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1993 AND 1994 COHO SPAWNING ESCAPEMENT
AND JUVENILE STUDIES IN LOUIS AND LEMIEUX CREEKS
(NORTH THOMPSON RIVER)

by

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ABSTRACT

Atagi D. Y., R. E. Diewert, J. M. Bratty, L. C. Walthers, and J. R. Irvine. 1999. 1993 and 1994 coho spawning escapement and juvenile studies in Louis and Lemieux creeks (North Thompson River). *Can. Manuscr. Rep. Fish. Aquat. Sci.* 2474: 80 p.

In 1993 Fisheries and Oceans Canada (DFO) implemented a program to assess coho populations in the North Thompson River region. Louis and Lemieux creeks, tributaries to the North Thompson River, support populations of coho and were selected for assessments. The adult escapement was estimated in 1993 and 1994 using the Petersen mark-recapture method. Escapement estimates for 1993 were; 554 adult coho to Louis Creek and 535 adult coho to Lemieux Creek. In 1994 escapement estimates were; 288 adult coho to Louis Creek and 936 adult coho to Lemieux Creek. In the falls of 1993 and 1994, Lemieux Creek juvenile (0+) coho were minnow trapped and coded wire tagged. Juveniles in Louis Creek were enumerated, but not tagged due to low numbers.

RÉSUMÉ

Atagi D. Y., R. E. Diewert, J. M. Bratty, L. C. Walthers, and J. R. Irvine. 1999. 1993 and 1994 coho spawning escapement and juvenile studies in Louis and Lemieux creeks (North Thompson River). *Can. Manuscr. Rep. Fish. Aquat. Sci.* 2474: 80 p.

En 1993, le ministère des Pêches et des Océans du Canada (MPO) a lancé un programme visant à évaluer les populations de coho dans la région de la rivière Thompson Nord. Les criques Louis et Lemieux, deux affluents de la Thompson qui abritent des populations de coho, ont été retenus pour les évaluations. Les échappées d'adultes ont été estimées en 1993 et 1994 par la méthode de marquage-recapture de Petersen, avec les résultats suivants : pour 1993, 554 cohos adultes vers le Louis et 535 vers le Lemieux; en 1994, 288 vers le Louis et 936 vers le Lemieux. À l'automne 1993 et 1994, des cohos juvéniles (0+) du crique Lemieux ont été capturés dans des pièges à ménés et marqués avec des micromarques codées. Les juvéniles du crique Louis ont été dénombrés, mais, à cause de la faiblesse des effectifs, ils n'ont pas été marqués.

INTRODUCTION

In 1993, the Fraser River Green Plan targeted North Thompson River coho salmon (*Oncorhynchus kisutch*) stocks for improved investigation. Impetus for expanded assessment programs originated with reports that this region's coho populations were in serious decline (Northcote and Atagi 1997). A lack of basic biological information on juvenile coho in the North Thompson provided additional incentive for renewed study. Research objectives were threefold and included measuring the annual spawning escapements of coho to selected study streams, and applying coded wire tags (CWT) to wild coho juveniles in these streams. The third objective involved examination of life history and habitat utilization characteristics of North Thompson River coho juveniles.

This report documents the 1993 and 1994 results of two adult escapement enumerations and juvenile CWT programs. Coho spawning escapements were evaluated for both Louis and Lemieux creeks (Fig. 1a), with juvenile coho being minnow trapped and coded wire tagged in Lemieux Creek. Although Louis Creek juveniles were enumerated, they were not coded wire tagged in either year due to low juvenile population numbers.

The North Thompson River and many of its tributaries support major stocks of coho, chinook (*O. tshawytscha*), sockeye (*O. nerka*), and pink salmon (*O. gorbuscha*), as well as steelhead and rainbow trout (*O. mykiss*). Bull trout (*Salvelinus confluentus*) and Rocky Mountain whitefish (*Prosopium williamsoni*) are also present in the system (Stewart *et al.* 1983). The non-salmonid species that predominate in the North Thompson River basin are: sculpins (*Cottus spp.*), lampreys (*Lampetra spp.*), redbside shiners (*Richardsonius balteatus*), longnose dace (*Rhinichthys cataractae*), largescale suckers (*Catostomus macrocheilus*), and northern pikeminnow (*Ptychocheilus oregonensis*).

Coho escapements to the North Thompson represent approximately 34% of the total coho escapements to the Thompson River basin (Harding *et al.* 1994). Previous CWT studies of North Thompson coho stocks indicate a harvest distribution pattern that is predominantly outside of the Strait of Georgia. The age structure of returning adults is chiefly composed of age 3₂ fish (Harding *et al.* 1994).

STUDY AREA

The North Thompson River flows east from its origins in the Caribou Mountains, and drains an area approximately 13,200 km² before joining with the South Thompson River at Kamloops (British Columbia). The two rivers form the Thompson River, which is one of the largest tributaries in the Fraser River watershed. The mean annual flow of the North Thompson River as measured at McLure (Fig. 1a), is approximately 452 m³/s with an average 7 day low flow, based on a 30 year record, of 57.7 m³/s (Sigma Engineering Ltd. 1991).

Louis and Lemieux creeks are in the southern portion of the North Thompson watershed and characterized by moderate to low gradients with headwaters originating in the lower elevations of the Shuswap Highlands (Stewart *et al.* 1983). Louis Creek flows approximately 66 km north to join the east side of the North Thompson River at the community of Louis Creek (Fig. 1a). Lemieux Creek originates near Mount Heger (2000 m) and flows 33 km in a

southerly direction before merging on the west side of the North Thompson River at Little Fort, approximately 100 km north of Kamloops.

a) Louis Creek

Louis Creek drains an area of 512 km² including Eileen Lake and six tributaries: Fraser Creek (km 8), Fadear Creek (km 15.5), Cahilty Creek (km 27.7), McGillivray Creek (km 42.2), Christian Creek (km 43.5), and Dominion Creek (km 47) (Fig. 1b). Significant flow has been noted in four of these streams (Fadear, Cahilty, McGillivray and Christian), but except for nominal spawning reported in the latter, high gradients limit their contribution to the salmon production of the system. Most significant salmon rearing conditions exist in the Louis Creek mainstem, particularly downstream of Dominion Creek, giving an accessible length for anadromous fish of 61.7 km. Since 1951, coho escapements to the system have ranged from 200 to 7,500, and the 1951-1980 mean spawner population is estimated at 1,600 fish. According to Harding *et al.* (1994), Louis coho escapements during the last two decades have averaged ~1,250 fish.

The majority of Louis Creek is a meandering, single channel bordered by agricultural land. Extensive agricultural and recreational use of Louis Creek has resulted in silting and streambank erosion in some areas (Berry and Kahl 1982). Louis Creek has an average wetted width of 8 m, a mean depth of 50 cm and is accessible from the north through Louis Creek Road and by the Heffley Creek Road to the west. The village of Whitecroft is situated near the McGillivray Creek confluence. Seven primary reaches have been identified in the anadromous portion of the Louis Creek mainstem based on major differences in flow, gradient, channel structure and riparian cover. For the purposes of this discussion, these reaches were further divided into three sections (lower, middle and upper) each with two to three reaches: lower - reach 1 and 2; middle - reach 3 and 4; upper - reach 5, and 7. A permanent adult fence structure exists approximately 10 km upstream of the confluence of Louis Creek with the North Thompson River (see Fig. 1b).

b) Lemieux Creek

The drainage area of Lemieux Creek encompasses 282 km², including Taweel Lake and three tributaries: Eakin Creek (km 4.0), Nehalliston Creek (km 5.3) and Demers Creek (km 6.0) (Fig. 1c). Flows in the creek are somewhat stabilized by Taweel Lake, but intensive irrigation has been known to exacerbate low water levels during the summer (Stewart *et al.* 1983). The creek has abundant sidechannel habitat, a gravel and cobble substrate and numerous beaver dams and log debris. The majority of this creek is easily accessible from Highway 24 and Lemieux Creek Road, and it is unusual in that its major spawning areas remain ice-free in the winter (Hutton *et al.* 1983). Impassable falls are located at km 12.5 making the upper reaches of the creek inaccessible to anadromous fish populations. Nonetheless, Lemieux Creek supports a significant coho spawning population in addition to a limited number of chinook spawners. A permanent adult fence structure exists near the Highway 24 bridge crossing, about 1.0 km upstream of the confluence of Lemieux Creek with the North Thompson River. Sockeye were reported in the system in the early 1950s. Since 1951, coho escapements to the system have ranged from 75 to 3,500, and the 1951-1980 mean spawner population is estimated at 1,000 fish. However, according to Harding *et al.* (1994), Lemieux coho escapements during the last two decades have averaged around 600 fish.

The anadromous area in Lemieux Creek may be divided into three main sections (lower, middle and upper) each containing two to three reaches: lower - reach 5, 6, 6a, and 7; middle - reach 3 and 4; upper - reach 1 and 2 (see Fig. 1c). The lower section of Lemieux Creek is approximately 3 km long and runs from the community of Little Fort, past the Highway 24 crossing and upstream for about 1.5 km. It consists of a deep fast main channel with many side channels and backwaters. This lower section has an average gradient of less than 1%, is 8-10 m wide, has a sand and gravel substrate, and short shallow rapids with small pools. Cover from bank and aquatic vegetation is minimal with cutbanks and log debris forming the major source of cover. Spawning and rearing potential in this section has been described as limited (Hutton *et al.* 1983). Much of the valley surrounding the lower reaches of Lemieux Creek has been cleared for agricultural use.

The middle reaches of Lemieux Creek cover a stream length of approximately 4 km and encompass the confluences of Eakins and Nehalliston creeks. The average gradient of this section is somewhat steeper than below (1-1.5%) and the streambed is mostly cobble and boulder in the lower portion and cobble and pebble higher up. This section of Lemieux Creek is more braided and has abundant bank vegetation and log debris for cover. The average wetted width is 5-7 m with numerous beaver and log jams creating channel widths of up to 20 m (Hutton *et al.* 1983). Rearing and spawning habitat are relatively abundant in this section.

The upper section of Lemieux Creek is approximately 2-3 km long and includes the outlet of Demers Creek where the substrate is silt and sand. The remainder of the section has a wetted width of about 5 m, a cobble and pebble substrate, and sections of pools and short riffles. Salmon rearing potential and spawning activity is concentrated in the lower portion of this section (Stewart *et al.* 1983).

FIELD METHODS

Juvenile Fish Capture

Juvenile coho were captured in Gee minnow traps set throughout Louis and Lemieux creeks and, in 1993, in slower sections of the North Thompson River near the confluences of each creek. The trapping period lasted from September 8 to October 2 in 1993 and September 6 to October 10 in 1994. Up to 400 minnow traps baited with chum salmon roe or sardines were set each day in areas of slow to moderate current with adequate cover such as log jams, submerged debris and under over-hanging banks. In areas of high fish abundance but limited cover, capture effectiveness was improved by providing artificial cover such as tree or shrub branches. Traps were moved frequently in response to declining catch levels.

The minnow traps were checked and rebaited up to five times daily, with captured fish being collected and enumerated. Coho juveniles were transported in 23 litre plastic buckets to nearby pens (described below) and held for sampling and coded wire tagging. Chinook, trout and all other species were enumerated and released at the capture site.

Each reach was intensively trapped independently from other sections in the study stream. Trapping was halted in a particular section when fish capture rates were substantially reduced. Coded wire tagged coho were then released throughout the area.

Juvenile Coho Holding

Prior to tagging, all coho juveniles were held in Lemieux Creek in pens constructed from 0.9 m X 1.8 m plastic (ABS) pipe frames and 4.8 mm mesh marquisette netting. Snap on plastic covers provided shade and protection from avian predators. Floats were attached to the ABS frame uprights to help support the pens in the water. Pens were either secured to shore or attached together. Holding sites were selected for each discrete trapping area on the basis of four criteria: ease of access; protection from turbulence during freshets; proximity to trapping areas; and the presence of an adequate supply of clean, oxygenated water at low flows.

Catches were graded by size into separate pens in order to minimize cannibalism and ease of tagging. Pen loading densities were loosely based on those recommended by McNeil and Bailey (1975), but were modified on the basis of local conditions and fish behaviour. Mortalities were enumerated and removed daily.

Coded Wire Tag Application (CWT)

The CWT equipment and machine maintenance procedures used during the study were described by Armstrong and Argue (1977) and Schubert and Fedorenko (1985). Coded wire tagging and trapping operations were coincident, and occurred in Lemieux Creek only between September 15 and October 2 in 1993, and September 8 and October 1 in 1994.

On each tagging day, coho were sorted roughly by size. Separate nose molds and implant depths were used for each group. Tag implantation was checked for each tag lot by bisecting the skull of a coded wire tagged fish with a scalpel along the median plane. If the CWT was not in the preferred position in the cartilaginous wedge of the skull (the chondrocranium), the implant depth was adjusted and the procedure repeated until tag placement was correct.

During the tagging procedure, fish were anaesthetized with Tricaine Methane Sulphonate (TMS), marked by adipose fin removal, coded wire tagged and passed through a quality control device to ensure that the CWT was present. Fish were then put into recovery pens to revive from the anesthesia. All coho juveniles with a fork length greater than 45 mm were tagged, with the exception of severely diseased and damaged fish which were counted then put into the recovery pens. A random sample of 200-500 coho were collected from the recovery bucket throughout the day and retained overnight to assess post-tagging mortality, adipose fin clip (AFC) quality and tag retention. Any coho without a CWT or with a poor AFC was retagged and/or reclipped. On occasion, this step was omitted due to problems with bears or flood conditions. Tagged coho were either transported to the original trapping area and released, or held until the cessation of trapping, transported and released.

Age Class Separation

Juvenile coho were separated into 0+ and 1+ age classes according to eye size (Schubert and Fedorenko 1985). Coho with eye diameters smaller than 5.5 mm were classified as age 0+ and those with larger eye diameters were recorded as age 1+. Dial vernier calipers were used to measure eye diameters. Scale samples were taken to verify this field age class separation technique.

Biological Sampling

Random samples of 25 juvenile coho from each area were chosen to determine fish age and average size and weight at release. A scale smear, with a scalpel was taken from the preferred region, nose fork length was measured to the nearest millimeter and mean wet weights (± 0.1 g) were determined by weighing the sample in aggregate in 1993 and the fish individually in 1994.

Adult Coho Capture

All coho adults were captured at adult fences installed in the lower reaches of both Lemieux and Louis creeks. (It was assumed that no (or minimal) spawning occurred downstream of either fence). Both fences were constructed of 2.4 m (8') long aluminum channel panels with 1.2 m (4') high, 2.5 cm (1") diameter aluminum dowels. The panels were attached to wooden bulkheads on either shoreline and rested on a 1 m wide wooden sill. All panels were supported at 1 m intervals with 1.6 cm (5/8") re-bar pounded into the substrate. A holding box was also constructed of aluminum panels and had a removable, lockable lid which was fitted with a 10 cm wide opening. The Louis Creek fence operated from October 14 to December 24 in 1993, and October 12 to December 30 in 1994. The Lemieux Creek fence captured adults between October 14 and January 9 in 1993/1994, and October 21 and January 12 in 1994/1995. The majority of fish were Petersen disk tagged (described below) and released immediately upstream of the fences. The Dunn Creek Hatchery facility also collected some coho adults for brood stock purposes, and a small number of adults were killed at the fence. Fences were periodically laid down due to freshet and ice jams creating some gaps in fence operation during spawning migrations and a subsequent underestimation of the number of fish migrating upstream. Details of the fence catches are listed in Appendix 1a to 1d.

Disk Tag Application

Coho adults were Petersen disk tagged in a wooden tray (10 cm X 10 cm X 100 cm) constructed with a flexible material bottom and a meter stick recessed in one side. The tags consisted of two 2.2 cm diameter laminated cellulose acetate disks and one 0.7 cm diameter transparent plastic buffer disk threaded through centrally punched holes onto a 7.7 cm long nickel pin. The pin was inserted with pliers through the musculature and pterygiophore bones approximately 1.2 cm below the anterior portion of the dorsal fin insertion. The disk tags, arranged with one on each side of the fish and with a buffer disk on the pinhead side, were secured by twisting the pin into double knot. One disk per pair was numbered with a unique code.

Each disk tagged fish received a secondary mark to allow the assessment of disk tag loss. A 0.7 cm diameter hole was punched through the operculum using a single hole paper punch. Care was taken to avoid gill tissue damage.

Date of capture, disk tag number, nose-fork (NF) length (to the nearest 0.1 cm), sex and adipose fin status were recorded for each fish released with a disk tag. Release condition was recorded as 1 (swam away vigorously), 2 (swam away sluggishly) or 3 (required ventilation). Recovered disk tagged carcasses were enumerated and sampled (described

below) to assess handling mortality. All tag application information is listed in Appendix 2a to 2d.

Spawning Ground Surveys

Weekly stream surveys were conducted in Louis Creek from October 23 to January 7 in 1993/1994 and October 20 to January 15 in 1994/1995. Surveys in Lemieux Creek lasted from October 24 to January 15 in 1993/1994, and November 1 to January 15 in 1994/1995. One, two person crew conducted a complete survey of both creeks, three times a week.

Live adults were counted and carcasses were sampled and recorded by recovery date and reach, sex (confirmed by abdominal incision) and mark type (disk tag, secondary mark or AFC). Heads were removed from AFC coho for later CWT identification. Every carcass was sampled and then cut in two with a machete and returned to the river. Sample data included a scale sample, postorbital-hypural plate (POH) length (to the nearest 0.1 cm), sex, female spawning success (0%, 50% or 99% spawned), and adipose fin and carcass condition. Adipose fin condition was recorded as unclipped or as complete (flush with dorsal surface), partial (nub present) or questionable (appeared clipped but fungus or decomposition obscured area). The condition of all carcasses was recorded as 1 (fresh = gill red or mottled), 2 (moderately fresh = gills white, body firm) or 3 (rotten = body barely intact, flesh soft). The absence of one or both eyes was also noted. The recoveries of disk tagged or secondary marked fish are noted in Appendix 3a to 3d.

ANALYTIC PROCEDURES

Tests for Sampling Selectivity

Temporal, spatial, sex, and size biases in the disk tag application and spawning ground recovery portions of the study were assessed in a manner comparable to that utilized by adult coho enumeration programs in the lower Fraser River (described by Schubert *et al.* 1994). The procedures are described below with relevant modifications.

Period

Temporal biases in the application and recovery samples were assessed using chi-squared tests (Sokal and Rohlf 1981). Application bias was examined by comparing the between period marked and unmarked portions of the recovery sample with their respective expected values. Mark incidences were calculated from the proportion of coho adults marked with either a disk tag or a secondary mark. Recovery bias was examined by stratifying the application sample by period and comparing the proportions recovered and unrecovered with their respective expected values.

Location

Spatial biases were assessed in the application and recovery samples in a similar manner to those described above. Application biases considered the recovered and unrecovered components of the recovery sample stratified by section. Mark incidences were calculated for each recovery section. Recovery biases were examined by stratifying the application sample by section and comparing the proportions recovered and unrecovered with their respective expected values.

Fish Size

Size related biases were assessed in a three step fashion: samples were first tested for normality, then either analyzed with a Kolmogorov-Smirnov two-sample test (if the distributions required a non-parametric test; Sokal and Rohlf 1981), or a Student's t-test. Homogeneity of variances was also verified. Application biases were examined by comparing the POH length distributions of marked and unmarked spawning ground recoveries. Recovery biases were examined by partitioning the application sample into recovered and non-recovered components and comparing the NF length distributions of each.

Fish Sex

Sex related biases were assessed using chi-squared tests. Application bias was examined by comparing the sex ratio of the marked and unmarked spawning ground recoveries with their respective expected values. Recovery bias was examined by partitioning the application sample into recovered and non-recovered components and comparing the sex composition in each with their respective expected values.

Escapement Estimation

Total Escapement

The 1993 and 1994 escapement of Louis and Lemieux creek coho adults was calculated from the mark-recapture data using the Petersen formula (Chapman modification; Ricker 1975). Total escapement was the sum of escapement by sex:

- 1) Estimated coho escapement for each system (N_t):

$$N_t = N_m + N_f$$

where:

N_m = estimated escapement of adult males;

$$= \frac{(M_m + 1)(C_m + 1)}{(R_m + 1)} - 1$$

N_f = estimated escapement of females, analogous to above.

- 2) Estimated 95% confidence limits of N_t :

$$N_t \pm 1.96\sqrt{v_t}$$

where:

v_t = variance of the escapement estimate;

$$= v_m + v_f$$

- v_m = variance of the adult male escapement estimate;

$$= \frac{(N_m^2)(C_m - R_m)}{(C_m + 1)(R_m + 2)}$$
 C_m = number of adult male carcasses examined for disk tags;
 R_m = number of disk tagged/secondary marked adult males recovered; and
 v_f = variance of female escapement estimate, analogous to above.

