# Link River Hydroelectric Project
# (Eastside and Westside Powerhouses)
# Final Entrainment Study Report

## March 1997 - October 1999

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# INTRODUCTION

PacifiCorp operates the Klamath hydroelectric project on the Klamath River in Oregon and California. Cell Tech International (formerly the New Earth Company) harvests blue-green algae as well as other zooplankton and phytoplankton within the U.S. Bureau of Reclamation (USBR) owned Klamath project. As part of its future planning, Cell Tech anticipates expanding algae harvest into PacifiCorp's Eastside and Westside canals (Figures 1a and 1b), as well as onto Upper Klamath Lake itself.

During endangered species consultation with the U.S. Fish and Wildlife Service (Service) in 1996, Cell Tech and PacifiCorp (the companies) operations and proposed actions were reviewed for their potential impact on endangered sucker populations. The resulting Biological Opinion (BO; USFWS 1996) described PacifiCorp's Klamath hydroelectric project and Cell Tech actions, analyzed effects, and listed terms and conditions for operations under an Incidental Take Statement.

Under the BO, a number of measures were identified to ensure that the continued existence of the federally endangered Lost River (*Deltistes luxatus*) and shortnose (*Chasmistes brevirostris*) suckers was not jeopardized due to impacts of the companies' operations. Under these negotiations, the companies committed over two million dollars toward the purchase of Tulana Farms (a 4,700 acre wetland and sucker habitat restoration site) and agreed to provide technical and management assistance for project development and funding to defray ongoing restoration expenses. This restoration project was the primary identified measure to offset unavoidable negative impacts to all lifestages of endangered suckers. To be exempt from Endangered Species Act section 9 prohibitions regarding the take of federally listed species, PacifiCorp and Cell Tech also agreed to complete a number of reasonable and prudent measures to offset project effects. One of these measures included conducting an entrainment study on the Eastside and Westside Link River canals (Figure 1).

> "1. Monitor incidence of sucker entrainment and review effectiveness of entrainment reduction devices at PacifiCorp and New Earth Company facilities." (USFWS 1996)

According to this guidance, the companies agreed to monitor entrainment of all life stages of fish, with emphasis on suckers, over a two year period. The following objectives were developed by the companies and the Service:

1) Assess the timing, size, magnitude, and duration of juvenile and adult fish entrainment by species (focusing on juvenile suckers >75 mm in fork length (FL) and adult suckers) through the Eastside and Westside powerhouses.
2) Assess the timing, size, magnitude, and duration of larval fish entrainment by species (focusing on larval suckers) into the Eastside and Westside diversion canals.
3) Assess the relationship between entrainment and environmental conditions.

Study emphasis was placed on fish >75 mm FL because this was identified as a target size for future screening of the Link River canals (USFWS 1996). It was presumed that screening for fish of this target size would protect endangered sucker populations while not being economically prohibitive in the complex Upper Klamath Lake environment where no simple screening solutions exist. Abundant algae and debris, intake hydraulics which change with fluctuating lake levels, and an A-canal bypass area that leads to these un-screened Link River hydropower units, have slowed fish screen installation and made this biological assessment of entrainment a priority.

Sampling and reporting responsibilities for the entrainment study were originally split between the companies and outlined in the 1996 BO, but these were later amended after discussions and agreement between the Service and the companies. Rather than each company submitting a separate report after their respective sampling periods, reporting of the Link River entrainment study was consolidated into annual study reports (April 21, 1998 amendment to the 1996 BO). The first of these reports was delivered to the Service in March of 1999 and covered two years of larval drift data (1997 and 1998), and adult fyke net data at Eastside and Westside canals from April 1997 through July 1998. This final study report reviews both larval monitoring from 1997 and 1998, as well as all juvenile/adult entrainment data collected from 2.5 years of monitoring between April 21, 1997 and October 20, 1999.

## DESCRIPTION OF HYDROFACILITIES

The Link River dam is located at the southern end of Upper Klamath Lake, in Klamath County, Oregon (Figure 1a). The dam was completed in 1921 to provide water storage for a large nearby irrigation canal (A-canal), and to serve as a diversion point for the Eastside and Westside hydrofacilities. The volume of water that passes the Link River dam depends on management of the Upper Klamath Lake for flood control and downstream uses including irrigation withdrawal, power generation, and the management of fish and wildlife. The USBR owns the dam (the A-canal and the Klamath Project irrigation system) and PacifiCorp owns the adjacent Eastside and Westside hydrofacilities. A contract between the two entities allows PacifiCorp to operate the dam under USBR's general guidance.

The Eastside hydrofacility consists of a small forebay (approximately 2 surface acres) that ends at a trash rack where water is supplied to the penstock which leads to the powerhouse. Slide gates regulate flow into the forebay from Upper Klamath Lake. The amount of water diverted into the facility is dependent on season, Upper Klamath Lake elevations, and downstream water needs. The maximum diversion is 1,200 cfs. At flows less than 300 cfs the plant cannot operate. The penstock is 12 ft (3.7 m) in diameter and roughly 3,000 ft (914.5 m) in length. Shortly before its end, penstock water flows into a surge tank (26 ft diameter by 26 ft high; 7.9 m x 7.9 m) and then back into the penstock terminus which is connected to the turbine unit. The Eastside powerhouse has a single vertical-shaft Francis turbine with a maximum generating capacity of 3,200 kilowatts at 138.5 revolutions/minute (rpm). The facility has a head height of 47 ft (14.3 m). Water is discharged from the turbine into a small tailrace area that is connected to the Link River.

At the Westside hydrofacility, water is diverted at the Link River dam into a 5,575 ft (1,699.2 m) long open-canal, earthen waterway before entering a penstock which feeds the turbine. The canal is approximately 40 ft (12.2 m) wide and 8 ft (2.4 m) deep. The penstock is 6.5 ft (2 m) in diameter and 140 ft (42.7 m) long. Maximum diversion is 250 cfs. The powerhouse only operates with flows between 200 and 250 cfs, and typically diverts 230 cfs. The Westside powerhouse has a double runner horizontal Francis turbine. Maximum generating capacity is 600 kilowatts at 300 rpm. The turbine discharges directly into Link River. A diagram of the Link River sampling sites and the vicinity is included in Figure 1b.

## MATERIALS AND METHODS

Fish entrainment sampling was conducted in the canals at the Eastside and Westside facilities. Two sampling methods were used in each canal; one for larval fish and another for juvenile and adult fish. The juvenile/adult sampling devices were specifically designed to capture fishes $\geq$75 mm in fork length (FL). For comparison with previous New Earth larval sampling in the A-canal (Gutermuth et al. 1998), all larval and juvenile/adult sampling was divided into weekly time periods (sample weeks). Dates included in weekly sample series are listed in Table 1.

Juvenile/adult sampling was designed to sample 100 percent of the canal flow. Larval collections sub-sampled the canals by netting fish from defined canal cell/depth positions within the Eastside and Westside canals. All collected fish were considered to be irreversibly entrained. Sampling generally took place as scheduled, however sampling equipment, construction/repair, or hydropower operational constraints occasionally caused interruptions.

Both larval and juvenile/adult sampling methods were designed to collect information regarding those parameters which might potentially affect entrainment. These included: water quality, time of day or year, depth of fish in the water column, lake elevation, Link River flow/spill, canal flow rate, weather, and lunar phase. To obtain water quality data, readings of water temperature, specific conductivity, pH, and dissolved oxygen concentration (DO) were collected in each canal at least once weekly during the early daytime period (generally between 07:00 and 09:30). Either a Hydrolab instrument (H20® or Datasonde3®) or a 6000UPG® unit from YSI was used to obtain these measurements. During larval sampling (March-July), water quality readings were collected three times weekly in each canal. Larval sampling water quality data was collected during the morning (M; 00:00-08:00), daytime (D; 08:00-16:00), and evening (EV; 16:00-00:00) samples. Continuous (hourly) water temperature data was also collected using an ONSET Optic thermograph located on the Eastside trash rack.

LARVAL FISH ENTRAINMENT

Larval sampling on the Eastside and Westside diversion canals employed the same drift net as that used in previous A-canal larval drift studies (Harris and Markle 1991; Markle and Simon 1993; Gutermuth et al. 1998). The drift net was 0.45 $m^2$ (1.0 m x 0.45 m internal dimensions) at the mouth, 8.2 m in length, and was constructed of 1,000 micron Nitex mesh (Figure 2). Within each sample week (Table 1), each day was further divided into three, eight hour diel segments, which represented morning (M; 00:00-08:00), daytime (D; 08:00-16:00), and evening (EV; 16:00-00:00) drift conditions. The morning diel sample period targeted primarily pre-dawn (dark) hours. To ensure representative sampling within each canal cross section, the width of the sampled canal was split into three canal cells (West - W, East - E, and Middle - MD) which were further divided by depth (Shallow - S; <1m and Deep - DP; $\geq$1m). During drift net sampling, the net was suspended, with its mouth perpendicular to the flow, at the selected canal cell and depth. A calibrated General Oceanics flowmeter (GO model 2030R6) with a low speed rotor was attached to the net frame in order to measure the water velocity (ft/s or m/s) at each sample. Within each diel period, a pre-determined random sampling schedule required collection of three drift samples (2 S and 1 DP) from both Eastside and Westside canals. When all drift net sets were performed as planned, a total of 18 weekly samples were collected (3 in each of 3 diel periods) from our two drift net sites.

The duration of each drift net sample varied from 2 to 20 minutes, depending on the algal density within the water column. As the algae load increased, sampling time decreased. After each sample, the net was raised from the water and washed with a portable water pump to remove excess algae. The remaining biomass concentrated at the cod-end and was measured in a calibrated five gallon bucket. Volume and the relative composition of algae versus zooplankton (as a percentage) were measured. The concentrated sample was then diluted with clean water and poured onto a 1.2 m square 1,000 micron mesh sorting screen, where it was rinsed with water from a low pressure spray nozzle. This technique filtered algae, zooplankton, and some of the smallest larval fish (<10 mm Total Length - TL) through the screen. All larval fish $\geq$10 mm TL remained on top of the screen. Sampled larval fish were collected in glass vials and preserved in 75% ethanol for later identification in the laboratory. Labels with information on location, date, time, and sample number were placed in each vial.

In the laboratory, all larval fish were identified to the nearest species and measured (TL), whenever possible. In 1998, in addition to collecting length data, the developmental stage of larval suckers (flexion mesolarvae, postflexion mesolarvae, or metalarva) was also recorded. It was thought that this developmental stage data might provide new knowledge about the time of spawning for adults of these species, as well as general information about the relative distance of spawning from the Link River canals. All larval suckers were grouped in an unknown sucker (SU) category. Overall difficulties in identifying ethanol preserved small fish also made it necessary to group several other species. *Gila* species (blue chub (*Gila coerulea*) and tui chub (*G. bicolor*)) were sometimes grouped as *Gila* unknown

(GU). Minnows which were unidentifiable between *Gila* and fathead minnows (*Pimephales promelas*) were categorized as cyprinid unknown (CY). Larval marbled sculpin (*Cottus klamathensis*), slender sculpin (*C. tenuis*) and Klamath Lake sculpin (*C. princeps*) were most often placed in an unidentified sculpin category (SC). In 1998, delays in laboratory classification were minimized (which made identification easier) and our sampling techniques were slightly modified to be less damaging to collected fish than in 1997. Consequently, the incidence of unidentified fish in 1998 was greatly reduced relative to 1997. A list of sampled fish species and their associated field codes is displayed in Table 2.

<u>Eastside larval drift</u>

Eastside drift net sampling was conducted at a site 60 ft (18.3 m) south of the Link River dam at approximately 42º 14.05' N latitude and 121º 48.01' W longitude. The top corners of the drift net frame were attached to a cable pulley system which stretched across the diversion canal. By using two opposing 200 lb (90.7 Kg) winches, the net was maneuvered and deployed within the specified canal cell and depth for sampling. Canal dimensions at the drift collection site were approximately 65 ft (19.8 m) wide at the surface, 30 ft (9.14 m) wide at the bottom, and 14 ft (4.3 m) deep (Figure 3). Due to the topography of the Eastside diversion canal, the designated deep depth of the eastern cell (ED) was too shallow for sampling. Consequently, only five Eastside positions were sampled.

<u>Westside larval drift</u>

Westside drift net sampling was conducted from a bridge located 300 ft (91.4 m) south (downstream) of the Westside canal headgates at approximately 42º 13.92' N latitude and 121º 48.09' W longitude. The net was manually deployed with two ropes attached to the net's frame. Each net set was made by attaching the ropes to the bridge cable railing. Canal dimensions at the bridge were approximately 42 ft (12.8 m) wide at the surface, 18 ft (5.5 m) wide at the bottom, and 8 ft (2.4 m) deep (Figure 4). At the Westside sampling site, all six canal cell/depth locations were available for sampling.

<u>Drift net velocities</u>

During drift net sampling, a flowmeter velocity estimate was taken with each sample to determine the volume of water filtered and the catch of fish per volume (fish or su/$m^3$). However, at both larval sampling sites, canal flows and sample velocities varied through the sample season. Occasionally, sample velocity readings were outside of the expected range for each canal cell/depth given the particular canal flow. These outlier values were either out of the optimum (and expected) range of the General Oceanics flow meter (0.2 to 3.2 ft/s; 0.06 to 0.98 m/s), or were obviously erroneous compared to other similar canal cell/depth and flow readings. To determine catch per unit effort (CPUE) values (e.g., su/$m^3$), it was necessary to replace these erroneous velocity readings with reasonable estimates based on previous data from within the same canal cell/depth and flow range. To estimate missing velocity data points, the average velocity (ft/s) and flow (cfs) from each position (ES, ED, WS, WD, MS, and MD), on each canal (Eastside and Westside) were determined after obvious outliers were excluded. The product of the average canal cell/depth velocity and the sample canal flow rate (for the outlier velocity) divided by the average canal flow rate then yielded a reliable velocity estimate for use in calculation of our sample volume.

<u>Drift net data analysis</u>

Larval sampling during this Link River entrainment study provides information on larval drift timing and magnitude for trend analysis. Drift netting results also allowed for a preliminary review of how larval sucker density changed in relation to the time of day or area of the canal sampled. However, due to our limited sampling effort and lack of sample replication, extrapolation of our results to estimate total canal entrainment of larval suckers, was not considered appropriate.

Due to the patchy larval fish distribution within the Eastside and Westside canals, our sample catch estimates (numbers/$m^3$), by species, were initially transformed (log, square-root, and square transformations) in an attempt to normalize the data. However, these transformations failed to normalize the data distribution (which included many catches of zero and occasional large catches) and were not used. Instead, all of our larval catches were standardized for effort (CPUE values determined) by dividing the total catch by the volume of water filtered in each sample. The sample water volume ($m^3$) was estimated by multiplying the flowmeter velocity (m/min) by the area of the net's mouth ($m^2$) and the sample duration (min). Using both the density of suckers ($su/m^3$) and of all fish ($all/m^3$) as dependent factors, the Kruskal-Wallis test (non-parametric test on group median values) was used to analyze the effects of: 1) Period of the day (diel period; M, D, or EV), 2) Area of the canal (canal cell; W, MD, or E), and 3) Depth of net set (depth; S or DP), on the catch rate.

JUVENILE/ADULT FISH ENTRAINMENT

The juvenile/adult collection facilities were designed to sample 100 percent of the flow through each of the Eastside and Westside canals. Though the initial intention was to sample each powerhouse tailrace, 100 percent sampling was determined to be difficult or impossible due to the configuration of the riverbed in the tailraces. Consequently, alternative sample locations, within the canals and prior to the powerhouses, were chosen. These alternative sample sites were approved by the Service (D. Young and S. Lewis of the Service, Klamath Falls Ecosystem Office) in the fall of 1996. Completion of the Westside sampling facility, which employed a live-box for holding collected fish, allowed sampling to begin on April 24, 1997. The Eastside fyke net structure, which could not employ live-boxes because of the sampling structure's configuration and the high velocity of sampled flows, was finished in early July (Figure 5). Eastside sampling commenced on July 14, 1997.

During weekly sample periods, the fyke nets were deployed for 48 continuous hours at sites on the Link River Eastside and Westside canal forebays (Figure 1b). The weekly net sets usually began on Monday morning and ended on Wednesday morning. However, staff schedules, equipment, and/or operational conflicts sometimes interrupted or shortened the sample duration. The nets were checked by removing them from the water and sampling their contents twice daily, in the early morning and the evening (dusk). This sampling schedule resulted in the acquisition of two day and night samples from each sample week and allowed for a determination of diel changes in fish movement. However, due to the changing photoperiod throughout the year, the length of diel period soak times varied seasonally. Additional net checks were sometimes necessary to ensure fish survival in the Westside live-box or to clear the nets of their debris/algae load.

Biological data collection included; number of fish caught, fish species, fork length (FL), disposition (alive/dead), and a record of physical condition (e.g., fungus, parasites, lamprey wounds, etc.). Within each sampling week, all collected suckers were measured (FL) and identified to species when possible. Since the three Upper Klamath Lake catostomid species are difficult to identify at small sizes, most suckers <100 mm FL were classified as unknown suckers (SU). A random sub-sample of up to 25 lengths from collected non-target fish species were measured weekly at each canal sample site. After representative lengths were recorded, remaining fish were separated by species and put into three size categories (<75 mm, 75-150 mm, and >150 mm FL). These categories were designated because of the 75 mm FL target size of fish identified for screening in the 1996 BO (USFWS 1996). When collected, all large catostomid mortalities (>150 mm FL; e.g., the shortnose sucker, Lost River sucker, and Klamath large-scale sucker (*Catostomus snyderi*)) were preserved and transferred to the USBR for research purposes. In 1998 and 1999, a representative sample of smaller suckers (<150 mm FL), was preserved in 75% alcohol for identification by Oregon State University (OSU) researchers. At OSU, these specimens were viewed under x-ray and a vertebral count was made. In combination with an inspection of the gill raker number and morphology, the vertebral count was then used to positively classify most of these catostomids to species.

The original Service approved study plan required that both Eastside and Westside fyke nets be designed to capture fish $\geq$75 mm FL. However, fish <75 mm FL were commonly collected at both sampling locations. On the Westside, where the net tapered to a live well, fish <75 mm FL were particularly common. Though the effectiveness of these nets at capturing fish <75 mm FL is not known, fish between 35 and 75 mm FL were measured, identified, and included in this report. Consequently, our Westside catches, and their species composition, include relatively more small fish than do Eastside catches.

All live suckers and redband trout (*Oncorhynchus mykiss newberrii*) were released into Upper Klamath Lake at Moore Park Marina. If water quality was poor (low DO and high temperature) and a large number of suckers were caught, then these fish were occasionally transported further north in the lake to Hagelstein Park. All other live fish were released downstream into the Link River.

Eastside juvenile/adult sampling

On the Eastside of the Link river, a system of fyke nets was constructed at the entrance of the penstock (42$^{o}$ 13.91' N latitude 121$^{o}$ 48.03' W longitude) to capture fish $\geq$75 mm FL. The Eastside structure consisted of two steel frames that held eight fyke nets each (4 rows of 2 nets side by side; Figure 5). Each of the 16 nets were 3.9 ft x 5.9 ft (1.2 m by 1.8 m) square at the mouth and approximately 6 ft (1.8 m) long. They were constructed of 1.5 inch stretch measure (38 mm) mesh at the mouth and 0.75 inch stretch measure (19 mm) mesh at the cod-end. For sampling, the fyke net frames slid down in front of the penstock entrance with dual electric winches (5 ton weight capacity) that were mounted on a 22 ft (6.7 m) high lift tower. The fyke nets themselves were closed ended because installation of a live-box was not possible at the site.

During sampling, the fyke nets were emptied by turning them inside-out, with an attached rope, onto a 1.2 $m^2$ sorting screen. To allow for determination of fish depth at capture, collected fish were placed into buckets according to the net number in which they were caught. After a short sample collection period (usually less than 0.5 hr) the nets were re-deployed or stored at the set's end.

Eastside efficiency: To determine the efficiency of the Eastside fyke nets, two methods were used. In the first of these (efficiency testing), a technique for deployment of fish at depth, like that used by Mueller and Hiebert in Blue Mesa reservoir, Colorado (1994), was used. To test the ability of the nets to collect and retain fish, paper bags were filled with up to thirty fin-clipped live fish of 60-150 mm FL, and small rocks. Because live fish in the desired test size range were frequently unavailable, we also used dead fish and radish (which have neutral buoyancy) releases in order to calculate net efficiency. A minimum of 135 marked fish were released in each efficiency test. Paper bags with fish enclosed were then either tossed gently in front of the deployed fyke net structure, or lowered via a pulley system, to a depth of >5 ft. The paper bags broke approximately 20 ft in front of the fyke nets after a sharp jerk from an attached rope, or occasionally on impact with the canal surface water. On one occasion, in an effort to minimize the variability in measured collection efficiency, bags of marked dead fish were lowered to a point 2.5 ft in front of the middle section of the Eastside and Westside banks of 8 fyke nets (Figure 5). In all efficiency testing, when the fyke nets were retrieved for sampling, the number and lengths of the recaptured fish were recorded as well as the test canal flow and lake level. The Eastside fyke net test efficiency was finally determined by dividing the number of recaptured fish by the number released.

In a second test (retention testing), to determine the ability of the Eastside net to retain fish which were already collected, three dead fish specimens were fin clipped and placed in each of the 16 individual fyke nets (48 total fish). At the end of the sample period, the number of marked fish remaining in each net were counted. The ratio of the number remaining to the number marked provided information on the ability of the nets to retain fish once they had entered the nets.

Westside juvenile/adult sampling

On the Westside Link River diversion canal, a large net was suspended from a steel lift frame with cables and block-tackle assemblies in order to sample the entire canal. The net was located approximately 328 ft (100 m) in front of the Westside penstock at 42$^{o}$ 13.85' N latitude 121$^{o}$ 48.12' W longitude. Steel baffle walls were constructed on both sides of the canal in front of the net structure to funnel water into the net. These walls increased the velocity of the water at the net mouth so that small fish could not easily escape. The net measured 11.0 ft x 11.5 ft (3.4 m by 3.5 m) tall at the mouth and was 60 ft (18.3 m) long with an inner 6 ft (1.8 m) cod-end that extended 1 ft (0.3 m) beyond the net and into the aluminum catch box. The first 30 ft (9.1 m) net section consisted of 1.5 inch stretch measure (38 mm) mesh, the following 30 ft (9.1 m) was sewn with 1.25 inch stretch measure (32 mm) mesh. The cod-end was connected 4.9 ft (1.5 m) from the end of the net and was constructed with 0.75 inch stretch measure (19 mm) mesh. The net attached to an aluminum slotted catch box that was 15 ft (4.57 m) long and equipped with an inclined bottom plate to slow flows into the attached live well. The live well was approximately 3.3 ft (1 m) long and 1.9 ft (0.60 m) deep (Figure 6).

During Westside net checks, it was not necessary to raise the net and stop fishing. The live well was simply raised and fish were dip-netted for evaluation.

Westside efficiency: To measure efficiency of the Westside net in catching fish, a total of 147 live fish (60-135 mm FL) were measured, marked with fin clips, and released approximately 0.5 meters ahead of the net structure. Fish were released for the test by pouring them from buckets just ahead of the Westside net mouth on November 5, 1997 during a standard Westside flow of 230 cfs.

Juvenile/adult data analysis

Since the number of sampled juvenile/adult fish varied with the duration and volume of water sampled, it was necessary to standardize these factors by calculating a CPUE index. The CPUE value used in this report is the number of fish, or suckers, collected per volume of sampled water. The volume sampled ($ft^3$) was calculated by multiplying the average daily flow (cfs) from sample days on the Eastside and Westside canals (provided by PacifiCorp), by the duration of the sample(s). Due to the large amount of water regularly filtered, our sample volume was then typically expressed in terms of 100 acre feet (4,356,000 $ft^3$ per 100 acre feet).

The following calculations were performed with our 48 hour sample collection data to estimate weekly Eastside and Westside entrainment indices for all fish and all suckers. The total weekly catch and total sampled canal water volume, from two consecutive weeks (or in rare cases, two sample weeks separated by one non-sample week), were summed. The combined catch, by species, from these two adjacent sample weeks, was then divided by the corresponding two week total sample volume. This resulted in an average species density estimate (number/100 acre ft) for use between our samples (the non-sample period). These species specific values were then multiplied by the weekly non-sampled volume to estimate species specific entrainment for the time between samples. To determine the total weekly entrainment (extrapolated estimate), our week's sampled catch was added to the calculated "between sample estimate." When periods between samples exceeded one week, the sampled week alone was used to determine species specific density estimates for extrapolation through that sample week. Entrainment indices were not estimated during extended periods where no sampling occurred (e.g., when Westside canal operations were quite erratic during the summer of 1997). By summing the weekly extrapolated entrainment estimates, we were able to determine total entrainment indices for the period of study (starting April 21, 1997 on the Westside and July 17, 1997 on the Eastside). These long-term entrainment estimates may be slightly conservative because they do not include entrainment estimates for the occasional periods when the canals were flowing but not sampled (e.g., due to inconsistent and sporadic use during hydropower equipment testing and maintenance or post-shutdown).

## RESULTS AND DISCUSSION

### LARVAL DRIFT NETTING

The primary objective of our larval drift netting was to determine Eastside and Westside canal larval sucker entrainment rates and the timing of larval sucker drift (both within and between seasons). A secondary objective was to increase our knowledge about the natal origin of larval suckers, and the factors which may affect their health and growth. Therefore, we also collected larval length and development stage data. Presently there are two known groups of spawning Upper Klamath Lake suckers; those that spawn at springs along the eastern Upper Klamath Lake shoreline, and which may spawn as early as mid-February and as late as June (Klamath Tribes 1996), and those which ascend the Williamson or Wood Rivers to spawn (generally in mid-April through mid-June). Given the ability of these fish to spawn in both lake and river conditions, it is possible that additional spawning beds exist in unidentified locations. Consequently, during warm temperatures, when development of larval fishes is very rapid, the collection of small (<15 mm TL) larval fish (mesolarvae or earlier stage) may be evidence that nearby, undocumented spawning beds exist.

In order to compare larval sucker growth rates between the two study years, and to review the effects of water quality on these fish, we have graphed average weekly larval fish lengths. We were especially interested in 1997 larval growth rates because length frequency information reported by Oregon State University (OSU) indicates that growth of larval/early juvenile suckers was negatively impacted by poor water quality in that year (Simon et al. 1998).

Eastside

1997: In 1997, a total of 819 larval fish were caught in 180 samples (60 M, 60 D, 60 EV), taken during weeks 11-31 (Mar. 10-Aug. 3; Tables 3A & 4A-1997). Total fish lengths ranged from 6 mm TL to 140 mm FL, of which 98.5 % were <30 mm TL. The largest fish entrained was a tui chub (140 mm FL) caught on July 25. Numbers caught and percent composition by species were: suckers, 110 (13.4%); unidentified chubs (*Gila* sp.), 404 (49.3%); fathead minnows, 75 (9.2%); unidentified cyprinids, 44 (5.4%); yellow perch (*Perca flavescens*), 7 (0.9%); sculpin (*Cottus* sp.), 11 (1.3%); marbled sculpin, 2 (0.2%); unidentified species, 154 (18.8%); and fish >30 mm FL, 12 (1.5%) (Table 4A-1997; Figure 7).

Our first sucker collection was made during week 20 (May 12-18) and suckers were consistently caught from week 21-26 (May 19-June 29; Table 4A-1997). The last larval sucker was collected from the Eastside during week 29, on July 18. The highest total catch of larval suckers per week was during week 22 (May 26-June 1) when 26 suckers were caught during a moderate flow period (average flow of approximately 700 cfs; Figure 8). However, our highest individual and average weekly sucker CPUE values (su/m$^3$) were estimated during weeks 23 and 24 (June 2-15) when Eastside flows were low (approximately 350 cfs; Figure 9). In the morning of week 23 (June 2-8) 0.341 su/m$^3$ were sampled and during the evening of week 24 (June 9-15), our highest 1997 catch rate (0.379 su/m$^3$) was recorded. During the following weeks (25-26; June 16-29), the average daily flow increased from 500 to 660 cfs and weekly catch rates fell to 0.057 su/m$^3$ and 0.047 su/m$^3$, respectively (Figure 9). Individual sample CPUE values, as well as average weekly CPUE values, are listed in Appendix Tables A1-1997 and A1-1998 for the Eastside and Appendix Tables B1-1997 and B1-1998 for the Westside.

1998: In 1998, a total of 894 larval fish were caught in 135 samples (45 M, 45 D, 45 EV) taken during weeks 17-31 (Apr. 20-Aug. 2; Tables 3A & 4A-1998). Total fish lengths ranged from 6-45 mm TL, and 99% of these were <30 mm TL. The largest fish entrained was a Klamath Lake sculpin (45 mm TL) on July 31. Numbers caught and percent composition by species were: suckers, 245 (27.4%); unidentified chubs, 71 (7.9%); fathead minnows, 32 (3.6%); unidentified cyprinids, 6 (0.7%); yellow perch, 4 (0.4%); sculpins, 494 (55.3%); marbled sculpin, 4 (0.4%); unidentified species, 35 (3.9%); and fish >30 mm FL, 3 (0.34%) (Table 4A-1998; Figure 7).

Our first collected sucker was taken during week 18 (Apr. 27-May 3), however, sucker numbers remained low through week 23 (June 1-June 7; Figure 8). During early June, six 12-13 mm sucker larvae were categorized as early development flexion mesolarvae. The rest were categorized as post-flexion or later development. From week 24-27 (June 8-July 5), suckers were the most abundant species collected and made up approximately 80% of the catch. The highest total weekly catch of suckers occurred during week 24 (June 8-14) when 178 suckers were collected (Table 4A-1998; Figure 8). Our last two suckers were caught during week 29 on July 17.

In 1998, both the highest total catch period for suckers and the highest average weekly larval sucker CPUE value occurred during week 24 (June 8-14). In week 24, we collected both our highest individual sample density of suckers (0.876 su/$m^3$ - during the day-time sample period; Appendix Table A1-1998), and calculated the 1998 maximum average weekly sucker CPUE value (0.231 su/$m^3$). During this week, Eastside flows averaged approximately 830 cfs. When average Eastside flows later dropped to 460 cfs, during week 27 (June 29-July 5), the mean weekly sucker CPUE value rose to a second peak of 0.194 su/$m^3$ (Figure 9). This suggests that there may be an inverse relationship between larval catch rates and Eastside flows, but we do not have adequate data to substantiate this observation. The effect of the sample diel period, canal cell, and depth on CPUE values, is reviewed in the section entitled: "Statistical evaluation of Eastside and Westside drift."

<u>1997-1998 Comparison</u>: Only two larval fishes were captured in 54 samples collected during early season 1997 drift net sets (weeks 11-16; Mar. 10-Apr. 20; Table 4A-1997). Because these two fish were not larval suckers and did not appreciably add to the season's total of Eastside collected larval fish, 1998 sampling was delayed until week 17 (April 20). In 1998, the Eastside catch was greater than that in 1997 even though the number of samples was less. Compared to catches in 1997, in 1998 sculpins and suckers increased in abundance and proportion of the catch, while *Gila* sp. decreased (Table 4A; Figure 7). The total catch of larval Eastside suckers in 1998 (245) was over twice that collected in 1997 (110), and the seasonal percent composition of suckers was 27.4% in 1998 versus 13.4% in 1997. Average weekly sucker CPUE values in 1998 were also considerably greater than the highest 1997 CPUE values (Figure 9). Larval sculpins, primarily from week 19 (May 4-10) in 1998, made up 55.3% of the total season catch. During 1997 sculpins made up only 1.3% of the season's catch.

Though 1998 larval suckers were sampled two weeks earlier than in 1997 (April 29 versus May 16), more larval suckers were collected in May 1997 than in May 1998 (before week 24). The 1997 peak for total catch of Eastside suckers occurred during week 22 (May 26-June 1). In 1998 this peak occurred two weeks later during week 24 (June 8-14; Figure 8). Despite the difference in the collection time for these totals, the highest average weekly CPUE value for suckers, in both years, was calculated during week 24 (June 8-14). In 1998, however, our larval sucker catches were distinctively bimodal with a second peak in CPUE values, and total collected sucker larvae, occurring in week 27 (June 29-July 5). It is possible that these modes correspond to peaks in spawning of the two endangered sucker species, however, peak captures of both Lost River and shortnose suckers have been less pronounced than in previous years (USGS 1997). Based on the timing, we cannot determine if these larval suckers were from "Eastside spring" or "river" parental stocks. Though collection of larval suckers in 1998 was generally more protracted, our last larval sucker collections were sampled during week 29 (July 14-20) in both years.

In 1990 Harris and Markle (1991) reported that peaks in abundance of larval fishes coincided with the full moon. In our study, no predictable relationship between the lunar cycle and sucker abundance was evident. While maximum larval sucker drift occurred during the full moon in 1998, it did not in 1997. The new and full moons are included in Figures 8 and 9, however, the already problematical relationship between total sucker catch, CPUE, and canal flows makes determining the effect of the lunar cycle on larval sucker abundance impracticable.

A comparison of 1997 and 1998 Eastside sucker length frequencies indicates that, with the exception of week 29, average weekly Eastside sucker lengths were greater in 1997 than in 1998 (Figure

10). The average increase in size (TL) of Eastside suckers during June (weeks 23-27) was 2.3 mm in 1998 compared to 7.9 mm in 1997. Rapid increases in larval size over this 1997 time period may have resulted from generally higher spring 1997 water temperatures (Figure 10). It is likely that larval suckers were spawned later in the comparatively cooler 1998, and that their mean size, at comparable dates to those in 1997, increased slowly over the period because of the continuous arrival of small larval suckers. Higher 1998 spring lake outflows may have also decreased the travel time between the points of larval emergence and our sampling sites, and may have resulted in our sampling of relatively younger (smaller) larval suckers. It is interesting to note, however, that by week 29 the average size of 1998 spawned suckers was greater than that of 1997 suckers from the same time. This may indicate a reduction in 1997 growth rates caused by poor water quality as suggested by Simon et al. (1998), or that larger suckers were no longer susceptible to our drift nets.

Westside

1997: During 1997, at the start of larval sampling (weeks 11-16; Mar. 3-Apr. 20), the Westside canal was shut down for repair. Consequently, the Westside 1997 larval sampling season ran, with several interruptions for canal maintenance, from week 17-31 (April 21-Aug. 3; Table 3B-1997). During this time, a total of 505 larval and juvenile fish were caught in 111 drift net samples (36 M, 39 D, 36 EV; Tables 3B & 4B-1997). Collected fish lengths ranged from 7 mm TL to 80 mm FL, and of these, 93.3% were <30 mm TL. The largest fish entrained was a blue chub (80 mm FL) caught on June 18. Numbers caught and percent composition, by species, were: suckers, 25 (5.0%); unidentified chubs, 272 (53.9%); fathead minnows, 27 (5.3%); unidentified cyprinids, 5 (1%); blue chubs, 2 (0.4%); yellow perch, 8 (1.6%); sculpins, 6 (1.2%), unidentified larval species, 126 (25%); and fish >30 mm FL, 34 (6.7%) (Table 4B-1997; Figure 7).

Our greatest larval catches occurred in June (weeks 23-26) and 5.6% of these were suckers (Figure 8). Our first sucker larvae was caught during week 20 (May 15) and the last was collected during week 28 (July 11). One 13 mm TL larval sucker, from June 9, was categorized in the flexion mesolarvae stage, the rest were considered more developed. Our maximum total catch of suckers occurred during week 25 (June 16-22) when 10 suckers were sampled. During this same week, we calculated both our individual peak sample CPUE value (0.276 su/m$^3$ in the morning period) and our highest average weekly CPUE value for suckers (0.040 su/m$^3$; Appendix Table B1-1997). A second smaller peak in sucker abundance occurred during week 27 (June 30-July 6) when the average weekly CPUE was 0.007 su/m$^3$ (Figure 9).

1998: In 1998, a total of 168 larval fish were caught in 117 samples (36 M, 39 D, 42 EV) taken during weeks 16-29 (Apr. 13-July 19; Tables 3B & 4B-1998). Total lengths ranged from 6 mm TL - 84 mm FL, and 95.8% of these were <30 mm TL. The largest fish was a tui chub (84 mm FL) which was sampled on June 26. Numbers caught and percent composition, by species, were: suckers, 32 (19%); unidentified chubs, 50 (29.8%); fathead minnows, 7 (4.2%); unidentified cyprinids, 14 (8.3%); yellow perch, 6 (3.6%); sculpins, 35 (20.8%); slender sculpin, 1 (0.6%); marbled sculpin, 2 (1.2%); unidentified species, 14 (8.3%); and fish >30 mm FL, 7 (4.2%) (Table 4B-1998; Figure 7). Our first larval sucker was sampled during week 24 (June 8), and our last larval sucker was caught during week 29 (July 17).

In 1998, our week 25 peak (June 15-21) in total sucker catch (Figure 8) coincided with both our maximum individual CPUE value (0.137 su/m$^3$; morning sample) and our greatest average weekly CPUE value (0.025 su/m$^3$; Figure 9; Appendix Table B1-1998). After week 29 (July 13-19) the Westside was shut down and larval sampling was concluded.

1997-1998 Comparison: Over the two years, Westside canal drift net sampling determined that larval suckers were primarily present during weeks 23-29 (June 1-July 20). Though our catch of all larval fishes was greater in 1997 (505 total) than in 1998 (168 total), the total number and proportion of suckers collected was greater in 1998. The peak in Westside larval sucker abundance was in mid-June (week 25) in both sample years, however, larval suckers were first sampled as early as week 20 (mid-

May) of 1997 and week 24 (mid-June) of 1998. In both study years, the Westside canal closed when larval sucker catches were diminishing, but still present. The latest larval suckers sampled were captured during week 29 (July 13-19) of 1998. Annual trends in our average Westside sucker CPUE values indicate that the magnitude of catches was similar between study years but that larval suckers were more abundant later in 1998 than in 1997 (Figure 9). No clear relationship between sucker CPUE values and the lunar phase was evident (Figures 8 & 9).

A comparison of 1997 and 1998 Westside larval length frequency histograms indicates that larval suckers were generally slightly larger during comparable weeks in 1997 versus 1998 (Figure 10). In 1997, however, the average size of collected Westside suckers did not uniformly increase as it did in 1998.

In 1998, a greater variety of fish species were sampled on the Westside than in 1997. Especially noticeable was the preponderance of sculpins collected during week 19 (May 4-10; Table 4B-1998). The majority of these were certainly Klamath Lake or marbled sculpins, both of which are documented spring spawners (Markle et al. 1996). However, during week 22 (May 21, 1998), a small age-0 fish (24 mm TL) was identified as a slender sculpin. This is interesting because slender sculpins have, based on the collection of ripe/spent females, been previously documented as fall spawners (Markle et al. 1996). Capture of this May age-0 slender sculpin either indicates that 1) growth of age-0 sculpin through the first winter is minimal, 2) time to hatching (from spawning) may be very long, or that 3) spawning may not be confined to the fall as previously suggested. Our collections of ripe slender sculpin during spring adult collections supports the last of these interpretations.

<u>Eastside versus Westside and A-canal</u>

Over the two years of study, Eastside and Westside larval collections followed similar trends in terms of species composition and timing. Larval suckers were much more abundant at both sites during 1998 than in 1997, and catches were generally more diverse in this year, as well. However, catch rates and total numbers sampled were higher in the Eastside canal (Figure 8; Table 4). Larval fish were potentially more easily entrained into the relatively high volume Eastside canal, or our Westside sampling may not have detected the presence of infrequent larval species.

Figure 9 illustrates that there may be an inverse relationship between Eastside sucker CPUE values and canal flows, yet fluctuations in Eastside canal flow made it difficult to discern actual changes in drift density from changes that were flow related. For instance, in 1997 maximum entrainment of sucker larvae (both total catch and CPUE values) occurred during weeks 24-25 (June 9-22) in the Westside and A-canals (Gutermuth et al. 1998), however, Eastside sucker catch rates decreased substantially in week 25 when the Eastside canal flows were increased from approximately 340 to 505 cfs (Figure 9). Though we have identified periods of consistently abundant sucker larvae, due to the potential relationship between Eastside canal flows and our CPUE values, our relatively small larval sampling effort, and to uncertainties concerning the spatial abundance of larval suckers within the canal and water column, the magnitude of larval drift in the Link River canals cannot be accurately quantified with the present data.

As mentioned previously, past researchers have noted a correlation between larval sucker abundance and the lunar phase. Harris and Markle (1991) and Markle and Simon (1993) noted peaks in larval sucker abundance that coincided with the full moon. Gutermuth et al. (1998) found larval sucker abundance to peak during new or full moons. However, in this study no clear relationship was found between the abundance of larval suckers and the lunar cycle.

A comparison of our 1997 average weekly larval sucker lengths, with those collected in the A-canal (Gutermuth et al. 1998), reveals that larval suckers of similar sizes were collected at all sampling sites, but the average size of these fish often decreased between sample weeks. Reported 1997 decreases in average weekly sucker lengths may have resulted when: a) A subset of small fish were caught and larger juveniles were somehow unavailable to the net (e.g., they had grown in size and were able to avoid capture or had suffered differential mortality - with large age-0 suckers more vulnerable to un-ionized ammonia; Simon et al. 1998); Or, b) Arrival of another group of new, very young larvae decreased the mean length of all those collected. Our collection of 118 sucker larvae <u><</u>13 mm TL in 1998, seven of which were in the early developmental "flexion mesolarvae" stage, suggests that very young suckers arrive at the Link River. This is approximately the size of fish which are collected at the mouth of the Williamson River (D. Simon, OSU research assistant, pers. comm.). With the high water temperatures that predominate in Upper Klamath Lake, these fish must have been transported very rapidly by water currents from known river or Upper Klamath Lake spring spawning sites, or must have been spawned in relatively close proximity to our sample sites. Sucker length frequency histograms by week, from each year and canal site are included in Appendix Figures A1 (Eastside) and B1 (Westside).

<u>Statistical evaluation of Eastside and Westside drift</u>

Based on two years of spring drift monitoring and a literature review (Bienz and Ziller 1987; Buettner and Scoppettone 1990; Harris and Markle 1991; Gutermuth et al. 1998), the time of year (week) when larval suckers were present, was relatively consistent. While our density calculations indicated that peaks in drifting suckers could be predicted to occur during weeks 21-28 (May 18-July 12), a statistical comparison of weekly drift density is not presented because the results indicated similarities between week-long sample period densities that were otherwise unrelated (e.g., there is no correlation between week 17 and week 27 sucker drift densities even though these were homogenous in a multiple range test). In this section, we present only those statistical tests where the density of larval suckers (or all/$m^3$) might be explained for in ecological terms.

Since our data (the catch of suckers or all fish; su/$m^3$ or all/$m^3$), included many zero catches and could not be made to fit to a normal distribution with data transformations, the non-parametric Kruskal-Wallis test was used to compare the sample group median values. Specifically, the Kruskal-Wallis test was run to determine which of the following parameters: depth (shallow, <1 m; or deep $\geq$1 m), canal cell (E;MD;W), and diel portion of the day (M;D;EV) had a significant effect on the dependent variable, catch of suckers (or all fish) per volume (su/$m^3$ or all/$m^3$). Box-and-whisker plots were then used to determine which median values were significantly different within test groups. To substantiate our results, one-way and multifactor ANOVA tests were run on the same parameters. In most cases the parametric and non-parametric tests were in agreement. The results of these tests are summarized in Table 5 and discussed below.

Overall, the time of day (diel period) was statistically significant in predicting the density of larval drift. The highest density of all drift organisms, including suckers, was during morning hours (00:00-08:00; Table 5). Since all of our morning samples were purposefully collected before dawn, this distribution indicates that drift organisms were more common during dark hours. Our results indicate that canal drift density decreased within diel periods in the following order: M, EV, D.

The greatest density of canal drift organisms was generally found to be in the surface stratum. On the Westside, the density of larval suckers was statistically greater at the surface (<1 m) than within the deep stratum. While the density of all Westside drift organisms (all/$m^3$) was consistently greater in the shallow stratum, the difference was not statistically significant in 1998 (Table 5). On the Eastside, the average density of shallow stratum sucker larvae was always greater than the average deep stratum density, but the difference was not statistically significant. As water passes the Eastside and Westside canal headgates it is mixed and any stratification of larval fishes is probably temporarily reduced. We suspect that the relatively close proximity of our Eastside larval sampling site to the headgate (80 ft) resulted in our collection of fish which were more evenly distributed in the water column than they would have been otherwise. On the Westside, our larval drift sampling occurred well downstream from the headgate (300 ft; Figure 1b) at a location which probably allowed for natural stratification of larvae to take place again. What is more, our minimal deep stratum sampling effort (one of three samples in each diel period) probably also limited our ability to statistically discern true differences in drift density between the depths.

Though we were unable to statistically verify differences in drift density between canal cells, some trends were evident. In both study years, the west cell of the Eastside canal had a higher mean density of drifting fishes than the other canal cells. Similarly, the eastern cell of the Westside canal usually held the highest density of larval within the Westside canal (Table 5). Though the reasons that larval fishes exhibited this distribution pattern are complex, depending on interactions of daytime and nighttime behavior patterns, two simple interpretations are made. The eastern cell of the Westside canal may have attracted more larval fishes because this cell provided the most riparian cover. Use of Westside canal overhanging vegetation for cover would be similar to the behavior of larval suckers observed in the Williamson River. In the Williamson, larval suckers are seen to congregate around shore-line vegetation in the day, and to drift in high velocity mid-stream areas at night (L. Dunsmoor, Klamath Tribes fisheries biologist, pers. comm.). The frequently occupied western cell of the Eastside canal was not vegetated or shaded, but water velocities were consistently high there. Since measured velocities in the high catch (su/$m^3$ and all/$m^3$) cells of both canals were generally greater than in other cells (Figures 3 & 4; Table 5). It is possible that higher velocities themselves have attracted migrating larval fishes.

JUVENILE/ADULT SAMPLING

The large fyke nets employed to sample 100% of Eastside and Westside canal flows required substantial effort to install and maintain. Through the duration of the study and the inclement weather during which sampling occurred, these net structures were occasionally subject to mechanical failure. Powerhouse breakdowns and the need to control water levels in Upper Klamath Lake and the downstream Lake Ewauna sometimes required closing of the canals and sampling. Table 6 summarizes, by year and week, the amount of time the fyke nets were fished, the water volume sampled (100 acre ft), and operational or sampling constraints which were encountered.

Juvenile/adult fishing effort was standardized by expressing results as number/100 acre ft. Sampled water volume is also reported in these terms. The relationship between the weekly volume sampled (100 acre ft), in our approximately 48 hr sample periods, and Eastside canal flow (cfs) is depicted in Appendix Figure A2. The unit conversion, between flow (cfs) and volume sampled (100 acre ft), is described in the following two equations:

a. FLOW (cfs) = 25.57(VOL in 100 acre ft) - 3.9977 Adjusted $R^2$ =0.9924
b. VOL (100 acre ft) = 0.0388 (FLOW in cfs) + 0.3524

Eastside

1997: The Eastside fyke net sampling site became operational on July 14, 1997. Sampling occurred during 23 of 24 weekly collection periods (96% of the time). Sampling was not conducted during week 43 (Oct. 20-27) when the fyke net hoist was under repair. In 1997, approximately 44,010 acre feet of Eastside canal water was sampled during 1,061 hours of netting (Table 6). A total of 43,719 fish (93% non-suckers) and 3,391 suckers (7%) were collected from July 14 to Dec. 28, 1997. In the field, these catostomids were identified as: 2% Klamath largescale, 11% Lost River, 31% shortnose, and 56% of undetermined species. Approximately 91% of all handled suckers were age-0 or age-1 fish ($\leq$150 mm FL; Figure 11a). By reviewing the size of collected suckers in comparison with monthly sucker length frequency histograms, we determined that approximately 54% of the $\leq$150 mm FL suckers were age-0 and 46% were age-1. Appendix Table A2-1997 summarizes Eastside sucker collections by species and size class category: <75, 75-150, and >150 mm FL.

The catch of suckers was generally highest starting in late July through mid-September (weeks 31-37). The maximum Eastside total sucker catch (1,164 suckers; Figure 12A-1997) and highest average weekly CPUE for suckers (59.2 su/100 acre ft; Figure 13A-1997) both occurred in a shortened sample (36.8 hr) during week 33 (Aug. 11-17). This was a week after the highest calculated 1997 CPUE value for all fish (51 day and 378 night - fish/100 acre ft; Figure 14A-1997) was measured (week 32; Aug. 4-10). Our 1997 maximum catch of all fish occurred during week 44 (Oct. 28 – Nov. 2; 4,858 fish handled), when flows were relatively high (3,130 acre ft /48 hr sample; 818 cfs). Our second highest weekly catch was taken during week 34 (Aug. 18-24). The catch at that time (4,795 fish; Figure 12A-1997) included primarily blue and tui chubs (>50%), marbled sculpins (21%), and suckers (12%), during a medium flow period (2,570 acre ft/48 hr sample; $\geq$ 650 cfs; Appendix Figure A2). Appendix Table A3-1997 details weekly catches of all fish by species and size.

Catches of rainbow trout followed a reverse trend from most of our collections in 1997. A total of 92 rainbow trout were collected (0.2% of the catch), and of these, 95% were collected between October and December. In December alone, 56 (61%) redband trout were collected. Over the sample year, captured trout ranged in size from 68 to 270 mm FL and averaged 156 mm FL.

On the Eastside in 1997, there appears to be a positive correlation between our total catch and canal flows during the late summer period (from approximately late-July through October; weeks 31-43; Figure 12A-1997). During this same period, our highest CPUE values (for suckers and all fish) were recorded during relatively low flows (<1,500 acre ft or about 400 cfs during the sample period; Figures 13A and 14A –1997). During the remainder of the sampled year, increased flows did not appear to result in increased total catches.

When reviewed in conjunction with our water quality data, it is evident that periods of low flow and high total catch were preceded and overlapped by an extended period of decreased water quality (7 weeks of DO <6 mg/l and temperature $\geq 21^{o}$C; Figure 15A-1997). On the Eastside, the highest sucker and fish collection period began in early August, approximately 3 weeks after morning DO concentrations were <6 mg/l and a week after they fell to nearly 4 mg/l. It is probable that many of our sampled fish had been incapacitated by these poor water quality conditions and resulting stressors (e.g., *Columnaris* outbreaks) that precipitated an extensive fish kill in August 1997 (Buettner 1997; pers. obs.). These stressed fish may have been trying to escape poor lake conditions or were weakened to the extent that they were drawn into the nets even during relatively low Eastside flows. The observed inverse relationship between flows and our highest CPUE values, suggests that fish were not uniformly distributed in the nearby waters of southern Upper Klamath Lake.

