40cm+ |

| Date | For | Visibility | TOTAL # of steelhead counted | # of sections | # of crew | Source | Section 1 | Section 2 | Section 3 | Section 4 | Section 5 | Section 6 | Section 7 | Section 8 | Section 9 |
|-------------------------------|---------------------|------------|------------------------------|---------------|------------|------------|-------------------------------------------|--------------------------------------------|-------------------------------------------------|--------------------------------------------------|-----------------------------------------------|------------------------------------|----------------------------------------|--------------------------------------|------------------------------------------|
| February 16, 17, 18, 19, 2000 | adults | | | 18 | 3 (4 days) | ARL floats | Old 4 Mile Log Jam to Centre Creek Prison | Centre Creek Prison to Centre Creek Bridge | Centre Creek Br. to Upper side channel | Upper side channel to 3rd Br. Pool | Old Bridge Crossing | Upper Box Canyon Pools | Cable Car Box Canyon Pool | Hatchery Intake to Hatchery Hole | Slesse Creek to Borden Creek |
| Sect. length (km) | | | | | | | 2.8 | 2.2 | 2.2 | 1.9 | spot check | spot check | spot check | spot check | 1.9 |
| # Fish Observed | | | 209 | | | | 0 | 0 | 2 | 1 | 1 | 3 | 0 | 75 | 13 |
| February 16, 17, 18, 19, 2000 | same float as above | | | | | | Borden Creek to Thurston Camp (10) | Thurston Camp to Allison Pool (11) | Allison Pool to Slesse Park clayslide (12) | d/s Tamihi Br. to culvert u/s Sheller's Br. (13) | culvert u/s Sheller's Br. to Way's Field (14) | Way's Field to Liumchen Creek (15) | Liumchen Creek to Vedder Crossing (16) | Vedder Crossing to Lickman Road (17) | Lickman Road to Keith Wilson Bridge (18) |
| Sect. length (km) | (cont.) | | | | | | 2.4 | 2.6 | 1.5 | 1.5 | 2.4 | 2.6 | 4.3 | 3.1 | 6.2 |
| # Fish Observed | | | | | | | 35 | 18 | 4 | 2 | 6 | 5 | 12 | 10 | 22 |
| March 20, 21, 2000 | adults | | | 12 | 3 (2 days) | ARL floats | Old 4 Mile Log Jam to Centre Creek Prison | Centre Creek Prison to Centre Creek Bridge | Centre Creek Bridge to Middle Creek turn around | Middle Creek turn around to 3rd Bridge Pool | Old Bridge Crossing | Upper Box Canyon Pools | Cable Car Box Canyon Pool | Hatchery Intake to Hatchery Hole | Slesse Creek to Borden Creek |
| Sect. length (km) | | | | | | | 2.8 | 2.2 | 2.6 | 1.5 | spot check | spot check | spot check | spot check | 1.9 |
| # Fish Observed | | | 163 | | | | 4 | 3 | 6 | 7 | 4 | 5 | 23 | 84 | 9 |
| March 20, 21, 2000 | same float as above | | | | | | Borden Creek to Thurston Camp (10) | Thurston Camp to Allison Pool (11) | Allison Pool to Slesse Park clayslide (12) | d/s Tamihi Br. to culvert u/s Sheller's Br. (13) | culvert u/s Sheller's Br. to Way's Field (14) | Way's Field to Liumchen Creek (15) | Liumchen Creek to Vedder Crossing (16) | Vedder Crossing to Lickman Road (17) | Lickman Road to Keith Wilson Bridge (18) |
| Sect. length (km) | (cont.) | | | | | | 2.4 | 2.6 | 1.5 | 1.5 | 2.4 | 2.6 | 4.3 | 3.1 | 6.2 |
| # Fish Observed | | | | | | | 10 | 8 | 0 | not floated | not floated | not floated | not floated | not floated | not floated |

| Date | For | Visibility | TOTAL # of steelhead counted | # of sections | # of crew | Source | Section 1 | Section 2 | Section 3 | Section 4 | Section 5 | Section 6 | Section 7 | Section 8 | Section 9 |
