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Enumeration and Coded-Wire Tagging of Coho Salmon (*Oncorhynchus kisutch*) Smolts Leaving Black Creek, French Creek, and the Trent River on Vancouver Island During 1990

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ENUMERATION AND CODED-WIRE TAGGING OF COHO SALMON (*Oncorhynchus kisutch*) SMOLTS LEAVING BLACK CREEK, FRENCH CREEK, AND THE TRENT RIVER ON VANCOUVER ISLAND DURING 1990

by

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Coho smolts leaving Black Creek, French Creek, and the Trent River between April 13 and June 20, 1990 were trapped and coded wire tagged. We tagged 118,410 coho smolts at Black Creek, 40,763 at French Creek, and 10,439 at the Trent River. The estimated total number of smolts produced in each system was 119,602, 41,835, and 11,126, respectively. Mortality due to trapping and tagging was low (0.1 - 1.6%). Wild coho smolts were primarily age 1; only 8.2% were estimated to be age 2 at Black Creek, 4.1% were estimated to be age 2 or 3 at French Creek, and less than 1% were estimated to be age 2 or 3 at Trent River. Black Creek smolts were significantly larger than Trent River smolts, and Trent River smolts were significantly larger than French Creek smolts. Outplant smolts comprised 5.9% and 48.2% of the migrating coho in French Creek and the Trent River, respectively. At the Trent River, estimated overwinter survivals for fry outplanted at four locations in the watershed differed significantly from those of the previous year. In all three systems, stratified mean lengths and weights were typically greatest in the early part of the smolt run. Male smolts always made up a greater proportion of the populations, and on average, comprised approximately 60% of the smolts in each of the three systems.

RÉSUMÉ

Nass, B. L., J. Carolsfeld, J. R. Irvine, and R. E. Bailey. 1993. Enumeration and coded-wire tagging of coho salmon (*Oncorhynchus kisutch*) smolts leaving Black Creek, French Creek, and the Trent River on Vancouver Island during 1990. Can. Manuscr. Rep. Fish. Aquat. Sci. 2206: 82 p.

Entre le 13 avril et le 20 juin 1990, des saumoneaux cohos sortant des ruisseaux Black et French et de la rivière Trent ont été piégés et étiquetés à l'aide de micromarques magnétisées codées. Ont ainsi été marqués 118 410 saumoneaux cohos du ruisseau Black, 40 763 du ruisseau French et 10 439 cohos de la rivière Trent. On estime à 119 602, 41 835 et 11 126 individus, respectivement, le nombre total de saumoneaux produits dans chacun de ces trois réseaux hydrographiques. Le taux de mortalité due au piégeage et au marquage était faible (0,1 % - 1,6 %). La plupart des saumoneaux cohos sauvages avaient un an; selon les estimations, seulement 8,2 % des saumoneaux du ruisseau Black avaient deux ans, 4,1 % des saumoneaux du ruisseau French avaient deux ou trois ans et moins de 1 % des cohos de la rivière Trent avaient deux ou trois ans. Les saumoneaux du ruisseau Black étaient nettement plus gros que ceux de la rivière Trent, tandis que les saumoneaux de la rivière Trent étaient beaucoup plus gros que ceux du ruisseau French. Les saumoneaux transplantés comptaient pour 5,9 % et 48, 2 % des cohos migrateurs du ruisseau French et de la rivière Trent, respectivement. Dans le cas de la rivière Trent, le nombre estimatif d'alevins transplantés dans quatre endroits différents du bassin-versant à avoir survécu à l'hiver variait considérablement par rapport à l'année précédente. Dans les trois réseaux hydrographiques, les longueurs et les poids moyens stratifiés des saumoneaux étaient typiquement plus importants au début de la remontée. Toutes les populations étaient constituées en majeure partie de saumoneaux mâles, lesquels représentaient en moyenne quelque 60 % des saumoneaux dans chaque réseau hydrographique.

INTRODUCTION

This report presents results of the 1990 coho smolt enumeration and coded-wire tagging at Black Creek, French Creek, and the Trent River, on the east coast of Vancouver Island (Fig. 1). The objectives of the program were to:

1. Describe the size, and age distributions of the outmigration from each system;
2. Determine the contributions of outplanted (hatchery origin) coho to the smolt runs in French Creek and the Trent River;
3. Obtain results required to examine the relationships between physical environmental factors and smolt migration; smolt migration timing and size and subsequent oceanic harvest distribution; and adult escapement and smolt production.

Achieving these objectives involved the operation of fences to monitor the downstream migration of juvenile salmonids, counting all outmigrants, sampling lengths, weights, and ages of coho smolts, and coded wire tagging of as large a portion of the coho smolts as possible. All tagging related data were stratified into pre-determined sampling and tagging periods (Table 1) used in previous studies (Fielden et al., 1989; Bocking et al. 1991).

STUDY STREAMS

Detailed descriptions of the study streams are provided in Bocking et al. (1991) and Fielden et al. (1989). Black Creek (Fig. 1) flows northeasterly, entering the Strait of Georgia approximately 30 km north of Courtenay. The stream is 26 km long with a watershed area of approximately 72.5 km^2. Peak discharges exceed 30 m^3/s during fall and winter freshets; summer flows occasionally decrease to negligible levels and some sections at lower elevations may become completely dry.

French Creek enters the Strait of Georgia, about 2 km west of Parksville (Fig. 1). The creek is approximately 20 km long, with an intertidal section of about 1 km in length. French Creek has large seasonal fluctuations in water levels: Discharge during winter floods can exceed 60 m^3/s, and may decrease to negligible levels during summer.

In 1982, a small Public Involvement Program (PIP) hatchery was constructed on Miller Road, on lower French Creek. Since then, local volunteers from the Parksville-Qualicum Fish and Game Association have collected broodstock and

released fry into the system (Table 2).

The Trent River (Fig. 1) flows northeast for 30 km until it enters Comox Harbour in the Strait of Georgia. Seven kilometres upstream, Bloedel Creek connects to the mainstem, but is inaccessible to adult coho because of a series of falls and cascades in the lower sections. Two kilometres upstream of the Bloedel Creek confluence, a 15 m high falls prevents fish from further migration up the mainstem Trent River. The accessible section of the river below the falls is 9 km long, with an average width of 16 m. Seasonal fluctuations in water levels are pronounced, and large floods are common, particularly during winter. Flows exceeding 150 m^3/s have been recorded during fall and winter, causing extensive gravel movement, logjam shifts, and scouring in the lower reaches (Labelle 1990). During summer, flows occasionally decrease to negligible levels, with several sections in the lower reaches becoming dry.

Historical records of smolt productions from these systems are provided in Clark and Irvine (1989), Fielden et al. (1989), Labelle (1990), and Bocking et al. (1991).

METHODS

FENCE OPERATIONS

Downstream juvenile fences were constructed according to Conlin and Tutty (1979), using wooden-framed panels screened with 1/4" steel hardware cloth, and modified and operated as per Bocking et al. (1991). Plywood holding boxes with Vexar-screened windows to allow water exchange, were anchored down-stream of the fences to hold sorted fish from the trap boxes.

The Black Creek smolt fence was operated from April 13 to June 20, although it was inoperable between June 11 - June 15 by flooding. The French Creek smolt fence was operated continuously from April 15 to June 18. At the Trent River, two W-style fences were operated from April 23 to June 18. The Trent River fences were totally inoperable from June 3 - June 7 due to high water, and partially disabled from June 8 - June 18.

PHYSICAL OBSERVATIONS

We collected data for water temperatures, water levels, and weather between 0700 and 0900 h, daily. Maximum-minimum thermometers (± 0.25°C) were used to measure fluctuations in temperature over each 24-hour period.

Water levels were monitored to the nearest 0.01 m. Water levels at Black Creek were recorded from a staff gauge located 200 m upstream from the Seaview Road bridge, outside the influence of the smolt fence. Stream levels at French Creek were recorded from a gauge located about 100 m downstream of the juvenile fence, outside the area of influence of the fence. The staff gauge on the Trent River was located 100 m downstream from the E&N railway trestle, and 150 m upstream from the smolt fences.

Discharge was estimated at Black Creek, French Creek and Trent River using stage-discharge relations measured in 1989 (Bocking et al. 1991).

Weather conditions were recorded according to percentage cloud cover, wind direction, and wind speed (all estimated visually). Precipitation type and strength was also recorded on a scale of 0 to 5 with 0 representing no precipitation and 5 being heavy precipitation.

TRAPPING EFFICIENCY

The trapping efficiency of each fence was tested once at Black and French creeks in early May, and twice on the Trent River in mid and late May. In each case, 100 coho smolts were clipped on one lobe of the caudal fin and released between 100 and 200m upstream of the fence. Different caudal fin lobe clips were used for each of the two tests in the Trent River (upper and lower caudal). Recaptures of these smolts were carefully monitored throughout the trapping period.

FISH COUNTS

Each morning, all coho smolts captured since the previous day were counted and sorted according to size. Coho greater than 70 mm in length were classified as smolts and those less than 70 mm were classified as fry. In addition, coho

smolts at Black Creek were classified as either small (< 120 mm forklength) or large (> =120 mm). Coho smolts at French Creek and Trent River were either wild (no obvious clips) or hatchery outplants, identified according to the various fin or maxillary bone clips (Table 2).

All non-coho migrating downstream were counted and released downstream of the fence. We assumed that adult cutthroat or steelhead caught in the downstream traps were kelts (spawned out). Upstream migrant steelhead trout caught in the broomstick traps were counted and released upstream. All fin clips observed on non-coho species were recorded.

BIOSAMPLING

A random sample of up to 25 coho smolts were selected from each day's catch. Smolts were anaesthetized in a 2-phenoxyethanol bath and measured for fork-length and weight (+/- 0.1 g). Mean smolt lengths and weights were stratified by wild and outplanted smolts, age, and sampling period. A stratified mean for the entire run was determined according to methods described in Cochran (1977).

Scale sampling procedures followed Ketchen's stratified method (Ricker 1975). We attempted to collect scale samples from 10 fish in each 5 mm size class of smolts per tagging period (described below). Smolts of the required sizes were selected from the catch to supplement the random samples when necessary. Scale samples were interpreted by personnel at the Department of Fisheries and Oceans Ageing laboratory in Nanaimo. Ages of smolts were stratified by sampling period.

One hundred and three coho smolts from Black Creek, 222 from French Creek, and 43 from the Trent River were dissected to determine sex. Most of these fish were mortalities incurred during the trapping operations or from tag checks. Sex determination samples were not taken randomly, however, the collection of specimens was interspersed throughout the study period, to minimize potential biases due to changes in sex ratios over the period of sampling.

CODED WIRE TAGGING

All coho smolts to be coded wire tagged were removed from the smolt traps, sorted according to size (Black Creek) or origin (wild versus outplants at French Creek and Trent River), and held in holding boxes until tagging. Tagging at Black Creek was generally conducted daily, however smolts were held on occasion for a second night before tagging. Coded wire tagging was performed using a Northwest Marine Technology Ltd. Mark IV or Mark II tagging machine.

Prior to tagging, coho smolts were anaesthetized in a 2-phenoxyethanol bath (approx. 300 ppm) and their adipose fins clipped. The baths were changed regularly and recovery basins were repeatedly flushed with fresh water.

Black Creek coho smolts were tagged with different tag codes according to 6 different tagging periods (Table 1). Within each time period, smolts greater than or equal to 120 mm and smolts less than 120 mm were also tagged with different codes. Large and small coho were sorted by hand while they were under anaesthesia. Smolts from one of the size categories were then tagged while the other size category was held in a separate holding pen for tagging later that day. This latter group of smolts was, therefore, subjected to two anaesthetic baths. No differential mortality was observed between the two size categories over a 24 hour holding period.

The French Creek wild coho smolt migration was divided into 4 tagging periods, for which 8 tag codes were used (Table 1). In addition, all outplanted coho were tagged, using a distinct tag code for each of 2 periods; prior to and including May 19, and May 20 onward (Table 1). Wild and outplanted coho were sorted by hand as they were dipped from the trap boxes and held separately until tagging. Tagging was done at French Creek every second day, and occasionally on every third day.

There were 2 tagging periods at the Trent River. Wild and outplant smolts were tagged with different codes for each of the 2 periods (Table 1). Hatchery outplanted juveniles had been marked with 4 different fin or bone clips to identify their release locations; left ventral, right ventral, left maxillary, and right maxillary (Table 2). Because of the large numbers of outplant origin coho smolts, and the number of different clips to watch for, all coho smolts were sorted under anaesthesia prior to tagging and re-anaesthetized for tagging. For those smolts held 2 days prior to tagging, there was a long recovery period (24-36 hours) between anaesthetic baths, however, for smolts captured and tagged on the same day, there was as little as 4 hours to recover between doses. No mortalities were observed either in smolts held 16 hours prior to tagging, or in smolts held 24 hours for tag retention checks.

TAG RETENTION TESTS

Tag retention checks were performed 7, 5, and 4 times at Black Creek, French Creek, and the Trent River, respectively. All retention tests were performed over at least 48 h, and we attempted to use at least 100 fish for each test although this was not always possible.

RESULTS AND DISCUSSION

PHYSICAL OBSERVATIONS

Water temperatures at Black Creek ranged from a minimum of 8.0°C in late April to a maximum of 20.0°C in late June (Appendix A). Daily water temperatures at French Creek were somewhat cooler, ranging from a minimum of 6.0°C in late April to a maximum of 16.0°C in June. At the Trent River, the water also was cooler than at Black Creek; the minimum water temperature observed was 6.0°C in late April and the maximum temperature recorded was 13.0°C, in mid June (Fig. 2).

Water levels in all 3 systems declined from late April to mid May (Fig. 2). In late May and June, water levels fluctuated considerably, especially at Black Creek and the Trent River.

We used stage-discharge relationships measured in 1989 (Bocking et al. 1992) to calculate discharge for 1990. The relations between our staff gauge levels and the associated discharge estimates have remained relatively constant over the previous 2 years of study. Discharge ranged from 0.1 to 8.0 m^3s^{-1} at Black Creek, 0.1 to 2.5 m^3s^{-1} at French Creek, and 0.2 to 14.0 m^3s^{-1} at Trent River (Fig. 3).

TRAPPING EFFICIENCY

Single trapping efficiency tests were conducted in early May on Black and French creeks, and 2 tests were conducted on the Trent River; 1 each in mid and late May (Table 3). The highest incidence of recapture (98.0 %) was observed at Black Creek. The observed recapture efficiency at French Creek was 92%, and at Trent River, efficiencies of 92% and 58% were recorded.

The trapping efficiencies for the 1990 smolt fences were slightly higher than those obtained in 1989 (Bocking et al. 1991) and are consistent with results for 1988 (Fielden et al. 1989). Fence personnel insist that traps were "fish tight" throughout the study except on the days when a fence was inoperable. Some mortality likely occurred after the marked fish were released upstream since minks, kingfishers, and mergansers were observed in the vicinity of the fence.

FISH COUNTS

Coho smolts

Total daily catches of juvenile coho are provided in Appendix B. At the Black Creek fence, 118,902 coho smolts were counted between April 13 and June 20 (Table 4). There were 117 pre-tagging mortalities (0.10%) and 343 smolts escaped during handling (0.3%) prior to tagging. The study appeared to cover most of the migration, since few smolts were trapped at the start and end of the trapping period. We estimate that the total number of smolts produced above the counting fence was 119,602. The first peak in migrating smolts occurred on May 6 and was followed by a series of large and moderate spikes through May 20. The largest daily catch at Black Creek was 12,851 on May 13 (Fig. 4a). Smolt numbers declined after this time. Approximately 58.0% of the run was caught between May 1 and May 15. Large coho (>120mm fork-length) comprised 23.5% of the total outmigrants.

A total of 41,335 coho smolts were captured at French Creek between April 15 and June 18 (Table 5). There were 198 pre-tagging mortalities (0.5%), and 209 smolts escaped (0.5%) during pre-tagging handling. The peak daily catch of 3,713 smolts occurred on May 18 (Fig. 4b). Numbers of migrating smolts increased rapidly prior to the peak, then declined gradually. From the distribution of catch, it is apparent that the initial phase of the smolt run was intercepted by the fence, however, it appears that a small number of fish were still migrating when the study was terminated. We estimate that the total number of smolts

produced above the counting fence was 41,835. Wild coho smolts comprised 94.1% of the sampled migrating population. Outplanted coho smolts in French Creek apparently completed their downstream migration by June 9 in contrast with the wild smolts, which were captured in moderate numbers to the end of the study period (Fig. 5a). Outplanted fish were mostly right ventral (49.0%), and left maxillary (39.6%) clipped fish (Table 7, Fig. 6a).

At the Trent River fences 10,826 coho smolts were captured between April 23 and June 18 (Table 6). There were 177 pre-tagging mortalities (1.6%) and 130 escapees (1.2%). The migration of coho smolts from the Trent River appeared truncated because of a paucity of observations at the end (Fig. 4c). We estimate that the total number of smolts produced above the counting fence was 11,126. Most (62.8%) smolts migrated during the first sampling period, and the greatest daily capture (1,037), occurred on May 23. Wild and outplant coho smolts were captured in similar proportions; naturally spawned smolts comprised 51.8% of the total migration. The greatest proportion of the hatchery origin smolts were left ventral clipped (40.2%), followed by right maxillary clipped (28.5%), left maxillary clipped (21.6%), and right ventral clipped (9.7%) (Table 7). Left ventral and right maxillary clipped fish were found in their largest numbers in sampling period 1, whereas left maxillary clipped fish were captured in their greatest numbers in sampling period 2 (Table 7, Fig. 6b). Right ventral clipped fish were found in equal proportions in both sampling periods.

We calculated the relative contributions of fry outplanted in 1988 and 1989 to the 1990 smolt runs at French Creek and Trent River by modifying the catch of outplants (Table 7) by the age proportions encountered during biosampling (presented in Tables 13 and 14, respectively), and comparing these numbers to the numbers of fry released for each respective year and location. The proportion of outplanted smolts in the total emigration at French Creek was very small (5.9%), however that is due, at least in part, to the large number of wild coho smolts. Coho fry releases were 10 times larger in 1989 than in 1988 (see Table 2). In 1990, approximately 1% of the fry planted in 1989 at Dudley Marsh, 0.8% of those released into Hamilton Marsh, 32% of the East Fork releases, and 3.9% of the mainstem outplants (based on ageing data indicating 50% 1+ and 50% 2+) survived to produce 1 year old smolts. Two year old outplant origin smolts represented approximately 12.8% of the fry planted at Dudley Marsh in 1988. These results indicate that fry planted in the East Fork had the greatest survival to smolt in their first year.

The total contribution of outplants at the Trent River was almost half of the smolt run (48.3%). The estimated minimum percentage overwinter survivals of fry stocked during 1989 at Bloedel Creek, Bradley Lake, China Creek, and the Trent Headwaters were 5.8, 23.2, 28.0, and 35.5 respectively. This contrasts with the minimum overwinter survivals of fry stocked at these same locations one year

previously (25.1, 13.4, 12.5, and 17.5). There were no obvious explanations for the different survivals. This demonstrates the importance of conducting assessments such as these over several years. Two year old smolts represented 0.4%, 1.1%, 5.3%, and 0.6% of the fry planted in 1988 at Bloedel Creek, Bradley Lake, China Creek, and the Trent headwaters, respectively.

Other Species

The total catches of non coho are summarized in Table 8, and daily catches are presented in Appendix C. Juvenile steelhead and cutthroat trout were caught in all 3 systems, as were a few kelts of each species. The largest number of juvenile steelhead were caught at French Creek. Cutthroat smolts were also most numerous at French Creek, followed by the Trent River, and Black Creek. Cottids, lamprey, and stickleback were caught in all 3 systems. Nine chum salmon fry were captured at French Creek and almost 600 were caught at Trent River.

BIOSAMPLING

Age

Calculated age-length distributions for wild coho smolts leaving Black Creek, French Creek, and Trent River are presented in Tables 9, 10, and 11, respectively. Age sample data (x) include non-random samples. The calculated age representation (y) is based on random sampling.

The calculated freshwater age structure of Black Creek smolts was 91.8% age 1 and 8.2% age 2 (Table 9). When compared over the 3 major sampling periods (pre May 10, May 10 - June 2, and June 3 on), the age ratio (age 1:age 2) changed from 14.8:1 in period 1, to 5.7:1 in period 2, and to 295:1 in period 3. The differences between age ratios for each period were significant (χ^2 = 60.1, df = 2, $p < 0.001$).

The calculated freshwater age structure of French Creek wild smolts was 95.9% age 1, 3.9% age 2 and 0.2% age 3 for the study period (Table 10). The ratio of age 1:age 2:age 3 smolts changed from 263:34:1 in period 1, to 360:2:1 in period 2, and to 269:0:0 in period 3. The differences in age ratios between sampling periods were significant (χ^2 = 68.0, df = 2, $p < 0.001$).

The calculated freshwater age structure of Trent River wild smolts was 99.6% age 1 and 0.4% age 2 for the study period (Table 11). The ratio of age 1

to age 2 smolts was 161:1 in period 1 and 93:0 in period 2. The difference in age ratios among sampling periods was not significant (χ^2 = 0.57, df=1, p>0.05).

The dominant age class of coho smolts in the 3 systems, for all sampling periods, was 1 year old. The greatest incidence of 2 year olds was found at Black Creek (8.2%), followed by French Creek (3.9%), and Trent River (0.4%). Three year old smolts were captured only in French Creek and constituted 0.2% of the population. In 1989, 15.1% of the Black Creek smolts were estimated to be 2 year olds, while 5.0% of the French Creek smolts and 2.8% of the Trent River smolts were estimated to be of age class 2 (Bocking et al. 1991) The reduced proportion of 2 year old smolts this year at Black Creek is at least partially due to the large production of 1 year smolts (118,900 vs 29,800). The ratio of age 1: age 2: age 3 smolts tended to increase over the study in Black Creek and French Creek, while it remained relatively constant at the Trent River. Age 2 smolts migrated in their highest proportions in the second sampling period at Black Creek and sampling period 1 at French Creek. In Black Creek and French Creek, the change in age structures across sampling periods were significant (χ^2, P<0.05), indicating that 2 and 3 year old smolts have different migration timing than 1 year old smolts. The shifts in age structure are also reflected in the length frequency distributions for each of the sampling periods for the 3 systems. In addition, within any particular age class, the larger smolts tended to migrate earlier in the run: On all 3 systems and in almost all cases, the largest smolts were captured in the first sampling period.

Length and Weight

The stratified mean forklength of Black Creek wild coho smolts was 115.5 mm and the mean weight was 12.8 g (Table 12). One year old smolts had a smaller range of mean lengths and weights compared to age 2 smolts. Length frequency distributions of smolts shifted slightly among sampling periods (Fig. 7); longer smolts tended to be captured most frequently in the first sampling period. There were no significant differences in mean length between sampling periods for any of the stratified classes.

The stratified mean forklength of the French Creek wild coho smolts was 103.0 mm and the mean weight was 11.9 g (Table 13). The stratified mean length and weight of outplant origin smolts was 123.3 mm and 31.5 g, respectively. Age 1 and 2 wild coho smolts decreased in length in sampling period 2 and then increased slightly in period 3. Mean lengths of age 1 wild smolts differed significantly between the first and second, and the first and third periods, however no significant differences were observed in age 2 wild smolts (Neuman-Keuls test, P>0.05). Mean lengths of age 1 and 2 right ventral clipped smolts declined significantly between each sampling period. There were insufficient

recoveries of other outplant smolts. In general, mean length and weight were greatest in the first sampling period for all clip types. Length frequencies of wild smolts were unimodal in periods 1 and 2, however, the distribution became narrower, and the mean length decreased in period 2 (Fig. 8b). Few smolts were sampled during period 3, and little pattern was evident except that smolts appeared composed of 2 fairly distinct size groups (Fig. 8c). Only 1 age 3 wild smolt was captured during random sampling, and it was sampled during period 1.