1998: A total of 51 weekly samples (98% of 52 total possible weeks) were collected in 1998. During week 43 (Nov. 19-25) the canal closed for maintenance and sampling did not occur (Table 6 - 1998). From the first of 1998 through December, approximately 135,000 acre feet of Eastside canal water was sampled during 2,422 hours of netting. A total of 58,395 fish (83.5% non-suckers) and 11,556 suckers (16.5%) were collected during this period. Identification of suckers to species was especially difficult because the majority were <75 mm FL, however, OSU researchers evaluated a sub-sample of 215 small suckers with x-ray technology. Of these catostomids, 1% were Klamath largescale, 29% were Lost River, 68% were shortnose, and 1% were unidentifiable. In total, 99.8% of our Eastside handled suckers were <150 mm FL (Figure 11a). Of these, only 1% were estimated to be age-1 fish. A total of 26 large catostomids (>150 mm FL) were identified in the field to be 42% Klamath largescale, 15.5% Lost River, 38.5% shortnose, and 4% unidentifiable. Appendix Table A2-1998 provides weekly sucker catches by week and size category.

Catches of suckers were low throughout the reporting period ($\leq$5 per 48 hr sample) until mid-July when sucker CPUE values began to increase ($\geq$0.2 su/100 acre ft). The maximum Eastside total sucker catch of 2,980 suckers was recorded during week 37 (Sept. 7-13; Figure 12A-1998), a week after the highest average weekly sucker CPUE value (140 su/100 acre ft; Figure 13A-1998) was estimated. This highest sucker catch corresponded to the highest flow (2,630 acre ft/ 48 hr sample; 668 cfs) during the peak sucker entrainment period. Though the catches of all fish were also high during this maximum sucker catch period, the highest total catch (17,660 fish; Figure 12A-1998) and CPUE value for all fish (635 fish/100 acre ft = 56 day and 883 night - fish/100 acre ft; Figure 14A-1998) were both estimated when canal flows increased (800 to 2,800 acre ft; 200 to 712 cfs) during week 42 (Oct. 12-18). The catch at this time consisted primarily of fathead minnows (43%) and chubs (tui chub = 24% and blue chub = 31%). All suckers comprised only 1% of the catch.

A total of 69 rainbow trout were collected (0.1% of the catch) in 1998 Eastside catches. The majority of these (93%) were collected outside of the summer period (summer period defined as - June 22 - Oct. 1), while the Link River spill was relatively high and water temperatures were <15$^{o}$C. The 1998 catch of rainbow trout was much more protracted than in 1997 and only two were sampled in December. In 1998, 32 trout (46%), including a large 490 mm specimen which was in very poor condition (infected with fungus and parasites), were collected during March and April. Over the year, trout ranged in size from 72 to 490 mm FL and averaged 130 mm FL. Appendix Table A3-1998 details weekly fish catches by species and size.

During most of 1998, sucker and all fish CPUE values (Figures 12A-14A: 1998) showed little correlation with Eastside canal flows. Starting in July, however, both catch rates (su and all fish/100 acre ft) and total catches, appeared to expand as flows increased. Contrary to our 1997 observations, we did not calculate these highest CPUE values during low Eastside canal flows. Upper Klamath Lake water quality had not been so degraded as in 1997, and water quality conditions were improving. During peak 1998 sucker catch rates (week 36; Aug. 31- Sept. 6), pH values were <9.5, water temperatures were $\geq$24$^{o}$C and DO was consistently >5 mg/l (Figure 15A-1998). Despite these relatively better conditions and the fact that no fish kills were reported in 1998, we cannot entirely discount the affect of water quality on fish movement in this year. Three weeks before our peak sucker CPUE estimate (week 33; Aug. 10-16), morning DO levels had dropped to <3 mg/l (Figure 15A – 1998). As Gutermuth et al. (1998) reported for trap netting in the A-canal, it is possible that the effects of this earlier poor lake water quality could have affected the distribution of fish at our sampling site until well after the event.

1999: A total of 40 weekly samples were collected in 1999 (93% of 43 total possible weeks before sampling was concluded. One sample week was missed (week 10; March 1-7) while the canal closed for maintenance, and sampling during weeks 23 and 24 (May 31-June 13) was reduced in duration (12 hr in week 23) or cancelled (week 24) because of a large bloom of diatoms (*Fragilaria* sp.) and filamentous green algae (*Cladophora* sp.) which clogged our nets and caused them to tear under water pressure. From early 1999 through week 43 (Oct. 24), approximately 98,020 acre feet of Eastside canal water was netted during 1,897 hours of sampling (Table 6 - 1999).

A total of 30,286 fish (79.5% non-suckers) and 7,824 suckers (20.5%) were collected during this period. Identification of suckers to species in 1999 was again very difficult because the majority were <75 mm FL, and nearly all (99.9%) were $\leq$150 mm FL. By using monthly size categories to identify sucker cohorts, we estimated that 2% of the 1999 collected suckers were age-1 fish and that 98% were age-0. Results from OSU identification of 125 of these catostomids indicated that 2% were Klamath largescale, 34% were Lost River, 61% were shortnose, and 3% were of undetermined species. Only five suckers >150 mm FL were handled on the Eastside in 1999. Of these, one (20%) was a Klamath largescale, and two each (40%) were Lost River and shortnose suckers (Figure 11a). Appendix Table A2-1999 provides weekly sucker catches by week and size category.

Our 1999 catostomid catch rates were low ($\leq$0.25 su/100 acre ft) and sporadic through mid-July (week 29; July 12-18). From this point forward our sucker catch rates consistently increased until their week 37 (Sept. 6-12) peak of 126 su/100 acre ft (Figure 13A-1999). This highest sucker CPUE value corresponded to our maximum total weekly collection of 4,066 suckers (Figure 12A-1999) and occurred as the sampled volume of Eastside canal water increased from 1,000 to 3,000 acre ft (250-750 cfs) between our sample weeks. Our maximum total catch (5,080 fish) was also highest at this time, though this number included a catch of 80% suckers. The year's maximum CPUE value for all fish was estimated in week 42 (Oct. 11-17) at 152 fish/100 acre ft (= 251 day and 80 night - fish/100 acre ft; Figure 14A-1999). Interestingly, this high CPUE week for all fish was considerably lower than either of the two previous years and included a day time CPUE value that was higher than any measured in this study. Because canal flows had been high since mid-Sept. it is possible that moving fish were more equally distributed between sample weeks in 1999. This catch had the highest species diversity sampled in this 2.5 year study; Species included blue chub (82%), fathead minnow (5%), Klamath Lake sculpin (4%), marbled sculpin (2%), suckers (4%), and tui chub (3%).

A total of 50 rainbow trout, 0.1% of the year's catch (the same percent as in 1998), were collected in all sample months but July and August. Summer water temperatures in 1999 were cool (maximum = 22.7 vs. 25.1$^{o}$C in 1998 and were <21$^{o}$C in all but one morning water temperature reading) and 24 trout (48%) were collected during the summer period (June 22-Oct. 1) compared to only 6-7% collected during the summers of 1997 (when sampling began on July 14) and 1998. The relatively large Eastside catch of trout in the summer of 1999 may serve as a relatively un-biased indicator of "high" quality water conditions in this year compared to the previous two study years. This in turn may help to substantiate that large-scale fish movements often take place out of Upper Klamath Lake regardless of water quality conditions. Over the year, trout ranged in size from 64 to 250 mm FL and averaged 122 mm FL. Appendix Table A3-1999 details weekly fish catches by species and size.

Our total catch rates and all fish CPUE values started to increase in late summer 1999, however the increases were slightly delayed in 1999 compared to 1998, and especially to 1997. During the 1999 period of high CPUE values, from mid-August to mid-October, our CPUE values (su and all fish/100 acre ft) and our total catches appeared to rise and fall with canal flows (Figures 21A-14A: 1999). As in 1998 (and opposite 1997), our highest CPUE values and catches were during high flows ($\geq$3,000 acre ft/48 hr sample; $\geq$750 cfs). In early-mid August to early September, there appears to have been an influx of suckers, and then, starting in mid-September, other species dominated the catches. As Gutermuth et al. (2000) reported for A-canal entrainment in 1998, there appears to have been some periodicity of movement for different age-0 species as they traveled through the Eastside sampling station in monotypic waves during 1999 (Appendix Table A3-1999). During this time, pH values were <9 and 6-7 weeks past their summer time high, water temperatures were $\leq$18$^{o}$C and DO was consistently >8 mg/l. The sampled fish in 1999 appeared to be in the best condition (e.g., lowest incidence of parasites - *Lernaea* sp. or trematodes, wounds, fungus, shortened operculum, etc.) of any sample year.

<u>Eastside efficiency</u>

Efficiency testing: Efficiency of the Eastside fyke net in catching and retaining live fish (that were released at various distances ahead of the net) was tested in six spring or fall trials when temperatures were considered low enough so that handling stresses would not impact fish recoveries. In these tests, recapture rates varied from 23% at a flow of 421 cfs (1,670 acre ft/ 48 hr sample period) to 71% at a flow of 562 cfs (2,220 acre ft/48 hr sample period). During the highest flow evaluated (1,095 cfs; 4,280 acre ft/ 48 hr sample period), the recapture rate was 60%. In two releases of marked dead fish, 28% were recaptured when fish were liberated 20 ft ahead of the fyke nets during a flow of 942 cfs (3,690 acre ft/48 hr sample period), and 90% were recaptured when released 2.5 ft ahead of the nets during a flow of 569 cfs (2,240 acre ft/48 hr sample period). Though Eastside fyke nets covered the mouth of the penstock, these efficiency tests indicate that we did not sample all entrained fish.

Retention testing: Through two retention tests, where dead fish were physically placed in the nets before deployment, 94% (at 510 cfs; 2,010 acre ft/48 hr sample period) and 98% (at 1028 cfs; 4,020 acre ft/48 hr sample period) of the marked fish remained in our nets when checked. Once fish were collected by the Eastside fyke nets, they most frequently remained until sampled.

Together these tests indicate that fish which entered our nets were generally retained, but that a proportion of unsampled fish did pass into the Eastside penstock. Because the opening of the penstock reclined slightly from the vertical fyke net structure, it is possible that fish could have escaped collection by moving with water flow which rushed over the submerged nets and into the penstock. For instance, in one efficiency test where dead fish were accidentally released on the surface approximately 2 ft ahead of the nets, only 50% were recovered. We speculate that surface oriented fish may have been less effectively collected than those at depth. At lower Eastside canal flows (e.g., <400 cfs; 1,590 acre ft/48 hr sample period), our low efficiency and subsequent increased catches after flow augmentation, suggest that fish congregated in the forebay during this time. Though we have been unable to determine a consistent relationship, the efficiency of the Eastside fyke nets may have varied depending on a number of variables including: the volume of water which passed through the penstock, the elevation of the lake, water quality, time of year (e.g., behavior of fish), etc. A summary of our Eastside efficiency testing is included Appendix Table A4.

Over the study years, we collected velocity readings (ft/s) during a variety of canal flows from individual submerged Eastside nets (numbers 1-16; Figure 5). The results of this testing indicated that the velocity at the inside nets was higher than those on the outside. The middle four inside nets (numbers 4, 6, 11, and 13; Figure 5) were in the highest velocity areas. When compared, individual net catch rates were similar in distribution to the measured velocity pattern. The highest velocity nets collected the most fish. These velocity measurements appeared to provide a better indication of where fish would be collected than the fishes' distribution in the water column.

Eastside summary

On the Eastside 22,771 suckers and 132,400 other fish were handled during 5379.6 hours of sampling between July 14, 1997 and October 20, 1999. This sampling accounted for approximately 277,036 acre ft (27%) of the total 1,026,557 acre ft of water which moved through the Eastside canal during the study period.

The Eastside sample site was closed much less frequently during the study than the Westside. Consequently, despite data standardization difficulties necessitated by fluctuating Eastside flows and less than 100% netting efficiency, Eastside entrainment sampling provided better chronological coverage of the study period than did Westside sampling.

Collections (size and species) and timing of entrainment were quite different in 1997, when samples contained many sucker cohorts, than in 1998 and 1999. During 1997, we sampled 49% age-0, 44% age-1, and 7% older suckers. Overall, 1998 and 1999 were similar in water quality and in Eastside entrainment trends. In these two years, age-0 suckers comprised over 98% of the sucker collections and suckers comprised 19-20% of the total catch. In 1997 suckers comprised only about 7% of the total Eastside catch.

During 1997, maximum total catches and catch rates occurred earlier and were more protracted than in the other sample years. Sucker catch rates in 1997 were lower and peaked sooner, during early and mid-August, than in other years. Maximum 1997 CPUE values, for suckers and all fish, were estimated during low flow periods and probably indicate that fish were moving to avoid poor water quality conditions. In 1998 and 1999, maximum sucker CPUE values were measured in late-August through early-September and total fish catch rates peaked in October. Though 1998 sucker CPUE values were similar to those estimated in 1999, the duration of high catches and the estimated number of entrained suckers was greater in 1998. Similarly, 1999 total Eastside CPUE values and total catches were not as high as those measured in 1998.

During 1998 and 1999, CPUE values and total catches trended along with canal flows during the late summer and early fall (approximately mid-August to November). Maximum "all fish" CPUE values in these two years were recorded during moderately high flows in mid-October. Similarly, efficiency testing resulted in few fish recoveries at Eastside flows of less than approximately 400 cfs (1,600 acre ft/48 hr sample period). From these results, and a review of CPUE values with flow, it appears that there may be a threshold Eastside flow below which most fish are not entrained.

Though their contribution was variable, shortnose suckers were the most abundant Eastside catostomid collected. Lost River suckers were consistently second in abundance and Klamath largescale suckers were rare (<5%). Within the large sucker group (>150 mm FL), however, Klamath largescale suckers were relatively more abundant and comprised approximately 10-40% of the large catostomids. This is breakdown for large suckers is similar to the sucker composition noted in USBR post-irrigation A-canal salvage reports (Peck 2000).

A total of 211 redband trout, generally less than 200 mm FL, were caught on the Eastside during the study. Most of these (92) were collected in 1997, and may have been compromised by poor water quality conditions in that year. In all years, the timing of trout collections appeared to be related to water temperatures. In 1997, the warmest study year, 61% of the collected trout were taken in December. During 1998 and 1999, the catch of trout was more protracted. In the coolest water year, 1999, trout were taken in Eastside nets in all sampled months but the warmest months of July and August.

Westside

1997: Westside fyke sampling began during week 17 (April 21, 1997) and continued with minimal interruption until week 29 (July 14) when the canal was closed for powerhouse repairs and the need to maintain Upper Klamath Lake levels. Consistent sampling (48 hr) was reinitiated again in early November when hydropower flows were resumed (Table 6). A total of 21 weekly samples were collected on the Westside in 1997 (74% of 35 total possible weeks). In 1997, approximately 17,140 acre feet of Westside canal water was sampled during 920.5 hours of netting. A total of 27,744 fish (98.7% non-suckers) and 359 suckers (1.3%) were collected between April 21 and Dec. 28, 1997. Our field biologists identified the catostomids to be: 1% Klamath largescale, 11% Lost River, 31% shortnose, and 57% of undetermined species. Approximately 93% of all handled Westside suckers were age-0 or age-1 fish ($\leq$150 mm FL; Figure 11b). By reviewing the size of individual "<150 mm FL suckers" in comparison with monthly age class size bounds (defined by reviewing bi-weekly sucker length frequency histograms), we determined that approximately 53% were age-0, and that 47% were age-1. This was virtually the same breakdown as was noted on the Eastside. Appendix Table B2-1997 summarizes Westside sucker collections by species and size class category: <75, 75-150, and >150 mm FL.

Sucker catch rates were steady at 1-4 su/100 acre ft from April through mid-July (week 28; July 7) when the Westside canal began a four week closure. The highest Westside total sucker catch (137 suckers; Figure 12B-1997) and highest average weekly CPUE (21.4 su/100 acre ft; Figure 13B-1997) were measured during a shortened sample period directly after reopening of the canal in week 36 (Sept. 1-7). The maximum catch of all fish (8,963) occurred during the same time (week 36; Figure 12B-1997), and was primarily composed of chubs (blue chub = 7% and tui chub = 73%), fathead minnows (16%), and suckers (all species combined = 2%). This highest catch, coincided with the highest CPUE (2,498 day and 811 night - fish/100 acre ft; Figure 14B-1997) measured for all fish. Appendix Table B3-1997 details weekly catches of all fish by species and size.

Catches of redband trout on the Westside were minimal in 1997. Only eight trout were collected (0.03% of the total catch). Three were taken in May and early June and none were collected during the summer (June 22-Oct. 1), or when water temperatures exceeded 17$^{o}$C. A total of five trout (63%) were sampled during the month of December 1997. Over the year, sampled trout ranged in size from 55 to 150 mm FL and averaged 112 mm FL. Appendix Table B3-1997 details weekly fish catches by species and size.

During the operational period, Westside 1997 flows, catches, and catch rates were relatively steady. The minor variations depicted in the volume sampled in early 1997 (Figures 12B-14B 1997) resulted as our sampling crew developed a standard sampling routine. The highest catch periods (and catch rates) directly followed canal closures (e.g., Sept. 1-7 and Nov. 3-9) and probably represented collections of fish that had been "stacking up" or residing in the still canal. Throughout the highest Eastside sucker catch period (generally from Aug.-Sept. 1997) the Westside canal was rarely flowing. Consequently, correlations between Westside catch rates and environmental conditions could not be determined during this period.

1998: Relatively few 1998 Westside canal samples were missed due to water control needs or powerhouse repairs. In this year, the canal was operational and sampled during 44 of 52 (85%) possible sample weeks. From January through December, approximately 38,390 acre-feet of Westside canal water was sampled during 2,072 hours of netting (Table 6). A total of 72,090 fish (91.3% non-suckers) and 6,554 suckers (8.7%) were collected during this period. Identification of Westside suckers to species was especially difficult because nearly all (99.9%) were age-0 or age-1 fish (<150 mm FL; Figure 11b). Based on a review of sucker length frequency histograms, only 1% of the "<150 mm FL suckers" were estimated to be age-1 (1997 cohort) suckers. From these fish, 75 suckers were sub-sampled for x-ray evaluation by OSU biologists. These were determined to be: 1% Klamath largescale, 33% Lost River, 61% shortnose, and 4% suckers of undeterminable species. Appendix Table B2-1998 summarizes Westside sucker collections by species and size class.

With the exception of a post-shutdown period in early May, Westside sucker catch rates remained low (0.0-0.8 su/100 acre ft) from December through mid-July (week 29; July 13-19). Then, as sucker catch rates increased to 2.4 su/100 acre ft (week 30, July 20-26), the Westside canal closed for three weeks. When the canal reopened, sucker catch rates continued to increase. The largest 1998 Westside total sucker catch (2,281 suckers; Figure 12B-1998) and highest average weekly CPUE (245 su/100 acre ft; Figure 13B-1998) were then measured the second week after canal reopening (week 35; Aug. 24-30). This was also the highest sucker CPUE value recorded during the entire study. Since these measures of sucker abundance peaked well after reopening of the canal and continued to increase from the first post-closure sample, we believe that they were not a result of collecting fish which had resided in the canal during the time that the Westside turbine was not operating. A second, though lower peak in sucker catch rates coincided with our maximum total fish catch rate (610 day and 1,497 night - fish/100 acre ft; Figure 14B-1998) and total catch (10,479 fish) in week 38 (Sept. 14-20; Figure 14B-1998). At this time, the catch consisted primarily of blue chubs (29%), fathead minnows (43%), tui chubs (14%) and suckers (12%). Appendix Table B3-1998 details weekly catches of all fish by species and size.

In 1998, 17 trout were collected on the Westside. This represented <1% of the year's entire catch. During 1998, water temperatures in the spring remained cooler than in 1997 and trout were collected more widely throughout the year (Figure 15B-1998). A total of four rainbow trout (24%) were collected during July when morning water temperatures were >23.5$^{o}$C. Over the year, trout ranged in size from 73 to 195 mm FL and averaged 115 mm FL.

As in 1997, flows in the Westside canal were relatively steady and high catches (and catch rates) were recorded after canal closure periods. However, an increase in both sucker and total catch rates was also evident during the late summer period (weeks 33-40, Aug. 10-Oct. 4) and appears to independent of canal closures. This is also the time-period where increased CPUE values were measured during Eastside canal sampling.

1999: In 1999, as in 1997, the Westside canal was closed to maintain Upper Klamath Lake levels during much of what was the key fish movement period in 1998 (Aug. 10-Oct. 4). The Westside canal was operational and sampled during 32 of 43 (74%) possible weeks in 1999 before this study was concluded. From January through October, approximately 29,350 acre-feet of Westside canal water was sampled during 1,556 hours of effort (Table 6). A total of 52,494 fish (99% non-suckers) and 462 suckers (1%) were collected during this period. As in 1998, identification of Westside suckers was extremely difficult because of the abundance of small (<150 mm FL) suckers (99.8%; Figure 11b). Of the "<150 mm FL" suckers, a review of length frequency histograms indicated that approximately 81% were age-0 and 19% were age-1. This distribution indicates that the 1998 sucker cohort was still extant, and that these continued to move through after the peak late-summer catch period. As on the Eastside however, if the Westside canal had been open through August and September, the percentage of collected age-1 suckers would have diminished. From these small catostomids, 23 were sub-sampled for x-ray evaluation by OSU biologists. These were determined to be: 39% Lost River, 48% shortnose, and 13% suckers of undeterminable species. Appendix Table B2-1999 summarizes Westside sucker collections by species and size class.

Westside sucker catch rates varied in 1999 as they did in early 1997, and several CPUE values exceeded 0.8 su/100 acre ft in January and mid-May (Figure 13B-1999). It is possible that hypothesized movement of age-0 fish from Upper Klamath Lake continues at a reduced rate outside of the primary late-summer/early-fall movement period or that age-1 fish may also tend to move downstream. By week 27 (June 28-July 4), sucker catch rates had begun a steady increase until their maximum of 17.4 su/100 acre ft was reached during week 32 (Aug. 2-8) and the canal was closed to help maintain Upper Klamath Lake levels. Based upon 1998 Westside sampling results, and on similar increasing 1999 Eastside sucker catch rates, we speculate that a peak in 1999 Westside sucker CPUE values would have been measured during this seven week shutdown period. When the canal reopened in week 40 (Sept. 27-Oct. 3), sucker catch rates had decreased to 12.3 su/100 acre ft, but our collection of all fish (9,253; Figure 12B-1999) and our total fish CPUE values (810 day and 1,087 night - fish/100 acre ft; Figure 14B-1999) were both at their maximum levels. Because our nets were set more than 48 hours after the Westside canal had reopened, we believe that these values were generally indicative of abundant fish moving through our sample site rather than of a post-shutdown collection peak. At this time, the catch consisted primarily of native fishes: blue chubs (83%), tui chubs (8%), and suckers (1%), and some exotic fathead minnows (7%). However, non-native fathead minnows and yellow perch made up a large proportion of the entire year's species composition (41% and 10%, respectively). Appendix Table B3-1999 details weekly catches of all fish by species and size.

In 1999 the total Westside catch of trout was only 9 fish (<1%). A total of seven of these trout were collected in April (78%) and one each was taken in June and July. Water temperatures were at the year's maximum (23$^{o}$C), during week 29 (July 12-18), when the last trout was collected. In this year, Westside trout ranged in size from 65 to 160 mm FL and averaged 96 mm FL. Due to the extended 1999 summer closure of the Westside canal (Aug. 9 – Sept. 25) it is difficult to compare the potential for catching trout in this summer to our other sample years.

Westside canal flows and catches fluctuated modestly in 1999 with the exception of one anomalous high catch in week 5 (Jan. 25-Jan 31). In early July, our catches increased dramatically and sucker catch rates began an upward trend until canal closure in week 33 (August 9-15). At this time, DO concentrations remained well above a 4 ppm threshold of concern for warm-water fishes (Davis 1975) and there is no evidence to indicate that fish were moving to escape degraded water conditions (Figure 15B-1999). Our late-summer early-fall increase in catch rates appears to be representative of a similar fish movement pattern seen in 1998, and possibly 1997, in the Link River canals and the A-canal (Gutermuth et al. 2000). Our last sample (week 40; Sept. 27-Oct. 3), collected over 60 hr after the Westside canal was re-opened, to minimize shut-down effects, remained elevated as fish and suckers continued to move through.

Westside efficiency

A total of 140 fish (60-135 mm FL) were recaptured from 147 that were released approximately 0.5 m ahead of the Westside fyke net on November 5, 1997. The same range of sizes was collected as was released. This testing, which equated to a 95% efficiency estimate, was representative of our Westside efficiency during standard 230 cfs flows. Appendix Figure A3 depicts the length frequency distribution of marked and then captured Westside fish.

Westside summary

On the Westside canal, a total of 7,675 suckers and 152,328 other fish, were handled during 4548.5 hours of netting between April 21, 1997 and October 20, 1999. This sampling accounted for approximately 84,882 acre ft (28%) of the total 300,136 acre ft of water which moved through the Westside canal during the study period.

The Westside canal, with its consistent (230 cfs) flows and efficient fyke net, would have been the preferred sampling site to determine Link River canal entrainment rates, however, variable flows and operational constraints limited the time period of data collection. During the late-summer maximum period of sucker entrainment, Upper Klamath Lake levels were often maintained in close coordination with Klamath River water releases from other areas within Reclamation's Klamath Project. Consequently, the Eastside canal, which utilizes remotely controlled water release gates and allows PacifiCorp to "instantaneously" manipulate lake outflows, was frequently used as the sole release of water from the Link River canals. In all three summers, during important late-summer water conservation periods, when limited water was available for downstream release, the Westside was closed. In 1997 and 1999, the closure periods appeared to coincide with periods of most active fish movement

(Figures 13B & 14B: 1997-1999) and an approximately bell shaped curve of CPUE values was not seen. In 1998 however, the Westside was operational during much of the most active period of fish entrainment. During week 36 (Aug. 31-Sept. 6) of 1998 the maximum sucker CPUE value (245 su/100 acre ft; Figure 13B-1998) of the entire study was calculated. Because of Westside closures in other years, we cannot directly compare maximum CPUE values between years.

Overall, trends on the Westside followed those noted on the Eastside except that the Westside was closed for almost the entire period of peak 1997 entrainment. One notable exception is that during the winter and spring of 1999, the catch rate for Westside suckers remained relatively high. Since this was not seen in the winter and spring of 1998, we infer that the 1997 sucker cohort may have experienced substantial mortality. Furthermore, the slow but steady rate of age-0 sucker entrainment in winter-spring 1999 may indicate that sucker movement out of the lake may continue past the recorded peak late-summer interval. A similar proportion of sucker age classes (49% age-0, 44% age-1, and 7% older suckers in 1997 and relatively few age-1 and older suckers, thereafter) were collected at both Westside and Eastside collection sites. Shortnose suckers (31-61%) were always determined to be the most abundant catostomid collected, followed by the Lost River sucker (33-39%; Figure 11b).

A total of 34 trout were sampled on the Westside during the study. The collection of these fish seems to be related to water temperature as catches were more protracted in 1998 and 1999 than in the warmer 1997. Though there were exceptions, trout catches were generally lowest during the high water temperatures of July and August.

Through 2.5 years of sampling, Westside catch rates were often very high following re-opening of the canal after a period of closure. During closures, fish likely continued to enter the Westside forebay (in front of our fyke nets) but could not leave until the canal was operational again. However, the factors which affect the level of post-closure increase are unclear. In September of 1997 (week 36), we sampled within 24 hours of a four week shutdown period and our catch, especially our daytime CPUE value, was much greater than usual. In other post-shutdown sampling, where the interval between reinitiating canal flows and sampling was greater, catch rates were not consistently augmented. In July 1997 and November 1998, post-shutdown Westside catches were not identifiably greater than other collections (Figures 14B 1997-1999). However, in the post-shutdown periods which occurred during the late summer period (August-October), even if the sample was taken several days after flows were returned (e.g., 7 days after flows were restored in week 45 (Nov. 3-9, 1997) or 3 days after start-up in week 40 (Sept. 27-Oct. 3, 1999)), our catches seemed to be elevated. Though we cannot determine the amount of time that it is required for Westside catch rates to level out after re-opening of the power canal, it is apparent that during high catch intervals (e.g., late summer) the post-canal closure period of high catches is extended.

Species composition and timing

Sucker species composition: Upper Klamath Lake catostomids can be extremely difficult to identify based on morphological characteristics. Because classification of small sucker specimens (e.g., < 150 mm FL) can be especially difficult, these fish were usually described as unknown suckers (su) in the field and a sub-sample sent to OSU biologists for positive identification (Figures 11a and 11b). Of the OSU identified suckers, shortnose suckers were the most common (48-68%) and Lost River suckers second most common (29-39%) at both the Eastside and Westside collection sites. Klamath largescale suckers consistently comprised about 1% of the suckers sampled at all sites. Though the sample size was smaller in 1999, there was an increase in the percentage of Lost River suckers sampled in this year at both sites (Figures 11a & 11b). In comparison, Gutermuth et al. (2000) reported a potentially more even distribution between sucker species collected during 1998 A-canal entrainment studies. A sub-sample of x-ray identified 1998 A-canal entrained suckers yielded the following species breakdown: 52% shortnose, 40% Lost River, 1% Klamath largescale, and 6% unidentifiable suckers.

For the largest size class of suckers (>150 mm FL), most fish possessed characteristics by which they could be confidently identified. However, only in 1997 were there substantial numbers of large suckers collected (297 Eastside and 24 Westside). In that year, shortnose suckers comprised 66-79% of the catch, Lost River 13-20%, and Klamath largescale suckers ≤10% (Figures 11a and 11b). Since that time, the relative percentage of Lost River and Klamath largescale suckers has increased, but all of our yearly sucker collections (>150 mm FL) total only 37 fish. The species composition of suckers reported by the USBR in their recent canal salvage reports is quite different. Of the identified suckers (predominantly > 160 mm FL) collected during 1997 through 1999 A-canal salvages, the USBR estimated 53-69% Klamath largescale suckers, 29-42% shortnose suckers, and 2-6% Lost River suckers (Peck 2000). The reason for this disparity is not clear. Klamath largescale suckers may be entrained more often at the A-canal or they may survive through poor summer canal water quality (inferior to that found in Upper Klamath Lake; Gutermuth et al. 1998) more frequently than other sucker species.

Sucker size/age class distribution: Throughout the study, similar sized suckers (same length frequency distribution) were generally sampled at both Eastside and Westside sites. In 1997, various sucker cohorts were sampled. These included a substantial group of age-1 suckers from 1996 and a relatively large catch (7-9% of our catch) of juvenile/adult suckers (>150 mm FL; Figures 11a and 11b - 1997). In 1998 and 1999, sample collections consisted primarily of age-0 suckers with a proportion of age-1 fish. However, it is important to note that numerous age-0 suckers reached our 75 mm FL criteria size by August/September. After a thorough review of monthly length frequency histograms, many fall collected 75-150 mm FL suckers are included in the age-0 cohort.

On the Eastside in 1997, suckers <75 mm FL and 75-150 mm FL were evenly distributed at nearly 45% each. The larger size class of suckers, >150 mm FL fish, made up the remaining 9% of the catch (Figure 11a). During 1997, on the Westside, suckers <75 mm FL made up 41% of the catch. Suckers 75-150 mm FL made up a greater portion of the Westside catch (52%) than on the Eastside, and large suckers, at 7% of the catch, comprised a smaller portion. Overall, this distribution of sizes between our two sample sites could indicate that larger suckers (>150 mm FL) may be more frequently entrained in the Eastside, where inflow water volumes are greater, than on the Westside. However, inferences concerning the relative likelihood of catching different sized fish on the Eastside and Westside is difficult because the Westside canal was closed for a considerable portion of the sampling period.

The Westside net was angled to canal flow and was not subject to high Eastside velocities that may have strained small fish through the net. Consequently, small fish (e.g., <40 mm FL) and suckers (<50 mm FL) were more frequently collected on the Westside than on the Eastside in the spring (pers. obs). Aside from this slight difference in the collection efficiency of very small fishes, the sampling of sucker size-classes was relatively consistent between our sample sites (Figures 16A & B).

In spring of 1997 (April-June), only age-1 suckers (1996 cohort) were collected during Westside sampling (Figure 16B- Fall, winter, and spring (FWS)). By July, Eastside sampling had also commenced and two age classes of suckers, (age-0, those <75 mm FL, and age-1, those 75-150 mm FL) were evident at both sites. Very few larger fish (from older cohorts) were collected at this time. During August and September 1997, suckers from two early age cohorts (the 1996 age-1 suckers and 1997 age-0 suckers) were evident, and many large age classes were also collected (Figures 16A & B). A mixture of sucker size classes (age classes) were caught through April of 1998, but by May of 1998, only the 1997 cohort (approximately ≥75 mm FL and <150 mm FL) were found. For the remainder of the study (from June 1998), only 37 total suckers, from either sample site, were estimated to be older than age-1 (e.g., >150 mm FL). Length frequency distributions from the fall and winter in 1998 and 1999 appear to mirror those of the same period in 1997-1998. The largest proportion of over winter (Nov.- May) entrained suckers was comprised of age-0 fish (Figures 16A & B).

Overall, large suckers were rarely sampled after 1997. These fish may have followed a northern lake distribution as reported by Peck (1999), and were unavailable to our gear, or potentially such large numbers were lost in consecutive 1995, 1996, and 1997 fish kills that they were not available for sampling. Each year age-0 suckers were predominantly sampled in August through October, however, these young suckers continued to be entrained, in decreased numbers, through fall, winter, and spring periods.

Other species: Although suckers were the focus of this 2.5 year study, a large database was also created on the catch of non-target species and their associated environmental parameters. Our 1997-1999 weekly Eastside catches, by species and size category, are listed in Appendix Tables A3-1997, 1998, 1999. Corresponding Westside catches are included in Appendix Tables B3-1997, 1998, and 1999. Histograms which depict the monthly relative abundance of collected species are displayed in two groups: all species, and sub-dominant species (those that make-up $\leq$10% of the sampled numbers). Eastside Figure 17A-Summer displays the 1997-1999 species composition for the summer period and 17A-FWS displays the Eastside species composition during the fall, winter, and spring seasons. Figures 17B-Sp/Summer and 17B-FW display 1997-1999 Westside species composition during the spring/summer and fall/winter periods, respectively.

Our collections at the Eastside and Westside sample sites were similar in species composition, but several factors limit our ability to make direct comparisons: 1) The Westside fyke net was more efficient and collections there included a greater proportion of small species and age-0 fish (35-50 mm FL; e.g., fathead minnows, unknown species of sculpin, yellow perch, lamprey, and unidentified fish in general) than were sampled on the Eastside. This sampling bias probably resulted because of typically lower Westside velocities and the configuration of the Westside fyke net, which despite use of the same mesh size as on the Eastside (1.5 inch stretch measure), more efficiently retained <75 mm FL fish. Collection of these small fishes was most common during spring and early summer sampling. 2) The volume of water flowing through our two sample canals was quite different (e.g., 230 cfs consistently flowed through the Westside while Eastside flows varied from 300 to 1200 cfs). While the Eastside fyke net's efficiency seemed to vary with flow, the exact relationship was unclear. 3) The Westside canal was closed during parts of the highest summer collection periods (August-September in 1997 and 1999). During this time, the Eastside generally operated under low (less than about 2,000 acre ft/48 hr or 500 cfs) or fluctuating flows. 4) This study was primarily designed to determine entrainment rates of suckers. Consequently other fish species have not received the level of quantitative review (e.g., standardization by the volume of water sampled) which has been given to sucker catches. As a result, this information is probably best used for determining trends which may be verified or refuted later through additional studies or analyses.

Our most frequently collected species, in both canals, was the blue chub. Blue chub generally comprised from 40 to 70% of our Eastside and Westside catches except for during the months of July and August when their relative abundance decreased. From November 1997 thorough May/June 1998, blue chub were especially abundant and often made up 80% of the catch. Fathead minnows were the second most frequently collected species overall. From December 1998 through June 1999, however, fathead minnows were often the most abundant species sampled (Figures 17A & 17B). Possibly, at least partly because of the increased Westside efficiency at small sizes, relatively more fathead minnows were collected on the Westside (generally 30% FH), than on the Eastside (generally 18% FH). Tui chub were steadily collected throughout the year. This species was common but never made up more than 18% of our samples. Suckers made up approximately the same proportion of the annual Eastside catch as Tui chub (approximately 15%), but their collections were highest during a relatively short period of time. Suckers contributed up to 50% of our Eastside samples in August and September. In 1998, when the Westside operated through the late summer high catch period, the catch of suckers approached 10% of the year's total versus only 1% in 1997 and 1999. The Klamath lake sculpin and yellow perch, were the last two commonly collected species. These were predominantly caught as age-0 fish in July and August. Several species like the brown bullhead (*Ameirus nebulosus*), speckled dace (*Rhinichthys osculus*), and small sunfish (*Lepomis* sp. - probably very small pumpkinseed sunfish (*L. gibbosus*)) were collected, but rarely.

Overall, the diversity of species collected was least in the winter (November-March). During this period, native species (blue chub, tui chub, Klamath Lake sculpin, and some suckers) and fathead minnows dominated the catches. In April, the diversity of our catch increased as Klamath Lake sculpin and lamprey (unknown species) were consistently sampled. Species diversity was highest in the summer from June through September. However, as Gutermuth et al. (2000) reported, sampling weeks during the late summers of 1998 and 1999, were often dominated by one or two species. These collection peaks corresponded to time intervals when young fish (generally age-0) of one or two species dominated the catch for several days or weeks, then declined. Consistency in our results over three summer periods, and with A-canal findings (Gutermuth et al. 2000) support the hypothesis that a late-summer movement of fishes from Upper Klamath Lake may often occur.

The three years during which this study was conducted were relatively "high" water years where Upper Klamath Lake received greater than average precipitation. Within these study years, 1998 and 1999 were somewhat wetter than 1997. Consequently there is no entrainment information for low water years. Outside of the discrete 1997 fish kill period, the diversity of fish collected in 1998-1999 seemed to be higher than in 1997. Our catches in 1997 were dominated by native fishes (e.g., blue chub and tui chub, and suckers) while catches in 1998 and 1999 included larger numbers of common (yellow perch and fathead minnow) and rare (brown bullhead and crappie) non-native fishes. Over time, native Upper Klamath Lake fishes may have developed a tolerance to sub-optimal water quality conditions that allows them to survive and grow better than other species which have not evolved in the highly eutrophic Upper Klamath Lake.

Some significant trends included: a) Many more destroyed fish were collected in July and August of 1997 than at any other time. Due to poor water quality conditions, most of these destroyed fish were probably dead or moribund when they reached our nets. Consequently, they were often decomposing or deteriorated when examined by our field crews. b) A maximum summer diversity of fishes was collected in July and August 1997 (Figures 17A-Summer and 17B-Sp/Sum). These fish may have been moving to escape poor water quality conditions. However, a comparison of fish health between years is difficult because the Westside canal (which sampled live fish) was closed during most of the late summer 1997 migration period. However, sampled fish in 1998 and 1999 appeared to be in better condition (fewer external parasites and abnormalities) than those from 1997. A similar improvement in the health of 1998 versus 1997 sampled fish, was noted by Gutermuth et al. (2000) during A-canal entrainment sampling. c) Our sampled rainbow trout were generally <200 mm FL and more common outside of the summer months. The summer-time abundance of these fish was relatively greater when water temperatures were cool. For instance, in June 1999, when water temperatures remained $\leq 20^{o}$C, we collected nine trout (18% of the year's total) from the Eastside nets. Trout were rarely caught during July-September. The largest collected rainbow trout was 490 mm FL and was sampled at the Eastside net on April 8, 1998. This fish was in extremely poor condition (parasites on gills and fungus on 30% of the body). d) The abundant yellow perch and unidentified sculpin sampled in July and August of 1998-1999 were primarily age-0 fish. These were just larger than the 35 mm FL criteria established for measuring collected fish. e) Lampreys (*Lampetra* sp.) were relatively common from February through early June, with a peak in collections during April. We speculate that these fish were moving downstream at this time, but cannot suggest a reason. Lamprey were more frequently collected on the Westside than the Eastside, probably because they slipped through the mesh of the Eastside under high flow conditions (Figures 17A and 17B). Due to taxonomic difficulties, we could not identify these lamprey to species. We classified these fish as three primary types: ammocete larvae (small, <170 mm TL, without eyes), small mature fish (<200 mm TL, with eyes), and large mature fish (>230 mm TL, with eyes). Since, little is known about the life history of lamprey in the Klamath basin, and their morphology changes drastically through development, samples were sent to be identified by researchers at OSU and the University of British Columbia.

For reasons that are not clear, the Eastside fyke net appeared to collect more adult sculpin, especially marbled sculpin, than the Westside net. Large catches of Westside sculpin were occasionally made, but these usually consisted of age-0 fish which were captured in spring or early summer. The substrate of the Westside was muddier than the Eastside (pers. obs.), which might have favored Klamath Lake sculpin (Markle et al. 1996), but these, as well as marbled and slender sculpin, were consistently more abundant on the Eastside than the Westside. Since the marbled and Klamath Lake sculpin were most commonly sampled from early spring (Feb.) through August (Figures 17A-FWS & Summer), and were often in ripe condition, perhaps they were attracted to spawning habitat in the Eastside canal. It is noteworthy that Markle et al. (1996) reported Klamath Lake and slender sculpins to be fall spawners. We found that spawning of these species was not confined to the fall as females expressed gametes in the spring. Our slender sculpin catches were highest in November followed by July (Figures 17A-FWS and Summer).

Movement patterns and environmental correlations

Diel fish movement patterns: Though the study did not specifically seek to answer questions related to diel fish movement patterns, our sampling strategy allowed a broad scale ability to determine relative night and day-time movement rates since the nets were checked in the early morning and evening (dusk). Night time “all fish” catch rates were substantially higher than day-time catch rates (Figures 14A & 14B 1997-1999), with the following two exceptions: 1) When the Westside canal was reopened after a closure, daytime catch rates were predictably high. 2) Though both day and night catch rates increased during the late-summer/fall high catch period, daytime catch rates appear to have been relatively greater in 1997 and late in the summer 1999 (week 38; Sept. 13-19; after the primary pulse of suckers) than in 1998 (Figures 14A & 14B 1997-1999). Gutermuth et al. (2000) hypothesized that late-summer 1997 A-canal day-time catch rates increased when fish became stressed by poor water conditions and were less able to avoid collection. While this may account for some of the diel pattern we saw in 1997, it fails to explain our increased day-time catch rates in the late summer of 1999.

Lake level and Link River spill: To review the relationship of Upper Klamath Lake elevation and Link River spill to sucker entrainment rates (su/100 acre ft), we have graphed these data together (Figures 18 & 19). Though our highest sucker CPUE values were measured during moderate lake levels (e.g., $\leq$4141.5 ft; Figure 18) and while Link River spill rates were minimal (Figure 19), we believe that these are not necessarily causal relationships. Instead, moderate to low lake elevations and minimal Link River spill are simply auto-correlated with the late-summer period when movement occurs. Though we do not know the frequency with which suckers, and other fish, move downstream within the Link River spill water, we expect that their movement patterns would be similar to those monitored in the Link River and A-canal (Gutermuth et. al 2000) entrainment studies.

Within the late-summer period of high sucker entrainment, however, our data show that sucker and all fish entrainment increased with canal flows. Of the three years reviewed, 1997 stands out as the only year where some of our highest Eastside CPUE values, for suckers and all fish, were recorded at relatively low flows (Figure 13A and 14A-1997). We interpret this to indicate that fish were leaving (passively and actively) 1997 poor water quality conditions in the lake at this time. In 1998 and 1999, our sucker CPUE values were generally greater during high flow periods, which may indicate that these fish will follow strong velocity vectors. These data suggest that if passive dispersal of age-0 suckers occurs, higher lake outflows in late summer could expose more suckers to potential entrainment. For comparison, data are required from low water years when diminished springtime river inflows might result in a decreased distribution of larval and early juvenile suckers through Upper Klamath Lake.

During the summer of 1998, the USBR conducted velocity profiling in the southern portion of Upper Klamath Lake during both high (4143.1 ft) and medium (4140.2 ft) lake level conditions. Resulting measurements, which were made with a Doppler acoustic velocity meter, indicated that southern lake velocities were quite variable, in strength and direction, depending on the lake level and the magnitude of out-flows. During high lake elevations, medium-low A-canal withdrawal (<400 cfs), and a relatively large combined Link River discharge (3,745 cfs – total from Link River spill, eastside and westside power canals), the strongest velocity vectors swept down the Link River. However, later in the year, at a lower lake elevation, low Link River total discharge (1,060 cfs), and medium A-canal flow (approximately 600 cfs), the strongest velocity vectors oriented toward the A-canal. This second condition, annually corresponds to the August-September period when high entrainment was evident in our study. Though healthy juvenile suckers could behaviorally avoid or swim against velocities measured in the USBR studies (2-3 ft/s), they are relatively high compared to the 1.08 ft/s critical swimming speed, for juvenile Lost River and shortnose suckers, determined by DeLonay and Little (1997). If these fish were involved in some sort of density dependent or passive dispersal, they might easily follow velocity vectors through either the A-canal or the Link River outflows. However, given the general increase in sucker CPUE values during late-summer high Link River canal flow periods, reported higher velocity vectors which orient towards the A-canal, and 1997 and 1998 A-canal entrainment rates (number of suckers/100 acre ft) which generally exceed our Link River canal entrainment rates, we believe that more suckers are probably moving down the A-canal than the Link River outflows.

Water Quality: The early-summer of 1997 was unusually warm and Upper Klamath Lake had an early bloom of blue-green algae. Algal photosynthesis quickly elevated the lake's early season pH and caused dissolved oxygen levels to fluctuate daily. During calm weather periods, the high pH allowed toxic levels of un-ionized ammonia to build (Kann unpublished data as cited by Simon et al. 1998). Then in August 1997, poor water quality conditions and an outbreak of *Columnaris* disease caused an extensive fish kill for the third year in a row (Buettner 1997; pers. obs.). There is no doubt that poor water quality conditions increased our 1997 fish collections, however, there may have been other movement patterns that were masked by this year's influx of stressed and dying fish. Though it is difficult to monitor and characterize all water-related parameters which could have influenced fish community movements in the large Upper Klamath Lake, Gutermuth et al. (2000) reported that Upper Klamath Lake experienced better water quality in 1998 than in 1997, and we assert that summer 1999 water quality was the best encountered during this study. Given relatively healthful water quality conditions in 1999, and probably 1998, we believe that fish movements recorded in those years were primarily regulated by factors other than water quality.

Maximum water temperatures of approximately 25.0ºC were occasionally reached each summer, but stressful water temperatures of >29.4ºC (Bellerud and Saiki 1995) were not recorded in the southern lake during any sampling year. Specific conductivity readings were consistent and within the expected range for the low ionic strength waters of Upper Klamath Lake. Conductivity readings generally varied between 100 to 110 microsiemens/cm (µS/cm) through the 2.5 year study (Cell Tech Link River data and USBR unpublished A-canal headworks data).

Though ammonia data for the headworks were not available, unusually high un-ionized ammonia concentrations, which would have been stressful or lethal to larval/juvenile suckers, were frequently measured during summer 1997 lake sampling. In July 1997, twenty-nine water samples collected at various locations around the lake, had a mean un-ionized ammonia concentration of 1.51 mg/l and 45% (13) were greater than 1.00 mg/l (unpublished Klamath Tribes Upper Klamath Lake water quality data 1990-1999). Such high un-ionized ammonia levels prompted Simon et al. (1998) to hypothesize that substantial mortality of age-0 suckers may have resulted in 1997. Average July 1998 lake wide un-ionized ammonia concentrations were again high at 0.86 mg/l (19 samples; unpublished Klamath Tribes Upper Klamath Lake water quality data 1990-1999). In 1999, average un-ionized ammonia concentrations were substantially lower at 0.36 mg/l (20 samples; unpublished Klamath Tribes Upper Klamath Lake water quality data 1990-1999).

By early June 1997, pH at the headworks rose to >9.5, a level which caused shortnose suckers to loose their equilibrium in laboratory tests (Falter and Cech 1991), and remained high through late July. Concurrently, high and daily fluctuating dissolved oxygen concentrations (DO) added to conditions considered as impairing for fish (Stewart et al. 1967). At the start of August, a large-scale algae die-off occurred and daily average DO dropped to levels <4.0 ppm, considered stressful for warm-water fishes (Davis 1975). Our Eastside sucker CPUE values peaked shortly thereafter in mid-August 1997, one and two weeks after the algae die-off (Figure 13A). This is also the highest 1997 collection period reported from concurrent A-canal entrainment monitoring (Gutermuth et al. 2000). Given the lengthy early summer period of high pH, the subsequent extended duration of low oxygen conditions (approximately 3 weeks of fluctuating DO near and <4.0 ppm) and high water temperatures, and the poor condition/disposition of collected fishes, we expect that many of the sampled fish were incapacitated by or migrating from poor lake conditions. It was also during this time period that an extensive fish kill, which appeared to impact large suckers to a greater extent than small ones, occurred in Upper Klamath Lake (Buettner 1997, Simon et al. 2000; pers. obs.). We expect that the effect was most detrimental to larger fish because these are frequently the first to succumb under low oxygen and poor water quality conditions (Herman and Meyer 1990). It was during this interval of extremely poor water quality (e.g., August 1997; Figure 16A-summer) that we collected the largest suckers of the study.

Upper Klamath Lake water quality was better in 1998 and no fish kills were reported. Though stressful conditions did exist in 1998, they were less severe and shorter in duration than in 1997. During 1998, the pH at the Link River fluctuated above 9.5 for three weeks in mid-July (Figure 15A-1998). After a "crash" of the dominant blue-green algae, a six-day period of low DO (daily lows <4.0 ppm) began on August 8th. Our highest 1998 Westside sucker CPUE values and maximum A-canal sucker entrainment levels (Gutermuth et al. 2000), both on relatively consistently flowing lake outflows, peaked two weeks after this (week 35; August 24-30). Eastside 1998 sucker CPUE values peaked a week later when the Eastside canal flows were higher (Figure 13A-1998).