|--------------------|---------------------|----------------------------------------------|------------------------------|---------------|------------|------------|--------------------------------------|-------------------------------------------|----------------------------------------------|------------------------------------------------|------------------------------------------------|-------------------------------------------------|-----------------------------------------------|---------------------------------------------|--------------------------------------------|
| April 3, 2000 | adults | | | 12 | 3 | ARL floats | Old 4 Mile Log Jam to Old Ford | Old Ford to Upper Centre Ck. outside bend | Upper Centre Ck. bend to Centre Ck. WRP in | Centre Ck. WRP intake to Centre Ck. overflow | Centre Ck. overflow to Lower Centre Ck. prison | Lower Centre Ck. prison to Centre Ck. camp spot | Centre Ck. camping spot to Centre Ck. WRP out | Centre Ck. WRP outlet to Centre Ck. trail | Centre Ck. trail to Centre Ck. bridge |
| Sect. length (km) | | | | | (1 day) | | 1 | 0.9 | 0.3 | 0.4 | 0.5 | 0.5 | 0.3 | 0.7 | 0.5 |
| # Fish Observed | | | 27 | | | | 4 | 4 | 0 | 1 | 4 | 5 | 0 | 1 | 2 |
| April 3, 2000 | same float as above | | | | | | Centre Ck. Bridge to 3rd Bridge (10) | Old Bridge Crossing (11) | Upper Box Canyon Pools (12) | Cable Car Canyon Pool (13) | Hatchery Intake to Hatchery Hole | Slesse Creek to Slesse Park clayslide | d/s Tamihi Bridge to Vedder Crossing | Vedder Crossing to Keith Wilson Br. | |
| Sect. length (km) | (cont.) | | | | | | 4.1 | spot check | spot check | spot check | | | | | |
| # Fish Observed | | | | | | | not floated | 0 | 1 | 5 | not floated | not floated | not floated | not floated | |
| April 26, 27, 2000 | adults | | | 18 | 3 (2 days) | ARL floats | Upper Log Jam to Old 4 Mile Log Jam | Old 4 Mile Log Jam to Centre Ck. WRP in | Centre Ck. WRP in to Centre Ck. WRP overflow | Centre Ck. overflow to Centre Ck. camping spot | Centre Ck. camping spot to Centre Ck. WRP out | Centre Ck. WRP outlet to Centre Ck. trail | Centre Ck. trail to Centre Ck. Bridge | Centre Ck. Bridge to Middle Ck. turn around | Middle Ck. turn around to 3rd Bridge Pool |
| Sect. length (km) | | | | | | | 0.5 | 2.2 | 0.4 | 1.0 | 0.3 | 0.3 | 0.5 | 2.6 | 1.5 |
| # Fish Observed | | | 104 | | | | 9 | 5 | 0 | 3 | 1 | 2 | 6 | 12 | 7 |
| April 26, 27, 2000 | same float as above | | | | | | Old Bridge Crossing (10) | Upper Box Canyon Pools (11) | Cable Car Canyon Pool (12) | Hatchery Intake (13) | Hatchery Storage Area to Hatchery Hole (14) | Slesse Creek to Borden Creek (15) | Borden Creek to Thurston Camp (16) | Thurston Camp to Allison Pool (17) | Allison Pool to Slesse Park clayslide (18) |
| Sect. length (km) | (cont.) | | | | | | spot check | | spot check | spot check | 0.6 | 1.9 | 2.4 | 2.6 | 1.5 |
| # Fish Observed | | (Tamihi Br. to Keith Wilson Br. not floated) | | | | | 0 | not floated | 1 | 5 | 17 | 15 | 7 | 6 | 8 |

| Date | For | Visibility | TOTAL # of steelhead counted | # of sections | # of crew | Source | Section 1 | Section 2 | Section 3 | Section 4 | Section 5 | Section 6 | Section 7 |
|-----------------------------|---------------------|------------|------------------------------|---------------|------------|------------|------------------------------------|-------------------------------------------|--------------------------------------|----------------------------------------------|-----------------------------------------------|---------------------------------------------|---------------------------|
| February 8, 9, 13, 14, 2001 | adults | 1 - >10m | | 12 | 3 (4 days) | ARL floats | Upper Log Jam to Centre Ck Bridge | Centre Ck Bridge to Third Bridge | Third Bridge to Old Bridge Crossing | Old Bridge Crossing | Old Br Crossing to Upper Box Canyon Pools | Chipmunk Pools to Cable Car Box Canyon Pool | |