The stratified mean length and weight of Trent River wild coho smolts was 101.4 mm and 11.0 g, respectively (Table 14). All values presented are for age 1 smolts; there were no other age classes of wild smolts captured. The mean stratified length of wild smolts tended to decrease from period 1 to 2, although no significant differences were detected among the periods (Neuman-Keuls test, $P>0.05$). The stratified mean length and weight of Trent River outplant origin smolts was 120.0 mm and 18.2 g, respectively. Mean stratified length decreased from sampling period 1 to 2 for all outplant classes. With the exception of right ventral clipped smolts, significant differences in length were detected for all age 1 outplant smolts among sampling periods (Neuman-Keuls test, $P<0.05$). No significant differences in lengths were detected among periods for any age 2 outplant smolts ($P>0.05$). Mean lengths were greatest in the first period for all classes, and stratified mean weights followed a similar pattern. The length frequency distribution for wild smolts was approximately normal for both sampling periods, and in both periods the mode occurred in the 100 mm size class (Fig. 9).

Black Creek wild smolts, by age, were significantly larger than French Creek and Trent River wild smolts (t-test, $p<0.001$). Wild smolts, by age, at French Creek and Trent River were similar in size (t-test, $p>0.2$), but age 1 outplant smolts in French Creek were significantly larger than age 1 Trent River outplants (t-test, $p<0.001$). There were no significant size differences between age 2 outplants at French Creek and Trent River. Outplant smolts at French Creek and Trent River were significantly larger than wild smolts from the respective systems (t-test, $p<0.001$). Outplant smolts from different instream rearing locations at French Creek and Trent River exhibited some differences in mean length. At French Creek, age 1 Dudley Marsh smolts were significantly larger than age 1 mainstem smolts (t-test, $p<0.001$). At Trent River, age 1 mainstem smolts were significantly smaller than age 1 smolts rearing in Bradley Lake, Bloedel Creek, or China Creek (t-test, $p<0.001$). In addition, age 2 Bradley Lake smolts were significantly larger than smolts from Bloedel or China creeks (t-test, $p<0.001$). Other rearing location relationships were not significant or could not be determined due to lack of data. We speculate that differences in mean size of equivalent age smolts are due to differences in the quality of rearing habitat within and among the systems.

Sex

Males were more abundant than females in each system. The male:female ratios were 64.0:36.0, 62.5:37.5, and 58.5:41.5 for Black Creek, French Creek, and Trent River, respectively (Table 15). No significant differences were detected among male and female mean stratified lengths within any of the sampling periods for all three systems (Neuman-Keuls test, $P > 0.05$).

CODED WIRE TAGGING

Tag retention tests were performed 7 times at Black Creek, 5 times at French Creek, and 4 times at Trent River. Mean tag retention was highest at Black Creek (100%), and marginally less at Trent River (98.5%) and French Creek (98.4%) (Table 16). The total numbers of coho smolts successfully coded wire tagged and released were 118,410 at Black Creek, 40,763 at French Creek, and 10,439 at the Trent River (Table 17).

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Table 1. Tagging periods and coho smolt coded-wire tag codes for associated tagging dates and size/origin groups from Black Creek, French Creek and the Trent River, 1990. Outplanted fish represent hatchery releases as per Table 2.

System	Tagging Periods (a)	Coho Group	Tag Code	Tagging Dates		
Black Creek	Apr-13 - Apr-30	small/wild	082650	4/13/90	-	4/28/90
	May-1 - May-10		082653	4/29/90	-	4/30/90
	May-11 - May-15		082703	5/1/90	-	5/5/90
	May-16 - May-19		082721	5/5/90	-	5/7/90
	May-20 - Jun-2		082652	5/7/90	-	5/7/90
	Jun-3 - Jun-20		081607	5/7/90	-	5/10/90
			082726	5/11/90	-	5/13/90
			025136	5/13/90	-	5/14/90
			082725	5/14/90	-	5/15/90
			081608	5/16/90	-	5/19/90
			020841	5/20/90	-	6/1/90
			082658	6/2/90	-	6/2/90
			082709	6/3/90	-	6/20/90
		large/wild	082708	4/13/90	-	4/26/90
			082724	4/26/90	-	4/30/90
			082720	5/1/90	-	5/7/90
			082704	5/7/90	-	5/10/90
			082722	5/11/90	-	5/15/90
			082711	5/16/90	-	5/19/90
			082712	5/20/90	-	6/2/90
			082654	6/3/90	-	6/20/90
French Creek	Apr-15 - May-10	wild	082655	4/18/90	-	5/10/90
	May-11 - May-19		082723	5/11/90	-	5/19/90
	May-20 - Jun-3		082660	5/19/90	-	5/19/90
	Jun-4 - Jun-18		020840	5/20/90	-	5/26/90
			082713	5/26/90	-	5/30/90
			082714	5/30/90	-	6/3/90
			082661	6/4/90	-	6/9/90
			082651	6/9/90	-	6/18/90
		outplanted	082656	4/17/90	-	5/19/90
			082657	5/20/90	-	6/18/90
Trent River	Apr-23 - May-23	wild	082662	4/27/90	-	5/23/90
	May-24 - Jun-18		082663	5/24/90	-	6/2/90
		outplanted	082705	4/27/90	-	5/25/90
			082706	5/26/90	-	6/2/90

(a) Tagging periods do not exactly correspond with tagging dates.

Table 2. Hatchery coho fry releases at French Creek and the Trent River in 1988 and 1989. Data provided courtesy R. Hurst, Special Projects Division, SEP, DFO.

System	Release Date	Release Site	Number Released	Mean Size (g)	Fin Clip
French Creek	Jun-88	Dudley Marsh	4630	1.5	right ventral
	Jun-89	Hamilton	7000	2.0	right maxillary
	Jun-89	E. Fork	3000	2.0	left maxillary
	Jun-89	Dudley Marsh	22000	2.0	left ventral
	Jun-89	mainstem	15211	2.0	right ventral
Trent River	Jun-88	Bradley Lake	18000	3.5	left ventral
	Jun-88	Bloedel Creek	18000	3.5	right ventral
	Jun-88	China Creek	7000	3.5	left maxillary
	Jun-88	mainstem headwaters	7000	3.5	right maxillary
	Jun-89	Bradley Lake	9037	3.2	left ventral
	Jun-89	Bloedel Creek	8740	3.2	right ventral
	Jun-89	China Creek	4046	2.4	left maxillary
	Jun-89	mainstem headwaters	4183	3.2	right maxillary

Table 3. Results of trap efficiency tests conducted at Black Creek, French Creek, and Trent River, 1990.

System	Date of Release	Number Released	Fin Clip	Number Recovered	Date of Last Recovery	% Recovered
Black Creek	May-02	100	lower caudal	98	May-19	98.0
French Creek	May-12	100	upper caudal	92	Jun-02	92.0
Trent River	May-15	100	upper caudal	92	Jun-10	92.0
	May-28	100	lower caudal	58	Jun-02	58.0

Table 4. Coho smolt catches at Black Creek by tagging period, 1990. Mortalities include smolts killed by trapping, holding and predation.

Tagging Period	Large	Small	Total	Pre tagging Mortalities	Number Escapees	Available for Tagging
Apr 13 - Apr 30	10801	3034	13835	17	51	13767
May 1 - May 10	12328	28286	40614	20	92	40502
May 11 - May 15	2967	25661	28628	19	79	28530
May 16 - May19	779	19478	20257	26	53	20178
May 20 - Jun 2	817	11110	11927	25	54	11848
Jun 3 - Jun 20	227	3414	3641	10	14	3617
Total	27919	90983	118902	117	343	118442

Table 5. Coho smolt catches at French Creek by tagging period, 1990. Mortalities include smolts killed by trapping, holding, and predation.

Tagging Period	Wild	Outplanted	Total	Pre tagging Mortalities	Number Escapees	Available (a) for Tagging
Apr 15 - May 10	1356	259	1615	20	13	1582
May 11 - May 19	11736	659	12395	57	84	12254
May 20 - Jun 3	20507	1290	21797	84	38	21675
Jun 4 - Jun 18	5317	211	5528	37	74	5417
Total	38916	2419	41335	198	209	40928

(a) Does not equal number marked (Table 17) because not all captured coho were tagged.

Table 6. Coho smolt catches at Trent River by tagging period, 1990. Mortalities include smolts killed by trapping, holding, and predation.

Tagging Period	Wild	Outplanted	Total	Pre tagging Mortalities	Number Escapees	Available (a) for Tagging
Apr 23 - May 23	3545	3272	6817	130	91	6596
May 24 - Jun 18	2058	1951	4009	47	39	3923
Total	5603	5223	10826	177	130	10519

(a) Does not equal number marked (Table 17) because not all captured coho were tagged.

Table 7. Outplanted coho smolt catches at French Creek and the Trent River, by clip and tagging period, 1990.

System	Clip	Tagging Period		Total Catch
French Creek	Left Ventral (Dudley Marsh)	Apr 15-May 10		89
		May 11-May 19		97
		May 20-Jun 3		18
		Jun 4-Jun 18		17
			Total	221
	Right Ventral (Dudley Marsh, mainstem)	Apr 15-May 10		103
		May 11-May 19		233
		May 20-Jun 3		734
		Jun 4-Jun 18		116
			Total	1186
	Left Maxillary (East Fork)	Apr 15-May 10		41
		May 11-May 19		321
		May 20-Jun 3		526
		Jun 4-Jun 18		69
			Total	957
	Right Maxillary (Hamilton)	Apr 15-May 10		26
		May 11-May 19		8
		May 20-Jun 3		10
		Jun 4-Jun 18		9
			Total	53
	Other	Apr 15-May 10		0
		May 11-May 19		0
		May 20-Jun 3		2
		Jun 4-Jun 18		0
			Total	2
			GRAND TOTAL	2419

Table 7 (cont.). Outplanted coho smolt catches at French Creek and the Trent River, by clip and tagging period.

System	Clip	Tagging Period		Total Catch
Trent River	Left Ventral	Apr 23-May 23		1822
	(Bradley Lake)	May 24-Jun 18		278
			Total	2100
	Right Ventral	Apr 23-May 23		254
	(Bloedel Cr.)	May 24-Jun 18		253
			Total	507
	Left Maxillary	Apr 23-May 23		109
	(China Cr.)	May 24-Jun 18		1017
			Total	1126
	Right Maxillary	Apr 23-May 23		1086
	(mainstem headwaters)	May 24-Jun 18		403
			Total	1489
	Other	Apr 23-May 23		1
		May 24-Jun 18		0
			Total	1
			GRAND TOTAL	5223

Table 8. Total number of non-coho caught in Black Creek, French Creek, and the Trent River, April - June, 1990.

System	Species	Life Stage (a)	Total Number Caught
Black Creek	Steelhead	parr	1
		smolt	591
		kelt	13
	Cutthroat	smolt	117
		kelt	289 (b)
	Cottids	-	333
	Lamprey	-	20
	Stickleback	-	572
French Creek	Steelhead	fry	90
		parr	367
		smolt	2963
		adult	1
		kelt	11
	Cutthroat	parr	20
		smolt	827
		adult	3
		kelt	20 (c)
	Cottids	-	270
	Lamprey	-	10
	Stickleback	-	163
	Chum	fry	9
Trent River	Steelhead	fry	1
		parr	672
		smolt	796 (d)
		kelt	16
	Cutthroat	fry	1
		parr	106
		smolt	30
		kelt	10
	Cottids	-	1308
	Lamprey	-	6
	Stickleback	-	106
	Chum	fry	589

(a) Steelhead and cutthroat were classified as adults when caught moving upstream and kelts whe
(b) 214 of these were hatchery outplanted cutthroat
(c) 1 of these were hatchery outplanted cutthroat
(d) 3 of these were hatchery outplanted steelhead

Table 9. Age-length distribution of Black Creek wild coho smolts, by sampling period, 1990. Age representation determined according to Ketchen's stratified subsampling method (Ricker 1975, p. 67).

Sampling Period	Size-Class (mm)	Age Sample (X)	Age-groups in X				Length Sample (Y)	Calculated Age Representation in Y			
			0	1	2	3		0	1	2	3
Apr 13-May 10	<80	1	0	1	0	0	0	0.0	0.0	0.0	0.0
	80	2	0	2	0	0	2	0.0	2.0	0.0	0.0
	85	0	0	0	0	0	1	0.0	2.0	0.0	0.0
	90	6	0	6	0	0	4	0.0	4.0	0.0	0.0
	95	10	0	9	1	0	13	0.0	11.7	1.3	0.0
	100	9	0	9	0	0	26	0.0	26.0	0.0	0.0
	105	7	0	7	0	0	53	0.0	53.0	0.0	0.0
	110	6	0	6	0	0	85	0.0	85.0	0.0	0.0
	115	10	0	10	0	0	126	0.0	126.0	0.0	0.0
	120	7	0	7	0	0	126	0.0	126.0	0.0	0.0
	125	10	0	10	0	0	93	0.0	93.0	0.0	0.0
	130	11	0	11	0	0	53	0.0	53.0	0.0	0.0
	135	10	0	8	2	0	34	0.0	27.2	6.8	0.0
	140	6	0	4	2	0	26	0.0	17.3	8.7	0.0
	145	1	0	1	0	0	6	0.0	6.0	0.0	0.0
	150	7	0	0	7	0	11	0.0	0.0	11.0	0.0
	155	4	0	1	3	0	7	0.0	1.8	5.3	0.0
	160	0	0	0	0	0	2	0.0	1.0	1.0	0.0
	165	3	0	0	3	0	3	0.0	0.0	3.0	0.0
	170	2	0	0	2	0	3	0.0	0.0	3.0	0.0
	175	2	0	1	1	0	3	0.0	1.5	1.5	0.0
	180	0	0	0	0	0	1	0.0	0.0	1.0	0.0
	185	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	190	1	0	0	1	0	1	0.0	0.0	1.0	0.0
	195	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	>200	0	0	0	0	0	0	0.0	0.0	0.0	0.0
Total		115	0	93	22	0	679	0	636	43	0
May 11-Jun 2	<80	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	80	4	0	4	0	0	9	0.0	9.0	0.0	0.0
	85	15	0	14	1	0	25	0.0	23.3	1.7	0.0
	90	11	0	10	1	0	78	0.0	70.9	7.1	0.0
	95	15	0	13	2	0	100	0.0	86.7	13.3	0.0
	100	11	0	9	2	0	124	0.0	101.5	22.5	0.0
	105	15	0	12	3	0	90	0.0	72.0	18.0	0.0
	110	14	0	12	2	0	55	0.0	47.1	7.9	0.0
	115	14	0	11	3	0	31	0.0	24.4	6.6	0.0
	120	11	0	10	1	0	12	0.0	10.9	1.1	0.0
	125	2	0	2	0	0	3	0.0	3.0	0.0	0.0
	130	6	0	5	1	0	8	0.0	6.7	1.3	0.0
	135	3	0	2	1	0	2	0.0	1.3	0.7	0.0
	140	2	0	1	1	0	0	0.0	0.0	0.0	0.0
	145	4	0	3	1	0	2	0.0	1.5	0.5	0.0
	150	0	0	0	0	0	0	0.0	0.0	0.0	0.0

Table 9 (cont). Age-length distribution of Black Creek coho smolts, by sampling period, 1989. Age representation determined according to Ketchen's stratified subsampling method (Ricker 1975, p. 67).

Sampling Period	Size-Class (mm)	Age Sample (X)	Age-groups in X				Length Sample (Y)	Calculated Age Representation in Y			
			0	1	2	3		0	1	2	3
	155	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	160	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	165	0	0	0	0	0	1	0.0	0.0	0.0	0.0
	170	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	175	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	180	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	185	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	190	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	195	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	>200	1	0	1	0	0	1	0.0	1.0	0.0	0.0
Total		128	0	109	19	0	541	0	460	81	0
Jun 3-Jun 23	<80	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	80	1	0	1	0	0	3	0.0	3.0	0.0	0.0
	85	7	0	7	0	0	8	0.0	8.0	0.0	0.0
	90	3	0	3	0	0	25	0.0	25.0	0.0	0.0
	95	3	0	3	0	0	24	0.0	24.0	0.0	0.0
	100	6	0	6	0	0	62	0.0	62.0	0.0	0.0
	105	6	0	6	0	0	68	0.0	68.0	0.0	0.0
	110	6	0	6	0	0	58	0.0	58.0	0.0	0.0
	115	5	0	5	0	0	25	0.0	25.0	0.0	0.0
	120	6	0	6	0	0	9	0.0	9.0	0.0	0.0
	125	3	0	2	1	0	3	0.0	2.0	1.0	0.0
	130	2	0	2	0	0	3	0.0	3.0	0.0	0.0
	135	1	0	1	0	0	2	0.0	2.0	0.0	0.0
	140	0	0	0	0	0	3	0.0	3.0	0.0	0.0
	145	1	0	1	0	0	2	0.0	2.0	0.0	0.0
	150	1	0	1	0	0	1	0.0	1.0	0.0	0.0
	155	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	160	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	165	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	170	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	175	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	180	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	185	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	190	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	195	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	>200	0	0	0	0	0	0	0.0	0.0	0.0	0.0
Totals		51	0	50	1	0	296	0	295	1	0
Grand Total		294	0	252	42	0	1516	0	1391	125	0

Note: calculated age representations have been interpolated where no age sample was observed.

Table 10. Age-length distribution of French Creek wild coho smolts, by sampling period, 1990. Age representation determined according to Ketchen's stratified subsampling method (Ricker 1975, p. 67).

Sampling Period	Size-Class (mm)	Age Sample (X)	Age-groups in X				Length Sample (Y)	Calculated Age Representation in Y			
			0	1	2	3		0.0	1.0	2.0	3.0
Apr 15-May 10	<=80	0	0	0	0	0	1	0.0	0.0	0.0	0.0
	80	3	0	3	0	0	3	0.0	3.0	0.0	0.0
	85	4	0	4	0	0	5	0.0	5.0	0.0	0.0
	90	13	0	13	0	0	15	0.0	15.0	0.0	0.0
	95	8	0	8	0	0	32	0.0	32.0	0.0	0.0
	100	12	0	12	0	0	56	0.0	56.0	0.0	0.0
	105	5	0	4	1	0	42	0.0	33.6	8.4	0.0
	110	5	0	4	1	0	43	0.0	34.4	8.6	0.0
	115	7	0	6	1	0	34	0.0	29.1	4.9	0.0
	120	10	0	10	0	0	29	0.0	29.0	0.0	0.0
	125	8	0	6	2	0	15	0.0	11.3	3.8	0.0
	130	7	0	7	0	0	8	0.0	8.0	0.0	0.0
	135	1	0	1	0	0	2	0.0	2.0	0.0	0.0
	140	6	0	2	3	1	5	0.0	1.7	2.5	0.8
	145	4	0	2	2	0	5	0.0	2.5	2.5	0.0
	>150	2	0	0	2	0	3	0.0	0.0	3.0	0.0
Total		95	0	82	12	1	298	0	263	34	1
May 11-Jun 3	<=80	13	0	13	0	0	10	0.0	10.0	0.0	0.0
	80	24	0	24	0	0	43	0.0	43.0	0.0	0.0
	85	15	0	15	0	0	54	0.0	54.0	0.0	0.0
	90	19	0	19	0	0	79	0.0	79.0	0.0	0.0
	95	12	0	12	0	0	69	0.0	69.0	0.0	0.0
	100	16	0	16	0	0	44	0.0	44.0	0.0	0.0
	105	8	0	8	0	0	28	0.0	28.0	0.0	0.0
	110	9	0	8	1	0	15	0.0	13.3	1.7	0.0
	115	5	0	5	0	0	6	0.0	6.0	0.0	0.0
	120	8	0	8	0	0	10	0.0	10.0	0.0	0.0
	125	4	0	4	0	0	3	0.0	3.0	0.0	0.0
	>130	2	0	1	0	1	1	0.0	0.5	0.0	0.5
Total		135	0	133	1	1	362	0	360	2	1

Table 10 (cont). Age-length distribution of French Creek wild coho smolts, by sampling period, 1990. Age representation determined according to Ketchen's stratified subsampling method (Ricker 1975, p. 67).

Sampling Period	Size-Class (mm)	Age Sample (X)	Age-groups in X				Length Sample (Y)	Calculated Age Representation in Y			
			0	1	2	3		0.0	1.0	2.0	3.0
Jun 4-Jun 18	<=80	3	0	3	0	0	17	0.0	17.0	0.0	0.0
	80	1	0	1	0	0	63	0.0	63.0	0.0	0.0
	85	0	0	0	0	0	84	0.0	84.0	0.0	0.0
	90	0	0	0	0	0	53	0.0	53.0	0.0	0.0
	95	0	0	0	0	0	34	0.0	34.0	0.0	0.0
	100	3	0	3	0	0	8	0.0	8.0	0.0	0.0
	105	2	0	2	0	0	3	0.0	3.0	0.0	0.0
	110	4	0	4	0	0	6	0.0	6.0	0.0	0.0
	115	2	0	2	0	0	0	0.0	0.0	0.0	0.0
	120	3	0	2	1	0	1	0.0	0.7	0.3	0.0
	125	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	>130	0	0	0	0	0	0	0.0	0.0	0.0	0.0
Totals		18	0	17	1	0	269	0	269	0	0
Grand Total		248	0	232	14	2	929	0	891	36	2

Note: calculated age representations have been interpolated where no age sample was observed.

Table 11. Age-length distribution of Trent River wild coho smolts, by sampling period, 1990. Age representation determined according to Ketchen's stratified subsampling method (Ricker 1975, p. 67).

Sampling Period	Size-Class (mm)	Age Sample (X)	Age-groups in X				Length Sample (Y)	Calculated Age Representation in Y			
			0	1	2	3		0.0	1.0	2.0	3.0
Apr 23-May 23	<=80	10	0	10	0	0	4	0.0	4.0	0.0	0.0
	80	8	0	8	0	0	3	0.0	3.0	0.0	0.0
	85	13	0	13	0	0	18	0.0	18.0	0.0	0.0
	90	17	0	17	0	0	23	0.0	23.0	0.0	0.0
	95	13	0	13	0	0	17	0.0	17.0	0.0	0.0
	100	24	0	24	0	0	30	0.0	30.0	0.0	0.0
	105	11	0	11	0	0	18	0.0	18.0	0.0	0.0
	110	14	0	14	0	0	17	0.0	17.0	0.0	0.0
	115	12	0	12	0	0	14	0.0	14.0	0.0	0.0
	120	5	0	5	0	0	10	0.0	10.0	0.0	0.0
	125	2	0	2	0	0	3	0.0	3.0	0.0	0.0
	>130	6	0	5	1	0	5	0.0	4.2	0.8	0.0
Total		135	0	134	1	0	162	0	161	1	0
May 24-Jun18	<=80	1	0	1	0	0	0	0.0	0.0	0.0	0.0
	80	7	0	7	0	0	5	0.0	5.0	0.0	0.0
	85	7	0	7	0	0	11	0.0	11.0	0.0	0.0
	90	8	0	8	0	0	12	0.0	12.0	0.0	0.0
	95	10	0	10	0	0	19	0.0	19.0	0.0	0.0
	100	12	0	12	0	0	21	0.0	21.0	0.0	0.0
	105	4	0	4	0	0	8	0.0	8.0	0.0	0.0
	110	4	0	4	0	0	12	0.0	12.0	0.0	0.0
	115	2	0	2	0	0	2	0.0	2.0	0.0	0.0
	120	1	0	1	0	0	2	0.0	2.0	0.0	0.0
	125	1	0	1	0	0	1	0.0	1.0	0.0	0.0
	>130	0	0	0	0	0	0	0.0	0.0	0.0	0.0
Total		57	0	57	0	0	93	0	93	0	0
Grand Total		192	0	191	1	0	255	0	254	1	0

Table 12. Mean size, standard deviation, and sample size for Black Creek smolts, by size, age, and sampling period, 1990. Standard deviations are calculated using formula for pooled variances (Zar 1984).