In summer 1999, Upper Klamath Lake water quality was the best recorded in the study. Though pH measurements exceeded 9.5 through the entire month of July, there were no periods when the DO was <4.0 mg/l. Water temperatures were cooler and un-ionized ammonia concentrations were reduced from levels measured in the two previous study years. Furthermore, a summary description by OSU biologists (Simon et al. 2000) reported that the distribution of age-0 suckers, during 1991-1999, was not clearly tied to water quality. Their analyses of age-0 sucker growth showed a positive relationship with temperature and pH and a negative relationship with DO, and young suckers appeared to select habitats based on substrate types rather than on associated water quality parameters (Simon et al. 2000). Through years of evolution in the eutrophic Upper Klamath Lake, the fish community has apparently evolved a tremendous ability to thrive in poor water quality conditions. Hence, interpreting poor water quality as the driving factor behind our documented large-scale, late-summer downstream movements of age-0 fish and suckers could be misleading. We believe that some of these age-0 fish may have moved for other reasons because: 1) There were similar movement patterns of age-0 suckers in all three years, regardless of water quality. In 1998 and 1999, young suckers (age-0 and some age-1) comprised >98% of the moving suckers; 2) Simon et al. (2000) reported that young sucker distribution could be predicted primarily based on substrate and not water quality; and 3) The health of entrained suckers on the Link River and at the A-canal (Gutermuth et al. 2000) appeared to be improved in 1998 and 1999 relative to 1997 sampling.

In 1997, there appears to have been one extended migration of all species, during day and night periods, which was probably greatly influenced by poor water quality conditions. In this year, our highest Eastside sucker CPUE values were recorded during low Eastside canal flows. This inverse relationship between 1997 flows and catch rates, and our rapidly increasing sucker catches (sucker catch rates rose from <10 su/100 acre ft to >45 su/100 acre ft within a week) suggest that these were water quality driven events. Compared to the timing of maximum 1997 catches our 1998 and 1999 sucker collections approximated a more protracted normal distribution (Figures 13A 1997-1999). Though the specific reasons for movement are unclear, species composition trends for all fish also showed peaks, which we interpret as movement of individual species as they were cued to disperse by species-specific environmental or density-dependent cues. Based on the magnitude and comparable timing of movement between years, and the relative health of the sampled fish, we speculate that some age-0 suckers probably leave the lake annually as they did in 1997 through 1999 regardless of water conditions.

Our three years of age-0 sucker entrainment data generally corroborate a pattern of relatively high age-0 sucker density reported by Simon et al. (2000) in the southern lake. Combined with A-canal data (Gutermuth et al. 2000), our 1997-1999 CPUE values also generally trend with annual sucker year class estimates reported by Simon et al. (2000). Since our highest Eastside CPUE values from 1998 and 1999 were very similar, we might expect that these two years were relatively good sucker year classes when compared to 1997. However, since the A-canal was not sampled in 1999, it would be impossible to accurately estimate the total entrainment loss of Upper Klamath Lake suckers in that year.

The late summer period of sucker entrainment reported herein closely corresponds to the approximately annual late-summer interval of declining Upper Klamath Lake age-0 sucker abundance which Simon et al. (2000) report. We hypothesize that this yearly decline in age-0 sucker abundance is closely related to the late summer/early fall movement of age-0 suckers which we have measured out of Upper Klamath Lake. It is possible that this movement, which appears to increase with flows, may be an evolutionary adaptation that transported age-0 suckers in good water years to historical Lower Klamath Lake nursery areas (e.g., wetlands) which existed downstream of the Link River. Historically these young suckers may have grown quickly in these warm and productive areas and have returned to Upper Klamath Lake and its northern tributaries to spawn as adults.

The mechanisms affecting sucker dispersal from Upper Klamath Lake are obviously varied, complex, and interrelated. Our limited data suggest that water quality and total outflow are among the most apparent parameters influencing dispersal although there are probably other behavioral mechanisms which are not fully understood.

Extrapolation of canal sampling

To determine total canal entrainment indices for the study period, the Westside and Eastside sampling structures were considered to test all canal flows and to be 100% efficient. Therefore, calculated indices are conservative entrainment estimates. A second entrainment estimate for the Eastside net was calculated using a 70% efficiency value, and is included in the summary of 1997-1999 Link River entrainment indices (Table 7).

The total 2.5 year study period Link River canal sucker entrainment index was estimated to be 109,429 suckers. By size class, this number broke down as follows: Suckers <75 mm FL totaled 77,579; suckers 75-150 mm FL totaled 30,419; and those >150 mm FL totaled 1,431. The Westside sucker entrainment index, for the period from April 21, 1997 to October 20, 1999, was 25,490 suckers. This figure was based on a total sampled Westside canal volume of 84,880 acre ft (28%) from a total study period volume of 300,136 acre ft. The Eastside sucker entrainment index, for the period from July 14, 1997 to October 20, 1999, was 83,939 suckers. This figure was based on a sampled Eastside water volume of 277,036 acre ft (27%) from a total study period volume of 1,026,557 acre ft that ran through the Eastside power canal. The 1998 sucker entrainment index was the highest calculated value. In 1998, the index was 64,727 (<75 mm FL = 52,628; 75-150 mm FL = 11,983; >150 mm FL = 116) which accounted for 59% of the total study's estimated entrainment (Table 7).

These indices indicate that the Eastside accounted for 77% of the total estimated flow and 77% of the sucker entrainment. The Westside canal accounted for 23% of the total estimated flow and 23% of sucker entrainment. However, catch rates were not always similar nor was the time period over which the Westside and Eastside were sampled. Furthermore, because of the relatively better Westside sampling efficiency, entrainment estimates on this side are potentially more accurate. Using a 70% efficiency value in Eastside extrapolation estimates subsequently increased the estimated Eastside entrainment index and the proportion of sucker entrainment attributed to the Eastside powerhouse. While there is a degree of unalterable variability in these calculations (e.g., associated primarily with estimation of volume sampled and efficiency), the overall trends and abundance estimates should be comparable between locations. Since the 2.5 year entrainment indices were based on actual sucker catches and sampled flow volumes, weekly entrainment indices follow the timing displayed in sucker CPUE Figures 13A and 13B 1997-1999 and in Appendix Tables A2 and B2 1997-1999. Eastside and Westside entrainment indices by sucker species, size class, and year, are included in Table 7.

During the study period, a total of 974,442 fish (non-suckers) were estimated to have been entrained at the two hydropower facilities. The Westside accounted for 503,416 (52%; April 21, 1997 to October 20, 1999) and the Eastside canal accounted for 471,026 (48%; July 14, 1997 to October 20, 1999) of this total. The larger index for Westside entrainment is indicative of the sampling structure's relatively better efficiency and its April 1997 startup, which allowed many small age-0 fishes to be collected that were not sampled on the Eastside, which started in mid-July 1997. The Westside sucker entrainment index is not similarly high because catostomid collections were concentrated during the late summer when the Westside was often closed.

Through the duration of the study, 110 (12%) rainbow trout were estimated to be entrained on the Westside and 781 (88%) were estimated to be entrained on the Eastside (Appendix Table A5). It is possible that trout were attracted to the higher flows that are common at the Eastside canal. A summary of species specific entrainment indices, by location and year, is included in Appendix Table A5. Estimated weekly entrainment indices trend along with the catch rates and total numbers reported in Appendices A3 and B3.

The proposed screening of the A-canal will likely affect Link River entrainment due to hydraulic complexities in the southern lake environment in which these outfalls exist. Consequently, it is important to understand the extent of entrainment at all Upper Klamath Lake outflows, as well as the timing, species, and sizes of fish that might be impacted, before entrainment reduction devices are developed for these sites. Presently the USBR leads the Upper Klamath Lake entrainment reduction working group, whose charge it is to study Upper Klamath Lake entrainment and alternatives for its reduction, as well as to coordinate efforts to this end.

A-canal studies in 1997 and 1998 employed a rotary screw trap and fyke net to determine entrainment rates (Gutermuth et al. 2000) at this site. Though these sampling devices were not equivalent to Link River canal fyke nets in their ability to collect fish, some trends are comparable. As at the Eastside and Westside canals, A-canal collections of suckers and other fishes increased dramatically in the late-summer and declined in the fall. The length frequency distribution of collected suckers was also quite similar between all sample locations. During the 1997 fish kill year, a diverse assemblage of sucker age-classes was collected at all sites, but in 1998 age-0 suckers dominated the catch of catostomids.

The 1997 and 1998 A-canal sucker entrainment indices (April through October period) were estimated to be 46,708 and 246,524 suckers, respectively (Gutermuth et al. 2000). These values were considerably greater than our estimated total Link River canal entrainment indices (January-December period) of 15,215 suckers in 1997 and 64,727 suckers in 1998 (Table 7). Even if we were to include a 100% correction for poor Eastside efficiency, the A-canal entrainment indices would still be substantially greater than Link River estimates. Such a disparity between calculated entrainment rates and subsequently between entrainment indices suggest that the A-canal entrains relatively more fish, especially considering its relatively short operational season (approximately April 1-October 15), than the Link River canals. We hypothesize that A-canal sucker entrainment rates may be greater than those measured on the Link River canals because: 1) Velocity vectors at late-summer lake levels (e.g., <4141.5 ft) strongly orient towards the A-canal (Gutermuth et al. 2000); 2) Consistent and high A-canal irrigation flows (e.g., ≥800 cfs) during peak late-summer sucker entrainment are higher than Westside flows and often higher than Eastside power canal flows, which oscillate greatly with power and water level control needs; and 3) the A-canal is physically the first exit from the lake that age-0 suckers might encounter if they move toward lake outflows from northern spawning and early rearing areas. Though it is difficult to determine the cause of movement out of Upper Klamath Lake, and many factors may be involved, it is possible that suckers are following evolutionarily selected behavioral traits to move downstream to historic warm and productive rearing areas in the Lower Klamath Lake/marsh. Today such quality rearing sites are not believed to exist downstream in the channelized Klamath River and Lake Ewauna. Alternatively, they may be exhibiting a density dependent response to crowding at preferred locations in the southern lake. In any case, there appears to be a positive relationship between downstream migration and water flow. It would be enlightening to determine what triggers the downstream movement, and if this occurs annually in high and low water year conditions.

Additional information is required to determine the behavioral cues that might elicit downstream movement. The three years during which this study was conducted were relatively “high” water years. Further study in dry years as well as a review of annual relationships between river inflows and lake outflows, and how these affect sucker catch rates and timing at Upper Klamath Lake outflows, would be informative. In addition, the effects of seasonal water temperature regimes on the timing of migration (e.g., do age-0 suckers migrate relatively earlier if they have grown more quickly in a summer) should also be evaluated.

## SUMMARY

### LARVAL FISH ENTRAINMENT

In our two year study, we found that the timing of larval drift in the Link River canals was similar to the annual timing of sucker drift in the USBR owned A-canal (Gutermuth et al. 1998). We also detected similar diel patterns in drift abundance. Over the course of the study, the following findings were made:

- In general, peaks in larval sucker abundance were earlier in 1997 than in 1998. Larval suckers were collected as early as week 18 (April 28, 1997) and as late as week 29 (July 18, 1998), however, the peak in drifting sucker abundance, in both years, occurred during weeks 21-28 (May 18-July 12) in both years.

- Sucker drift density was at a maximum during morning hours (00:00-08:00) and minimum during the day (08:00-16:00). The greatest density of canal drift organisms and larval suckers was located in the surface stratum (<1 m).

- Eastside and Westside larval collections followed similar trends in terms of species composition and timing. However, catch rates and the total number of larval suckers sampled were higher in the Eastside canal. The Eastside period of larval sucker collection was also slightly longer than that seen on the Westside canal which was subject to periodic closures.

- At both our Eastside and Westside sampling sites, larval species diversity was greater and larval suckers were more common and constituted a greater percentage of the sampled fish in 1998 than 1997. In 1998, 27.4% (245 fish) of the Eastside larval catch consisted of suckers while only 13.4% (110 fish) were suckers in 1997.

- At our Eastside drift net site, we detected an inverse relationship between larval sucker CPUE values and canal flows. Fluctuations in Eastside canal flow made it difficult to discern actual changes in drift density from changes that were flow related. Consistent Westside canal flows alleviated concerns about the effect of flow on measured larval density.

- A comparison of our 1997 average weekly larval sucker lengths, with those collected in the A-canal (Gutermuth et al. 1998), revealed that suckers of similar sizes were collected at all sampling sites, and that the average size of collected suckers often decreased between sample weeks. Reported 1997 decreases in average weekly sucker lengths may have resulted when: a) A subset of small fish were caught and larger juveniles were somehow unavailable to the net (e.g., they had grown in size and were able to avoid capture or had suffered differential mortality - with large age-0 suckers more vulnerable to un-ionized ammonia; Simon et al. 1998); or, b) Arrival of another group of new, very young larvae decreased the mean length of all those collected.

- Collection of numerous small larval suckers (≤13 mm TL) in 1998, seven of which were in the early developmental "flexion mesolarvae" stage, suggest that very young suckers arrive at the Link River. With the high water temperatures that predominate in Upper Klamath Lake, these fish must have been transported very rapidly by water currents, or been spawned in relatively close proximity to our sample sites.

JUVENILE/ADULT FISH ENTRAINMENT

Though this entrainment study was conducted during three relatively wet water years, other conditions varied during the period that might have affected differences in annual entrainment. Water quality conditions and the age distribution of sampled suckers were markedly different. In 1997, water quality conditions were extremely poor and an Upper Klamath Lake fish kill brought many stressed, older/larger, and dead fish into our nets. In this year, a diverse distribution of sucker age classes was sampled (approximately 49% age-0, 44% age-1, and 7% older cohorts). In 1998, water quality conditions were not as poor, no Upper Klamath Lake fish kills were documented, and sampled suckers were in better condition. Water quality conditions during the study were best in 1999, and no water quality periods of concern (e.g., dissolved oxygen concentrations of <4 mg/l) were reported. In 1998 and 1999, very few >age-1 suckers were collected.

Despite water quality differences, there appeared to be a substantial movement of age-0 suckers out of Upper Klamath Lake in the late-summer of each year. Though the reasons for this movement are unclear, species composition trends also indicate that other fishes exhibit peak movement periods in the late-summer and early fall. Based on the magnitude and comparable timing of movement between years, and the relative health of the sampled fish, we speculate that some age-0 suckers, and other species, leave the lake annually as they did in 1997 through 1999 regardless of water conditions.

The following conclusions summarize the juvenile/adult portion of this study:

- In the Eastside nets, 22,771 suckers and 132,400 other fish were sampled during 5379.6 hours of sampling between July 14, 1997 and October 20, 1999. This sampling accounted for approximately 277,036 acre ft (27%) of the total 1,026,557 acre ft of water which moved through the Eastside canal during the study period.

- In the Westside net, a total of 7,675 suckers and 152,328 other fish, were handled during 4548.5 hours of netting between April 21, 1997 and October 20, 1999. This sampling accounted for approximately 84,882 acre ft (28%) of the total 300,136 acre ft of water which moved through the Westside canal during the study period.

- A total of 245 redband trout, generally less than 200 mm FL, were collected during the entire study. In all years, the timing of trout collections appeared to be related to water temperatures. In 1997, the warmest study year, 61% of the collected trout were taken in December. During 1998 and 1999, the catch of trout was more protracted. In the coolest water year, 1999, trout were taken in all sampled months but the warmest month of August.

- Sucker entrainment was most common in August to mid-October. Maximum 1997 Eastside CPUE values, for suckers and all fish, were estimated during low flow periods and probably indicate that fish were moving to avoid poor water quality conditions. During 1997, maximum total catches and catch rates occurred earlier and were more protracted than in the other sample years.

- During 1998 and 1999, Eastside CPUE values and total catch estimates followed trends in canal flow during the late summer and early fall (approximately mid-August to November). Maximum sucker CPUE values in these two years were measured in late-August through early-September and total fish catch rates peaked in October. The correlation between catch rates and Eastside canal flows was not evident outside of this high catch period.

- Westside canal flows was very consistent (230 cfs) for the duration of the study. Consequently, no relationship between the Westside catch rate and flow was determined. However, Westside catch rates were often very high following re-opening of the canal after a period of closure. During closures, fish likely began to reside in the canal and were entrained when operations began again. Similarly, on the Eastside, catch rates often increased when flows were augmented after low flow periods.

- Throughout the study, similar sized suckers were generally sampled at both Eastside and Westside sites. In 1997, various sucker cohorts were sampled. These included a substantial group of age-1 suckers from 1996 and a relatively large catch (7-9%) of juvenile/adult suckers. In 1998 and 1999, sample collections consisted primarily of age-0 suckers with a proportion of age-1 fish. Age-0 suckers were predominantly sampled in August through October, however, these young suckers continued to be entrained, in decreased numbers, through fall, winter, and spring periods. Large suckers may have followed a northern lake distribution in these years, or potentially such large numbers were lost in consecutive 1995, 1996, and 1997 fish kills that they were not available for sampling.

- Though their contribution was variable, shortnose suckers were the most abundant Eastside catostomid collected. Lost River suckers were consistently second in catostomid abundance and Klamath largescale suckers were rare (<5%). Within the large-size sucker group (>150 mm FL), however, Klamath largescale suckers were relatively more abundant (10-40%).

- Outside of the discrete 1997 fish kill period, the diversity of fish collected in 1998-1999 seemed to be higher than in 1997. Our catches in 1997 were dominated by native fishes (e.g., blue chub and tui chub, and suckers) while catches in 1998 and 1999 included larger numbers of common (yellow perch and fathead minnow) and rare (brown bullhead and crappie) non-native fishes. Over time, native Upper Klamath Lake fishes may have developed a tolerance to sub-optimal water quality conditions that allows them to survive and grow better than other species which have not evolved in the highly eutrophic Upper Klamath Lake.

- Species diversity of sampled fishes was lowest during the winter (November-March) and native species (blue chub, tui chub, Klamath Lake sculpin, and some suckers), along with fathead minnows, dominated the catch. In April, the diversity of our catch increased as Klamath Lake sculpin and lamprey (unknown species) were consistently sampled. Species diversity was highest in the summer from June through September.

- Our most frequently collected species, was the blue chub. Blue chub generally comprised from 40 to 70% of our Eastside and Westside catches except for during the months of July and August when their relative abundance decreased. From November 1997 thorough May/June 1998, blue chub were especially abundant and often made up 80% of the catch. Fathead minnows were the second most frequently collected species overall. From December 1998 through June 1999, however, fathead minnows were often the most abundant species sampled. Suckers made up approximately the same proportion of the annual Eastside catch as Tui chub (approximately 15%), but their collections were highest during a relatively short period of time. During each of the study years, suckers contributed up to 50% of our Eastside samples in August and September.

- Night time entrainment rates were generally higher than day-time rates. Our highest sucker CPUE values were measured during moderate lake levels (e.g., ≤4141.5 ft) and while Link River spill rates were minimal. However, we believe that these are not necessarily causal relationships. Instead, moderate to low lake elevations and minimal Link River spill are simply auto-correlated with the late-summer period when movement occurs.

- Based on the magnitude and comparable timing of movement between years, and the relative health of the sampled fish, we speculate that some age-0 suckers probably leave the lake annually as they did in 1997 through 1999 regardless of water conditions. The late summer period of sucker entrainment reported herein closely corresponds to the approximately annual late-summer interval of declining Upper Klamath Lake age-0 sucker abundance which Simon et al. (2000) report. We hypothesize that this yearly decline in age-0 sucker abundance is closely related to the late summer/early fall movement of age-0 suckers which we have measured. It is possible that this movement, which appears to increase with flows, may be an evolutionary adaptation that transported age-0 suckers in good water years to historical Lower Klamath Lake nursery areas which existed downstream of the Link River. Historically these young suckers may have grown quickly in these warm and productive areas and have returned to Upper Klamath Lake and its northern tributaries to spawn as adults.

- The total 2.5 year study period Link River canal sucker entrainment index was estimated to be 109,429 suckers. By size class, this number broke down as follows: Suckers <75 mm FL totaled 77,579; suckers 75-150 mm FL totaled 30,419; and those >150 mm FL totaled 1,431. The Westside sucker entrainment index, for the period from April 21, 1997 to October 20, 1999, was 25,490 suckers. This figure was based on a total sampled Westside canal volume of 84,880 acre ft (28%) from a total study period volume of 300,136 acre ft. The Eastside sucker entrainment index, for the period from July 14, 1997 to October 20, 1999, was 83,939 suckers. This figure was based on a sampled Eastside water volume of 277,036 acre ft (27%) from a total study period volume of 1,026,557 acre ft that ran through the Eastside power canal. The 1998 sucker entrainment index was the highest annual calculated value. In 1998, the index was 64,727 (<75 mm FL = 52,628; 75-150 mm FL = 11,983; >150 mm FL = 116) which accounted for 59% of the total study's estimated entrainment (Table 7).

- During the study, a total of 974,442 fish (non-suckers) were estimated to have been entrained at the two hydropower facilities. The Westside accounted for 503,416 (52%; April 21, 1997 to October 20, 1999) and the Eastside canal accounted for 471,026 (48%; July 14, 1997 to October 20, 1999) of this total. Through the duration of the study, 110 (12%) rainbow trout were estimated to be entrained on the Westside and 781 (88%) were estimated to be entrained on the Eastside.

ACKNOWLEDGMENTS

The authors wish to acknowledge and show appreciation to the individuals, companies, and agencies involved in completing this work.

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Dr. Joseph Meyer, assistant professor, Dept. of Zoology, University of Wyoming, Laramie, Wyoming.
Mr. David Simon, Oregon State University, research assistant, Corvallis, Oregon.

# FIGURES

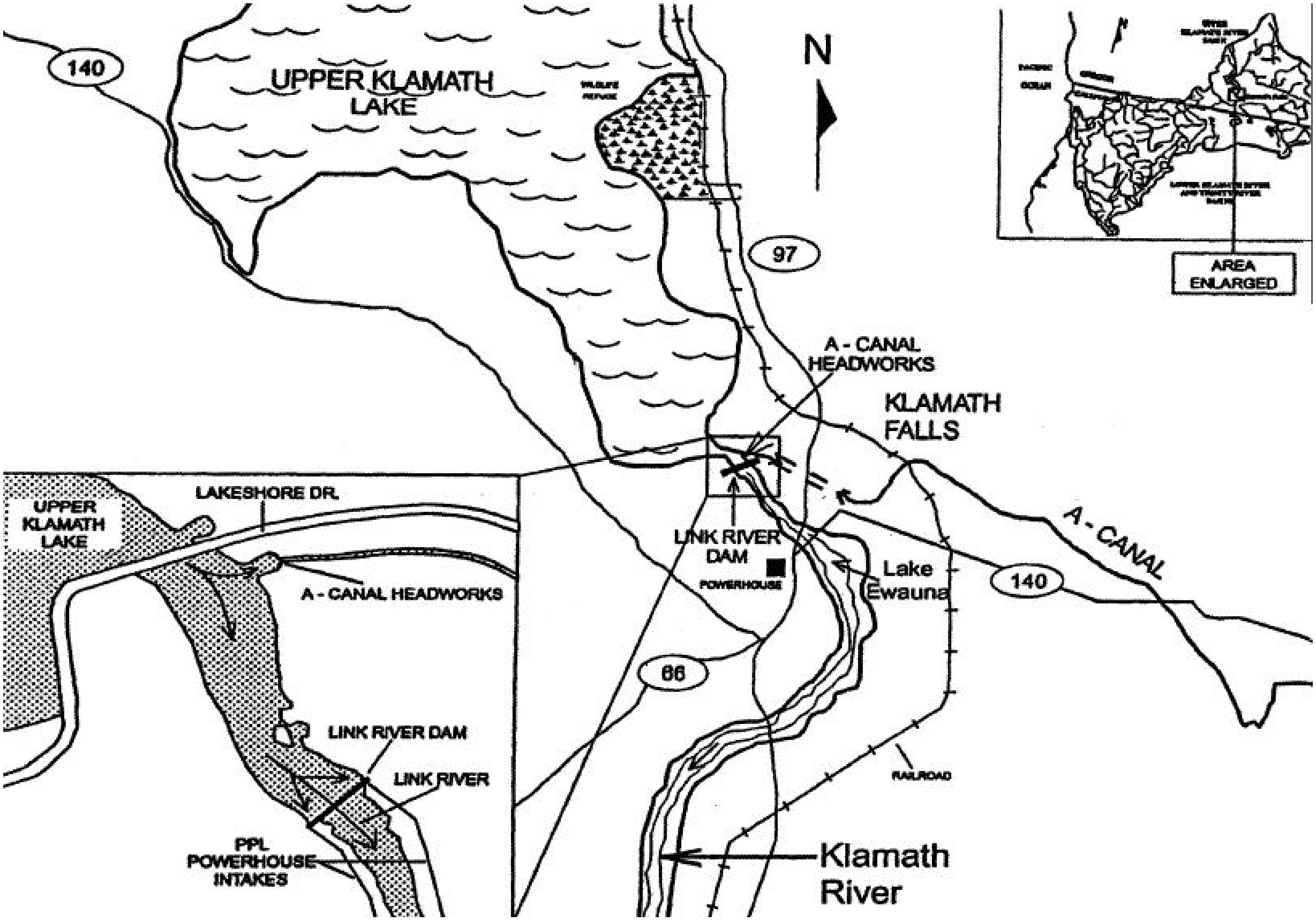



Figure 1a. Location of the Link River Dam and A-Canal Headworks at the southern end of Upper Klamath Lake (from Vogel 1997).

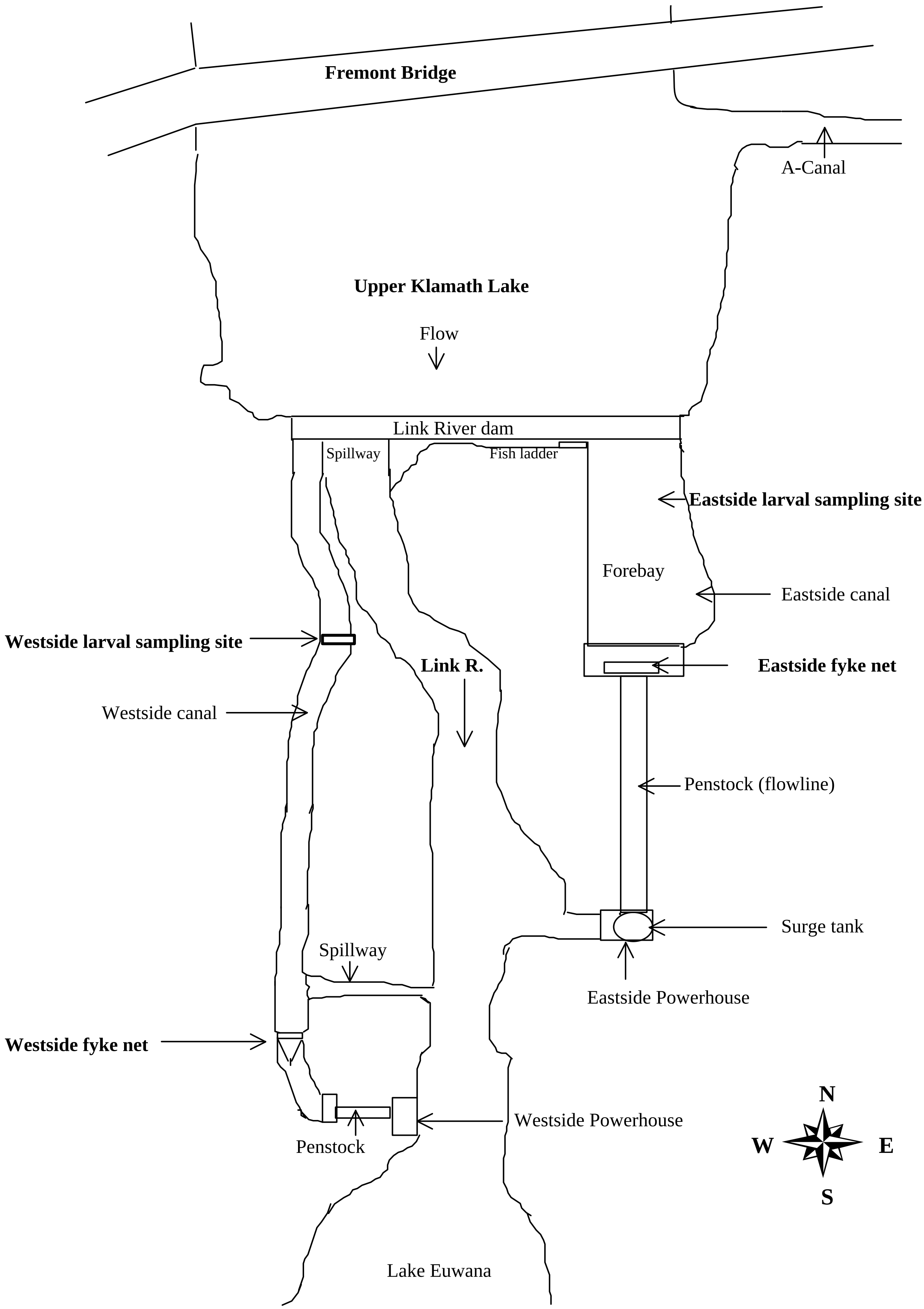
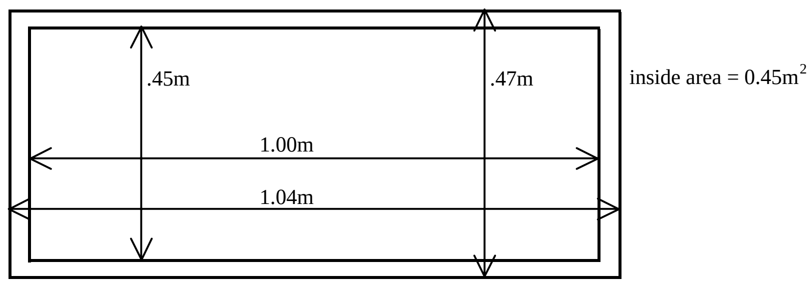
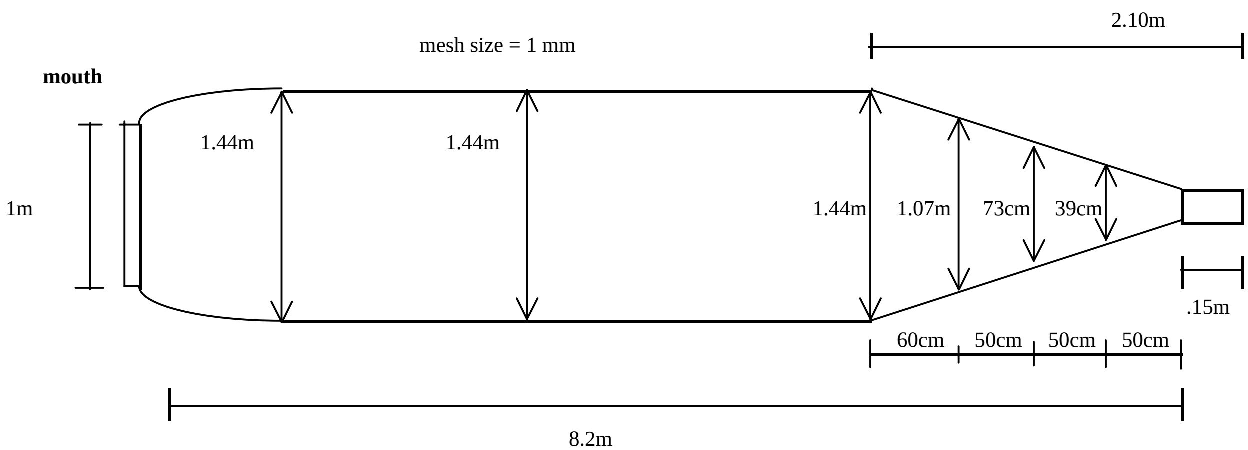


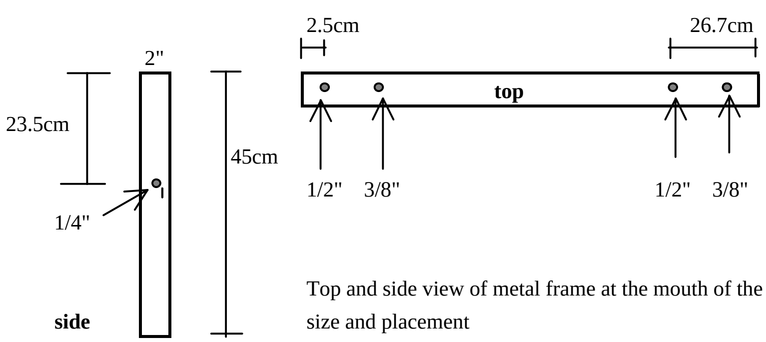

Figure 1b. Link River study area. Eastside and Westside larval and fyke net sampling sites are shown. Not to scale



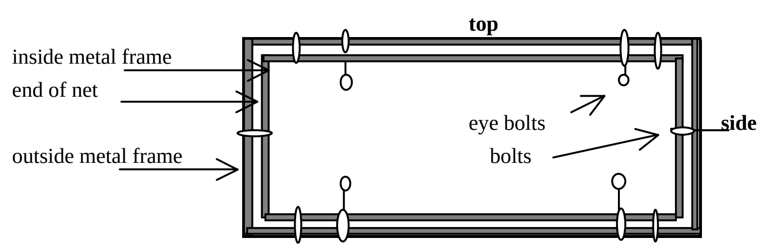

Front view of metal frames at mouth of net




Top view of entire length of net

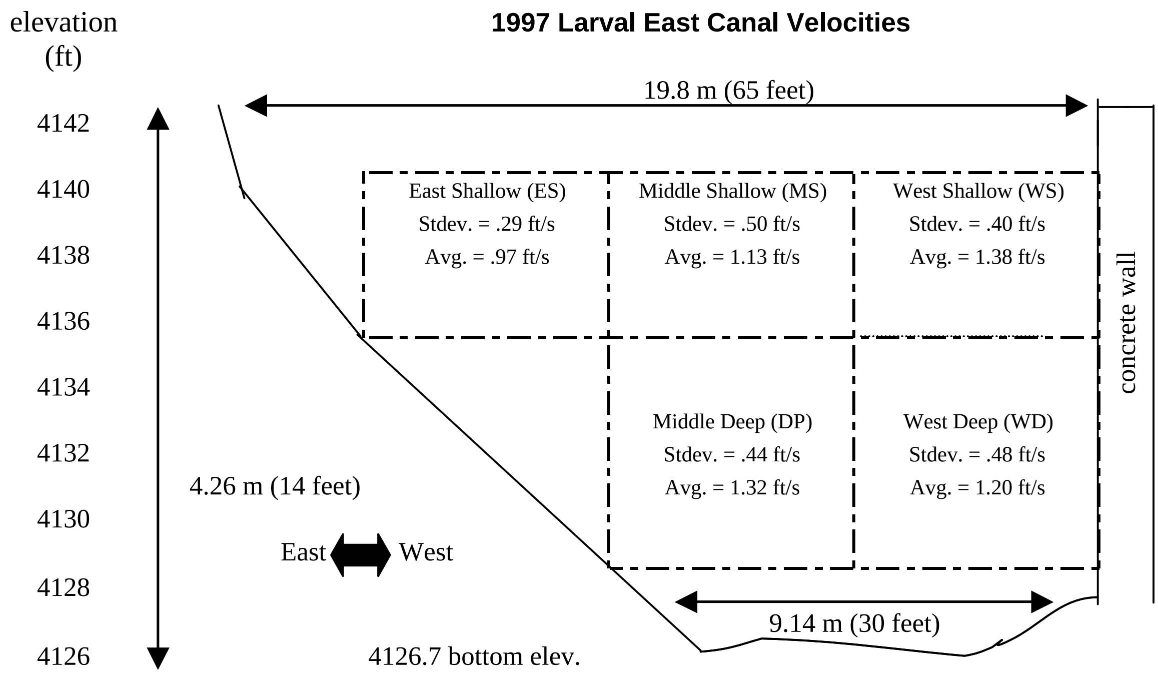



Top and side view of metal frame at the mouth of the net showing bolt hole size and placement




Mouth of net showing end of net between two metal frames; placement of regular and eye bolts

Figure 2. Diagram of the drift net used for larval sampling



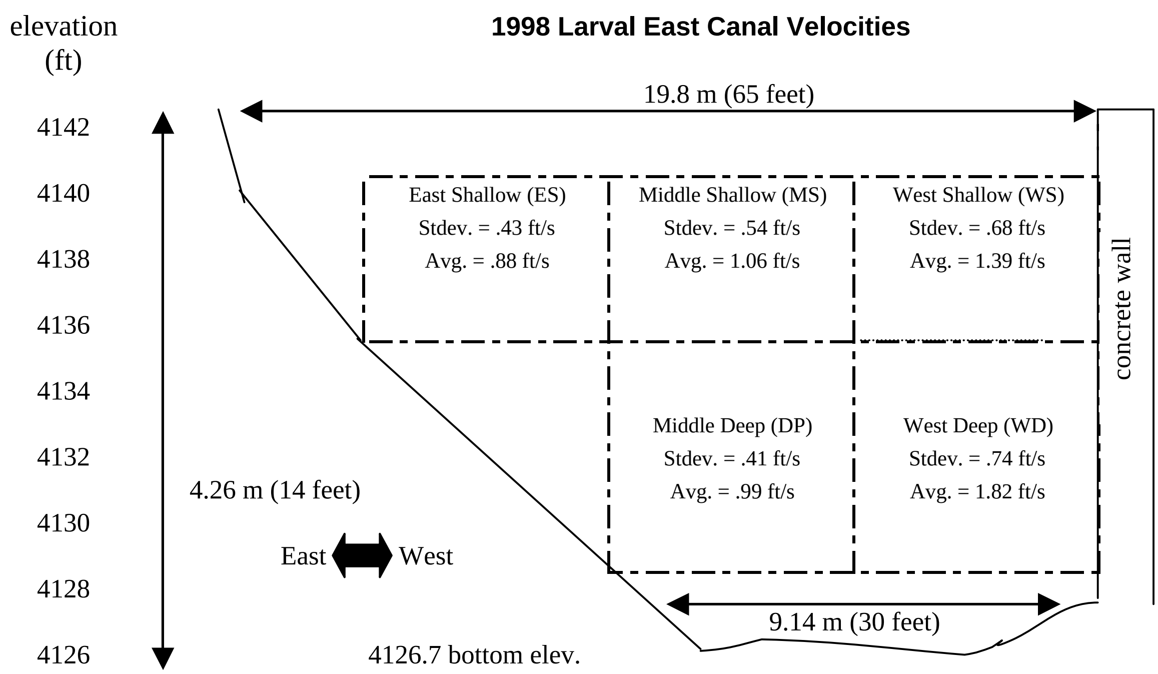
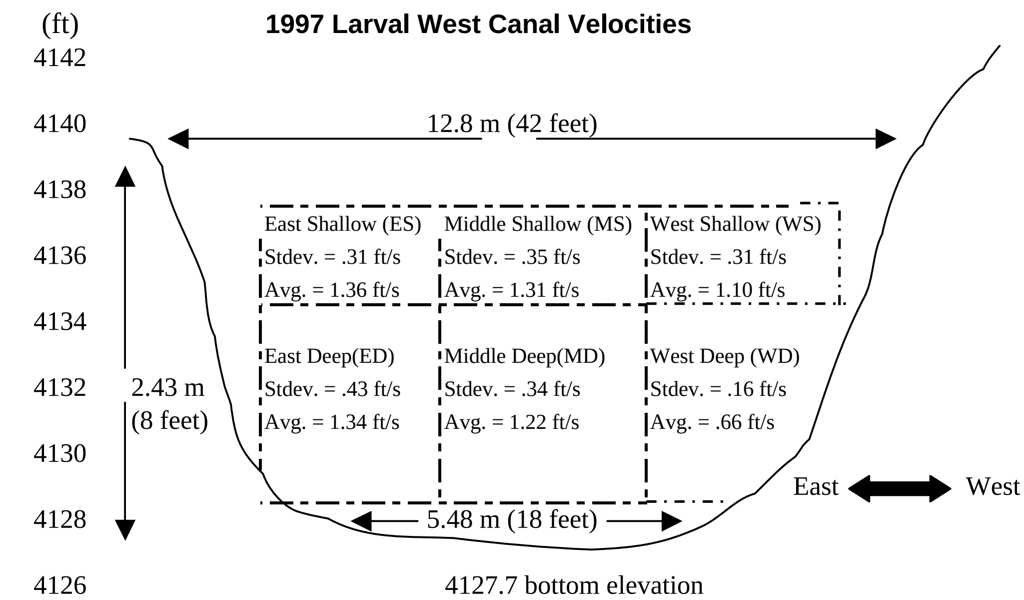




Figure 3. Eastside Link River canal dimensions. Canal cell/depth average sampling velocities and their associated standard deviations are shown. View is facing downstream.



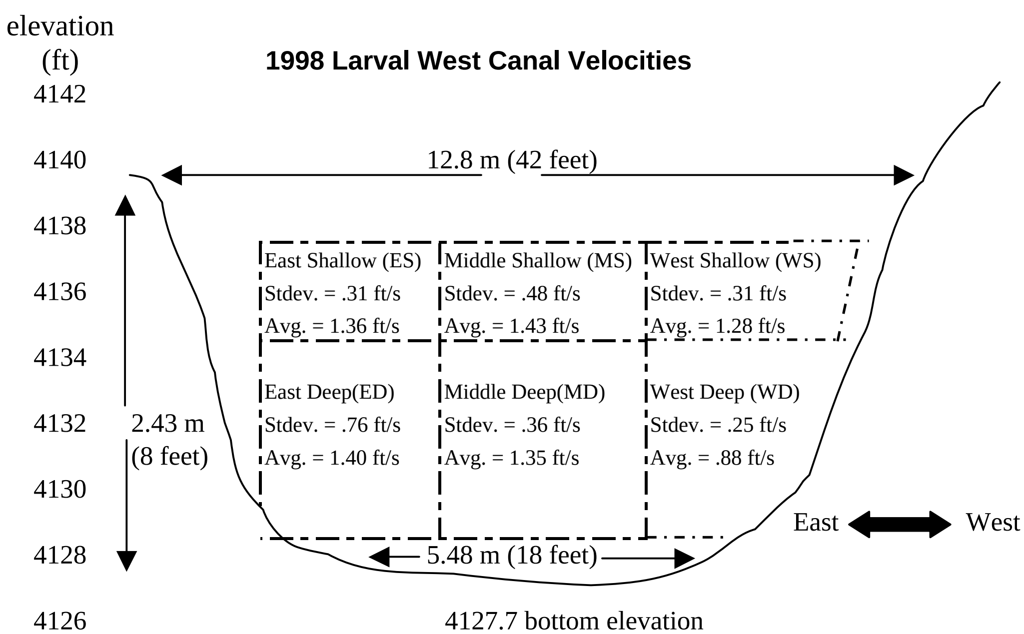
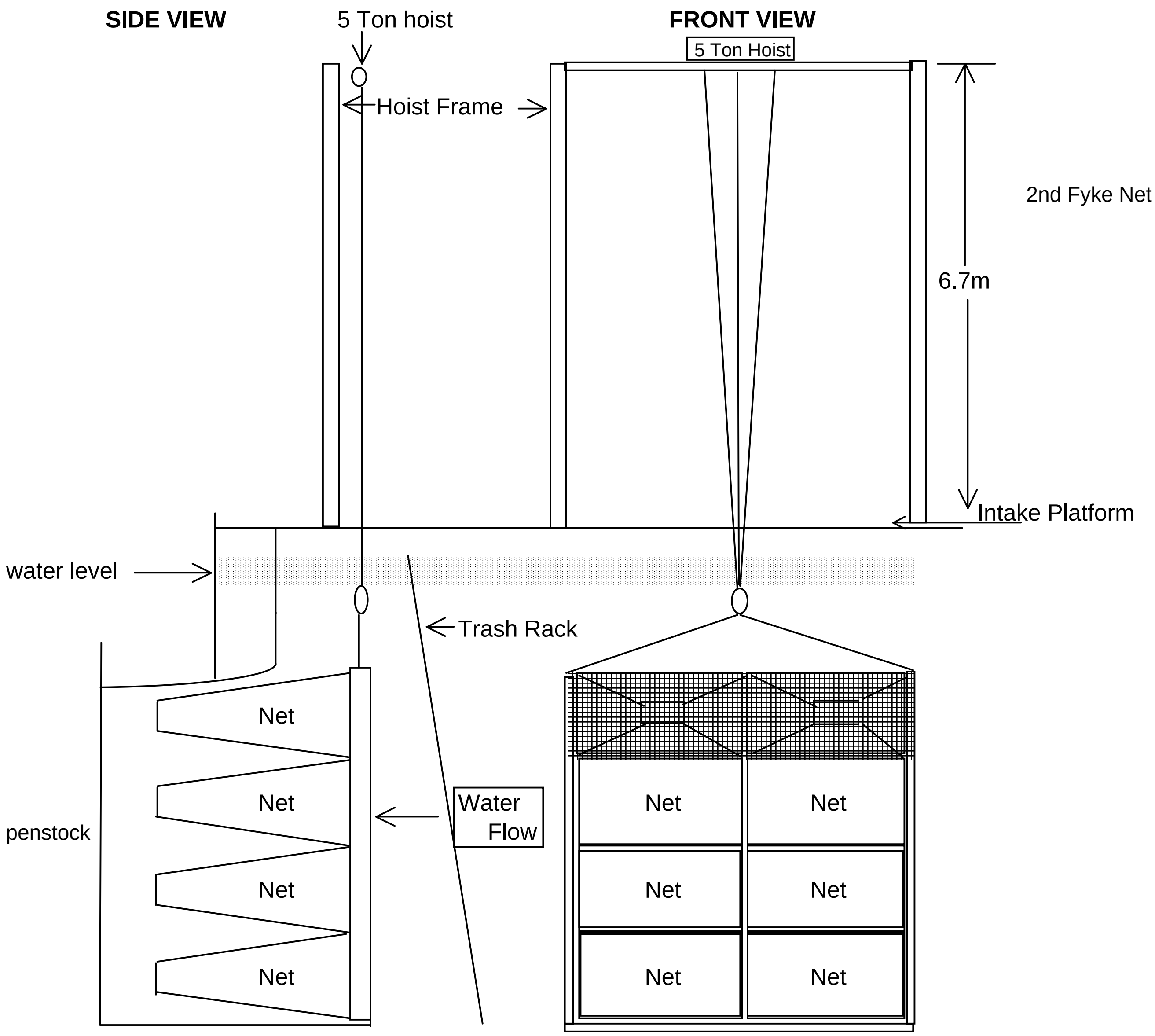




Figure 4. Westside Link River canal dimensions. Canal cell/depth average sampling velocities and their associated standard deviations are shown. View is facing downstream.




example of Eastside net numbering -

Eastside bank

| | |
|---|---|
| #7 | #8 |
| #5 | #6 |
| #3 | #4 |
| #1 | #2 |

nets 1-8

Westside bank

| | |
|---|---|
| #15 | #16 |
| #13 | #14 |
| #11 | #12 |
| #9 | #10 |

nets 9-16

Figure 5. Drawing of the Eastside juvenile/adult fyke net system. Two structures, of eight nets each, were placed adjacent to one another to cover the penstock intake. Individual nets on the Eastside bank were numbered 1-8 and those on the Westside bank were numbered 9-16, so that the depth of fish collections could be tracked.

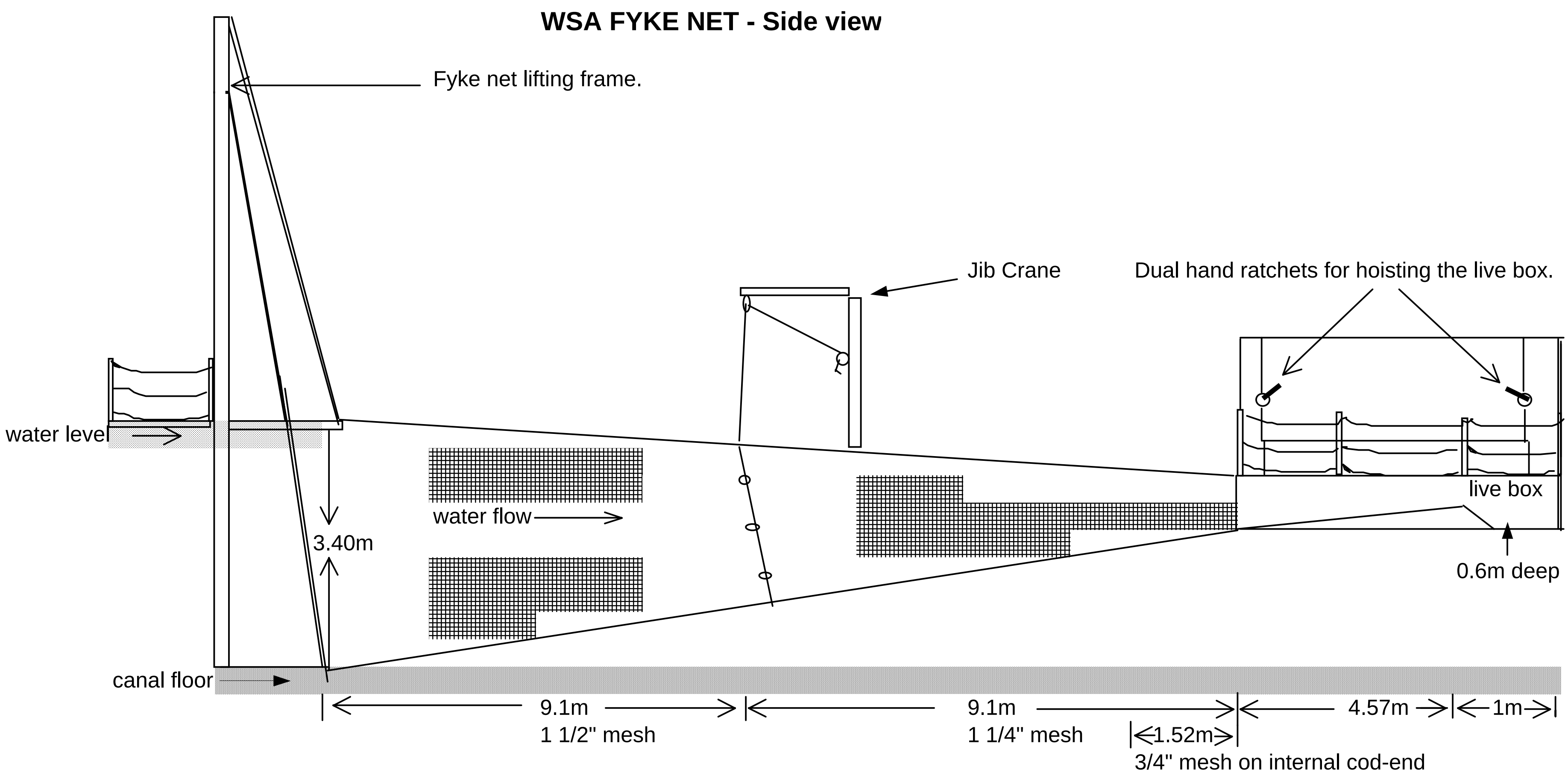



Figure 6. Westside juvenile/adult fyke net and live well.