Sex Identification Correction:

The disk tag application data were corrected for errors that occurred in sex identification during tagging. Sex identification error was corrected as described by Staley (1990):

- 3) Estimated true number of males released with disk tags and secondary marks (M_m):

$$M_m = \frac{M_m^* - (M_t R_{m,f}) / R_f}{1 - (R_{m,f} / R_f) - (R_{f,m} / R_m)}$$

where:

- M_m^* = field estimate of number of males released with disk tags and secondary marks;
 M_t = total number of coho adults released with disk tags and secondary marks;
 $R_{m,f}$ = number of females recovered with disk tags which were released as males;
 R_f = number of females recovered with disk tags;
 R_m = number of males recovered with disk tags.

- 4) Estimated true number of females released with disk tags and secondary marks (M_f):

$$M_f = M_t - M_m$$

RESULTS

Fish Capture

Juvenile Salmonid Capture

a) Louis Creek

A total of 35 juvenile coho, 106 juvenile chinook and 962 rainbow trout were captured in four reaches of Louis Creek in 1993 (Table 1a). In 1994, trapping in Louis Creek was restricted to two sites, and totaled 884 coho, 391 chinook and 1,049 rainbow trout (Table 1b). In both years, trapping was completed over a period of 3 days during September/October. Trapping efforts in Louis Creek in 1993 totaled 5,713 trap-hours or 238 trap-days. In 1993, 74% of the coho catch and 42% of the trout catch occurred at one site, Whitecroft Village (26 and 407,

respectively), which accounted for 34% of the year's total effort (79 trap-days). Catch per trap-day (CPUE) was highest for rainbow trout (0.015).

b) Lemieux Creek and North Thompson River

Prior to the start of the CWT program a reconnaissance survey was conducted in both Louis and Lemieux creeks to determine relative abundance and distribution of juvenile coho. During September 1993, 7 days were spent assessing the feasibility of implementing a CWT program in these systems. Preliminary results of trapping efforts suggested that Louis Creek coho abundances were too low to conduct tagging. However, during early trapping efforts (pre-coded wire tagging) a total of 3,962 juvenile coho, 80 chinook and 529 rainbow trout were captured in four reaches in Lemieux Creek and three areas in the North Thompson River (Table 1a). These results indicated sufficient numbers of juvenile coho to commence coded wire tagging in the Lemieux Creek system. Subsequent trapping efforts in Lemieux Creek resulted in a capture of 20,759 juvenile coho (Table 2a). In 1994 trapping was not conducted in the North Thompson, however juvenile catches in seven reaches in Lemieux Creek totaled 12,993 coho, 1,434 chinook and 3,360 rainbow trout (Table 1b). The trapping period in both years occurred during the month of September. In 1993, trapping effort information was limited to pre-CWT efforts. The total trapping hours for the North Thompson sites equaled 2,757 hours (115 trap days), and for Lemieux Creek 4,691 hours (195 trap days). In 1994, 25,104 trap hours (1,046 trap days) were expended in Lemieux Creek. The highest catches in 1993 (pre-CWT) occurred in Lemieux Creek at the Ianson channel and mainstem sites. Together these reaches accounted for over 80% of 1993's total coho catch (3,188). In 1994, Ianson channel accounted for 30% of the total coho catch from all seven sites (3,955). CPUE (catch/trap/day) was highest for coho in 1993 (pre-CWT) (0.093) with 1994 having a lower CPUE (0.003).

Capture of Non-salmonid Species

The non-salmonid catch in Louis and Lemieux creeks for 1993 and 1994 is detailed in Appendix 4. Catches included a variety of species (sculpin, Rocky Mountain whitefish, redbside shiner, northern pikeminnow, largescale sucker, longnose dace, peamouth chub) and were generally low, except on occasion when a large number of scuplins were caught. Although CPUEs of all species were very low, it is important to note that the non-salmonid catches do not completely reflect relative species abundance in the areas trapped. These species were usually released at the site of capture immediately after they were collected from the minnow traps, therefore the proportion recaptured may have been quite high.

Coded Wire Tag Application

A total of 20,759 and 12,110 age 0+ coho juveniles were adipose clipped and coded wire tagged in Lemieux Creek during 1993 and 1994, respectively (Table 2a and 2b). When adjusted for short-term (24 hour) CWT loss and mortality, the total number of tagged and released age 0+ juveniles in 1993 and 1994 were 19,803 and 12,035, respectively. Average holding time prior to tagging was 24 hours (range 8-48 hours) for both years. Pre-tagging mortality of coho juveniles for 1994 was reported at 65, with 1993 mortalities not recorded.

Short-term (24 hours) CWT loss averaged 3.3% (range 0.0% to 7.0%) in 1993 and 0.4% (range 0.0% and 1.7%) in 1994. The incidence of short term post-tagging mortality of coho juveniles was also low, averaging 1.1% in 1993 and 0.4% in 1994 (Table 2a,2b; Appendix

5a,5b). Post-tagging mortality usually occurred immediately after tagging and was likely due to over anaesthesia or handling stress.

The incidence of disease, damage and structural anomalies among trapped coho juveniles was approximately 0.4% in both 1993 and 1994 (Appendix 6). The most prevalent conditions among age 0+ juveniles was fin rot (0.3% in both years). Lordosis (curvature of spine) and fog eye were also observed, but at much reduced rates. The incidence of naturally missing adipose fins was less than 0.1% during both years.

Juvenile Coho Age and Size

In both 1993 and 1994, scales from a sample of 25 CWT juveniles from each tag group were collected. Subsequent analysis of the samples indicated that 99.5% of these fish were age 0+ and 0.5% were age 1+. Nose-fork (NF) lengths and weights of juveniles were also measured (Table 3). NF lengths averaged 67.0 mm (± 7.3 mm S.D.) in 1993 and in 1994 averaged 63.4 mm (± 7.9 mm S.D.). Wet weights were calculated in aggregate and averaged 3.31 g (± 0.51 g S.D.) in 1993. In 1994 weights were taken for each individual fish and averaged 2.85 g (± 1.15 g S.D.).

Disk Tag Application

a) Louis Creek

In 1993, disk tags and secondary marks were applied to 239 coho adults in the Louis Creek system between October 14 and December 24. In 1994, 235 tags were applied between October 12 and December 30 (Table 4a; Appendix 2a and 2b). All fish were tagged and released at the adult fence, and in 1993 only 8.7% required ventilation. No fish were reported to require ventilation in 1994.

The proportion of males and females mis-sexed at the time of tagging was assessed by confirming the sex of carcasses recovered on the spawning grounds. No errors in sex identification were found in either 1993 or 1994 (Appendix 3a and 3b). Therefore the total number of males and females tagged and released in 1993 were 146 and 93, respectively. The mean nose-fork (NF) length of tagged males and females in 1993 was 46.4 cm and 49.0 cm, with the difference being significant ($p < 0.001$; ANOVA). The total number of males and females released with disk tags in 1994 was 191 and 44, respectively. The mean nose-fork (NF) length of tagged males and females in 1994 was 51.1 cm and 52.0 cm, a difference that was not significant.

b) Lemieux Creek

Disk tags and secondary marks were applied to 465 coho adults in the Lemieux Creek system from October 14 to January 9, 1993 (Table 4b; Appendix 2c and 2d). Only 9.0% of these fish required ventilation upon release. In 1994, 772 disk tags were applied and no fish required ventilation upon release.

An estimated 2.2% of females and 1.7% of males were incorrectly sexed at the time of tagging in 1993 (Appendix 3c). In 1994, 0.7% of males and 0.2% of females were mis-sexed during the tagging portion of the study. When adjusted for this error, it was estimated that

281 males (60.4%) and 184 (39.6%) females were released in 1993. In 1994, it was estimated that 399 males (51.7%) and 373 females (48.3%) were released with disk tags and secondary marks. However, because the errors in sex identification could not be ascribed to any particular sampling period, location or fish size, Tables 4 through 9 only reflect the sex corrections of marked fish, and thus the bias analyses are based on slightly different numbers (the male to female ratio of disk tagged fish in 1993 and 1994 were: 280:185 and 402:370, respectively). The mean NF lengths of Lemieux Creek males and females in 1993 were 49.9 cm and 51.4 cm, respectively. In 1994, the mean NF lengths of males and females was 53.2 cm and 53.6 cm, respectively. The differences between males and females were significant in both years ($p < 0.05$; ANOVA).

Spawning Ground Recovery

a) Louis Creek

A total of 18 adult carcasses were recovered on the Louis Creek spawning grounds for 1993 between October 23, 1993 and January 7, 1994. Eleven (61%) of the carcasses were male, and 7 (39%) were female (Table 4a; Appendix 3a). Carcasses were recovered throughout the Louis Creek system, but the majority (72.2%) were found at the adult fence (Table 7a). In 1994, 25 adult carcasses were recovered on the spawning grounds between October 20, 1994 and January 15, 1995. Twenty-two (88%) of the carcasses were male, and 3 (12%) were female (Table 4a; Appendix 3b). Carcass recovery was more evenly spread throughout the system in 1994, and approximately equal numbers were found in reaches 1 and 3 of the creek (Table 7a).

In 1994, all carcasses recovered were more or less complete (*i.e.* intact vertebral column to determine POH length, and enough body cavity to confirm sex identification), and all had both tags and secondary marks. For the purposes of the analyses, it was therefore assumed that no carcasses had lost their disk tags over the duration of the study. The mean POH lengths of males and females recovered on the spawning grounds were 42.1 cm and 43.3 cm. No significant difference existed between these lengths.

In 1993, the POH lengths of three carcasses were not discernible. However, all other recovery information was obtained and subsequently included in the 1993 Petersen population estimate analysis. The mean POH lengths of the complete male and female carcasses were 38.1 cm and 40.3 cm, respectively. This difference was not significant. As in 1994, all carcasses had retained their disk tags throughout the study.

b) Lemieux Creek

A total of 103 adult carcasses were recovered on the Lemieux Creek spawning grounds in 1993 between October 24, 1993 and January 15, 1994. Fifty-eight (56%) of the recoveries were male and 45 (44%) were female (Table 4b; Appendix 3c). In 1994, 291 carcasses were recovered on the Lemieux Creek spawning grounds between November 1, 1994 and January 15, 1995. Forty-one percent (120) of the recoveries were male, and 59% (171) were female (Table 4b; Appendix 3d). In both years, carcass recovery was spread throughout the system, but as was the case during 1993 in Louis Creek, the majority of the 1993 Lemieux Creek recoveries (57%) were found at the adult fence. In 1994, the middle and upper

reaches of the creek accounted for 75% of the carcasses found in the Lemieux Creek system (Table 7b).

In 1993, no fish appeared to lose their disk tags over the duration of the study and the mean POH lengths of males and females were 39.1 cm and 43.1 cm, respectively. In 1994, one female was recovered with a secondary mark but no disk tag, and the average POH lengths of all male and female carcasses were 43.6 cm and 45.1 cm, respectively. These differences between male and female carcass POH lengths was found to be significant for both years ($p < 0.05$; ANOVA).

Age of Coho Recoveries

The ages of the fish recovered on the Louis and Lemieux creek spawning grounds in 1993 were not recorded. The 1994 age information for both systems is reported in Appendix 7. The majority of recoveries in both creeks (84.3% in Louis and 95.1% in Lemieux - of successfully aged fish) were age 3₂. Fish, which could not be aged by scale samples, were identified by RG while 1M identified fish with 1 marine year, but an unknown fresh water age.

Sampling Selectivity

Results of the 1993 and 1994 Louis and Lemieux creek analyses of bias for sampling period, sampling location, fish size and fish sex bias are reported in Tables 10a and 10b.

Period

Biases in sampling period were addressed by stratifying the total number of days spent applying tags or recovering carcasses into sampling blocks of equal length. Temporal biases in the application samples were examined by comparing the mark incidences in each recovery period (Table 5a and 5b). Temporal biases in the recovery samples were examined by comparing the proportions of carcasses recovered from each application period (Table 6a and 6b).

In 1993, mark incidences in Louis Creek ranged between 0.0% and 71.4% (Table 5a). Carcasses were recovered in each of the four recovery periods. In 1994, mark incidences in Louis Creek ranged from 0.0% to 100%, and, again, carcasses were recovered in each of the four recovery periods. Chi-squared analyses of the results in each year indicated that the capture and tagging of fish was not biased in 1993, but was biased to the former sampling periods in 1994. Except for differences in mark incidences (see Table 5b), the same statistical results as stated above were observed during each year in Lemieux Creek.

In 1993, the proportion of fish marked in Louis Creek that were recovered as carcasses ranged from 0.0% to 25.0% (Table 6a). Carcasses tagged during all three application periods were found on the spawning grounds. In 1994, the proportion of carcasses recovered in Louis Creek was approximately the same, ranging from 0.0% to 33.3%. Tests were performed on data stratified into four application periods. Chi-squared analyses of the results in each year indicated that the recovery of fish was biased for females only in 1993, but was not biased for either sex in 1994.

The proportion of fish recovered in Lemieux Creek in 1993 ranged from 10.0% to 29.3% (Table 6b), and in 1994 it ranged from 18.9% to 51.7% (Table 5b). In both 1993 and 1994,

fish tagged in all of the application periods were recovered on the spawning grounds, and no temporal bias in either year was observed in the recovery samples.

Location

Biases in sampling location were examined by dividing both creeks into seven reaches, as defined in the Methods section. The reaches were then grouped into three creek sections: lower, middle and upper. Spatial biases in the 1993 and 1994 application samples were examined by comparing mark incidences in fish recovered in these sections. Spatial biases in the recovery samples were not assessed because all fish were tagged at the adult fences.

In 1993, mark incidences (combined male and female) in Louis Creek ranged between 0.0% and 56.5%, and disk tagged and/or secondary marked carcasses were recovered in the lower and middle sections only (Table 7a). Of the total 44 recoveries in 1993, the majority of carcasses (52.3%) were recovered at the adult fence. In 1994, disk tagged fish weren't recovered in the upper section of the creek either. The carcasses that were recovered were divided fairly evenly between the lower and middle sections of the creek (Table 7a). No spatial biases were identified in the 1993 or 1994 application samples (Table 10a).

The mark incidences in fish recovered in Lemieux Creek ranged from 66.7% to 100% in 1993 and 75.4% to 86.7% in 1994 (Table 7b). Fish were recovered in all sections of the creek in both years. In 1993, the majority of carcasses (55.1%) were found at the adult fence, and in 1994, recoveries were fairly evenly distributed in the system. No spatial bias was observed in the 1994 application sample, but females were biased towards recovery at the fence in 1993 (Table 10b).

The proportion of disk tagged fish (combined males and females) recovered in 1993 ranged between 13.7% and 28.5% and ranged between 20.0% and 42.0% in 1994 (Table 6b). However, no spatial bias analyses were performed on the data because all fish were tagged and released at the adult fence.

Fish Size

Size related biases in the 1993 and 1994 application samples were examined by comparing the POH length distributions of marked and unmarked spawning grounds recoveries. Size related biases in the recovery sample were examined by dividing the application sample into recovered and unrecovered fish, and comparing the NF length distributions of each. Application sample length frequency distributions are noted in Table 8a and 8b. All length distributions were found to be normal, and analysis with Students t-tests indicated that only the application sample in Lemieux Creek during 1993 was biased towards females (Table 10b).

Fish Sex

Sex-related biases in the 1993 and 1994 application samples were assessed by comparing the sex ratios of marked and unmarked spawning ground recoveries. In 1993, the sex ratio of Louis Creek marked males and females was 61.1% to 38.9%, and for unmarked males and females it was 69.2% to 30.8%. In 1994, the sex ratio of marked males and females was 88% to 12% and for unmarked males and females it was 83.3% to 16.7% (Table 9a). No sex-related biases in the Louis Creek application sample during 1993 or 1994.

The Lemieux Creek application sample sex ratio of marked males and females was 56.3% to 43.7%, and for unmarked males and females it was 86.7% to 13.3%. In 1994, the sex ratio of marked males and females was 41.2% to 58.8% and for unmarked males and females it was 45% to 55% (Table 9b). The sex ratio was biased towards males in 1993 only.

Biases in the sex ratios of the recovery samples were examined by comparing the numbers of recovered and unrecovered males and females. In 1993, the sex ratio of Louis Creek recovered males and females was 65.9% to 34.1%, and for unrecovered males and females it was 60% to 40%. In 1994, the sex ratio of recovered males and females was 87.1% to 12.9%, and for unrecovered males and females it was 80.4% to 19.6%. No significant difference was noted in the sex ratios of the recovery sample either year (Table 10a).

In 1993, the sex ratio of Lemieux Creek recovered males and females was 60.2% to 39.8%, and for unrecovered males and females it was 60.2% to 39.8%. In 1994, the sex ratio of recovered males and females was 41.9% to 58.1%, and for unrecovered males and females it was 60.6% to 39.4%. The sex ratio was biased towards females in 1994 only (Table 10b).

Spawning Success

Spawning success was estimated from the internal examination of female carcasses, which were upstream of the fence. In both creeks during 1993 and 1994, all disk tagged and/or secondarily marked fish were 99% spawned. The average spawning successes of Louis Creek females during 1993 and 1994 were 99% and 100%, respectively. For Lemieux Creek, the average spawning success was slightly lower at 91% in 1993 and 94% in 1994.

Estimation of Spawner Population

Total Escapement

Total escapement was estimated in both 1993 and 1994 using the Petersen population estimator stratified by sex. The estimates are approximate and have fairly wide confidence limits given the relatively low sample sizes, especially in 1993 (Table 11a and 11b). The escapement estimates should be interpreted with caution and in the context of the temporal bias identified in 1994 (Table 12).

The 1993-1994 escapement of Louis Creek coho adults was 554, with upper and lower 95% confidence limits of 730 and 377, respectively (Table 11a). The escapement of males and females was 368 and 188. Escapements could not be broken down by age.

The 1994-1995 escapement of Louis Creek coho adults was 288, with upper and lower 95% confidence limits of 333 and 243, respectively (Table 11a). The escapement of males and females was 233 and 55, with age 3₂ fish dominating the adult population (84.3%) of successfully aged fish.

The 1993-1994 escapement of Lemieux Creek coho adults was 535, with upper and lower 95% confidence limits of 573 and 497, respectively (Table 11b). The escapement of males and females was 342 and 193. Escapements could not be broken down by age.

The 1994-1995 escapement of Lemieux Creek coho adults was 936, with upper and lower 95% confidence limits of 982 and 890, respectively (Table 11b). The escapement of males

and females was 492 and 444, with age 3₂ fish again dominating the successfully aged adult population (95.1%).

DISCUSSION

Results from the juvenile coho coded wire tagging studies in Louis and Lemieux creeks during 1993 and 1994 are reported in Tables 1 through 3. Coho catches in Louis Creek were too low to fulfill minimum CWT requirements, and thus only juveniles from Lemieux Creek were tagged. Lemieux Creek coho catches in 1993 (pre-CWT: 3,962) were comparable to the number tagged in a similar study conducted in 1982 of 4,185 age 0+ coho (Hutton *et al.* 1983). Coho catches during 1994 in Lemieux Creek were substantially higher (12,993) than the results above, but a comparison of CPUEs indicates very little difference between years (approximately 0.1 in both years using the available data). The 1993 CWT efforts in Lemieux Creek resulted in a much larger catch of 20,759 coho juveniles, however no CPUE information was available for comparisons. Nonetheless, as noted by Schubert and Fedorenko (1985), CPUE calculations are not reliable indices of relative coho abundance because measurements of fishing effort are not sensitive to variation in the frequency of trap checks or to the duration of the trapping period. CPUE results are presented in this document only to assist with program planning, and given that coho CPUEs were fairly consistent for 1993 (pre-CWT) and 1994, it appears that the allocation of effort to the trapping sites was appropriate.

The non-salmonid catches in Louis and Lemieux creeks during both 1993 and 1994 compared to previous minnow trapping studies in the creeks (Hutton *et al.* 1983; Stewart *et al.* 1983) confirmed that the most abundant species were sculpins. Although CPUE's of all species were very low, it is important to note that the non-salmonid catches do not necessarily reflect species abundance in each tributary. Because all non-coho species (especially non-salmonids) were released unmarked at the capture site when the minnow traps were checked, the incidence of recaptures may have been quite high with actual abundances likely inflated.