Size	Age	Sampling Period	Fork Length (mm)			Weight (g)		
			N	Mean	SD	N	Mean	SD
Small	1	Apr 13-May 10	34	105.8	9.9	34	12.6	3.5
		May 11-Jun 2	86	101.3	10.4	74	10.8	3.4
		Jun 3-Jun 20	34	102.9	10.8	24	11.8	3.3
		Total	154	102.6	10.4	132	11.4	3.4
	2	Apr 13-May 10	1	96.0	0.0	1	9.7	0.0
		May 11-Jun 2	2	111.5	9.2	2	14.7	2.9
		Jun 3-Jun 20	-	-	-	-	-	-
		Total	3	106.3	9.2	3	13.0	2.9
		Total small	157	102.7	10.4	135	11.5	3.4
Large	1	Apr 13-May 10	43	132.8	10.3	43	24.0	5.9
		May 11-Jun 2	11	128.5	7.8	11	21.6	4.0
		Jun 3-Jun 20	11	130.9	10.5	9	24.6	6.4
		Total	65	131.8	10.0	63	23.7	5.7
	2	Apr 13-May 10	21	157.3	13.8	21	39.9	11.0
		May 11-Jun 2	3	135.0	12.1	3	26.2	6.6
		Jun 3-Jun 20	1	127.0	0.0	1	20.0	0.0
		Total	25	153.4	13.7	25	37.5	10.7
		Total large	90	137.8	11.1	88	14.7	7.4
	Total age 1		219	111.3	10.3	195	15.4	4.3
	Total age 2		28	148.4	13.4	28	34.8	10.3
	GRAND TOTAL		247	115.5	10.6	223	12.8	5.4

Table 13. Mean size, standard deviation, and sample size for French Creek smolts, by origin, age, and sampling period, 1990. Total means and standard deviations are calculated using formula for pooled variences (Zar, 1984).

Origin	Clip	Age	Sampling Period	Fork Length (mm)			Weight (g)		
				N	Mean	SD	N	Mean	SD
Outplant	LV	1	Apr 15-May 10	5	115.8	2.8	5	15.1	0.7
			May 11-Jun 3	-	-	-	-	-	-
			Jun 4-Jun 18	-	-	-	-	-	-
			Total	5	115.8	2.8	5	15.1	0.7
	RV	1	Apr 15-May 10	4	112.0	26.8	4	14.8	10.2
			May 11-Jun 3	40	96.4	8.5	24	9.9	2.2
			Jun 4-Jun 18	4	83.0	2.3	4	5.5	0.5
			Total	48	96.6	10.5	32	9.9	3.8
	LM	1	Apr 15-May 10	-	-	-	-	-	-
			May 11-Jun 3	1	115.0	0.0	-	-	-
			Jun 4-Jun 18	-	-	-	-	-	-
			Total	1	115.0	0.0			
	RM	1	Apr 15-May 10	-	-	-	-	-	-
			May 11-Jun 3	-	-	-	-	-	-
			Jun 4-Jun 18	1	170.0	0.0	1	47.3	0.0
			Total	1	170.0	0.0	1	47.3	0.0
	Total age 1			55	100.0	10.1	38	11.6	3.7
	RV	2	Apr 15-May 10	43	152.8	9.0	43	32.6	5.8
			May 11-Jun 3	5	126.8	29.6	5	21.7	16.9
			Jun 4-Jun 18	-	-	-	-	-	-
			Total	48	150.1	12.3	48	47.2	7.5
	Total outplant			103	123.3	11.2	86	31.5	6.1
Wild	-	1	Apr 15-May 10	78	109.3	16.4	78	13.5	5.7
			May 11-Jun 3	123	95.8	13.7	104	9.2	4.1
			Jun 4-Jun 18	12	97.8	15.3	12	9.4	4.0
			Total	213	100.9	14.8	194	10.9	4.8
	-	2	Apr 15-May 10	12	135.4	16.7	12	25.1	9.0
			May 11-Jun 3	1	111.0	0.0	1	12.4	0.0
			Jun 4-Jun 18	1	124.0	0.0	1	18.5	0.0
			Total	14	132.8	16.7	14	23.7	9.0
	-	3	Apr 15-May 10	1	142.0	0.0	1	28.5	0.0
			May 11-Jun 3	-	-	-	-	-	-
			Jun 4-Jun 18	-	-	-	-	-	-
			Total	1	142.0	0.0	1	28.5	0.0
	Total wild			228	103.0	15.0	209	11.9	5.2
	GRAND TOTAL			331	109.3	13.9	295	17.6	5.5

Table 14. Mean size, standard deviation, and sample size for Trent River smolts, by origin, age, and sampling period, 1990. Total means and standard deviations are calculated using formula for pooled variences (Zar, 1984).

Origin	Clip	Age	Sampling Period	Fork Length (mm)			Weight (g)		
				N	Mean	SD	N	Mean	SD
Outplant	LV	1	Apr 23-May 23	179	119.3	11.2	179	17.7	6.3
			May 24-Jun 18	15	111.1	11.7	15	13.8	4.2
			Total	194	118.7	11.2	194	17.4	6.2
	RV	1	Apr 23-May 23	30	117.6	11.5	30	16.7	4.4
			May 24-Jun 18	2	104.5	4.9	2	11.7	1.2
			Total	32	116.8	11.3	32	16.4	4.3
	LM	1	Apr 23-May 23	2	124.0	15.6	2	19.4	7.4
			May 24-Jun 18	22	113.9	5.3	22	14.0	2.1
			Total	24	114.7	6.2	24	14.5	2.6
	RM	1	Apr 23-May 23	25	105.8	8.6	25	12.0	3.1
			May 24-Jun 18	10	98.3	8.1	10	9.4	2.4
			Total	35	103.7	8.5	35	11.3	2.9
	Total age 1			285	116.3	10.6	285	16.3	5.5
	LV	2	Apr 23-May 23	18	162.0	9.8	18	44.0	8.1
			May 24-Jun 18	2	148.0	9.9	1	35.2	0.0
			Total	20	160.6	9.8	19	43.5	8.1
	RV	2	Apr 23-May 23	5	130.8	13.4	5	22.8	6.7
			May 24-Jun 18	-	-	-	-	-	-
			Total	5	130.8	13.4	5	22.8	6.7
	LM	2	Apr 23-May 23	3	143.0	2.0	3	29.4	0.9
			May 24-Jun 18	9	134.9	11.2	8	21.3	2.4
			Total	12	136.9	10.1	11	23.5	2.2
	RM	2	Apr 23-May 23	1	114.0	0.0	1	15.9	0.0
			May 24-Jun 18	-	-	-	-	-	-
			Total	1	114.0	0.0	1	15.9	0.0
	Total age 2			38	148.0	10.4	36	33.8	6.6
	Total outplant			323	120.0	10.6	321	18.3	5.6
Wild	-	1	Apr 23-May 23	112	102.4	12.9	112	11.4	4.7
			May 24-Jun 18	53	99.4	11.5	53	10.0	4.1
			Total	165	101.4	12.5	165	11.0	4.5
	Total wild			165	101.4	12.5	165	11.0	4.5
	GRAND TOTAL			488	113.7	11.3	486	15.8	5.3

Table 15. Sex ratio and mean length of Black Creek, French Creek, and Trent River wild coho smolts, by sampling period, 1990. Totals are the weighted mean length and standard deviation.

System	Sampling Period	Sex	Proportion (%)	Sample Size	Mean Length (mm)	SD
Black Creek	Apr 13-May 10	Male	53.2	25	117.4	16.0
		Female	46.8	22	110.1	14.4
	May 11-Jun 2	Male	53.1	26	99.7	12.4
		Female	46.9	23	97.7	10.6
	Jun 3-Jun 20	Male	85.7	6	110.2	14.5
		Female	14.3	1	111.0	0.0
	Total	Male	64.0	57	108.6	9.1
		Female	36.0	46	103.9	8.7
French Creek	Apr 15-May 10	Male	66.7	22	118.7	22
		Female	33.3	11	105.5	22.2
	May 11-Jun 3	Male	54.3	101	92.6	10.1
		Female	45.7	85	91.5	10.7
	Jun 4-Jun 18	Male	66.7	2	79.5	7.8
		Female	33.3	1	100.0	0.0
	Total	Male	62.5	125	97.0	9.0
		Female	37.5	97	93.2	9.7
Trent River	Apr 23-May 23	Male	41.9	13	109.3	23.4
		Female	58.1	18	99.0	9.9
	May 24-Jun 18	Male	75.0	9	101.7	7.9
		Female	25.0	3	96.7	2.3
	Total	Male	58.5	22	106.2	14.2
		Female	41.5	21	98.7	8.5

Table 16. Tag retention rates for Black Creek, Fench Creek, and Trent River coho smolts coded wire tagged in 1990.

System	Date	Time Held	Sample Size	No. tags Lost	Percent Retention
Black Creek	13-Apr	48	100	0	100.0
	22-Apr	48	100	0	100.0
	27-Apr	48	111	0	100.0
	6-May	48	100	0	100.0
	14-May	48	109	0	100.0
	20-May	72	110	0	100.0
	26-May	48	103	0	100.0
	Total	51.4	733	0	100.0
French Creek	May-17	24	200	0	100.0
	18-May	48	51	5	90.2
	20-May	48	100	1	99.0
	29-May	48	119	1	99.2
	2-Jun	48	100	2	98.0
	Total	43.2	570	9	98.4
Trent River	29-Apr	48	34	3	91.2
	4-May	48	19	0	100.0
	21-May	48	80	0	100.0
	29-May	48	67	0	100.0
	Total	48	200	3	98.5

Table 17. Coded wire tag releases of coho smolts from Black Creek, French Creek, and the Trent River, 1990, (not corrected for tag loss).

System	Coho Group	Tag Code	Tagging Dates	No. Marked (a)	Tagging Morts	Total Released	Total Untagged (b)
Black Creek	small	082650	4/13/90 - 4/28/90	1960	7	1953	5
		082653	4/29/90 - 4/30/90	1057	0	1057	1
		082703	5/1/90 - 5/5/90	4423	0	4423	26
		082721	5/5/90 - 5/7/90	10400	0	10400	13
		082652	5/7/90 - 5/7/90	2381	0	2381	0
		081607	5/7/90 - 5/10/90	11005	0	11005	19
		082726	5/11/90 - 5/13/90	10649	1	10648	49
		025136	5/13/90 - 5/14/90	11248	0	11248	5
		082725	5/14/90 - 5/15/90	3675	1	3674	17
		081608	5/16/90 - 5/19/90	19401	4	19397	52
		020841	5/20/90 - 6/1/90	10381	4	10377	46
		082658	6/2/90 - 6/2/90	661	0	661	3
		082709	6/3/90 - 6/20/90	3394	3	3391	11
	Total			90635	20	90615	247
	large	082708	4/13/90 - 4/26/90	5100	9	5091	35
		082724	4/26/90 - 4/30/90	5650	0	5650	8
		082720	5/1/90 - 5/7/90	10134	2	10132	27
		082704	5/7/90 - 5/10/90	2159	0	2159	4
		082722	5/11/90 - 5/15/90	2958	1	2957	8
		082711	5/16/90 - 5/19/90	777	0	777	1
		082712	5/20/90 - 6/2/90	806	0	806	5
		082654	6/3/90 - 6/20/90	223	0	223	3
	Total			27807	12	27795	91
TOTAL				118442	32	118410	338
French Creek	wild	082655	4/18/90 - 5/10/90	1320	7	1313	19
		082723	5/11/90 - 5/19/90	10135	22	10113	76
		082660	5/19/90 - 5/19/90	1472	4	1468	0
		020840	5/20/90 - 5/26/90	10658	43	10615	20
		082713	5/26/90 - 5/30/90	5466	16	5450	11
		082714	5/30/90 - 6/3/90	4272	4	4268	7
		082661	6/4/90 - 6/9/90	3441	31	3410	52
		082651	6/9/90 - 6/18/90	1771	2	1769	19
	Total			38535	129	38406	204
	outplanted	082656	4/17/90 - 5/19/90	891	7	884	20
		082657	5/20/90 - 6/18/90	1484	11	1473	3
	Total			2375	18	2357	23
TOTAL				40910	147	40763	227

Table 17 (cont.). Coded wire tag releases of coho smolts from Black Creek, French Creek, and the Trent River, 1990 (not corrected for tag loss).

System	Coho Group	Tag Code	Tagging Dates	No. Marked (a)	Tagging Morts	Total Released	Total Untagged (b)
Trent River	wild	082662	4/27/90 - 5/23/90	3386	1	3385	88
		082663	5/24/90 - 6/2/90	1954	10	1944	80
	Total			5340	11	5329	168
	outplanted	082705	4/27/90 - 5/25/90	3562	1	3561	9
		082706	5/26/90 - 6/2/90	1558	9	1549	38
	Total			5120	10	5110	47
TOTAL				10460	21	10439	215

(a) does not equal the number available for tagging (Tables 4, 5, & 6) because not all captured coho were tagged

(b) total untagged = escapes + captured and released prior to or after tagging operations.
Escapes (Tables 4, 5, &6) are apportioned by size and origin.

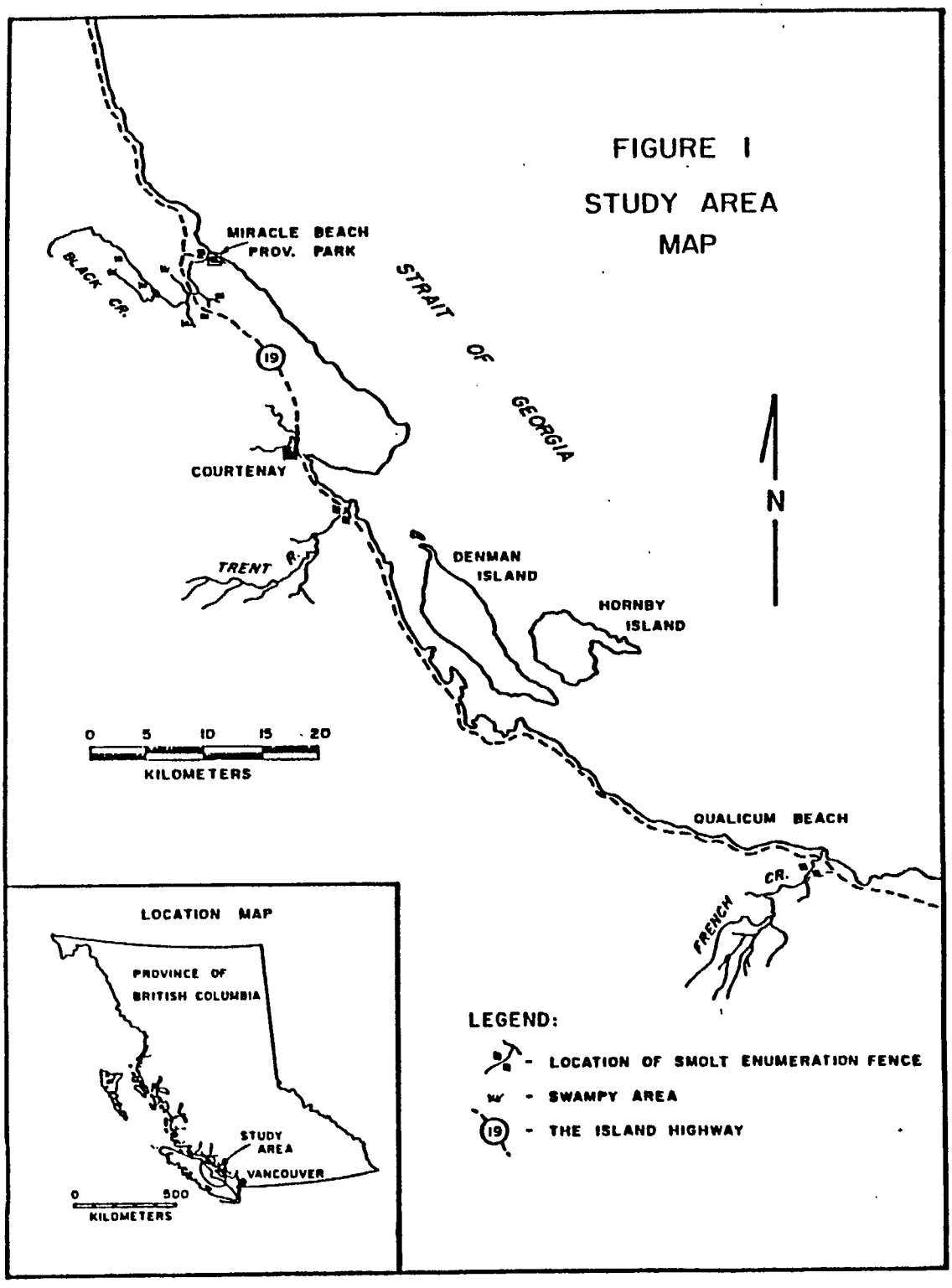


Figure 1. Study area map.

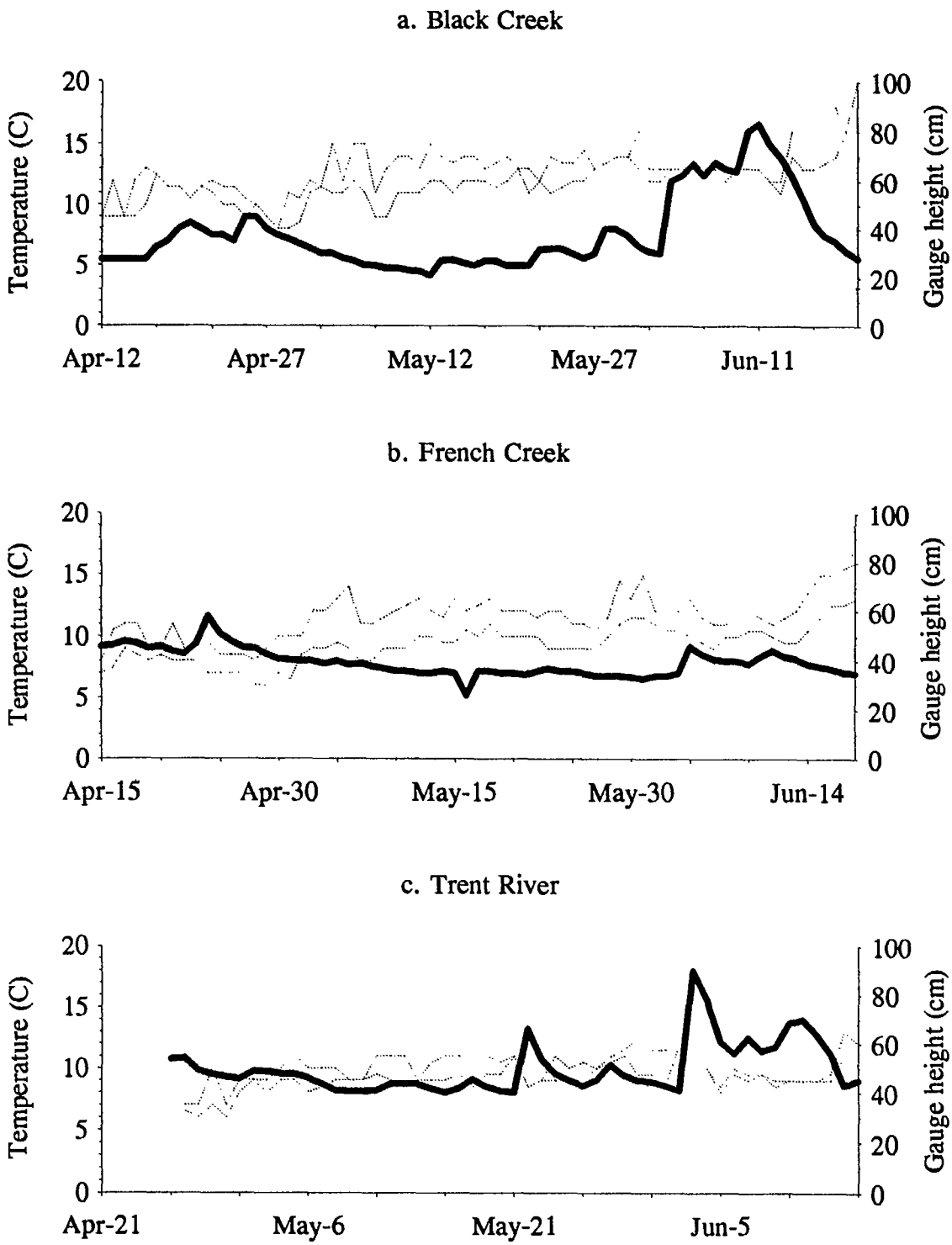
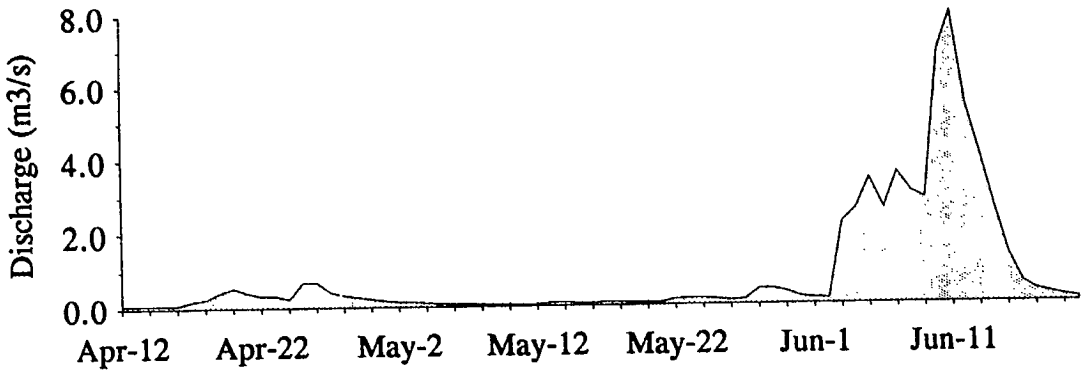
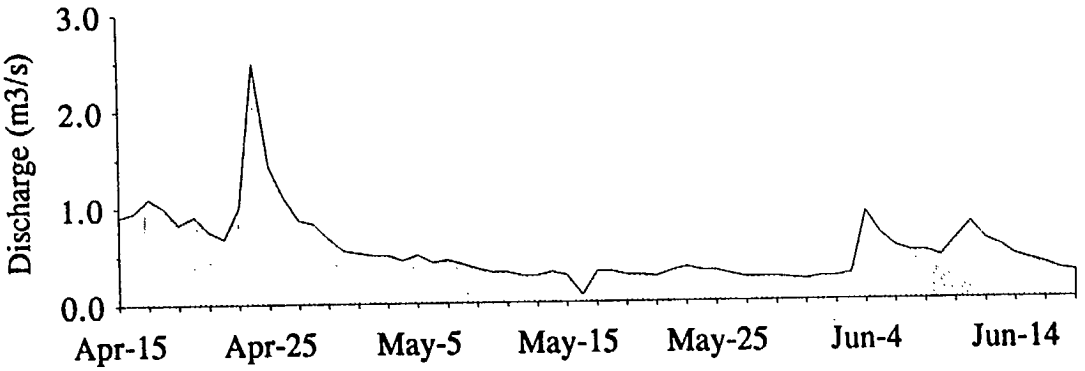


Figure 2. Water temperature and gauge heights for Black Creek, French Creek, and Trent River, 1990. Solid lines are gauge height and dotted lines are maximum and minimum temperatures.

a. Black Creek



b. French Creek



c. Trent River

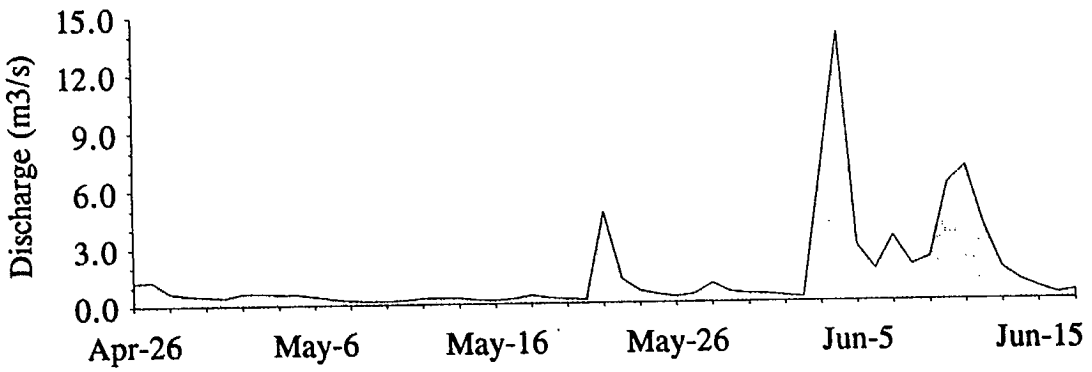


Figure 3. Estimated daily discharge (m3/s) at Black Creek, French Creek, and Trent River, 1990. Discharge was calculated using stage-discharge relationships measured in 1989 (Bocking et al. 1992).