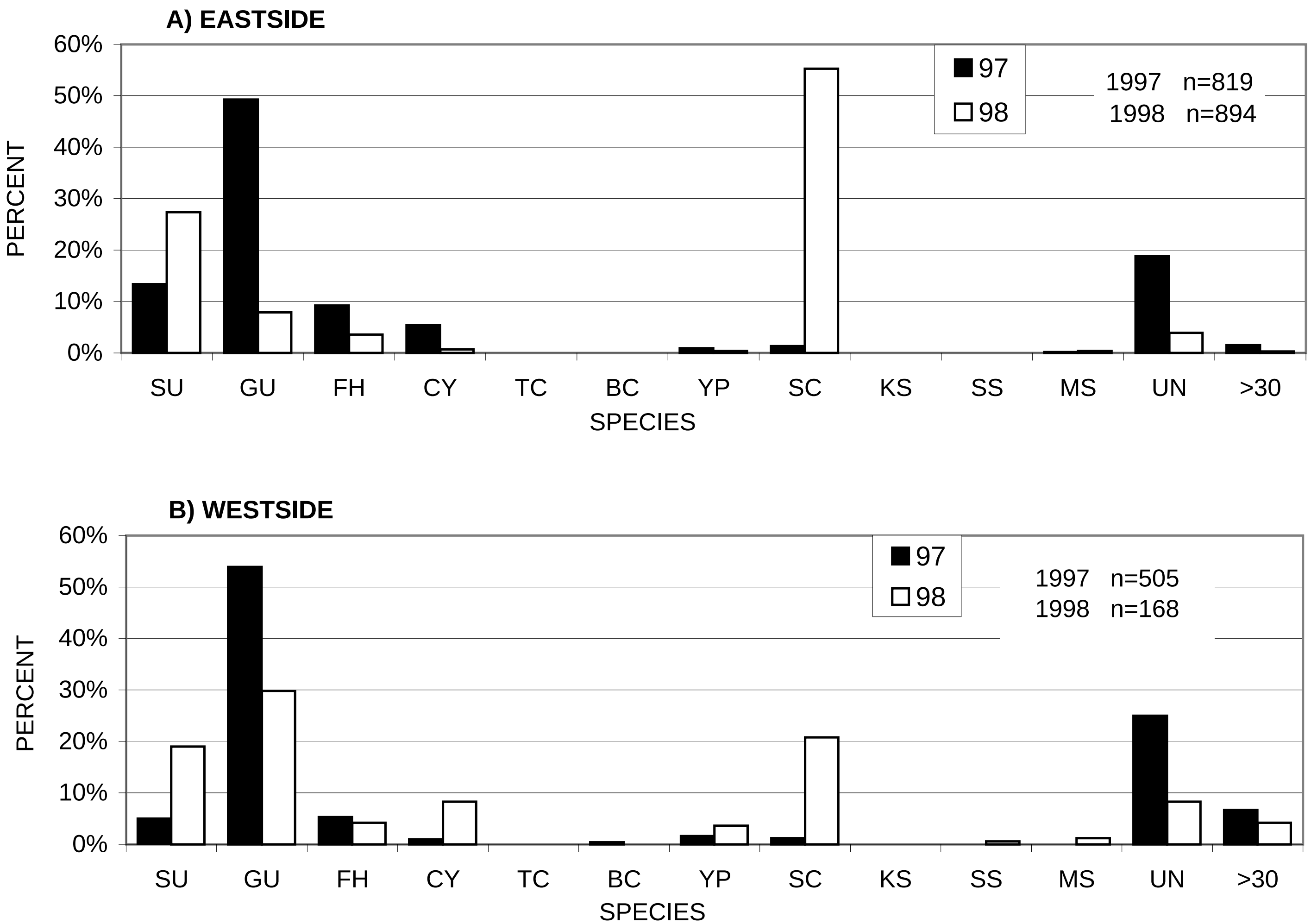



Figure 7. 1997 and 1998 Eastside and Westside larval species composition by year. The "n" represents the total number of larval fish sampled each year.

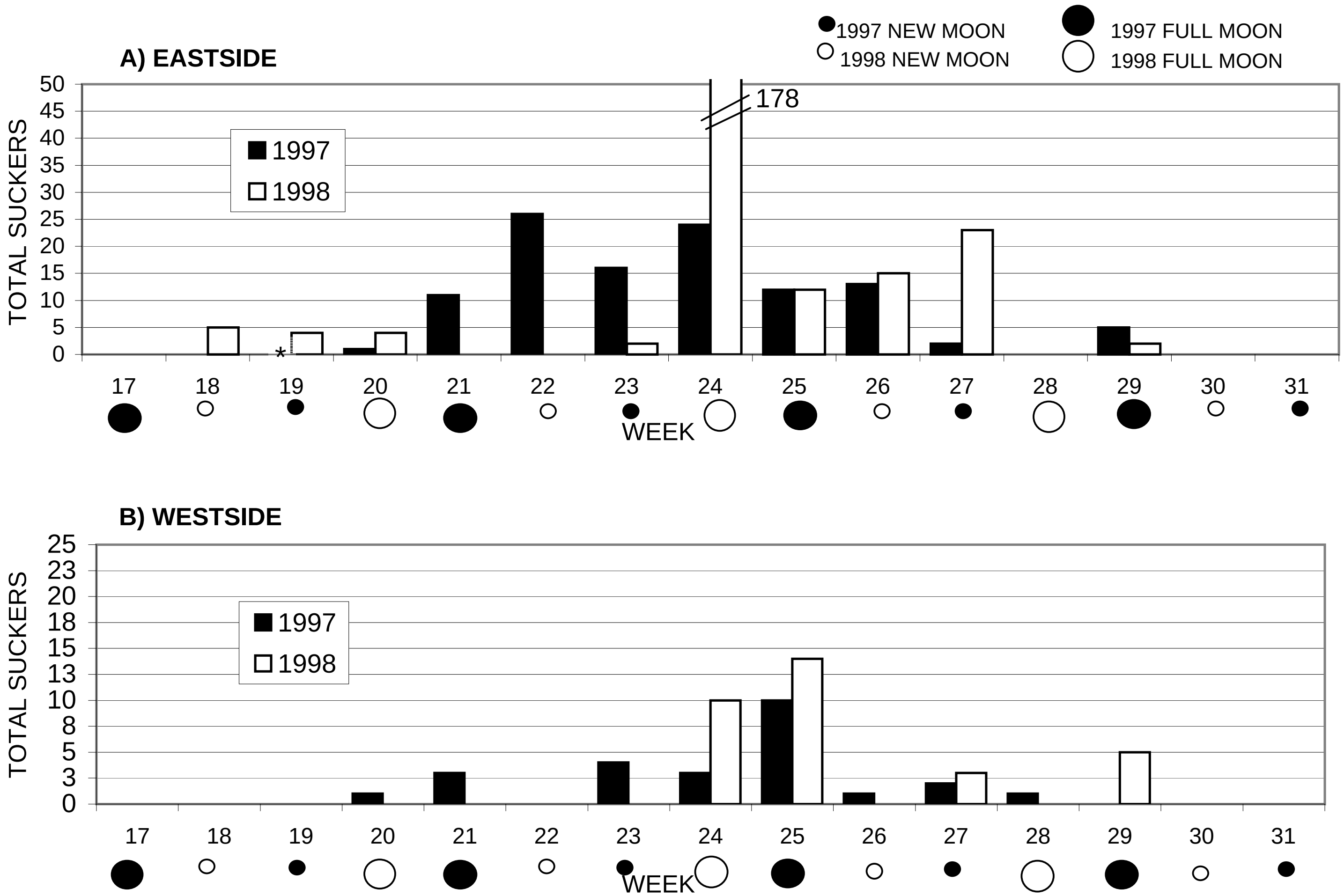



Figure 8. 1997 and 1998 Eastside and Westside total weekly sucker catch with new and full moon phases. Note scale changes.
* - No sample collections were made during week 19 in 1997 when the Eastside canal was shutdown.

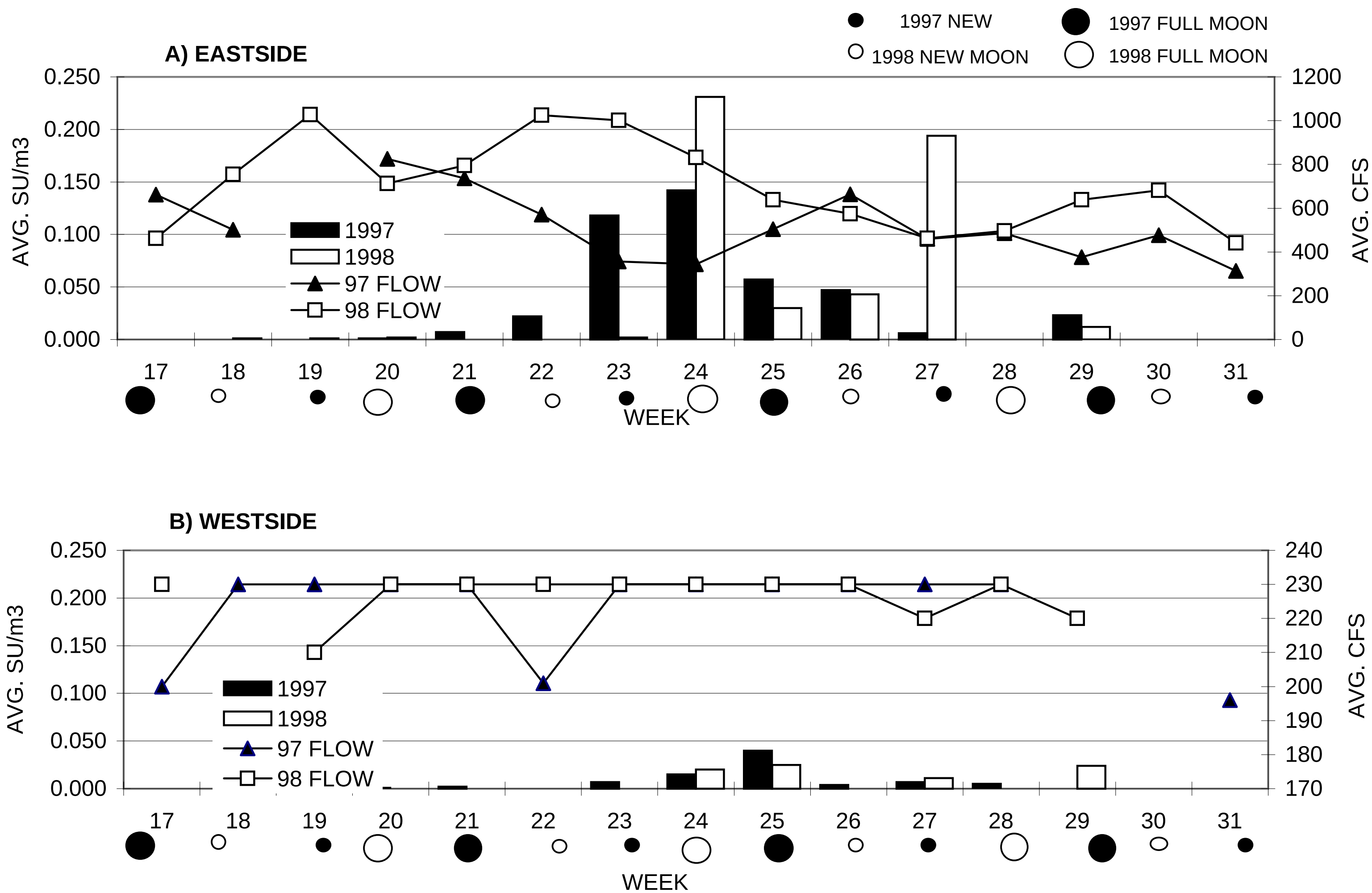



Figure 9. Eastside and Westside average weekly larval sucker CPUE values (su/$m^3$ - from all canal cells and depths combined), associated mean weekly canal flows, and new and full moon phases, by year.

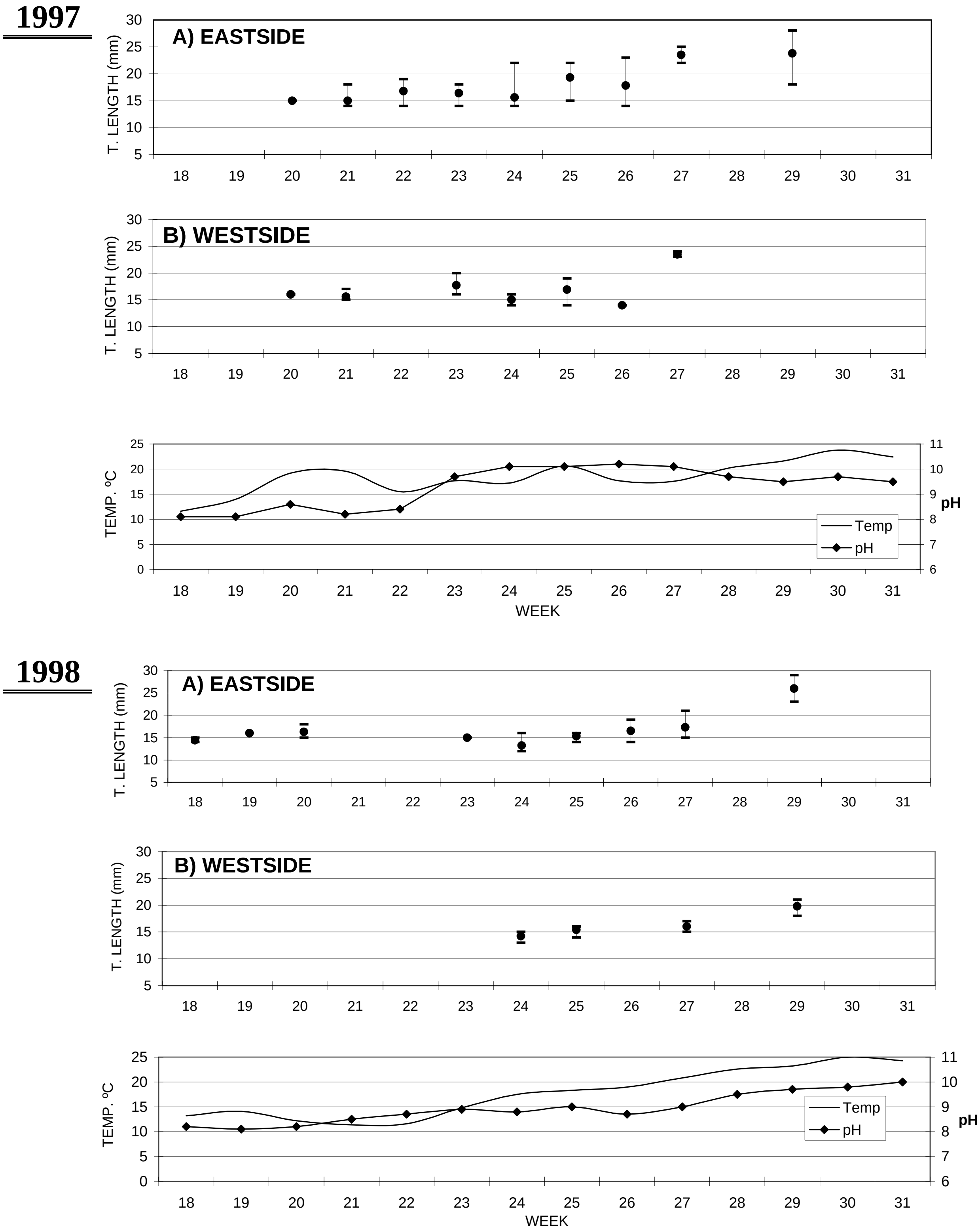



Figure 10. 1997 and 1998 Eastside and Westside average weekly larval sucker total lengths (the range of weekly lengths is displayed in the vertical bar). Eastside canal average weekly pH and temperature spot check data, by year, is graphed below.

## A) EASTSIDE

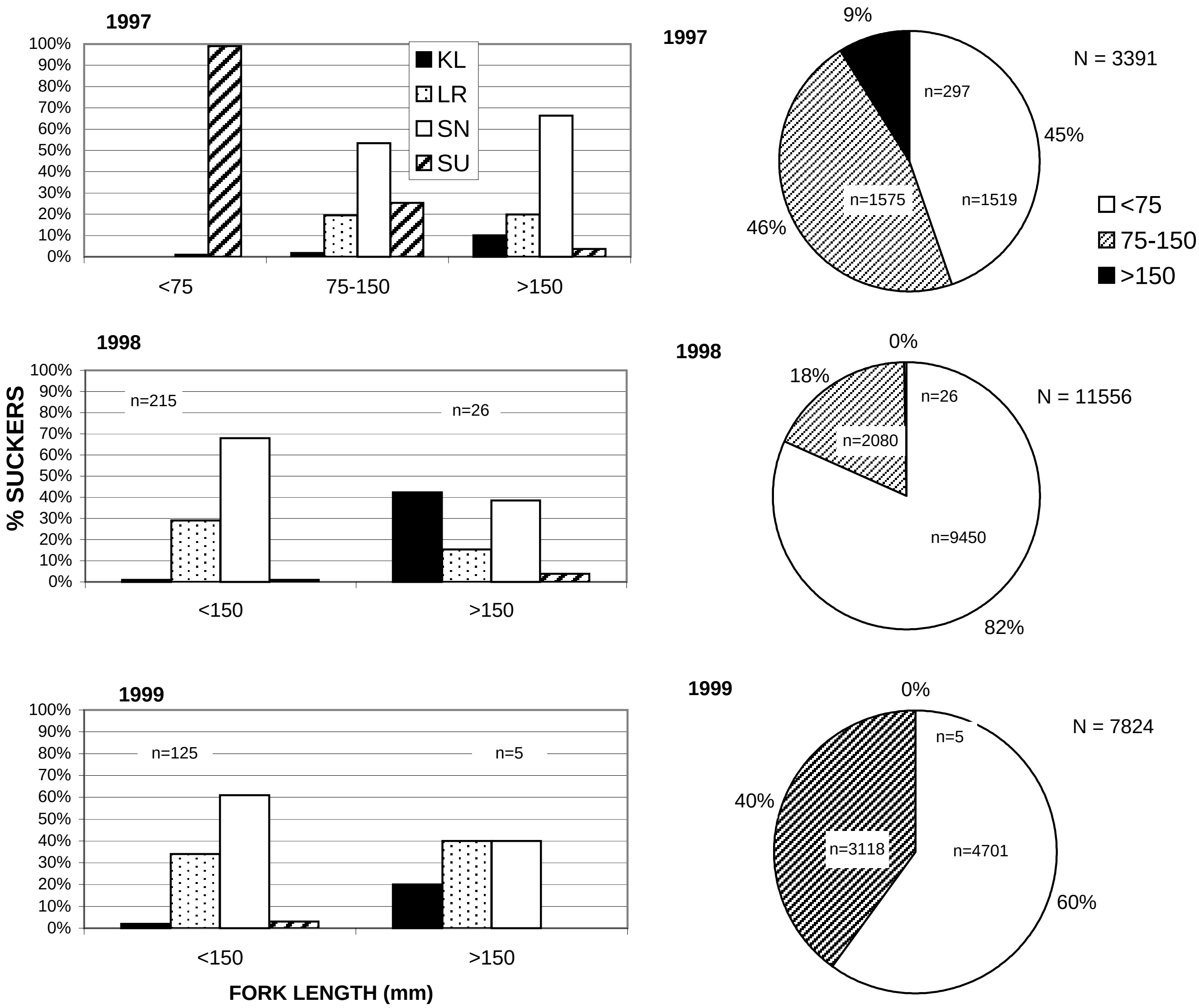



Figure 11a. 1997-1999 Eastside sucker breakdown into species and fork length size categories (<75 mm, 75-150 mm, >150 mm). In 1997, all suckers were identified in the field. In 1998 and 1999, a subsample (n) of suckers <150 mm FL were identified by Oregon State University researchers with x-ray technology. Suckers >150 mm FL were identified in the field. Pie charts represent the year's catch of suckers split into fork length size classes. The total year's catch is "N." The number in each size category is "n".

**B) WESTSIDE**

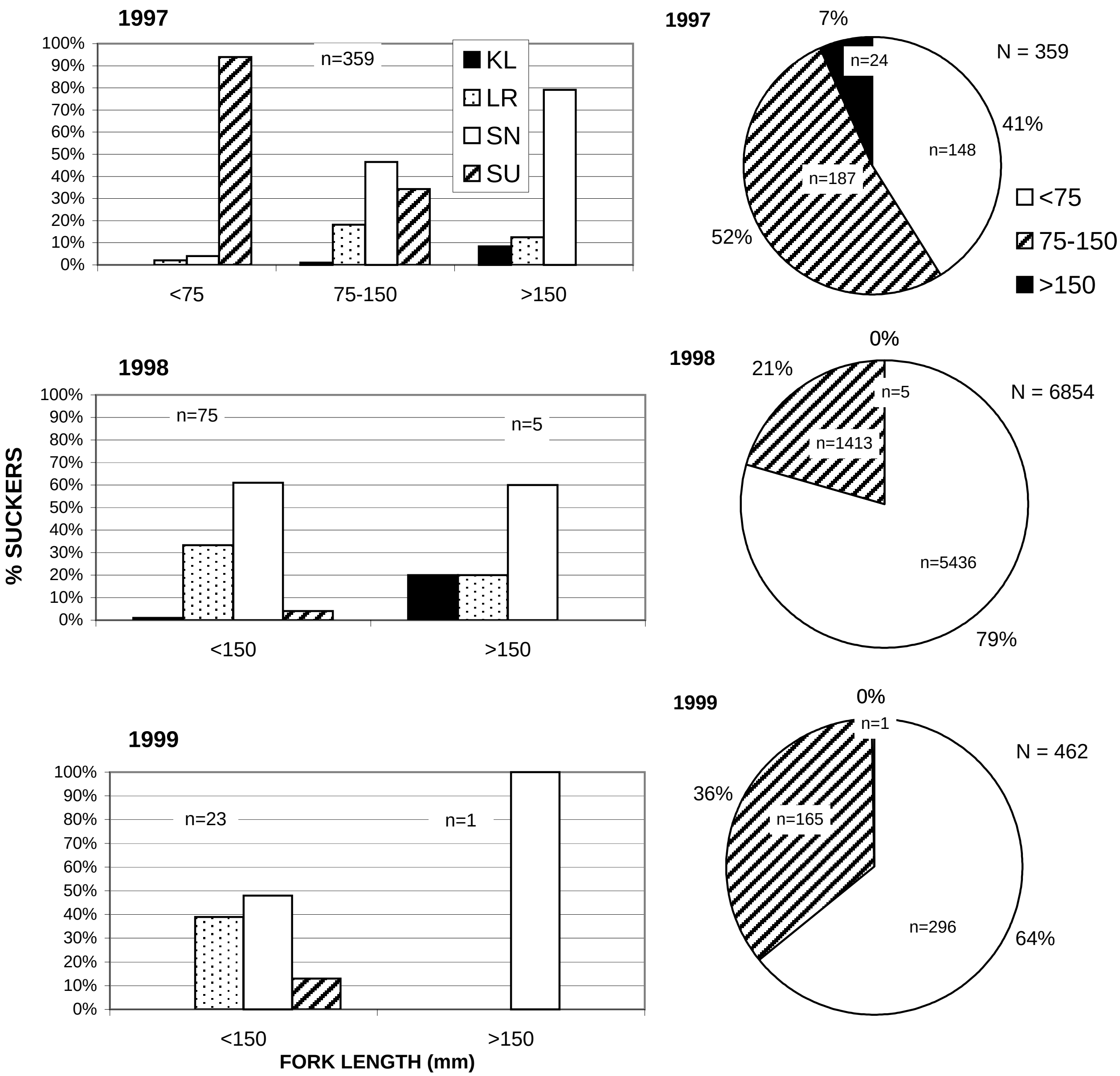



Figure 11b. 1997-1999 Westside sucker breakdown into species and fork length size categories (<75 mm, 75-150 mm, >150 mm). In 1997, all suckers were identified in the field. In 1998 and 1999, a subsample (n) of suckers <150 mm FL were identified by Oregon State University researchers with x-ray technology. Suckers >150 mm FL were identified in the field. Pie charts represent the year's catch of suckers split into fork length size classes. The total year's catch is "N." The number in each size category is "n".

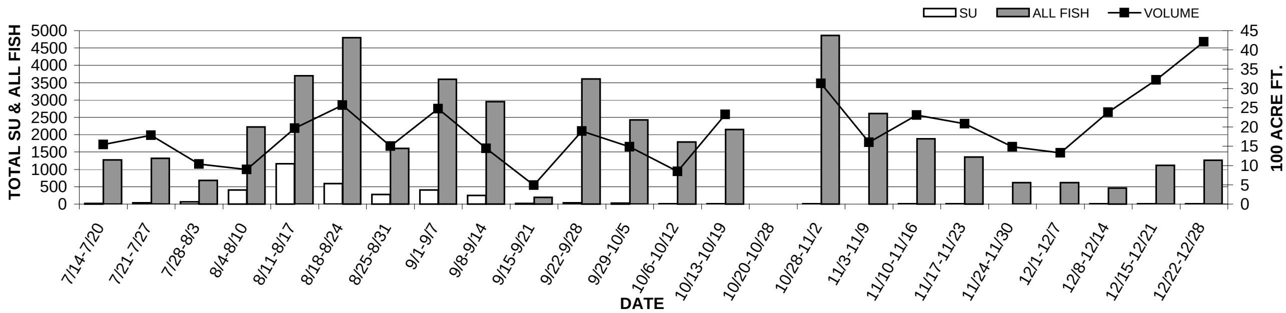



Figure 12A. 1997 Eastside weekly fyke net total sucker and all fish catches, in relation to the total weekly sampled water volume (100 acre feet).

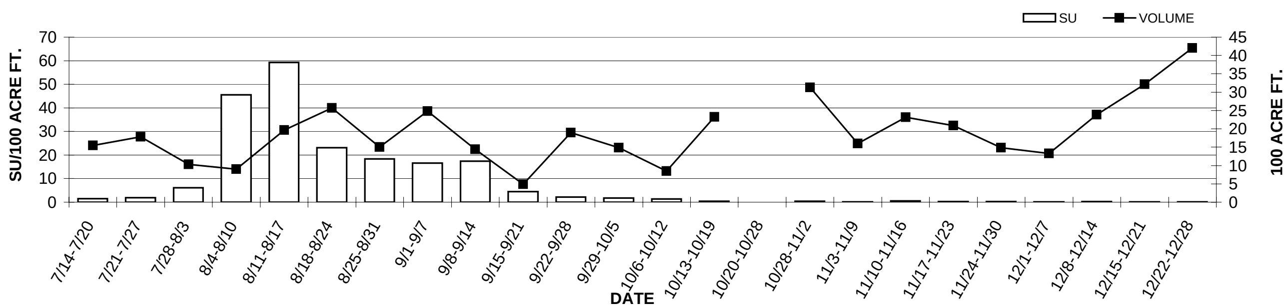



Figure 13A. 1997 Eastside weekly fyke net sucker CPUE (su/100 acre feet), graphed in relation to the total weekly sampled water volume (100 acre feet).

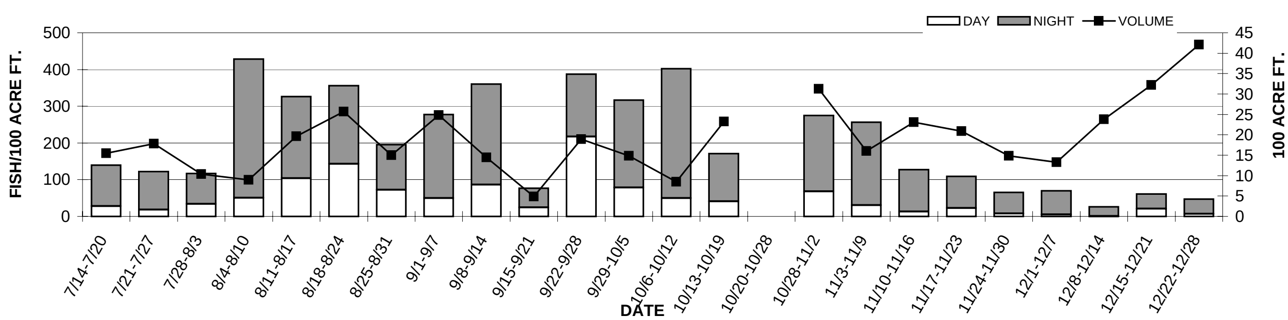



Figure 14A. 1997 Eastside weekly fyke net CPUE for all fish (fish/100 acre feet) by day and night periods, graphed in relation to the total weekly sampled water volume (100 acre feet).

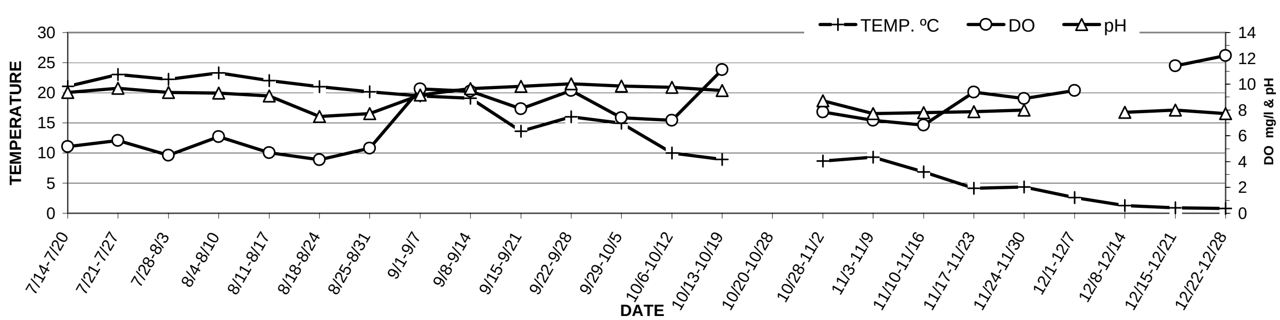
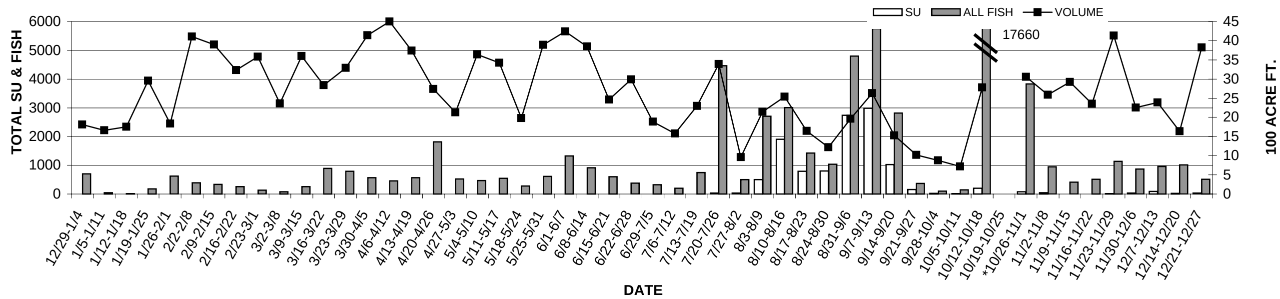



Figure 15A. 1997 Eastside weekly water quality readings for dissolved oxygen, pH, and water temperature (ºC). Single morning spot check values are connected so that trends are more visible. These values are not from continuous testing. Breaks in the lines represent missing data or canal closure periods.

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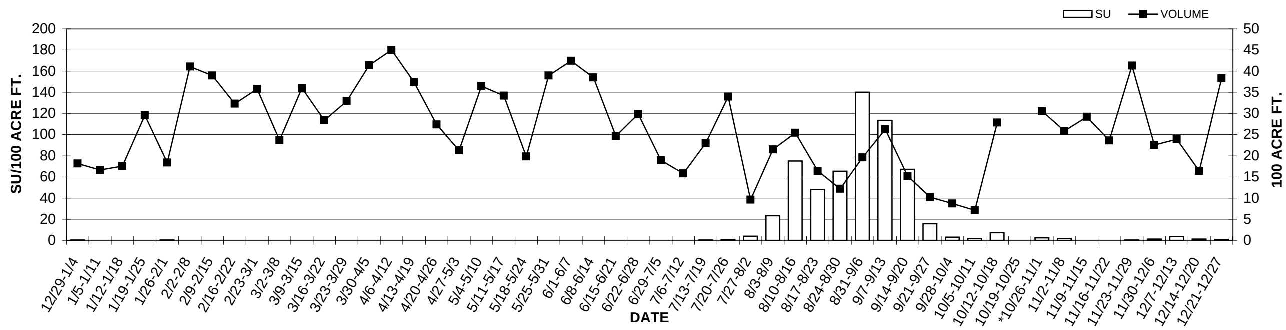


Figure 13A. 1998 Eastside weekly fyke net sucker CPUE (su/100 acre feet), graphed in relation to the total weekly sampled water volume (100 acre feet).

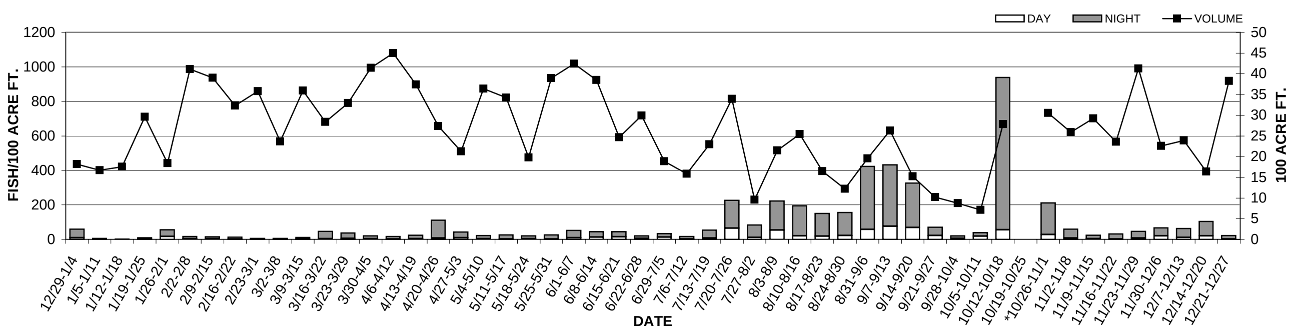


Figure 14A. 1998 Eastside weekly fyke net CPUE for all fish (fish/100 acre feet) by day and night periods, graphed in relation to the total weekly sampled water volume (100 acre feet).

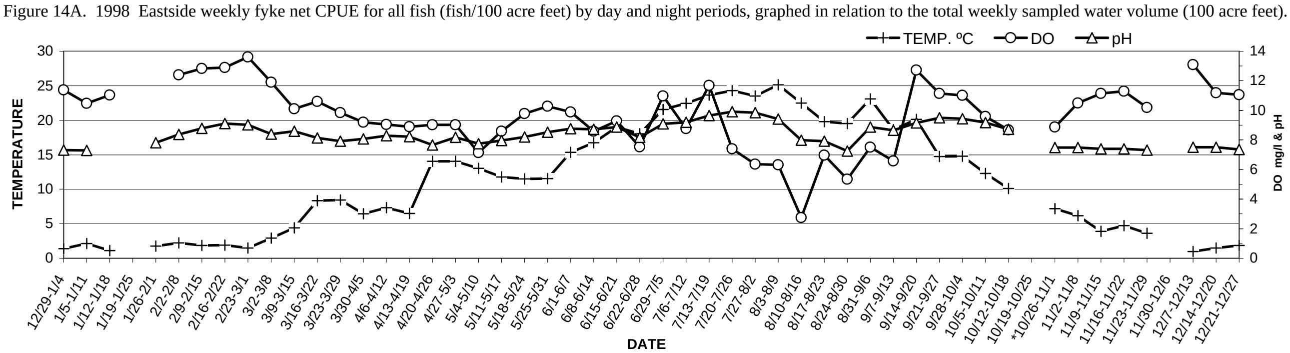


Figure 15A. 1998 Eastside weekly water quality readings for dissolved oxygen, pH, and water temperature (ºC). Single morning spot check values are connected so that trends are more visible. These values are not from continuous testing. Breaks in the lines represent missing data or canal closure periods.

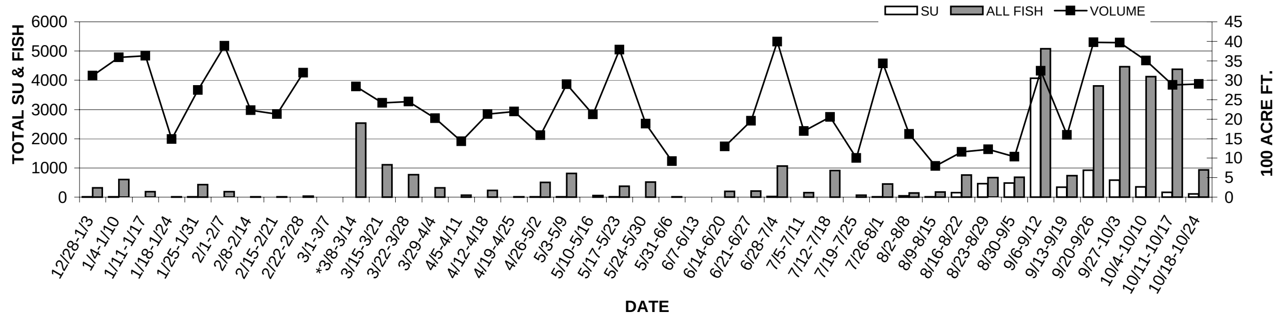


Figure 12A. 1999 Eastside weekly fyke net total sucker and all fish catches, in relation to the total weekly sampled water volume (100 acre feet).

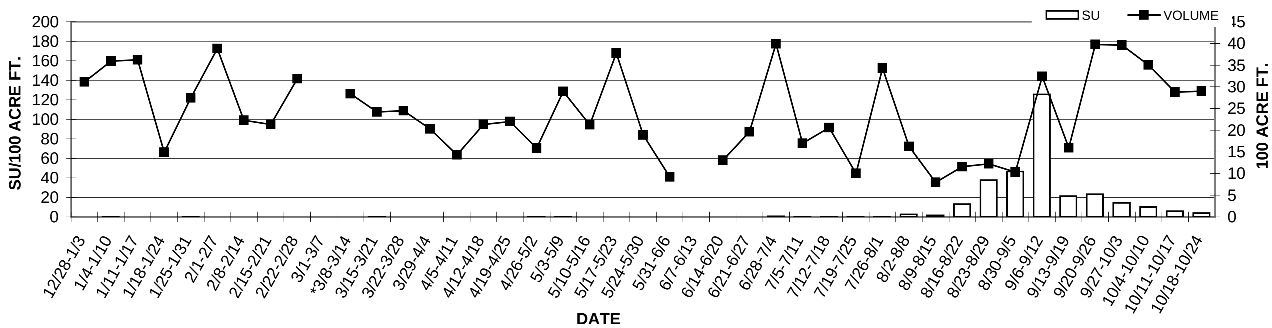


Figure 13A. 1999 Eastside weekly fyke net sucker CPUE (su/100 acre feet), graphed in relation to the total weekly sampled water volume (100 acre feet).

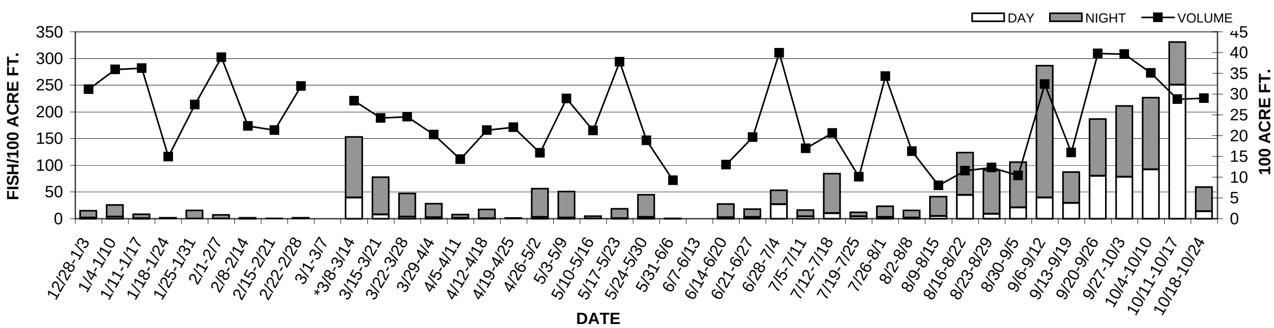


Figure 14A. 1999 Eastside weekly fyke net CPUE for all fish (fish/100 acre feet) by day and night periods, graphed in relation to the total weekly sampled water volume (100 acre feet).

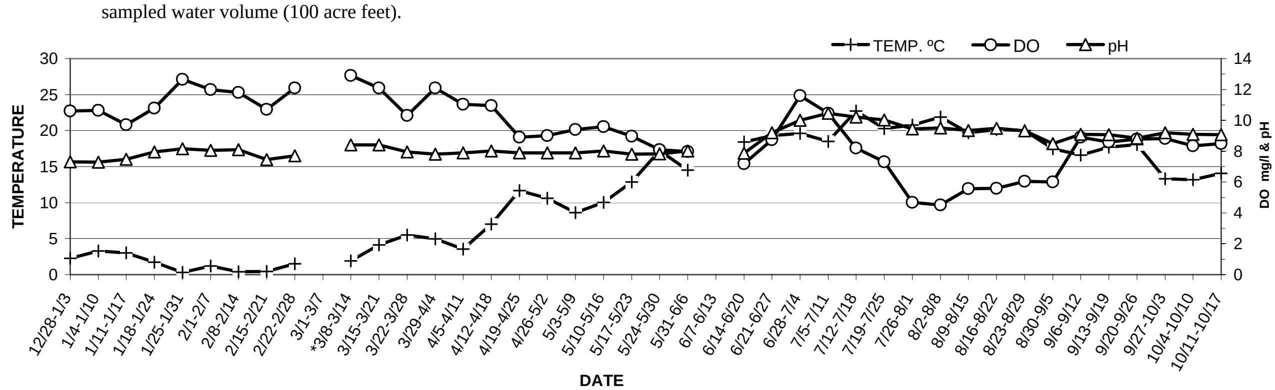


Figure 15A. 1999 Eastside weekly water quality readings for dissolved oxygen, pH, and water temperature (ºC). Single morning spot check values are connected so that trends are more visible. These values are not from continuous testing. Breaks in the lines represent missing data or canal closure periods.

An * represents when the canal was re-opened after a shutdown period.

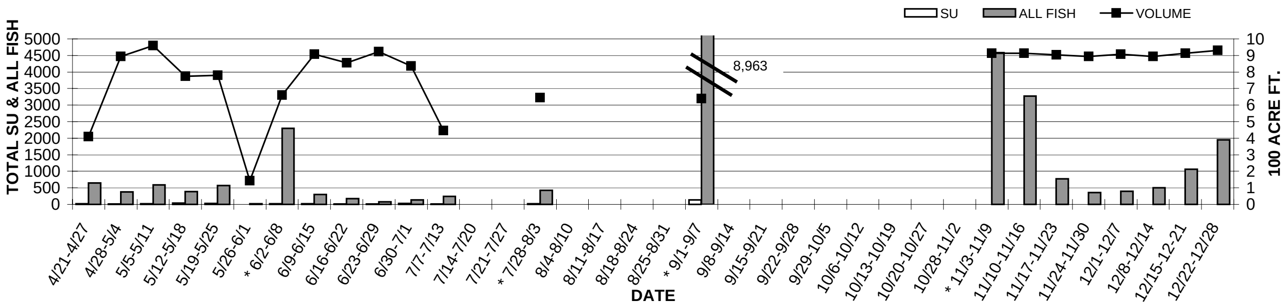


Figure 12B. 1997 Westside weekly fyke net total sucker and all fish catches, in relation to the total weekly sampled water volume (100 acre feet).

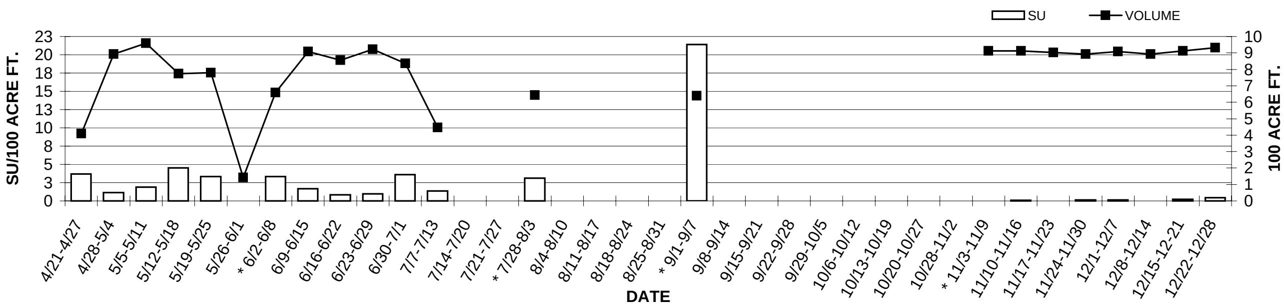


Figure 13B. 1997 Westside weekly fyke net sucker CPUE (su/100 acre feet), graphed in relation to the total weekly sampled water volume (100 acre feet).

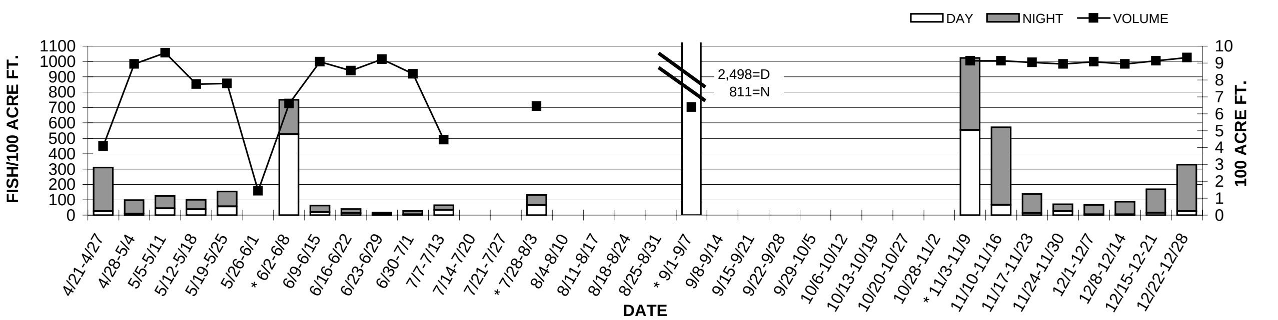


Figure 14B. 1997 Westside weekly fyke net CPUE for all fish (fish/100 acre feet) by day and night periods, graphed in relation to the total sampled water volume (100 acre feet).

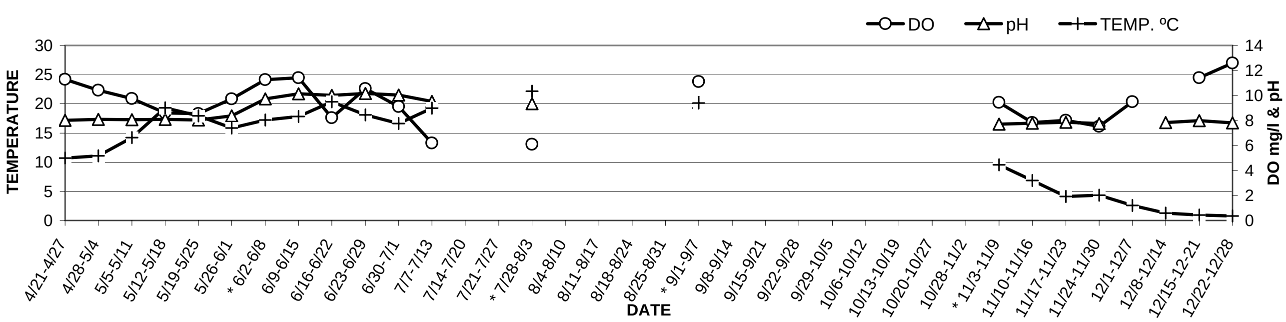


Figure 15B. 1997 Westside weekly water quality readings for dissolved oxygen, pH, and water temperature (ºC). Single morning spot check values are connected so that trends are more visible. These values are not from continuous testing. Breaks in the lines represent missing data or canal closure periods.

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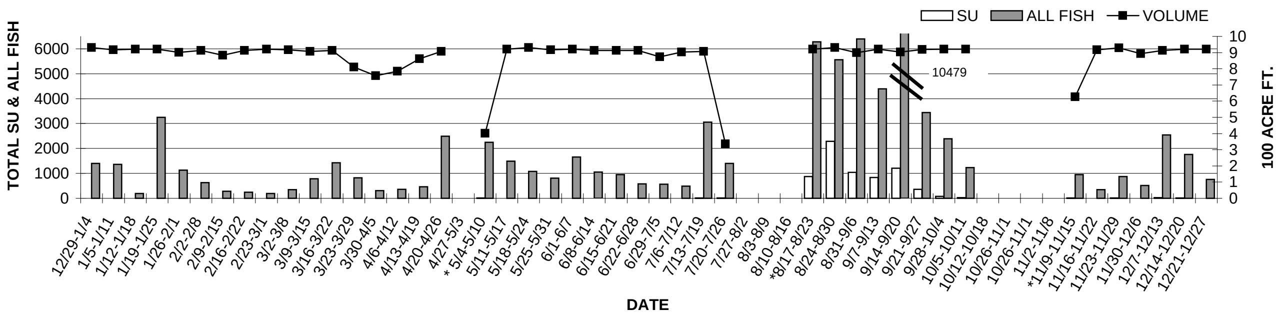



Figure 12B. 1998 Westside weekly fyke net total sucker and all fish catches, in relation to the total weekly sampled water volume (100 acre ft.)