Results of the 1993 and 1994 Louis and Lemieux creek adult escapement enumeration programs are reported in Tables 4 through 11. Examination of potential biases in sampling indicated that no serious spatial, temporal, size, or sex-related differences existed in either year. However, to correct any differing results between sexes, escapement estimates were stratified by sex and are reported in Table 10. The calculated mark incidences and percent recovered in each strata (Tables 4 through 9) were well within the ranges documented by adult escapement enumeration programs conducted in the lower Fraser River in, for example, the Salmon River (Langley) (Farwell *et al.* 1991, 1992; Kalnin and Schubert 1991).

The sex ratio of fish returning to Louis Creek was biased towards males in both years. Therefore, in years of low returns (e.g. 1993), brood stock collection should be conservative to ensure adequate numbers of natural spawners in the system.

SUMMARY

Coded wire tags (CWTs) and adipose fin clips (AFCs) were applied to juvenile coho captured in minnow traps throughout the Lemieux Creek system during two years. A total of 19,803 age 0+ were released in 1993. A total of 12,035 age 0+ were released in 1994.

The average lengths and wet weights of age 0+ coho in 1993 were 67.0 mm, and 3.24 g, respectively. In 1994, the average lengths and weights were 63.4 mm, and 2.85 g, respectively.

Adult spawners were enumerated by a mark-recapture study. A fence operated in cooperation with the North Thompson Indian Band was utilized to apply tags. Returning spawners were released marked with Petersen disk tags and operculum punches. Escapement was estimated by sex from the recovery of carcasses following spawning.

The 1993 escapement of 554 adult coho to Louis Creek and 535 adults to Lemieux Creek was estimated from (respectively by creek): a tag application sample 239 and 465, a recovery of 18 and 103 disk tags or secondary marks. The 1994 estimate of 288 adult coho from Louis Creek and 936 from Lemieux Creek was derived from (again, respectively by creek): an application sample of 235 and 772, a recovery sample of 31 and 351, and a recovery of 25 and 290 disk tags or secondary marks.

Most of the adult escapement in both years was comprised of age 3₂ fish. Adult POH lengths in Louis Creek during 1993 averaged 38.1 cm and 40.3 cm for males and females, respectively. In Lemieux Creek they averaged 39.1 cm and 43.1 cm, respectively. In 1994, the mean POH lengths of Louis Creek males and females was 42.1 cm and 43.3 cm. In Lemieux Creek, the carcasses averaged 43.6 cm and 45.1 cm, respectively.

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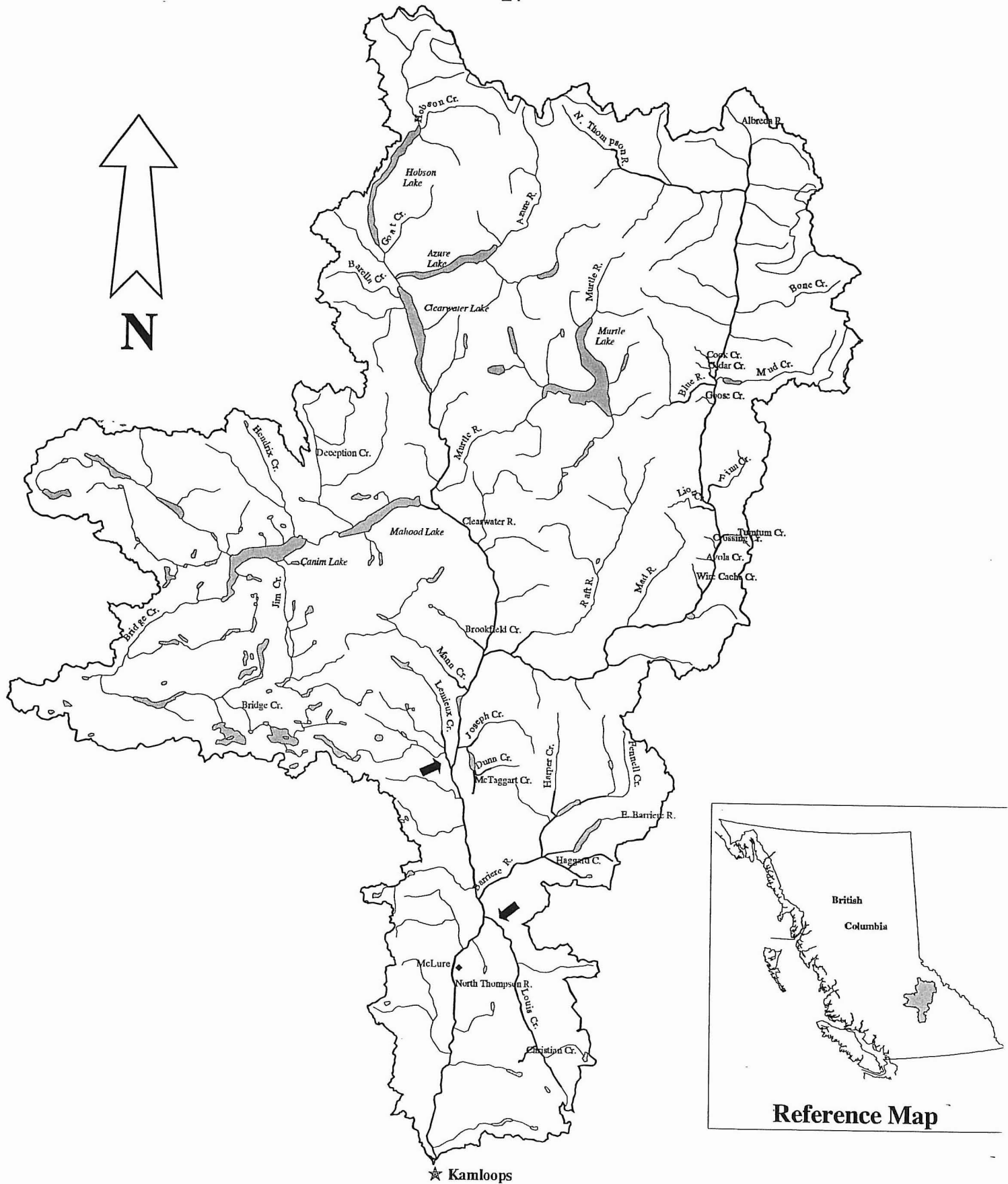
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FIGURES

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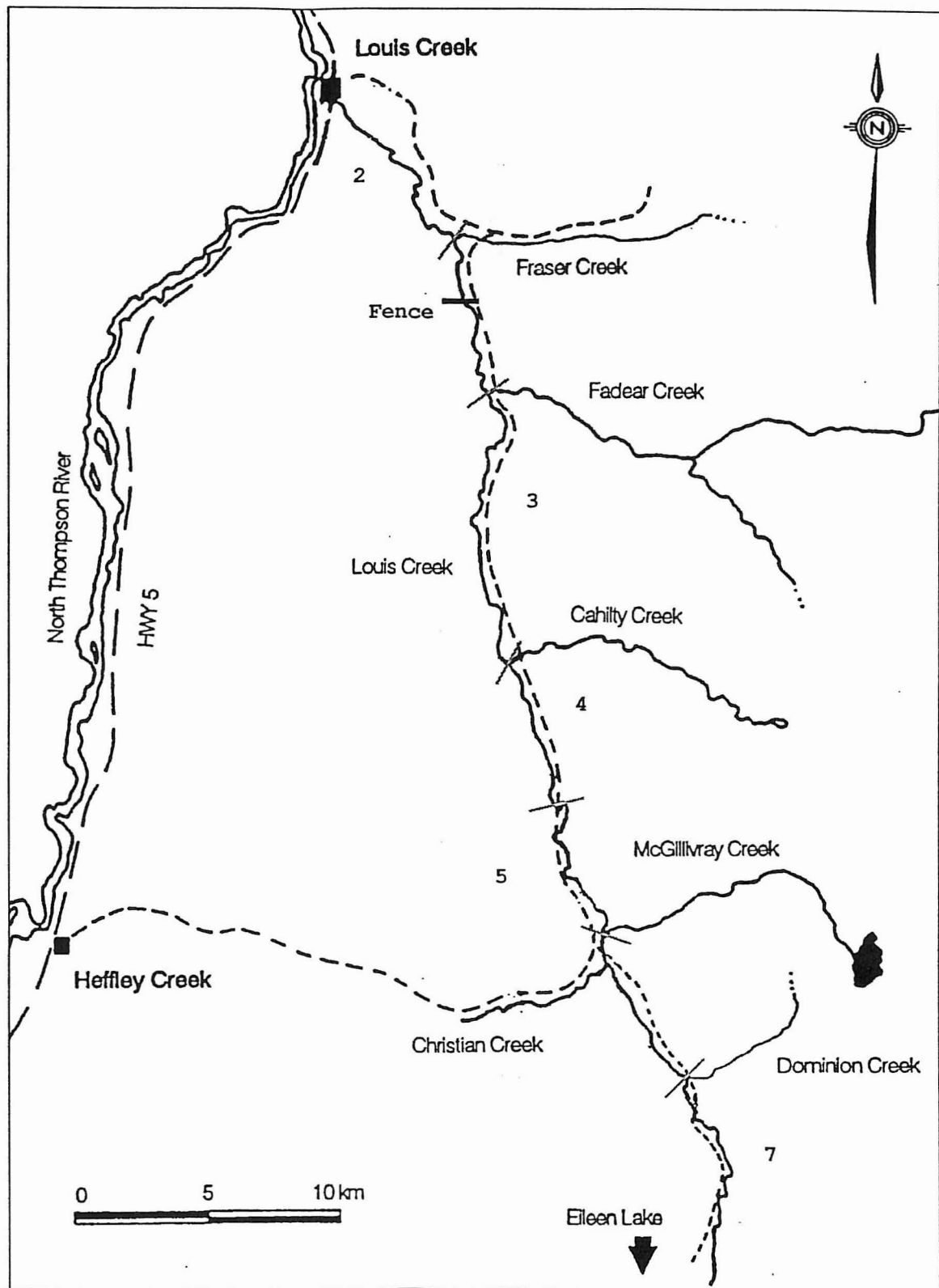


Fig. 1b. Sketch of reach locations for Louis Creek (1993-1994).

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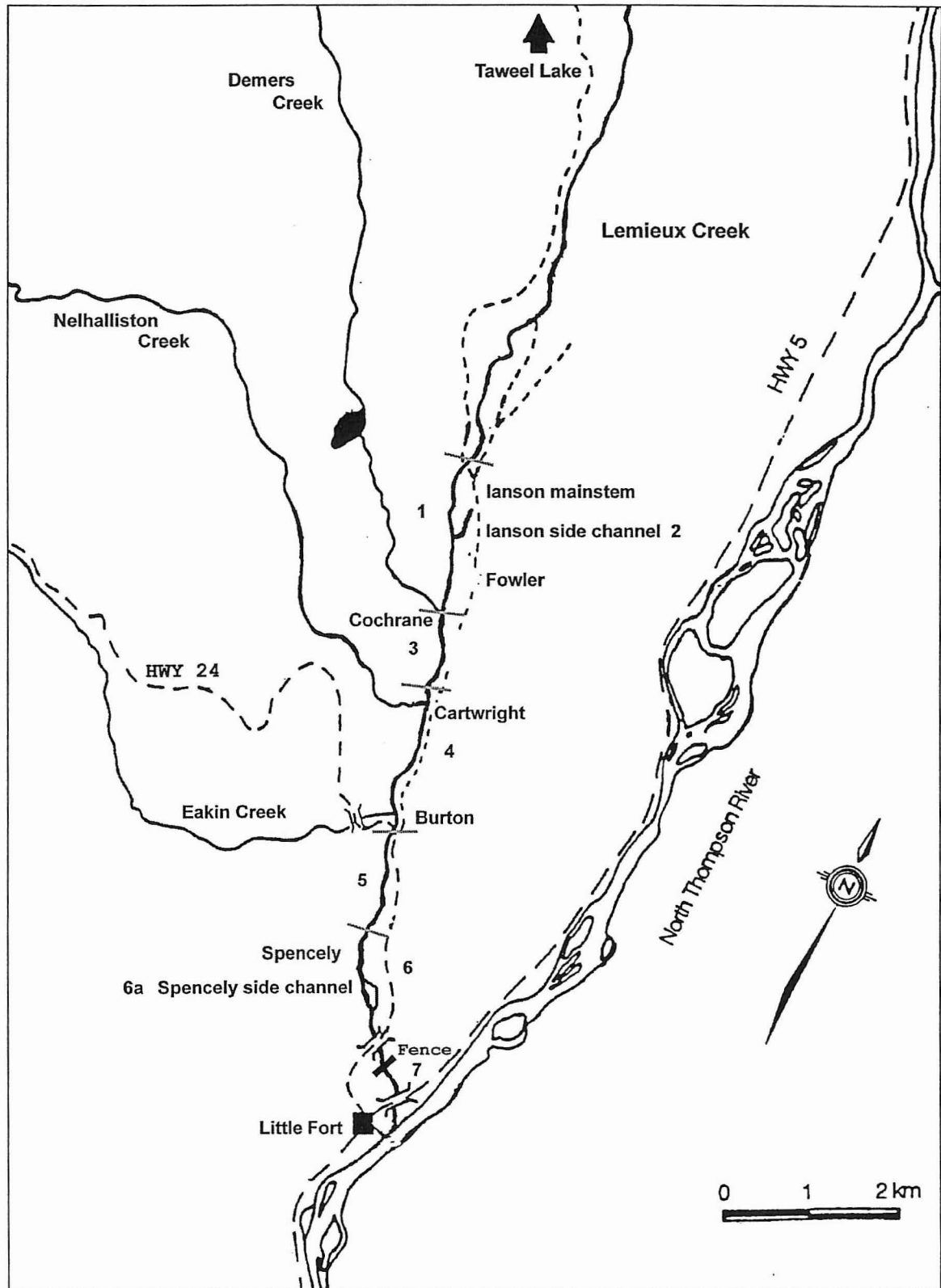


Fig. 1c. Sketch of reach locations for Lemieux Creek (1993-1994).

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TABLES

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Table 1a. Pre-coded wire tagging minnow trapping results for salmonid juveniles captured in the North Thompson mainstem and Louis and Lemieux creeks, 1993.

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Table 1b. Minnow trapping results for salmonid juveniles captured in the North Thompson mainstem and Louis and Lemieux creeks, 1994.

Date	Location	# of traps	Soak time (hours)	Soak time (days)	Catch			CPUE (catch/trap/day)		
					CO	CN	RB	CO	CN	RB
LOUIS CREEK										
Oct 9-10, 1994	Bordman upstream	348	9222	384.3	612	233	657	0.005	0.002	0.005
Oct 10-11, 1994	Bordman downstream	174	3915	163.1	272	158	392	0.010	0.006	0.014
	Total Louis Creek	522	13137	547.4	884	391	1049	0.003	0.001	0.004
LEMIEUX CREEK										
Sep 6-8, 1994	Hwy 24 Bridge downstream	275	3840	160	812	138	83	0.018	0.003	0.002
Sep 8-11, 1994	Spencely mainstem	216	2736	114	1005	67	131	0.041	0.003	0.005
Sep 8-11, 1994	Spencely sidechannel	197	2208	92	530	20	108	0.029	0.001	0.006
Sep 12, 1994	Eakins confluence	116	504	21	740	94	155	0.304	0.039	0.064
Sep 13-16, 1994	Cartwright	408	3768	157	1998	172	401	0.031	0.003	0.006
Sep 15-20, 1994	Cochran	754	3312	138	1761	360	939	0.017	0.003	0.009
Sep 20-24, 1994	Fowler	584	3240	135	1462	310	656	0.019	0.004	0.008
Sep 23-28, 1994	Ianson channel	746	3408	142	3955	26	420	0.037	0.000	0.004
Sep 28-29, 1994	Ianson mainstem	188	1104	46	242	180	364	0.028	0.021	0.042
Sep 29-30, 1994	Burton	94	1056	44	488	67	103	0.118	0.016	0.025
	Total Lemieux Creek	3578	25104	1046	12993	1434	3360	0.003	0.000	0.001

CO coho

CN chinook

RB rainbow trout

Table 2a. Summary of age 0+ coho coded wire tagging results by year in the Lemieux Creek system, 1993.

Location	Date	Tag code	Total tagged	Estimated post tag mortality	Estimated tag loss	Number tagged & released
Lemieux Cr. s/c	Sep 15-Sep 16	18/6/49 18/6/89	2603	3	131	2469
Ianson side channel	Sep 17	18/6/49	280	0	0	280
Ianson	Sep 17-Sep 18	18/6/49	1933	0	113	1820
pen #3	Sep 20	18/6/49	3203	0	223	2980
pen #4	Sep 21	18/6/49	800	2	25	773
pen #5	Sep 22	18/6/49	1891	108	70	1713
pen#6/ beaver pond	Sep 23-Sep 24	18/6/50 18/6/50	2702	107	91	2504
Burton	Sep 27	18/6/50	350	0	9	341
Cartwright	Sep 27-Sep 28	18/6/50	3179	2	53	3124
Cochran	Sep 30-Oct 2	18/6/50	3818	2	17	3799
Total 1993			20759	224	732	19803

Table 2b. Summary of age 0+ coho coded wire tagging results by year in the Lemieux Creek system, 1994.

Location	Date	Tag code	Total tagged	Estimated post tag mortality	Estimated tag loss	Number tagged & released
Hwy 24 Bridge downstream	Sep 7	18/18/52	270	5	5	260
Belcham	Sep 8-Sep 9	18/18/53	918	8	0	910
Spencely	Sep 10-Sep 12	18/18/53	1137	0	0	1137
Cartwright	Sep 13-Sep 17	18/18/53	2483	5	4	2474
Cochran	Sep 17-Sep 21	18/18/53	1812	6	8	1798
Fowler	Sep 21-Sep 25	18/18/53	1381	22	13	1346
Ianson side channel	Sep 26-Sep 29	18/18/53	3423	0	0	3423
Ianson	Sep 29-Sep 30	18/18/52 18/18/54	220	0	0	220
Burton	Sep 30-Oct 1	18/18/54	466	0	0	466
Total 1994			12110	46	29	12035

Table 3. Average size by location for age 0+ juvenile coho released with coded wire tags in Lemieux Creek in 1993 and 1994.