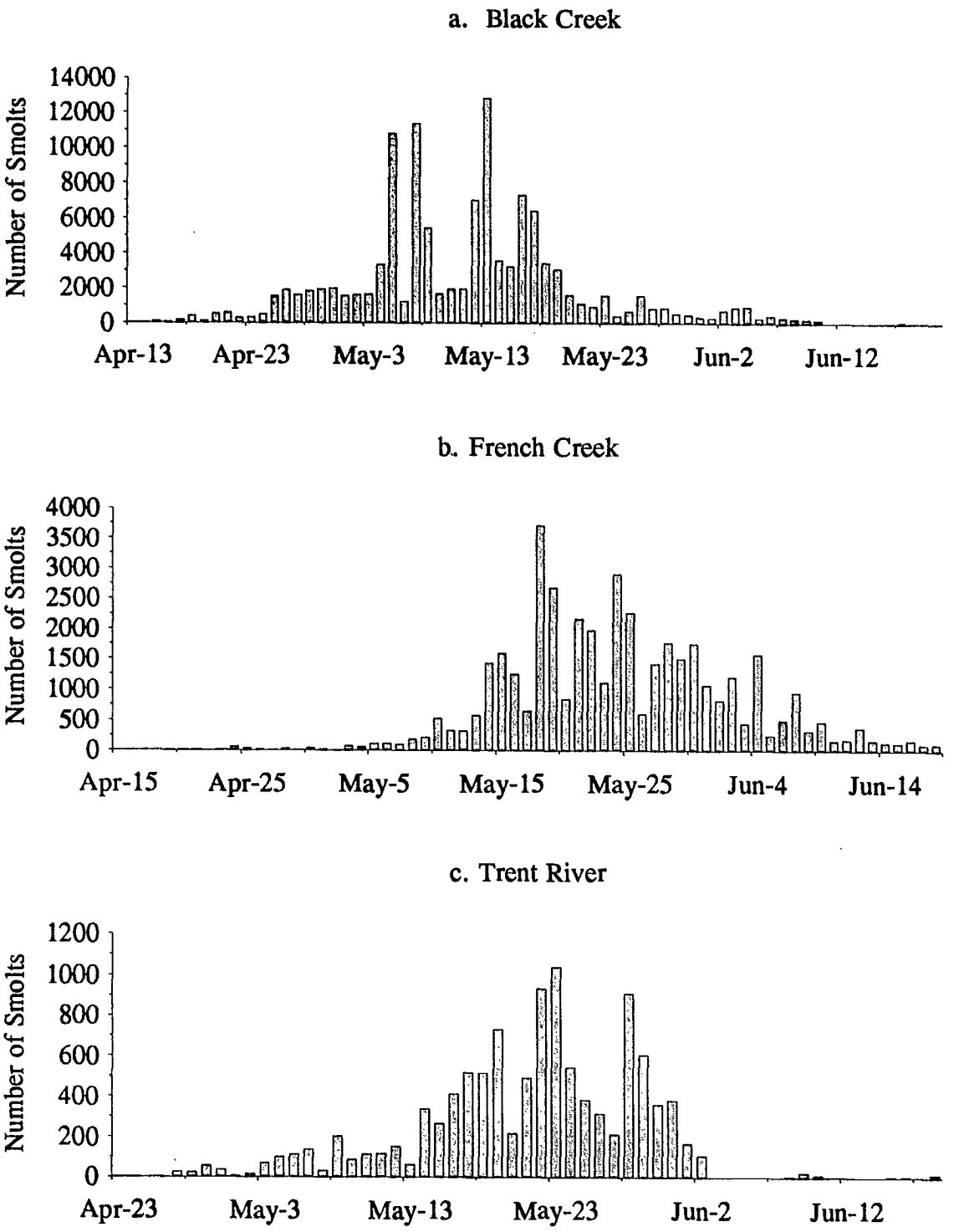
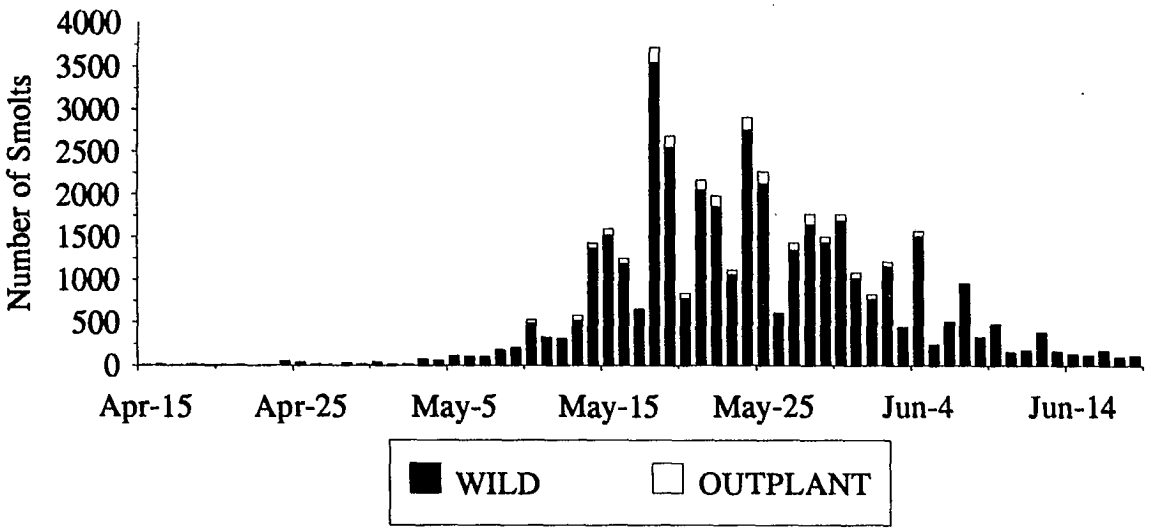


Figure 4. Total coho smolt catch at Black Creek, French Creek, and Trent River, 1990.

a. French Creek



b. Trent River

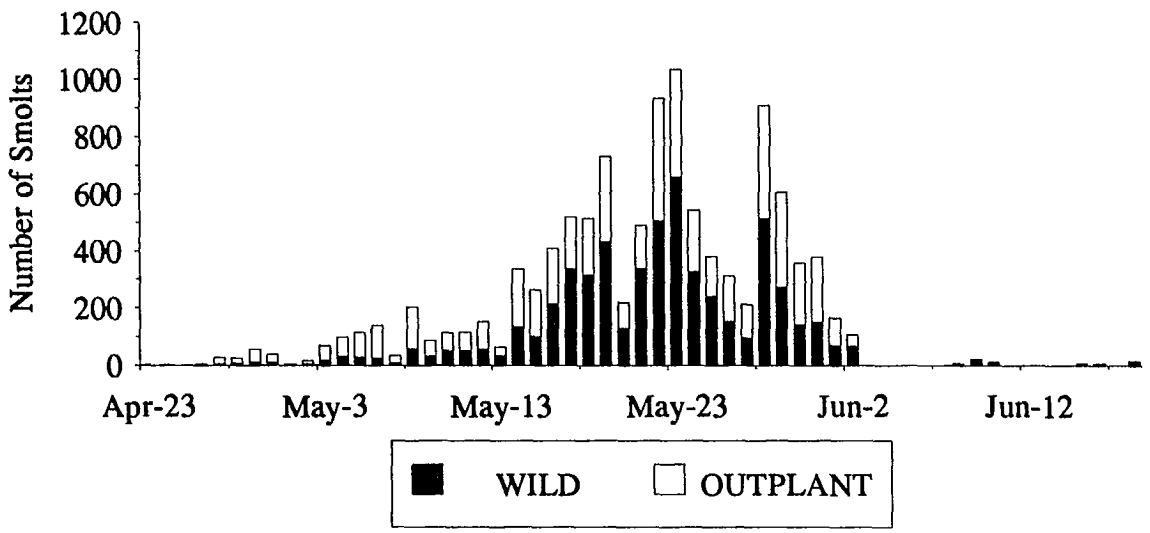
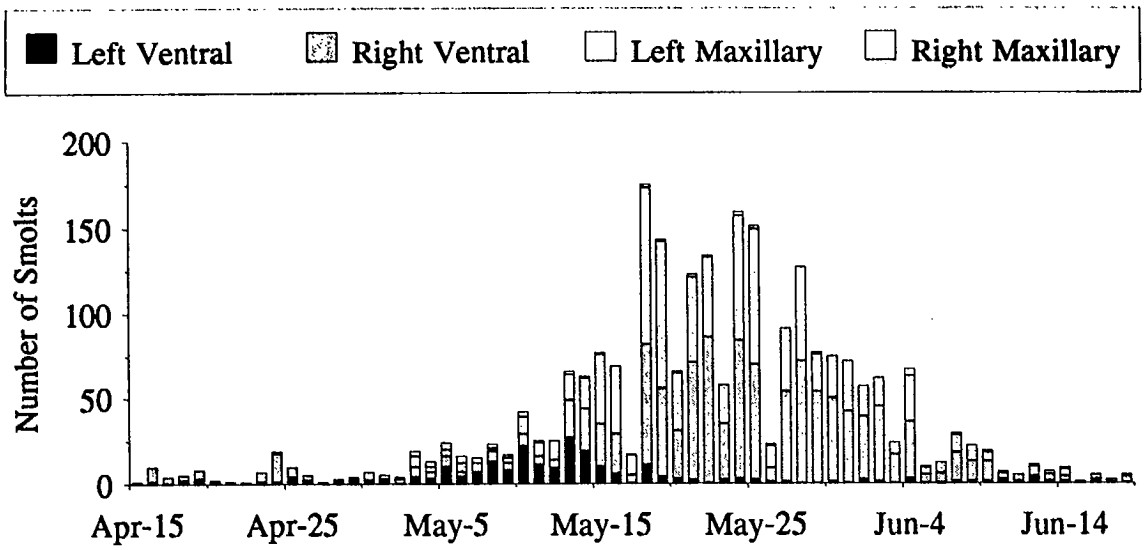


Figure 5. Wild and outplanted coho smolt catch at French Creek and Trent River, 1990.

a. French Creek



b. Trent River

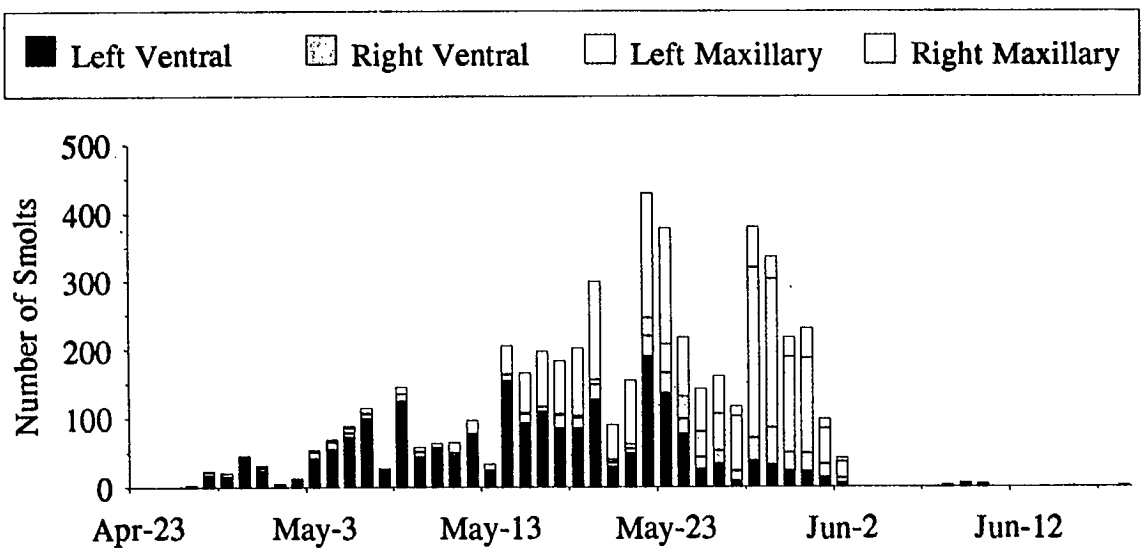


Figure 6. Outplanted smolt catch, by fin/bone clip, at French Creek and Trent River, 1990.

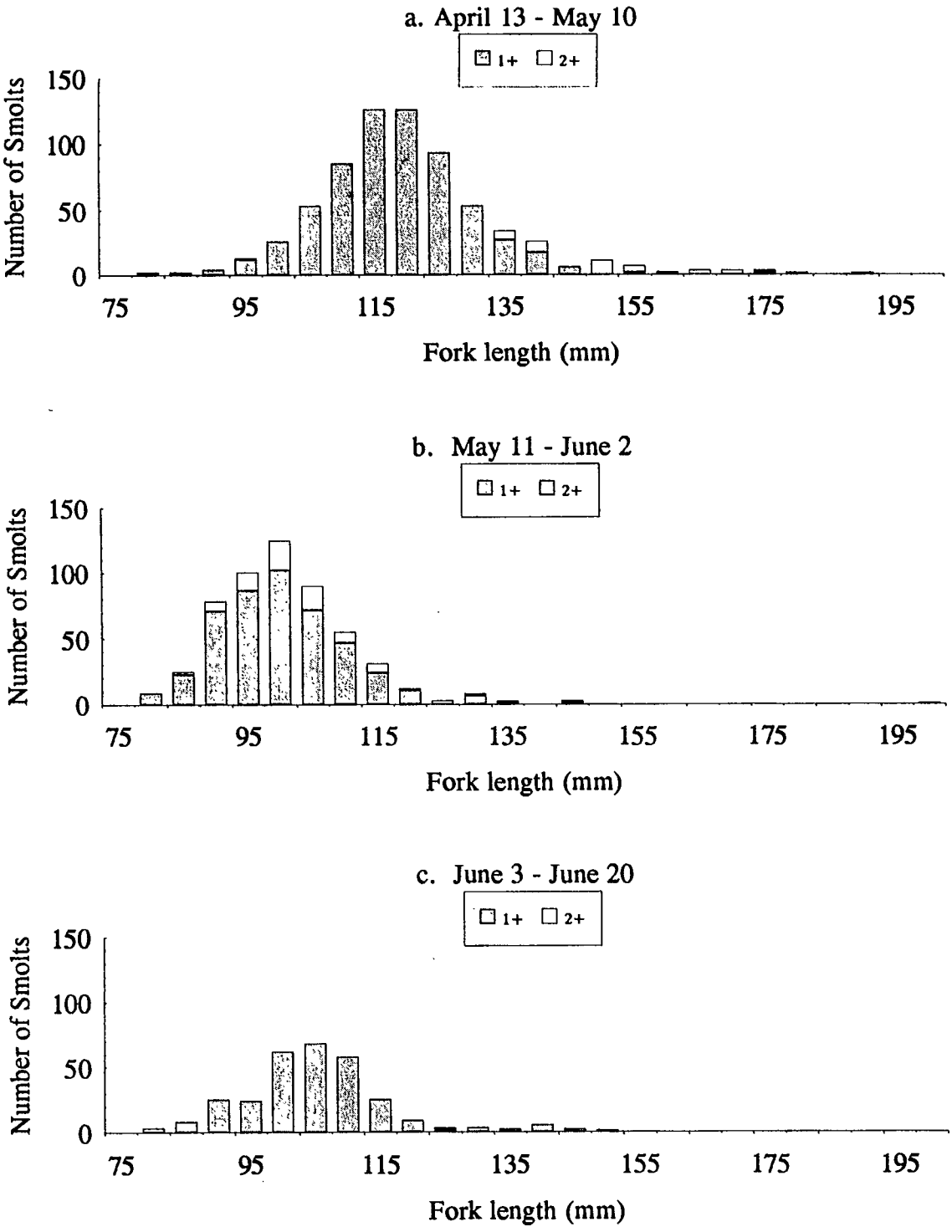


Figure 7. Length frequency distributions of Black Creek coho smolts by sampling period, 1990. The first and last size class intervals represent all smolts measuring less than or greater than the interval, respectively.

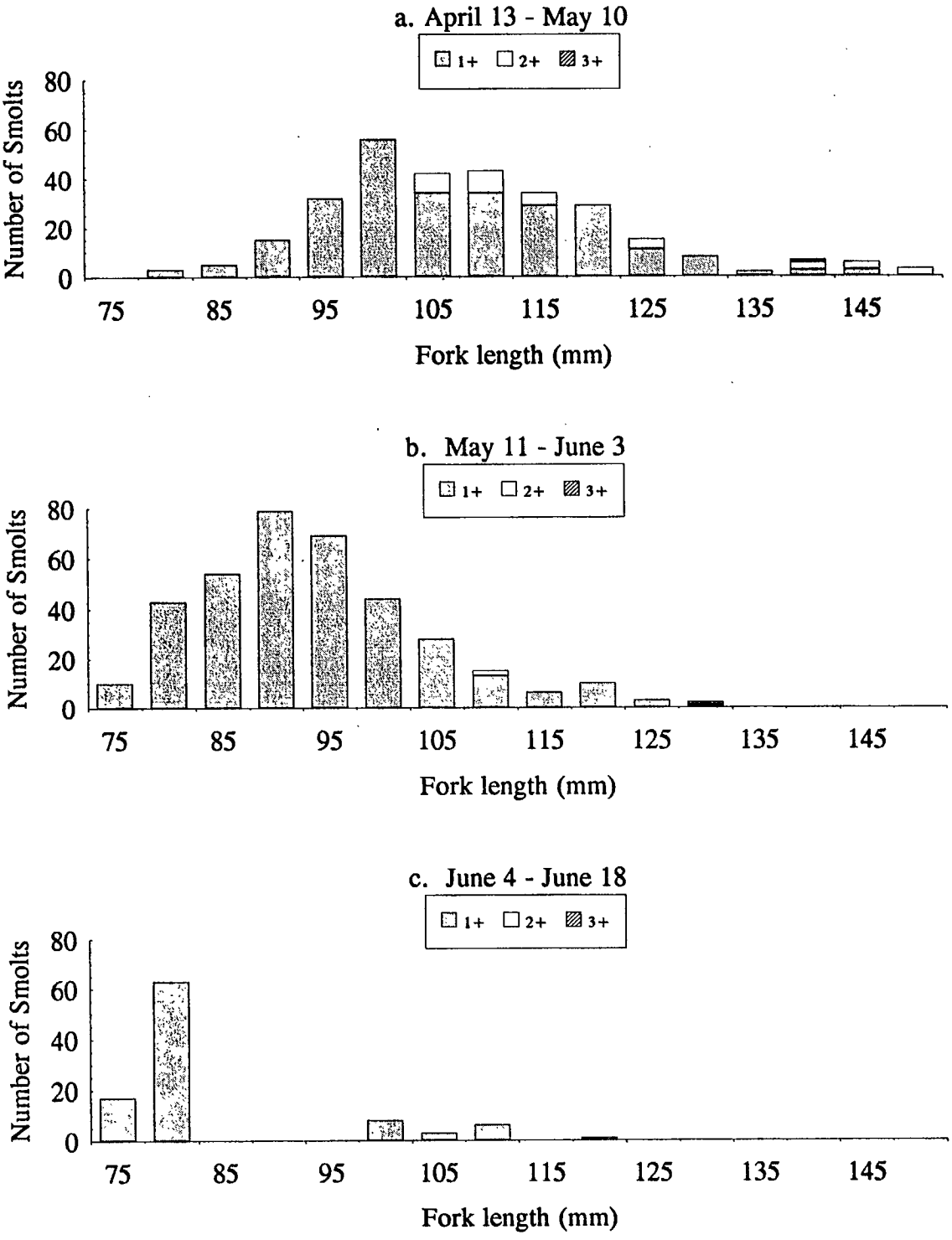


Figure 8. Length frequency distributions of French Creek coho smolts by sampling period, 1990 The first and last size class intervals represent all smolts measuring less than or greater than the interval, respectively.

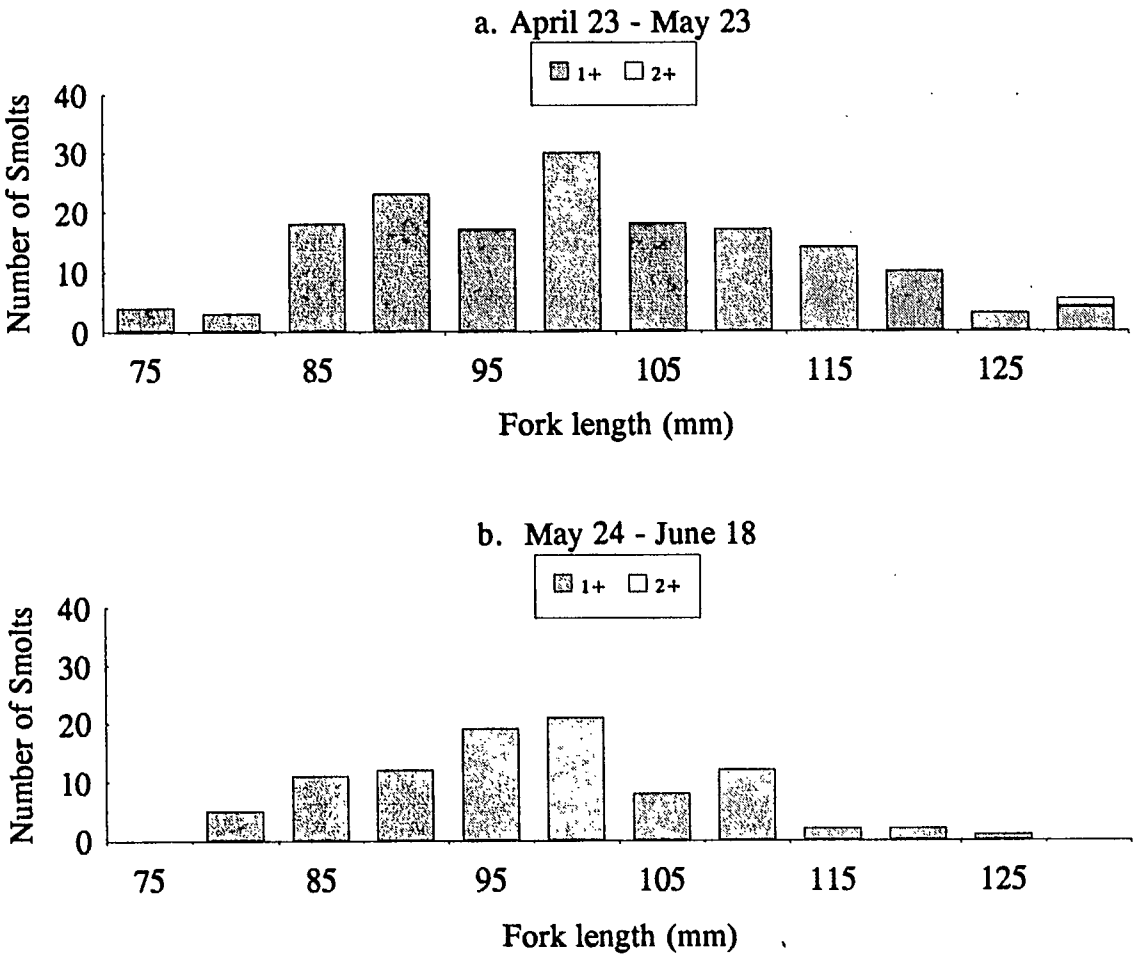


Figure 9. Length frequency distributions of Trent River coho smolts by sampling period, 1990. The first and last size class intervals represent all smolts measuring less than or greater than the interval, respectively.