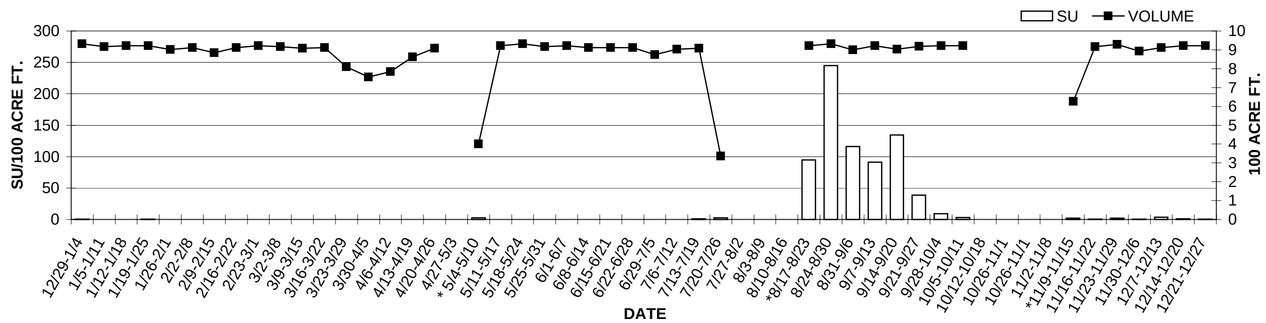
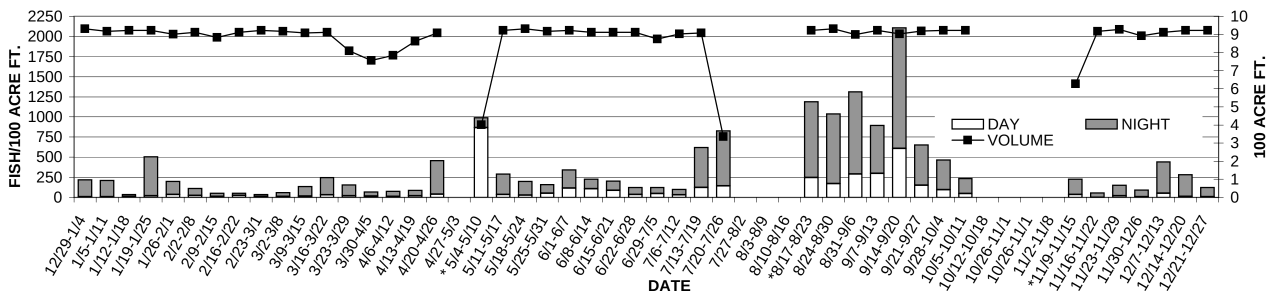



Figure 13B. 1998 Westside weekly fyke net sucker CPUE (su/ (100 acre feet), graphed in relation to the total weekly sampled water volume (100 acre feet).

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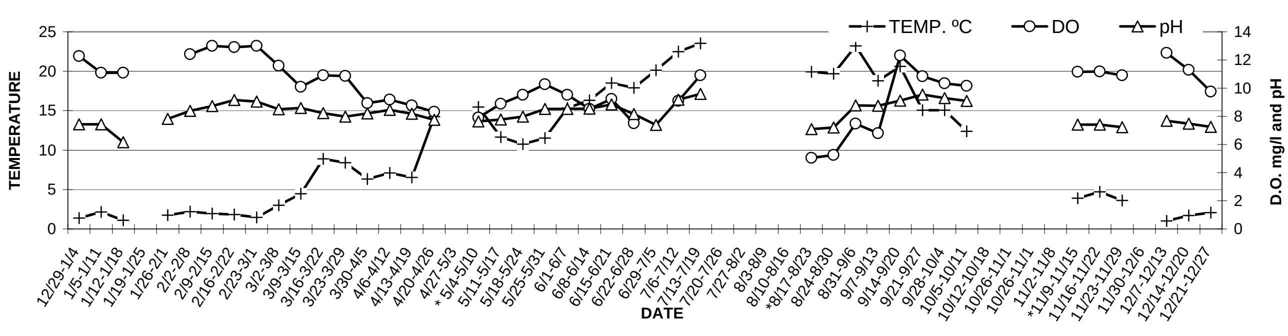



Figure 15B. 1998 Westside weekly water quality readings for dissolved oxygen, pH, and water temperature (ºC). Single morning spot check values are connected so that trends are more visible. These values are not from continuous testing. Breaks in the lines represent missing data or canal closure periods.

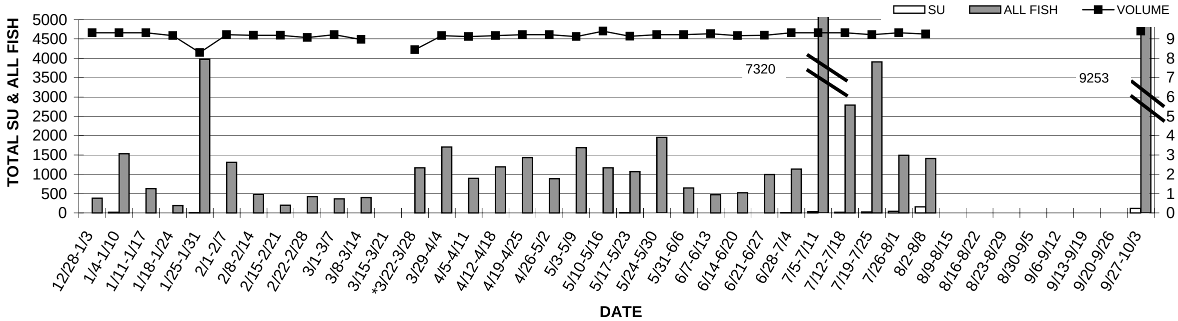



Figure 12B. 1999 Westside weekly fyke net total sucker and all fish catches, in relation to the total weekly sampled water volume (100 acre feet).

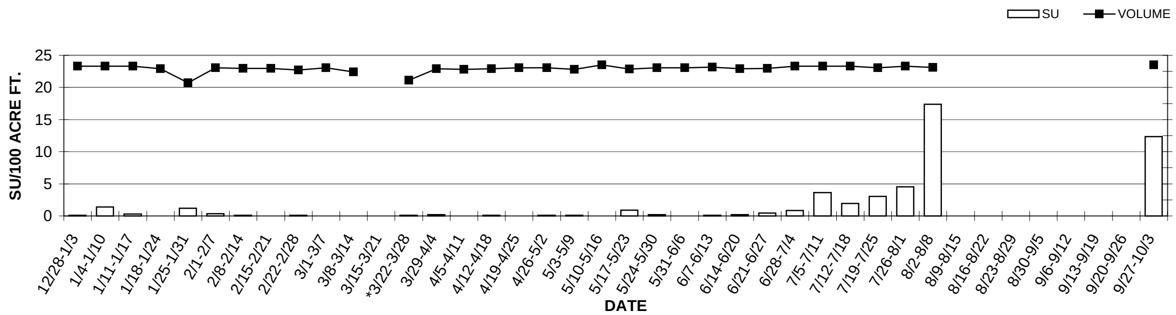



Figure 13B. 1999 Westside weekly fyke net sucker CPUE (su/100 acre feet), graphed in relation to the total weekly sampled water volume (100 acre feet).

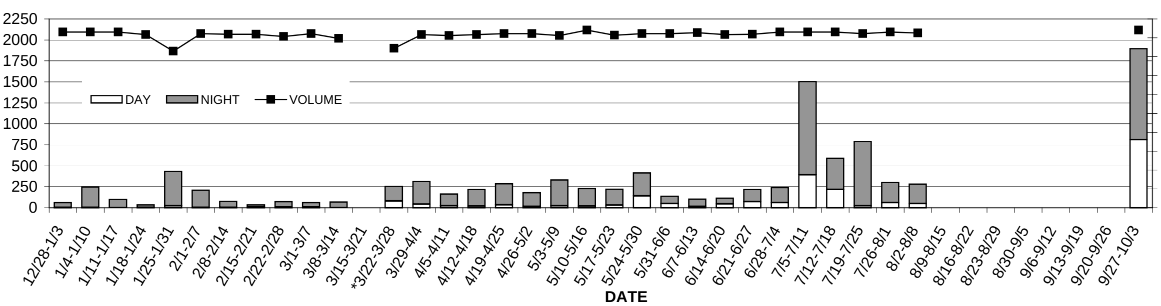



Figure 14B. 1999 Westside weekly fyke net CPUE for all fish (fish/100 acre feet) by day and night periods, graphed in relation to the total weekly sampled water volume (100 acre feet).

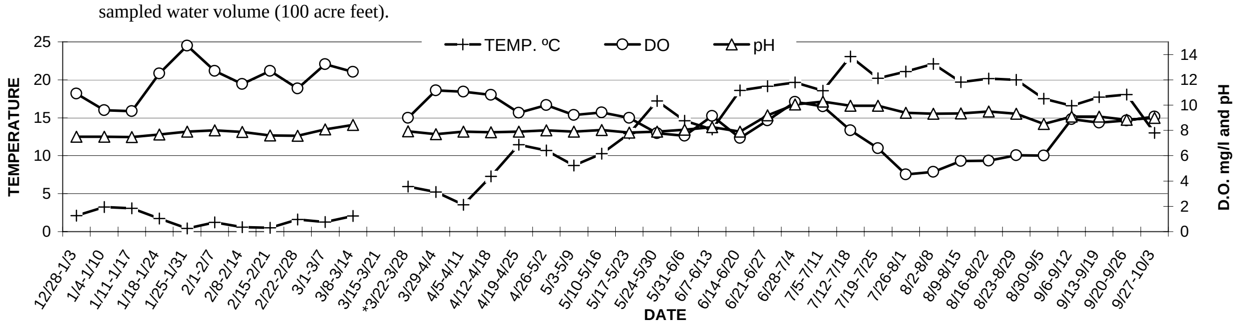



Figure 15B. 1999 Westside weekly water quality readings for dissolved oxygen, pH, and water temperature (ºC). Single morning spot check values are connected so that trends are more visible. These values are not from continuous testing. Breaks in the lines represent missing data or canal closure periods. Water quality readings during Westside shutdown (8/9-9/25) were from Eastside.

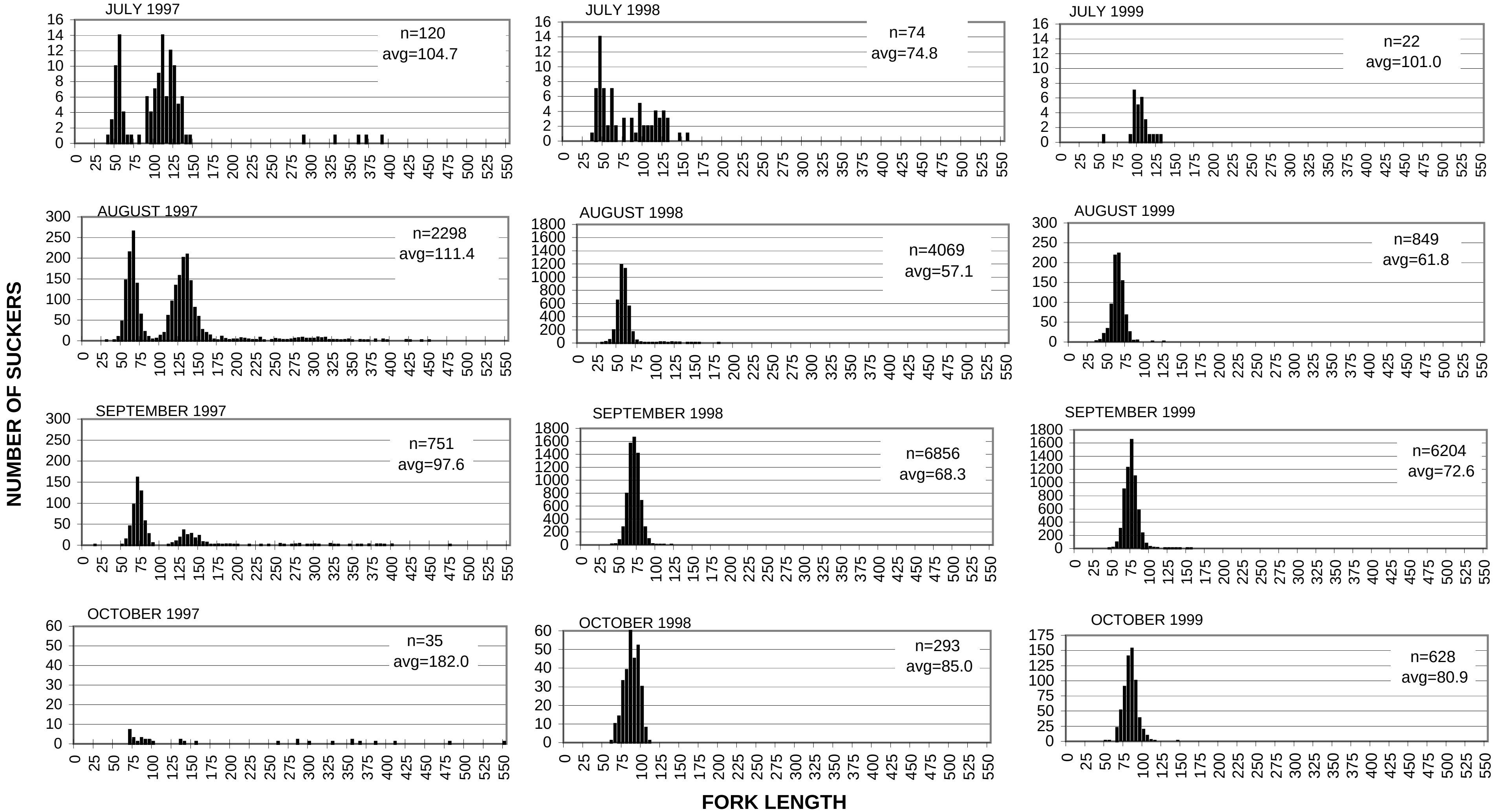



Figure 16A-Summer. 1997-1999 summer monthly Eastside length frequency distributions for all juvenile and adult suckers. The month, number of suckers, and average fork length are noted above each histogram. Note different scales on the Y-axis.

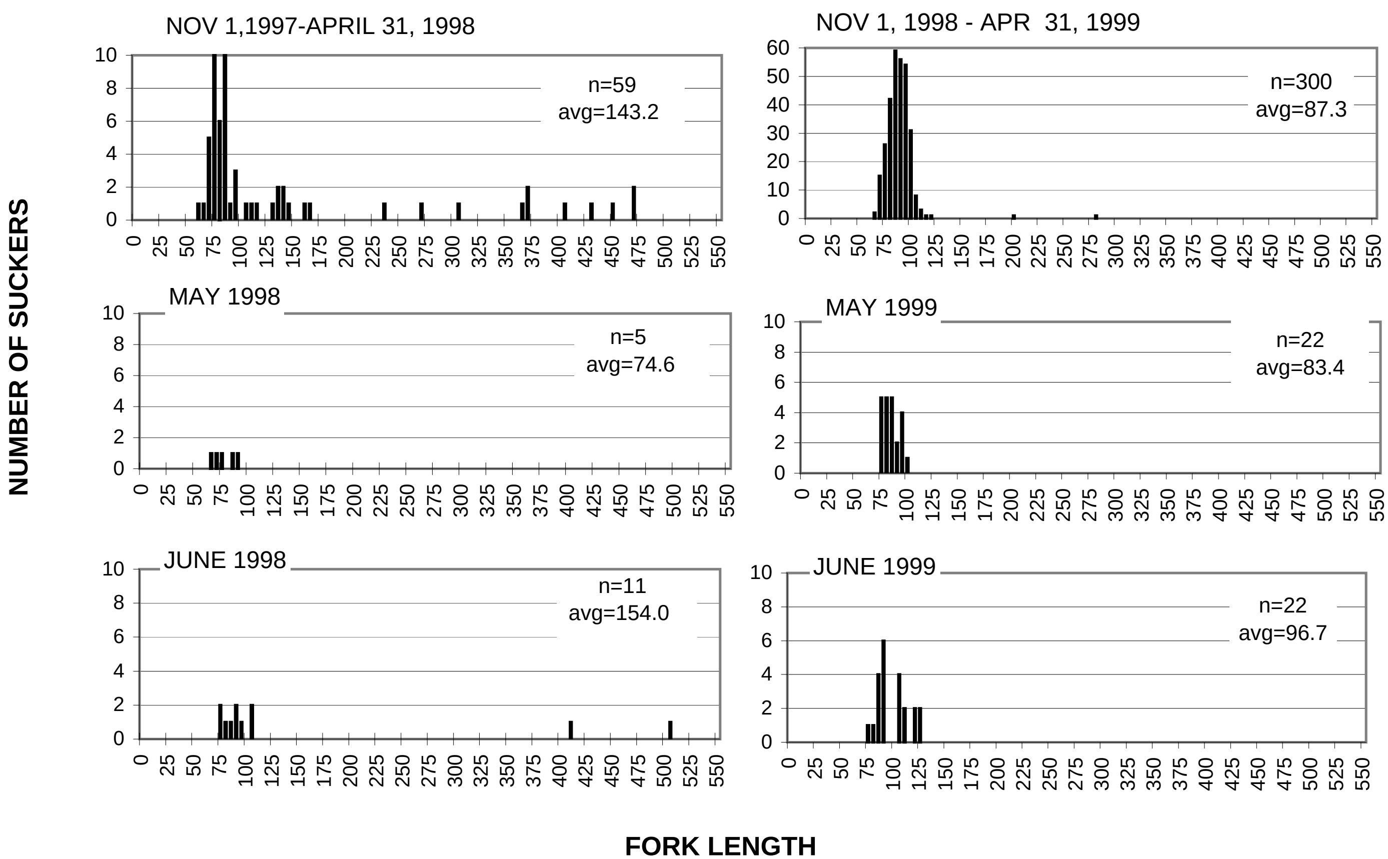



Figure 16A-FWS. 1997-1999 fall, winter, and spring Eastside length frequency distributions for all juvenile and adult suckers. The time period, number of suckers and average fork length are noted above each histogram.

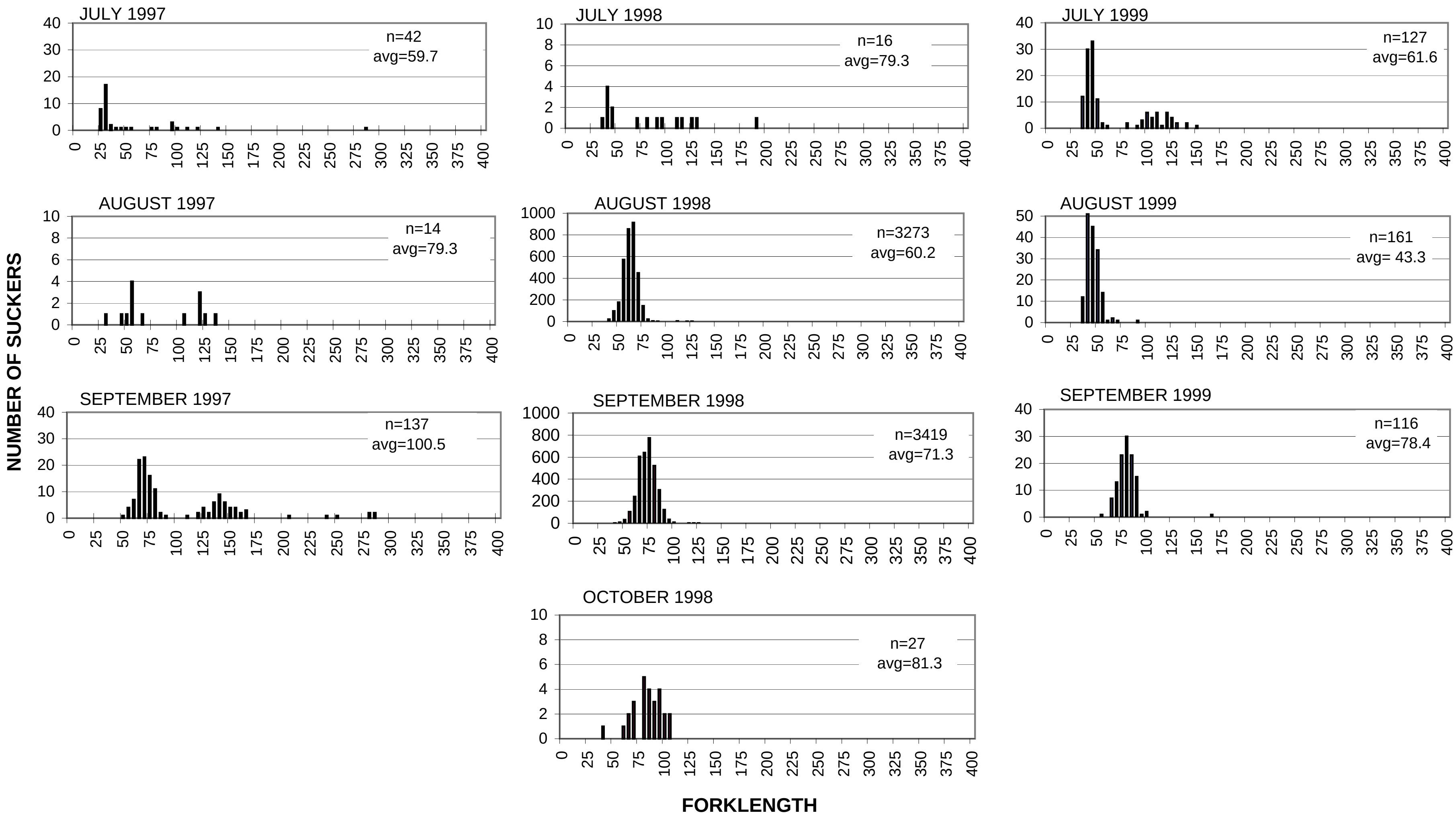



Figure 16B-Summer. 1997-1999 summer monthly Westside length frequency distributions for all juvenile and adult suckers. The month, number of suckers, and averag fork length are noted above each histogram. No sampling occurred in October of 1997 or 1999.

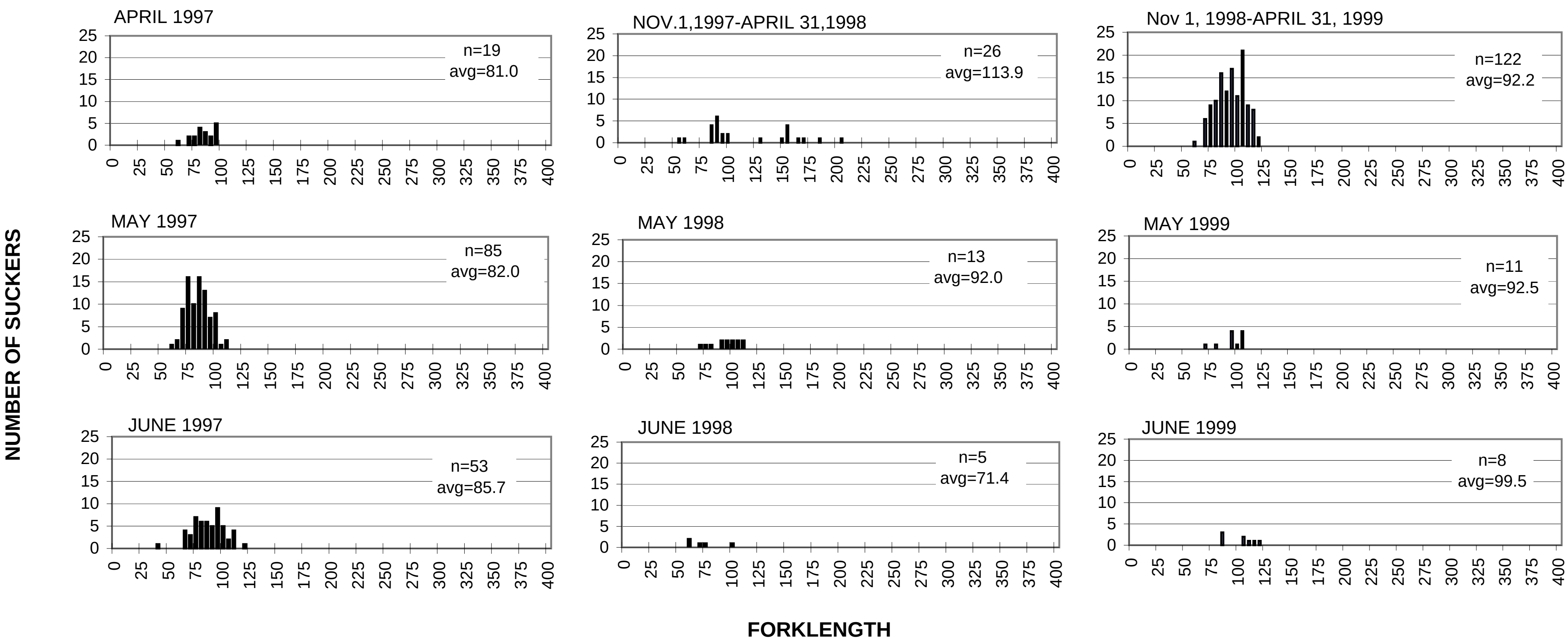



Figure 16B-FWS. 1997-1999 fall, winter, and spring Westside length frequency distributions for all juvenile and adult suckers. The time period, number of suckers and average fork length are noted above each histogram.

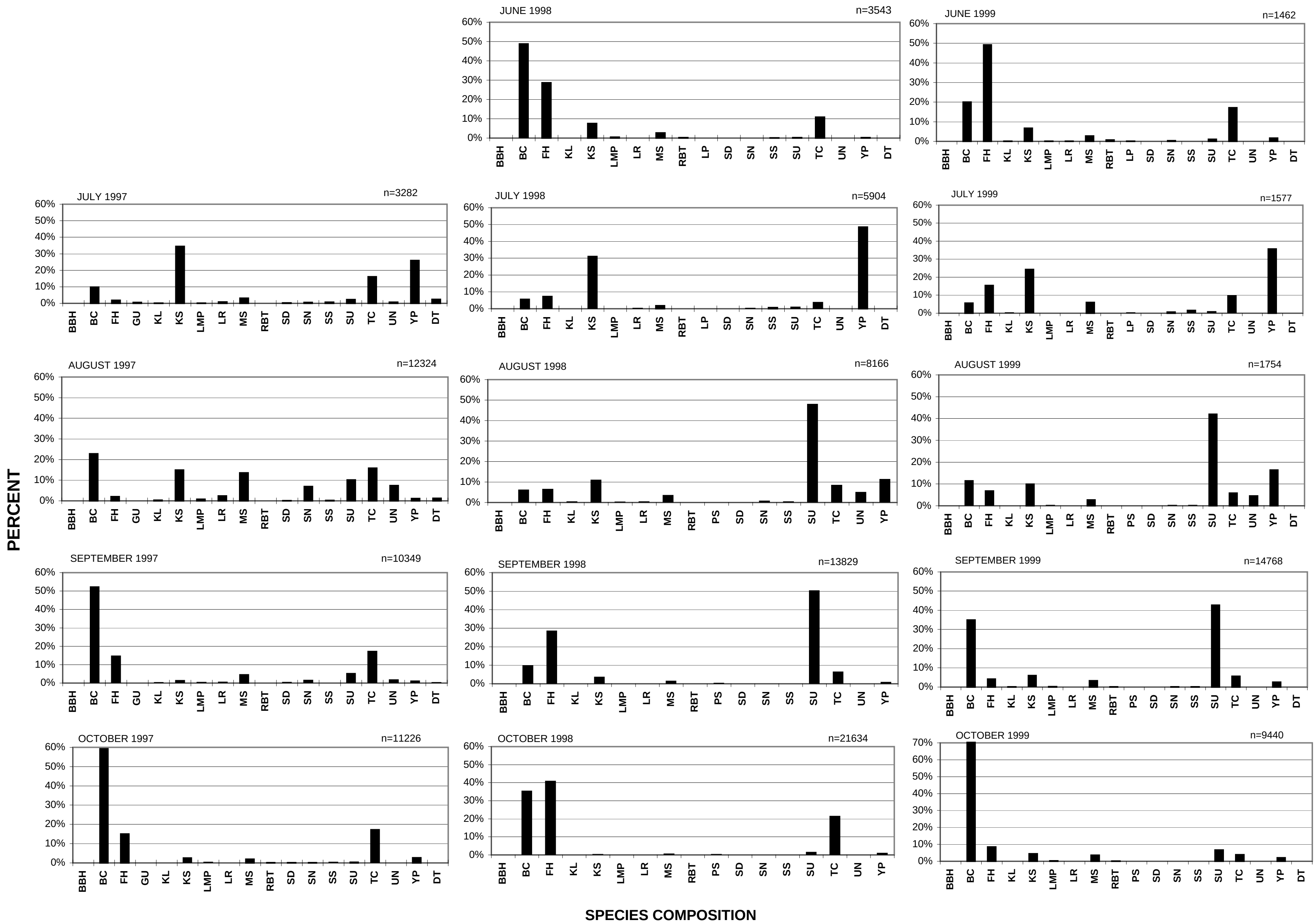



Figure 17A-Summer. 1997-1999 summer monthly species composition from Eastside fyke net collections. "n" is the total number of fish sampled. Data collection started in July 1997.

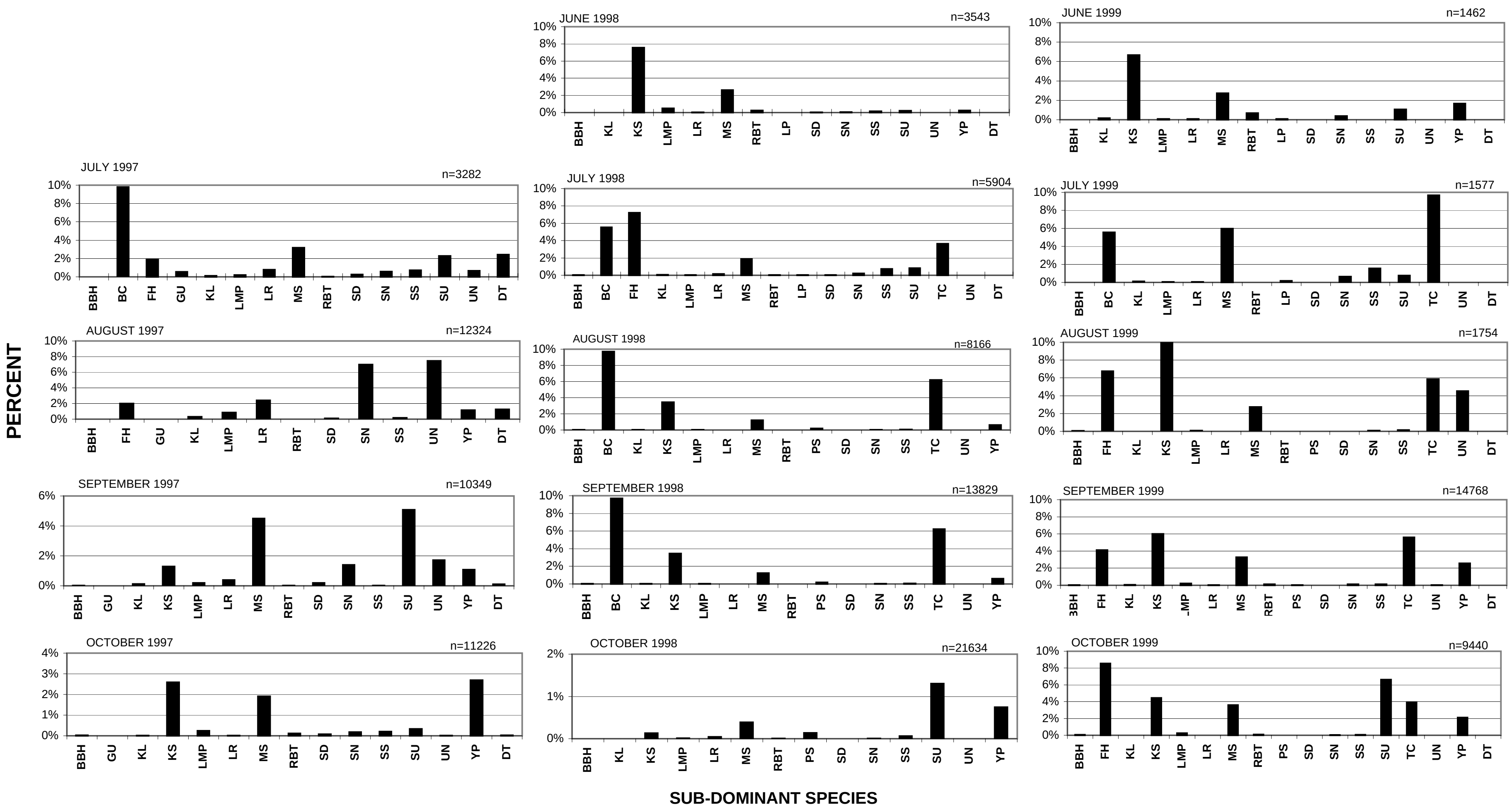



Figure 17A-Summer. (continued) 1997-1999 summer monthly species composition of sub-dominant species (those comprising <10% of the total catch), from Eastside fyke net collections. Data collection started in July 1997. Note scale changes.

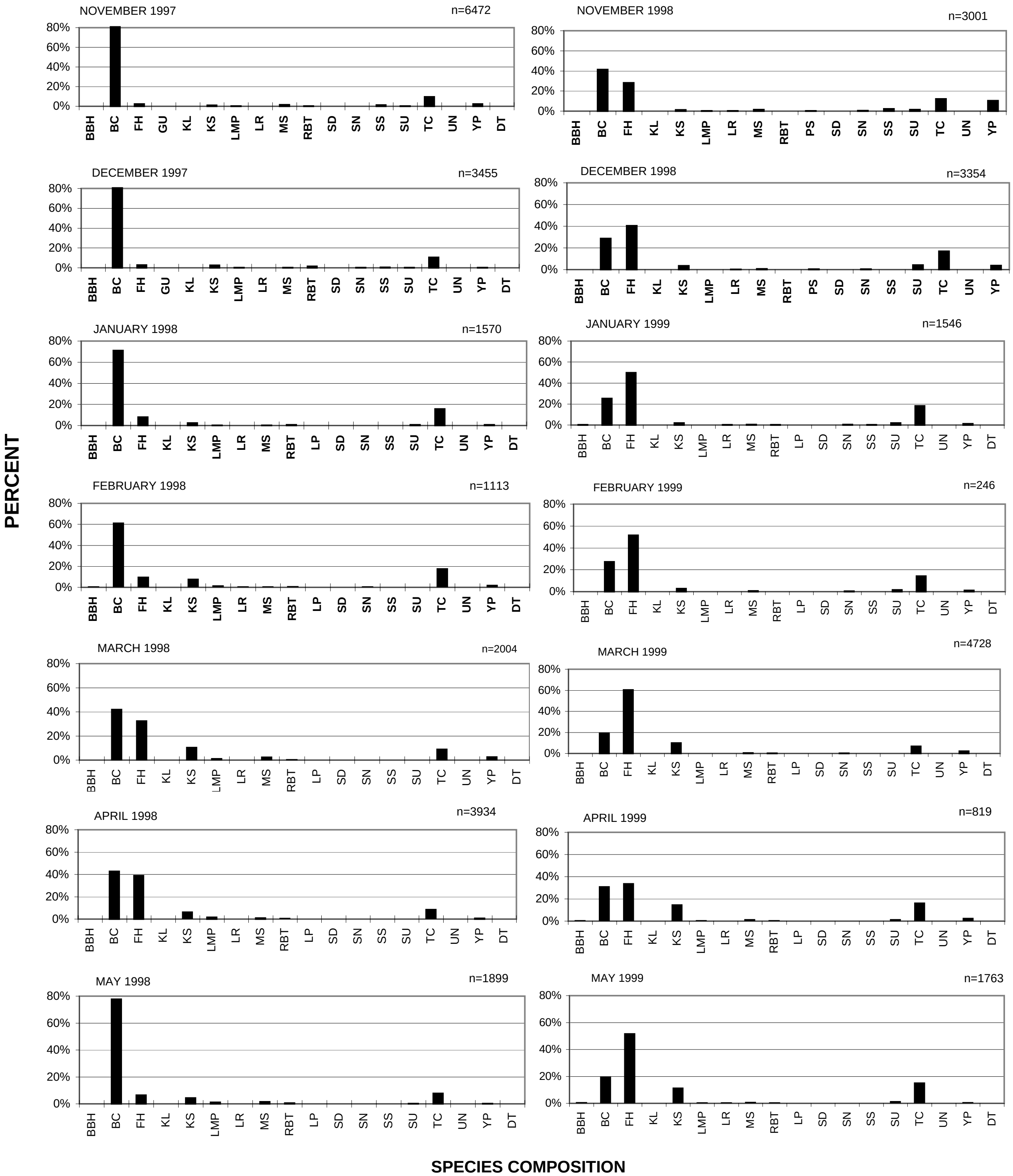



Figure 17A-FWS. 1997-1999 fall, winter, and spring monthly species composition from Eastside fyke net collections.

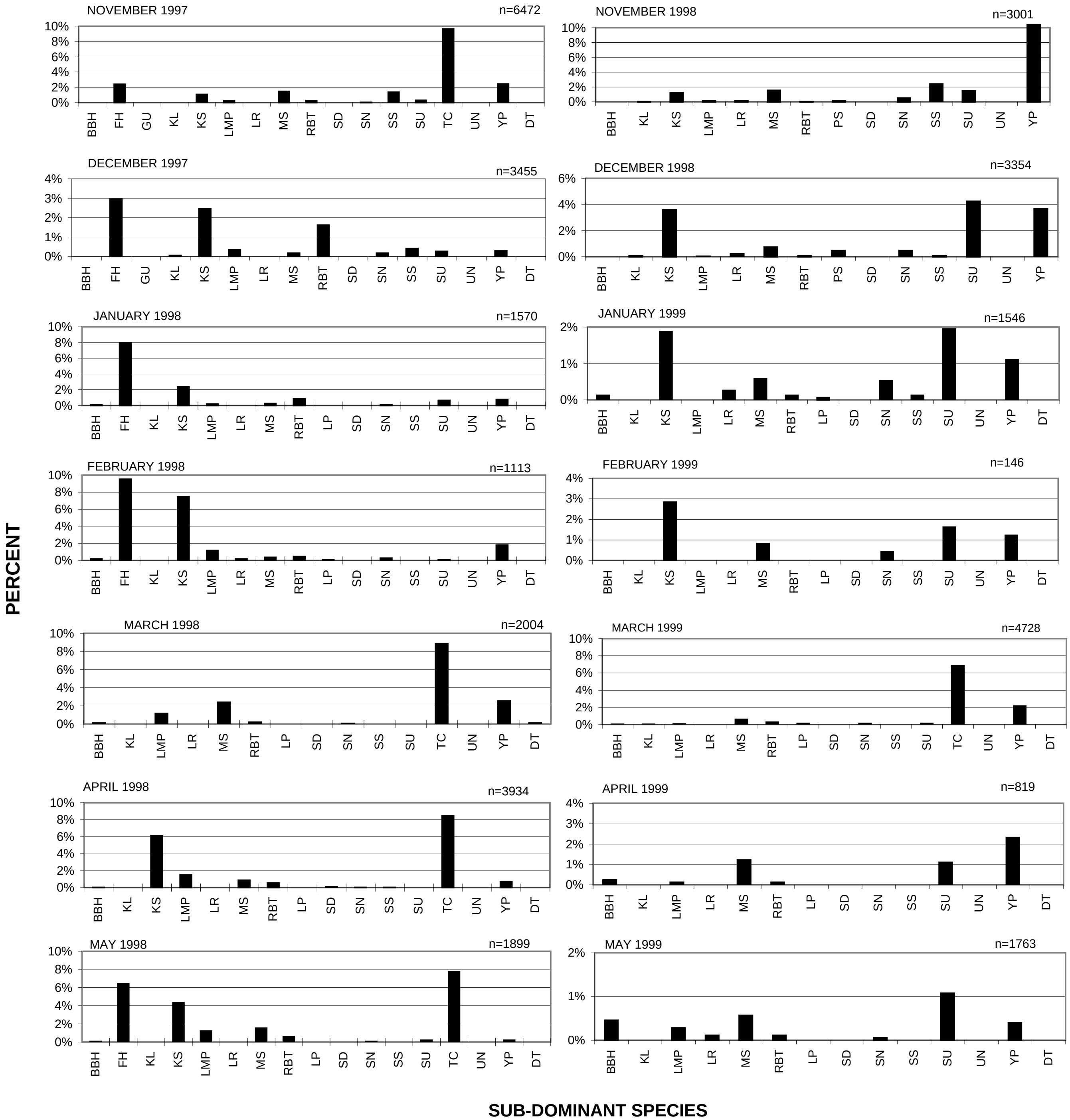



Figure 17A-FWS. (continued) 1997-1999 fall, winter, and spring species composition of sub-dominant species (those comprising <10% of the total catch) from Eastside fyke net collections. Note scale changes.

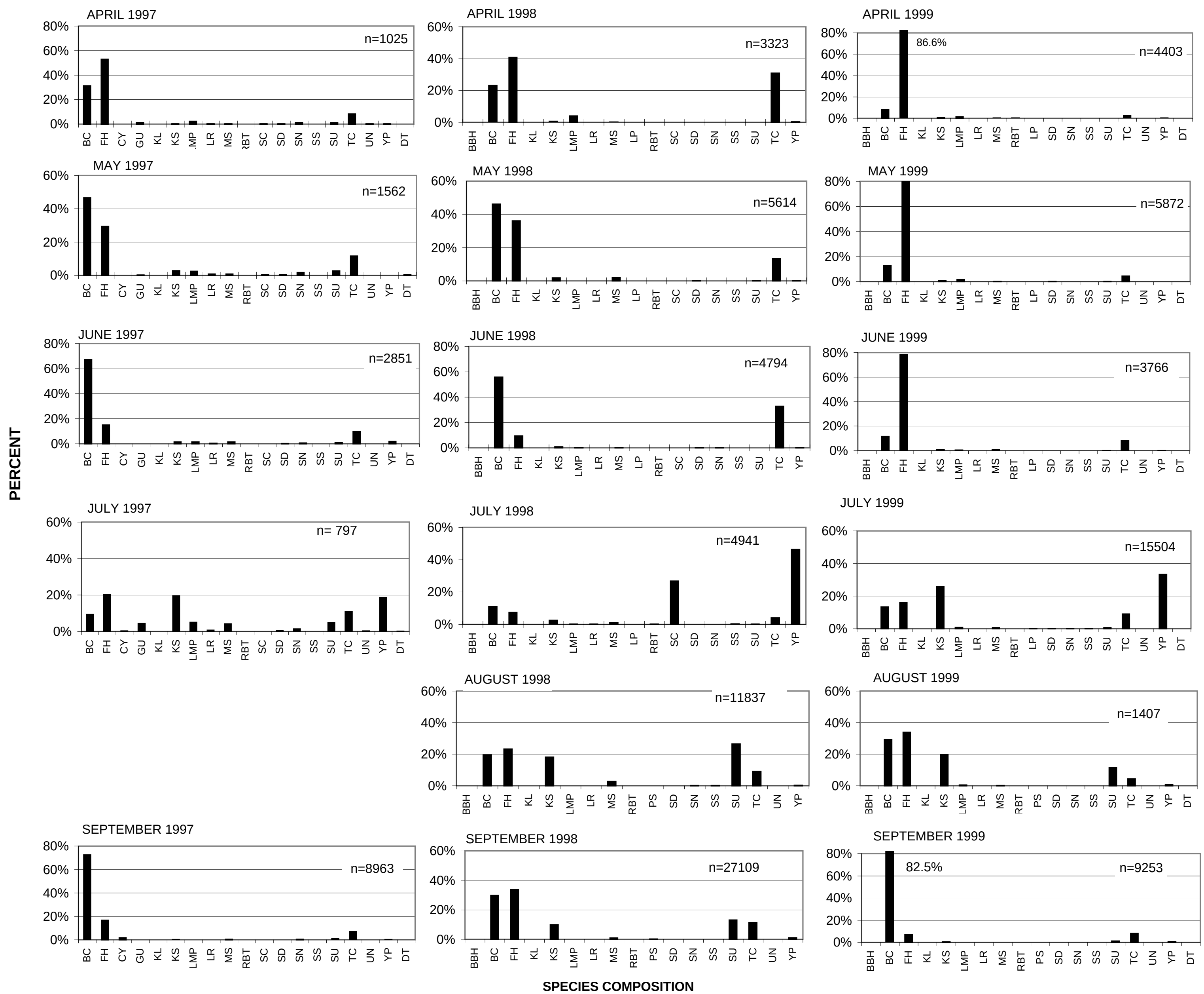



Figure 17B-Sp/Sum. 1997-1999 spring/summer monthly species composition from Westside fyke net collections. "n" is the total number of fish sampled. No sampling occurred in August 1997. Note scale changes.

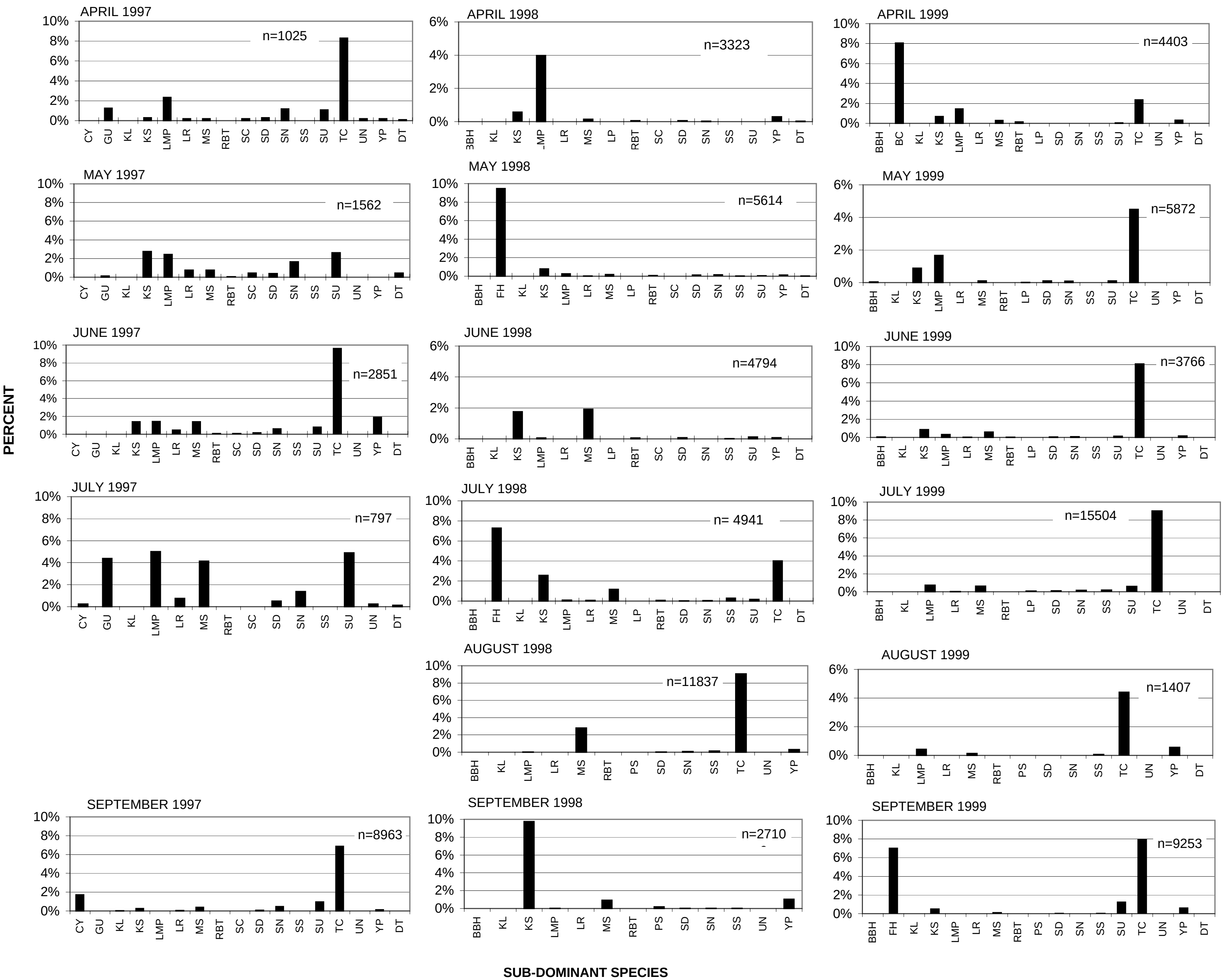



Figure 17B-Sp/Sum. (continued) 1997-1999 spring/summer monthly species composition of sub-dominant species (those comprising <10% of the total catch), from Westside fyke net collections. No sampling occurred in August 1997. "n" refers to the total number of fish sampled. Note scale changes.