Location	Date	Number sampled	1993		Location	Date	Number sampled	1994	
			Mean length	Mean weight				Mean length	Mean weight
Ianson side channel	Sep 17	25	57.9	2.18	Belchum	Sep 8	25	63.7	2.71
Ianson	Sep 18	25	65.5	3.09	Spencely	Sep 10	25	64.6	2.88
Pen 2/3	Sep 19	25	66.0	2.96	Eakins Confluence	Sep 12	25	65.6	3.24
	Sep 21	25	67.6	2.93					
Powerline crossing	Sep 22	25	73.4	4.35	Cartwright	Sep 14	25	64.8	3.04
Fowler	Sep 23	25	67.9	3.52	Cochrane	Sep 18	25	63.6	2.91
pen #6	Sep 24	25	67.4	3.50	Fowler	Sep 24	25	58.9	2.50
	Sep 26	25	65.2	3.10					
pen #8	Sep 28	25	68.7	3.43	Ianson	Sep 27	25	59.7	2.27
	Sep 28	25	67.4	3.22					
pen #9	Oct 1	25	67.4	3.31	Burton	Oct 1	25	66.8	3.28
	Oct 2	25	68.8	3.63					
	Oct 4	25	68.3	3.80					
Overall mean			67.0	3.24	Overall mean			63.4	2.85
StDev			7.3	0.51	StDev			7.9	1.15
			(mm)	(g)				(mm)	(g)

Table 4a. Disk tag application, carcass examination and mark recovery, by sex, of Louis Creek coho adults, 1993 and 1994. ^a

Year	Sex	Disk tags applied	Carcasses examined b,c	Marks Recovered			Total	Percent recovered
				Disk tags and secondary mark ^c	Secondary mark only	Disk tag only		
1993	Male	146	29	11	0	0	11	7.53%
	Female	93	15	7	0	0	7	7.53%
	Total	239	44	18	0	0	18	7.53%
1994	Male	191	27	22	0	0	22	11.52%
	Female	44	4	3	0	0	3	6.82%
	Total	235	31	25	0	0	25	10.64%

^a Corrected for sex identification errors^b Not including jacks^c Includes partial carcassesTable 4b. Disk tag application, carcass examination and mark recovery, by sex, of Lemieux Creek coho adults, 1993 and 1994. ^a

Year	Sex	Disk tags applied	Carcasses examined b,c	Marks Recovered			Total	Percent recovered
				Disk tags and secondary mark ^c	Secondary mark only	Disk tag only		
1993	Male	280	71	58	0	0	58	20.71%
	Female	185	47	45	0	0	45	24.32%
	Total	465	118	103	0	0	103	22.15%
1994	Male	402	147	120	0	0	120	29.85%
	Female	370	204	170	1	0	171	46.22%
	Total	772	351	290	1	0	291	37.69%

^a Corrected for sex identification errors^b Not including jacks^c Includes partial carcasses

Table 5a. Incidence of disk tags or secondary marks in coho adults recovered in the Louis Creek system spawning grounds, by recovery period and sex, 1993 and 1994. ^a

Year	Recovery Period	Recovered with disk tag or secondary mark ^b			Total recovery ^b			Mark incidence		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1993	Oct 23 - Nov 5	1	2	3	2	3	5	50.0%	66.7%	60.0%
	Nov 6 - Nov 26	0	1	1	5	3	8	0.0%	33.3%	12.5%
	Nov 27 - Dec 17	5	2	7	15	6	21	33.3%	33.3%	33.3%
	Dec 18 - Jan 7	5	2	7	7	3	10	71.4%	66.7%	70.0%
	Total	11	7	18	29	15	44	37.9%	46.7%	40.9%
1994	Oct 20 - Nov 10	0	1	1	3	1	4	0.0%	100.0%	25.0%
	Nov 11 - Dec 1	12	1	13	13	1	14	92.3%	100.0%	92.9%
	Dec 2 - Dec 23	7	1	8	8	2	10	87.5%	50.0%	80.0%
	Dec 24 - Jan 15	3	0	3	3	0	3	100.0%	-	100.0%
	Total	22	3	25	27	4	31	81.5%	75.0%	80.6%

^a Corrected for sex identification errors

^b Includes partial carcasses

Table 5b. Incidence of disk tags or secondary marks in coho adults recovered in the Lemieux Creek system spawning grounds, by recovery period and sex, 1993 and 1994. ^a

Year	Recovery Period	Recovered with disk tag or secondary mark ^b			Total recovery ^b			Mark incidence		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1993	Oct 24 - Nov 13	2	10	12	5	12	17	40.0%	83.3%	70.6%
	Nov 14 - Dec 4	17	12	29	25	11	36	68.0%	109.1%	80.6%
	Dec 5 - Dec 25	16	8	24	17	9	26	94.1%	88.9%	92.3%
	Dec 26 - Jan 15	23	15	38	24	15	39	95.8%	100.0%	97.4%
	Total	58	45	103	71	47	118	81.7%	95.7%	87.3%
1994	Nov 1 - Nov 19	7	15	22	11	18	29	63.6%	83.3%	75.9%
	Nov 20 - Dec 8	35	14	49	40	20	60	87.5%	70.0%	81.7%
	Dec 9 - Dec 27	49	101	150	67	121	188	73.1%	83.5%	79.8%
	Dec 28 - Jan 15	29	41	70	29	45	74	100.0%	91.1%	94.6%
	Total	120	171	291	147	204	351	81.6%	83.8%	82.9%

^a Corrected for sex identification errors

^b Includes partial carcasses

Table 6a. Proportion of the disk tag application sample recovered in the Louis Creek system spawning grounds, by application period and sex, 1993 and 1994. ^a

Year	Application Period	Disk tags and secondary mark applied			Carcasses recovered with disk tags ^b			Percent recovered		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1993	Oct 14 - Nov 6	70	58	128	6	3	9	8.6%	5.2%	7.0%
	Nov 7 - Nov 30	2	12	14	0	3	3	0.0%	25.0%	21.4%
	Dec 1 - Dec 24	74	23	97	5	1	6	6.8%	4.3%	6.2%
	Total	146	93	239	11	7	18	7.5%	7.5%	7.5%
1994	Oct 12 - Oct 31	107	24	131	14	2	16	13.1%	8.3%	12.2%
	Nov 1 - Nov 20	34	15	49	5	0	5	14.7%	0.0%	10.2%
	Nov 21 - Dec 10	4	2	6	0	0	0	0.0%	0.0%	0.0%
	Dec 11 - Dec 30	46	3	49	3	1	4	6.5%	33.3%	8.2%
	Total	191	44	235	22	3	25	11.5%	6.8%	10.6%

^a Corrected for sex identification errors

^b Includes partial carcasses

Table 6b. Proportion of the disk tag application sample recovered in the Lemieux Creek system spawning grounds, by application period and sex, 1993 and 1994. ^a

Year	Application Period	Disk tags and secondary mark applied			Carcasses recovered with disk tags ^b			Percent recovered		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1993	Oct 14 - Nov 4	137	92	229	27	23	50	19.7%	25.0%	21.8%
	Nov 5 - Nov 26	16	10	26	3	1	4	18.8%	10.0%	15.4%
	Nov 27 - Dec 18	75	62	137	22	17	39	29.3%	27.4%	28.5%
	Dec 19 - Jan 9	52	21	73	6	4	10	11.5%	19.0%	13.7%
	Total	280	185	465	58	45	103	20.7%	24.3%	22.2%
1994	Oct 21 - Nov 10	58	29	87	20	15	35	34.5%	51.7%	40.2%
	Nov 11 - Dec 1	170	173	343	58	86	144	34.1%	49.7%	42.0%
	Dec 2 - Dec 22	137	145	282	35	65	100	25.5%	44.8%	35.5%
	Dec 23 - Jan 12	37	23	60	7	5	12	18.9%	21.7%	20.0%
	Total	402	370	772	120	171	291	29.9%	46.2%	37.7%

^a Corrected for sex identification errors

^b Includes partial carcasses

Table 7a. Proportion of the Louis Creek system coho adult spawning ground recovery sample marked with disk tags or secondary marks, by recovery section and sex, 1993 and 1994. ^{a, b}

Year	Area	Recovery reach ^c	Carcasses recovered with disk tags or secondary marks ^d			Coho adult carcasses examined ^d			Mark incidence		
			Male	Female	Total	Male	Female	Total	Male	Female	Total
1993	Lower	1, 2	0	0	0	0	1	1	-	0.0%	0.0%
	Middle	3, 4	5	0	5	10	2	12	50.0%	0.0%	41.7%
	Upper	5, 6, 7	0	0	0	6	2	8	0.0%	0.0%	0.0%
	Fence		6	7	13	13	10	23	46.2%	70.0%	56.5%
	Total		11	7	18	29	15	44	37.9%	46.7%	40.9%
1994	Lower	1, 2	13	2	15	17	3	20	76.5%	66.7%	75.0%
	Middle	3, 4	9	1	10	10	1	11	90.0%	100.0%	90.9%
	Upper	5, 6, 7	0	0	0	0	0	0	0.0%	0.0%	0.0%
	Total		22	3	25	27	4	31	81.5%	75.0%	80.6%

^a Corrected for sex identification errors

^b Does not include carcasses recovered below fence

^c Reaches as defined in Study Area

^d Includes partial carcasses

Table 7b. Proportion of the Lemieux Creek system coho adult spawning ground recovery sample marked with disk tags or secondary marks, by recovery section and sex, 1993 and 1994. ^{a, b}

Year	Area	Recovery reach ^c	Carcasses recovered with disk tags or secondary marks ^d			Coho adult carcasses examined ^d			Mark incidence		
			Male	Female	Total	Male	Female	Total	Male	Female	Total
1993	Upper	1, 2	9	7	16	10	9	19	90.0%	77.8%	84.2%
	Middle	3, 4	8	5	13	12	5	17	66.7%	100.0%	76.5%
	Lower	5, 6, 6a, 7	7	9	16	8	9	17	87.5%	100.0%	94.1%
	Fence		34	24	58	41	24	65	82.9%	100.0%	89.2%
	Total		58	45	103	71	47	118	81.7%	95.7%	87.3%
1994	Upper	1, 2	26	48	74	30	59	89	86.7%	81.4%	83.1%
	Middle	3, 4	48	62	110	56	72	128	85.7%	86.1%	85.9%
	Lower	5, 6, 6a, 7	46	61	107	61	73	134	75.4%	83.6%	79.9%
	Total		120	171	291	147	204	351	81.6%	83.8%	82.9%

^a Corrected for sex identification errors

^b Does not include carcasses recovered below fence

^c Reaches as defined in Study Area

^d Includes partial carcasses

Table 8a. Proportion of the Louis Creek system coho adult disk tag application sample recovered on the spawning grounds, by increments of nose-fork length and sex, 1993 and 1994.^a

Year	Nose-fork length (cm)	Disk tags applied			Carcasses recovered with disk tags or secondary marks			Percent recovered		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1993	30 - 39.9	9	0	9	1	0	1	11.1%	-	11.1%
	40 - 49.9	105	54	159	6	5	11	5.7%	9.3%	6.9%
	50 - 59.9	32	39	71	4	2	6	12.5%	5.1%	8.5%
	60 - 69.9	0	0	0	0	0	0	-	-	-
	70 - 79.9	0	0	0	0	0	0	-	-	-
	Total	146	93	239	11	7	18	7.5%	7.5%	7.5%
1994	30 - 39.9	0	0	0	0	0	0	-	-	-
	40 - 49.9	76	12	88	8	1	9	10.5%	8.3%	10.2%
	50 - 59.9	110	29	139	14	2	16	12.7%	6.9%	11.5%
	60 - 69.9	4	3	7	0	0	0	0.0%	0.0%	0.0%
	70 - 79.9	1	0	1	0	0	0	0.0%	-	0.0%
	Total	191	44	235	22	3	25	11.5%	6.8%	10.6%

^a Corrected for sex identification errors

Table 8b. Proportion of the Lemieux Creek system coho adult disk tag application sample recovered on the spawning grounds, by increments of nose-fork length and sex, 1993 and 1994.^a

Year	Nose-fork length (cm)	Disk tags applied			Carcasses recovered with disk tags or secondary marks			Percent recovered		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1993	20 - 29.9	1	0	1	0	0	0	0.0%	-	0.0%
	30 - 39.9	4	0	4	1	0	1	25.0%	-	25.0%
	40 - 49.9	126	68	194	31	17	48	24.6%	25.0%	24.7%
	50 - 59.9	136	115	251	23	27	50	16.9%	23.5%	19.9%
	60 - 69.9	13	2	15	3	1	4	23.1%	50.0%	26.7%
	Total	280	185	465	58	45	103	20.7%	24.3%	22.2%
1994	30 - 39.9	2	0	2	0	0	0	0.0%	-	0.0%
	40 - 49.9	110	69	179	37	34	71	33.6%	49.3%	39.7%
	50 - 59.9	238	262	500	65	118	183	27.3%	45.0%	36.6%
	60 - 69.9	51	39	90	17	19	36	33.3%	48.7%	40.0%
	70 - 79.9	1	0	1	1	0	1	100.0%	-	100.0%
	Total	402	370	772	120	171	291	29.9%	46.2%	37.7%

^a Corrected for sex identification errors

Table 9a. Sex composition of the Louis Creek system coho adults in the disk tag application and spawning ground recovery samples, 1993 and 1994. ^a

Year	Sex	Application sample sex ratio ^b (by mark status)				Recovery sample sex ratio ^b (by recovery status)			
		Sample size	Marked	Unmarked	Total	Sample size	Recovered	Not recovered	Total
1993	Male	29	61.1%	69.2%	65.9%	146	65.9%	60.0%	61.1%
	Female	15	38.9%	30.8%	34.1%	93	34.1%	40.0%	38.9%
1994	Male	27	88.0%	83.3%	87.1%	191	87.1%	80.4%	81.3%
	Female	4	12.0%	16.7%	12.9%	44	12.9%	19.6%	18.7%

^a Corrected for sex identification errors

^b Includes partial carcasses

Table 9b. Sex composition of the Lemieux Creek system coho adults in the disk tag application and spawning ground recovery samples, 1993 and 1994. ^a

Year	Sex	Application sample sex ratio ^b (by mark status)				Recovery sample sex ratio ^b (by recovery status)			
		Sample size	Marked	Unmarked	Total	Sample size	Recovered	Not recovered	Total
1993	Male	71	56.3%	86.7%	60.2%	280	60.2%	60.2%	60.2%
	Female	47	43.7%	13.3%	39.8%	185	39.8%	39.8%	39.8%
1994	Male	147	41.2%	45.0%	41.9%	402	41.9%	60.6%	52.1%
	Female	204	58.8%	55.0%	58.1%	370	58.1%	39.4%	47.9%

^a Corrected for sex identification errors

^b Includes partial carcasses

Table 10a. Results of the statistical tests for bias in the 1993 and 1994 Louis Creek system coho adult escapement estimation study.

Bias Type	Year	Application Sample	Recovery Sample
Period	1993	No bias	Females biased from middle periods
	1994	Males biased to former periods	No bias
Location	1993	- ^a	No bias
	1994	- ^a	No bias
Fish size	1993	No bias	No bias
	1994	No bias	No bias
Fish sex	1993	No bias	No bias
	1994	No bias	No bias

^a Test not applicable because all fish tagged at adult fence.

Table 10b. Results of the statistical tests for bias in the 1993 and 1994 Lemieux Creek system coho adult escapement estimation study.

Bias Type	Year	Application Sample	Recovery Sample
Period	1993	No bias	No bias
	1994	Males biased from latter periods	No bias
Location	1993	- ^a	Females biased towards fence
	1994	- ^a	No bias
Fish size	1993	Biased to females	No bias
	1994	No bias	No bias
Fish sex	1993	Biased to males	No bias
	1994	No bias	Biased to females

^a Test not applicable because all fish tagged at adult fence.

Table 11a. Escapement estimates and 95% confidence limits, by age and sex, for Louis Creek system coho adults, 1993 and 1994.

Year	Group	U/K	Escapement by age			95% confidence limit on escapement estimate	
			3/2	4/3	Total	Lower	Upper
1993	Male	- ^a	- ^a	- ^a	367	212	521
	Female	- ^a	- ^a	- ^a	187	101	273
	Total	- ^a	- ^a	- ^a	554	377	730
1994	Male	27	165	41	233	193	272
	Female	0	55	0	55	34	77
	Total	27	220	41	288	243	333

^a Data not available U/K age unknown

Table 11b. Escapement estimates and 95% confidence limits, by age and sex, for Lemieux Creek system coho adults, 1993 and 1994.

Year	Group	U/K	Escapement by age			95% confidence limit on escapement estimate	
			3/2	4/3	Total	Lower	Upper
1993	Male	- ^a	- ^a	- ^a	342	182	204
	Female	- ^a	- ^a	- ^a	193	305	379
	Total	- ^a	- ^a	- ^a	535	497	573
1994	Male	94	385	13	492	455	529
	Female	72	355	17	444	417	471
	Total	166	740	30	936	890	982

^a Data not available U/K age unknown

Table 12a. Results of the statistical tests for bias in the 1993 and 1994 Louis Creek system coho adult escapement estimation study.

Bias Type	Year	Application Sample	Recovery Sample
Period	1993	No bias	Females biased from middle periods
	1994	Males biased to former periods	No bias
Location	1993	No bias	- ^a
	1994	No bias	- ^a
Fish size	1993	No bias	No bias
	1994	No bias	No bias
Fish sex	1993	No bias	No bias
	1994	No bias	No bias

^a Test not applicable because all fish tagged at adult fence.

Table 12b. Results of the statistical tests for bias in the 1993 and 1994 Lemieux Creek system coho adult escapement estimation study.

Bias Type	Year	Application Sample	Recovery Sample
Period	1993	No bias	No bias
	1994	Males biased from latter periods	No bias
Location	1993	Females biased towards fence	- ^a
	1994	No bias	- ^a
Fish size	1993	Biased	No bias
	1994	No bias	No bias
Fish sex	1993	Biased to males	No bias
	1994	No bias	Biased to females

^a Test not applicable because all fish tagged at adult fence.

APPENDICES

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Appendix 1a. Daily fence catch and brood stock removal by sex and adipose fin status for Louis Creek coho, 1993-1994.

Date	Adipose present			Adipose absent			Brood stock		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
14-Oct-93	1	0	1	0	0	0	0	0	0
16-Oct-93	2	0	2	0	0	0	0	0	0
20-Oct-93	0	1	1	0	0	0	0	0	0
21-Oct-93	1	1	2	0	0	0	0	0	0
23-Oct-93	2	2	4	0	0	0	0	0	0
24-Oct-93	1	0	1	0	1	1	0	0	0
25-Oct-93	11	1	12	1	0	1	0	0	0
26-Oct-93	8	4	12	0	1	1	0	0	0
27-Oct-93	1	0	1	0	0	0	0	0	0
28-Oct-93	2	1	3	0	0	0	0	0	0
29-Oct-93	2	3	5	0	0	0	0	0	0
30-Oct-93	6	6	12	0	0	0	0	0	0
31-Oct-93	3	3	6	0	0	0	0	0	0
1-Nov-93	4	1	5	0	0	0	0	0	0
2-Nov-93	4	2	6	0	1	1	0	0	0
3-Nov-93	21	26	47	0	3	3	0	0	0
4-Nov-93	7	12	19	0	0	0	7	11	18
5-Nov-93	0	3	3	0	0	0	0	3	3
6-Nov-93	0	2	2	0	0	0	0	2	2
7-Nov-93	0	1	1	0	0	0	0	1	1
12-Nov-93	3	5	8	0	0	0	3	5	8
15-Nov-93	2	4	6	0	0	0	2	4	6
16-Nov-93	1	4	5	0	0	0	1	4	5
17-Nov-93	0	1	1	0	0	0	0	1	1
18-Nov-93	1	0	1	0	0	0	1	0	1
19-Nov-93	1	1	2	0	0	0	1	1	2
22-Nov-93	2	4	6	0	0	0	2	4	6
26-Nov-93	2	10	12	0	1	1	0	0	0
30-Nov-93	0	1	1	0	0	0	0	0	0
1-Dec-93	1	0	1	0	0	0	0	0	0
4-Dec-93	11	4	15	0	0	0	0	0	0
6-Dec-93	7	8	15	0	0	0	7	8	15
7-Dec-93	0	1	1	0	0	0	1	1	2
10-Dec-93	1	0	1	0	0	0	0	0	0
11-Dec-93	29	16	45	0	0	0	29	16	45
14-Dec-93	30	18	48	3	2	5	29	17	46
15-Dec-93	5	1	6	0	0	0	0	0	0
16-Dec-93	2	2	4	0	0	0	0	0	0
17-Dec-93	2	1	3	0	0	0	0	0	0
20-Dec-93	12	4	16	2	0	2	0	0	0
21-Dec-93	3	0	3	0	0	0	0	0	0
22-Dec-93	2	0	2	0	0	0	0	0	0
Total	193	154	347	6	9	15	83	78	161

Appendix 1b. Daily fence catch and brood stock removal by sex and adipose fin status for Louis Creek coho, 1994-1995.

Date	Adipose present			Adipose absent			Brood stock		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
12-Oct-94	10	0	10	0	0	0	0	0	0
13-Oct-94	2	0	2	0	0	0	0	0	0
14-Oct-94	16	4	20	1	0	1	0	0	0
15-Oct-94	13	3	16	1	1	2	0	0	0
16-Oct-94	4	1	5	0	0	0	0	0	0
17-Oct-94	0	1	1	0	0	0	0	0	0
19-Oct-94	5	2	7	1	0	1	0	0	0
20-Oct-94	8	3	11	2	0	2	0	0	0
21-Oct-94	7	2	9	0	0	0	0	0	0
22-Oct-94	5	4	9	1	1	2	0	0	0
23-Oct-94	4	1	5	0	0	0	0	0	0
24-Oct-94	4	1	5	0	0	0	0	0	0
25-Oct-94	4	0	4	0	0	0	4	0	4
26-Oct-94	8	4	12	0	0	0	8	4	12
27-Oct-94	16	2	18	1	1	2	8	2	10
28-Oct-94	6	1	7	0	0	0	0	1	1
29-Oct-94	7	3	10	1	1	2	0	3	3
31-Oct-94	4	3	7	0	0	0	4	3	7
1-Nov-94	1	0	1	1	0	1	1	0	1
2-Nov-94	0	0	0	1	0	1	0	0	0
5-Nov-94	6	0	6	0	0	0	0	0	0
6-Nov-94	0	0	0	0	0	0	2	2	4
9-Nov-94	3	4	7	3	0	3	3	4	7
10-Nov-94	20	8	28	2	1	3	20	8	28
11-Nov-94	13	7	20	1	0	1	13	7	20
12-Nov-94	4	2	6	0	0	0	0	0	0
13-Nov-94	2	1	3	0	0	0	0	0	0
14-Nov-94	1	1	2	0	0	0	0	0	0
15-Nov-94	8	2	10	0	1	1	0	0	0
16-Nov-94	10	5	15	2	2	4	2	2	4
17-Nov-94	3	2	5	0	1	1	3	2	5
18-Nov-94	3	2	5	0	0	0	0	0	0
19-Nov-94	1	0	1	0	0	0	1	0	1
24-Nov-94	2	1	3	1	1	2	0	0	0
25-Nov-94	4	2	6	1	1	2	5	3	8
28-Nov-94	2	1	3	1	0	1	3	1	4
30-Nov-94	4	3	7	0	0	0	4	3	7
1-Dec-94	6	1	7	0	0	0	6	1	7
2-Dec-94	1	0	1	0	0	0	0	0	0
12-Dec-94	3	0	3	1	0	1	0	0	0
13-Dec-94	5	1	6	0	0	0	0	0	0

Appendix 1b. (cont.)