APPENDIX A

Physical data for Black Creek,
French Creek, and the Trent River, 1990.

APPENDIX A

SYSTEM	DATE	TIME 24hr.	WTEMP_MAX *C	WTEMP_MIN *C	WTEMP *C	GAUGE1 cm	GAUGE2 cm	RAIN 0-5	WIND_DIR	WIND_SPD km/hr	PCLCOV %
Period 1											
BLACK	4/12/90	900	9.0	9.0	9.0	60.0	27.5	0		0	85
BLACK	4/13/90	900	12.0	9.0	9.0	62.5	27.5	1		0	0
BLACK	4/14/90	830	9.0	9.0	9.0	62.5	27.5	0		0	100
BLACK	4/15/90	900	12.0	9.0	9.0	62.5	27.5	0	NW	8	75
BLACK	4/16/90	830	13.0	10.0	10.0	60.0	27.5	0		0	60
BLACK	4/17/90	800	12.5	12.5	12.5	65.0	32.5	1		0	100
BLACK	4/18/90	900	11.5	11.5	11.5	72.5	35.0	0		0	50
BLACK	4/19/90	800	11.5	11.5	11.5	75.0	40.0	2	SE	8	100
BLACK	4/20/90	900	10.5	10.5	10.5	80.0	42.5	0		0	30
BLACK	4/21/90	900	11.5	11.5	11.5	80.0	40.0	0		0	60
BLACK	4/22/90	800	12.0	11.0	11.0	75.0	37.5	2	SE	8	100
BLACK	4/23/90	800	11.5	10.0	10.0	75.0	37.5	1		0	100
BLACK	4/24/90	900	11.5	10.0	10.0	72.5	35.0	0	NE	16	40
BLACK	4/25/90	900	10.5	9.0	9.0	82.5	45.0	0	NE	8	50
BLACK	4/26/90	830	10.0	10.0	10.0	90.0	45.0	0		0	50
BLACK	4/27/90	800	9.0	9.0	9.0	82.5	40.0	2		0	100
BLACK	4/28/90	800	8.0	8.0	8.0	80.0	37.5	0		0	0
BLACK	4/29/90	800	11.0	8.0	8.0	80.0	36.0	0		0	5
BLACK	4/30/90	800	10.5	8.5	8.5	79.0	34.0	0		0	0
	MEAN		10.9	9.8	9.8	73.5	35.5				
	MAX					90.0	45.0				
	MIN					60.0	27.5				
Period 2											
BLACK	5/1/90	800	12.0	11.0	11.0	73.0	32.0	0		0	100
BLACK	5/2/90	800	11.5	11.5	11.5	72.5	30.0	0		0	80
BLACK	5/3/90	800	15.0	11.0	11.0	71.0	30.0	0		0	30
BLACK	5/4/90	800	12.0	11.0	11.0	67.5	28.0	0		0	10
BLACK	5/5/90	800	15.0	12.0	12.0	67.0	27.0	0		0	0
BLACK	5/6/90	800	15.0	11.0	11.0	67.5	25.0	0		0	20
BLACK	5/7/90	800	11.0	9.0	9.0	68.0	25.0	0		0	100
BLACK	5/8/90	800	13.0	9.0	9.0	67.5	24.0	0		0	0
BLACK	5/9/90	800	14.0	11.0	11.0	65.0	24.0	0	NW	16	5
BLACK	5/10/90	800	14.0	11.0	11.0	64.0	23.0	0	NW	8	5
	MEAN		13.3	10.8	10.8	68.3	26.8				
	MAX					73.0	32.0				
	MIN					64.0	23.0				

APPENDIX A

SYSTEM	DATE	TIME 24hr.	WTEMP_MAX *C	WTEMP_MIN *C	WTEMP *C	GAUGE1 cm	GAUGE2 cm	RAIN 0-5	WIND_DIR	WIND_SPD km/hr	PCLCOV %
Period 3											
BLACK	5/11/90	800	13.0	11.0	11.0	63.0	22.5	0		0	70
BLACK	5/12/90	800	15.0	12.0	12.0	60.0	21.0	0		0	85
BLACK	5/13/90	800	14.0	12.0	12.0	65.0	27.0	2		0	100
BLACK	5/14/90	800	13.5	11.0	11.0	68.0	27.5	0		0	10
BLACK	5/15/90	800	14.0	12.0	12.0	66.0	26.0	0	NE	8	90
	MEAN		13.9	11.6	11.6	64.4	24.8				
	MAX					68.0	27.5				
	MIN					60.0	21.0				
Period 4											
BLACK	5/16/90	800	14.0	12.0	12.0	64.0	25.0	2		0	100
BLACK	5/17/90	800	13.0	12.0	12.0	67.0	27.0	0	NW	8	70
BLACK	5/18/90	800	13.5	11.5	11.5	67.0	27.0	0	NW	16	10
BLACK	5/19/90	800	14.0	12.0	12.0	64.0	25.0	0	NW	8	20
	MEAN		13.6	11.9	11.9	65.5	26.0				
	MAX					67.0	27.0				
	MIN					64.0	25.0				
Period 5											
BLACK	5/20/90	1000	13.0	13.0	13.0	63.0	25.0	0	NW	16	60
BLACK	5/21/90	900	13.0	11.0	11.0	63.0	25.0	0	NW	16	70
BLACK	5/22/90	800	12.0	12.0	12.0	70.0	31.5	0	NW	8	50
BLACK	5/23/90	800	14.0	11.0	11.0	74.0	32.0	0		0	10
BLACK	5/24/90	800	13.5	11.5	11.5	73.0	32.0	0		0	60
BLACK	5/25/90	800	13.5	12.0	12.0	70.0	30.0	0		0	20
BLACK	5/26/90	800	14.5	12.0	12.0	68.0	28.0	0		0	90
BLACK	5/27/90	830	13.0	13.0	13.0	70.0	30.0	3		0	100
BLACK	5/28/90	830	13.5	13.5	13.5	80.0	40.0	0		0	80
BLACK	5/29/90	800	14.0	14.0	14.0	80.0	40.0	0		0	70
BLACK	5/30/90	900	14.0	14.0	14.0	77.5	37.5	0		0	90
BLACK	5/31/90	800	16.0	13.0	13.0	75.0	33.0	0		0	75
BLACK	6/1/90	800	13.0	12.0	12.0	73.0	31.0	1		0	100
BLACK	6/2/90	800	13.0	12.0	12.0	71.0	30.0	1	NW	5	100
	MEAN		13.6	12.4	12.4	72.0	31.8				
	MAX					80.0	40.0				
	MIN					63.0	25.0				

APPENDIX A

SYSTEM	DATE	TIME 24hr.	WTEMP_MAX *C	WTEMP_MIN *C	WTEMP *C	GAUGE1 cm	GAUGE2 cm	RAIN 0-5	WIND_DIR	WIND_SPD km/hr	PCLCOV %
Period 6											
BLACK	6/3/90	800	13.0	13.0	13.0	95.0	60.0	4		0	100
BLACK	6/4/90	800	13.0	13.0	13.0	90.0	62.5	0		0	80
BLACK	6/5/90	800	13.0	13.0	13.0	98.0	67.0	0		0	50
BLACK	6/6/90	800	13.0	13.0	13.0	100.0	62.5	2		0	100
BLACK	6/7/90	800	13.0	13.0	13.0	90.0	67.8	0	NW	16	100
BLACK	6/8/90	800	13.0	12.0	12.0	86.0	65.0	2	NW	5	100
BLACK	6/9/90	900	13.0	13.0	13.0	85.0	64.0	0	NW	5	90
BLACK	6/10/90	800	13.0	13.0	13.0	110.0	80.0	3		0	100
BLACK	6/11/90	900	13.0	13.0	13.0	117.5	83.0	1	NW	25	100
BLACK	6/12/90	900	12.0	12.0	12.0	95.0	75.0	0	NW	40	50
BLACK	6/13/90	900	12.0	11.0	11.0	90.0	70.0	0		0	40
BLACK	6/14/90	900	16.0	14.0	14.0	85.0	62.5	0		0	20
BLACK	6/15/90	800	17.0	13.0	13.0	80.0	53.0	0	NW	5	25
BLACK	6/16/90	900	16.0	13.0	13.0	77.5	42.5	0		0	70
BLACK	6/17/90	900	17.0	13.5	13.5	75.0	37.5	0		0	50
BLACK	6/18/90	900	18.0	14.0	14.0	72.5	35.0	0		0	40
BLACK	6/19/90	900	16.0	16.0	16.0	67.5	31.0	0	NE	8	50
BLACK	6/20/90	900	20.0	20.0	16.0	65.0	28.0	0		0	10
	MEAN		14.5	13.5	13.3	87.7	58.1				
	MAX					117.5	83.0				
	MIN					65.0	28.0				

APPENDIX A

SYSTEM	DATE	TIME 24hr.	WTEMP_MAX *C	WTEMP_MIN *C	WTEMP *C	GAUGE1 cm	GAUGE2 cm	RAIN 0-5	WIND_DIR	WIND_SPD km/hr	PCLCOV %
Period 1											
FRENCH	4/15/90	900	8.0	7.0	8.0	35.0	46.0	0		0	30
FRENCH	4/16/90	825	10.5	7.5	8.5	33.5	46.5	0		0	30
FRENCH	4/17/90	900	11.0	9.0	9.0	37.0	48.0	0		0	10
FRENCH	4/18/90	830	11.0	8.5	8.5	32.0	47.0	0		0	50
FRENCH	4/19/90	830	9.0	8.0	8.5	34.0	45.0	2	SE	8	100
FRENCH	4/20/90	830	9.0	8.5	8.5	30.5	46.0	0	SE	8	100
FRENCH	4/21/90	830	11.0	8.0	8.0	31.0	44.0	0	SE	8	50
FRENCH	4/22/90	830	9.0	8.0	8.5	27.5	43.0	1	SE	8	100
FRENCH	4/23/90	830	10.0	8.0	9.0	36.0	47.0	3		0	100
FRENCH	4/24/90	900	9.5	7.0	7.0	55.5	58.0	0		0	0
FRENCH	4/25/90	830	8.5	7.0	7.0	43.0	51.0	0	NW	8	5
FRENCH	4/26/90	830	8.5	7.0	7.0	35.0	48.0	0		0	90
FRENCH	4/27/90	830	8.5	7.0	7.0	30.5	45.5	1		0	100
FRENCH	4/28/90	830	8.0	6.0	6.0	33.5	45.0	0		0	30
FRENCH	4/29/90	830	9.0	6.0	7.0	29.0	43.0	0		0	0
FRENCH	4/30/90	830	10.0	7.0	7.0	29.0	41.0	0		0	0
FRENCH	5/1/90	830	10.0	6.5	9.0	28.5	40.5	0		0	100
FRENCH	5/2/90	830	10.0	8.5	9.0	28.5	40.0	0		0	100
FRENCH	5/3/90	830	12.0	9.0	9.0	28.0	40.0	0		0	100
FRENCH	5/4/90	830	12.0	9.0	9.5	25.5	39.0	0		0	0
FRENCH	5/5/90	830	13.0	9.5	10.5	26.5	40.0	0		0	0
FRENCH	5/6/90	830	14.0	9.0	9.0	27.0	38.5	0	S	16	0
FRENCH	5/7/90	830	11.0	8.0	8.0	28.5	39.0	0		0	100
FRENCH	5/8/90	830	11.0	8.0	8.5	27.0	38.0	0		0	10
FRENCH	5/9/90	830	11.5	9.0	9.0	28.0	37.0	0		0	0
FRENCH	5/10/90	830	12.0	9.0	9.0	28.5	36.0	0	N	16	70
	MEAN		10.3	7.9	8.3	31.8	43.5				
	MAX					55.5	58.0				
	MIN					25.5	36.0				

APPENDIX A

SYSTEM	DATE	TIME 24hr.	WTEMP_MAX °C	WTEMP_MIN °C	WTEMP °C	GAUGE1 cm	GAUGE2 cm	RAIN 0-5	WIND_DIR	WIND_SPD km/hr	PCLCOV %
Period 2											
FRENCH	5/11/90	900	12.5	9.0	10.5	28.5	36.0	0	NW	3	100
FRENCH	5/12/90	900	13.0	10.0	10.5	25.0	35.0	0		0	100
FRENCH	5/13/90	830	12.0	10.0	10.0	26.0	35.0	1		0	100
FRENCH	5/14/90	830	11.5	9.5	9.5	25.5	36.0	0		0	65
FRENCH	5/15/90	830	13.0	9.5	10.5	26.0	35.0	0	N	8	100
FRENCH	5/16/90	830	12.0	10.5	10.5	35.0	26.0	2	SE	5	100
FRENCH	5/17/90	830	12.5	10.0	10.5	27.0	36.0	0		0	100
FRENCH	5/18/90	830	13.0	11.0	11.0	27.5	36.0	0	SE	16	80
FRENCH	5/19/90	1200	12.0	10.0	11.0	28.0	35.0	0	SE	24	90
	MEAN		12.4	9.9	10.4	27.6	34.4				
	MAX					35.0	36.0				
	MIN					25.0	26.0				
Period 3											
FRENCH	5/20/90	830	12.0	10.0	10.0	25.0	35.0	0		0	100
FRENCH	5/21/90	900	12.0	10.0	10.0	24.0	34.5	0	SW	8	80
FRENCH	5/22/90	830	11.5	10.0	10.0	27.5	36.0	0	SW	8	0
FRENCH	5/23/90	830	12.0	9.0	9.0	25.0	37.0	0	SW	2	30
FRENCH	5/24/90	830	12.0	9.0	10.0	25.0	36.0	0		0	20
FRENCH	5/25/90	830	11.0	9.0	9.0	26.5	36.0	0	SE	8	10
FRENCH	5/26/90	830	11.0	9.0	9.0	24.5	35.0	0		0	95
FRENCH	5/27/90	830	10.5	9.0	10.0	24.0	34.0	1		0	100
FRENCH	5/28/90	830	11.5	10.0	11.0	24.5	34.0	0	SE	8	80
FRENCH	5/29/90	830	14.5	11.0	12.0	22.0	34.0	0		0	30
FRENCH	5/30/90	830	13.0	11.5	11.5	21.5	33.5	0	SW	8	20
FRENCH	5/31/90	830	15.0	11.5	12.0	20.5	33.0	2	SE	5	100
FRENCH	6/1/90	845	12.0	11.0	11.0	22.0	34.0	1		0	100
FRENCH	6/2/90	930	11.5	10.5	10.5	21.5	34.0	0	SE	8	95
FRENCH	6/3/90	800	12.0	10.5	11.5	24.0	35.0	2	SE	8	100
	MEAN		12.1	10.1	10.4	23.8	34.7				
	MAX					27.5	37.0				
	MIN					20.5	33.0				

APPENDIX A

SYSTEM	DATE	TIME 24hr.	WTEMP_MAX *C	WTEMP_MIN *C	WTEMP *C	GAUGE1 cm	GAUGE2 cm	RAIN 0-5	WIND_DIR	WIND_SPD km/hr	PCLCOV %
Period 4											
FRENCH	6/4/90	830	13.0	10.0	10.5	40.0	46.0	0	SE	8	20
FRENCH	6/5/90	830	11.5	9.5	9.5	27.5	43.0	0		0	30
FRENCH	6/6/90	830	11.0	9.0	10.0	26.0	41.0	3		0	100
FRENCH	6/7/90	900	11.0	10.0	10.0	26.0	40.0	0	SE	8	100
FRENCH	6/8/90	830	11.5	10.0	10.5	26.5	40.0	1	SE	25	100
FRENCH	6/9/90	900	12.0	10.5	10.5	26.5	39.0	0		0	100
FRENCH	6/10/90	830	11.5	10.5	10.5	30.0	42.0	1		0	100
FRENCH	6/11/90	830	11.0	10.0	10.0	30.0	44.5	0	SW	3	30
FRENCH	6/12/90	830	11.5	9.5	10.0	29.5	42.0	0	NW	16	20
FRENCH	6/13/90	900	12.0	9.5	11.0	26.5	41.0	0	SE	8	20
FRENCH	6/14/90	830	13.5	10.5	11.5	24.5	39.0	0		0	0
FRENCH	6/15/90	900	15.0	11.5	12.5	23.0	38.0	0	N	8	0
FRENCH	6/16/90	800	15.0	12.5	13.0	22.0	37.0	0		0	100
FRENCH	6/17/90	1000	15.5	12.5	12.5	21.0	35.5	0	N	16	0
FRENCH	6/18/90	830	16.0	13.0	13.0	20.0	35.0	0		0	0
	MEAN		12.7	10.6	11.0	26.6	40.2				
	MAX					40.0	46.0				
	MIN					20.0	35.0				

APPENDIX A

SYSTEM	DATE	TIME 24hr.	WTEMP_MAX *C	WTEMP_MIN *C	WTEMP *C	GAUGE1 cm	GAUGE2 cm	RAIN 0-5	WIND_DIR	WIND_SPD km/hr	PCLCOV %
Period 1											
TRENT	4/21/90	1300						0		0	0
TRENT	4/22/90	900						0		0	0
TRENT	4/23/90	900						0		0	0
TRENT	4/24/90	900						0		0	0
TRENT	4/25/90	900						0		0	0
TRENT	4/26/90	900				48.3	53.5	0		0	40
TRENT	4/27/90	830	7.0	6.5	7.0	40.3	54.0	2		0	100
TRENT	4/28/90	800	7.0	6.0	7.0	40.8	49.0	0		0	0
TRENT	4/29/90	800	10.0	7.0	10.0	38.5	47.4	0		0	0
TRENT	4/30/90	900	7.0	6.0	6.0	39.0	46.5	0	NE	8	0
TRENT	5/1/90	900	9.0	8.0	8.0	38.0	45.5	1	N	8	90
TRENT	5/2/90	900	9.0	9.0	9.0	40.0	48.5	0	NE	12	30
TRENT	5/3/90	900	9.0	8.0	9.0	37.8	48.5	0		0	90
TRENT	5/4/90	900	10.0	9.0	9.5	37.8	47.8	1		0	0
TRENT	5/5/90	830	11.0	9.0	11.5	37.8	47.5	1		0	0
TRENT	5/6/90	900	10.0	8.0	8.5	35.0	46.0	0	NE	16	40
TRENT	5/7/90	900	10.0	8.5	9.0	35.5	43.5	0		0	0
TRENT	5/8/90	900	10.0	9.0	9.5	32.5	41.0	0	NW	12	10
TRENT	5/9/90	830	9.0	9.0	9.0	31.6	40.5	1	NW	10	0
TRENT	5/10/90	830	9.0	9.0	9.0	31.3	40.5	1	NW	10	75
TRENT	5/11/90	830	11.0	9.5	11.0	32.0	41.0	1	SW	5	100
TRENT	5/12/90	900	11.0	9.0	9.5	32.8	43.5	0		0	70
TRENT	5/13/90	900	11.0	8.5	9.0	32.0	43.5	0	NE	8	50
TRENT	5/14/90	900	9.0	9.0	9.0	32.5	43.5	0	NW	12	0
TRENT	5/15/90	830	10.5	9.0	11.0	32.5	41.5	1	SW	10	100
TRENT	5/16/90	830	11.0	9.0	11.0	31.3	40.2	1		0	100
TRENT	5/17/90	830	11.0	9.5	11.0	33.8	41.8	1	SE	10	80
TRENT	5/18/90	830	10.0	8.5	8.5	36.8	45.5	0	SW	8	0
TRENT	5/19/90	815	11.0	9.5	10.0	32.8	42.5	0		0	10
TRENT	5/20/90	830	10.5	9.5	9.5	31.5	40.8	1		0	90
TRENT	5/21/90	830	11.0	11.0	11.0	30.8	40.0	3	SE	10	100
TRENT	5/22/90	830	8.5	8.5	9.5	58.8	66.0	1	SE	30	50
TRENT	5/23/90	830	9.0	9.0	8.0	43.5	53.5	0		0	0
	MEAN		9.7	8.6	9.3	36.6	45.8				
	MAX					58.8	66.0				
	MIN					30.8	40.0				

APPENDIX A

SYSTEM	DATE	TIME 24hr.	WTEMP_MAX °C	WTEMP_MIN °C	WTEMP °C	GAUGE1 cm	GAUGE2 cm	RAIN 0-5	WIND_DIR	WIND_SPD km/hr	PCLCOV %
Period 2											
TRENT	5/24/90	830	11.0	9.0	9.0	37.0	48.0	0	NW	8	40
TRENT	5/25/90	830	10.0	9.0	9.5	36.3	45.0	0		0	10
TRENT	5/26/90	900	10.5	9.0	9.5	34.0	43.0	0	NW	8	70
TRENT	5/27/90	830	10.0	10.0	10.0	33.0	45.0	3		0	100
TRENT	5/28/90	830	11.0	10.5	11.0	42.5	51.5	0		0	75
TRENT	5/29/90	830	11.5	11.0	11.5	38.0	47.0	0	SE	10	80
TRENT	5/30/90	830	12.5	9.5	10.5	36.2	45.0	0	NW	8	80
TRENT	5/31/90	800	11.5	9.5	10.0	36.0	44.5	0		0	90
TRENT	6/1/90	830	11.5	8.5	9.5	34.2	43.0	0	N	8	100
TRENT	6/2/90	830	12.0	12.0	12.0	32.5	41.0	1	SE	20	100
TRENT	6/3/90	600			9.5	105.0	90.0	1		0	100
TRENT	6/4/90	830	10.0	10.0	10.0	73.8	78.0	1	SE	30	75
TRENT	6/5/90	1000	8.5	8.0	8.0	56.7	61.0	0		0	40
TRENT	6/6/90	800	10.0	9.5	9.5	48.8	56.0	1		0	100
TRENT	6/7/90	900	9.5	9.0	9.0	54.0	62.5	0	NE	8	100
TRENT	6/8/90	900	9.5	9.5	9.5	50.6	57.0	0	SE	40	100
TRENT	6/9/90	900	9.0	8.5	9.0	53.1	58.8	0		0	80
TRENT	6/10/90	900	9.0	9.0	9.0	66.3	68.5	0		0	100
TRENT	6/11/90	830	9.0	9.0	9.0	66.2	70.0	0	NE	8	60
TRENT	6/12/90	830	9.0	9.0	9.0	60.0	64.0	0	SE	8	10
TRENT	6/13/90	830	9.5	9.0	9.0	48.7	56.0	0		0	5
TRENT	6/16/90	900	13.0	11.0	11.0		43.0	0		0	30
TRENT	6/17/90	900	12.0	12.0	12.0	35.6	45.0	0	NW	5	0
	MEAN		10.4	9.6	9.8	49.0	54.9				
	MAX					105.0	90.0				
	MIN					32.5	41.0				

APPENDIX B

Juvenile coho catch data for Black Creek,
French Creek, and the Trent River, 1990.