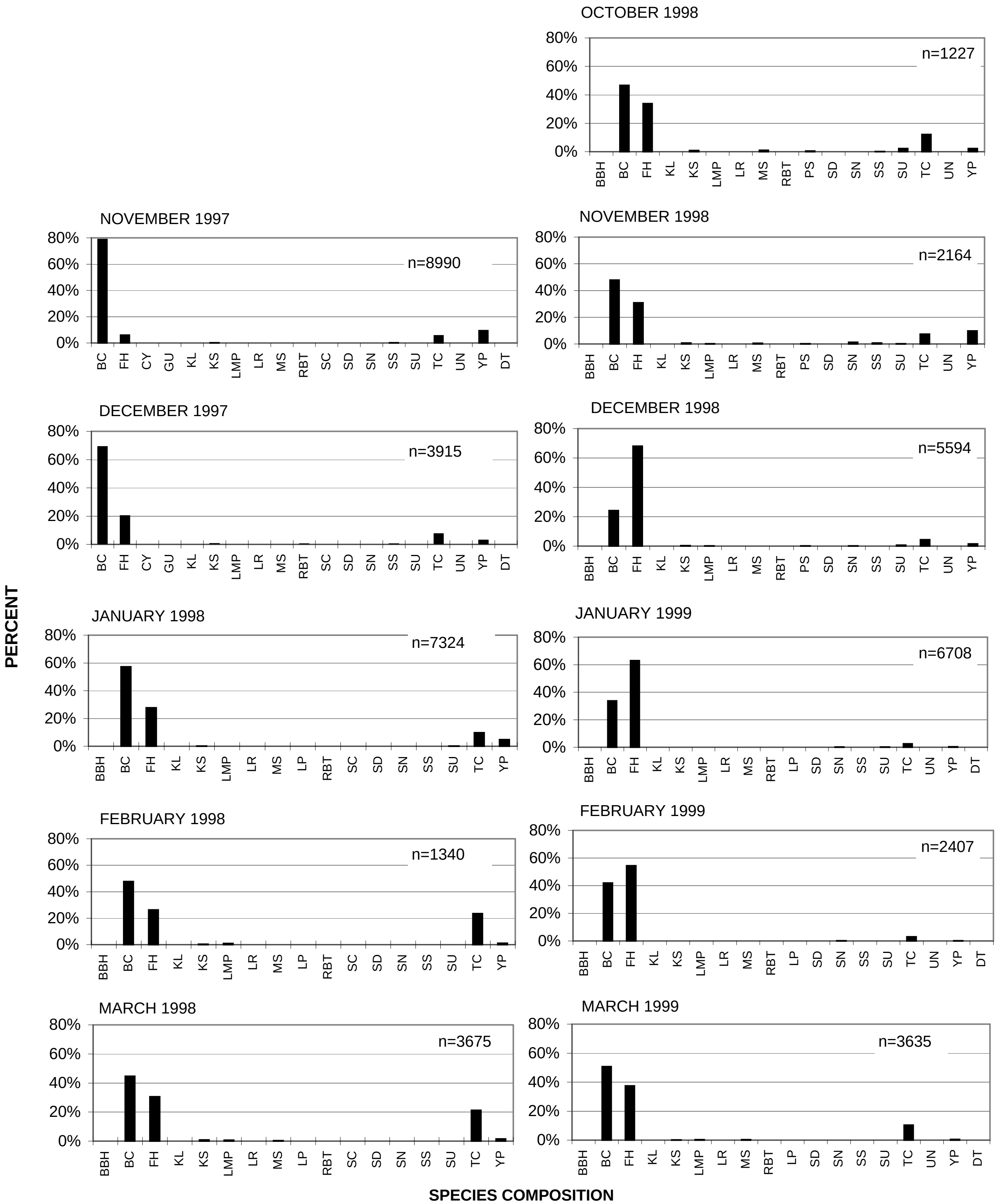



Figure 17B-FW. 1997-1999 fall and winter species composition from Westside fyke net collections. "n" is the total number of fish sampled. No sampling occurred in October 1997.

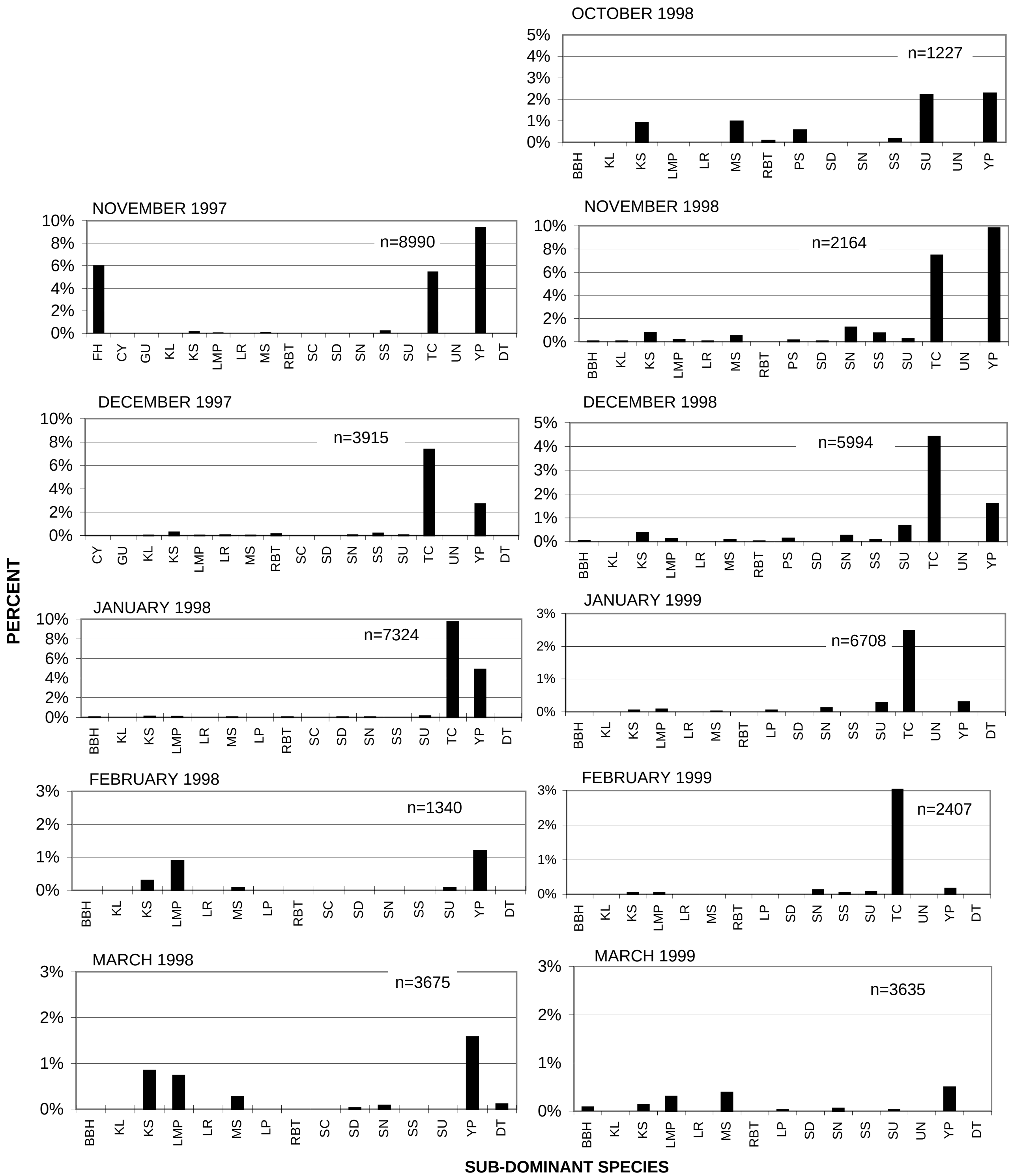
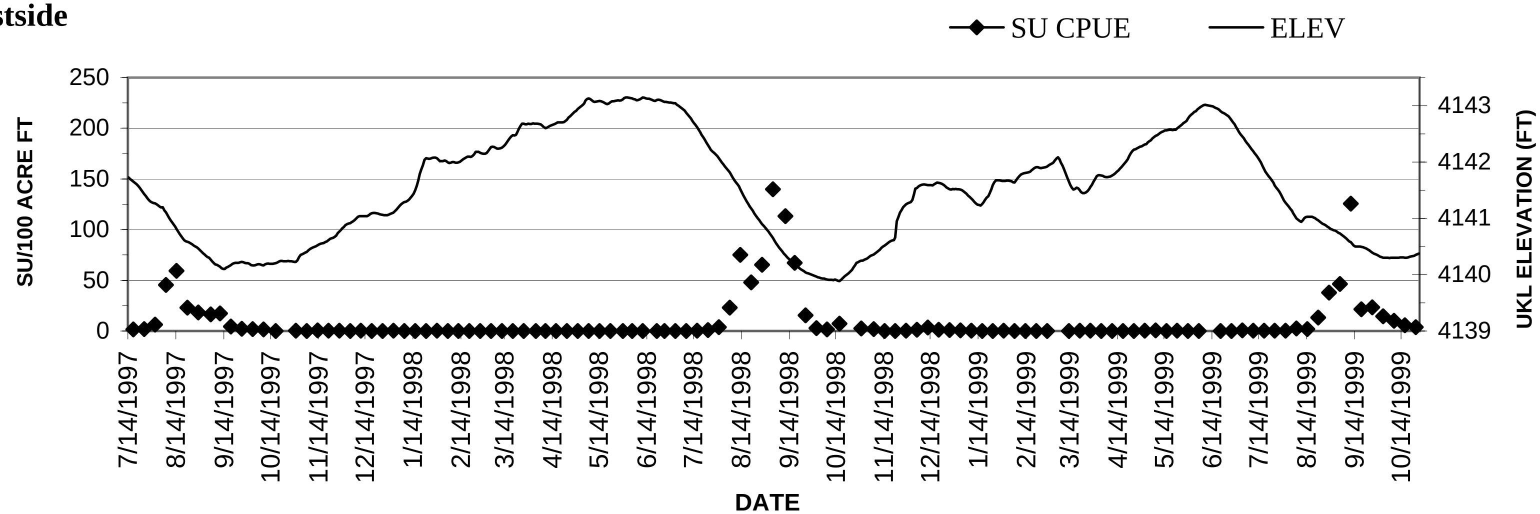



Figure 17B-FW. (continued) 1997-1999 fall and winter species composition of sub-dominant species those comprising <10% of the total catch) from Westside fyke net collections. No sampling occurred in October 1997 Note scale changes.

## A) Eastside




## B) Westside

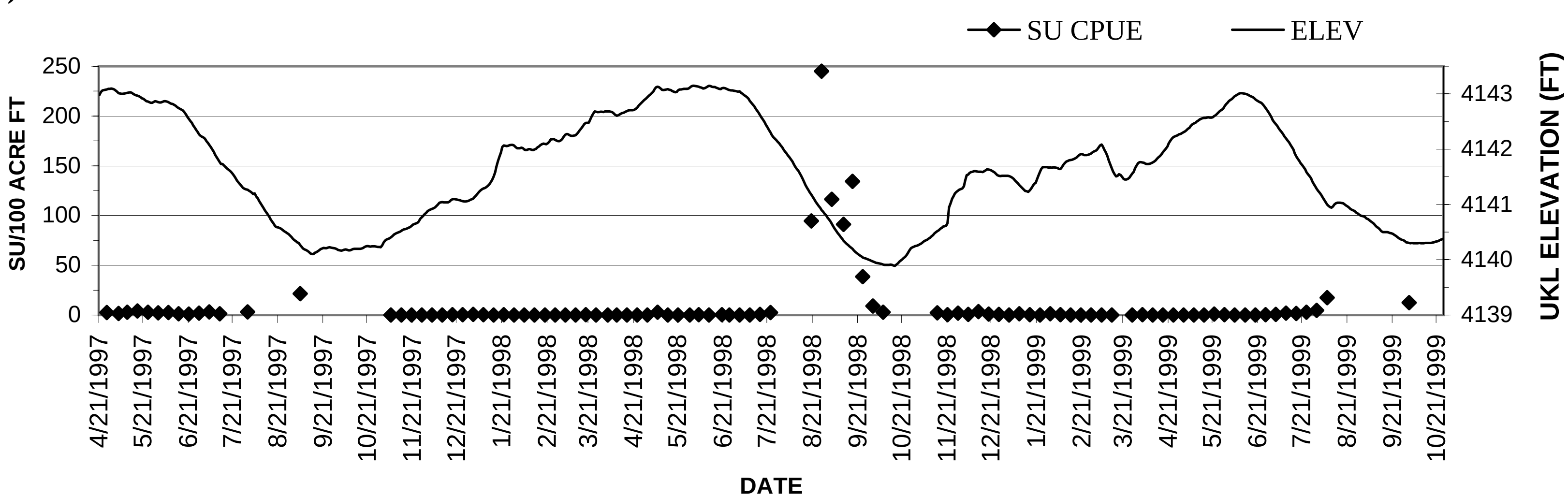
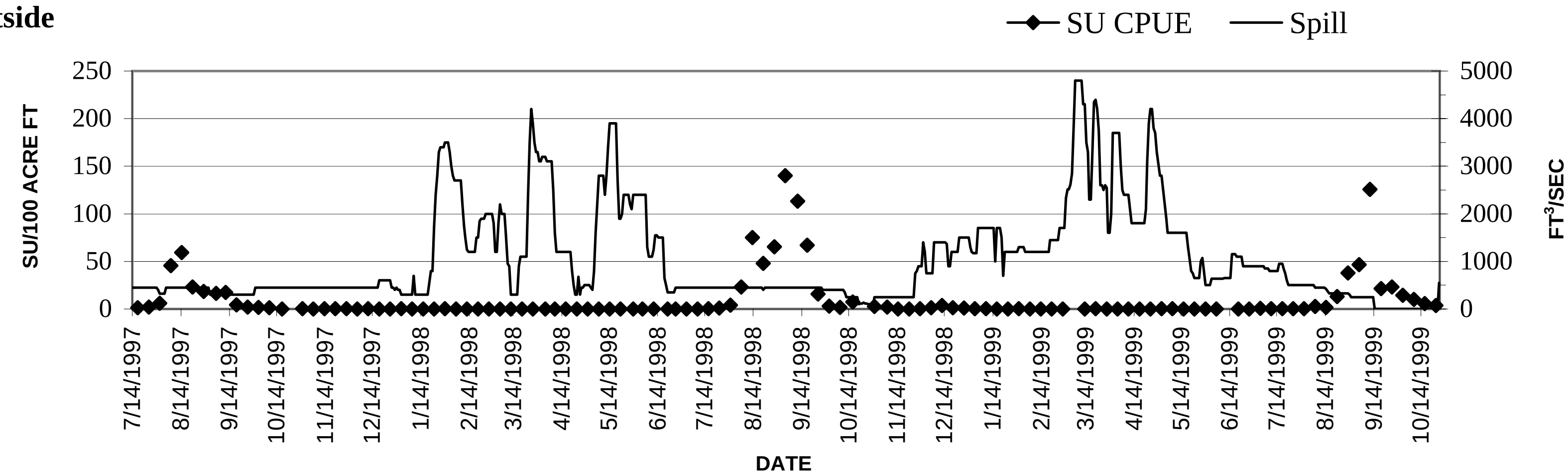



Figure 18. Eastside (A) and Westside (B) sucker CPUE values (su/100 acre feet) in relation to Upper Klamath Lake (UKL) water elevation (ft

**A) Eastside**




**B) Westside**

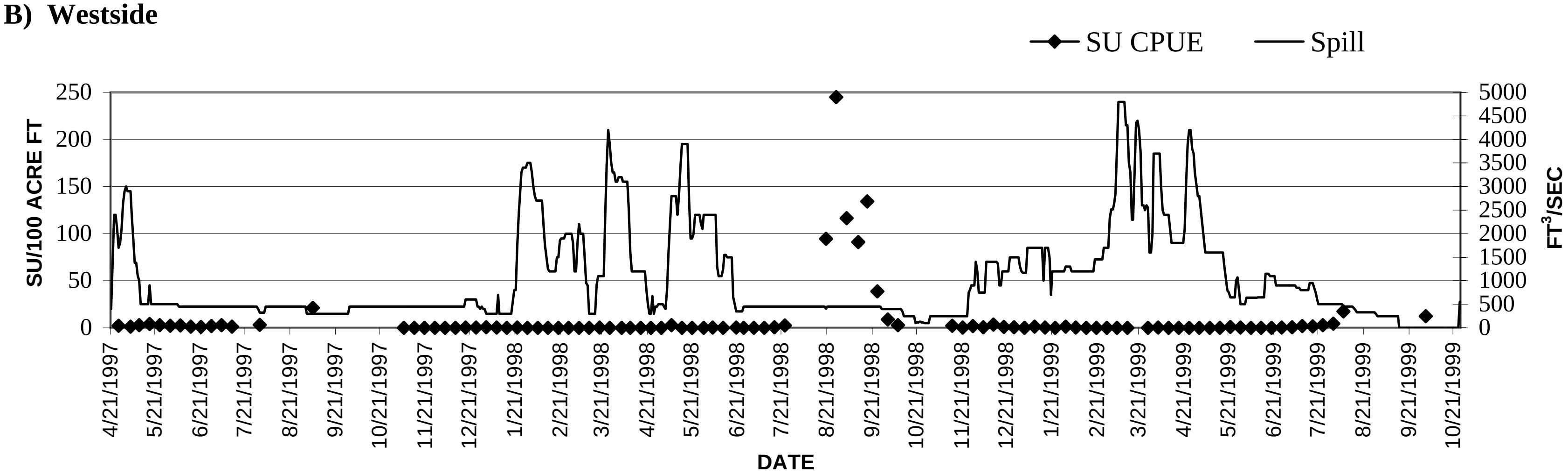



Figure 19. Eastside (A) and Westside (B) sucker CPUE values (su/100 acre feet) graphed with Link River dam spill values (cfs).

# TABLES

**1997 week numbers**

| week | Dates |
|---|---|
| 1 | Dec 30 - Jan 5 |
| 2 | Jan 6 - Jan 12 |
| 3 | Jan 13 - Jan 19 |
| 4 | Jan 20 - Jan 26 |
| 5 | Jan 27 - Feb 2 |
| 6 | Feb 3 - Feb 9 |
| 7 | Feb 10 - Feb 16 |
| 8 | Feb 17 - Feb 23 |
| 9 | Feb 24 - March 2 |
| 10 | March 3 - March 9 |
| 11 | March 10 - March 16 |
| 12 | March 17 - March 23 |
| 13 | March 24 - March 30 |
| 14 | March 31 - April 6 |
| 15 | April 7 - April 13 |
| 16 | April 14 - April 20 |
| 17 | April 21 - April 27 |
| 18 | April 28 - May 4 |
| 19 | May 5 - May 11 |
| 20 | May 12 - May 18 |
| 21 | May 19 - May 25 |
| 22 | May 26 - June 1 |
| 23 | June 2 - June 8 |
| 24 | June 9 - June 15 |
| 25 | June 16 - June 22 |
| 26 | June 23 - June 29 |
| 27 | June 30 - July 6 |
| 28 | July 7 - July 13 |
| 29 | July 14 - July 20 |
| 30 | July 21 - July 27 |
| 31 | July 28 - Aug 3 |
| 32 | Aug 4 - Aug 10 |
| 33 | Aug 11 - Aug 17 |
| 34 | Augt 18 - Aug 24 |
| 35 | Aug25 - Aug 31 |
| 36 | Sept 1 - Sept 7 |
| 37 | Sept 8 - Sept 14 |
| 38 | Sept 15 - Sept 21 |
| 39 | Sept 22 - Sept 28 |
| 40 | Sept 29 - Oct 5 |
| 41 | Oct 6 - Oct 12 |
| 42 | Oct 13 - Oct 19 |
| 43 | Oct 20 - Oct 26 |
| 44 | Oct 27 - Nov 2 |
| 45 | Nov 3-Nov 9 |
| 46 | Nov 10 - Nov16 |
| 47 | Nov 17 - Nov 23 |
| 48 | Nov 24 -Nov 30 |
| 49 | Dec 1 - Dec 7 |
| 50 | Dec 8- Dec 14 |
| 51 | Dec 15- Dec 21 |
| 52 | Dec 22- Dec 28 |

**1998 week numbers**

| week | Dates |
|---|---|
| 1 | Dec 29 - Jan 4 |
| 2 | Jan 5 - Jan 11 |
| 3 | Jan 12 - Jan 18 |
| 4 | Jan 19 - Jan 25 |
| 5 | Jan 26 - Feb 1 |
| 6 | Feb 2 - Feb 8 |
| 7 | Feb 9 - Feb 15 |
| 8 | Feb 16 - Feb 22 |
| 9 | Feb 23 - March 1 |
| 10 | March 2 - March 8 |
| 11 | March 9 - March 15 |
| 12 | March 16 - March 22 |
| 13 | March 23 - March 29 |
| 14 | March 30 - April 5 |
| 15 | April 6 - April 12 |
| 16 | April 13 - April 19 |
| 17 | April 20 - April 26 |
| 18 | April 27 - May 3 |
| 19 | May 4 - May 10 |
| 20 | May 11 - May 17 |
| 21 | May 18 - May 24 |
| 22 | May 25 - May 31 |
| 23 | June 1 - June 7 |
| 24 | June 8 - June 14 |
| 25 | June 15- June 21 |
| 26 | June 22 - June 28 |
| 27 | June 29- July 5 |
| 28 | July 6 - July 12 |
| 29 | July 13- July 19 |
| 30 | July 20 - July 26 |
| 31 | July 27 - Aug 2 |
| 32 | Aug 3 - Aug 9 |
| 33 | Aug 10 - Aug 16 |
| 34 | Aug 17 - Aug 23 |
| 35 | Aug 24 - Aug 30 |
| 36 | Aug 31 - Sept 6 |
| 37 | Sept 7 - Sept 13 |
| 38 | Sept 14 - Sept 20 |
| 39 | Sept 21- Sept 27 |
| 40 | Sept 28 - Oct 4 |
| 41 | Oct 5 - Oct 11 |
| 42 | Oct 12 - Oct 18 |
| 43 | Oct 19 - Oct 25 |
| 44 | Oct 26 - Nov 1 |
| 45 | Nov 2 - Nov 8 |
| 46 | Nov 9 - Nov 15 |
| 47 | Nov 16 - Nov 22 |
| 48 | Nov 23 - Nov 29 |
| 49 | Nov 30 - Dec 6 |
| 50 | Dec 7 - Dec 13 |
| 51 | Dec 14 - Dec 20 |
| 52 | Dec 21 - Dec 27 |

**1999 week numbers**

| week | Dates |
|---|---|
| 1 | Dec 28 - Jan 3 |
| 2 | Jan 4 - Jan 10 |
| 3 | Jan 11 - Jan 17 |
| 4 | Jan 18 - Jan 24 |
| 5 | Jan 25 - Jan 31 |
| 6 | Feb 1 - Feb 7 |
| 7 | Feb 8 - Feb 14 |
| 8 | Feb 15 - Feb 21 |
| 9 | Feb 22 - Feb 28 |
| 10 | March 1 - March 7 |
| 11 | March 8 - March 14 |
| 12 | March 15 - March 21 |
| 13 | March 22 - March 28 |
| 14 | March 29 - April 4 |
| 15 | April 5 - April 11 |
| 16 | April 12 - April 18 |
| 17 | April 19 - April 25 |
| 18 | April 26 - May 2 |
| 19 | May 3 - May 9 |
| 20 | May 10 - May 16 |
| 21 | May 17 - May 23 |
| 22 | May 24 - May 30 |
| 23 | May 31 - June6 |
| 24 | June 7 - June 13 |
| 25 | June 14- June 20 |
| 26 | June 21 - June 27 |
| 27 | June 28- July 4 |
| 28 | July 5 - July 11 |
| 29 | July 12- July 18 |
| 30 | July 19 - July 25 |
| 31 | July 26 - Aug 1 |
| 32 | Aug 2 - Aug 8 |
| 33 | Aug 9 - Aug 15 |
| 34 | Aug 16 - Aug 22 |
| 35 | Aug 23 - Aug 29 |
| 36 | Aug 30 - Sept 5 |
| 37 | Sept 6 - Sept 12 |
| 38 | Sept 13 - Sept 19 |
| 39 | Sept 20- Sept 26 |
| 40 | Sept 27 - Oct 3 |
| 41 | Oct 4 - Oct 10 |
| 42 | Oct 11 - Oct 17 |
| 43 | Oct 18 - Oct 24 |
| 44 | Oct 25 - Oct 31 |
| 45 | Nov 1 - Nov 7 |
| 46 | Nov 8 - Nov 14 |
| 47 | Nov 15 - Nov 21 |
| 48 | Nov 22 - Nov 28 |
| 49 | Nov 29 - Dec 5 |
| 50 | Dec 6 - Dec 12 |
| 51 | Dec 13 - Dec 19 |
| 52 | Dec 20 - Dec 26 |

Table 1. 1997 - 1999 sample weeks and corresponding dates.

| | COMMON NAME | SCIENTIFIC NAME | FIELD CODE |
|---|---|---|---|
| 1 | Blue chub | *Gila coerulea* | BC |
| 2 | Brown bullhead | *Ameirus nebulosus* | BBH |
| 3 | Minnow unknown | Cyprinidae | CY |
| 4 | DESTROYED | - | DT |
| 5 | Fathead minnow | *Pimephales promelas* | FH |
| 6 | Chub unknown | *Gila* sp. | GU |
| 7 | Klamath Lake sculpin | *Cottus princeps* | KS |
| 8 | Klamath largescale sucker | *Catostomus snyderi* | KL |
| 9 | Lamprey unknown | *Lampetra* sp. | LMP |
| 10 | Sunfish | *Lepomis* sp. | LP |
| 11 | Lost River sucker | *Deltistes luxatus* | LR |
| 12 | Marbled sculpin | *Cottus klamathensis* | MS |
| 13 | Rainbow trout (redband) | *Oncorhynchus mykiss newberrii* | RBT |
| 14 | Sculpin unknown | *Cottus* sp. | SC |
| 15 | Shortnose sucker | *Chasmistes brevirostris* | SN |
| 16 | Slender sculpin | *Cottus tenuis* | SS |
| 17 | Speckled dace | *Rhinichthys osculus* | SD |
| 18 | Sucker unknown | Catostomidae | SU |
| 19 | Tui chub | *Gila bicolor* | TC |
| 20 | Unknown species | - | UN |
| 21 | Yellow perch | *Perca flavescens* | YP |

Table 2. Common names, scientific names, and species codes, utilized by field personnel.

**1997 EASTSIDE LARVAL/JUVENILE DRIFT NET**

| | Diel period - | Morning | | | | | Day | | | | | Evening | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Canal cell - | W | | MD | | E | W | | MD | | E | W | | MD | | E | |
| Week | Date/depth | S | DP | S | DP | S | S | DP | S | DP | S | S | DP | S | DP | S | **Total** |
| 11 | 3/10-3/16 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | **9** |
| 12 | 3/17-3/23 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | **9** |
| 13 | 3/24-3/30 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | **9** |
| 14 | 3/31-4/6 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | **9** |
| 15 | 4/7-4/13 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | **9** |
| 16 | 4/14-4/20 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | **9** |
| 17 | 4/21-4/27 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | **9** |
| 18 | 4/28-5/4 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | **9** |
| 19 | 5/5-5/11 | **No sampling, Eastside shut down** | | | | | | | | | | | | | | | **0** |
| 20 | 5/12-5/18 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | **9** |
| 21 | 5/19-5/25 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | **9** |
| 22 | 5/26-6/1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | **9** |
| 23 | 6/2-6/8 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | **9** |
| 24 | 6/9-6/15 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | **9** |
| 25 | 6/16-6/22 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | **9** |
| 26 | 6/23-6/29 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | **9** |
| 27 | 6/30-7/6 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | **9** |
| 28 | 7/7-7/13 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | **9** |
| 29 | 7/14-7/20 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | **9** |
| 30 | 7/21-7/27 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | **9** |
| 31 | 7/28-8/3 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | **9** |
| **TOTAL** | | **12** | **8** | **14** | **9** | **17** | **14** | **6** | **13** | **12** | **15** | **18** | **10** | **12** | **8** | **12** | **180** |
| **Diel Total** | | **60** | | | | | **60** | | | | | **60** | | | | | |

**1998 EASTSIDE LARVAL/JUVENILE DRIFT NET**

| | Diel period - | Morning | | | | | Day | | | | | Evening | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Canal cell - | W | | MD | | E | W | | MD | | E | W | | MD | | E | |
| Week | Date/depth | S | DP | S | DP | S | S | DP | S | DP | S | S | DP | S | DP | S | **Total** |
| 17 | 4/20-4/26 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | **9** |
| 18 | 4/27-5/3 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | **9** |
| 19 | 5/4-5/10 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | **9** |
| 20 | 5/11-5/17 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | **9** |
| 21 | 5/18-5/24 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | **9** |
| 22 | 5/25-5/31 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | **9** |
| 23 | 6/1-6/7 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | **9** |
| 24 | 6/8-6/14 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | **9** |
| 25 | 6/15-6/21 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | **9** |
| 26 | 6/22-6/28 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | **9** |
| 27 | 6/29-7/5 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | **9** |
| 28 | 7/6-7/12 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | **9** |
| 29 | 7/13-7/19 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | **9** |
| 30 | 7/20-7/26 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | **9** |
| 31 | 7/27-8/2 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | **9** |
| **TOTAL** | | **13** | **10** | **8** | **5** | **9** | **10** | **10** | **10** | **6** | **9** | **9** | **8** | **10** | **7** | **11** | **135** |
| **Diel Total** | | **45** | | | | | **45** | | | | | **45** | | | | | |

Table 3A. 1997 and 1998 Link River Eastside drift net sampling summary by diel period (Morning -M, Day-D, Evening-EV),canal cell (West-W, Middle-MD, E-East), and depth (Shallow-S, Deep-DP).

## 1997 WESTSIDE LARVAL/JUVENILE DRIFT NET

| Week | Diel period - | Morning | | | | | | Day | | | | | | Evening | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Canal cell - | W | | MD | | E | | W | | MD | | E | | W | | MD | | E | | |
| Week | Date/depth | S | DP | S | DP | S | DP | S | DP | S | DP | S | DP | S | DP | S | DP | S | DP | Total |
| 11 | 3/10-3/16 | **No sampling, westside shut down.** | | | | | | | | | | | | | | | | | | **0** |
| 12 | 3/17-3/23 | **No sampling, westside shut down.** | | | | | | | | | | | | | | | | | | **0** |
| 13 | 3/24-3/30 | **No sampling, westside shut down.** | | | | | | | | | | | | | | | | | | **0** |
| 14 | 3/31-4/6 | **No sampling, westside shut down.** | | | | | | | | | | | | | | | | | | **0** |
| 15 | 4/7-4/13 | **No sampling, westside shut down.** | | | | | | | | | | | | | | | | | | **0** |
| 16 | 4/14-4/20 | **No sampling, westside shut down.** | | | | | | | | | | | | | | | | | | **0** |
| 17 | 4/21-4/27 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | **9** |
| 18 | 4/28-5/4 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | **9** |
| 19 | 5/5-5/11 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | **9** |
| 20 | 5/12-5/18 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | **9** |
| 21 | 5/19-5/25 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | **9** |
| 22 | 5/26-6/1 | **No sample/shut down** | | | | | | 1 | 1 | 0 | 0 | 1 | 0 | **No sample/shut down** | | | | | | **3** |
| 23 | 6/2-6/8 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | **9** |
| 24 | 6/9-6/15 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | **9** |
| 25 | 6/16-6/22 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | **9** |
| 26 | 6/23-6/29 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | **9** |
| 27 | 6/30-7/6 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | **9** |
| 28 | 7/7-7/13 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | **9** |
| 29 | 7/14-7/20 | **No sampling, westside shut down.** | | | | | | | | | | | | | | | | | | **0** |
| 30 | 7/21-7/27 | **No sampling, westside shut down.** | | | | | | | | | | | | | | | | | | **0** |
| 31 | 7/28-8/3 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | **9** |
| **TOTAL** | | **5** | **1** | **9** | **4** | **10** | **7** | **10** | **4** | **5** | **6** | **11** | **3** | **9** | **3** | **10** | **5** | **4** | **5** | **111** |
| **Diel Total** | | **36** | | | | | | **39** | | | | | | **36** | | | | | | |

## 1998 WESTSIDE LARVAL/JUVENILE DRIFT NET

| Week | Diel period - | Morning | | | | | | Day | | | | | | Evening | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Canal cell - | W | | MD | | E | | W | | MD | | E | | W | | MD | | E | | |
| Week | Date/depth | S | DP | S | DP | S | DP | S | DP | S | DP | S | DP | S | DP | S | DP | S | DP | **Total** |
| 16 | 4/13-4/19 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | | **9** |
| 17 | 4/20-4/26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | **6** |
| 18 | 4/27-5/3 | **No sampling, westside shut down.** | | | | | | | | | | | | | | | | | | **0** |
| 19 | 5/4-5/10 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | **9** |
| 20 | 5/11-5/17 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | **9** |
| 21 | 5/18-5/24 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 2 | **12** |
| 22 | 5/25-5/31 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | **9** |
| 23 | 6/1-6/7 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | **9** |
| 24 | 6/8-6/14 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | **9** |
| 25 | 6/15-6/21 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | **9** |
| 26 | 6/22-6/28 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | **9** |
| 27 | 6/29-7/5 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | **9** |
| 28 | 7/6-7/12 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | **9** |
| 29 | 7/13-7/19 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | **9** |
| 30 | 7/20-7/26 | **No sampling, westside shut down.** | | | | | | | | | | | | | | | | | | **0** |
| 31 | 7/27-8/2 | **No sampling, westside shut down.** | | | | | | | | | | | | | | | | | | **0** |
| **TOTAL** | | **9** | **5** | **9** | **7** | **5** | **1** | **6** | **4** | **12** | **4** | **8** | **5** | **7** | **7** | **11** | **4** | **9** | **4** | **117** |
| **Diel Total** | | **36** | | | | | | **39** | | | | | | **42** | | | | | | |

Table 3B. 1997 and 1998 Link River Westside drift net sampling summary by diel period (Morning-M, Day-D Evening-EV),canal cell (West-W, Middle-MD, E-East), and depth (Shallow-S, Deep-DP).

## 1997 EASTSIDE LARVAL DRIFT NET SAMPLING

| Week # | Dates | SU | GU | FH | CY | TC | BC | YP | SC | KS | MS | UN | >30mm | <30mm | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 3/10-3/16 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | **1** |
| 12 | 3/17-3/23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | **1** |
| 13 | 3/24-3/30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| 14 | 3/31-4/6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| 15 | 4/7-4/13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| 16 | 4/14-4/20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| 17 | 4/21-4/27 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | **1** |
| 18 | 4/28-5/4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| 19 | 5/5-5/11 | **Eastside shut down, no sampling** | | | | | | | | | | | 0 | 0 | **0** |
| 20 | 5/12-5/18 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 4 | **6** |
| 21 | 5/19-5/25 | 11 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 17 | **17** |
| 22 | 5/26-6/1 | 26 | 16 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 12 | 0 | 60 | **60** |
| 23 | 6/2-6/8 | 16 | 56 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 19 | 1 | 97 | **98** |
| 24 | 6/9-6/15 | 24 | 54 | 7 | 4 | 0 | 0 | 5 | 0 | 0 | 0 | 30 | 1 | 124 | **125** |
| 25 | 6/16-6/22 | 12 | 64 | 7 | 9 | 0 | 0 | 2 | 0 | 0 | 0 | 37 | 1 | 131 | **132** |
| 26 | 6/23-6/29 | 13 | 27 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 59 | **59** |
| 27 | 6/30-7/6 | 2 | 35 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 1 | 59 | **60** |
| 28 | 7/7-7/13 | 0 | 38 | 5 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 54 | **55** |
| 29 | 7/14-7/20 | 5 | 96 | 43 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 179 | **179** |
| 30 | 7/21-7/27 | 0 | 15 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 20 | **21** |
| 31 | 7/28-8/3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | **4** |
| **SEASON TOTAL** | | **110** | **404** | **75** | **44** | **0** | **0** | **7** | **11** | **0** | **2** | **154** | **12** | **807** | **819** |
| **SEASON % CATCH** | | *13.4%* | *49.3%* | *9.2%* | *5.4%* | *0.0%* | *0.0%* | *0.9%* | *1.3%* | *0.0%* | *0.2%* | *18.8%* | *1.5%* | *98.5%* | |

## 1998 EASTSIDE LARVAL DRIFT NET SAMPLING

| Week # | Dates | SU | GU | FH | CY | TC | BC | YP | SC | KS | MS | UN | >30mm | <30 mm | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | 4/20-4/26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | **1** |
| 18 | 4/27-5/3 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | **5** |
| 19 | 5/4-5/10 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 484 | 0 | 0 | 1 | 0 | 490 | **490** |
| 20 | 5/11-5/17 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 6 | **6** |
| 21 | 5/18-5/24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| 22 | 5/25-5/31 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 6 | **6** |
| 23 | 6/1-6/7 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 7 | **7** |
| 24 | 6/8-6/14 | 178 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 4 | 23 | 0 | 209 | **209** |
| 25 | 6/15-6/21 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | **12** |
| 26 | 6/22-6/28 | 15 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 30 | **30** |
| 27 | 6/29-7/5 | 23 | 24 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 50 | **51** |
| 28 | 7/6-7/12 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | **3** |
| 29 | 7/13-7/19 | 2 | 13 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 27 | **27** |
| 30 | 7/20-7/26 | 0 | 17 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | **32** |
| 31 | 7/27-8/2 | 0 | 7 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 14 | **15** |
| **SEASON TOTAL** | | **245** | **71** | **32** | **6** | **0** | **0** | **4** | **494** | **0** | **4** | **35** | **3** | **891** | **894** |
| **SEASON % CATCH** | | *27.4%* | *7.9%* | *3.6%* | *0.7%* | *0.0%* | *0.0%* | *0.4%* | *55.3%* | *0.0%* | *0.4%* | *3.9%* | *0.3%* | *99.7%* | |

Table 4A. 1997 and 1998 Eastside total drift net catch by week and species. The season's species composition values are listed with the totals.

## 1997 WESTSIDE LARVAL DRIFT NET SAMPLING

| Week # | Dates | SU | GU | FH | CY | TC | BC | YP | SC | KS | SS | MS | UN | **>30mm** | **<30mm** | **Total** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 3/10-3/16 | **Westside shutdown, no sampling** | | | | | | | | | | | | 0 | 0 | **0** |
| 12 | 3/17-3/23 | **Westside shutdown, no sampling** | | | | | | | | | | | | 0 | 0 | **0** |
| 13 | 3/24-3/30 | **Westside shutdown, no sampling** | | | | | | | | | | | | 0 | 0 | **0** |
| 14 | 3/31-4/6 | **Westside shutdown, no sampling** | | | | | | | | | | | | 0 | 0 | **0** |
| 15 | 4/7-4/13 | **Westside shutdown, no sampling** | | | | | | | | | | | | 0 | 0 | **0** |
| 16 | 4/14-4/20 | **Westside shutdown, no sampling** | | | | | | | | | | | | 0 | 0 | **0** |
| 17 | 4/21-4/27 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 1 | **20** |
| 18 | 4/28-5/4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| 19 | 5/5-5/11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | **4** |
| 20 | 5/12-5/18 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | **3** |
| 21 | 5/19-5/25 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 6 | **7** |
| 22* | 5/26-6/1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| 23 | 6/2-6/8 | 4 | 52 | 3 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 8 | 2 | 72 | **74** |
| 24 | 6/9-6/15 | 3 | 36 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 1 | 50 | **51** |
| 25 | 6/16-6/22 | 10 | 45 | 6 | 5 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 61 | 3 | 129 | **132** |
| 26 | 6/23-6/29 | 1 | 32 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 1 | 62 | **63** |
| 27 | 6/30-7/6 | 2 | 32 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 1 | 52 | **53** |
| 28 | 7/7-7/13 | 1 | 74 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 10 | 4 | 90 | **94** |
| 29 | 7/14-7/20 | **Westside shutdown, no sampling** | | | | | | | | | | | | 0 | 0 | **0** |
| 30 | 7/21-7/27 | **Westside shutdown, no sampling** | | | | | | | | | | | | 0 | 0 | **0** |
| 31 | 7/28-8/3 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | **4** |
| **SEASON TOTAL** | | **25** | **272** | **27** | **5** | **0** | **2** | **8** | **6** | **0** | **0** | **0** | **126** | **34** | **471** | **505** |
| **SEASON % CATCH** | | *5.0%* | *53.9%* | *5.3%* | *1.0%* | *0.0%* | *0.4%* | *1.6%* | *1.2%* | *0.0%* | *0.0%* | *0.0%* | *25.0%* | *6.7%* | *93.3%* | |

## 1998 WESTSIDE LARVAL DRIFT NET SAMPLING

| Week # | Dates | SU | GU | FH | CY | TC | BC | YP | SC | KS | SS | MS | UN | **>30mm** | **<30 mm** | **Total** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 4/13-4/19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | **2** |
| 17 | 4/20-4/26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| 18 | 4/27-5/3 | **Westside shutdown, no sampling** | | | | | | | | | | | | 0 | 0 | **0** |
| 19 | 5/4-5/10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 1 | 24 | **25** |
| 20 | 5/11-5/17 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 4 | **4** |
| 21 | 5/18-5/24 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 6 | **6** |
| 22 | 5/25-5/31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | **2** |
| 23 | 6/1-6/7 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | **3** |
| 24 | 6/8-6/14 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 1 | 0 | 14 | **14** |
| 25 | 6/15-6/21 | 14 | 0 | 0 | 3 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 6 | 0 | 27 | **27** |
| 26 | 6/22-6/28 | 0 | 19 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 28 | **30** |
| 27 | 6/29-7/5 | 3 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 15 | **15** |
| 28 | 7/6-7/12 | 0 | 11 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 15 | **15** |
| 29 | 7/13-7/19 | 5 | 12 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 23 | **25** |
| 30 | 7/20-7/26 | **Westside shutdown, no sampling** | | | | | | | | | | | | 0 | 0 | **0** |
| 31 | 7/27-8/2 | **Westside shutdown, no sampling** | | | | | | | | | | | | 0 | 0 | **0** |
| **SEASON TOTAL** | | **32** | **50** | **7** | **14** | **0** | **0** | **6** | **35** | **0** | **1** | **2** | **14** | **7** | **161** | **168** |
| **SEASON % CATCH** | | *19.0%* | *29.8%* | *4.2%* | *8.3%* | *0.0%* | *0.0%* | *3.6%* | *20.8%* | *0.0%* | *0.6%* | *1.2%* | *8.3%* | *4.2%* | *95.8%* | |

Table 4B. 1997 and 1998 Westside total drift net catch by week and species. The season's species composition values are listed with the totals. * Only three day samples were taken during this week.

A)

**SUCKERS/m$^3$**

| **Factors:** | WSD 97 P-value | WSD 98 P-value | ESD 97 P-value | ESD 98 P-value |
|---|---|---|---|---|
| Diel | ***0.0116*** | ***0.0620*** | ***0.0330*** | ***0.0126*** |
| Canal cell | 0.1674 | 0.4356 | ***0.0045*** | 0.2421 |
| Depth | ***0.0928*** | ***0.0638*** | 0.5395 | 0.4758 |

**ALL/m$^3$**

| **Factors:** | WSD 97 P-value | WSD 98 P-value | ESD 97 P-value | ESD 98 P-value |
|---|---|---|---|---|
| Diel | ***0.012*** | ***0.0278*** | ***0.0854*** | ***0.0003*** |
| Canal cell | 0.0036 | 0.8713 | 0.0425 | 0.157 |
| Depth | 0.3419 | ***0.0212*** | 0.3419 | 0.7690 |

B)

**SUCKERS/m$^3$**

| **Diel** | WSD 97 | | WSD 98 | | ESD 97 | | ESD 98 | |
|---|---|---|---|---|---|---|---|---|
| M | | **X** | | **X** | x | x | | **X** |
| D | x | | x | x | x | | x | x |
| EV | x | x | x | | | **X** | x | |
| **Canal cell** | WSD 97 | | WSD 98 | | ESD 97 | | ESD 98 | |
| W | x | | x | | | **X** | **X** | |
| MD | x | | x | | x | | x | |
| E | **X** | | **X** | | x | | x | |

**ALL/m$^3$**

| **Diel** | WSD 97 | | WSD 98 | | ESD 97 | | ESD 98 | |
|---|---|---|---|---|---|---|---|---|
| M | | **X** | **X** | | x | x | | **X** |
| D | x | | x | | x | | x | |
| EV | x | x | x | | | **X** | x | |
| **Canal cell** | WSD 97 | | WSD 98 | | ESD 97 | | ESD 98 | |
| W | x | | **X** | | | **X** | **X** | |
| MD | x | | x | | x | | x | |
| E | | **X** | x | | x | | x | |

Table 5. A) Statistical test results to determine differences in density of larval drift organisms within the sample sites (Westside-WSD and Eastside-ESD) each year. Kruskal-Wallis test results on the equality of median drift density (su/m3 or all/m3) between diel periods (Morning-M, Day-D, Evening-EV), canal cells (East-E, Middle-MD, West-W), and depths (Shallow-S, Deep- DP). Bold numbers represent statistically significant different medians at the 0.10 alpha level.
B) Homogeneous diel and canal cell groupings, determined by viewing Box-and-Whisker plots for test group distributions (su/m$^3$ or all/m$^3$) in combination with multifactor ANOVA results, are represented when the "x"s align in the same column. A bold, capitalized "X" represents the diel period and/or canal cell within each test group with the greatest mean and median values.

## 1997 SAMPLING EFFORT

| | | A.) Eastside 1997 | | | | B.) Westside 1997 | | | |
|---|---|---|---|---|---|---|---|---|---|
| Week # | Date | Total Hrs. | Vol.samp. 100 acre ft. | Canal Operation | Comments | Total Hrs. | Vol.samp. 100 acre ft. | Canal Operation | Comments |
| 17 | 4/21-4/27 | | | SD | under construction | 27.00 | 4.09 | OP | testing equipment |
| 18 | 4/28-5/4 | | | SD | under construction | 47.00 | 8.93 | OP | |
| 19 | 5/5-5/11 | | | SD | under construction | 50.50 | 9.60 | OP | |
| 20 | 5/12-5/18 | | | SD | under construction | 40.75 | 7.75 | OP | fyke net repair |
| 21 | 5/19-5/25 | | | SD | under construction | 41.00 | 7.79 | OP | pressure washer repair |
| 22 | 5/26-6/1 | | | SD | under construction | 10.00 | 1.43 | 5/28-6/2 SD | turbine repair |
| 23 | 6/2-6/8 | | | SD | under construction | 40.00 | 6.59 | OP | fyke net repair |
| 24 | 6/9-6/15 | | | SD | under construction | 47.75 | 9.08 | OP | |
| 25 | 6/16-6/22 | | | SD | under construction | 45.00 | 8.55 | OP | |
| 26 | 6/23-6/29 | | | SD | under construction | 48.50 | 9.22 | OP | |
| 27 | 6/30-7/6 | | | SD | under construction | 44.00 | 8.36 | OP | |
| 28 | 7/7-7/13 | | | SD | under construction | 23.50 | 4.47 | OP | fish salvage |
| 29 | 7/14-7/20 | 42.75 | 15.48 | OP | | no sample | | SD | turbine repair |
| 30 | 7/21-7/27 | 45.75 | 17.82 | OP | | no sample | | SD | turbine repair |
| 31 | 7/28-8/3 | 44.50 | 10.35 | OP | | 38.00 | 6.44 | OP | shutting down |
| 32 | 8/4-8/10 | 43.75 | 8.98 | OP | | no sample | | SD | turbine repair |
| 33 | 8/11-8/17 | 36.75 | 19.66 | OP | | no sample | | PS | turbine repair |
| 34 | 8/18-8/24 | 46.25 | 25.69 | OP | | no sample | | PS | turbine repair |
| 35 | 8/25-8/31 | 46.25 | 15.00 | OP | | no sample | | SD | turbine repair |
| 36 | 9/1-9/7 | 48.25 | 24.78 | OP | | 35.25 | 6.40 | 9/3-9/8 PS | shutting down |
| 37 | 9/8-9/14 | 45.75 | 14.43 | OP | | no sample | | SD | turbine repair |
| 38 | 9/15-9/21 | 46.75 | 4.86 | OP | | no sample | | SD | water level control |
| 39 | 9/22-9/28 | 47.00 | 18.95 | OP | | no sample | | SD | water level control |
| 40 | 9/29-10/5 | 46.75 | 14.88 | OP | | no sample | | SD | water level control |
| 41 | 10/6-10/12 | 47.75 | 8.45 | OP | | no sample | | SD | water level control |
| 42 | 10/13-10/19 | 47.25 | 23.27 | OP | | no sample | | SD | water level control |
| 43 | 10/20-10/27 | no sample | 0.00 | OP | fyke hoist repair | no sample | | SD | water level control |
| 44 | 10/28-11/2 | 46.25 | 31.27 | OP | | no sample | | OP | flushing debris |
| 45 | 11/3-11/9 | 47.25 | 16.02 | OP | | 48.00 | 9.12 | OP | |
| 46 | 11/10-11/16 | 47.75 | 23.12 | OP | | 48.00 | 9.12 | OP | |
| 47 | 11/17-11/23 | 47.75 | 20.87 | OP | | 47.50 | 9.03 | OP | |
| 48 | 11/24-11/30 | 46.25 | 14.86 | OP | | 47.00 | 8.93 | OP | |
| 49 | 12/1-12/7 | 46.25 | 13.31 | OP | | 47.75 | 9.08 | OP | |
| 50 | 12/8-12/14 | 47.25 | 23.83 | OP | Daytime=E-run only | 47.00 | 8.93 | OP | |
| 51 | 12/15-12/21 | 47.75 | 32.20 | OP | | 48.00 | 9.12 | OP | |
| 52 | 12/22-12/28 | 48.75 | 42.07 | OP | | 49.00 | 9.31 | OP | |
| TOTALS - | | **1060.8** | **440.1** | | | **920.5** | **171.4** | | |

1997
Table 6. Link River Eastside and Westside fyke net sampling summary, by year.
Comments represent periods where there was a canal shut-down or the sample time was reduced.
Canal Operation: OP=Operating, PS= Partially shutdown, and SD=Shutdown completely.