Date	Adipose present			Adipose absent			Brood stock		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
14-Dec-94	2	0	2	0	0	0	0	0	0
15-Dec-94	1	0	1	0	0	0	0	0	0
16-Dec-94	2	0	2	0	0	0	0	0	0
17-Dec-94	6	1	7	0	0	0	0	0	0
19-Dec-94	6	2	8	1	0	1	3	2	5
20-Dec-94	3	1	4	1	0	1	2	1	3
21-Dec-94	12	1	13	4	0	4	2	1	3
22-Dec-94	1	0	1	0	0	0	0	0	0
26-Dec-94	2	1	3	2	0	2	0	0	0
29-Dec-94	1	0	1	0	0	0	0	0	0
Total	261	84	345	30	11	41	94	50	144

Appendix 1c. Daily fence catch and brood stock removal by sex and adipose fin status for Lemieux Creek coho, 1993-1994.

Date	Adipose present			Adipose absent			Brood stock		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
14-Oct-93	7	1	8	1	2	3	0	0	0
15-Oct-93	0	1	1	2	1	3	0	0	0
16-Oct-93	1	0	1	0	2	2	0	0	0
17-Oct-93	4	1	5	1	0	1	0	0	0
18-Oct-93	4	1	5	3	0	3	0	0	0
19-Oct-93	3	4	7	2	0	2	0	0	0
20-Oct-93	0	1	1	0	0	0	0	0	0
21-Oct-93	4	2	6	3	2	5	0	0	0
22-Oct-93	7	3	10	4	2	6	0	0	0
23-Oct-93	5	5	10	0	5	5	0	0	0
24-Oct-93	37	18	55	8	10	18	0	0	0
25-Oct-93	0	0	0	2	2	4	0	0	0
26-Oct-93	10	9	19	4	5	9	0	0	0
27-Oct-93	2	2	4	4	2	6	0	0	0
28-Oct-93	3	3	6	1	0	1	0	0	0
29-Oct-93	3	2	5	0	1	1	0	0	0
30-Oct-93	3	4	7	0	0	0	0	0	0
31-Oct-93	3	3	6	0	0	0	0	0	0
2-Nov-93	1	1	2	0	0	0	0	0	0
3-Nov-93	7	8	15	1	2	3	0	0	0
4-Nov-93	11	5	16	2	2	4	0	0	0
5-Nov-93	0	1	1	1	1	2	0	0	0
6-Nov-93	2	0	2	0	0	0	0	0	0
7-Nov-93	1	1	2	1	0	1	0	0	0
8-Nov-93	6	3	9	1	1	2	0	0	0
9-Nov-93	3	0	3	0	0	0	0	0	0
10-Nov-93	3	2	5	0	1	1	0	0	0
11-Nov-93	3	3	6	1	1	2	4	4	8
12-Nov-93	2	0	2	1	0	1	3	0	3
15-Nov-93	6	1	7	1	0	1	7	1	8
16-Nov-93	2	0	2	0	0	0	2	0	2
17-Nov-93	1	1	2	0	0	0	1	1	2
18-Nov-93	3	2	5	2	1	3	5	3	8
22-Nov-93	1	0	1	0	0	0	1	0	1
23-Nov-93	1	0	1	0	0	0	1	0	1
29-Nov-93	11	7	18	2	2	4	0	9	9
30-Nov-93	4	2	6	0	0	0	0	0	0
1-Dec-93	4	4	8	1	0	1	0	0	0
2-Dec-93	1	2	3	0	0	0	0	0	0
3-Dec-93	5	2	7	1	0	1	0	0	0
4-Dec-93	8	9	17	0	1	1	0	0	0

Appendix 1c. (cont.)

Date	Adipose present			Adipose absent			Brood stock		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
6-Dec-93	5	7	12	0	0	0	2	1	3
7-Dec-93	1	0	1	0	0	0	0	0	0
8-Dec-93	11	9	20	0	0	0	7	7	14
9-Dec-93	1	1	2	0	0	0	0	0	0
10-Dec-93	3	6	9	0	0	0	0	0	0
13-Dec-93	16	13	29	0	1	1	0	0	0
14-Dec-93	6	6	12	0	0	0	0	0	0
15-Dec-93	2	2	4	2	0	2	0	0	0
16-Dec-93	1	1	2	0	0	0	0	0	0
17-Dec-93	1	1	2	0	1	1	0	0	0
20-Dec-93	4	2	6	0	1	1	0	0	0
21-Dec-93	2	0	2	0	0	0	0	0	0
22-Dec-93	5	3	8	0	0	0	0	0	0
23-Dec-93	2	2	4	0	0	0	0	0	0
24-Dec-93	6	2	8	2	0	2	0	0	0
27-Dec-93	1	0	1	1	0	1	0	0	0
28-Dec-93	2	1	3	0	0	0	0	0	0
30-Dec-93	3	0	3	1	0	1	0	0	0
31-Dec-93	6	2	8	0	0	0	0	0	0
3-Jan-94	7	2	9	1	0	1	0	0	0
4-Jan-94	2	1	3	0	0	0	0	0	0
8-Jan-94	5	5	10	1	0	1	0	0	0
Total	274	180	454	58	49	107	33	26	59

Appendix 1d. Daily fence catch and brood stock removal by sex and adipose fin status for Lemieux Creek coho, 1994-1995.

Date	Adipose present			Adipose absent			Brood stock		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
21-Oct-94	1	0	1	0	0	0	0	0	0
22-Oct-94	0	0	0	0	0	0	0	0	0
23-Oct-94	2	0	2	0	0	0	0	0	0
24-Oct-94	0	1	1	0	0	0	0	0	0
25-Oct-94	2	1	3	0	0	0	0	0	0
26-Oct-94	9	2	11	0	0	0	0	0	0
27-Oct-94	6	2	8	0	0	0	0	0	0
28-Oct-94	21	9	30	0	1	1	0	0	0
29-Oct-94	2	1	3	0	0	0	0	0	0
30-Oct-94	2	0	2	0	0	0	2	0	2
31-Oct-94	2	1	3	0	0	0	2	1	3
1-Nov-94	27	11	38	1	1	2	18	10	28
2-Nov-94	2	2	4	0	0	0	0	0	0
3-Nov-94	0	0	0	0	0	0	0	0	0
4-Nov-94	1	1	2	0	0	0	0	0	0
5-Nov-94	2	5	7	0	0	0	0	0	0
6-Nov-94	1	0	1	0	0	0	0	0	0
7-Nov-94	0	0	0	0	0	0	0	0	0
8-Nov-94	0	1	1	0	0	0	0	0	0
9-Nov-94	6	4	10	1	1	2	6	4	10
10-Nov-94	24	12	36	0	1	1	24	12	36
11-Nov-94	18	10	28	0	2	2	0	0	0
12-Nov-94	8	5	13	0	0	0	0	0	0
13-Nov-94	10	5	15	0	0	0	0	0	0
14-Jan-94	2	0	2	0	0	0	0	0	0
15-Nov-94	14	8	22	1	1	2	0	0	0
16-Nov-94	17	20	37	1	1	2	2	2	4
17-Nov-94	4	1	5	1	0	1	0	0	0
18-Nov-94	1	2	3	0	1	1	0	0	0
19-Nov-94	2	5	7	0	0	0	2	5	7
20-Nov-94	0	0	0	0	0	0	0	0	0
21-Nov-94	1	1	2	0	0	0	1	1	2
22-Nov-94	0	0	0	0	0	0	0	0	0
23-Nov-94	2	5	7	0	0	0	2	5	7
24-Nov-94	8	4	12	0	1	1	8	5	13
25-Nov-94	4	2	6	0	0	0	4	0	4
27-Nov-94	8	9	17	0	0	0	0	0	0
28-Nov-94	7	7	14	7	7	14	0	0	0
29-Nov-94	9	5	14	0	3	3	0	0	0
30-Nov-94	35	28	63	5	4	9	0	0	0
1-Dec-94	31	53	84	1	6	7	0	0	0
2-Dec-94	13	6	19	0	1	1	0	0	0

Appendix 1d. (cont.)

Date	Adipose present			Adipose absent			Brood stock		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
3-Dec-94	4	0	4	0	0	0	0	0	0
4-Dec-94	0	0	0	0	0	0	0	0	0
5-Dec-94	0	0	0	0	0	0	0	0	0
6-Dec-94	0	0	0	0	0	0	0	0	0
7-Dec-94	1	2	3	0	0	0	0	0	0
8-Dec-94	1	1	2	0	0	0	0	0	0
9-Dec-94	9	9	18	1	2	3	0	0	0
10-Dec-94	16	22	38	0	0	0	0	0	0
12-Dec-94	14	12	26	0	2	2	0	0	0
13-Dec-94	4	2	6	0	1	1	0	0	0
14-Dec-94	4	8	12	0	1	1	0	0	0
15-Dec-94	3	5	8	0	1	1	0	0	0
16-Dec-94	7	4	11	0	1	1	0	0	0
17-Dec-94	5	7	12	2	0	2	0	0	0
18-Dec-94	13	7	20	0	0	0	0	0	0
19-Dec-94	11	11	22	0	0	0	0	0	0
20-Dec-94	14	14	28	2	0	2	0	0	0
21-Dec-94	17	16	33	0	0	0	0	0	0
22-Dec-94	3	4	7	0	0	0	0	0	0
23-Dec-94	7	1	8	0	0	0	0	0	0
24-Dec-94	3	4	7	0	0	0	0	0	0
25-Dec-94	0	0	0	0	0	0	0	0	0
26-Dec-94	7	5	12	0	0	0	0	0	0
27-Dec-94	4	5	9	2	0	2	0	0	0
28-Dec-94	1	1	2	0	0	0	0	0	0
29-Dec-94	4	4	8	0	0	0	0	0	0
30-Dec-94	1	0	1	0	0	0	0	0	0
31-Dec-94	0	0	0	0	0	0	0	0	0
1-Jan-95	0	0	0	0	0	0	0	0	0
2-Jan-95	0	0	0	0	0	0	0	0	0
3-Jan-95	0	0	0	0	0	0	0	0	0
4-Jan-95	0	0	0	0	0	0	0	0	0
5-Jan-95	0	0	0	0	0	0	0	0	0
6-Jan-95	0	0	0	0	0	0	0	0	0
7-Jan-95	0	0	0	0	0	0	0	0	0
8-Jan-95	0	0	0	0	0	0	0	0	0
9-Jan-95	0	0	0	0	0	0	0	0	0
10-Jan-95	0	0	0	0	0	0	0	0	0
11-Jan-95	8	3	11	0	0	0	0	0	0
12-Jan-95	0	0	0	0	0	0	0	0	0
13-Jan-95	0	0	0	0	0	0	0	0	0
Total	465	376	841	25	39	64	71	45	116

Appendix 2a. Petersen disk tag application by date, sex and adipose fin status to coho in Louis Creek, 1993-1994.

Date	Adipose present			Adipose absent		
	Male	Female	Total	Male	Female	Total
14-Oct-93	1	0	1	0	0	0
16-Oct-93	2	0	2	0	0	0
20-Oct-93	0	1	1	0	0	0
21-Oct-93	1	1	2	0	0	0
23-Oct-93	2	2	4	0	0	0
24-Oct-93	1	0	1	0	1	1
25-Oct-93	11	1	12	1	0	1
26-Oct-93	8	4	12	0	1	1
27-Oct-93	1	0	1	0	0	0
28-Oct-93	2	1	3	0	0	0
29-Oct-93	2	3	5	0	0	0
30-Oct-93	6	6	12	0	0	0
31-Oct-93	3	3	6	0	0	0
1-Nov-93	4	1	5	0	0	0
2-Nov-93	4	2	6	0	1	1
3-Nov-93	21	26	47	0	3	3
4-Nov-93	0	1	1	0	0	0
26-Nov-93	2	10	12	0	1	1
30-Nov-93	0	1	1	0	0	0
1-Dec-93	1	0	1	0	0	0
4-Dec-93	11	4	15	0	0	0
10-Dec-93	1	0	1	0	0	0
14-Dec-93	30	9	39	3	2	5
15-Dec-93	5	1	6	0	0	0
16-Dec-93	2	2	4	0	0	0
17-Dec-93	2	1	3	0	0	0
20-Dec-93	12	4	16	2	0	2
21-Dec-93	3	0	3	0	0	0
22-Dec-93	2	0	2	0	0	0
Total	140	84	224	6	9	15

Appendix 2b. Petersen disk tag application by date, sex and adipose fin status to coho in Louis Creek, 1994-1995.

Date	Adipose present			Adipose absent		
	Male	Female	Total	Male	Female	Total
12-Oct-94	10	0	10	0	0	0
13-Oct-94	2	0	2	0	0	0
14-Oct-94	16	4	20	1	0	1
15-Oct-94	13	3	16	1	1	2
16-Oct-94	4	1	5	0	0	0
17-Oct-94	0	1	1	0	0	0
19-Oct-94	5	2	7	1	0	1
20-Oct-94	9	3	12	1	0	1
21-Oct-94	7	2	9	0	0	0
22-Oct-94	5	4	9	1	1	2
23-Oct-94	4	1	5	0	0	0
24-Oct-94	4	1	5	0	0	0
26-Oct-94	0	4	4	0	0	0
27-Oct-94	8	0	8	1	0	1
28-Oct-94	6	0	6	0	0	0
29-Oct-94	5	0	5	1	0	1
5-Nov-94	6	0	6	0	0	0
9-Nov-94	0	0	0	1	0	1
10-Nov-94	0	0	0	1	2	3
11-Nov-94	1	0	1	1	0	1
12-Nov-94	2	1	3	0	0	0
14-Nov-94	1	1	2	0	0	0
15-Nov-94	8	2	10	0	1	1
16-Nov-94	9	3	12	0	2	2
17-Nov-94	0	0	0	0	1	1
18-Nov-94	3	2	5	0	0	0
24-Nov-94	2	1	3	1	1	2
2-Dec-94	1	0	1	0	0	0
12-Dec-94	3	0	3	1	0	1
13-Dec-94	5	1	6	0	0	0
14-Dec-94	2	0	2	0	0	0
15-Dec-94	1	0	1	0	0	0
16-Dec-94	2	0	2	0	0	0
17-Dec-94	6	1	7	0	0	0
19-Dec-94	3	0	3	1	0	1
20-Dec-94	2	0	2	0	0	0
21-Dec-94	11	0	11	3	0	3
22-Dec-94	1	0	1	0	0	0
26-Dec-94	3	1	4	1	0	1
29-Dec-94	1	0	1	0	0	0
Total	171	39	210	17	9	26

Appendix 2c. Petersen disk tag application by date, sex and adipose fin status to coho in Lemieux Creek, 1993-1994.

Date	Adipose present			Adipose absent		
	Male	Female	Total	Male	Female	Total
14-Oct-93	7	1	8	1	1	2
15-Oct-93	0	1	1	2	0	2
16-Oct-93	1	0	1	0	1	1
17-Oct-93	4	1	5	1	0	1
18-Oct-93	4	1	5	2	0	2
19-Oct-93	3	4	7	1	0	1
21-Oct-93	4	2	6	2	0	2
22-Oct-93	7	3	10	2	1	3
23-Oct-93	5	5	10	0	3	3
24-Oct-93	37	18	55	5	7	12
26-Oct-93	8	6	14	2	3	5
27-Oct-93	2	2	4	1	2	3
28-Oct-93	3	3	6	1	0	1
29-Oct-93	3	2	5	0	1	1
30-Oct-93	3	4	7	0	0	0
31-Oct-93	3	3	6	0	0	0
2-Nov-93	1	1	2	0	0	0
3-Nov-93	7	8	15	1	1	2
4-Nov-93	11	5	16	2	0	2
5-Nov-93	0	1	1	0	1	1
6-Nov-93	2	0	2	0	0	0
7-Nov-93	1	1	2	1	0	1
8-Nov-93	6	3	9	0	1	1
9-Nov-93	3	0	3	0	0	0
10-Nov-93	3	2	5	0	1	1
29-Nov-93	11	0	11	2	0	2
30-Nov-93	4	2	6	0	0	0
1-Dec-93	4	4	8	1	0	1
2-Dec-93	1	2	3	0	0	0
3-Dec-93	5	2	7	1	0	1
4-Dec-93	8	9	17	0	1	1
6-Dec-93	3	6	9	0	0	0
7-Dec-93	1	0	1	0	0	0
8-Dec-93	4	2	6	0	0	0
9-Dec-93	1	1	2	0	0	0
10-Dec-93	3	6	9	0	0	0
13-Dec-93	16	13	29	0	1	1
14-Dec-93	6	6	12	0	0	0
15-Dec-93	1	2	3	1	0	1
16-Dec-93	1	1	2	0	0	0
17-Dec-93	1	1	2	0	1	1

Appendix 2c. (cont.)

Date	present			absent		
	Male	Female	Total	Male	Female	Total
20-Dec-93	4	2	6	0	1	1
21-Dec-93	2	0	2	0	0	0
22-Dec-93	5	3	8	0	0	0
23-Dec-93	2	2	4	0	0	0
24-Dec-93	6	2	8	2	0	2
27-Dec-93	1	0	1	1	0	1
27-Dec-93	1	0	1	0	0	0
28-Dec-93	2	1	3	0	0	0
30-Dec-93	3	0	3	1	0	1
31-Dec-93	6	2	8	0	0	0
3-Jan-94	7	2	9	1	0	1
4-Jan-94	2	1	3	0	0	0
8-Jan-94	5	5	10	1	0	1
Total	244	154	398	35	27	62

Appendix 2d. Petersen disk tag application by date, sex and adipose fin status to coho in Lemieux Creek, 1994-1995.

Date	Adipose present			Adipose absent		
	Male	Female	Total	Male	Female	Total
21-Oct-94	1	0	1	0	0	0
23-Oct-94	2	0	2	0	0	0
24-Oct-94	0	1	1	0	0	0
25-Oct-94	2	1	3	0	0	0
26-Oct-94	9	2	11	0	0	0
27-Oct-94	6	2	8	0	0	0
28-Oct-94	21	9	30	0	1	1
29-Oct-94	2	1	3	0	0	0
31-Oct-94	1	0	1	0	0	0
1-Nov-94	8	1	9	1	0	1
2-Nov-94	2	2	4	0	0	0
4-Nov-94	1	1	2	0	0	0
5-Nov-94	1	5	6	0	0	0
6-Nov-94	1	0	1	0	0	0
8-Nov-94	0	1	1	0	0	0
9-Nov-94	0	0	0	0	1	1
11-Nov-94	18	10	28	0	2	2
12-Nov-94	8	5	13	0	0	0
13-Nov-94	10	5	15	0	0	0
14-Nov-94	2	0	2	0	0	0
15-Nov-94	14	8	22	1	1	2
16-Nov-94	15	20	35	0	1	1
17-Nov-94	4	1	5	1	0	1
18-Nov-94	1	2	3	0	1	1
25-Nov-94	0	2	2	0	0	0
27-Nov-94	8	9	17	0	0	0
28-Nov-94	7	7	14	0	0	0
29-Nov-94	9	5	14	0	3	3
30-Nov-94	35	28	63	5	4	9
1-Dec-94	31	53	84	1	6	7
2-Dec-94	13	6	19	0	1	1
3-Dec-94	0	4	4	0	0	0
6-Dec-94	1	2	3	0	0	0
8-Dec-94	1	1	2	0	0	0
9-Dec-94	7	9	16	2	2	4
11-Dec-94	16	22	38	0	0	0
12-Dec-94	14	13	27	0	1	1
13-Dec-94	4	2	6	0	1	1
14-Dec-94	4	8	12	0	1	1
15-Dec-94	3	5	8	0	1	1
16-Dec-94	7	4	11	0	1	1
17-Dec-94	5	7	12	2	0	2
18-Dec-94	13	7	20	0	0	0
19-Dec-94	11	11	22	0	0	0
20-Dec-94	14	14	28	2	0	2
21-Dec-94	17	16	33	0	0	0

Appendix 2d. (cont.)