SYSTEM	DATE	OPHR	TOT_FRY	TOT_PARR	TOT_SMOLT	TOT_WILD	TOT_HAT	SMOLT_AD	SMOLT_LV	SMOLT_RV	SMOLT_LM	SMOLT_RM	SMOLT_OT	MORT_TAG	MORT_HO	MORT_TR	MORT_PR	TOT_MORT	ESCAPES
BLACK	4/13/90	22	0	1	44	44	0	0	0	0	0	0	0	0	0	0	0	0	0
BLACK	4/14/90	24	0	0	24	24	0	0	0	0	0	0	0	1	0	0	0	1	1
BLACK	4/15/90	24	0	3	81	81	0	0	0	0	0	0	0	0	0	1	1	2	0
BLACK	4/16/90	24	1	3	57	57	0	0	0	0	0	0	0	8	0	1	0	9	0
BLACK	4/17/90	24	0	1	185	185	0	0	0	0	0	0	0	1	0	0	1	2	2
BLACK	4/18/90	24	1	8	397	397	0	0	0	0	0	0	0	3	0	0	0	3	7
BLACK	4/19/90	24	1	5	110	110	0	0	0	0	0	0	0	0	0	0	0	0	2
BLACK	4/20/90	24	1	3	527	527	0	0	0	0	0	0	0	0	0	0	0	0	7
BLACK	4/21/90	24	1	4	577	577	0	0	0	0	0	0	0	0	0	1	0	1	2
BLACK	4/22/90	24	1	13	258	258	0	0	0	0	0	0	0	0	0	0	1	1	1
BLACK	4/23/90	24	0	5	325	325	0	0	0	0	0	0	0	0	0	0	0	0	1
BLACK	4/24/90	24	2	8	527	527	0	0	0	0	0	0	0	2	0	1	0	3	1
BLACK	4/25/90	24	2	4	1520	1520	0	0	0	0	0	0	0	0	0	2	0	2	14
BLACK	4/26/90	24	1	4	1892	1892	0	0	0	0	0	0	0	1	0	1	0	2	3
BLACK	4/27/90	24	0	10	1599	1599	0	0	0	0	0	0	0	0	0	0	0	0	1
BLACK	4/28/90	24	1	8	1804	1804	0	0	0	0	0	0	0	0	5	0	0	5	3
BLACK	4/29/90	24	0	8	1945	1945	0	0	0	0	0	0	0	0	0	1	0	1	2
BLACK	4/30/90	24	0	2	1963	1963	0	0	0	0	0	0	0	0	0	1	0	1	4
	TOTAL		12	90	13835	13835	0	0	0	0	0	0	0	16	5	9	3	33	51
BLACK	5/1/90	24	0	2	1528	1528	0	0	0	0	0	0	0	2	0	2	0	4	4
BLACK	5/2/90	24	0	6	1615	1615	0	0	0	0	0	0	0	0	0	0	0	0	9
BLACK	5/3/90	24	2	8	1641	1641	0	0	0	0	0	0	0	0	0	0	0	0	3
BLACK	5/4/90	24	2	6	3330	3330	0	0	0	0	0	0	0	0	1	0	0	1	12
BLACK	5/5/90	24	0	16	10788	10788	0	0	0	0	0	0	0	0	0	5	0	5	23
BLACK	5/6/90	24	0	1	1256	1256	0	0	0	0	0	0	0	0	0	0	0	0	1
BLACK	5/7/90	24	0	8	11369	11369	0	0	0	0	0	0	0	0	1	0	0	1	17
BLACK	5/8/90	24	3	11	5462	5462	0	0	0	0	0	0	0	0	6	0	0	6	15
BLACK	5/9/90	24	1	7	1700	1700	0	0	0	0	0	0	0	0	4	0	0	4	3
BLACK	5/10/90	24	3	8	1925	1925	0	0	0	0	0	0	0	0	0	1	0	1	5
	TOTAL		11	73	40614	40614	0	0	0	0	0	0	0	2	12	8	0	22	92
BLACK	5/11/90	24	2	7	1929	1929	0	0	0	0	0	0	0	2	0	2	0	4	5
BLACK	5/12/90	24	2	19	7030	7030	0	0	0	0	0	0	0	0	0	3	0	3	22
BLACK	5/13/90	24	5	25	12851	12851	0	0	0	0	0	0	0	0	0	6	0	6	29
BLACK	5/14/90	24	1	7	3563	3563	0	0	0	0	0	0	0	1	0	2	0	3	5
BLACK	5/15/90	24	5	26	3255	3255	0	0	0	0	0	0	0	0	0	0	6	6	18
	TOTAL		15	84	28628	28628	0	0	0	0	0	0	0	3	0	13	6	22	79
BLACK	5/16/90	24	8	55	7314	7314	0	0	0	0	0	0	0	2	0	2	0	4	14
BLACK	5/17/90	24	5	51	6435	6435	0	0	0	0	0	0	0	2	0	7	0	9	14
BLACK	5/18/90	24	6	28	3421	3421	0	0	0	0	0	0	0	0	0	3	0	3	8
BLACK	5/19/90	24	4	6	3087	3087	0	0	0	0	0	0	0	0	0	6	8	14	17
	TOTAL		23	140	20257	20257	0	0	0	0	0	0	0	4	0	18	8	30	53

APPENDIX B

SYSTEM	DATE	OPHR	TOT_FRY	TOT_PARR	TOT_SMOLT	TOT_WILD	TOT_HAT	SMOLT_AD	SMOLT_LV	SMOLT_RV	SMOLT_LM	SMOLT_RM	SMOLT_OT	MORT_TAG	MORT_HO	MORT_TR	MORT_PR	TOT_MORT	ESCAPES
BLACK	5/20/90	24	7	11	1605	1605	0	0	0	0	0	0	0	0	0	2	0	2	4
BLACK	5/21/90	24	11	3	1119	1119	0	0	0	0	0	0	0	0	0	4	0	4	9
BLACK	5/22/90	24	7	4	951	951	0	0	0	0	0	0	0	0	0	0	0	0	1
BLACK	5/23/90	24	13	6	1560	1560	0	0	0	0	0	0	0	0	1	0	0	1	3
BLACK	5/24/90	24	6	1	386	386	0	0	0	0	0	0	0	0	3	0	0	3	0
BLACK	5/25/90	24	4	1	683	683	0	0	0	0	0	0	0	1	0	4	0	5	3
BLACK	5/26/90	24	4	2	1567	1567	0	0	0	0	0	0	0	0	0	0	4	4	7
BLACK	5/27/90	24	2	3	843	843	0	0	0	0	0	0	0	0	0	0	0	0	1
BLACK	5/28/90	24	10	3	866	866	0	0	0	0	0	0	0	0	0	0	0	0	4
BLACK	5/29/90	24	8	7	547	547	0	0	0	0	0	0	0	0	2	0	0	2	5
BLACK	5/30/90	24	2	2	440	440	0	0	0	0	0	0	0	2	0	0	1	3	13
BLACK	5/31/90	24	2	0	347	347	0	0	0	0	0	0	0	0	0	2	0	2	1
BLACK	6/1/90	24	0	0	302	302	0	0	0	0	0	0	0	0	0	0	0	0	0
BLACK	6/2/90	24	0	0	711	711	0	0	0	0	0	0	0	0	0	2	0	2	3
	TOTAL		76	43	11927	11927	0	0	0	0	0	0	0	3	6	14	5	28	54
BLACK	6/3/90	24	7	0	893	893	0	0	0	0	0	0	0	0	0	2	0	2	3
BLACK	6/4/90	24	13	3	953	953	0	0	0	0	0	0	0	0	0	3	0	3	4
BLACK	6/5/90	24	8	1	270	270	0	0	0	0	0	0	0	2	0	0	1	3	1
BLACK	6/6/90	24	14	3	394	394	0	0	0	0	0	0	0	0	0	1	0	1	1
BLACK	6/7/90	24	15	0	313	313	0	0	0	0	0	0	0	0	0	0	0	0	3
BLACK	6/8/90	24	10	3	235	235	0	0	0	0	0	0	0	0	0	0	1	1	1
BLACK	6/9/90	24	11	1	221	221	0	0	0	0	0	0	0	0	0	0	0	0	0
BLACK	6/10/90	20	16	0	188	188	0	0	0	0	0	0	0	0	0	0	0	0	0
BLACK	6/16/90	17	24	1	37	37	0	0	0	0	0	0	0	0	1	0	0	1	0
BLACK	6/17/90	24	37	1	48	48	0	0	0	0	0	0	0	0	0	0	0	0	0
BLACK	6/18/90	24	27	1	40	40	0	0	0	0	0	0	0	1	0	0	0	1	0
BLACK	6/19/90	24	22	0	22	22	0	0	0	0	0	0	0	0	0	1	0	1	1
BLACK	6/20/90	24	31	1	27	27	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL		235	15	3641	3641	0	0	0	0	0	0	0	3	1	7	2	13	14
	GRAND TOTAL		372	445	118902	118902	0	0	0	0	0	0	0	31	24	69	24	148	343

APPENDIX B

SYSTEM	DATE	OPHR	TOT_FRY	TOT_PARR	TOT_SMOLT	TOT_WILD	TOT_HAT	SMOLT_AD	SMOLT_LV	SMOLT_RV	SMOLT_LM	SMOLT_RM	SMOLT_OT	MORT_TAG	MORT_HO	MORT_TR	MORT_PR	TOT_MORT	ESCAPES
FRENCH	4/15/90	17	0	0	6	5	1	0	0	1	0	0	0	0	0	0	0	0	0
FRENCH	4/16/90	24	5	0	13	3	10	0	1	9	0	0	0	0	0	1	0	1	0
FRENCH	4/17/90	24	1	0	4	0	4	0	0	4	0	0	0	0	0	0	0	0	0
FRENCH	4/18/90	24	0	0	10	5	5	0	2	3	0	0	0	1	0	0	0	1	0
FRENCH	4/19/90	24	4	0	11	3	8	0	3	5	0	0	0	0	0	0	0	0	0
FRENCH	4/20/90	24	1	0	4	2	2	0	1	1	0	0	0	0	0	1	0	1	0
FRENCH	4/21/90	24	3	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0
FRENCH	4/22/90	24	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0
FRENCH	4/23/90	24	0	0	10	3	7	0	1	6	0	0	0	0	1	0	0	1	0
FRENCH	4/24/90	24	9	2	50	31	19	0	1	17	1	0	0	0	0	0	0	0	1
FRENCH	4/25/90	24	1	0	34	24	10	0	4	6	0	0	0	0	0	0	0	0	0
FRENCH	4/26/90	24	7	0	17	12	5	0	2	3	0	0	0	0	0	0	0	0	0
FRENCH	4/27/90	24	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0
FRENCH	4/28/90	24	0	1	24	21	3	0	1	2	0	0	0	0	0	0	0	0	0
FRENCH	4/29/90	24	2	1	12	8	4	0	2	1	1	0	0	0	0	1	0	1	0
FRENCH	4/30/90	24	0	1	34	28	6	0	2	4	0	0	0	3	0	0	0	3	1
FRENCH	5/1/90	24	2	0	15	10	5	0	1	2	0	2	0	0	3	0	0	3	0
FRENCH	5/2/90	24	0	0	13	9	4	0	0	3	1	0	0	0	0	0	0	0	0
FRENCH	5/3/90	24	0	2	75	56	19	0	4	6	6	3	0	0	0	0	0	0	1
FRENCH	5/4/90	24	0	1	56	43	13	0	3	4	3	3	0	2	0	0	0	2	0
FRENCH	5/5/90	24	0	0	107	85	22	0	9	5	4	4	0	2	2	1	0	5	3
FRENCH	5/6/90	24	0	0	103	87	16	0	4	3	5	4	0	0	0	1	0	1	1
FRENCH	5/7/90	24	1	0	101	86	15	0	7	0	5	3	0	0	3	0	0	3	0
FRENCH	5/8/90	24	0	4	181	158	23	0	13	6	2	2	0	0	3	1	0	4	1
FRENCH	5/9/90	24	0	8	206	192	14	0	6	3	3	2	0	4	1	1	0	6	1
FRENCH	5/10/90	24	0	12	525	483	42	0	22	7	10	3	0	1	0	0	0	1	4
	TOTAL		36	32	1615	1356	259	0	89	103	41	26	0	13	13	7	0	33	13
FRENCH	5/11/90	24	0	0	325	300	25	0	11	5	8	1	0	2	2	0	0	4	1
FRENCH	5/12/90	24	0	109	312	287	25	0	9	5	11	0	0	0	1	0	0	1	1
FRENCH	5/13/90	24	1	22	577	511	66	0	27	22	15	2	0	0	0	0	0	0	2
FRENCH	5/14/90	24	1	114	1428	1365	63	0	19	25	18	1	0	0	16	0	0	16	19
FRENCH	5/15/90	24	1	166	1586	1509	77	0	10	25	41	1	0	7	1	0	0	8	25
FRENCH	5/16/90	24	0	3	1238	1169	69	0	6	23	40	0	0	5	6	3	0	14	5
FRENCH	5/17/90	24	0	0	646	629	17	0	0	5	12	0	0	3	0	2	0	5	10
FRENCH	5/18/90	24	15	39	3604	3430	174	0	11	71	90	2	0	109	11	3	0	123	7
FRENCH	5/19/90	24	2	41	2679	2536	143	0	4	52	86	1	0	4	12	0	0	16	14
	TOTAL		20	494	12395	11736	659	0	97	233	321	8	0	130	49	8	0	187	84

APPENDIX B

SYSTEM	DATE	OPHR	TOT_FRY	TOT_PARR	TOT_SMOLT	TOT_WILD	TOT_HAT	SMOLT_AD	SMOLT_LV	SMOLT_RV	SMOLT_LM	SMOLT_RM	SMOLT_OT	MORT_TAG	MORT_HO	MORT_TR	MORT_PR	TOT_MORT	ESCAPES
FRENCH	5/20/90	24	4	20	805	740	65	0	3	28	33	1	0	29	0	0	0	29	0
FRENCH	5/21/90	24	1	6	2162	2040	122	0	2	68	50	2	0	5	0	9	0	14	0
FRENCH	5/22/90	24	4	4	1971	1842	129	0	0	83	45	1	0	8	0	2	0	10	7
FRENCH	5/23/90	24	16	3	1104	1047	57	0	2	32	23	0	0	5	0	12	0	17	5
FRENCH	5/24/90	24	17	5	2904	2745	159	0	3	81	73	2	0	0	0	9	0	9	6
FRENCH	5/25/90	24	8	40	2267	2114	153	0	2	68	79	2	2	4	3	0	0	7	2
FRENCH	5/26/90	24	8	10	604	581	23	0	1	8	13	1	0	0	0	0	0	0	0
FRENCH	5/27/90	24	1	22	1417	1328	89	0	1	52	36	0	0	8	0	1	0	9	1
FRENCH	5/28/90	24	5	16	1769	1642	127	0	0	72	55	0	0	0	28	2	0	30	0
FRENCH	5/29/90	24	9	1	1493	1416	77	0	0	54	22	1	0	10	4	2	0	16	6
FRENCH	5/30/90	24	9	4	1756	1681	75	0	1	49	25	0	0	0	1	1	0	2	4
FRENCH	5/31/90	24	14	3	1073	1002	71	0	0	41	30	0	0	3	0	0	1	4	1
FRENCH	6/1/90	24	16	16	820	763	57	0	2	37	18	0	0	0	1	1	0	2	1
FRENCH	6/2/90	24	9	13	1205	1143	62	0	1	44	17	0	0	0	4	0	0	4	2
FRENCH	6/3/90	24	8	7	447	423	24	0	0	17	7	0	0	0	3	0	0	3	3
	TOTAL		129	170	21797	20507	1290	0	18	734	526	10	2	72	44	39	1	156	38
FRENCH	6/4/90	24	63	14	1543	1476	67	0	3	33	27	4	0	27	0	16	0	43	16
FRENCH	6/5/90	24	44	2	241	231	10	0	0	5	4	1	0	0	0	2	0	2	0
FRENCH	6/6/90	24	42	4	498	486	12	0	0	6	6	0	0	2	0	1	0	3	0
FRENCH	6/7/90	24	41	8	951	922	29	0	1	17	10	1	0	0	1	1	0	2	8
FRENCH	6/8/90	24	14	5	322	300	22	0	1	12	9	0	0	2	0	0	0	2	15
FRENCH	6/9/90	24	23	5	471	452	19	0	1	12	5	1	0	0	1	4	0	5	16
FRENCH	6/10/90	24	7	1	157	150	7	0	2	4	0	1	0	1	0	0	0	1	1
FRENCH	6/11/90	24	22	0	174	169	5	0	1	4	0	0	0	0	1	3	0	4	1
FRENCH	6/12/90	24	16	0	376	365	11	0	4	6	1	0	0	0	0	0	0	0	3
FRENCH	6/13/90	24	13	1	164	157	7	0	1	4	2	0	0	0	0	1	0	1	4
FRENCH	6/14/90	24	5	0	131	122	9	0	1	3	4	1	0	1	1	0	0	2	0
FRENCH	6/15/90	24	14	0	123	122	1	0	0	1	0	0	0	0	1	0	0	1	3
FRENCH	6/16/90	24	23	0	172	167	5	0	2	3	0	0	0	0	1	1	0	2	6
FRENCH	6/17/90	24	23	0	95	93	2	0	0	2	0	0	0	0	0	2	0	2	1
FRENCH	6/18/90	24	17	0	110	105	5	0	0	4	1	0	0	0	0	0	0	0	0
	TOTAL		367	40	5528	5317	211	0	17	116	69	9	0	33	6	31	0	70	74
	GRAND TOTAL		552	736	41335	38916	2419	0	221	1186	957	53	2	248	112	85	1	446	209

APPENDIX B

SYSTEM	DATE	OPHR	TOT_FRY	TOT_PARR	TOT_SMOLT	TOT_WILD	TOT_HAT	SMOLT_AD	SMOLT_LV	SMOLT_RV	SMOLT_LM	SMOLT_RM	SMOLT_OT	MORT_TAG	MORT_HO	MORT_TR	MORT_PR	TOT_MORT	ESCAPES
TRENT	4/23/90	24	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
TRENT	4/24/90	24	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
TRENT	4/25/90	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRENT	4/26/90	24	9	1	4	1	3	0	3	0	0	0	0	0	0	0	0	0	0
TRENT	4/27/90	24	20	2	26	3	23	0	17	5	1	0	0	0	0	0	0	0	0
TRENT	4/28/90	24	19	0	25	5	20	0	15	5	0	0	0	0	1	0	0	1	0
TRENT	4/29/90	24	34	7	55	10	45	0	40	4	0	1	0	0	0	0	0	0	0
TRENT	4/30/90	24	9	0	37	6	31	0	23	6	0	2	0	0	0	0	0	0	0
TRENT	5/1/90	24	1	0	5	1	4	0	1	2	0	1	0	0	0	0	0	0	0
TRENT	5/2/90	24	3	0	16	3	13	0	10	3	0	0	0	0	0	0	0	0	0
TRENT	5/3/90	24	18	2	70	16	54	0	41	10	1	2	0	0	0	0	0	0	0
TRENT	5/4/90	24	41	1	99	30	69	0	54	12	1	2	0	0	0	0	17	17	0
TRENT	5/5/90	24	51	1	114	25	89	0	72	7	7	3	0	0	0	0	15	15	0
TRENT	5/6/90	24	4	1	137	22	115	0	99	7	1	8	0	0	1	0	0	1	0
TRENT	5/7/90	24	9	0	33	6	27	0	25	0	1	1	0	0	0	0	0	0	1
TRENT	5/8/90	24	6	3	202	56	146	0	125	10	0	11	0	0	0	0	0	0	1
TRENT	5/9/90	24	6	0	88	30	58	0	43	8	1	6	0	0	0	0	0	0	0
TRENT	5/10/90	24	1	2	127	59	68	0	57	3	1	7	0	1	0	1	0	2	1
TRENT	5/11/90	24	4	3	115	50	65	0	45	5	0	15	0	0	0	0	0	0	0
TRENT	5/12/90	24	3	1	143	45	98	0	74	4	1	19	0	0	1	0	0	1	1
TRENT	5/13/90	24	1	1	64	31	33	0	22	2	0	9	0	0	0	0	0	0	0
TRENT	5/14/90	24	13	1	337	131	206	0	154	9	1	42	0	0	0	2	0	2	0
TRENT	5/15/90	24	1	2	264	98	166	0	93	13	2	58	0	0	0	2	0	2	54
TRENT	5/16/90	24	5	0	411	213	198	0	109	8	0	81	0	0	5	0	0	5	0
TRENT	5/17/90	24	2	0	519	335	184	0	85	20	1	78	0	0	0	0	0	0	6
TRENT	5/18/90	24	10	1	515	312	203	1	85	16	3	98	0	0	4	0	0	4	6
TRENT	5/19/90	24	12	1	731	431	300	0	127	22	7	144	0	0	3	0	0	3	8
TRENT	5/20/90	24	4	0	218	127	91	0	29	6	5	51	0	0	0	0	0	0	0
TRENT	5/21/90	24	9	1	490	336	154	0	48	7	7	92	0	1	4	1	0	6	0
TRENT	5/22/90	24	7	3	933	503	430	0	190	30	26	184	0	0	0	8	0	8	11
TRENT	5/23/90	24	998	0	1037	658	379	0	136	30	42	171	0	0	24	41	0	65	2
	TOTAL		1300	34	6817	3545	3272	1	1822	254	109	1086	0	2	43	55	32	132	91
														3272					

APPENDIX B

SYSTEM	DATE	OPHR	TOT_FRY	TOT_PARR	TOT_SMOLT	TOT_WILD	TOT_HAT	SMOLT_AD	SMOLT_LV	SMOLT_RV	SMOLT_LM	SMOLT_RM	SMOLT_OT	MORT_TAG	MORT_HO	MORT_TR	MORT_PR	TOT_MORT	ESCAPES
TRENT	5/24/90	24	330	0	543	325	218	0	77	22	33	86	0	0	3	7	0	10	0
TRENT	5/25/90	24	28	4	381	238	143	0	25	18	38	62	0	0	1	1	0	2	1
TRENT	5/26/90	24	5	1	313	152	161	0	33	20	53	55	0	0	0	1	3	4	3
TRENT	5/27/90	24	3	0	212	94	118	0	8	15	80	15	0	0	0	3	0	3	1
TRENT	5/28/90	24	31	0	893	513	380	0	38	33	249	60	0	0	0	8	0	8	0
TRENT	5/29/90	24	19	0	589	262	327	0	30	54	211	32	0	17	3	0	0	20	11
TRENT	5/30/90	24	5	2	359	141	218	0	23	27	139	29	0	0	6	2	0	8	14
TRENT	5/31/90	24	7	0	378	147	231	0	22	27	138	44	0	2	5	0	0	7	9
TRENT	6/1/90	24	12	2	165	66	99	0	14	19	52	14	0	0	0	0	0	0	0
TRENT	6/2/90	24	7	0	107	65	42	0	5	8	23	6	0	0	3	1	0	4	0
TRENT	6/3/90																		
TRENT	6/4/90																		
TRENT	6/5/90																		
TRENT	6/6/90																		
TRENT	6/7/90																		
TRENT	6/8/90		9	0	7	5	2	0	0	2	0	0	0	0	0	0	0	0	0
TRENT	6/9/90	24	5	0	23	18	5	0	1	3	1	0	0	0	0	0	0	0	0
TRENT	6/10/90	24	0	0	11	7	4	0	2	2	0	0	0	0	0	0	0	0	0
TRENT	6/11/90		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRENT	6/12/90	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRENT	6/13/90	24	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRENT	6/14/90																		
TRENT	6/15/90		23	0	5	4	1	0	0	1	0	0	0	0	0	0	0	0	0
TRENT	6/16/90	24	53	0	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0
TRENT	6/17/90																		
TRENT	6/18/90		83	0	16	14	2	0	0	2	0	0	0	0	0	0	0	0	0
	TOTAL		621	9	4009	2058	1951	0	278	253	1017	403	0	19	21	23	3	66	39
GRAND TOTAL			1921	43	10826	5603	5223	1	2100	507	1126	1489	0	21	64	78	35	198	130

APPENDIX C

Non-coho catch data for Black Creek,
French Creek, and the Trent River, 1990.