| Sect. length (km) | | | | | | | 5.5 | 4 | 1.7 | spot check | 0.8 | 1.4 | |
| # Fish Observed | | | 458 | | | | not floated | 7 | not floated | 0 | 4 | 3 | |
| February 8, 9, 13, 14, 2001 | same float as above | | | | | | Cable Car Box Canyon Pool (7) | Cable Car Box Canyon Pool to Hatchery (8) | Hatchery Intake to Butterfly Run (9) | Butterfly Run to Slesse Park Clayslides (10) | Tamihi to Vedder Crossing (11) | Vedder Crossing to Keith Wilson Bridge (12) | |
| Sect. length (km) | (cont.) | | | | | | spot check | 3 | 4.7 | 5.2 | 10.8 | 9.3 | |
| # Fish Observed | | | | | | | 54 | not floated | 298 | 7 | 54 | 31 | |
| March 6, 7, 2001 | adults | 5 - >15m | | 10 | 3 (2 days) | ARL floats | Upper Log Jam to Centre Ck Bridge | Centre Ck Bridge to Third Bridge | Third Bridge to Old Bridge Crossing | Old Bridge Crossing | Old Br Crossing to Upper Box Canyon Pools | Chipmunk Pools to Cable Car Box Canyon Pool | |
| Sect. length (km) | | | | | | | 5.5 | 4 | 1.7 | spot check | 0.8 | 1.4 | |
| # Fish Observed | | | 649 | | | | 0 | 20 | not floated | 65 | 60 | 116 | |
| March 6, 7, 2001 | same float as above | | | | | | Cable Car Box Canyon Pool (7) | Cable Car Box Canyon Pool to Hatchery (8) | Hatchery Intake to Butterfly Run (9) | Butterfly Run to Slesse Park Clayslides (10) | | | |
| Sect. length (km) | (cont.) | | | | | | spot check | 3 | 4.7 | 5.2 | | | |
| # Fish Observed | | | | | | | 0 | not floated | 358 | 30 | | | |
| March 8, 2001 | adults | 3 - 8m | | 6 | 3 | ARL floats | Upper Log Jam to Centre Ck. Bridge | Centre Ck Bridge to Third Bridge | Third Bridge to Old Bridge Crossing | Old Bridge Crossing | Old Bridge Crossing to Upper Box Canyon Pools | Chipmunk Pools to Cable Car Box Canyon Pool | Cable Car Box Canyon Pool |
| Sect. length (km) | | | | | | | 5.5 | 4 | 1.7 | spot check | 0.8 | 1.4 | |
| # Fish Observed | | | 128 | | | | not floated | 4 | 26 | 37 | 26 | 35 | spot check not floated |

| Date | For | Visibility | TOTAL # of steelhead counted | # of sections | # of crew | Source | Section 1 | Section 2 | Section 3 | Section 4 | Section 5 | Section 6 | Section 7 |
|------------------------|---------------------|------------|------------------------------|---------------|----------------------------|------------|--------------------------------------|-------------------------------------------|--------------------------------------|----------------------------------------------|-------------------------------------------|---------------------------------------------|-----------|
| March 26, 27, 2001 | adults | 4 - 8m | | 10 | 3 (2 days) | ARL floats | Upper Log Jam to Centre Creek Bridge | Centre Ck Bridge to Third Bridge | Third Bridge to Old Bridge Crossing | Old Bridge Crossing | Old Br Crossing to Upper Box Canyon Pools | Chipmunk Pools to Cable Car Box Canyon Pool | |
| Sect. length (km) | | | | | | | 5.5 | 4 | 1.7 | spot check | 0.8 | 1.4 | |
| # Fish Observed | | | 415 | | | | 51 | 142 | not floated | 60 | 9 | 14 | |
| March 26, 27, 2001 | same float as above | | | | | | Cable Car Box Canyon Pool (7) | Cable Car Box Canyon Pool to Hatchery (8) | Hatchery Intake to Butterfly Run (9) | Butterfly Run to Slesse Park Clayslides (10) | | | |
| Sect. length (km) | (cont.) | | | | | | spot check | 3 | 4.7 | 5.2 | | | |
| # Fish Observed | | | | | | | 11 | not floated | 99 | 29 | | | |
| April 10, 11, 12, 2001 | adults | 5 - >10m | | 10 | 3 (4 on April 12) (3 days) | ARL floats | Upper Log Jam to Centre Ck Bridge | Centre Ck Bridge to Third Bridge | Third Bridge to Old Bridge Crossing | Old Bridge Crossing | Old Br Crossing to Upper Box Canyon Pools | Chipmunk Pools to Cable Car Box Canyon Pool | |