Date	Adipose present			Adipose absent		
	Male	Female	Total	Male	Female	Total
22-Dec-94	3	4	7	0	0	0
23-Dec-94	7	1	8	0	0	0
24-Dec-94	3	4	7	0	0	0
25-Dec-94	7	5	12	0	0	0
27-Dec-94	4	5	9	2	0	2
28-Dec-94	1	1	2	0	0	0
29-Dec-94	4	4	8	0	0	0
30-Dec-94	1	0	1	0	0	0
11-Jan-95	8	3	11	0	0	0
Total	387	339	726	17	28	45

Appendix 3a. Tagged carcass recoveries by application and recovery date, location, size, sex and adipose fin status of Louis Creek coho in 1993-1994.

Tag application sample				Recovery sample				
Date	Sex	NF length (cm)	Adipose fin status	Date	Reach	Sex	POH length (cm)	Days out
25-Oct-93	M	43	P	26-Oct-93	F	M	-0-	1
25-Oct-93	M	55	P	20-Dec-93	4	M	-0-	56
25-Oct-93	F	47	P	26-Oct-93	F	F	42	1
26-Oct-93	F	47	P	26-Oct-93	F	F	-0-	1
31-Oct-93	M	50	P	30-Nov-93	F	M	40.5	30
2-Nov-93	F	44	P	22-Nov-93	F	F	38	20
3-Nov-93	M	37	P	4-Jan-94	4	M	-0-	62
3-Nov-93	M	52	P	20-Dec-93	4	M	-0-	47
3-Nov-93	M	55	P	3-Dec-93	4	M	-0-	30
3-Nov-93	M	47	P	3-Dec-93	4	M	-0-	30
26-Nov-93	F	47	A	4-Jan-94	3	F	41	40
26-Nov-93	F	52	P	30-Nov-93	F	F	44	4
26-Nov-93	F	47	P	2-Dec-93	F	F	37.5	7
1-Dec-93	M	40	P	3-Dec-93	F	M	31.5	2
14-Dec-93	M	49	A	3-Jan-94	F	M	39.5	20
14-Dec-93	M	48	P	15-Dec-93	F	M	39	1
14-Dec-93	F	51.5	P	31-Dec-93	F	F	43.5	17
17-Dec-93	M	44	P	20-Dec-93	F	M	35	3

Appendix 3b. Tagged carcass recoveries by application and recovery date, location, size, sex, adipose fin status and age of Louis Creek coho in 1994-1995.

Tag application sample				Tag recovery sample					
Date	Sex	NF length (cm)	Adipose fin status	Date	Reach	Sex	POH length (cm)	Age	Days out
12-Oct-94	M	49	P	16-Nov-94	3	M	39.5	4 ₃	35
15-Oct-94	M	51	P	25-Nov-94	1	M	42.5	3 ₂	41
15-Oct-94	M	53	P	18-Nov-94	1	M	43	4 ₃	34
15-Oct-94	M	59.5	P	16-Nov-94	3	M	48	1M	32
20-Oct-94	M	48.5	P	2-Dec-94	2	M	40.5	3 ₂	43
20-Oct-94	M	51.5	A	26-Nov-94	1	M	42	4 ₃	37
20-Oct-94	M	42.5	A	2-Dec-94	2	M	35	3 ₂	43
21-Oct-94	M	58.5	P	17-Nov-94	1	M	48	3 ₂	27
22-Oct-94	F	50	P	10-Nov-94	3	F	41.5	3 ₂	19
22-Oct-94	M	59.5	P	16-Nov-94	3	M	48.5	3 ₂	25
23-Oct-94	M	56.5	P	16-Nov-94	3	M	46	3 ₂	24
12-Nov-94	M	49	P	14-Nov-94	1	M	42	3 ₂	2
16-Nov-94	M	48	P	23-Nov-94	1	M	41	3 ₂	7
18-Nov-94	M	47	P	20-Dec-94	1	M	38.5	3 ₂	32
24-Nov-94	F	49	A	20-Dec-94	1	F	42	3 ₂	26
24-Nov-94	F	50.5	P	25-Nov-94	1	F	43	3 ₂	1
13-Dec-94	M	49.5	P	13-Jan-95	1	M	40.5	3 ₂	31

Appendix 3c. Tagged carcass recoveries by application and recovery date, location size, sex, and adipose fin status of Lemieux Creek coho in 1993-1994.

Tag application sample				Recovery sample				
Date	Sex	NF length (cm)	Adipose fin status	Date	Reach	Sex	POH length (cm)	Days out
14-Oct-93	M	44	P	29-Nov-93	F	M	36.5	46
14-Oct-93	M	49	P	11-Nov-93	2	M	41	28
17-Oct-93	M	54.5	A	11-Nov-93	3	M	-0-	25
18-Oct-93	F	49	P	29-Nov-93	F	F	40	42
18-Oct-93	M	54	P	11-Nov-93	5	M	-0-	24
19-Oct-93	F	48	P	1-Nov-93	F	F	42.5	13
19-Oct-93	M	45	P	26-Nov-93	3	M	-0-	38
20-Oct-93	F	50.5	P	26-Oct-93	F	F	-0-	6
21-Oct-93	M	54	A	14-Jan-94	1	M	-0-	85
21-Oct-93	M	58	P	2-Jan-94	5	M	-0-	73
21-Oct-93	M	63	P	26-Nov-93	7	M	-0-	36
22-Oct-93	F	52.5	P	25-Oct-93	F	F	-0-	3
22-Oct-93	M	50.5	P	26-Nov-93	3	M	-0-	35
22-Oct-93	M	53	P	14-Jan-94	3	M	-0-	84
22-Oct-93	F	50	P	29-Nov-93	7	F	43	38
23-Oct-93	M	47.5	P	26-Nov-93	3	M	-0-	34
23-Oct-93	F	49	A	11-Nov-93	5	F	35	19
23-Oct-93	F	53.5	P	9-Nov-93	F	F	44.5	17
23-Oct-93	M	40	P	6-Dec-93	F	M	31	44
23-Oct-93	M	57	P	17-Nov-93	6	F	-0-	25
24-Oct-93	F	60	A	4-Jan-94	4	F	-0-	72
24-Oct-93	F	44.5	P	11-Nov-93	3	M	36	18
24-Oct-93	M	59	P	17-Nov-93	4	M	46	24
24-Oct-93	F	56	P	18-Nov-93	F	F	45	25
24-Oct-93	M	55	P	17-Dec-93	5	M	-0-	54
24-Oct-93	M	48.5	P	8-Dec-93	F	M	37.5	45
24-Oct-93	F	49.5	A	17-Nov-93	3	F	42.5	24
24-Oct-93	F	49	A	16-Nov-93	F	F	41	23
24-Oct-93	F	46.5	P	3-Jan-94	1	F	39	71
24-Oct-93	M	50	P	2-Jan-94	5	M	-0-	70
24-Oct-93	F	53.5	P	29-Nov-93	5	F	44.5	36
24-Oct-93	M	53	P	30-Nov-93	F	M	41.5	37
24-Oct-93	M	48	P	1-Nov-93	F	M	40.5	8
24-Oct-93	M	42	P	22-Nov-93	F	M	36	29
26-Oct-93	F	48	P	1-Nov-93	F	F	41	6
26-Oct-93	F	49	P	8-Nov-93	F	F	41.5	13
26-Oct-93	F	57.5	P	2-Nov-93	F	F	-0-	7
26-Oct-93	M	45	A	29-Nov-93	7	M	36	34
26-Oct-93	F	50	A	29-Oct-93	F	F	-0-	3

Appendix 3c. (cont.)

Tag application sample				Recovery sample				
Date	Sex	NF length (cm)	Adipose fin status	Date	Reach	Sex	POH length (cm)	Days out
27-Oct-93	F	53.5	P	19-Nov-93	F	F	44	23
27-Oct-93	M	50	P	14-Jan-94	1	M	-0-	79
27-Oct-93	F	49	A	17-Nov-93	4	F	40.5	21
28-Oct-93	M	52.5	P	1-Dec-93	2	M	43	34
29-Oct-93	F	51.5	P	5-Nov-93	F	F	42	7
29-Oct-93	F	57.5	P	30-Nov-93	1	F	-0-	32
30-Oct-93	M	49	P	17-Dec-93	5	M	-0-	48
31-Oct-93	M	47.5	P	30-Nov-93	2	M	-0-	30
31-Oct-93	M	42	P	18-Nov-93	F	M	33	18
1-Nov-93	M	38.5	A	29-Nov-93	1	M	34.5	28
3-Nov-93	M	45	P	10-Dec-93	4	M	36	37
3-Nov-93	M	40.5	P	30-Nov-93	F	M	33	27
3-Nov-93	M	52.5	P	4-Jan-94	4	M	-0-	62
3-Nov-93	F	49.5	P	2-Jan-94	5	F	-0-	60
4-Nov-93	M	46	P	7-Jan-94	5	M	-0-	64
4-Nov-93	M	57.5	A	17-Dec-93	5	M	46.5	43
4-Nov-93	M	47.5	P	8-Dec-93	F	M	38.5	34
4-Nov-93	M	53	P	2-Jan-94	5	M	-0-	59
4-Nov-93	M	63.5	P	17-Dec-93	3	M	-0-	43
5-Nov-93	F	47	P	29-Nov-93	4	F	41	24
6-Nov-93	M	55	P	1-Dec-93	5	M	-0-	25
9-Nov-93	M	53	P	1-Dec-93	5	M	44	22
10-Nov-93	M	48.5	P	22-Nov-93	F	M	39	12
29-Nov-93	M	46	P	14-Dec-93	F	M	38.5	15
29-Nov-93	M	40	P	1-Dec-93	F	M	34	2
29-Nov-93	M	51	P	10-Dec-93	4	M	42	11
29-Nov-93	M	42	P	9-Dec-93	F	M	36.5	10
30-Nov-93	F	49	P	17-Dec-93	2	F	41	17
30-Nov-93	M	49	P	28-Dec-93	F	M	40.5	28
30-Nov-93	M	64	P	28-Dec-93	F	M	49.5	28
1-Dec-93	M	52.5	P	22-Dec-93	F	M	41	21
1-Dec-93	F	58	P	17-Dec-93	5	F	47.5	16
3-Dec-93	M	44	P	28-Dec-93	F	M	37	25
3-Dec-93	F	46	P	17-Dec-93	6	F	38.5	14
4-Dec-93	F	55.5	P	6-Jan-94	4	F	45.5	33
4-Dec-93	F	46.5	P	22-Dec-93	1	F	38	18
4-Dec-93	M	52.5	P	30-Dec-93	F	M	42	26
4-Dec-93	M	55	P	7-Dec-93	F	M	42	3
6-Dec-93	F	53	P	23-Dec-93	-0-	F	42	17
7-Dec-93	M	51	P	7-Jan-94	3	M	-0-	31

Appendix 3c. (cont.)

Tag application sample				Recovery sample				
Date	Sex	NF length (cm)	Adipose fin status	Date	Reach	Sex	POH length (cm)	Days out
8-Dec-93	M	55	P	29-Dec-93	F	M	43.5	21
8-Dec-93	M	43.5	P	16-Dec-93	F	M	36	8
8-Dec-93	F	54.5	P	21-Dec-93	F	F	45	13
9-Dec-93	F	46.5	P	13-Dec-93	F	F	42	4
9-Dec-93	M	58	P	28-Dec-93	F	M	47	19
10-Dec-93	F	54.5	P	22-Dec-93	5	F	45.5	12
10-Dec-93	F	51	P	3-Jan-94	1	F	44	24
13-Dec-93	M	59	P	21-Dec-93	F	M	46.5	8
13-Dec-93	F	51	P	30-Dec-93	1	F	43.5	17
13-Dec-93	M	45.5	P	28-Dec-93	F	M	43	15
13-Dec-93	F	63.5	P	3-Jan-94	1	F	52	21
13-Dec-93	F	49	P	29-Dec-93	F	F	40.5	16
13-Dec-93	M	55	P	28-Dec-93	1	M	45	15
13-Dec-93	M	48	P	30-Dec-93	F	M	39	17
13-Dec-93	M	43.5	P	20-Dec-93	F	M	36	7
13-Dec-93	M	47	P	4-Jan-94	4	M	-0-	22
14-Dec-93	M	53.5	P	3-Jan-94	F	M	43	20
14-Dec-93	F	53	P	3-Jan-94	F	F	44.5	20
15-Dec-93	F	44	P	28-Dec-93	F	F	44	13
16-Dec-93	F	56.5	P	20-Dec-93	F	F	47	4
17-Dec-93	F	54	A	11-Jan-94	6	F	45.5	25
17-Dec-93	M	50	P	3-Jan-94	1	M	-0-	17
20-Dec-93	M	57	P	3-Jan-94	F	M	45.5	14
20-Dec-93	M	60	P	29-Dec-93	F	M	49	9
22-Dec-93	M	49	P	3-Jan-94	F	M	41	12
23-Dec-93	F	56	P	24-Dec-93	1	F	-0-	1
23-Dec-93	F	55	P	3-Jan-94	F	F	47	11
24-Dec-93	M	54	P	3-Jan-94	F	M	42.5	10
24-Dec-93	F	52	P	7-Jan-94	5	F	44	14
24-Dec-93	M	44	P	5-Jan-94	F	M	35	12
27-Dec-93	M	49	A	30-Dec-93	5	M	-0-	3
31-Dec-93	M	41.5	P	10-Jan-94	4	M	34.5	10
3-Jan-94	M	41.5	P	7-Jan-94	8	M	36	4
8-Jan-94	F	50.5	P	12-Jan-94	6	F	42	4

Appendix 3d. Tagged carcass recoveries by application and recovery date, location, size, sex, adipose fin status and age of Lemieux Creek coho in 1994-1995.

Tag application sample				Recovery sample					
Date	Sex	NF length (cm)	Adipose fin status	Date	Reach	Sex	POH length (cm)	Age	Days out
21-Oct-94	M	52	P	7-Dec-94	4	M	42.5	3 ₂	47
23-Oct-94	M	46	P	17-Nov-94	6	M	39	3 ₂	25
24-Oct-94	F	49.5	P	7-Nov-94	6A	F	42	3 ₂	14
25-Oct-94	M	53	P	14-Nov-94	6	M	42.5	3 ₂	20
25-Oct-94	F	55	P	14-Nov-94	6	F	44.5	3 ₂	20
26-Oct-94	M	49	P	14-Nov-94	6A	M	41	3 ₂	19
26-Oct-94	M	55	P	15-Nov-94	6	M	44	3 ₂	20
27-Oct-94	F	49	P	14-Nov-94	3	F	40.5	3 ₂	18
27-Oct-94	M	45.5	P	23-Nov-94	3	M	37.5	3 ₂	27
28-Oct-94	F	60	P	14-Nov-94	2	F	50	1M	17
28-Oct-94	F	54	A	14-Nov-94	2	F	44	4 ₂	17
28-Oct-94	F	48.5	P	14-Nov-94	3	F	40	3 ₂	17
28-Oct-94	F	59.5	P	15-Nov-94	6	F	48.5	1M	18
28-Oct-94	F	61	P	17-Nov-94	2	F	51	1M	20
28-Oct-94	M	57	P	17-Nov-94	4	M	46	3 ₂	20
28-Oct-94	M	50.5	P	18-Nov-94	4	M	41.5	RG	21
28-Oct-94	M	45.5	P	23-Nov-94	2	M	37	3 ₂	26
28-Oct-94	M	48.5	P	28-Nov-94	2	M	40	3 ₂	31
28-Oct-94	M	48.5	P	28-Nov-94	2	M	40	3 ₂	31
28-Oct-94	M	48.5	P	28-Nov-94	3	M	41	3 ₂	31
28-Oct-94	M	59	P	1-Dec-94	6A	M	47	3 ₂	34
28-Oct-94	F	55	P	8-Dec-94	1	F	47	3 ₂	41
28-Oct-94	M	53.5	P	12-Dec-94	6	M	46	3 ₂	45
29-Oct-94	F	49.5	P	3-Nov-94	6	F	42	3 ₂	5
29-Oct-94	M	49.5	P	1-Dec-94	2	M	41	3 ₂	33
1-Nov-94	M	49.5	P	28-Nov-94	1	M	40	3 ₂	27
1-Nov-94	M	48	P	14-Dec-94	1	M	39	1M	43
2-Nov-94	F	59	P	14-Nov-94	6A	F	50.5	1M	12
2-Nov-94	M	54.5	P	14-Nov-94	6	M	43.5	4 ₃	12
5-Nov-94	F	56	P	14-Nov-94	6	F	48.5	4 ₃	9
5-Nov-94	F	48.5	P	14-Nov-94	6	F	41	3 ₂	9
5-Nov-94	F	53.5	P	21-Nov-94	4	F	45	1M	16
5-Nov-94	M	54	P	21-Nov-94	6	M	42.5	3 ₂	16
5-Nov-94	F	53.5	P	12-Dec-94	6	F	45.5	4 ₃	37
6-Nov-94	M	52	P	1-Dec-94	4	M	42.5	1M	25
11-Nov-94	F	57.5	P	17-Nov-94	6	F	49	4 ₃	6
11-Nov-94	F	53.5	A	21-Nov-94	6	F	44	3 ₂	10
11-Nov-94	M	53	P	27-Nov-94	6	M	43	1M	16
11-Nov-94	M	60	P	28-Nov-94	3	M	50	3 ₂	17
11-Nov-94	M	47	P	28-Nov-94	3	M	38.5	3 ₂	17

Appendix 3d. (cont.)

Tag application sample				Recovery sample					
Date	Sex	NF length (cm)	Adipose fin status	Date	Reach	Sex	POH length (cm)	Age	Days out
11-Nov-94	F	49	P	28-Nov-94	6A	F	42	3 ₂	17
11-Nov-94	F	52	A	1-Dec-94	5	F	42.5	3 ₂	20
11-Nov-94	F	60	P	1-Dec-94	6	F	50	3 ₂	20
11-Nov-94	F	44	P	2-Dec-94	6	F	38	3 ₂	21
11-Nov-94	M	57.5	P	5-Dec-94	2	M	46	3 ₂	24
11-Nov-94	M	47.5	P	8-Dec-94	3	M	39.5	3 ₂	27
12-Nov-94	F	56	P	16-Nov-94	6	F	47.5	3 ₂	4
12-Nov-94	M	51	P	23-Nov-94	3	M	43.5	3 ₂	11
12-Nov-94	M	48	P	1-Dec-94	3	M	40.5	RG	19
12-Nov-94	F	47.5	P	30-Dec-94	4	F	41	3 ₂	48
13-Nov-94	F	53	P	1-Dec-94	2	F	45	1M	18
13-Nov-94	M	53.5	P	1-Dec-94	2	M	44	3 ₂	18
13-Nov-94	M	63	P	14-Dec-94	2	M	51.5	3 ₂	31
15-Nov-94	M	54	P	21-Nov-94	6A	M	46.5	3 ₂	6
15-Nov-94	M	63	P	28-Nov-94	6A	M	52	4 ₃	13
15-Nov-94	M	68	P	1-Dec-94	3	M	55.5	3 ₂	16
15-Nov-94	M	52.5	P	1-Dec-94	6	M	43	3 ₂	16
15-Nov-94	F	55	P	7-Dec-94	4	F	47	1M	22
15-Nov-94	M	55	P	7-Dec-94	4	M	45	3 ₂	22
15-Nov-94	F	51	P	19-Dec-94	2	F	43.5	3 ₂	34
16-Nov-94	F	60.5	P	18-Nov-94	4	F	50	1M	2
16-Nov-94	F	57.5	P	28-Nov-94	3	F	47.5	3 ₂	12
16-Nov-94	M	50.5	P	29-Nov-94	6	M	41	3 ₂	13
16-Nov-94	F	60.5	P	1-Dec-94	2	F	50	3 ₂	15
16-Nov-94	M	54	P	1-Dec-94	2	M	43.5	3 ₂	15
16-Nov-94	M	60	P	1-Dec-94	3	M	48.5	3 ₂	15
16-Nov-94	F	54	P	5-Dec-94	3	F	44.5	3 ₂	19
16-Nov-94	M	44.5	P	8-Dec-94	3	M	37.5	3 ₂	22
16-Nov-94	F	52.5	P	12-Dec-94	2	F	43.5	3 ₂	26
16-Nov-94	F	48.5	P	14-Dec-94	4	F	39	3 ₂	28
17-Nov-94	M	57	P	25-Nov-94	6	M	49	3 ₂	8
17-Nov-94	M	58.5	P	12-Dec-94	6A	M	45.5	3 ₂	25
18-Nov-94	F	57	P	29-Nov-94	6	F	49	3 ₂	11
18-Nov-94	F	52.5	A	12-Dec-94	1	F	44.5	3 ₂	24
25-Nov-94	F	57	P	14-Dec-94	3	F	47.5	3 ₂	19
27-Nov-94	M	64.5	P	8-Dec-94	2	M	52.5	3 ₂	11
27-Nov-94	F	54	P	12-Dec-94	6	F	47	3 ₂	15
27-Nov-94	F	55	P	12-Dec-94	6A	F	47.5	3 ₂	15
27-Nov-94	F	51	P	13-Dec-94	6	F	44.5	3 ₂	16
27-Nov-94	F	51	P	14-Dec-94	6A	F	45	3 ₂	17
27-Nov-94	M	69.5	P	14-Dec-94	1	M	54	1M	17

Appendix 3d. (cont.)