## 1998 SAMPLING EFFORT

| | | A.) Eastside 1998 | | | | B.) Westside 1998 | | | |
|---|---|---|---|---|---|---|---|---|---|
| Week # | Date | Total Hrs. | Vol.samp. 100 acre ft. | Canal Operation | Comments | Total Hrs. | Vol.samp. 100 acre ft. | Canal Operation | Comments |
| 1 | 12/29-1/4 | 48.8 | 18.1 | OP | | 49.0 | 9.3 | OP | |
| 2 | 1/5-1/11 | 47.3 | 16.7 | OP | | 48.2 | 9.2 | OP | |
| 3 | 1/12-1/18 | 47.8 | 17.5 | OP | | 48.5 | 9.2 | OP | |
| 4 | 1/19-1/25 | 48.0 | 29.6 | OP | | 48.5 | 9.2 | OP | |
| 5 | 1/26-2/1 | 48.2 | 18.4 | OP | | 48.8 | 9.0 | OP | |
| 6 | 2/2-2/8 | 47.5 | 41.1 | OP | | 48.0 | 9.1 | OP | |
| 7 | 2/9-2/15 | 46.4 | 39.0 | OP | | 46.5 | 8.8 | OP | |
| 8 | 2/16-2/22 | 47.5 | 32.3 | OP | | 48.0 | 9.1 | OP | |
| 9 | 2/23-3/1 | 48.2 | 35.8 | OP | | 48.5 | 9.2 | OP | |
| 10 | 3/2-3/8 | 47.7 | 23.7 | OP | | 48.2 | 9.2 | OP | |
| 11 | 3/9-3/15 | 45.5 | 36.0 | OP | | 47.8 | 9.1 | OP | |
| 12 | 3/16-3/22 | 48.2 | 28.4 | OP | | 48.0 | 9.1 | OP | |
| 13 | 3/22-3/29 | 48.2 | 32.9 | OP | | 49.0 | 8.1 | OP | |
| 14 | 3/30-4/5 | 46.0 | 41.4 | OP | | 45.8 | 7.6 | OP | |
| 15 | 4/6-4/12 | 48.2 | 45.0 | OP | | 48.5 | 7.8 | OP | |
| 16 | 4/13-4/19 | 48.0 | 37.4 | OP | | 48.5 | 8.6 | OP | |
| 17 | 4/20-4/26 | 48.0 | 27.4 | OP | | 47.7 | 9.1 | OP | |
| 18 | 4/27-5/3 | 45.0 | 21.3 | OP | | no sample | 0.0 | 4/23-5/4 SD | repair turbine |
| 19 | 5/4-5/10 | 48.5 | 36.4 | OP | | 24.3 | 4.0 | Post SD/OP | Non-rep. |
| 20 | 5/11-5/17 | 48.7 | 34.2 | OP | | 48.5 | 9.2 | OP | |
| 21 | 5/18-5/24 | 47.9 | 19.8 | OP | | 49.0 | 9.3 | OP | |
| 22 | 5/25-5/31 | 47.8 | 38.9 | OP | | 48.3 | 9.2 | OP | |
| 23 | 6/1-6/7 | 48.8 | 42.4 | OP | | 48.5 | 9.2 | OP | |
| 24 | 6/8-6/14 | 48.2 | 38.5 | OP | | 48.0 | 9.1 | OP | |
| 25 | 6/15-6/21 | 44.5 | 24.7 | OP | | 48.0 | 9.1 | OP | |
| 26 | 6/22-6/28 | 45.7 | 29.9 | OP | | 48.0 | 9.1 | OP | |
| 27 | 6/29-7/5 | 46.4 | 18.9 | OP | | 48.0 | 8.7 | OP | |
| 28 | 7/6-7/12 | 48.7 | 15.8 | OP | | 47.5 | 9.0 | OP | |
| 29 | 7/13-7/19 | 49.2 | 23.0 | OP | | 47.8 | 9.1 | OP | |
| 30 | 7/20-7/26 | 47.3 | 33.9 | OP | | 24.0 | 3.4 | 7/22-8/2 PS | repair turbine |
| 31 | 7/27-8/2 | 47.3 | 9.6 | OP | | no sample | 0.0 | SD | repair turbine |
| 32 | 8/3-8/9 | 47.8 | 21.5 | OP | | no sample | 0.0 | SD | repair turbine |
| 33 | 8/10-8/16 | 47.3 | 25.4 | OP | | no sample | 0.0 | SD | repair turbine |
| 34 | 8/17-8/23 | 51.3 | 16.4 | OP | | 48.5 | 9.2 | OP | |
| 35 | 8/24-8/30 | 47.5 | 12.2 | OP | | 49.0 | 9.3 | OP | |
| 36 | 8/31-9/6 | 47.3 | 19.6 | OP | | 48.5 | 9.0 | OP | |
| 37 | 9/7-9/13 | 47.8 | 26.3 | OP | | 48.5 | 9.2 | OP | |
| 38 | 9/14-9/20 | 46.7 | 15.2 | OP | | 47.5 | 9.0 | OP | |
| 39 | 9/21-9/27 | 47.5 | 10.2 | OP | | 48.3 | 9.2 | OP | |
| 40 | 9/28-10/4 | 47.6 | 8.7 | OP | | 48.5 | 9.2 | OP | |
| 41 | 10/5-10/11 | 47.2 | 7.1 | OP | | 48.5 | 9.2 | OP | |
| 42 | 10/12-10/18 | 47.5 | 27.8 | OP | | no sample | 0.0 | SD | water level cont |
| 43 | 10/19-10/25 | no sample | 0.0 | SD | maintenance | no sample | 0.0 | SD | water level cont |
| 44 | 10/26-11/1 | 47.2 | 30.5 | OP | | no sample | 0.0 | SD | water level cont |
| 45 | 11/2-11/8 | 47.3 | 25.9 | OP | | no sample | 0.0 | SD | water level cont |
| 46 | 11/9-11/15 | 47.5 | 29.2 | OP | | 46.5 | 6.3 | OP | |
| 47 | 11/16-11/22 | 46.8 | 23.6 | OP | | 48.3 | 9.2 | OP | |
| 48 | 11/23-11/29 | 47.6 | 41.3 | OP | | 48.8 | 9.3 | OP | |
| 49 | 11/30-12/6 | 47.4 | 22.5 | OP | | 49.0 | 8.9 | OP | |
| 50 | 12/7-12/13 | 44.9 | 23.9 | OP | | 48.0 | 9.1 | OP | |
| 51 | 12/14-12/20 | 47.2 | 16.4 | OP | | 48.5 | 9.2 | OP | |
| 52 | 12/21-12/27 | 47.5 | 38.2 | OP | | 48.5 | 9.2 | OP | |
| TOTALS - | | **2422.3** | **1350.0** | | | **2072.2** | **383.9** | | |

continued - 1998

Table 6. Link River Eastside and Westside fyke net sampling summary, by year. Comments represent periods where there was a canal shutdown or the sample time was reduced. Canal Operation: OP=Operating, PS= Partially shutdown, and SD=Shutdown completel Non-rep. = non-representative.

## 1999 SAMPLING EFFORT

| Week # | Date | A.) Eastside 1999 Total Hrs. | Vol.samp. 100 acre ft. | Canal Operation | Comments | B.) Westside 1999 Total Hrs. | Vol.samp. 100 acre ft. | Canal Operation | Comments |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 12/28-1/3 | 48.2 | 31.1 | OP | | 49.0 | 9.3 | OP | |
| 2 | 1/4-1/10 | 48.3 | 35.9 | OP | | 49.0 | 9.3 | OP | |
| 3 | 1/11-1/17 | 47.5 | 36.3 | OP | | 49.0 | 9.3 | OP | |
| 4 | 1/18-1/24 | 47.3 | 14.9 | OP | | 48.2 | 9.2 | OP | |
| 5 | 1/25-1/31 | 31.5 | 27.5 | OP | | 48.5 | 8.3 | OP | |
| 6 | 2/1-2/7 | 47.5 | 38.8 | OP | | 48.5 | 9.2 | OP | |
| 7 | 2/8-2/14 | 47.2 | 22.3 | OP | | 48.3 | 9.2 | OP | |
| 8 | 2/15-2/21 | 47.7 | 21.3 | OP | | 48.3 | 9.2 | OP | |
| 9 | 2/22-2/28 | 46.7 | 31.9 | OP | | 47.7 | 9.1 | OP | |
| 10 | 3/1-3/7 | no sample | 0.0 | SD | turbine repair | 48.5 | 9.2 | OP | |
| 11 | 3/8-3/14 | 48.0 | 28.4 | OP | | 50.0 | 9.0 | OP | |
| 12 | 3/15-3/21 | 47.8 | 24.2 | OP | | no sample | 0.0 | SD | partial drain |
| 13 | 3/22-3/28 | 48.3 | 24.5 | OP | | 48.5 | 8.4 | OP | |
| 14 | 3/29-4/4 | 47.3 | 20.3 | OP | | 48.3 | 9.2 | OP | |
| 15 | 4/5-4/11 | 46.5 | 14.3 | OP | | 48.0 | 9.1 | OP | |
| 16 | 4/12-4/18 | 47.3 | 21.3 | OP | | 48.2 | 9.2 | OP | |
| 17 | 4/19-4/25 | 47.5 | 22.0 | OP | | 48.5 | 9.2 | OP | |
| 18 | 4/26-5/2 | 47.3 | 15.8 | OP | | 48.5 | 9.2 | OP | |
| 19 | 5/3-5/9 | 49.0 | 28.9 | OP | | 48.0 | 9.1 | OP | |
| 20 | 5/10-5/16 | 48.3 | 21.2 | OP | | 49.5 | 9.4 | OP | |
| 21 | 5/17-5/23 | 47.4 | 37.8 | OP | | 48.1 | 9.1 | OP | |
| 22 | 5/24-5/30 | 48.3 | 18.9 | OP | | 48.5 | 9.2 | OP | |
| 23 | 5/31-6/6 | 12.0 | 9.2 | OP | algae overload | 48.5 | 9.2 | OP | |
| 24 | 6/7-6/13 | no sample | 0.0 | OP | algae overload | 48.8 | 9.3 | OP | |
| 25 | 6/14-6/20 | 47.3 | 13.0 | OP | | 48.2 | 9.2 | OP | |
| 26 | 6/21-6/27 | 48.3 | 19.6 | OP | | 48.3 | 9.2 | OP | |
| 27 | 6/28-7/4 | 47.0 | 39.9 | OP | | 49.0 | 9.3 | OP | |
| 28 | 7/5-7/11 | 47.0 | 16.9 | OP | | 49.0 | 9.3 | OP | |
| 29 | 7/12-7/18 | 47.3 | 20.6 | OP | | 49.0 | 9.3 | OP | |
| 30 | 7/19-7/25 | 47.3 | 10.0 | OP | | 48.5 | 9.2 | OP | |
| 31 | 7/26-8/1 | 47.3 | 34.3 | OP | | 49.0 | 9.3 | OP | |
| 32 | 8/2-8/8 | 47.3 | 16.2 | OP | | 48.7 | 9.3 | OP | |
| 33 | 8/9-8/15 | 47.7 | 8.0 | OP | | no sample | 0.0 | SD | |
| 34 | 8/16-8/22 | 47.2 | 11.6 | OP | | no sample | 0.0 | SD | |
| 35 | 8/23-8/29 | 47.0 | 12.3 | OP | | no sample | 0.0 | SD | |
| 36 | 8/30-9/5 | 47.3 | 10.4 | OP | | no sample | 0.0 | SD | |
| 37 | 9/6-9/12 | 47.3 | 32.4 | OP | | no sample | 0.0 | SD | |
| 38 | 9/13-9/19 | 47.8 | 15.9 | OP | | no sample | 0.0 | SD | |
| 39 | 9/20-9/26 | 47.5 | 39.7 | OP | | no sample | 0.0 | SD | |
| 40 | 9/27-10/3 | 48.0 | 39.6 | OP | | 49.5 | 9.4 | OP | |
| 41 | 10/4-10/10 | 47.4 | 35.1 | OP | | no sample | 0.0 | SD | |
| 42 | 10/11-10/17 | 47.0 | 28.8 | OP | | no sample | 0.0 | SD | |
| 43 | 10/18-10/24 | 47.3 | 29.0 | OP | | no sample | 0.0 | SD | |
| TOTALS- | | **1896.5** | **980.2** | | | **1555.8** | **293.5** | | |

continued - 1999

Table 6. Link River Eastside and Westside fyke net sampling summary, by year. Comments represent periods where there was a canal shutdown or the sample time was reduced. Canal Operation: OP=Operating, PS= Partially shutdown, and SD=Shutdown completely. Algae overload = filamentous algal buildup tore out nets and prohibited sampling

**EASTSIDE**

| | Klamath largescale | | | | Lost River suckers | | | | shortnose suckers | | | | suckers unknown | | | | **All sucker species combined** | | | | **70% east** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | **efficiency** |
| **1997** | 0 | 117 | 119 | 237 | 0 | 1,285 | 237 | 1,522 | 61 | 3,480 | 791 | 4,332 | 6,153 | 1,633 | 46 | 7,832 | 6,213 | 6,516 | 1,193 | **13,922** | **19,889** |
| **1998** | 0 | 61 | 44 | 105 | 0 | 168 | 15 | 183 | 0 | 386 | 37 | 424 | 34,983 | 6,512 | 2 | 41,497 | 34,983 | 7,127 | 99 | **42,209** | **60,299** |
| **1999** | 0 | 54 | 4 | 58 | 0 | 35 | 7 | 42 | 0 | 181 | 7 | 188 | 16,989 | 10,531 | 0 | 27,520 | 16,989 | 10,801 | 18 | **27,808** | **39,725** |
| **Total** | **0** | **232** | **167** | **399** | **0** | **1,488** | **259** | **1,747** | **61** | **4,048** | **835** | **4,944** | **58,125** | **18,676** | **48** | **76,849** | **58,186** | **24,444** | **1,310** | **83,939** | **119,913** |

**WESTSIDE**

| | Klamath largescale | | | | Lost River suckers | | | | shortnose suckers | | | | suckers unknown | | | | **All sucker species combined** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total |
| **1997** | 0 | 7 | 7 | 14 | 12 | 129 | 15 | 157 | 22 | 297 | 68 | 387 | 504 | 232 | 0 | 735 | 538 | 664 | 91 | **1,293** |
| **1998** | 0 | 9 | 3 | 12 | 0 | 23 | 4 | 27 | 0 | 201 | 10 | 211 | 17,645 | 4,624 | 0 | 22,268 | 17,645 | 4,856 | 17 | **22,518** |
| **1999** | 0 | 7 | 0 | 7 | 0 | 14 | 0 | 14 | 0 | 61 | 14 | 115 | 1,211 | 373 | 0 | 1,584 | 1,211 | 455 | 14 | **1,679** |
| **Total** | **0** | **22** | **10** | **32** | **12** | **166** | **19** | **197** | **22** | **498** | **78** | **598** | **18,148** | **4,856** | **0** | **23,004** | **19,393** | **5,975** | **122** | **25,490** |

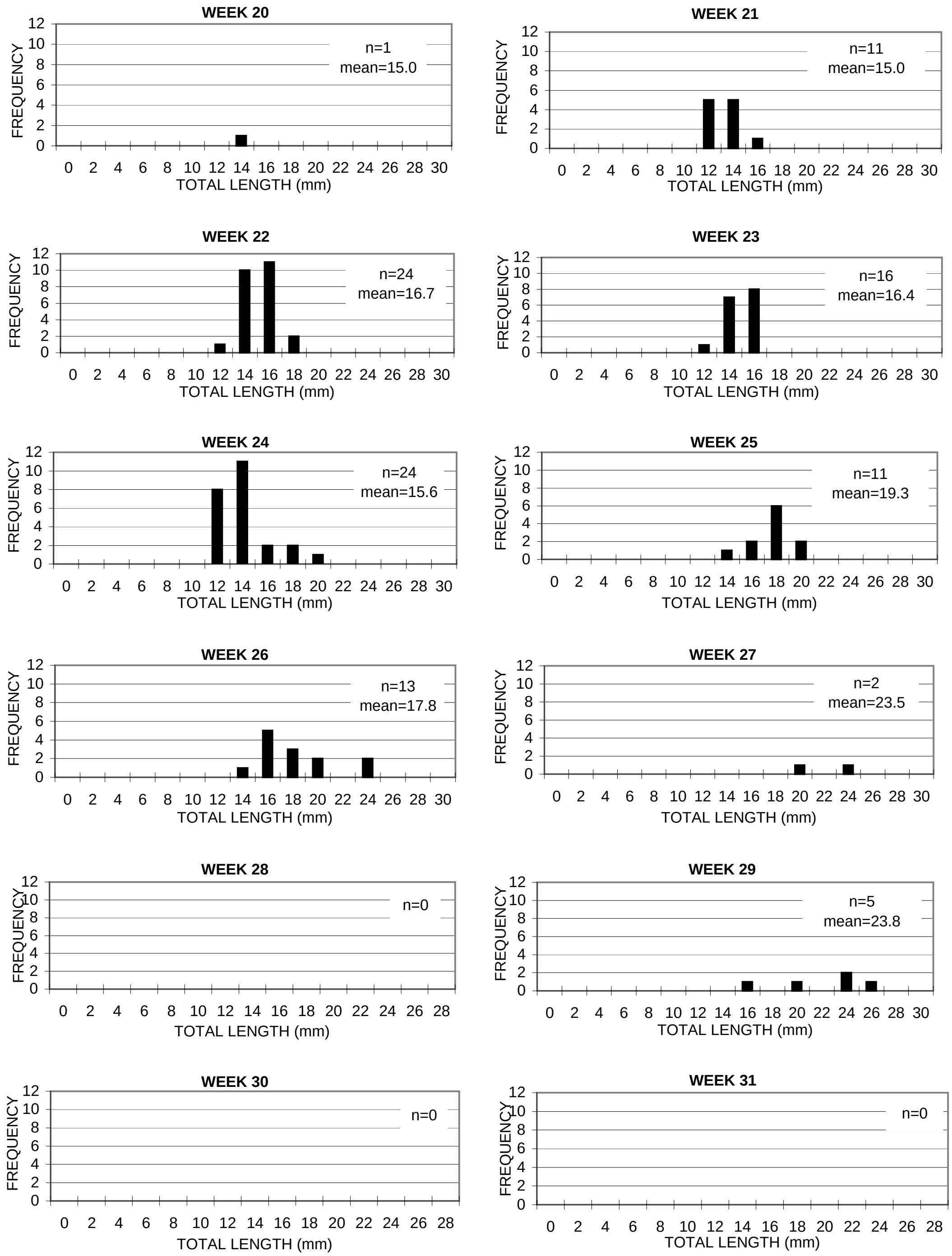
**EASTSIDE AND WESTSIDE COMBINED**

| | Klamath largescale | | | | Lost River suckers | | | | shortnose suckers | | | | suckers unknown | | | | **All sucker species combined** | | | | **70% east** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | **efficiency** |
| **1997** | 0 | 124 | 126 | 250 | 12 | 1,414 | 253 | 1,679 | 83 | 3,777 | 859 | 4,719 | 6,656 | 1,865 | 46 | 8,567 | 6,751 | 7,180 | 1,284 | **15,215** | **21,182** |
| **1998** | 0 | 69 | 48 | 117 | 0 | 191 | 19 | 210 | 0 | 587 | 47 | 634 | 52,628 | 11,136 | 2 | 63,766 | 52,628 | 11,983 | 116 | **64,727** | **82,817** |
| **1999** | 0 | 61 | 4 | 64 | 0 | 48 | 7 | 55 | 0 | 242 | 21 | 304 | 18,200 | 10,904 | 0 | 29,104 | 18,200 | 11,256 | 31 | **29,487** | **41,405** |
| **All Years** | **0** | **254** | **178** | **432** | **12** | **1,654** | **278** | **1,944** | **83** | **4,607** | **928** | **5,657** | **77,484** | **23,905** | **48** | **101,437** | **77,579** | **30,419** | **1,431** | **109,429** | **145,403** |

Table 7. 1997-1999 Eastside, Westside, and combined annual extrapolated entrainment indices for suckers, by species (as identified in the field), based on summation of weekly entrainment totals through the 2.5 year study period. The Westside was sampled from April 21, 1997 to October 20, 1999. The Eastside was sampled from July 14, 1997 to October 20, 1999. Consequently, only 1998 represents a full year of sampling. Size class refers to fork length (mm). The 70% efficiency values assume that the Eastside fyke net was 70% efficient at all flows. Rounding errors during extrapolation prevent all columns and rows from adding up.

# APPENDIX
# FIGURES

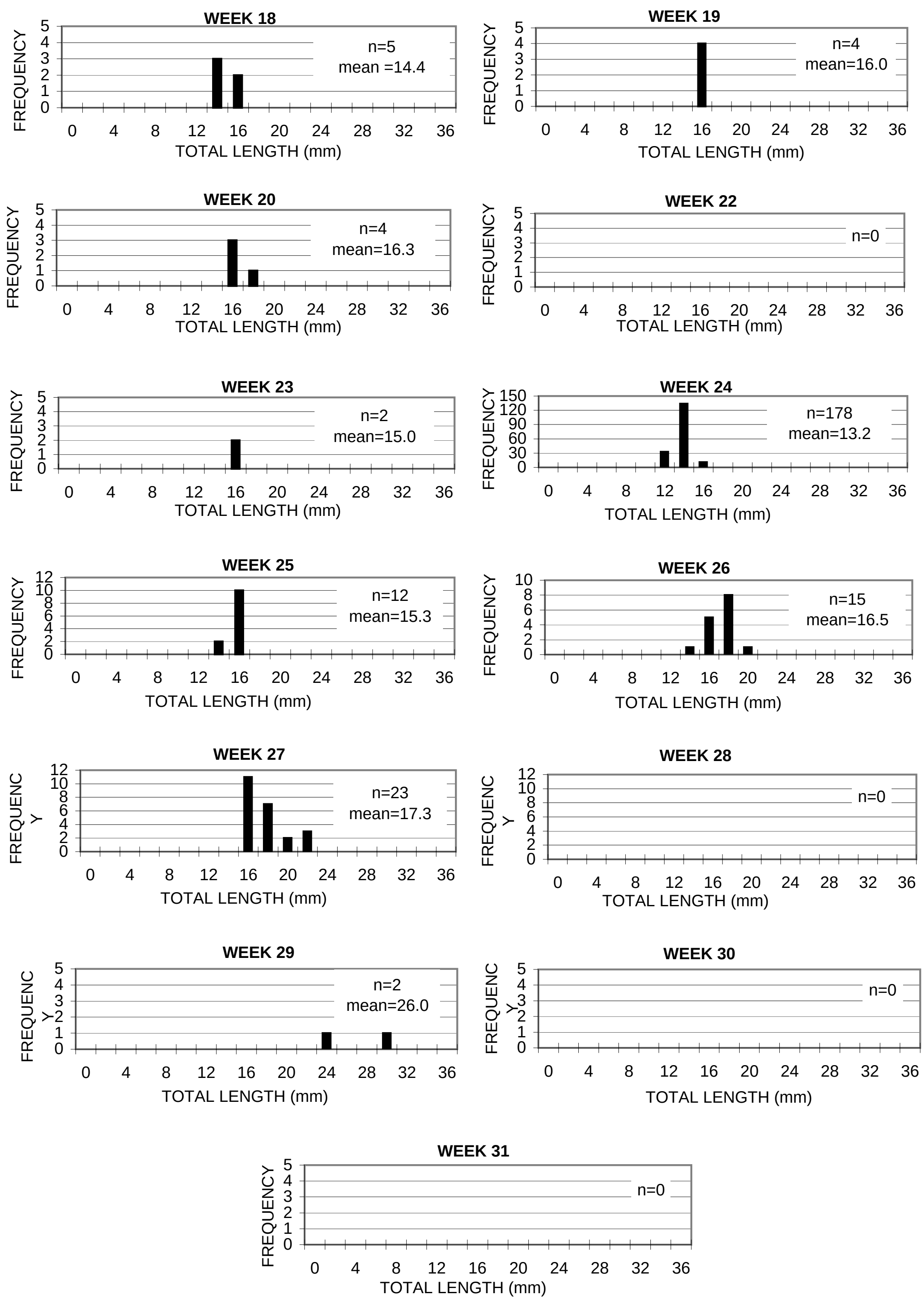
# EASTSIDE 1997




APPENDIX

Figure A1. 1997 Eastside sucker length frequency histograms during weeks when suckers were collected. The first larval sucker was caught during week 20 (May 12-18). No sampling occurred during week 19 (May 5-11). n= the number of suckers collected. Mean is their average total length.

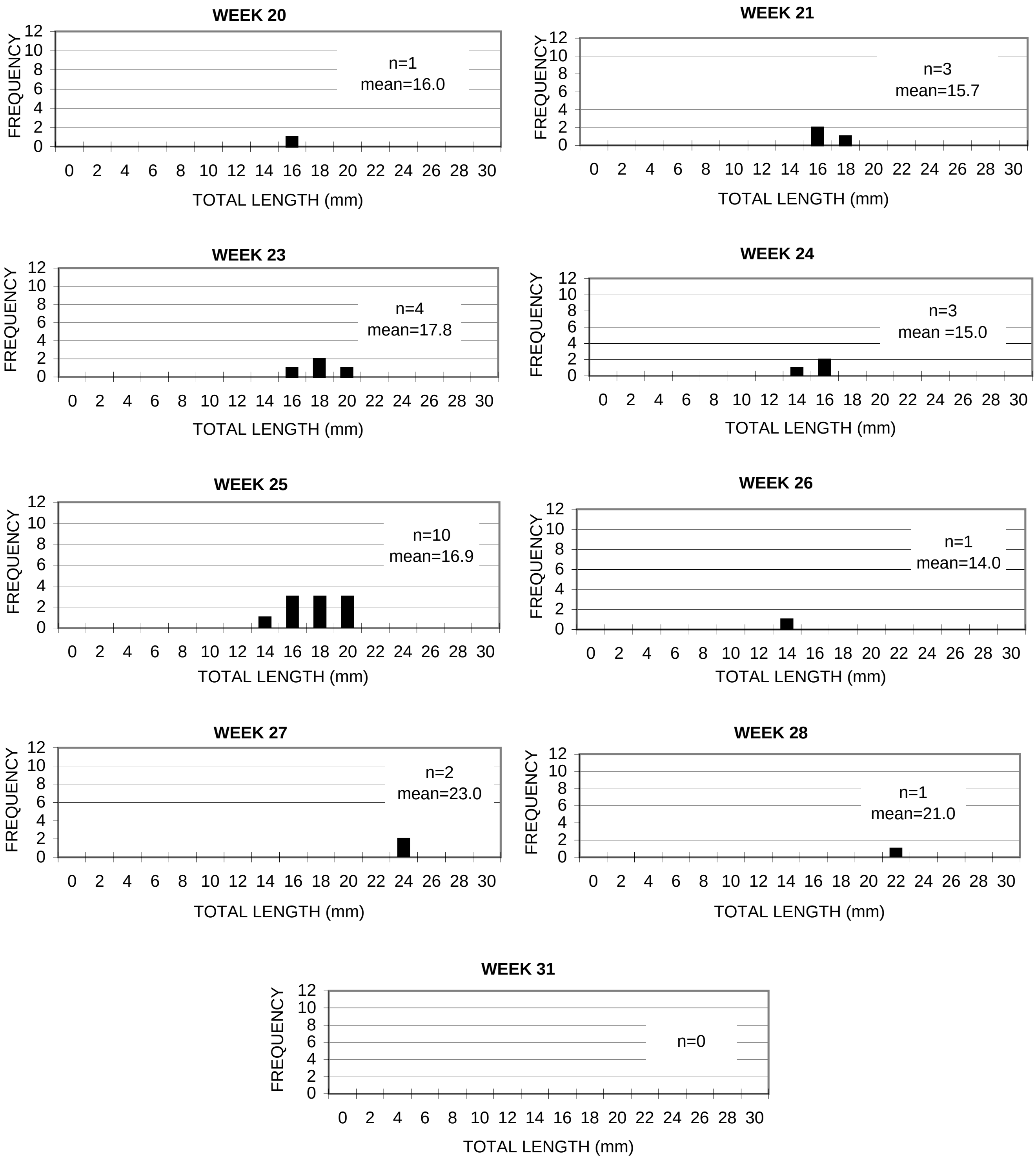
# EASTSIDE 1998




APPENDIX

Figure A1. 1998 Eastside sucker length frequency histograms during weeks when suckers were collected. The first larval sucker was caught during week 18 (Apr. 27-May 3). No sampling occurred during week 21 (May 18-24). n= the number of suckers collected. Mean is their average total length.

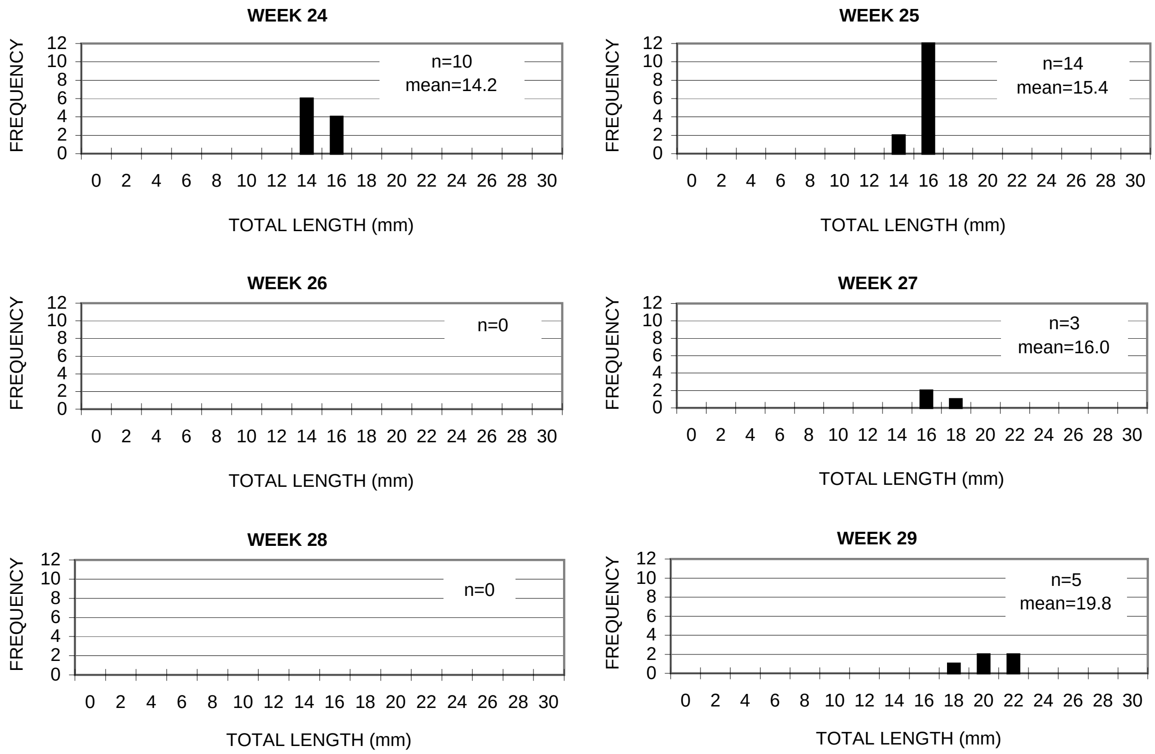
# WESTSIDE 1997



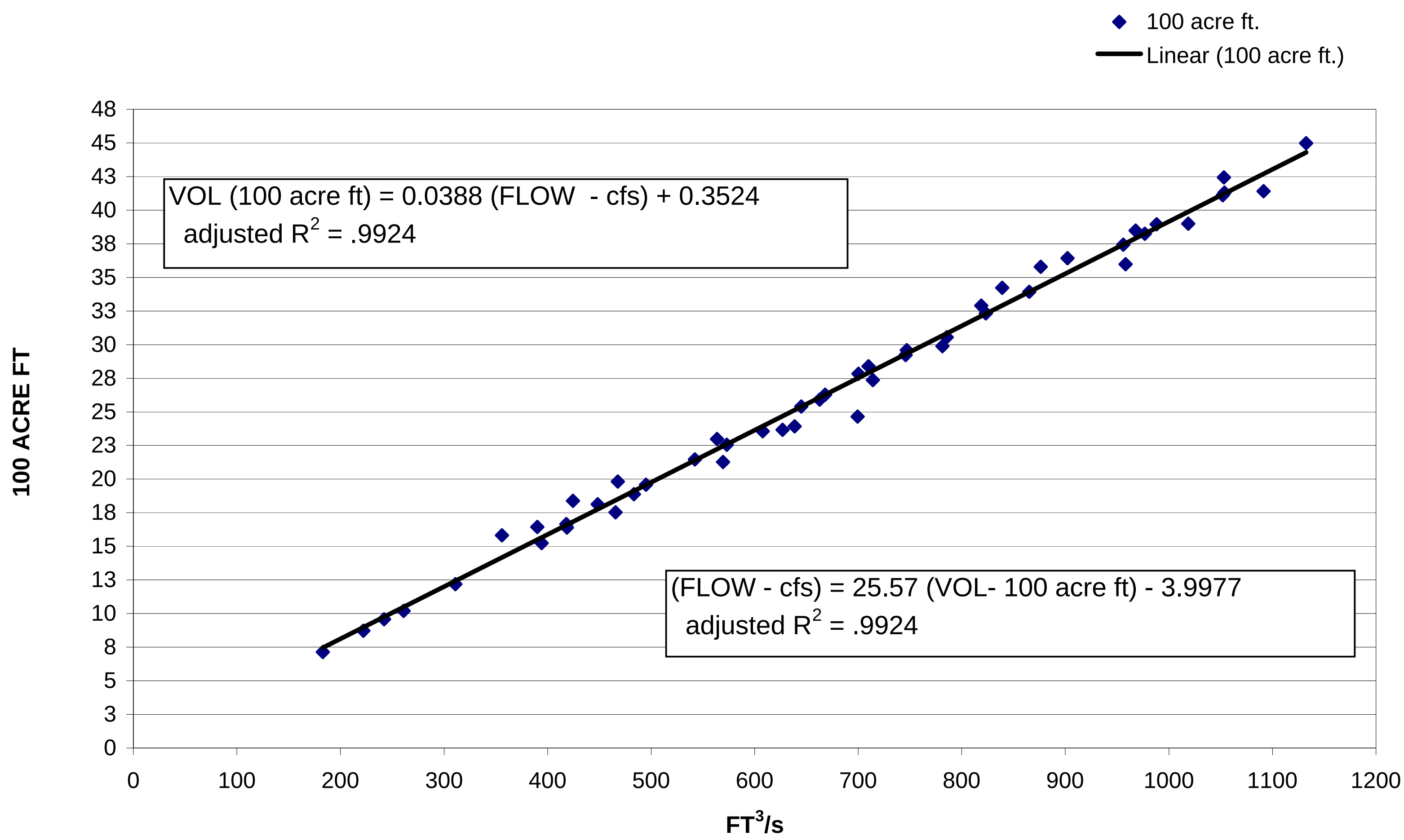

APPENDIX

Figure B1. 1997 Westside sucker length frequency histograms. Larval drift sampling began during week 17 (Apr. 10-16), and the first larval sucker caught was during week 20 (May 12-18). No sampling occurred during weeks 22 (May 26-June 1), 29 (July 14-20), and 30 (July 21-27). n= the number of suckers collected. Mean is their average total length.

# WESTSIDE 1998

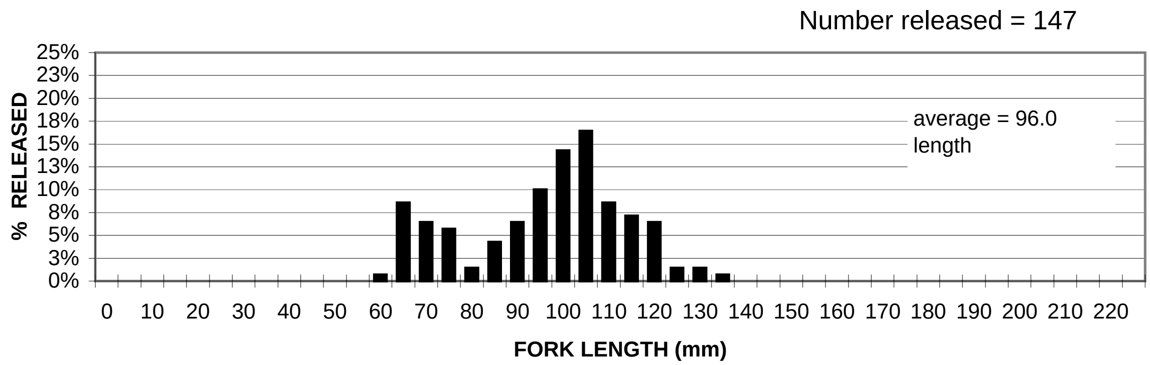


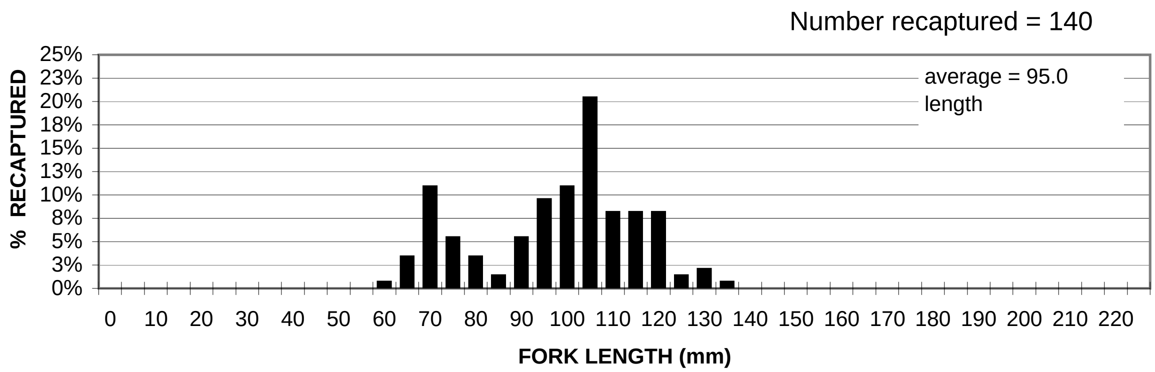

APPENDIX
Figure B1. 1998 Westside sucker length frequency histograms. Larval drift sampling began during week 16 (Mar.13-19), and the first larval sucker caught was during week 24 (June 8-14). No sampling occured during weeks 18 (Apr 27-May 3), 30 (July 20-26), and 31 (July 27-Aug 2). n= the number of suckers collected. Mean is their average total length.




APPENDIX

Figure A2. 1998 Eastside linear relationship between average Eastside canal sample flows ($ft^3/s$ = average flow over approximately 48 hr sample period) and calculated volume sampled (100 acre ft) during the corresponding sample.




APPENDIX
Figure A3. Westside fyke net efficiency test, performed on 11/5/97, with one test. Daily flow equaled 230cfs Recapture success was 95%.

# APPENDIX
# TABLES

## 1997 EASTSIDE SUCKER LARVAL CPUE (su/m$^3$)

| WEEK | DEPTH | MORNING West | MORNING Middle | MORNING East | DAY West | DAY Middle | DAY East | EVENING West | EVENING Middle | EVENING East | Weekly avg. CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **11** | **S** | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | **DP** | | | | | | | | | | |
| **12** | **S** | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | **DP** | | | | | | | | | | |
| **13** | **S** | | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | | 0.000 | 0.000 |
| | **DP** | 0.000 | | | | 0.000 | | 0.000 | | | |
| **14** | **S** | 0.000 | | 0.000 | 0.000 | | 0.000 | 0.000 | | 0.000 | 0.000 |
| | **DP** | | 0.000 | | 0.000 | | | 0.000 | | | |
| **15** | **S** | 0.000 | 0.000 | | 0.000 | | 0.000 | 0.000 | 0.000 | | 0.000 |
| | **DP** | 0.000 | | | | 0.000 | | 0.000 | | | |
| **16** | **S** | | 0.000 | 0.000 | 0.000 | 0.000 | | | 0.000 | 0.000 | 0.000 |
| | **DP** | 0.000 | | | | 0.000 | | 0.000 | | | |
| **17** | **S** | | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | | 0.000 | 0.000 |
| | **DP** | 0.000 | | | | 0.000 | | | 0.000 | | |
| **18** | **S** | 0.000 | | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 |
| | **DP** | | 0.000 | | | 0.000 | | | 0.000 | | |
| **19** | **S** | Eastside shutdown during week 19 | | | | | | | | | |
| | **DP** | ND: 5/5-11/97 | | | | | | | | | |
| **20** | **S** | **0.007** | | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | | 0.001 |
| | **DP** | 0.000 | | | 0.000 | | | | 0.000 | | |
| **21** | **S** | | **0.006** | 0.000 | **0.009** | | 0.000 | **0.041** | | 0.000 | 0.007 |
| | **DP** | | 0.000 | | | **0.007** | | | 0.000 | | |
| **22** | **S** | | 0.000 | 0.000 | | 0.000 | 0.000 | **0.129** | | 0.000 | 0.022 |
| | **DP** | 0.000 | | | | 0.000 | | **0.067** | | | |
| **23** | **S** | **0.341** | | **0.187** | 0.000 | 0.000 | | **0.107** | 0.000 | | 0.118 |
| | **DP** | | **0.065** | | 0.000 | | | **0.364** | | | |
| **24** | **S** | **0.282** | **0.163** | | | 0.000 | 0.000 | **0.372** | **0.086** | | 0.142 |
| | **DP** | | 0.000 | | | 0.000 | | **0.379** | | | |
| **25** | **S** | **0.115** | **0.093** | | | 0.000 | 0.000 | **0.045** | **0.125** | | 0.057 |
| | **DP** | | 0.000 | | | 0.000 | | **0.133** | | | |
| **26** | **S** | | **0.033** | 0.000 | **0.140** | | **0.071** | **0.072** | | **0.104** | 0.047 |
| | **DP** | | 0.000 | | | 0.000 | | | 0.000 | | |
| **27** | **S** | **0.028** | | 0.000 | | **0.029** | 0.000 | 0.000 | | 0.000 | 0.006 |
| | **DP** | | 0.000 | | 0.000 | | | 0.000 | | | |
| **28** | **S** | | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | | 0.000 |
| | **DP** | 0.000 | | | 0.000 | | | | 0.000 | | |
| **29** | **S** | 0.000 | 0 | | 0.000 | | 0.000 | **0.036** | | 0.000 | 0.023 |
| | **DP** | **0.036** | | | 0.000 | | | **0.133** | | | |
| **30** | **S** | 0.000 | | 0.000 | 0.000 | | 0.000 | | 0.000 | 0.000 | 0.000 |
| | **DP** | 0.000 | | | | 0.000 | | | 0.000 | | |
| **31** | **S** | | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 |
| | **DP** | | 0.000 | | | 0.000 | | | 0.000 | | |

APPENDIX

Table A1. 1997 Eastside larval sucker CPUE (su/m$^3$) by diel period, canal cell, and depth (Shallow-S and Deep-DP). Bold numbers represent samples with suckers caught. Bold with a dark border is the highest density in the year's samples. The weekly average CPUE is the average of all weekly sucker catch rates. ND indicates that no samples (No data ) were collected

## 1998 EASTSIDE SUCKER LARVAL CPUE (su/m$^3$)

| | | MORNING | | | DAY | | | EVENING | | | Weekly |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WEEK | DEPTH | West | Middle | East | West | Middle | East | West | Middle | East | avg. CPUE |
| **17** | **S** | 0.000 | 0.000 | | | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 |
| | **DP** | 0.000 | | | 0.000 | | | | 0.000 | | |
| **18** | **S** | **0.007** | | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | | 0.001 |
| | **DP** | | 0.000 | | | 0.000 | | | 0.000 | | |
| **19** | **S** | **0.003** | 0.000 | | | 0.000 | 0.000 | | 0.000 | 0.000 | 0.001 |
| | **DP** | **0.008** | | | 0.000 | | | 0.000 | | | |
| **20** | **S** | 0.000 | | 0.000 | **0.008** | | 0.000 | **0.003** | 0.000 | | 0.002 |
| | **DP** | 0.000 | | | 0.000 | | | **0.003** | | | |
| **21** | **S** | 0.000 | | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | | 0.000 |
| | **DP** | 0.000 | | | 0.000 | | | 0.000 | | | |
| **22** | **S** | 0.000 | 0.000 | | 0.000 | 0.000 | | | 0.000 | 0.000 | 0.000 |
| | **DP** | 0.000 | | | 0.000 | | | 0.000 | | | |
| **23** | **S** | 0.000 | 0.000 | | 0.000 | 0.000 | | 0.000 | | 0.000 | 0.002 |
| | **DP** | 0.000 | | | 0.000 | | | 0.019 | | | |
| **24** | **S** | **0.328** | | **0.090** | **0.876** | **0.163** | | | **0.012** | 0.000 | 0.231 |
| | **DP** | **0.552** | | | | **0.018** | | **0.040** | | | |
| **25** | **S** | | **0.188** | **0.084** | | 0.000 | 0.000 | | 0.000 | 0.000 | 0.030 |
| | **DP** | 0.000 | | | 0.000 | | | 0.000 | | | |
| **26** | **S** | **0.224** | **0.112** | | 0.000 | | 0.000 | **0.051** | | 0.000 | 0.043 |
| | **DP** | 0.000 | | | | 0.000 | | 0.000 | | | |
| **27** | **S** | **0.645** | **0.054** | | 0.000 | | | | 0.000 | **0.057** | 0.194 |
| | **DP** | | **0.798** | | | 0.000 | | | 0.000 | | |
| **28** | **S** | | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | | 0.000 |
| | **DP** | | 0.000 | | | 0.000 | | | 0.000 | | |
| **29** | **S** | **0.108** | | 0.000 | | 0.000 | 0.000 | 0.000 | | 0.000 | 0.012 |
| | **DP** | | 0.000 | | 0.000 | | | | 0.000 | | |
| **30** | **S** | 0.000 | 0.000 | | | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 |
| | **DP** | | 0.000 | | 0.000 | | | | 0.000 | | |
| **31** | **S** | 0.000 | | 0.000 | 0.000 | 0.000 | | | 0.000 | 0.000 | 0.000 |
| | **DP** | 0.000 | | | | 0.000 | | | 0.000 | | |

APPENDIX

Table A1. 1998 Eastside larval sucker CPUE (su/m$^3$) by diel period, canal cell, and depth (Shallow-S and Deep-DP). Bold numbers represent samples with suckers caught. Bold with a dark border is the highest density in the year's samples. The weekly average CPUE is the average of all weekly sucker catch rates.

## 1997 WESTSIDE SUCKER LARVAL CPUE (su/m$^3$)

| | | MORNING | | | DAY | | | EVENING | | | Weekly |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WEEK | DEPTH | West | Middle | East | West | Middle | East | West | Middle | East | avg. CPUE |
| **17** | **S** | 0.000 | | 0.000 | 0.000 | 0.000 | | 0.000 | 0.000 | | 0.000 |
| | **DP** | | 0.000 | | | 0.000 | | | | 0.000 | |
| **18** | **S** | 0.000 | 0.000 | | 0.000 | | 0.000 | | 0.000 | 0.000 | 0.000 |
| | **DP** | | 0.000 | | | 0.000 | | 0.000 | | | |
| **19** | **S** | | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 |
| | **DP** | 0.000 | | | | 0.000 | | | 0.000 | | |
| **20** | **S** | | 0.000 | **0.005** | 0.000 | | 0.000 | | 0.000 | 0.000 | 0.001 |
| | **DP** | | 0.000 | | 0.000 | | | | 0.000 | | |
| **21** | **S** | **0.018** | 0.000 | | | **0.004** | 0.000 | 0.000 | 0.000 | | 0.002 |
| | **DP** | | 0.000 | | | 0.000 | | | 0.000 | | |
| **22** | **S** | ND | ND | ND | 0.000 | | 0.000 | ND | ND | ND | 0.000 |
| | **DP** | ND | ND | ND | 0.000 | | | ND | ND | ND | |
| **23** | **S** | | 0.000 | 0.000 | 0.000 | | 0.000 | | **0.028** | 0.000 | 0.007 |
| | **DP** | | | 0.000 | 0.000 | | | | | **0.034** | |
| **24** | **S** | **0.047** | | **0.060** | 0.000 | | 0.000 | 0.000 | 0.000 | | 0.015 |
| | **DP** | | | 0.000 | 0.000 | | | | | **0.029** | |
| **25** | **S** | | 0.000 | **0.276** | | 0.000 | 0.000 | 0.000 | **0.086** | | 0.040 |
| | **DP** | | | 0.000 | | 0.000 | | | 0.000 | | |
| **26** | **S** | | 0.000 | **0.038** | 0.000 | | 0.000 | 0.000 | 0.000 | | 0.004 |
| | **DP** | | | 0.000 | | | 0.000 | | 0.000 | | |
| **27** | **S** | | **0.026** | **0.033** | 0.000 | | 0.000 | 0.000 | | 0.000 | 0.007 |
| | **DP** | | | 0.000 | | | 0.000 | | | 0.000 | |
| **28** | **S** | 0.000 | | **0.043** | | | 0.000 | 0.000 | 0.000 | | 0.005 |
| | **DP** | | | 0.000 | 0.000 | | 0.000 | 0.000 | | | |
| **29** | **S** | Westside shutdown during weeks 29 and 30 | | | | | | | | | |
| | **DP** | ND - 7/14-27/97 | | | | | | | | | |
| **30** | **S** | Westside shutdown during weeks 29 and 30 | | | | | | | | | |
| | **DP** | ND - 7/14-27/97 | | | | | | | | | |
| **31** | **S** | | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 | | 0.000 | 0.000 |
| | **DP** | | | 0.000 | | 0.000 | | 0.000 | | | |

APPENDIX

Table B1. 1997 Westside larval sucker CPUE (su/m$^3$) by diel period, canal cell, and depth (Shallow-S and Deep-DP). Bold numbers represent samples with suckers caught. Bold with a dark border is the highest density in the year's samples. The weekly average CPUE is the average of all weekly sucker catch rates. ND indicates that no samples (No data ) were collected

## 1998 WESTSIDE SUCKER LARVAL CPUE (su/m$^3$)

| | | MORNING | | | DAY | | | EVENING | | | Weekly |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WEEK | DEPTH | West | Middle | East | West | Middle | East | West | Middle | East | avg. CPUE |
| **16** | **S** | | 0.000 | | | 0.000 | 0.000 | | | 0.000 | 0.000 |
| | **DP** | 0.000 | 0.000 | | | | 0.000 | 0.000 | 0.000 | | |
| **17** | **S** | ND | ND | ND | | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 |
| | **DP** | ND | ND | ND | | | 0.000 | | | 0.000 | |
| **18** | **S** | Westside shutdown during week 18, starting with week 17 morning samples | | | | | | | | | |
| | **DP** | ND - for the entire week | | | | | | | | | |
| **19** | **S** | 0.000 | 0.000 | | | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 |
| | **DP** | | 0.000 | | | | 0.000 | 0.000 | | | |
| **20** | **S** | 0.000 | | 0.000 | | | | 0.000 | 0.000 | | 0.000 |
| | **DP** | | | 0.000 | | | | | 0.000 | | |
| **21** | **S** | 0.000 | 0.000 | | | 0.000 | 0.000 | | 0.000 | 0.000 | 0.000 |
| | **DP** | 0.000 | | | | 0.000 | | | | 0.000 | |
| **22** | **S** | 0.000 | 0.000 | | 0.000 | 0.000 | | | 0.000 | 0.000 | 0.000 |
| | **DP** | | 0.000 | | 0.000 | | | 0.000 | | | |
| **23** | **S** | 0.000 | 0.000 | | 0.000 | 0.000 | | 0.000 | | 0.000 | 0.000 |
| | **DP** | | 0.000 | | | 0.000 | | | 0.000 | | |
| **24** | **S** | **0.035** | **0.012** | | | **0.082** | **0.029** | | 0.000 | **0.018** | 0.020 |
| | **DP** | | 0.000 | | 0.000 | | | | | 0.000 | |
| **25** | **S** | | **0.137** | **0.030** | 0.000 | | 0.000 | 0.000 | **0.029** | | 0.025 |
| | **DP** | 0.000 | | | | **0.033** | | 0.000 | | | |
| **26** | **S** | | | | 0.000 | 0.000 | | 0.000 | 0.000 | | 0.000 |
| | **DP** | | | | 0.000 | | | 0.000 | | | |
| **27** | **S** | **0.035** | | **0.064** | 0.000 | 0.000 | | 0.000 | 0.000 | | 0.011 |
| | **DP** | 0.000 | | | 0.000 | | | | 0.000 | | |
| **28** | **S** | 0.000 | | 0.000 | | 0.000 | 0.000 | 0.000 | 0.000 | | 0.000 |
| | **DP** | | 0.000 | | | | 0.000 | 0.000 | | | |
| **29** | **S** | **0.110** | **0.027** | | | 0.000 | **0.036** | 0.000 | | 0.000 | 0.024 |
| | **DP** | | 0.000 | | | | **0.042** | 0.000 | | | |

APPENDIX

Table B1. 1998 Westside larval sucker CPUE (su/m$^3$) by diel period, canal cell, and depth (Shallow-S and Deep-DP). Bold numbers represent samples with suckers caught. Bold with a dark border is the highest density in the year's samples. The weekly average CPUE is the average of all weekly sucker catch rates. ND indicates that no samples (No data ) were collected.