| Sect. length (km) | | | | | | | 5.5 | 4 | 1.7 | spot check | 0.8 | 1.4 | |
| # Fish Observed | | | 1204 | | | | 60 | 175 | 89 | 59 | 93 | 60 | |
| April 10, 11, 12, 2001 | same float as above | | | | | | Cable Car Box Canyon Pool (7) | Cable Car Box Canyon Pool to Hatchery (8) | Hatchery Intake to Butterfly Run (9) | Butterfly Run to Slesse Park Clayslides (10) | | | |
| Sect. length (km) | (cont.) | | | | | | spot check | 3 | 4.7 | 5.2 | | | |
| # Fish Observed | | | | | | | 36 | 67 | 411 | 154 | | | |

| Date | Total SH | Post | 4-mi. log jam | Centre Creek Br | Third Bridge | Box Canyons | Sandbar Camp | Wells Ranch | Slesse Creek | Anderson | Allison | Slesse Park | Tamihi | Boulder Hole | Osbourne Road | Vedder Crossing | Vedder Canal | Power Line |
|---------------|----------|------|---------------|-----------------|--------------|-------------|--------------|-------------|--------------|----------|---------|-------------|--------|--------------|---------------|-----------------|--------------|------------|
| Feb. 8, 1973 | 751 | | | █ | █ | █ | █ | | | | | | | | | | | |
| Feb. 15, 1973 | 291 | | | █ | █ | █ | █ | | | | | | | | | | | |
| Feb. 21, 1974 | 278 | █ | | █ | █ | █ | █ | | | | | | | | | | | |
| Jan. 8, 1975 | 174 | | | | █ | █ | | | | | | | | | | | | |
| Feb. 5, 1975 | 400 | █ | | █ | █ | █ | █ | | | | | | | | | | | |
| Mar. 8, 1975 | 120 | | | | █ | █ | | | | | | | | | | | | |
| Mar. 27, 1975 | 135 | | | | | | | | | | | | | | | | █ | █ |
| Apr. 9, 1979 | 398 | | | | | | | | | | | | | | | | | █ |
| Apr. 11, 1975 | 39 | | | | | | | | | | | | | | | | | █ |
| Feb. 11, 1976 | 252 | | | █ | █ | █ | █ | | | | | | | | | | | |
| Mar. 20, 1976 | 584 | █ | | █ | █ | █ | █ | | | | | | | | | | | █ |
| Jan. 9, 1977 | 148 | | | | | | | | | | | | | | | | | █ |
| Feb. 2, 1977 | 216 | | | █ | █ | █ | | | | | | | | | | | | |
| Feb. 16, 1978 | 297 | | | █ | █ | █ | █ | | | | | | | | | | | |
| Feb. 16, 1979 | 99 | ? | | █ | █ | █ | █ | | | | | | | | | | | |
| Apr., 1979 | 169 | ? | | █ | █ | █ | █ | | | | | | | | | | | |
| Feb. 15, 1980 | 167 | █ | | █ | █ | █ | █ | | | | | | | | | | | |
| Apr. 3, 1980 | 132 | █ | | █ | █ | █ | █ | | | | | | | | | | | |
| Mar. 11, 1981 | 380 | ? | | █ | █ | █ | █ | | | | | | | | | | | |
| Mar. 11, 1982 | 663 | | | █ | █ | █ | █ | | | | | | | | | | | |
| Feb. 8, 1983 | 270 | █ | | █ | █ | █ | █ | | | | | | | | | | | |
| Apr. 6, 1983 | 705 | | | █ | █ | █ | █ | | | | | | | | | | | |
| Mar. 13, 1984 | 223 | █ | | █ | █ | █ | █ | | | | | | | | | | | |
| May 12, 1986 | 45 | | | | █ | | | | | | | | | | | | | |
| Mar. 25, 1987 | 118 | | | | █ | | | | | | | | | | | | | |
| Feb. 16, 2000 | 209 | | | █ | █ | █ | █ | | | | | | | | | | | |
| Mar. 20, 2000 | 163 | | | █ | █ | █ | █ | | | | | | | | | | | |
| Apr. 3, 2000 | 27 | | | █ | █ | █ | █ | | | | | | | | | | | |
| Mar. 26, 2000 | 104 | | | █ | █ | █ | █ | | | | | | | | | | | |
| Feb. 8, 2001 | 458 | | | █ | █ | █ | █ | | | | | | | | | | | |
| Mar. 6, 2001 | 649 | | | █ | █ | █ | █ | | | | | | | | | | | |
| Mar. 8, 2001 | 128 | | | | | █ | | | | | | | | | | | | |
| Mar. 26, 2001 | 415 | | | █ | █ | █ | █ | | | | | | | | | | | |
| Apr. 10, 2001 | 1204 | | | █ | █ | █ | █ | | | | | | | | | | | |

Note: Schematic diagram approximate, and *not to scale*, and relies on file records of reaches floated (see Appendix II).
 Some records sum counts over large sections, and do not indicate whether all reaches were floated, or if some dangerous portions were walked. Sections for which there is particular uncertainty are indicated in grey.
 Spot checks indicated by short bars (Post Creek, Box Canyons, Sandbar Camp and Wells Ranch).