Tag application sample				Recovery sample					
Date	Sex	NF length (cm)	Adipose fin status	Date	Reach	Sex	POH length (cm)	Age	Days out
27-Nov-94	F	60	P	15-Dec-94	6	F	51	3 ₂	18
27-Nov-94	M	57	P	16-Dec-94	6A	M	47	3 ₂	19
28-Nov-94	F	54.5	P	1-Dec-94	6A	F	44	4 ₃	3
28-Nov-94	M	46	P	1-Dec-94	6A	M	38	3 ₂	3
28-Nov-94	M	44.5	P	6-Dec-94	6A	M	38	3 ₂	8
28-Nov-94	F	52	P	9-Dec-94	6	F	45	3 ₂	11
28-Nov-94	M	47.5	P	12-Dec-94	2	M	38	3 ₂	14
28-Nov-94	F	54	P	12-Dec-94	6A	F	45	3 ₂	14
28-Nov-94	F	46	P	12-Dec-94	6A	F	39	3 ₂	14
28-Nov-94	M	56	P	14-Dec-94	6	M	46.5	4 ₃	16
28-Nov-94	F	55	P	16-Dec-94	6	F	47.5	3 ₂	18
28-Nov-94	M	45	P	16-Dec-94	6	M	36	3 ₂	18
28-Nov-94	M	57	P	23-Dec-94	6	M	46	3 ₂	25
29-Nov-94	M	65	P	12-Dec-94	6	M	52.5	1M	13
29-Nov-94	M	55	P	12-Dec-94	3	M	44.5	1M	13
29-Nov-94	F	61	P	12-Dec-94	6	F	50.5	3 ₂	13
29-Nov-94	F	56	A	12-Dec-94	6A	F	47.5	3 ₂	13
29-Nov-94	F	46.5	P	14-Dec-94	2	F	39.5	3 ₂	15
29-Nov-94	F	57.5	A	14-Dec-94	3	F	47.5	3 ₂	15
29-Nov-94	F	58	A	15-Dec-94	6	F	50.5	3 ₂	16
30-Nov-94	M	56	P	1-Dec-94	6A	M	48.5	3 ₂	1
30-Nov-94	M	52	P	12-Dec-94	1	M	50.5	3 ₂	12
30-Nov-94	F	60	P	12-Dec-94	3	F	49	3 ₂	12
30-Nov-94	F	64	P	12-Dec-94	3	F	54.5	3 ₂	12
30-Nov-94	F	50	P	12-Dec-94	6	F	42.5	1M	12
30-Nov-94	F	55	A	13-Dec-94	6	F	49	3 ₂	13
30-Nov-94	M	61	P	14-Dec-94	2	M	49.5	3 ₂	14
30-Nov-94	M	54	P	14-Dec-94	2	F	45.5	1M	14
30-Nov-94	F	51.5	P	14-Dec-94	3	F	44	3 ₂	14
30-Nov-94	M	62.5	P	14-Dec-94	3	M	50	3 ₂	14
30-Nov-94	M	51.5	P	14-Dec-94	3	M	39.5	3 ₂	14
30-Nov-94	F	56.5	P	14-Dec-94	3	F	47	1M	14
30-Nov-94	F	58.5	P	14-Dec-94	3	F	51	1M	14
30-Nov-94	F	50	P	16-Dec-94	2	F	42	3 ₂	16
30-Nov-94	M	61.5	P	16-Dec-94	4	M	46	3 ₂	16
30-Nov-94	M	52	P	17-Dec-94	6	M	42.5	3 ₂	17
30-Nov-94	M	54	A	17-Dec-94	6	M	44	1M	17
30-Nov-94	F	48.5	P	19-Dec-94	3	F	40	3 ₂	19
30-Nov-94	F	59	P	19-Dec-94	4	F	48	1M	19
30-Nov-94	F	55	P	21-Dec-94	4	F	46	3 ₂	21
30-Nov-94	M	45	P	21-Dec-94	4	M	37.5	3 ₂	21

Appendix 3d. (cont.)

Tag application sample				Recovery sample					
Date	Sex	NF length (cm)	Adipose fin status	Date	Reach	Sex	POH length (cm)	Age	Days out
1-Dec-94	F	58.5	P	12-Dec-94	2	M	39.5	3 ₂	11
1-Dec-94	F	52	P	12-Dec-94	6A	F	44	3 ₂	11
1-Dec-94	F	50	P	12-Dec-94	6A	F	43	3 ₂	11
1-Dec-94	F	53	P	13-Dec-94	6	F	47	3 ₂	12
1-Dec-94	F	51	P	14-Dec-94	1	F	41.5	3 ₂	13
1-Dec-94	F	52.5	A	14-Dec-94	1	F	44.5	3 ₂	13
1-Dec-94	M	46	P	14-Dec-94	1	M	39.5	1M	13
1-Dec-94	F	57	P	14-Dec-94	1	F	46	3 ₂	13
1-Dec-94	F	56	P	14-Dec-94	1	F	48.5	3 ₂	13
1-Dec-94	F	52	P	14-Dec-94	2	F	43.5	1M	13
1-Dec-94	F	58	P	14-Dec-94	2	F	48.5	3 ₂	13
1-Dec-94	F	55	P	14-Dec-94	2	F	45.5	3 ₂	13
1-Dec-94	F	57	P	14-Dec-94	2	F	47	3 ₂	13
1-Dec-94	F	57	P	14-Dec-94	3	F	48	3 ₂	13
1-Dec-94	F	46	A	14-Dec-94	3	F	39.5	3 ₂	13
1-Dec-94	F	48	P	14-Dec-94	3	F	40.5	3 ₂	13
1-Dec-94	F	59	P	14-Dec-94	4	F	49.5	3 ₂	13
1-Dec-94	F	50	P	16-Dec-94	1	F	41.5	3 ₂	15
1-Dec-94	F	49	P	16-Dec-94	1	F	42	1M	15
1-Dec-94	F	46	P	16-Dec-94	3	F	38	1M	15
1-Dec-94	M	50	P	16-Dec-94	3	M	40	1M	15
1-Dec-94	F	48	P	16-Dec-94	3	F	40	3 ₂	15
1-Dec-94	F	49	A	16-Dec-94	6	F	41	3 ₂	15
1-Dec-94	F	51	P	19-Dec-94	1	F	44	3 ₂	18
1-Dec-94	F	52	P	19-Dec-94	1	F	43.5	3 ₂	18
1-Dec-94	F	54	P	19-Dec-94	1	F	44	3 ₂	18
1-Dec-94	F	56	P	19-Dec-94	1	F	46	4 ₃	18
1-Dec-94	F	53	P	19-Dec-94	2	F	41.5	3 ₂	18
1-Dec-94	F	57	P	19-Dec-94	2	F	48	1M	18
1-Dec-94	M	53.5	P	19-Dec-94	2	M	44.5	3 ₂	18
1-Dec-94	M	58	P	19-Dec-94	2	M	47	3 ₂	18
1-Dec-94	F	49	P	19-Dec-94	2	F	40.5	3 ₂	18
1-Dec-94	F	47	P	19-Dec-94	2	F	39	3 ₂	18
1-Dec-94	F	49.5	P	19-Dec-94	3	F	41	3 ₂	18
1-Dec-94	M	60	P	19-Dec-94	3	M	47.5	3 ₂	18
1-Dec-94	F	52	P	19-Dec-94	3	F	42	3 ₂	18
1-Dec-94	F	51	P	21-Dec-94	3	F	43	3 ₂	20
2-Dec-94	F	48	P	14-Dec-94	6	F	42	3 ₂	12
2-Dec-94	F	55.5	P	19-Dec-94	2	F	46	3 ₂	17
2-Dec-94	M	71	P	21-Dec-94	2	M	55.5	1M	19
6-Dec-94	F	55	P	19-Dec-94	6	F	46.5	3 ₂	13

Appendix 3d. (cont.)

Tag application sample				Recovery sample					
Date	Sex	NF length (cm)	Adipose fin status	Date	Reach	Sex	POH length (cm)	Age	Days out
9-Dec-94	F	41.5	P	19-Dec-94	6	F	36.5	3 ₂	10
9-Dec-94	M	59.5	P	30-Dec-94	5	M	47	3 ₂	21
9-Dec-94	M	51	P	2-Jan-95	2	M	41	3 ₂	24
11-Dec-94	F	51	P	14-Dec-94	6	F	45	3 ₂	3
11-Dec-94	F	51	P	20-Dec-94	6	F	44	3 ₂	9
11-Dec-94	M	56	P	21-Dec-94	3	M	44.5	3 ₂	10
11-Dec-94	F	45	P	21-Dec-94	4	F	38	3 ₂	10
11-Dec-94	F	64	P	21-Dec-94	4	F	54.5	3 ₂	10
11-Dec-94	F	54	P	23-Dec-94	2	F	45	3 ₂	12
11-Dec-94	F	58	P	4-Jan-95	6	F	50	3 ₂	24
11-Dec-94	M	49	P	6-Jan-95	3	M	39.5	3 ₂	26
11-Dec-94	F	53	P	13-Jan-95	6	F	46	3 ₂	33
12-Dec-94	M	41	P	18-Dec-94	6	M	35.5	3 ₂	6
12-Dec-94	F	52.5	P	2-Jan-95	4	F	44.5	3 ₂	21
14-Dec-94	F	55	P	21-Dec-94	6	F	46.5	3 ₂	7
14-Dec-94	M	51	P	22-Dec-94	6	M	42	3 ₂	8
14-Dec-94	M	49	P	2-Jan-95	6	M	41	1M	19
15-Dec-94	F	52	P	4-Jan-95	4	F	44	1M	20
16-Dec-94	F	47	A	13-Jan-95	6A	F	41.5	3 ₂	28
17-Dec-94	M	57	P	30-Dec-94	6A	M	47.5	3 ₂	13
17-Dec-94	M	51.5	A	2-Jan-95	6A	M	42.5	3 ₂	16
17-Dec-94	F	61	P	6-Jan-95	4	F	50	3 ₂	20
19-Dec-94	M	51	P	2-Jan-95	6	M	42	1M	14
19-Dec-94	F	50.5	P	2-Jan-95	3	F	41	3 ₂	14
19-Dec-94	M	54	P	2-Jan-95	4	M	44	3 ₂	14
19-Dec-94	F	59	P	4-Jan-95	2	F	49	3 ₂	16
19-Dec-94	F	53.5	P	13-Jan-95	6	F	46	3 ₂	25
20-Dec-94	F	52	P	2-Jan-95	2	F	44	4 ₃	13
20-Dec-94	M	51	P	2-Jan-95	3	M	42	3 ₂	13
20-Dec-94	F	51	P	4-Jan-95	1	F	43	3 ₂	15
20-Dec-94	M	57	P	4-Jan-95	3	M	45	3 ₂	15
20-Dec-94	F	54.5	P	4-Jan-95	4	F	46	3 ₂	15
20-Dec-94	M	57.5	P	6-Jan-95	2	M	47	3 ₂	17
20-Dec-94	F	52.5	P	6-Jan-95	3	F	44	3 ₂	17
20-Dec-94	F	49	P	6-Jan-95	4	F	41.5	3 ₂	17
20-Dec-94	F	53	P	11-Jan-95	2	F	44	3 ₂	22
20-Dec-94	F	57	P	13-Jan-95	4	F	48.5	1M	24
21-Dec-94	M	64	P	30-Dec-94	2	M	52	3 ₂	9
21-Dec-94	F	52	P	2-Jan-95	2	F	43.5	3 ₂	12
21-Dec-94	F	60	P	2-Jan-95	3	F	50	3 ₂	12
21-Dec-94	F	53	P	6-Jan-95	3	F	44.5	3 ₂	16

Appendix 3d. (cont.)

Tag application sample				Recovery sample					
Date	Sex	NF length (cm)	Adipose fin status	Date	Reach	Sex	POH length (cm)	Age	Days out
21-Dec-94	F	56.5	P	6-Jan-95	3	F	48	3 ₂	16
21-Dec-94	M	53	P	11-Jan-95	6	M	43.5	3 ₂	21
22-Dec-94	M	49	P	3-Jan-95	6	M	41	3 ₂	12
22-Dec-94	F	49.5	P	13-Jan-95	6A	F	42	3 ₂	22
22-Dec-94	M	47	P	13-Jan-95	6	M	40	3 ₂	22
23-Dec-94	M	40	P	30-Dec-94	6A	M	35	1M	7
23-Dec-94	M	48	P	30-Dec-94	6	M	41	3 ₂	7
23-Dec-94	M	53	P	2-Jan-95	6	M	44	3 ₂	10
24-Dec-94	M	49	P	30-Dec-94	6	M	41.5	3 ₂	6
24-Dec-94	F	59	P	11-Jan-95	2	F	49	1M	18
24-Dec-94	M	52.5	P	11-Jan-95	7	M	44.5	3 ₂	18
25-Dec-94	F	61.5	P	9-Jan-95	4	F	54	3 ₂	15
25-Dec-94	F	53	P	9-Jan-95	4	F	46	3 ₂	15
25-Dec-94	M	63.5	P	11-Jan-95	4	M	52	3 ₂	17
25-Dec-94	M	44	P	11-Jan-95	7	M	37	3 ₂	17
25-Dec-94	F	55	P	13-Jan-95	2	F	46	3 ₂	19
29-Dec-94	F	53	P	13-Jan-95	6	F	44	3 ₂	15

Appendix 4. Minnow trapping results for non-salmonid juveniles captured in the North Thompson mainstem and Louis and Lemieux creeks, 1993 and 1994.

1993	Date	Location	#of traps	Soak time (hours)	Soak time (days)	Catch							CPUE (catch/trap/day)						
						SC	WF	RS	SQ	SU	LD	PC	SC	WF	RS	SQ	SU	LD	PC
		LOUIS CREEK																	
	Sep 08	Adult fence site	58	1257	52.4	7	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Sep 09	McGillivray Ck confl	36	621	25.9	1	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Sep 10	Upper Louis Creek	99	1931	80.4	3	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Sep 10	Whitcroft Village	84	1904	79.3	10	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total Louis Ck	277	5713	238.0	21	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		NORTH THOMPSON RIVER																	
	Sep 14	Little Fort ferry	40	1032	43.0	12	0	9	2	0	1	0	0.01	0.00	0.01	0.00	0.00	0.00	0.00
	Sep 14	Blind backwater	7	175	7.3	0	0	1	0	0	0	0	0.00	0.00	0.02	0.00	0.00	0.00	0.00
	Sep 14	Side channel	62	1550	64.6	13	1	38	0	1	0	0	0.00	0.00	0.01	0.00	0.00	0.00	0.00
		Total N. Thompson	109	2757	114.9	25	1	48	2	1	1	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		LEMIEUX CREEK																	
	Sep14-15	Ianson mainstem	121	2686	111.9	2	0	0	0	0	0	0	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	Sep 15	Ianson channel	61	1281	53.4	3	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Sep 15	Ianson m.stem d/s	20	460	19.2	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Sep 15	Ianson m.stem u/s	11	264	11.0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Total Lemieux Ck	213	4691	195.5	5	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SC	sculpin,	WF	Rocky Mountain whitefish,	RS	reidside shiner,	SQ	northern pikeminnow,	SU	largescale sucker,										
LD	longnose dace,	PC	peamouth chub																

1994	Location	#of traps	Soak time (hours)	Soak time (days)	Catch								CPUE (catch/trap/day)							
					SC	WF	RS	SQ	SU	LD	PC	SC	WF	RS	SQ	SU	LD	PC		
LOUIS CREEK																				
Oct 9-10	Bordman u/s	348	9222	384.3	21	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Oct 10-11	Bordman d/s	174	3915	163.1	13	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	Total Louis Ck	522	13137	547.4	34	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
LEMIEUX CREEK																				
Sep 6-8	Hwy 24 Bridge d/s	275	159.5	6.6	16	1	0	0	0	7	0	0.01	0.00	0.00	0.00	0.00	0.00	0.00		
Sep 8-11	Spencely m.stem	216	113.5	4.7	21	1	0	0	0	0	0	0.02	0.00	0.00	0.00	0.00	0.00	0.00		
Sep 8-11	Spencely sidech.	197	91.5	3.8	3	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Sep 12	Eakins confl.	116	21.0	0.9	8	0	0	0	0	0	0	0.08	0.00	0.00	0.00	0.00	0.00	0.00		
Sep 13-16	Cartwright	408	157.0	6.5	18	0	0	0	0	0	0	0.01	0.00	0.00	0.00	0.00	0.00	0.00		
Sep 15-20	Cochrane	754	138.0	5.8	51	0	0	0	0	0	0	0.01	0.00	0.00	0.00	0.00	0.00	0.00		
Sep 20-24	Fowler	584	134.5	5.6	29	0	0	0	0	0	0	0.01	0.00	0.00	0.00	0.00	0.00	0.00		
Sep 23-28	Ianson channel	746	141.5	5.9	105	0	0	0	0	0	0	0.02	0.00	0.00	0.00	0.00	0.00	0.00		
Sep 28-29	Ianson mainstem	188	45.5	1.9	19	0	0	0	0	0	0	0.05	0.00	0.00	0.00	0.00	0.00	0.00		
Sep 29-30	Burton	94	44.0	1.8	8	0	0	0	0	0	0	0.05	0.00	0.00	0.00	0.00	0.00	0.00		
	Total Lemieux Ck	3578	1046	43.6	278	2	0	0	0	7	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
SC	sculpin, WF	Rocky Mountain whitefish,	RS	reidside shiner,	SQ	northern pikeminnow,	SU	largescale sucker,												
LD	longnose dace, PC	peamouth chub																		

Appendix 5a. Coded wire tagging results for age 0+ coho juveniles in the Lemieux Creek system, 1993.

Date	Location	Tag code	Tag count	Retag	Total tagged	Pre-tag mortality	Post tag mortality			Percent tag loss	Estimated tag loss	Tagged & released
							Imm.	24 h	Total			
9/15/93	Lemieux Cr. s/c	18/6/49	297	16	281		0	2	2	6.0%	17	262
16/09/93	Lemieux Cr. s/c	18/6/89	-	-	2322		0	1	1	4.3%	100	2221
	TOTAL		-	-	2603		0	3	3	5.0%	131	2469
17/09/93	Ianson side channel	18/6/49	131	0	131		0	0	0	0.0%	0	131
17/09/93	Ianson side channel	18/6/49	149	0	149		0	0	0	0.0%	0	149
	TOTAL		280	0	280		0	0	0	0.0%	0	280
17/09/93	Ianson	18/6/49	807	0	807		0	0	0	6.0%	49	758
18/09/93	Ianson	18/6/49	1126	0	1126		0	0	0	5.6%	63	1063
	TOTAL		1933	0	1933		0	0	0	5.8%	113	1820
20/09/93	pen #3	18/6/49	1583	1	1582		0	0	0	7.0%	110	1472
20/09/93	pen #3	18/6/49	1621	0	1621		0	0	0			
	TOTAL		3204	1	3203		0	0	0	7.0%	223	2980
9/21/93	pen #4	18/6/49	800	0	800		0	2	2	3.1%	25	773
	TOTAL		800	0	800		0	2	2	3.1%	25	773
22/09/93	pen #5	18/6/49	1891	0	1891		98 ^a	10	108	3.7%	70	1713
	TOTAL		1891	0	1891		98	10	108	3.7%	70	1713
23/09/93	pen#6/ beaver pond	18/6/49	758	13	745		97	10	107	4.3%	32	606
23/09/93	pen#6/ beaver pond	18/6/50	1071	0	1071		0	0	0	0.0%	0	1071
24/09/93	pen#6/ beaver pond	18/6/50	886	0	886		0	0	0	1.5%	13	873
	TOTAL		2715	13	2702		97	10	107	3.4%	91	2504
27/09/93	Burton	18/6/50	350	0	350		0	0	0	2.6%	9	341
	TOTAL		350	0	350		0	0	0	2.6%	9	341
27/09/93	Cartwright	18/6/50	2018	0	2018		0	0	0	2.0%	40	1978
28/09/93	Cartwright	18/6/50	1161	0	1161		0	2	2	1.2%	14	1145
	TOTAL		3179	0	3179		0	2	2	1.7%	53	3124
30/09/93	Cochran	18/6/50	2218	0	2218		0	0	0	0.4%	8	2210
1/10/93	Cochran	18/6/50	1241	-	1242		1	1	2	0.6%	7	1233
2/10/93	Cochran	18/6/50	358	0	358		0	0	0	0.0%	0	358
	TOTAL		3817	0	3818		1	1	2	0.4%	17	3799
GRAND TOTAL 1993			18169	14	20759	^b	196	28	224	3.3%	732	19803

^a Double anaesthetic

^b No data available

Appendix 5b. Coded wire tagging results for age 0+ coho juveniles in the Lemieux Creek system, 1994.