APPENDIX C

SYSTEM	DATE	STL_FRY	STL_PARR	STL_SM_W	STL_SM_H	STL_AD_W	STL_AD_H	STL_KL_W	STL_KL_H	CUT_FRY	CUT_PARR	CUT_SM_W	CUT_SM_H	CUT_AD_W	CUT_AD_H	CUT_KL_W	CUT_KL_H	COTTIDS	LAMPREY	STICKLE	CHUM_FR
BLACK	4/13/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	14	0	3	0
BLACK	4/14/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	24	0	2	0
BLACK	4/15/90	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	16	0	4	0
BLACK	4/16/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	20	0	7	0
BLACK	4/17/90	0	1	3	0	0	0	0	0	0	0	1	0	0	0	0	6	13	1	8	0
BLACK	4/18/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	11	31	0	36	0
BLACK	4/19/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	17	0	12	0
BLACK	4/20/90	0	0	2	0	0	0	0	0	0	0	1	0	0	0	4	12	20	0	13	0
BLACK	4/21/90	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	21	0	6	0
BLACK	4/22/90	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2	12	0	8	0
BLACK	4/23/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	7	0
BLACK	4/24/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	3	6
BLACK	4/25/90	0	0	102	0	0	0	5	0	0	0	0	0	0	0	20	68	4	0	10	0
BLACK	4/26/90	0	0	4	0	0	0	0	0	0	0	0	0	0	0	6	4	14	0	20	0
BLACK	4/27/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	4	0	10	0
BLACK	4/28/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	13	0
BLACK	4/29/90	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	5	0	14	0
BLACK	4/30/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	16	0
BLACK	5/1/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	7	0
BLACK	5/2/90	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	5	0	3	0
BLACK	5/3/90	0	0	1	0	0	0	0	0	0	1	2	0	0	0	0	0	4	0	13	0
BLACK	5/4/90	0	0	17	0	0	0	0	0	0	10	9	0	0	0	15	35	2	0	7	0
BLACK	5/5/90	0	0	41	0	0	0	0	0	0	10	11	0	0	0	9	24	3	0	10	0
BLACK	5/6/90	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	1	0	9	0
BLACK	5/7/90	0	0	25	0	0	0	0	0	0	5	6	0	0	0	0	1	2	0	1	0
BLACK	5/8/90	0	0	18	0	0	0	1	0	0	5	3	0	0	0	0	1	2	0	0	0
BLACK	5/9/90	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0
BLACK	5/10/90	0	0	1	0	0	0	0	0	0	1	2	0	0	0	0	1	2	0	4	0
BLACK	5/11/90	0	0	1	0	0	0	0	0	0	2	1	0	0	0	1	0	2	0	3	0
BLACK	5/12/90	0	0	17	0	0	0	0	0	0	19	3	0	0	0	1	0	4	0	14	0
BLACK	5/13/90	0	0	35	0	0	0	0	0	0	4	8	0	0	0	0	1	0	0	8	0
BLACK	5/14/90	0	0	30	0	0	0	1	0	0	0	8	0	0	0	2	7	1	0	6	0
BLACK	5/15/90	0	0	23	0	0	0	0	0	0	2	6	0	0	0	0	0	1	0	20	0
BLACK	5/16/90	0	0	18	0	0	0	0	0	0	4	11	0	0	0	1	0	3	0	9	0
BLACK	5/17/90	0	0	7	0	0	0	0	0	0	1	11	0	0	0	2	0	7	1	8	0
BLACK	5/18/90	0	0	24	0	0	0	0	0	0	2	5	0	0	0	1	3	0	0	5	0
BLACK	5/19/90	0	0	54	0	0	0	2	0	0	0	6	0	0	0	2	7	6	0	3	0
BLACK	5/20/90	0	0	13	0	0	0	0	0	0	0	5	0	0	0	0	0	0	1	8	0
BLACK	5/21/90	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	9	0
BLACK	5/22/90	0	0	16	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	4	0
BLACK	5/23/90	0	0	7	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	24	0
BLACK	5/24/90	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	11	0
BLACK	5/25/90	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	7	0
BLACK	5/26/90	0	0	5	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0	11	0
BLACK	5/27/90	0	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0	2	1	3	0
BLACK	5/28/90	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	7	0
BLACK	5/29/90	0	0	11	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	11	0
BLACK	5/30/90	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	6	0
BLACK	5/31/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	13	0
BLACK	6/1/90	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	0
BLACK	6/2/90	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	9
BLACK	6/3/90	0	0	56	0	0	0	2	0	0	0	2	0	0	0	1	2	2	2	11	0
BLACK	6/4/90	0	0	12	0	0	0	0	0	0	0	1	0	0	0	0	2	5	1	26	0
BLACK	6/5/90	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	27	0
BLACK	6/6/90	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2	15	0
BLACK	6/7/90	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	3	2	7	0
BLACK	6/8/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0

APPENDIX C

SYSTEM	DATE	STL_FRY	STL_PARR	STL_SM_W	STL_SM_H	STL_AD_W	STL_AD_H	STL_KL_W	STL_KL_H	CUT_FRY	CUT_PARR	CUT_SM_W	CUT_SM_H	CUT_AD_W	CUT_AD_H	CUT_KL_W	CUT_KL_H	COTTIDS	LAMPREY	STICKLE	CHUM_FR
BLACK	6/9/90	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	4	0
BLACK	6/10/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0
BLACK	6/16/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	5	0
BLACK	6/17/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	7	0
BLACK	6/18/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	8	0
BLACK	6/19/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	4	0
BLACK	6/20/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	8	0
TOTAL		0	1	591	0	0	0	13	0	0	69	117	0	0	0	75	214	333	20	572	15

APPENDIX C

SYSTEM	DATE	STL_FRY	STL_PARR	STL_SM_W	STL_SM_H	STL_AD_W	STL_AD_H	STL_KL_W	STL_KL_H	CUT_FRY	CUT_PARR	CUT_SM_W	CUT_SM_H	CUT_AD_W	CUT_AD_H	CUT_KL_W	CUT_KL_H	COTTIDS	LAMPREY	STICKLE	CHUM_FR
FRENCH	4/15/90	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	1	0
FRENCH	4/16/90	0	5	21	0	0	0	0	0	0	0	3	0	0	0	0	0	19	0	0	0
FRENCH	4/17/90	0	2	13	0	0	0	0	0	0	0	2	0	0	0	0	0	26	0	1	0
FRENCH	4/18/90	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	24	0	0	0
FRENCH	4/19/90	0	1	13	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	1	0
FRENCH	4/20/90	0	1	21	0	0	0	0	0	0	0	2	0	0	0	3	0	13	0	3	0
FRENCH	4/21/90	0	0	5	0	0	0	0	0	0	0	2	0	0	0	4	0	12	0	3	0
FRENCH	4/22/90	0	0	5	0	0	0	0	0	0	0	1	0	0	0	0	0	7	0	1	0
FRENCH	4/23/90	0	2	26	0	0	0	0	0	0	0	1	0	0	0	0	0	15	0	1	0
FRENCH	4/24/90	0	0	82	0	1	0	1	0	0	0	4	0	2	0	0	0	23	0	13	0
FRENCH	4/25/90	0	0	15	0	0	0	0	0	0	0	3	0	0	0	1	0	7	0	4	0
FRENCH	4/26/90	0	0	14	0	0	0	0	0	0	0	1	0	0	0	0	0	6	0	5	0
FRENCH	4/27/90	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	2	0
FRENCH	4/28/90	0	1	9	0	0	0	0	0	0	0	2	0	0	0	0	0	4	0	1	0
FRENCH	4/29/90	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0
FRENCH	4/30/90	0	0	6	0	0	0	0	0	0	0	2	0	0	0	1	0	8	0	0	0
FRENCH	5/1/90	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	0	4	0	1	0
FRENCH	5/2/90	0	5	8	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
FRENCH	5/3/90	0	4	74	0	0	0	0	0	0	0	2	0	0	0	2	1	6	0	0	0
FRENCH	5/4/90	0	5	66	0	0	0	0	0	0	0	3	0	0	0	1	0	4	0	3	0
FRENCH	5/5/90	0	5	73	0	0	0	2	0	0	0	8	0	0	0	0	0	6	0	1	0
FRENCH	5/6/90	0	3	67	0	0	0	0	0	0	0	7	0	0	0	4	0	5	1	1	0
FRENCH	5/7/90	0	3	60	0	0	0	0	0	0	1	6	0	0	0	0	0	2	1	2	0
FRENCH	5/8/90	0	1	127	0	0	0	0	0	0	0	6	0	0	0	1	0	1	1	3	0
FRENCH	5/9/90	0	1	53	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
FRENCH	5/10/90	0	9	141	0	0	0	0	0	0	0	8	0	0	0	0	0	1	0	2	0
FRENCH	5/11/90	0	13	95	0	0	0	0	0	0	1	12	0	0	0	0	0	3	0	1	0
FRENCH	5/12/90	0	8	86	0	0	0	0	0	0	0	42	0	0	0	1	0	1	0	2	0
FRENCH	5/13/90	0	8	54	0	0	0	0	0	0	0	28	0	0	0	0	0	0	0	0	0
FRENCH	5/14/90	0	15	225	0	0	0	0	0	0	0	43	0	0	0	0	0	4	0	4	0
FRENCH	5/15/90	0	15	180	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	1	0
FRENCH	5/16/90	0	29	156	0	0	0	0	0	0	1	29	0	0	0	0	0	1	0	3	0
FRENCH	5/17/90	0	0	15	0	0	0	0	0	0	0	8	0	0	0	0	0	1	1	0	0
FRENCH	5/18/90	0	23	364	0	0	0	0	0	0	5	73	0	0	0	0	0	0	0	4	0
FRENCH	5/19/90	0	22	183	0	0	0	0	0	0	0	44	0	0	0	0	0	3	0	3	0
FRENCH	5/20/90	0	10	98	0	0	0	0	0	0	0	19	0	0	0	0	0	3	0	2	0
FRENCH	5/21/90	0	15	66	0	0	0	0	0	0	0	22	0	0	0	0	0	1	0	4	0
FRENCH	5/22/90	0	19	137	0	0	0	0	0	0	2	17	0	0	0	0	0	0	0	1	0
FRENCH	5/23/90	0	7	69	0	0	0	1	0	0	1	31	0	0	0	0	0	0	2	5	0
FRENCH	5/24/90	0	16	63	0	0	0	3	0	0	4	32	0	0	0	0	0	1	0	4	0
FRENCH	5/25/90	0	5	35	0	0	0	0	0	0	2	22	0	0	0	0	0	3	0	5	0
FRENCH	5/26/90	0	0	12	0	0	0	1	0	0	0	11	0	0	0	0	0	1	1	0	0
FRENCH	5/27/90	0	6	4	0	0	0	1	0	0	1	18	0	0	0	0	0	0	0	0	0
FRENCH	5/28/90	0	4	13	0	0	0	0	0	0	0	18	0	0	0	0	0	1	0	1	0
FRENCH	5/29/90	0	9	35	0	0	0	0	0	0	0	32	0	0	0	0	0	4	1	1	0
FRENCH	5/30/90	0	6	27	0	0	0	0	0	0	1	42	0	0	0	0	0	3	0	2	0
FRENCH	5/31/90	0	21	28	0	0	0	0	0	0	1	35	0	0	0	0	0	2	0	2	0
FRENCH	6/1/90	0	6	16	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	1	0
FRENCH	6/2/90	0	5	10	0	0	0	0	0	0	0	6	0	0	0	0	0	1	0	3	9
FRENCH	6/3/90	0	3	2	0	0	0	1	0	0	0	8	0	0	0	0	0	2	0	1	0
FRENCH	6/4/90	0	20	48	0	0	0	0	0	0	0	26	0	0	0	0	0	3	0	12	0
FRENCH	6/5/90	0	6	0	0	0	0	0	0	0	0	8	0	0	0	0	0	1	1	11	0
FRENCH	6/6/90	0	3	7	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	5	0
FRENCH	6/7/90	0	2	7	0	0	0	1	0	0	0	10	0	0	0	0	0	0	0	0	0
FRENCH	6/8/90	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	2	0
FRENCH	6/9/90	0	1	4	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	3	0
FRENCH	6/10/90	1	2	0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0	4	0

APPENDIX C

SYSTEM	DATE	STL_FRY	STL_PARR	STL_SM_W	STL_SM_H	STL_AD_W	STL_AD_H	STL_KL_W	STL_KL_H	CUT_FRY	CUT_PARR	CUT_SM_W	CUT_SM_H	CUT_AD_W	CUT_AD_H	CUT_KL_W	CUT_KL_H	COTTIDS	LAMPREY	STICKLE	CHUM_FR
FRENCH	6/11/90	1	0	1	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	7	0
FRENCH	6/12/90	0	1	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	5	0
FRENCH	6/13/90	2	4	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	2	0
FRENCH	6/14/90	2	2	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	1	3	0
FRENCH	6/15/90	7	3	1	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	2	0
FRENCH	6/16/90	15	3	0	0	0	0	0	0	0	0	5	0	0	0	0	0	1	0	2	0
FRENCH	6/17/90	27	3	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	2	0
FRENCH	6/18/90	35	1	1	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	2	0
TOTAL		90	367	2963	0	1	0	11	0	0	20	827	0	3	0	19	1	270	10	163	9

APPENDIX C

SYSTEM	DATE	STL_FRY	STL_PARR	STL_SM_W	STL_SM_H	STL_AD_W	STL_AD_H	STL_KL_W	STL_KL_H	CUT_FRY	CUT_PARR	CUT_SM_W	CUT_SM_H	CUT_AD_W	CUT_AD_H	CUT_KL_W	CUT_KL_H	COTTIDS	LAMPREY	STICKLE	CHUM_FR
TRENT	4/23/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0
TRENT	4/24/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0
TRENT	4/25/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0
TRENT	4/26/90	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	33	0	0	1
TRENT	4/27/90	0	11	3	0	0	0	0	0	0	0	0	0	0	0	0	0	59	0	0	34
TRENT	4/28/90	0	8	6	0	0	0	0	0	0	0	0	0	0	0	0	0	63	0	0	85
TRENT	4/29/90	0	10	6	0	0	0	0	0	0	0	0	0	0	0	1	0	90	0	0	69
TRENT	4/30/90	0	18	3	0	0	0	0	0	0	2	0	0	0	0	0	0	73	0	1	21
TRENT	5/1/90	0	2	3	0	0	0	0	0	0	1	1	0	0	0	0	0	43	0	0	7
TRENT	5/2/90	0	7	8	1	0	0	1	0	0	3	1	0	0	0	0	0	47	0	0	17
TRENT	5/3/90	0	28	9	0	0	0	1	0	0	0	0	0	0	0	0	0	89	0	0	46
TRENT	5/4/90	0	38	12	0	0	0	0	0	0	1	0	0	0	0	0	0	76	0	0	108
TRENT	5/5/90	0	38	10	0	0	0	0	0	0	0	0	0	0	0	0	0	87	0	0	74
TRENT	5/6/90	0	31	37	1	0	0	0	0	0	3	2	0	0	0	0	0	53	0	0	29
TRENT	5/7/90	0	28	44	0	0	0	0	0	0	5	0	0	0	0	0	0	39	0	0	12
TRENT	5/8/90	1	29	35	0	0	0	0	0	0	1	1	0	0	0	0	0	43	1	0	7
TRENT	5/9/90	0	10	10	0	0	0	0	0	0	0	0	0	0	0	1	0	22	1	0	6
TRENT	5/10/90	0	17	10	0	0	0	0	0	0	4	1	0	0	0	0	0	41	0	0	7
TRENT	5/11/90	0	17	21	0	0	0	0	0	0	5	1	0	0	0	0	0	67	0	1	23
TRENT	5/12/90	0	11	42	0	0	0	0	0	0	0	1	0	0	0	0	0	27	0	0	7
TRENT	5/13/90	0	9	16	0	0	0	0	0	0	0	0	0	0	0	0	0	27	0	0	3
TRENT	5/14/90	0	15	53	1	0	0	0	0	0	4	3	0	0	0	6	0	17	0	0	7
TRENT	5/15/90	0	18	33	0	0	0	1	0	0	1	1	0	0	0	0	0	27	1	0	1
TRENT	5/16/90	0	6	13	0	0	0	0	0	1	12	1	0	0	0	0	0	13	0	1	4
TRENT	5/17/90	0	13	19	0	0	0	0	0	0	10	0	0	0	0	0	0	16	1	0	2
TRENT	5/18/90	0	29	14	0	0	0	0	0	0	5	5	0	0	0	1	0	12	0	0	0
TRENT	5/19/90	0	22	19	0	0	0	0	0	0	6	2	0	0	0	1	0	25	0	0	2
TRENT	5/20/90	0	8	7	0	0	0	0	0	0	0	0	0	0	0	0	0	23	0	0	2
TRENT	5/21/90	0	4	3	0	0	0	0	0	0	5	0	0	0	0	0	0	8	0	0	4
TRENT	5/22/90	0	31	227	0	0	0	12	0	0	15	3	0	0	0	0	0	15	1	1	0
TRENT	5/23/90	0	70	74	0	0	0	0	0	0	9	1	0	0	0	0	0	21	0	1	3
TRENT	5/24/90	0	30	7	0	0	0	0	0	0	2	1	0	0	0	0	0	21	1	0	5
TRENT	5/25/90	0	20	8	0	0	0	0	0	0	4	1	0	0	0	0	0	13	0	1	2
TRENT	5/26/90	0	17	13	0	0	0	0	0	0	1	3	0	0	0	0	0	12	0	0	0
TRENT	5/27/90	0	11	1	0	0	0	0	0	0	1	0	0	0	0	0	0	3	0	0	1
TRENT	5/28/90	0	26	8	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0
TRENT	5/29/90	0	9	8	0	0	0	1	0	0	0	0	0	0	0	0	0	17	0	0	0
TRENT	5/30/90	0	7	6	0	0	0	0	0	0	1	0	0	0	0	0	0	27	0	0	0
TRENT	5/31/90	0	9	1	0	0	0	0	0	0	3	0	0	0	0	0	0	29	0	0	0
TRENT	6/1/90	0	7	1	0	0	0	0	0	0	1	1	0	0	0	0	0	6	0	0	0
TRENT	6/2/90	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
TRENT	6/8/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	5	0
TRENT	6/9/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	0
TRENT	6/10/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	6	0
TRENT	6/11/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRENT	6/12/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
TRENT	6/13/90	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	7	0
TRENT	6/15/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	15	0
TRENT	6/16/90	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	47	0
TRENT	6/17/90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	15	0
TOTAL		1	672	793	3	0	0	16	0	1	106	30	0	0	0	10	0	1308	6	106	589

APPENDIX D

Coded wire tagging data for Black Creek,
French Creek, and the Trent River, 1990.

APPENDIX D

SYSTEM	DATE	TAG CODE	SIZE L/S	SMOLT ORIGIN	NO. TAGS USED	NO. TAG MORTS	NO. REJECTS	NO. TAGGED	NO. RELEASED
BLACK	4/13/90	82708	L	W	29	0	0	29	29
BLACK	4/14/90	82708	L	W	13	0	0	13	13
BLACK	4/15/90	82708	L	W	42	0	0	42	42
BLACK	4/16/90	82708	L	W	36	8	0	36	28
BLACK	4/17/90	82708	L	W	145	0	0	145	145
BLACK	4/18/90	82708	L	W	327	1	1	326	325
BLACK	4/19/90	82708	L	W	86	0	0	86	86
BLACK	4/20/90	82708	L	W	473	0	0	473	473
BLACK	4/21/90	82708	L	W	472	0	0	472	472
BLACK	4/22/90	82708	L	W	206	0	0	206	206
BLACK	4/23/90	82708	L	W	253	0	0	253	253
BLACK	4/24/90	82708	L	W	490	0	0	490	490
BLACK	4/25/90	82708	L	W	727	0	0	727	727
BLACK	4/25/90	82708	L	W	540	0	0	540	540
BLACK	4/26/90	82708	L	W	1262	0	0	1262	1262
BLACK	4/26/90	82724	L	W	232	0	1	231	231
BLACK	4/27/90	82724	L	W	731	0	0	731	731
BLACK	4/27/90	82724	L	W	458	0	0	458	458
BLACK	4/28/90	82724	L	W	729	0	0	729	729
BLACK	4/28/90	82724	L	W	658	0	0	658	658
BLACK	4/29/90	82724	L	W	478	0	0	478	478
BLACK	4/29/90	82724	L	W	990	0	0	990	990
BLACK	4/30/90	82724	L	W	864	0	0	864	864
BLACK	4/30/90	82724	L	W	511	0	0	511	511
				TOTAL	10752	9	2	10750	10741

APPENDIX D

SYSTEM	DATE	TAG CODE	SIZE L/S	SMOLT ORIGIN	NO. TAGS USED	NO. TAG MORTS	NO. REJECTS	NO. TAGGED	NO. RELEASED
BLACK	5/1/90	82720	L	W	972	2	0	972	970
BLACK	5/2/90	82720	L	W	727	0	0	727	727
BLACK	5/3/90	82720	L	W	753	0	0	753	753
BLACK	5/4/90	82720	L	W	383	0	2	381	381
BLACK	5/4/90	82720	L	W	1154	0	1	1153	1153
BLACK	5/5/90	82720	L	W	434	0	0	434	434
BLACK	5/5/90	82720	L	W	379	0	0	379	379
BLACK	5/5/90	82720	L	W	404	0	0	404	404
BLACK	5/5/90	82720	L	W	356	0	1	355	355
BLACK	5/5/90	82720	L	W	310	0	0	310	310
BLACK	5/5/90	82720	L	W	399	0	1	398	398
BLACK	5/5/90	82720	L	W	298	0	0	298	298
BLACK	5/5/90	82720	L	W	350	0	0	350	350
BLACK	5/5/90	82720	L	W	290	0	0	290	290
BLACK	5/5/90	82720	L	W	441	0	0	441	441
BLACK	5/6/90	82720	L	W	354	0	0	354	354
BLACK	5/7/90	82704	L	W	56	0	0	56	56
BLACK	5/7/90	82704	L	W	309	0	0	309	309
BLACK	5/7/90	82704	L	W	214	0	0	214	214
BLACK	5/7/90	82720	L	W	338	0	0	338	338
BLACK	5/7/90	82720	L	W	291	0	1	290	290
BLACK	5/7/90	82720	L	W	253	0	0	253	253
BLACK	5/7/90	82720	L	W	260	0	0	260	260
BLACK	5/7/90	82720	L	W	251	0	0	251	251
BLACK	5/7/90	82720	L	W	222	0	1	221	221
BLACK	5/7/90	82720	L	W	210	0	0	210	210
BLACK	5/7/90	82720	L	W	312	0	0	312	312
BLACK	5/8/90	82704	L	W	277	0	0	277	277
BLACK	5/8/90	82704	L	W	204	0	1	203	203
BLACK	5/8/90	82704	L	W	227	0	0	227	227
BLACK	5/8/90	82704	L	W	354	0	0	354	354
BLACK	5/9/90	82704	L	W	254	0	0	254	254
BLACK	5/10/90	82704	L	W	265	0	0	265	265
				TOTAL	12301	2	8	12293	12291
BLACK	5/11/90	82722	L	W	170	1	0	170	169
BLACK	5/12/90	82722	L	W	804	0	4	800	800
BLACK	5/13/90	82722	L	W	1085	0	0	1085	1085
BLACK	5/13/90	82722	L	W	548	0	0	548	548
BLACK	5/14/90	82722	L	W	130	0	0	130	130
BLACK	5/14/90	82722	L	W	102	0	0	102	102
BLACK	5/15/90	82722	L	W	123	0	0	123	123
				TOTAL	2962	1	4	2958	2957
BLACK	5/16/90	82711	L	W	219	0	0	219	219
BLACK	5/17/90	82711	L	W	220	0	0	220	220
BLACK	5/18/90	82711	L	W	146	0	0	146	146
BLACK	5/19/90	82711	L	W	192	0	0	192	192
				TOTAL	777	0	0	777	777