Date	Location	Tag code	Tag count	Retag	Total tagged	Pre-tag mortality	Post tag mortality			Percent tag loss	Estimated tag loss	Tagged & released
							Imm.	24 h	Total			
9/7/94	Hwy 24 Bridge downstream	18/18/52	275	5	270	0	0	5	5	1.7%	5	260
	TOTAL			5	270	0	0	5	5	1.7%	5	260
9/8/94	Belcham	18/18/52	434	0	434	0	0	8	8	0.0%	0	426
9/9/94	Belcham	18/18/52	484	0	484	0	0	0	0	0.0%	0	484
	TOTAL			0	918	0	0	8	8	0.0%	0	910
9/10/94	Spencely	18/18/52	497	0	497	3	0	0	0	0.0%	0	497
9/11/94	Spencely	18/18/52	413	0	413	2	0	0	0	0.0%	0	413
9/12/94	Spencely	18/18/52	227	0	227	0	0	0	0	0.0%	0	227
	TOTAL			0	1137	5	0	0	0	0.0%	0	1137
9/13/94	Cartwright	18/18/52	728	0	728	3	0	4	4	0.0%	0	724
9/14/94	Cartwright	18/18/52	418	0	418	8	0	0	0	0.8%	4	414
9/15/94	Cartwright	18/18/52	852	0	852	1	0	0	0	0.0%	0	852
9/16/94	Cartwright	18/18/52	281	2	279	1	0	1	1	0.0%	0	278
9/17/94	Cartwright	18/18/52	206	0	206	0	0	0	0	0.0%	0	206
	TOTAL			2	2483	13	0	5	5	0.2%	4	2474
9/17/94	Cochran	18/18/52	553	0	553	1	0	0	0	0.5%	3	550
9/18/94	Cochran	18/18/52	475	0	475	3	0	0	0	1.1%	5	470
9/19/94	Cochran	18/18/52	362	0	362	29	0	0	0	0.0%	0	362
9/20/94	Cochran	18/18/52	313	0	313	3	0	5	5	0.0%	0	308
9/21/94	Cochran	18/18/52	109	0	109	0	0	1	1	0.0%	0	108
	TOTAL			0	1812	36	0	6	6	0.3%	8	1798
9/21/94	Fowler	18/18/52	167	0	167	0	0	4	4	0.0%	0	163
9/22/94	Fowler	18/18/52	369	0	369	1	0	1	1	0.0%	0	368
9/23/94	Fowler	18/18/52	510	0	510	1	0	6	6	0.8%	4	500
9/24/94	Fowler	18/18/52	204	0	204	0	0	4	4	0.0%	0	200
9/25/94	Fowler	18/18/52	137	6	131	0	0	7	7	6.9%	9	115
	TOTAL			6	1381	2	0	22	22	1.5%	13	1346
9/26/94	Ianson side channel	18/18/52	2445	1	2444	4	0	0	0	0.0%	0	2444
9/27/94	Ianson side channel	18/18/52	505	0	505	0	0	0	0	0.0%	0	505
9/28/94	Ianson side channel	18/18/52	296	0	296	0	0	0	0	0.0%	0	296
9/29/94	Ianson side channel	18/18/52	178	0	178	0	0	0	0	0.0%	0	178
	TOTAL			1	3423	4	0	0	0	0.0%	0	3423
9/29/94	Ianson	18/18/52	190	6	184	0	0	0	0	0.0%	0	184
9/30/94	Ianson	18/18/53	47	11	36	0	0	0	0	0.0%	0	36
	TOTAL			17	220	0	0	0	0	0.0%	0	220
9/30/94	Burton	18/18/53	293	0	293	5	0	0	0	0.0%	0	293
10/1/94	Burton	18/18/53	173	0	173	0	0	0	0	0.0%	0	173
	TOTAL			0	466	5	0	0	0	0.0%	0	466
	GRAND TOTAL 1994				12110	65	0	46	46	0.4%	29	12035

Appendix 6. Anomalies encountered during aging of coho juveniles in the Lemieux Creek system, 1993 and 1994.

Year	Location	Age	Number inspected	Too small	Naturally missing adipose	Lordosis	Fog eye	Fin rot	Other	Percent Tagged
1993	Lemieux Creek	0+	20759	13	10	7	0	56	0	100%
1994	Lemieux Creek	0+	12110	30	10	0	3	33	5	100%

Appendix 7. Summary of 1994 adult age information for Louis and Lemieux creek coho.

Louis Creek

Date	Reach	POH Length (cm)	Sex	Age
10-Nov-94	3	41.5	F	3 ₂
25-Nov-94	1	43	F	3 ₂
2-Dec-94	2	46.5	F	3 ₂
20-Dec-94	1	42	F	3 ₂
10-Nov-94	2	42.5	M	1M
16-Nov-94	3	48	M	1M
10-Nov-94	2	41	M	3 ₂
14-Nov-95	1	42	M	3 ₂
17-Nov-94	1	48	M	3 ₂
16-Nov-94	3	48.5	M	3 ₂
16-Nov-94	3	46	M	3 ₂
21-Nov-94	1	38	M	3 ₂
23-Nov-94	1	41	M	3 ₂
25-Nov-94	1	42.5	M	3 ₂
2-Dec-94	2	40.5	M	3 ₂
2-Dec-94	2	35	M	3 ₂
20-Dec-94	1	38.5	M	3 ₂
13-Jan-95	1	40.5	M	3 ₂
16-Nov-94	3	39.5	M	4 ₃
18-Nov-94	1	43	M	4 ₃
26-Nov-94	1	42	M	4 ₃

Lemieux Creek

Date	Reach	POH Length (cm)	Sex	Age
3-Nov-94	6	42	F	3 ₂
7-Nov-94	6A	42	F	3 ₂
14-Nov-94	6	48.5	F	4 ₃
14-Nov-94	6	41	F	3 ₂
14-Nov-94	6	42.5	M	3 ₂
14-Nov-94	2	50	F	1M
14-Nov-94	2	44	F	4 ₂
14-Nov-94	3	40	F	3 ₂
14-Nov-94	3	40.5	F	3 ₂
14-Nov-94	5	47	M	3 ₂
14-Nov-94	6	40.5	M	3 ₂
14-Nov-94	6A	50.5	F	1M
14-Nov-94	6A	41	M	3 ₂
14-Nov-94	6A	44.5	F	3 ₂
14-Nov-94	6	44.5	F	3 ₂

Appendix 7. (cont.)
Lemieux Creek

Date	Reach	POH Length		Sex	Age
			(cm)		
14-Nov-94	6		43.5	M	4 ₃
15-Nov-94	6		44	M	3 ₂
15-Nov-94	6		48.5	F	1M
16-Nov-94	6		47.5	F	3 ₂
17-Nov-94	6		39	M	3 ₂
17-Nov-94	6		42	M	3 ₂
17-Nov-94	6		47	F	3 ₂
17-Nov-94	6		49	F	4 ₃
17-Nov-94	2		51	F	1M
17-Nov-94	3		41.5	F	1M
17-Nov-94	3		47	M	1M
17-Nov-94	4		46	M	3 ₂
18-Nov-94	4		50	F	1M
18-Nov-94	4		41.5	M	RG
21-Nov-94	3		51.5	M	3 ₂
21-Nov-94	4		45	F	1M
21-Nov-94	6		42.5	M	3 ₂
21-Nov-94	6		44	F	3 ₂
21-Nov-94	6A		46.5	M	3 ₂
21-Nov-94	7		46	F	3 ₂
21-Nov-94	7		48	F	3 ₂
23-Nov-94	2		37	M	3 ₂
23-Nov-94	3		43.5	M	3 ₂
23-Nov-94	3		37.5	M	3 ₂
23-Nov-94	6A		37.5	M	3 ₂
24-Nov-94	6		45.5	M	3 ₂
25-Nov-94	6		49	M	3 ₂
27-Nov-94	6		43	M	1M
28-Nov-94	1		40	M	3 ₂
28-Nov-94	2		40	M	3 ₂
28-Nov-94	2		40	M	3 ₂
28-Nov-94	3		50	M	3 ₂
28-Nov-94	3		47.5	F	3 ₂
28-Nov-94	3		41	M	3 ₂
28-Nov-94	3		38.5	M	3 ₂
28-Nov-94	6A		42	F	3 ₂
28-Nov-94	6A		52	M	4 ₃
28-Nov-94	7		61	M	1M
29-Nov-94	6		41	M	3 ₂
29-Nov-94	6		49	F	3 ₂
29-Nov-94	6		38	M	1M
1-Dec-94	2		45	F	1M

Appendix 7. (cont.)
Lemieux Creek

Date	Reach	POH Length (cm)	Sex	Age
1-Dec-94	2	41	M	3 ₂
1-Dec-94	2	50	F	3 ₂
1-Dec-94	2	44	M	3 ₂
1-Dec-94	2	43.5	M	3 ₂
1-Dec-94	3	40.5	M	RG
1-Dec-94	3	55.5	M	3 ₂
1-Dec-94	3	48.5	M	3 ₂
1-Dec-94	4	42.5	M	1M
1-Dec-94	5	42.5	F	3 ₂
1-Dec-94	6	43	M	3 ₂
1-Dec-94	6	50	F	3 ₂
1-Dec-94	6A	47	M	3 ₂
1-Dec-94	6A	44	F	4 ₃
1-Dec-94	6A	38	M	3 ₂
1-Dec-94	6A	48.5	M	3 ₂
2-Dec-94	6	38	F	3 ₂
5-Dec-94	2	46	M	3 ₂
5-Dec-94	3	44.5	F	3 ₂
6-Dec-94	6A	38	M	3 ₂
7-Dec-94	4	47	F	1M
7-Dec-94	4	42.5	M	3 ₂
7-Dec-94	4	45	M	3 ₂
8-Dec-94	1	47	F	3 ₂
8-Dec-94	1	36.5	F	3 ₂
8-Dec-94	2	47	F	3 ₂
8-Dec-94	2	52.5	M	3 ₂
8-Dec-94	3	39.5	M	3 ₂
8-Dec-94	3	44.5	F	3 ₂
8-Dec-94	3	37.5	M	3 ₂
9-Dec-94	6	49.5	M	3 ₂
9-Dec-94	6	45	F	3 ₂
12-Dec-94	6	52.5	M	1M
12-Dec-94	7	29.5	M	2 ₂
12-Dec-94	1	50.5	M	3 ₂
12-Dec-94	1	44.5	F	3 ₂
12-Dec-94	2	45.5	F	3 ₂
12-Dec-94	2	43	F	1M
12-Dec-94	2	38	M	3 ₂
12-Dec-94	2	43.5	F	3 ₂
12-Dec-94	2	48.5	M	1M
12-Dec-94	2	39.5	M	3 ₂
12-Dec-94	3	49	F	3 ₂

Appendix 7. (cont.)

Lemieux Creek

Date	Reach	POH Length		Sex	Age
			(cm)		
12-Dec-94	3		44.5	F	3 ₂
12-Dec-94	3		44.5	M	1M
12-Dec-94	3		54.5	F	3 ₂
12-Dec-94	4		38.5	M	3 ₂
12-Dec-94	6		46	M	3 ₂
12-Dec-94	6		50.5	F	3 ₂
12-Dec-94	6		42.5	F	1M
12-Dec-94	6		45.5	F	4 ₃
12-Dec-94	6		47	F	3 ₂
12-Dec-94	6A		45.5	M	3 ₂
12-Dec-94	6A		47.5	F	3 ₂
12-Dec-94	6A		44	F	3 ₂
12-Dec-94	6A		43	F	3 ₂
12-Dec-94	6A		45	F	3 ₂
12-Dec-94	6A		39	F	3 ₂
12-Dec-94	6A		47.5	F	3 ₂
12-Dec-94	6A		41	M	3 ₂
13-Dec-94	6		44.5	F	3 ₂
13-Dec-94	6		47	F	3 ₂
13-Dec-94	6		49	F	3 ₂
14-Dec-94	6		45	F	3 ₂
14-Dec-94	6		42	F	3 ₂
14-Dec-94	6		46.5	M	4 ₃
14-Dec-94	6A		45	F	3 ₂
14-Dec-94	1		41.5	F	3 ₂
14-Dec-94	1		44.5	F	3 ₂
14-Dec-94	1		39	M	1M
14-Dec-94	1		39.5	M	1M
14-Dec-94	1		46	F	3 ₂
14-Dec-94	1		42	F	1M
14-Dec-94	1		48.5	F	3 ₂
14-Dec-94	1		43	F	3 ₂
14-Dec-94	1		54	M	1M
14-Dec-94	2		43.5	F	1M
14-Dec-94	2		44	F	3 ₂
14-Dec-94	2		48.5	F	3 ₂
14-Dec-94	2		51.5	M	3 ₂
14-Dec-94	2		49.5	M	3 ₂
14-Dec-94	2		39.5	F	3 ₂
14-Dec-94	2		45.5	F	3 ₂
14-Dec-94	2		45.5	F	1M
14-Dec-94	2		47	F	3 ₂

Appendix 7. (cont.)
Lemieux Creek

Date	Reach	POH Length (cm)	Sex	Age
14-Dec-94	3	45	F	3 ₂
14-Dec-94	3	44	F	3 ₂
14-Dec-94	3	48	F	3 ₂
14-Dec-94	3	50	M	3 ₂
14-Dec-94	3	39.5	F	3 ₂
14-Dec-94	3	39.5	M	3 ₂
14-Dec-94	3	47	F	1M
14-Dec-94	3	38.5	M	3 ₂
14-Dec-94	3	47.5	F	3 ₂
14-Dec-94	3	47.5	F	3 ₂
14-Dec-94	3	51	F	1M
14-Dec-94	3	40.5	F	3 ₂
14-Dec-94	4	49.5	F	3 ₂
14-Dec-94	4	39	F	3 ₂
15-Dec-94	6	50.5	F	3 ₂
15-Dec-94	6	51	F	3 ₂
15-Dec-94	6	48	M	3 ₂
16-Dec-94	1	41.5	F	3 ₂
16-Dec-94	1	42	F	1M
16-Dec-94	2	44	F	3 ₂
16-Dec-94	2	42	F	3 ₂
16-Dec-94	2	43.5	M	3 ₂
16-Dec-94	3	38	F	1M
16-Dec-94	3	45	F	3 ₂
16-Dec-94	3	40	M	1M
16-Dec-94	3	40	F	3 ₂
16-Dec-94	3	38.5	M	3 ₂
16-Dec-94	4	46	M	3 ₂
16-Dec-94	4	41.5	F	3 ₂
16-Dec-94	4	46	F	3 ₂
16-Dec-94	4	42.5	F	1M
16-Dec-94	6	41	F	3 ₂
16-Dec-94	6	42	M	1M
16-Dec-94	6	47.5	F	3 ₂
16-Dec-94	6	36	M	3 ₂
16-Dec-94	6A	43.5	F	3 ₂
16-Dec-94	6A	47	M	3 ₂
17-Dec-94	6	42.5	M	3 ₂
17-Dec-94	6	44	M	1M
18-Dec-94	6	35.5	M	3 ₂
19-Dec-94	6	38.5	M	3 ₂
19-Dec-94	6	46.5	F	3 ₂

Appendix 7. (cont.)
Lemieux Creek

Date	Reach	POH Length		Sex	Age
			(cm)		
19-Dec-94	6		47	F	3 ₂
19-Dec-94	6		36.5	F	3 ₂
19-Dec-94	1		44	F	3 ₂
19-Dec-94	1		43.5	F	3 ₂
19-Dec-94	1		44	F	3 ₂
19-Dec-94	1		46	F	4 ₃
19-Dec-94	1		44	F	3 ₂
19-Dec-94	2		49.5	M	3 ₂
19-Dec-94	2		44.5	F	1M
19-Dec-94	2		41.5	F	3 ₂
19-Dec-94	2		40.5	F	3 ₂
19-Dec-94	2		46	F	3 ₂
19-Dec-94	2		48	F	1M
19-Dec-94	2		44.5	M	3 ₂
19-Dec-94	2		47	M	3 ₂
19-Dec-94	2		43.5	F	3 ₂
19-Dec-94	2		40.5	F	3 ₂
19-Dec-94	2		39	F	3 ₂
19-Dec-94	3		41	F	3 ₂
19-Dec-94	3		40	F	3 ₂
19-Dec-94	3		47.5	M	3 ₂
19-Dec-94	3		42	F	3 ₂
19-Dec-94	4		48	F	1M
19-Dec-94	5		42	F	3 ₂
20-Dec-94	6		44	F	3 ₂
21-Dec-94	6		46.5	F	3 ₂
21-Dec-94	2		55.5	M	1M
21-Dec-94	3		44.5	F	3 ₂
21-Dec-94	3		43	F	3 ₂
21-Dec-94	3		44	F	3 ₂
21-Dec-94	3		34	M	3 ₂
21-Dec-94	3		44.5	M	3 ₂
21-Dec-94	4		38	F	3 ₂
21-Dec-94	4		54.5	F	3 ₂
21-Dec-94	4		46	F	3 ₂
21-Dec-94	4		37.5	M	3 ₂
22-Dec-94	6		42	M	3 ₂
23-Dec-94	6		46	M	3 ₂
23-Dec-94	1		39	M	1M
23-Dec-94	2		45	F	3 ₂
30-Dec-94	2		52	M	3 ₂
30-Dec-94	4		41	F	3 ₂

Appendix 7. (cont.)
Lemieux Creek

Date	Reach	POH Length (cm)	Sex	Age
30-Dec-94	5	47	M	3 ₂
30-Dec-94	6A	35	M	1M
30-Dec-94	6A	47.5	M	3 ₂
30-Dec-94	6	41.5	M	3 ₂
30-Dec-94	6	41	M	3 ₂
30-Dec-94	7	45.5	F	3 ₂
2-Jan-95	6	44	M	3 ₂
2-Jan-95	6	42	M	1M
2-Jan-95	2	43.5	F	3 ₂
2-Jan-95	2	44	F	4 ₃
2-Jan-95	2	41	M	3 ₂
2-Jan-95	3	42	M	3 ₂
2-Jan-95	3	50	F	3 ₂
2-Jan-95	3	41	F	3 ₂
2-Jan-95	4	44	M	3 ₂
2-Jan-95	4	44.5	F	3 ₂
2-Jan-95	6A	42.5	M	3 ₂
2-Jan-95	6	41	M	1M
3-Jan-95	6	41	M	3 ₂
4-Jan-95	6	50	F	3 ₂
4-Jan-95	1	43	F	3 ₂
4-Jan-95	2	49	F	3 ₂
4-Jan-95	3	45	M	3 ₂
4-Jan-95	4	46	F	3 ₂
4-Jan-95	4	44	F	1M
6-Jan-95	2	47	M	3 ₂
6-Jan-95	3	39.5	M	3 ₂
6-Jan-95	3	44	F	3 ₂
6-Jan-95	3	44.5	F	3 ₂
6-Jan-95	3	48	F	3 ₂
6-Jan-95	4	41.5	F	3 ₂
6-Jan-95	4	50	F	3 ₂
9-Jan-95	4	54	F	3 ₂
9-Jan-95	4	46	F	3 ₂
11-Jan-95	2	44	F	3 ₂
11-Jan-95	2	49	F	1M
11-Jan-95	4	52	M	3 ₂
11-Jan-95	6	43.5	M	3 ₂
11-Jan-95	7	37	M	3 ₂
11-Jan-95	7	44.5	M	3 ₂
13-Jan-95	2	46	F	3 ₂
13-Jan-95	4	48.5	F	1M

Appendix 7. (cont.)
Lemieux Creek

Date	Reach	POH Length		Sex	Age
			(cm)		
13-Jan-95	5		44.5	F	3 ₂
13-Jan-95	6A		41.5	F	3 ₂
13-Jan-95	6A		42	F	3 ₂
13-Jan-95	6		46	F	3 ₂
13-Jan-95	6		46	F	3 ₂
13-Jan-95	6		44	F	3 ₂
13-Jan-95	6		40	M	3 ₂