APPENDIX D

SYSTEM	DATE	TAG CODE	SIZE L/S	SMOLT ORIGIN	NO. TAGS USED	NO. TAG MORTS	NO. REJECTS	NO. TAGGED	NO. RELEASED
BLACK	5/20/90	82712	L	W	87	0	0	87	87
BLACK	5/21/90	82712	L	W	56	0	0	56	56
BLACK	5/22/90	82712	L	W	44	0	0	44	44
BLACK	5/23/90	82712	L	W	73	0	0	73	73
BLACK	5/24/90	82712	L	W	52	0	0	52	52
BLACK	5/25/90	82712	L	W	81	0	0	81	81
BLACK	5/26/90	82712	L	W	162	0	0	162	162
BLACK	5/27/90	82712	L	W	57	0	0	57	57
BLACK	5/28/90	82712	L	W	56	0	0	56	56
BLACK	5/29/90	82712	L	W	38	0	0	38	38
BLACK	5/30/90	82712	L	W	42	0	0	42	42
BLACK	5/31/90	82712	L	W	11	0	0	11	11
BLACK	6/1/90	82712	L	W	2	0	0	2	2
BLACK	6/2/90	82712	L	W	45	0	0	45	45
				TOTAL	806	0	0	806	806
BLACK	6/3/90	82654	L	W	94	0	0	94	94
BLACK	6/4/90	82654	L	W	34	0	0	34	34
BLACK	6/5/90	82654	L	W	33	0	0	33	33
BLACK	6/6/90	82654	L	W	23	0	0	23	23
BLACK	6/7/90	82654	L	W	9	0	0	9	9
BLACK	6/8/90	82654	L	W	7	0	0	7	7
BLACK	6/9/90	82654	L	W	6	0	0	6	6
BLACK	6/10/90	82654	L	W	3	0	0	3	3
BLACK	6/17/90	82654	L	W	4	0	0	4	4
BLACK	6/18/90	82654	L	W	2	0	0	2	2
BLACK	6/19/90	82654	L	W	1	0	0	1	1
BLACK	6/20/90	82654	L	W	7	0	0	7	7
				TOTAL	223	0	0	223	223
BLACK	4/13/90	82650	S	W	15	0	0	15	15
BLACK	4/14/90	82650	S	W	10	1	0	10	9
BLACK	4/15/90	82650	S	W	37	0	0	37	37
BLACK	4/16/90	82650	S	W	20	0	0	20	20
BLACK	4/17/90	82650	S	W	37	1	0	37	36
BLACK	4/18/90	82650	S	W	66	2	2	64	62
BLACK	4/19/90	82650	S	W	22	0	0	22	22
BLACK	4/20/90	82650	S	W	47	0	0	47	47
BLACK	4/21/90	82650	S	W	102	0	0	102	102
BLACK	4/22/90	82650	S	W	50	0	0	50	50
BLACK	4/23/90	82650	S	W	71	0	0	71	71
BLACK	4/24/90	82650	S	W	35	2	0	35	33
BLACK	4/25/90	82650	S	W	105	0	0	105	105
BLACK	4/25/90	82650	S	W	132	0	0	132	132
BLACK	4/26/90	82650	S	W	312	0	0	312	312
BLACK	4/26/90	82650	S	W	83	1	0	83	82
BLACK	4/27/90	82650	S	W	277	0	1	276	276
BLACK	4/27/90	82650	S	W	134	0	1	133	133
BLACK	4/28/90	82650	S	W	235	0	0	235	235
BLACK	4/28/90	82650	S	W	174	0	0	174	174
BLACK	4/29/90	82653	S	W	188	0	0	188	188
BLACK	4/29/90	82653	S	W	286	0	0	286	286
BLACK	4/30/90	82653	S	W	370	0	0	370	370
BLACK	4/30/90	82653	S	W	213	0	0	213	213
				TOTAL	3021	7	4	3017	3010

APPENDIX D

SYSTEM	DATE	TAG CODE	SIZE L/S	SMOLT ORIGIN	NO. TAGS USED	NO. TAG MORTS	NO. REJECTS	NO. TAGGED	NO. RELEASED
BLACK	5/1/90	82703	S	W	550	0	0	550	550
BLACK	5/2/90	82703	S	W	571	0	0	571	571
BLACK	5/2/90	82703	S	W	308	0	0	308	308
BLACK	5/3/90	82703	S	W	536	0	0	536	536
BLACK	5/3/90	82703	S	W	349	0	0	349	349
BLACK	5/4/90	82703	S	W	1206	0	0	1206	1206
BLACK	5/4/90	82703	S	W	578	0	1	577	577
BLACK	5/5/90	82703	S	W	326	0	0	326	326
BLACK	5/5/90	82721	S	W	434	0	0	434	434
BLACK	5/5/90	82721	S	W	806	0	0	806	806
BLACK	5/5/90	82721	S	W	711	0	0	711	711
BLACK	5/5/90	82721	S	W	738	0	3	735	735
BLACK	5/5/90	82721	S	W	809	0	0	809	809
BLACK	5/5/90	82721	S	W	688	0	1	687	687
BLACK	5/5/90	82721	S	W	633	0	0	633	633
BLACK	5/5/90	82721	S	W	516	0	0	516	516
BLACK	5/5/90	82721	S	W	645	0	0	645	645
BLACK	5/5/90	82721	S	W	802	0	3	799	799
BLACK	5/6/90	82721	S	W	311	0	0	311	311
BLACK	5/6/90	82721	S	W	590	0	0	590	590
BLACK	5/7/90	81607	S	W	843	0	2	841	841
BLACK	5/7/90	81607	S	W	1102	0	1	1101	1101
BLACK	5/7/90	81607	S	W	970	0	0	970	970
BLACK	5/7/90	81607	S	W	620	0	0	620	620
BLACK	5/7/90	82652	S	W	795	0	3	792	792
BLACK	5/7/90	82652	S	W	762	0	2	760	760
BLACK	5/7/90	82652	S	W	829	0	0	829	829
BLACK	5/7/90	82721	S	W	1113	0	5	1108	1108
BLACK	5/7/90	82721	S	W	838	0	4	834	834
BLACK	5/7/90	82721	S	W	782	0	0	782	782
BLACK	5/8/90	81607	S	W	1050	0	0	1050	1050
BLACK	5/8/90	81607	S	W	885	0	1	884	884
BLACK	5/8/90	81607	S	W	1064	0	0	1064	1064
BLACK	5/8/90	81607	S	W	1383	0	1	1382	1382
BLACK	5/9/90	81607	S	W	861	0	0	861	861
BLACK	5/9/90	81607	S	W	578	0	0	578	578
BLACK	5/10/90	81607	S	W	1660	0	6	1654	1654
				TOTAL	28242	0	33	28209	28209
BLACK	5/11/90	82726	S	W	1753	1	1	1752	1751
BLACK	5/12/90	82726	S	W	3617	0	0	3617	3617
BLACK	5/12/90	82726	S	W	2593	0	5	2588	2588
BLACK	5/13/90	25136	S	W	2543	0	0	2543	2543
BLACK	5/13/90	25136	S	W	1970	0	0	1970	1970
BLACK	5/13/90	25136	S	W	1628	0	0	1628	1628
BLACK	5/13/90	25136	S	W	1511	0	0	1511	1511
BLACK	5/13/90	25136	S	W	64	0	0	64	64
BLACK	5/13/90	25136	S	W	775	0	0	775	775
BLACK	5/13/90	82726	S	W	2700	0	8	2692	2692
BLACK	5/14/90	25136	S	W	2054	0	0	2054	2054
BLACK	5/14/90	25136	S	W	705	0	2	703	703
BLACK	5/14/90	82725	S	W	567	1	0	567	566
BLACK	5/15/90	82725	S	W	3116	0	8	3108	3108
				TOTAL	25596	2	24	25572	25570

APPENDIX D

SYSTEM	DATE	TAG CODE	SIZE L/S	SMOLT ORIGIN	NO. TAGS USED	NO. TAG MORTS	NO. REJECTS	NO. TAGGED	NO. RELEASED
BLACK	5/16/90	81608	S	W	1680	0	0	1680	1680
BLACK	5/16/90	81608	S	W	2354	0	3	2351	2351
BLACK	5/16/90	81608	S	W	3048	2	0	3048	3046
BLACK	5/17/90	81608	S	W	1461	0	0	1461	1461
BLACK	5/17/90	81608	S	W	376	0	0	376	376
BLACK	5/17/90	81608	S	W	1554	0	0	1554	1554
BLACK	5/17/90	81608	S	W	2807	2	4	2803	2801
BLACK	5/18/90	81608	S	W	1756	0	0	1756	1756
BLACK	5/18/90	81608	S	W	1517	0	9	1508	1508
BLACK	5/19/90	81608	S	W	1241	0	0	1241	1241
BLACK	5/19/90	81608	S	W	1623	0	0	1623	1623
				TOTAL	19417	4	16	19401	19397
BLACK	5/20/90	20841	S	W	1512	0	0	1512	1512
BLACK	5/21/90	20841	S	W	1050	0	0	1050	1050
BLACK	5/22/90	20841	S	W	906	0	0	906	906
BLACK	5/23/90	20841	S	W	1485	0	2	1483	1483
BLACK	5/24/90	20841	S	W	331	0	0	331	331
BLACK	5/25/90	20841	S	W	596	1	1	595	594
BLACK	5/26/90	20841	S	W	1394	0	0	1394	1394
BLACK	5/27/90	20841	S	W	785	0	0	785	785
BLACK	5/28/90	20841	S	W	806	1	0	806	805
BLACK	5/29/90	20841	S	W	503	0	1	502	502
BLACK	5/30/90	20841	S	W	387	2	3	384	382
BLACK	5/31/90	20841	S	W	333	0	0	333	333
BLACK	6/1/90	20841	S	W	300	0	0	300	300
BLACK	6/2/90	82658	S	W	663	0	2	661	661
				TOTAL	11051	4	9	11042	11038
BLACK	6/3/90	82709	S	W	794	0	0	794	794
BLACK	6/4/90	82709	S	W	913	0	1	912	912
BLACK	6/5/90	82709	S	W	235	2	0	235	233
BLACK	6/6/90	82709	S	W	369	0	0	369	369
BLACK	6/7/90	82709	S	W	301	0	0	301	301
BLACK	6/8/90	82709	S	W	226	0	0	226	226
BLACK	6/9/90	82709	S	W	215	0	0	215	215
BLACK	6/10/90	82709	S	W	185	0	0	185	185
BLACK	6/16/90	82709	S	W	36	0	0	36	36
BLACK	6/17/90	82709	S	W	44	0	0	44	44
BLACK	6/18/90	82709	S	W	38	1	0	38	37
BLACK	6/19/90	82709	S	W	19	0	0	19	19
BLACK	6/20/90	82709	S	W	20	0	0	20	20
				TOTAL	3395	3	1	3394	3391
				GRAND TOTAL	118543	32	101	118442	118410

APPENDIX D

SYSTEM	DATE	TAG CODE	SMOLT ORIGIN	NO. TAGS USED	NO. TAG MORTS	NO. REJECTS	NO. TAGGED	NO. RELEASED
FRENCH	4/17/90	82656	O	4	0	0	4	4
FRENCH	4/18/90	82656	O	5	0	0	5	5
FRENCH	4/19/90	82656	O	8	0	0	8	8
FRENCH	4/20/90	82656	O	2	0	0	2	2
FRENCH	4/21/90	82656	O	1	0	0	1	1
FRENCH	4/22/90	82656	O	1	0	0	1	1
FRENCH	4/23/90	82656	O	7	0	0	7	7
FRENCH	4/24/90	82656	O	19	0	0	19	19
FRENCH	4/25/90	82656	O	10	0	0	10	10
FRENCH	4/26/90	82656	O	5	0	0	5	5
FRENCH	4/28/90	82656	O	3	0	0	3	3
FRENCH	4/29/90	82656	O	4	0	0	4	4
FRENCH	4/30/90	82656	O	6	1	0	6	5
			TOTAL	75	1	0	75	74
FRENCH	5/1/90	82656	O	5	0	0	5	5
FRENCH	5/2/90	82656	O	4	0	0	4	4
FRENCH	5/3/90	82656	O	19	0	0	19	19
FRENCH	5/4/90	82656	O	13	0	0	13	13
FRENCH	5/5/90	82656	O	21	2	0	21	19
FRENCH	5/6/90	82656	O	16	0	0	16	16
FRENCH	5/7/90	82656	O	15	0	0	15	15
FRENCH	5/8/90	82656	O	21	0	1	20	20
FRENCH	5/9/90	82656	O	14	3	0	14	11
FRENCH	5/10/90	82656	O	42	0	0	42	42
			TOTAL	170	5	1	169	164
FRENCH	5/11/90	82656	O	24	0	0	24	24
FRENCH	5/12/90	82656	O	25	0	0	25	25
FRENCH	5/13/90	82656	O	66	0	0	66	66
FRENCH	5/14/90	82656	O	62	0	0	62	62
FRENCH	5/15/90	82656	O	76	0	0	76	76
FRENCH	5/16/90	82656	O	67	0	0	67	67
FRENCH	5/17/90	82656	O	17	0	0	17	17
FRENCH	5/18/90	82656	O	199	1	26	173	172
FRENCH	5/19/90	82656	O	69	0	0	69	69
FRENCH	5/19/90	82656	O	68	0	0	68	68
			TOTAL	673	1	26	647	646
FRENCH	5/20/90	82657	O	65	1	0	65	64
FRENCH	5/21/90	82657	O	120	1	0	120	119
FRENCH	5/22/90	82657	O	129	5	0	129	124
FRENCH	5/23/90	82657	O	57	1	0	57	56
FRENCH	5/24/90	82657	O	159	0	0	159	159
FRENCH	5/25/90	82657	O	153	0	0	153	153
FRENCH	5/26/90	82657	O	23	0	0	23	23
FRENCH	5/27/90	82657	O	89	2	0	89	87
FRENCH	5/29/90	82657	O	198	0	0	198	198
FRENCH	5/30/90	82657	O	75	0	0	75	75
FRENCH	5/31/90	82657	O	71	1	0	71	70
FRENCH	6/1/90	82657	O	57	0	0	57	57
FRENCH	6/2/90	82657	O	61	0	0	61	61
			TOTAL	1257	11	0	1257	1246

APPENDIX D

SYSTEM	DATE	TAG CODE	SMOLT ORIGIN	NO. TAGS USED	NO. TAG MORTS	NO. REJECTS	NO. TAGGED	NO. RELEASED
FRENCH	6/3/90	82657	O	22	0	0	22	22
FRENCH	6/4/90	82657	O	66	0	0	66	66
FRENCH	6/5/90	82657	O	9	0	0	9	9
FRENCH	6/6/90	82657	O	12	0	0	12	12
FRENCH	6/7/90	82657	O	29	0	0	29	29
FRENCH	6/8/90	82657	O	21	0	0	21	21
FRENCH	6/9/90	82657	O	17	0	0	17	17
FRENCH	6/10/90	82657	O	7	0	0	7	7
FRENCH	6/11/90	82657	O	5	0	0	5	5
FRENCH	6/12/90	82657	O	11	0	0	11	11
FRENCH	6/13/90	82657	O	7	0	0	7	7
FRENCH	6/14/90	82657	O	8	0	0	8	8
FRENCH	6/15/90	82657	O	1	0	0	1	1
FRENCH	6/16/90	82657	O	5	0	0	5	5
FRENCH	6/17/90	82657	O	2	0	0	2	2
FRENCH	6/18/90	82657	O	5	0	0	5	5
			TOTAL	227	0	0	227	227
FRENCH	4/18/90	82655	W	1	0	0	1	1
FRENCH	4/18/90	82655	W	4	1	0	4	3
FRENCH	4/19/90	82655	W	3	0	0	3	3
FRENCH	4/20/90	82655	W	1	0	0	1	1
FRENCH	4/23/90	82655	W	2	0	0	2	2
FRENCH	4/24/90	82655	W	30	0	0	30	30
FRENCH	4/27/90	82655	W	38	0	0	38	38
FRENCH	4/28/90	82655	W	21	0	0	21	21
FRENCH	4/29/90	82655	W	7	0	0	7	7
FRENCH	4/30/90	82655	W	31	2	4	27	25
			TOTAL	138	3	4	134	131
FRENCH	5/1/90	82655	W	7	0	0	7	7
FRENCH	5/2/90	82655	W	9	0	0	9	9
FRENCH	5/3/90	82655	W	55	0	0	55	55
FRENCH	5/4/90	82655	W	43	2	0	43	41
FRENCH	5/5/90	82655	W	80	0	0	80	80
FRENCH	5/6/90	82655	W	85	0	0	85	85
FRENCH	5/7/90	82655	W	83	0	0	83	83
FRENCH	5/8/90	82655	W	156	0	0	156	156
FRENCH	5/9/90	82655	W	190	1	1	189	188
FRENCH	5/10/90	82655	W	482	1	3	479	478
			TOTAL	1190	4	4	1186	1182
FRENCH	5/11/90	82723	W	298	2	0	298	296
FRENCH	5/12/90	82723	W	285	0	0	285	285
FRENCH	5/13/90	82723	W	513	0	4	509	509
FRENCH	5/14/90	82723	W	1338	0	7	1331	1331
FRENCH	5/15/90	82723	W	1485	7	1	1484	1477
			TOTAL	3919	9	12	3907	3898

APPENDIX D

SYSTEM	DATE	TAG CODE	SMOLT ORIGIN	NO. TAGS USED	NO. TAG MORTS	NO. REJECTS	NO. TAGGED	NO. RELEASED
FRENCH	5/16/90	82723	W	1166	5	9	1157	1152
FRENCH	5/17/90	82723	W	623	3	6	617	614
FRENCH	5/18/90	82723	W	1301	5	20	1281	1276
FRENCH	5/18/90	82723	W	434	0	20	414	414
FRENCH	5/18/90	82723	W	793	0	70	723	723
FRENCH	5/18/90	82723	W	356	0	42	314	314
FRENCH	5/18/90	82723	W	708	0	30	678	678
FRENCH	5/19/90	82723	W	1048	0	4	1044	1044
FRENCH	5/19/90	82660	W	1475	4	3	1472	1468
			TOTAL	7904	17	204	7700	7683
FRENCH	5/20/90	20840	W	759	28	19	740	712
FRENCH	5/21/90	20840	W	2033	4	0	2033	2029
FRENCH	5/22/90	20840	W	1833	3	0	1833	1830
FRENCH	5/23/90	20840	W	1030	4	0	1030	1026
FRENCH	5/24/90	20840	W	2730	0	0	2730	2730
FRENCH	5/25/90	20840	W	2113	4	4	2109	2105
FRENCH	5/26/90	20840	W	183	0	0	183	183
FRENCH	5/26/90	82713	W	398	0	0	398	398
FRENCH	5/27/90	82713	W	1326	6	0	1326	1320
FRENCH	5/28/90	82713	W	1618	0	0	1618	1618
FRENCH	5/29/90	82713	W	1408	10	4	1404	1394
FRENCH	5/30/90	82713	W	721	0	1	720	720
FRENCH	5/30/90	82714	W	955	0	0	955	955
FRENCH	5/31/90	82714	W	1001	2	1	1000	998
FRENCH	6/1/90	82714	W	761	0	1	760	760
FRENCH	6/2/90	82714	W	1141	0	3	1138	1138
			TOTAL	20010	61	33	19977	19916
FRENCH	6/3/90	82714	W	419	2	0	419	417
FRENCH	6/4/90	82661	W	1446	27	1	1445	1418
FRENCH	6/5/90	82661	W	230	0	0	230	230
FRENCH	6/6/90	82661	W	485	2	0	485	483
FRENCH	6/7/90	82661	W	912	0	0	912	912
FRENCH	6/8/90	82661	W	288	2	2	286	284
FRENCH	6/9/90	82661	W	83	0	0	83	83
FRENCH	6/9/90	82651	W	350	0	0	350	350
FRENCH	6/10/90	82651	W	149	1	0	149	148
FRENCH	6/11/90	82651	W	164	0	0	164	164
FRENCH	6/12/90	82651	W	362	0	0	362	362
FRENCH	6/13/90	82651	W	152	0	0	152	152
FRENCH	6/14/90	82651	W	122	1	0	122	121
FRENCH	6/15/90	82651	W	118	0	0	118	118
FRENCH	6/16/90	82651	W	159	0	0	159	159
FRENCH	6/17/90	82651	W	90	0	0	90	90
FRENCH	6/18/90	82651	W	105	0	0	105	105
			TOTAL	5634	35	3	5631	5596
			GRAND TOTAL	41197	147	287	40910	40763

APPENDIX D

SYSTEM	DATE	TAG CODE	SMOLT ORIGIN	NO. TAGS USED	NO. TAG MORTS	NO. REJECTS	NO. TAGGED	NO. RELEASED
TRENT	4/29/90	82705	O	88	0	0	88	88
TRENT	4/30/90	82705	O	31	0	0	31	31
TRENT	5/1/90	82705	O	4	0	0	4	4
TRENT	5/2/90	82705	O	13	0	0	13	13
TRENT	5/3/90	82705	O	54	0	0	54	54
TRENT	5/4/90	82705	O	55	0	0	55	55
TRENT	5/5/90	82705	O	75	0	0	75	75
TRENT	5/6/90	82705	O	114	0	0	114	114
TRENT	5/10/90	82705	O	296	0	0	296	296
TRENT	5/11/90	82705	O	65	0	0	65	65
TRENT	5/13/90	82705	O	133	0	4	129	129
TRENT	5/16/90	82705	O	565	0	0	565	565
TRENT	5/19/90	82705	O	684	0	0	684	684
TRENT	5/20/90	82705	O	91	0	0	91	91
TRENT	5/21/90	82705	O	153	1	0	153	152
TRENT	5/22/90	82705	O	429	0	0	429	429
TRENT	5/23/90	82705	O	222	0	0	222	222
TRENT	5/23/90	82705	O	136	0	0	136	136
			TOTAL	3208	1	4	3204	3203
TRENT	5/25/90	82705	O	358	0	0	358	358
TRENT	5/26/90	82706	O	157	0	0	157	157
TRENT	5/27/90	82706	O	117	0	0	117	117
TRENT	5/28/90	82706	O	394	0	0	394	394
TRENT	5/29/90	82706	O	319	9	0	319	310
TRENT	5/30/90	82706	O	206	0	0	206	206
TRENT	5/31/90	82706	O	229	0	1	228	228
TRENT	6/1/90	82706	O	99	0	0	99	99
TRENT	6/2/90	82706	O	38	0	0	38	38
			TOTAL	1917	9	1	1916	1907
TRENT	4/29/90	82662	W	17	0	0	17	17
TRENT	4/30/90	82662	W	6	0	0	6	6
TRENT	5/1/90	82662	W	1	0	0	1	1
TRENT	5/2/90	82662	W	3	0	0	3	3
TRENT	5/3/90	82662	W	16	0	0	16	16
TRENT	5/4/90	82662	W	27	0	0	27	27
TRENT	5/5/90	82662	W	24	0	0	24	24
TRENT	5/6/90	82662	W	22	0	0	22	22
TRENT	5/10/90	82662	W	150	1	0	150	149
TRENT	5/11/90	82662	W	53	0	3	50	50
TRENT	5/13/90	82662	W	76	0	0	76	76
TRENT	5/16/90	82662	W	384	0	0	384	384
TRENT	5/19/90	82662	W	1054	0	0	1054	1054
TRENT	5/20/90	82662	W	127	0	0	127	127
TRENT	5/21/90	82662	W	332	0	0	332	332
TRENT	5/22/90	82662	W	485	0	0	485	485
TRENT	5/23/90	82662	W	385	0	1	384	384
TRENT	5/23/90	82662	W	228	0	0	228	228
			TOTAL	3390	1	4	3386	3385

APPENDIX D

SYSTEM	DATE	TAG CODE	SMOLT ORIGIN	NO. TAGS USED	NO. TAG MORTS	NO. REJECTS	NO. TAGGED	NO. RELEASED
TRENT	5/25/90	82663	W	553	0	0	553	553
TRENT	5/26/90	82663	W	149	0	0	149	149
TRENT	5/27/90	82663	W	92	0	1	91	91
TRENT	5/28/90	82663	W	507	0	0	507	507
TRENT	5/29/90	82663	W	256	8	0	256	248
TRENT	5/30/90	82663	W	131	0	0	131	131
TRENT	5/31/90	82663	W	136	2	0	136	134
TRENT	6/1/90	82663	W	66	0	0	66	66
TRENT	6/2/90	82663	W	65	0	0	65	65
			TOTAL	1955	10	1	1954	1944
			GRAND TOTAL	10470	21	10	10460	10439