**1997**

**EASTSIDE SUCKERS**

| week | dates | KL <75 | KL 75-150 | KL >150 | KL total | LR <75 | LR 75-150 | LR >150 | LR total | SN <75 | SN 75-150 | SN >150 | SN total | SU <75 | SU 75-150 | SU >150 | SU total | All Suckers <75 | All Suckers 75-150 | All Suckers >150 | All Suckers total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 29 | 7/14-7/20 | 0 | 1 | 0 | 1 | 0 | 3 | 1 | 4 | 0 | 6 | 0 | 6 | 1 | 11 | 0 | 12 | 1 | 21 | 1 | 23 |
| 30 | 7/21-7/27 | 0 | 1 | 0 | 1 | 0 | 10 | 0 | 10 | 0 | 3 | 1 | 4 | 1 | 19 | 0 | 20 | 1 | 33 | 1 | 35 |
| 31 | 7/28-8/3 | 0 | 2 | 0 | 2 | 0 | 11 | 1 | 12 | 7 | 0 | 2 | 9 | 33 | 8 | 0 | 41 | 40 | 21 | 3 | 64 |
| 32 | 8/4-8/10 | 0 | 7 | 4 | 11 | 0 | 29 | 6 | 35 | 0 | 108 | 8 | 116 | 214 | 31 | 2 | 247 | 214 | 175 | 20 | 409 |
| 33 | 8/11-8/17 | 0 | 9 | 6 | 15 | 0 | 153 | 16 | 169 | 0 | 358 | 58 | 416 | 416 | 145 | 3 | 564 | 416 | 665 | 83 | 1,164 |
| 34 | 8/18-8/24 | 0 | 0 | 6 | 6 | 0 | 52 | 19 | 71 | 0 | 191 | 42 | 233 | 250 | 32 | 3 | 285 | 250 | 275 | 70 | 595 |
| 35 | 8/25-8/31 | 0 | 2 | 3 | 5 | 0 | 18 | 4 | 22 | 6 | 59 | 31 | 96 | 144 | 8 | 0 | 152 | 150 | 87 | 38 | 275 |
| 36 | 9/1-9/7 | 0 | 3 | 5 | 8 | 0 | 17 | 5 | 22 | 0 | 80 | 29 | 109 | 216 | 54 | 1 | 271 | 216 | 154 | 40 | 410 |
| 37 | 9/8-9/14 | 0 | 1 | 2 | 3 | 0 | 13 | 3 | 16 | 2 | 24 | 3 | 29 | 161 | 41 | 1 | 203 | 163 | 79 | 9 | 251 |
| 38 | 9/15-9/21 | 0 | 0 | 2 | 2 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 2 | 10 | 7 | 0 | 17 | 10 | 9 | 3 | 22 |
| 39 | 9/22-9/28 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 3 | 2 | 5 | 25 | 9 | 1 | 35 | 25 | 12 | 4 | 41 |
| 40 | 9/29-10/5 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 7 | 12 | 7 | 0 | 19 | 12 | 9 | 6 | 27 |
| 41 | 10/6-10/12 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 3 | 3 | 4 | 4 | 0 | 8 | 4 | 4 | 4 | 12 |
| 42 | 10/13-10/19 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 3 | 1 | 0 | 4 | 3 | 2 | 5 | 10 |
| 43 | 10/20-10/27 | no sample - fyke hoist repair | | | | | | | | | | | | | | | | | | | |
| 44 | 10/28-11/2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 3 | 5 | 3 | 4 | 0 | 7 | 3 | 6 | 4 | 13 |
| 45 | 11/3-11/9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 2 | 0 | 2 |
| 46 | 11/10-11/16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 8 | 0 | 10 | 2 | 9 | 0 | 11 |
| 47 | 11/17-11/23 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 4 | 0 | 4 | 0 | 5 | 1 | 6 |
| 48 | 11/24-11/30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 4 | 3 | 1 | 0 | 4 |
| 49 | 12/1-12/7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 50 | 12/8-12/14 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 1 | 1 | 0 | 2 | 1 | 3 | 2 | 6 |
| 51 | 12/15-12/21 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 4 | 2 | 3 | 0 | 5 |
| 52 | 12/22-12/28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 3 | 0 | 0 | 3 | 3 | 0 | 2 | 5 |
| | Total | 0 | 28 | 30 | 58 | 0 | 307 | 59 | 366 | 15 | 841 | 197 | 1,053 | 1504 | 399 | 11 | 1,914 | 1519 | 1575 | 297 | 3,391 |
| % SU catch by size | | **0.0%** | **1.8%** | **10.1%** | **1.7%** | **0.0%** | **19.5%** | **19.9%** | **10.8%** | **1.0%** | **53.4%** | **66.3%** | **31.1%** | **99.0%** | **25.3%** | **3.7%** | **56.4%** | **44.8%** | **46.4%** | **8.8%** | **100.0%** |
| | Mean catch | 0 | 1 | 1 | 3 | 0 | 13 | 3 | 16 | 1 | 37 | 9 | 46 | 65 | 17 | 0 | 83 | 66 | 68 | 13 | 147 |
| | St.dev. | 0.0 | 2.3 | 2.1 | 4.0 | 0.0 | 32.9 | 5.0 | 37.2 | 1.9 | 84.2 | 15.7 | 98.8 | 112.5 | 31.3 | 0.9 | 141.9 | 112.7 | 147.8 | 23.0 | 277.4 |

APPENDIX

Table A2. 1997 Eastside weekly fyke net sucker catch summary by species and fork length (mm) categories.

**1998**
**EASTSIDE SUCKERS**

| week | dates | KL <75 | KL 75-150 | KL >150 | KL total | LR <75 | LR 75-150 | LR >150 | LR total | SN <75 | SN 75-150 | SN >150 | SN total | | SU <75 | SU 75-150 | SU >150 | SU total | All Suckers <75 | All Suckers 75-150 | All Suckers >150 | All Suckers total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12/29-1/4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 1 | 3 | 1 | 5 | 1 | 3 | 1 | 5 |
| 2 | 1/5-1/11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| 3 | 1/12-1/18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 1/19-1/25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 5 | 1/26-2/1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | | 1 | 2 | 0 | 3 | 1 | 2 | 1 | 4 |
| 6 | 2/2-2/8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 7 | 2/9-2/15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 8 | 2/16-2/22 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | | 0 | 1 | 0 | 1 | 0 | 1 | 2 | 3 |
| 9 | 2/23-3/1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 10 | 3/2-3/8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 3/9-3/15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 3/16-3/22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 3/23-3/29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 14 | 3/30-4/5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 15 | 4/6-4/12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 4/13-4/19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 4/20-4/26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 4/27-5/3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | 5/4-5/10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | 5/11-5/17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | 5/18-5/24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| 22 | 5/25-5/31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | | 3 | 0 | 0 | 3 | 3 | 1 | 0 | 4 |
| 23 | 6/1-6/7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 2 |
| 24 | 6/8-6/14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 1 | 2 | 0 | 3 | 1 | 2 | 0 | 3 |
| 25 | 6/15-6/21 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 2 |
| 26 | 6/22-6/28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | | 0 | 3 | 0 | 3 | 0 | 3 | 1 | 4 |
| 27 | 6/29-7/5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 28 | 7/6-7/12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| 29 | 7/13-7/19 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 1 | | 1 | 1 | 0 | 2 | 1 | 4 | 0 | 5 |
| 30 | 7/20-7/26 | 0 | 3 | 0 | 3 | 0 | 6 | 1 | 7 | 0 | 11 | 0 | 11 | | 4 | 6 | 0 | 10 | 4 | 26 | 1 | 31 |
| 31 | 7/27-8/2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 36 | 0 | 0 | 36 | 36 | 0 | 1 | 37 |
| 32 | 8/3-8/9 | 0 | 4 | 0 | 4 | 0 | 6 | 0 | 6 | 0 | 19 | 1 | 20 | | 463 | 4 | 0 | 467 | 463 | 33 | 1 | 497 |
| 33 | 8/10-8/16 | 0 | 5 | 7 | 12 | 0 | 9 | 0 | 9 | 0 | 20 | 3 | 23 | | 1860 | 4 | 0 | 1,864 | 1860 | 38 | 10 | 1,908 |
| 34 | 8/17-8/23 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 4 | 0 | 4 | | 781 | 3 | 0 | 784 | 781 | 8 | 0 | 789 |
| 35 | 8/24-8/30 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | | 788 | 6 | 0 | 794 | 788 | 8 | 1 | 797 |
| 36 | 8/31-9/6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | | 2469 | 269 | 0 | 2,738 | 2469 | 272 | 0 | 2,741 |
| 37 | 9/7-9/13 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | | 2372 | 605 | 0 | 2,977 | 2372 | 608 | 0 | 2,980 |
| 38 | 9/14-9/20 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | | 525 | 497 | 0 | 1,022 | 525 | 498 | 1 | 1,024 |
| 39 | 9/21-9/27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 75 | 84 | 0 | 159 | 75 | 84 | 0 | 159 |
| 40 | 9/28-10/4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 9 | 17 | 0 | 26 | 9 | 17 | 0 | 26 |
| 41 | 10/5-10/11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 4 | 8 | 0 | 12 | 4 | 8 | 0 | 12 |
| 42 | 10/12-10/18 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 1 | 0 | 1 | | 23 | 175 | 0 | 198 | 23 | 181 | 0 | 204 |
| 43 | 10/19-10/25 | no sample -canal closed | | | | | | | | | | | | | | | | | | | | |
| 44 | 10/26-11/1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | | 9 | 63 | 0 | 72 | 9 | 68 | 0 | 77 |
| 45 | 11/2-11/8 | 0 | 1 | 0 | 1 | 0 | 4 | 0 | 4 | 0 | 13 | 0 | 13 | | 2 | 28 | 0 | 30 | 2 | 46 | 0 | 48 |
| 46 | 11/9-11/15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 1 | 3 | 0 | 4 | 1 | 3 | 0 | 4 |
| 47 | 11/16-11/22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | | 0 | 2 | 0 | 2 | 0 | 3 | 0 | 3 |
| 48 | 11/23-11/29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | | 2 | 6 | 0 | 8 | 2 | 8 | 0 | 10 |
| 49 | 11/30-12/6 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 2 | 25 | 0 | 27 | 2 | 25 | 1 | 28 |
| 50 | 12/7-12/13 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 12 | 0 | 12 | | 9 | 60 | 0 | 69 | 9 | 77 | 0 | 86 |
| 51 | 12/14-12/20 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 4 | 0 | 4 | | 2 | 13 | 0 | 15 | 2 | 19 | 0 | 21 |
| 52 | 12/21-12/27 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | | 4 | 27 | 0 | 31 | 4 | 29 | 0 | 33 |
| | Total | 0 | 16 | 11 | 27 | 0 | 46 | 4 | 50 | 0 | 98 | 10 | 108 | 0 | 9450 | 1920 | 1 | 11,371 | 9450 | 2080 | 26 | 11,556 |
| % Sucker catch by size | | **0.0%** | **0.8%** | **42.3%** | **0.2%** | **0.0%** | **2.2%** | **15.4%** | **0.4%** | **0.0%** | **4.7%** | **38.5%** | **0.9%** | | **100.0%** | **92.3%** | **3.8%** | **98.4%** | **81.8%** | **18.0%** | **0.2%** | **100.0%** |
| | Mean catch | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 2 | | 185 | 38 | 0 | 223 | 185 | 41 | 1 | 227 |
| | St.dev. | 0.0 | 1.0 | 1.0 | 1.8 | 0.0 | 2.1 | 0.3 | 2.1 | 0.0 | 4.6 | 0.5 | 4.9 | | 550.6 | 115.0 | 0.1 | 630.6 | 550.6 | 115.3 | 1.4 | 633.4 |

APPENDIX - continued

Table A2. 1998 Eastside weekly fyke net sucker catch summary, by species and fork length (mm) categories.

**1999**

**EASTSIDE SUCKERS**

| | | **KL** | | | | **LR** | | | | **SN** | | | | **SU** | | | | **All Suckers** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| week | date | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total |
| 1 | 12/28-1/3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 5 | 0 | 5 | 1 | 8 | 0 | 9 | 1 | 14 | 0 | 15 |
| 2 | 1/4-1/10 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 1 | 3 | 9 | 0 | 12 | 3 | 12 | 0 | 15 |
| 3 | 1/11-1/17 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 2 | 0 | 3 |
| 4 | 1/18-1/24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 1/25-1/31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 8 | 0 | 8 | 0 | 9 | 0 | 9 |
| 6 | 2/1-2/7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 2 | 0 | 2 |
| 7 | 2/8-2/14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 8 | 2/15-2/21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 2/22-2/28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 2 | 0 | 2 |
| 10 | 3/1-3/7 | no sample -turbine repair | | | | | | | | | | | | | | | | | | | |
| 11 | 3/8-3/14 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 12 | 3/15-3/21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 2 | 0 | 2 | 0 | 5 | 0 | 5 |
| 13 | 3/22-3/28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 2 | 0 | 3 | 1 | 3 | 0 | 4 |
| 14 | 3/29-4/4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 15 | 4/5-4/11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 4/12-4/18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 2 | 0 | 2 |
| 17 | 4/19-4/25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 4/26-5/2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 0 | 7 | 2 | 5 | 0 | 7 |
| 19 | 5/3-5/9 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 1 | 1 | 10 | 0 | 11 | 1 | 13 | 0 | 14 |
| 20 | 5/10-5/16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | 5/17-5/23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 6 | 0 | 6 |
| 22 | 5/24-5/30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 1 | 1 | 0 | 2 |
| 23 | 5/31-6/6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24 | 6/7-6/13 | no sample - algal overload | | | | | | | | | | | | | | | | | | | |
| 25 | 6/14-6/20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 26 | 6/21-6/27 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 3 | 0 | 3 |
| 27 | 6/28-7/4 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 5 | 0 | 5 | 0 | 14 | 0 | 14 | 0 | 22 | 0 | 22 |
| 28 | 7/5-7/11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 3 | 0 | 3 |
| 29 | 7/12-7/18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 4 | 0 | 4 | 0 | 5 | 0 | 5 |
| 30 | 7/19-7/25 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 1 | 1 | 3 | 0 | 4 |
| 31 | 7/26-8/1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 | 0 | 4 | 0 | 4 | 0 | 12 | 0 | 12 |
| 32 | 8/2-8/8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 1 | 0 | 41 | 40 | 1 | 0 | 41 |
| 33 | 8/9-8/15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 13 | 0 | 0 | 13 | 13 | 1 | 0 | 14 |
| 34 | 8/16-8/22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 140 | 11 | 0 | 151 | 140 | 12 | 0 | 152 |
| 35 | 8/23-8/29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 447 | 17 | 0 | 464 | 447 | 17 | 0 | 464 |
| 36 | 8/30-9/5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 442 | 39 | 0 | 481 | 442 | 39 | 0 | 481 |
| 37 | 9/6-9/12 | 0 | 5 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 | 2,861 | 1,192 | 0 | 4,053 | 2,861 | 1,204 | 1 | 4,066 |
| 38 | 9/13-9/19 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 143 | 195 | 0 | 338 | 143 | 196 | 1 | 340 |
| 39 | 9/20-9/26 | 0 | 2 | 0 | 2 | 0 | 2 | 1 | 3 | 0 | 7 | 1 | 8 | 282 | 628 | 0 | 910 | 282 | 639 | 2 | 923 |
| 40 | 9/27-10/3 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 180 | 390 | 0 | 570 | 180 | 396 | 0 | 576 |
| 41 | 10/4-10/10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 99 | 251 | 0 | 350 | 99 | 253 | 0 | 352 |
| 42 | 10/11-10/17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 142 | 0 | 166 | 24 | 142 | 0 | 166 |
| 43 | 10/18-10/24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 19 | 90 | 0 | 109 | 19 | 91 | 0 | 110 |
| | Total | 0 | 15 | 1 | 16 | 0 | 10 | 2 | 12 | 0 | 54 | 2 | 56 | 4,701 | 3,039 | 0 | 7,740 | 4,701 | 3,118 | 5 | 7,824 |
| **% Sucker catch by size** | | **0.0%** | **0.5%** | **20.0%** | **0.2%** | **0.0%** | **0.3%** | **40.0%** | **0.2%** | **0.0%** | **1.7%** | **40.0%** | **0.7%** | **100.0%** | **97.5%** | **0.0%** | **98.9%** | **60.1%** | **39.9%** | **0.1%** | **100.0%** |
| | Mean catch | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 115 | 74 | 0 | 189 | 115 | 76 | 0 | 191 |
| | St.dev. | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 2 | 453 | 216 | 0 | 649 | 453 | 219 | 0 | 651 |

APPENDIX - continued

Table A2. 1999 Eastside weekly fyke net sucker catch summary, by species and fork length (mm) categories.

**1997**

**WESTSIDE SUCKERS**

| | | KL | | | | LR | | | | SN | | | | SU | | | | All Suckers | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| week | dates | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total |
| 17 | 4/21-4/27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 7 | 2 | 6 | 0 | 8 | 3 | 12 | 0 | 15 |
| 18 | 4/28-5/4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 5 | 0 | 5 | 3 | 0 | 0 | 3 | 3 | 7 | 0 | 10 |
| 19 | 5/5-5/11 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 2 | 7 | 0 | 9 | 5 | 1 | 0 | 6 | 7 | 11 | 0 | 18 |
| 20 | 5/12-5/18 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 8 | 0 | 8 | 9 | 13 | 0 | 22 | 9 | 26 | 0 | 35 |
| 21 | 5/19-5/25 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 4 | 1 | 8 | 0 | 9 | 3 | 10 | 0 | 13 | 5 | 21 | 0 | 26 |
| 22 | 5/26-6/1 | partial sample (10 hr) | | | 0 | | | | 0 | | | | 0 | | | | 0 | | | | 0 |
| 23 | 6/2-6/8 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 9 | 0 | 9 | 4 | 6 | 0 | 10 | 4 | 18 | 0 | 22 |
| 24 | 6/9-6/15 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 1 | 4 | 0 | 5 | 1 | 4 | 0 | 5 | 2 | 13 | 0 | 15 |
| 25 | 6/16-6/22 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 3 | 1 | 0 | 4 | 5 | 2 | 0 | 7 |
| 26 | 6/23-6/29 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 2 | 0 | 2 | 1 | 3 | 0 | 4 | 1 | 8 | 0 | 9 |
| 27 | 6/30-7/6 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 1 | 2 | 0 | 3 | 24 | 0 | 0 | 24 | 25 | 5 | 0 | 30 |
| 28 | 7/7-7/13 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 1 | 1 | 3 | 0 | 0 | 3 | 3 | 1 | 2 | 6 |
| 29&30 | 7/14-7/27 | no sample -turbine repair | | | | | | | | | | | | | | | | | | | |
| 31 | 7/28-8/3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 7 | 0 | 7 | 12 | 0 | 0 | 12 | 12 | 8 | 0 | 20 |
| 32-35 | 8/4-8/31 | no sample -turbine repair | | | | | | | | | | | | | | | | | | | |
| 36 | 9/1-9/7 | 0 | 2 | 0 | 2 | 0 | 4 | 1 | 5 | 0 | 28 | 15 | 43 | 69 | 18 | 0 | 87 | 69 | 52 | 16 | 137 |
| 37-44 | 9/8-11/2 | no sample - water control | | | | | | | | | | | | | | | | | | | |
| 45 | 11/3-11/9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 46 | 11/10-11/16 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 47 | 11/17-11/23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 48 | 11/24-11/30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 49 | 12/1-12/7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 50 | 12/8-12/14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 51 | 12/15-12/21 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| 52 | 12/22-12/28 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 2 | 2 | 4 |
| | Total | 0 | 2 | 2 | 4 | 3 | 34 | 3 | 40 | 6 | 87 | 19 | 112 | 140 | 63 | 0 | 203 | 148 | 187 | 24 | 359 |
| % SU catch by size | | 0.0% | 1.1% | 8.3% | 1.1% | 2.0% | 18.2% | 12.5% | 11.1% | 4.1% | 46.5% | 79.2% | 31.2% | 94.6% | 33.7% | 0.0% | 56.5% | 41.2% | 52.1% | 6.7% | 100.0% |
| | Mean catch | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 4 | 1 | 5 | 7 | 3 | 0 | 9 | 7 | 9 | 1 | 16 |
| | St.dev. | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 2 | 1 | 6 | 3 | 9 | 15 | 5 | 0 | 19 | 15 | 13 | 3 | 29 |

APPENDIX

Table B2. 1997 Westside weekly fyke net sucker catch summary by species and fork length (mm) categories.

**1998**

**WESTSIDE SUCKERS**

| week | dates | KL <75 | KL 75-150 | KL >150 | KL total | LR <75 | LR 75-150 | LR >150 | LR total | SN <75 | SN 75-150 | SN >150 | SN total | SU <75 | SU 75-150 | SU >150 | SU total | All Suckers <75 | All Suckers 75-150 | All Suckers >150 | All Suckers total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12/29-1/4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 6 | 1 | 5 | 0 | 6 |
| 2 | 1/5-1/11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 2 | 0 | 2 |
| 3 | 1/12-1/18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 1/19-1/25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 1 | 0 | 1 | 0 | 2 | 1 | 3 |
| 5 | 1/26-2/1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| 6 | 2/2-2/8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 7 | 2/9-2/15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 2/16-2/22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 2/23-3/1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 3/2-3/8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 3/9-3/15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 3/16-3/22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 13 | 3/23-3/29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 3/30-4/5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 15 | 4/6-4/12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 4/13-4/19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 4/20-4/26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 18 | 4/27-5/3 | no sample- turbine repair | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 19 | 5/3-5/10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 8 | 0 | 8 | 1 | 1 | 0 | 2 | 1 | 10 | 0 | 11 |
| 20 | 5/11-5/17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| 21 | 5/18-5/24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22 | 5/25-5/31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 23 | 6/1-6/7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 1 | 1 | 0 | 2 |
| 24 | 6/8-6/14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| 25 | 6/15-6/21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 2 |
| 26 | 6/22-6/28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 27 | 6/29-7/5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| 28 | 7/6-7/12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29 | 7/13-7/19 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 2 | 0 | 2 | 1 | 1 | 0 | 2 | 1 | 5 | 1 | 7 |
| 30 | 7/20-7/26 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 6 | 0 | 0 | 6 | 6 | 2 | 0 | 8 |
| 31-33 | 7/27-8/16 | no sample- turbine repair | | | | | | | | | | | | | | | | | | | |
| 34 | 8/17-8/23 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 9 | 0 | 9 | 856 | 6 | 0 | 862 | 856 | 16 | 0 | 872 |
| 35 | 8/24-8/30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2237 | 43 | 0 | 2280 | 2237 | 44 | 0 | 2281 |
| 36 | 8/31-9/6 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 4 | 0 | 4 | 941 | 99 | 0 | 1040 | 941 | 105 | 0 | 1046 |
| 37 | 9/7-9/13 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 609 | 227 | 0 | 836 | 609 | 229 | 2 | 840 |
| 38 | 9/14-9/20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 598 | 615 | 0 | 1213 | 598 | 615 | 0 | 1213 |
| 39 | 9/21-9/27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 140 | 215 | 0 | 355 | 140 | 215 | 0 | 355 |
| 40 | 9/28-10/4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 60 | 0 | 83 | 23 | 60 | 0 | 83 |
| 41 | 10/5-10/11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 20 | 0 | 27 | 7 | 20 | 0 | 27 |
| 42-45 | 10/12-11/8 | no sample - turbine repair | | | | 0 | 0 | 0 | | | | | | | | | | | | | |
| 46 | 11/9-11/15 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 14 |
| 47 | 11/16-11/22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 1 | 1 | 2 | 0 | 3 |
| 48 | 11/23-11/29 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 12 | 0 | 12 | 0 | 4 | 0 | 4 | 0 | 17 | 0 | 17 |
| 49 | 11/30-12/6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 0 | 6 | 2 | 4 | 0 | 6 |
| 50 | 12/7-12/13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 12 | 4 | 16 | 0 | 20 | 4 | 28 | 0 | 32 |
| 51 | 12/14-12/20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 6 | 0 | 7 | 1 | 7 | 0 | 8 |
| 52 | 12/21-12/27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 4 | 0 | 5 | 1 | 5 | 0 | 6 |
| | Total | 0 | 3 | 1 | 4 | 0 | 7 | 1 | 8 | 0 | 72 | 3 | 75 | 5436 | 1331 | 0 | 6767 | 5436 | 1413 | 5 | 6854 |
| % SU catch by size | | **0.0%** | **0.2%** | **20.0%** | **0.1%** | **0.0%** | **0.5%** | **20.0%** | **0.1%** | **0.0%** | **5.1%** | **60.0%** | **1.1%** | **100.0%** | **94.2%** | **0.0%** | **98.7%** | **79.3%** | **20.6%** | **0.1%** | **100.0%** |
| | Mean catch | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 121 | 30 | 0 | 150 | 124 | 32 | 0 | 156 |
| | St.dev. | 0.0 | 0.3 | 0.2 | 0.4 | 0.0 | 0.4 | 0.1 | 0.5 | 0.0 | 3.4 | 0.3 | 3.4 | 390.6 | 101.4 | 0.0 | 434.6 | 394.7 | 102.3 | 0.4 | 439.4 |

APPENDIX - continued

Table B2. 1998 Westside weekly fyke net sucker catch summary by species and fork length (mm) categories

**1999**

**WESTSIDE SUCKERS**

| week | dates | KL <75 | KL 75-150 | KL >150 | KL total | LR <75 | LR 75-150 | LR >150 | LR total | SN <75 | SN 75-150 | SN >150 | SN total | SU <75 | SU 75-150 | SU >150 | SU total | All Suckers <75 | All Suckers 75-150 | All Suckers >150 | All Suckers total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12/28-1/3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| 2 | 1/4-1/10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 1 | 9 | 0 | 10 | 1 | 12 | 0 | 13 |
| 3 | 1/11-1/17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 | 1 | 2 | 0 | 3 |
| 4 | 1/18-1/24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 1/25-1/31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 5 | 0 | 5 | 0 | 10 | 0 | 10 |
| 6 | 2/1-2/7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 3 | 0 | 3 |
| 7 | 2/8-2/14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 8 | 2/15-2/21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 2/22-2/28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 10 | 3/1-3/7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 3/8-3/14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 3/15-3/21 | no sample - shutdown | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 3/22-3/28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 14 | 3/29-4/4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 2 |
| 15 | 4/5-4/11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 4/12-4/18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| 17 | 4/19-4/25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 4/26-5/2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 19 | 5/3-5/9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 20 | 5/10-5/16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | 5/17-5/23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 4 | 0 | 4 | 0 | 8 | 0 | 8 |
| 22 | 5/24-5/30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 2 |
| 23 | 5/31-6/6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24 | 6/7-6/13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 25 | 6/14-6/20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 2 |
| 26 | 6/21-6/27 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 4 | 0 | 4 |
| 27 | 6/28-7/4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 6 | 0 | 0 | 6 | 6 | 2 | 0 | 8 |
| 28 | 7/5-7/11 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 20 | 0 | 20 | 6 | 5 | 0 | 11 | 6 | 28 | 0 | 34 |
| 29 | 7/12-7/18 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 4 | 0 | 4 | 12 | 1 | 0 | 13 | 12 | 6 | 0 | 18 |
| 30 | 7/19-7/25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 25 | 0 | 0 | 25 | 25 | 3 | 0 | 28 |
| 31 | 7/26-8/1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 0 | 0 | 42 | 42 | 0 | 0 | 42 |
| 32 | 8/2-8/8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 160 | 1 | 0 | 161 | 160 | 1 | 0 | 161 |
| 33-39 | 8/9-9/25 | no sample - shutdown | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 40 | 9/27-10/3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 39 | 76 | 0 | 115 | 39 | 76 | 1 | 116 |
| 41-43 | 10/4-10/24 | no sample - shutdown | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | 0 | 2 | 0 | 2 | 0 | 4 | 0 | 4 | 0 | 49 | 1 | 50 | 296 | 110 | 0 | 406 | 296 | 165 | 1 | 462 |
| % SU catch by size | | **0.0%** | **1.2%** | **0.0%** | **0.4%** | **0.0%** | **2.4%** | **0.0%** | **0.9%** | **0.0%** | **29.7%** | **100.0%** | **10.8%** | **100.0%** | **66.7%** | **0.0%** | **87.9%** | 64.1% | 35.7% | 0.2% | 100.0% |
| | Mean catch | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 9 | 3 | 0 | 12 | 9 | 5 | 0 | 14 |
| | St.dev. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 29 | 13 | 0 | 34 | 29 | 14 | 0 | 34 |

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Table B2. 1999 Westside weekly fyke net sucker catch summary by species and fork length (mm) categories.

| Eastside 1997 | | | BBH | | | | BC | | | | FH | | | | GU | | | | KL | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| week | dates | hours | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total |
| 29 | 7/14-7/20 | 42.75 | 0 | 0 | 0 | **0** | 33 | 84 | 1 | **118** | 22 | 0 | 0 | **22** | 2 | 0 | 0 | **2** | 0 | 1 | 0 | **1** |
| 30 | 7/21-7/27 | 45.75 | 0 | 0 | 0 | **0** | 84 | 69 | 1 | **154** | 27 | 0 | 0 | **27** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 31 | 7/28-8/3 | 44.50 | 0 | 0 | 0 | **0** | 42 | 8 | 0 | **50** | 13 | 0 | 0 | **13** | 16 | 0 | 0 | **16** | 0 | 2 | 0 | **2** |
| 32 | 8/4-8/10 | 43.75 | 0 | 0 | 0 | **0** | 86 | 60 | 3 | **149** | 58 | 0 | 0 | **58** | 0 | 0 | 0 | **0** | 0 | 7 | 4 | **11** |
| 33 | 8/11-8/17 | 36.75 | 0 | 0 | 0 | **0** | 154 | 322 | 17 | **493** | 17 | 0 | 0 | **17** | 0 | 0 | 0 | **0** | 0 | 9 | 6 | **15** |
| 34 | 8/18-8/24 | 46.25 | 0 | 0 | 0 | **0** | 748 | 690 | 156 | **1594** | 70 | 0 | 0 | **70** | 0 | 0 | 0 | **0** | 0 | 0 | 6 | **6** |
| 35 | 8/25-8/31 | 46.25 | 0 | 0 | 0 | **0** | 301 | 172 | 98 | **571** | 103 | 0 | 0 | **103** | 0 | 0 | 0 | **0** | 0 | 2 | 3 | **5** |
| 36 | 9/1-9/7 | 48.25 | 0 | 0 | 0 | **0** | 661 | 643 | 125 | **1429** | 430 | 0 | 0 | **430** | 0 | 0 | 0 | **0** | 0 | 3 | 5 | **8** |
| 37 | 9/8-9/14 | 45.75 | 1 | 0 | 1 | **2** | 761 | 464 | 92 | **1317** | 540 | 1 | 0 | **541** | 0 | 0 | 0 | **0** | 0 | 1 | 2 | **3** |
| 38 | 9/15-9/21 | 46.75 | 0 | 0 | 0 | **0** | 66 | 32 | 9 | **107** | 16 | 0 | 0 | **16** | 0 | 0 | 0 | **0** | 0 | 0 | 2 | **2** |
| 39 | 9/22-9/28 | 47.00 | 0 | 0 | 0 | **0** | 2401 | 107 | 37 | **2545** | 519 | 0 | 0 | **519** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 40 | 9/29-10/5 | 46.75 | 0 | 0 | 0 | **0** | 1032 | 107 | 29 | **1168** | 609 | 0 | 0 | **609** | 0 | 0 | 0 | **0** | 0 | 0 | 1 | **1** |
| 41 | 10/6-10/12 | 47.75 | 0 | 0 | 1 | **1** | 613 | 44 | 15 | **672** | 754 | 0 | 0 | **754** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 42 | 10/13-10/19 | 47.25 | 1 | 0 | 1 | **2** | 1072 | 68 | 28 | **1168** | 273 | 0 | 0 | **273** | 0 | 0 | 0 | **0** | 0 | 0 | 1 | **1** |
| 43 | 10/20-10/27 | | no sample- fyke hoist repair | | | | | | | | | | | | | | | | | | | |
| 44 | 10/28-11/2 | 46.25 | 0 | 0 | 0 | **0** | 3061 | 564 | 22 | **3647** | 55 | 0 | 0 | **55** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 45 | 11/3-11/9 | 47.25 | 0 | 0 | 1 | **1** | 1979 | 107 | 8 | **2094** | 40 | 0 | 0 | **40** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 46 | 11/10-11/16 | 47.75 | 0 | 0 | 0 | **0** | 1442 | 85 | 8 | **1535** | 78 | 0 | 0 | **78** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 47 | 11/17-11/23 | 47.75 | 0 | 0 | 0 | **0** | 1159 | 34 | 1 | **1194** | 12 | 0 | 0 | **12** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 48 | 11/24-11/30 | 46.25 | 0 | 0 | 0 | **0** | 350 | 44 | 5 | **399** | 25 | 0 | 0 | **25** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 49 | 12/1-12/7 | 46.25 | 0 | 0 | 0 | **0** | 467 | 13 | 4 | **484** | 8 | 0 | 0 | **8** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 50 | 12/8-12/14 | 47.25 | 0 | 0 | 0 | **0** | 298 | 13 | 6 | **317** | 14 | 0 | 0 | **14** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 51 | 12/15-12/21 | 47.75 | 0 | 0 | 0 | **0** | 918 | 26 | 3 | **947** | 28 | 0 | 0 | **28** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 52 | 12/22-12/28 | 48.75 | 0 | 0 | 0 | **0** | 1000 | 30 | 8 | **1038** | 52 | 0 | 0 | **52** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| | Total | **1060.8** | 2 | 0 | 4 | **6** | 18728 | 3786 | 676 | **23190** | 3763 | 1 | 0 | **3764** | 18 | 0 | 0 | **18** | 0 | 28 | 30 | **58** |
| | % Catch | | | | | **0.0%** | | | | **49.2%** | | | | **8.0%** | | | | **0.0%** | | | | **0.1%** |
| | Mean catch | **46** | 0 | 0 | 0 | **0** | 814 | 165 | 29 | **1008** | 164 | 0 | 0 | **164** | 1 | 0 | 0 | **1** | 0 | 1 | 1 | **3** |
| | St.dev. | **2.5** | 0 | 0 | 0 | **1** | 792 | 213 | 44 | **883** | 232 | 0 | 0 | **232** | 3 | 0 | 0 | **3** | 0 | 2 | 2 | **4** |

APPENDIX

Table A3. 1997 Eastside weekly fyke net catch summary, by species and fork length (mm) categories.

| | | Eastside 1997 | KS | | | | LMP | | | | LP | | | | LR | | | | MS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **week** | **set** | **dates** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** |
| 29 | 1 | 7/14-7/20 | 379 | 55 | 0 | **434** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 0 | 3 | 1 | **4** | 7 | 26 | 0 | **33** |
| 30 | 2 | 7/21-7/27 | 418 | 102 | 0 | **520** | 0 | 0 | 2 | **2** | 0 | 0 | 0 | **0** | 0 | 10 | 0 | **10** | 4 | 42 | 0 | **46** |
| 31 | 3 | 7/28-8/3 | 117 | 60 | 0 | **177** | 0 | 0 | 4 | **4** | 0 | 0 | 0 | **0** | 0 | 11 | 1 | **12** | 9 | 16 | 0 | **25** |
| 32 | 4 | 8/4-8/10 | 590 | 192 | 0 | **782** | 0 | 0 | 39 | **39** | 0 | 0 | 0 | **0** | 0 | 29 | 6 | **35** | 12 | 48 | 0 | **60** |
| 33 | 5 | 8/11-8/17 | 655 | 111 | 0 | **766** | 0 | 0 | 16 | **16** | 0 | 0 | 0 | **0** | 0 | 153 | 16 | **169** | 64 | 265 | 0 | **329** |
| 34 | 6 | 8/18-8/24 | 235 | 23 | 0 | **258** | 0 | 0 | 26 | **26** | 0 | 0 | 0 | **0** | 0 | 52 | 19 | **71** | 203 | 807 | 0 | **1010** |
| 35 | 7 | 8/25-8/31 | 31 | 0 | 0 | **31** | 0 | 0 | 24 | **24** | 0 | 0 | 0 | **0** | 0 | 18 | 4 | **22** | 68 | 203 | 0 | **271** |
| 36 | 8 | 9/1-9/7 | 52 | 0 | 0 | **52** | 0 | 0 | 10 | **10** | 0 | 0 | 0 | **0** | 0 | 17 | 5 | **22** | 109 | 242 | 0 | **351** |
| 37 | 9 | 9/8-9/14 | 25 | 0 | 0 | **25** | 0 | 0 | 3 | **3** | 0 | 0 | 0 | **0** | 0 | 13 | 3 | **16** | 39 | 34 | 0 | **73** |
| 38 | 10 | 9/15-9/21 | 5 | 0 | 0 | **5** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 1 | 2 | 0 | **3** |
| 39 | 11 | 9/22-9/28 | 50 | 1 | 0 | **51** | 0 | 0 | 7 | **7** | 1 | 0 | 0 | **1** | 0 | 0 | 1 | **1** | 18 | 21 | 0 | **39** |
| 40 | 12 | 9/29-10/5 | 104 | 4 | 0 | **108** | 0 | 0 | 9 | **9** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 43 | 11 | 0 | **54** |
| 41 | 13 | 10/6-10/12 | 63 | 0 | 0 | **63** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 1 | **1** | 8 | 7 | 0 | **15** |
| 42 | 14 | 10/13-10/19 | 96 | 1 | 0 | **97** | 0 | 0 | 6 | **6** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 25 | 13 | 0 | **38** |
| 43 | | 10/20-10/27 | no sample | | | | | | | | | | | | | | | | | | | |
| 44 | 15 | 10/28-11/2 | 22 | 1 | 0 | **23** | 0 | 0 | 11 | **11** | 0 | 0 | 0 | **0** | 0 | 0 | 1 | **1** | 82 | 25 | 0 | **107** |
| 45 | 16 | 11/3-11/9 | 11 | 0 | 0 | **11** | 0 | 0 | 10 | **10** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 19 | 13 | 0 | **32** |
| 46 | 17 | 11/10-11/16 | 4 | 1 | 0 | **5** | 0 | 0 | 3 | **3** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 19 | 20 | 0 | **39** |
| 47 | 18 | 11/17-11/23 | 23 | 5 | 0 | **28** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 1 | **1** | 12 | 5 | 0 | **17** |
| 48 | 19 | 11/24-11/30 | 21 | 5 | 0 | **26** | 0 | 0 | 3 | **3** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 3 | 5 | 0 | **8** |
| 49 | 20 | 12/1-12/7 | 21 | 2 | 0 | **23** | 0 | 0 | 9 | **9** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 2 | 2 | 0 | **4** |
| 50 | 21 | 12/8-12/14 | 10 | 1 | 0 | **11** | 0 | 0 | 2 | **2** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 51 | 22 | 12/15-12/21 | 12 | 1 | 0 | **13** | 0 | 0 | 1 | **1** | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** |
| 52 | 23 | 12/22-12/28 | 32 | 6 | 0 | **38** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** |
| | | Total | 2976 | 571 | 0 | **3547** | 0 | 0 | 188 | **188** | 2 | 0 | 0 | **2** | 0 | 307 | 59 | **366** | 749 | 1807 | 0 | **2556** |
| | | % catch | | | | **7.5%** | | | | **0.4%** | | | | **0.0%** | | | | **0.8%** | | | | **5.4%** |
| | | Mean catch | 129 | 25 | 0 | **154** | 0 | 0 | 8 | **8** | 0 | 0 | 0 | **0** | 0 | 13 | 3 | **16** | 33 | 79 | 0 | **111** |
| | | St.dev. | 192 | 49 | 0 | **238** | 0 | 0 | 10 | **10** | 0 | 0 | 0 | **0** | 0 | 33 | 5 | **37** | 48 | 177 | 0 | **221** |

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Table A3. 1997 Eastside weekly fyke net catch summary, by species and fork length (mm) categories.

| Eastside 1997 | | RBT | | | | SD | | | | SN | | | | SS | | | | SU | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **week** | **dates** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** |
| 29 | 7/14-7/20 | 0 | 0 | 0 | **0** | 1 | 4 | 0 | **5** | 0 | 6 | 0 | **6** | 0 | 0 | 0 | **0** | 1 | 11 | 0 | **12** |
| 30 | 7/21-7/27 | 0 | 1 | 0 | **1** | 1 | 3 | 0 | **4** | 0 | 3 | 1 | **4** | 24 | 0 | 0 | **24** | 1 | 19 | 0 | **20** |
| 31 | 7/28-8/3 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 7 | 0 | 2 | **9** | 0 | 0 | 0 | **0** | 33 | 8 | 0 | **41** |
| 32 | 8/4-8/10 | 0 | 0 | 0 | **0** | 1 | 2 | 0 | **3** | 0 | 108 | 8 | **116** | 6 | 0 | 0 | **6** | 214 | 31 | 2 | **247** |
| 33 | 8/11-8/17 | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 0 | 358 | 58 | **416** | 7 | 1 | 0 | **8** | 416 | 145 | 3 | **564** |
| 34 | 8/18-8/24 | 0 | 0 | 0 | **0** | 5 | 2 | 0 | **7** | 0 | 191 | 42 | **233** | 6 | 1 | 0 | **7** | 250 | 32 | 3 | **285** |
| 35 | 8/25-8/31 | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 6 | 59 | 31 | **96** | 1 | 0 | 0 | **1** | 144 | 8 | 0 | **152** |
| 36 | 9/1-9/7 | 0 | 2 | 0 | **2** | 0 | 3 | 0 | **3** | 0 | 80 | 29 | **109** | 1 | 0 | 0 | **1** | 216 | 54 | 1 | **271** |
| 37 | 9/8-9/14 | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 2 | 24 | 3 | **29** | 1 | 0 | 0 | **1** | 161 | 41 | 1 | **203** |
| 38 | 9/15-9/21 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 1 | **2** | 0 | 0 | 0 | **0** | 10 | 7 | 0 | **17** |
| 39 | 9/22-9/28 | 0 | 0 | 0 | **0** | 3 | 14 | 0 | **17** | 0 | 3 | 2 | **5** | 0 | 0 | 0 | **0** | 25 | 9 | 1 | **35** |
| 40 | 9/29-10/5 | 0 | 1 | 0 | **1** | 0 | 7 | 0 | **7** | 0 | 2 | 5 | **7** | 0 | 0 | 0 | **0** | 12 | 7 | 0 | **19** |
| 41 | 10/6-10/12 | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 3 | **3** | 0 | 0 | 0 | **0** | 4 | 4 | 0 | **8** |
| 42 | 10/13-10/19 | 1 | 4 | 0 | **5** | 0 | 0 | 0 | **0** | 0 | 1 | 4 | **5** | 0 | 3 | 0 | **3** | 3 | 1 | 0 | **4** |
| 43 | 10/20-10/27 | no sample | | | | | | | | | | | | | | | | | | | |
| 44 | 10/28-11/2 | 0 | 6 | 1 | **7** | 0 | 0 | 0 | **0** | 0 | 2 | 3 | **5** | 1 | 19 | 0 | **20** | 3 | 4 | 0 | **7** |
| 45 | 11/3-11/9 | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 3 | 17 | 0 | **20** | 0 | 2 | 0 | **2** |
| 46 | 11/10-11/16 | 1 | 4 | 0 | **5** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 5 | 16 | 0 | **21** | 2 | 8 | 0 | **10** |
| 47 | 11/17-11/23 | 0 | 7 | 4 | **11** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 6 | 25 | 0 | **31** | 0 | 4 | 0 | **4** |
| 48 | 11/24-11/30 | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 5 | 11 | 0 | **16** | 3 | 1 | 0 | **4** |
| 49 | 12/1-12/7 | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 1 | **1** | 4 | 6 | 0 | **10** | 0 | 0 | 0 | **0** |
| 50 | 12/8-12/14 | 0 | 10 | 16 | **26** | 0 | 0 | 0 | **0** | 0 | 1 | 2 | **3** | 0 | 0 | 0 | **0** | 1 | 1 | 0 | **2** |
| 51 | 12/15-12/21 | 0 | 6 | 23 | **29** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** | 2 | 2 | 0 | **4** |
| 52 | 12/22-12/28 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 2 | **2** | 0 | 1 | 0 | **1** | 3 | 0 | 0 | **3** |
| | Total | 3 | 45 | 44 | **92** | 13 | 36 | 0 | **49** | 15 | 841 | 197 | **1053** | 70 | 103 | 0 | **173** | 1504 | 399 | 11 | **1914** |
| | % catch | | | | **0.2%** | | | | **0.1%** | | | | **2.2%** | | | | **0.4%** | | | | **4.1%** |
| | Mean catch | 0 | 2 | 2 | **4** | 1 | 2 | 0 | **2** | 1 | 37 | 9 | **46** | 3 | 4 | 0 | **8** | 65 | 17 | 0 | **83** |
| | St.dev. | 0 | 3 | 6 | **8** | 1 | 3 | 0 | **4** | 2 | 84 | 16 | **99** | 5 | 8 | 0 | **10** | 112 | 31 | 1 | **142** |

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Table A3. 1997 Eastside weekly fyke net catch summary, by species and fork length (mm) categories.

| Eastside 1997 | | TC | | | | UN | | | | YP | | | | DT | All Fish | ALL Fish Except Suckers |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| week | dates | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | no FL | total | total |
| 29 | 7/14-7/20 | 7 | 70 | 14 | **91** | 3 | 0 | 0 | **3** | 528 | 0 | 0 | **528** | **13** | **1273** | **1250** |
| 30 | 7/21-7/27 | 19 | 163 | 14 | **196** | 3 | 0 | 0 | **3** | 289 | 0 | 0 | **289** | **22** | **1323** | **1288** |
| 31 | 7/28-8/3 | 22 | 180 | 39 | **241** | 16 | 0 | 0 | **16** | 33 | 0 | 0 | **33** | **47** | **686** | **622** |
| 32 | 8/4-8/10 | 31 | 238 | 75 | **344** | 229 | 0 | 0 | **229** | 114 | 2 | 0 | **116** | **31** | **2226** | **1817** |
| 33 | 8/11-8/17 | 26 | 341 | 96 | **463** | 337 | 0 | 0 | **337** | 9 | 13 | 0 | **22** | **85** | **3701** | **2537** |
| 34 | 8/18-8/24 | 68 | 489 | 324 | **881** | 301 | 4 | 0 | **305** | 2 | 1 | 1 | **4** | **38** | **4795** | **4200** |
| 35 | 8/25-8/31 | 38 | 126 | 109 | **273** | 49 | 0 | 0 | **49** | 0 | 1 | 0 | **1** | **1** | **1602** | **1327** |
| 36 | 9/1-9/7 | 234 | 341 | 193 | **768** | 134 | 0 | 0 | **134** | 1 | 2 | 0 | **3** | **1** | **3594** | **3184** |
| 37 | 9/8-9/14 | 236 | 332 | 103 | **671** | 15 | 26 | 1 | **42** | 0 | 15 | 1 | **16** | **8** | **2951** | **2700** |
| 38 | 9/15-9/21 | 4 | 24 | 10 | **38** | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** | **2** | **194** | **172** |
| 39 | 9/22-9/28 | 243 | 48 | 7 | **298** | 0 | 0 | 0 | **0** | 1 | 90 | 2 | **93** | **0** | **3611** | **3570** |
| 40 | 9/29-10/5 | 304 | 51 | 22 | **377** | 2 | 0 | 0 | **2** | 28 | 33 | 1 | **62** | **0** | **2424** | **2397** |
| 41 | 10/6-10/12 | 181 | 26 | 10 | **217** | 0 | 0 | 0 | **0** | 0 | 52 | 0 | **52** | **2** | **1790** | **1778** |
| 42 | 10/13-10/19 | 402 | 95 | 3 | **500** | 0 | 0 | 0 | **0** | 1 | 51 | 0 | **52** | **0** | **2154** | **2144** |
| 43 | 10/20-10/27 | no sample | | | | | | | | | | | | | | |
| 44 | 10/28-11/2 | 572 | 260 | 6 | **838** | 0 | 0 | 0 | **0** | 2 | 134 | 0 | **136** | **1** | **4858** | **4845** |
| 45 | 11/3-11/9 | 251 | 100 | 4 | **355** | 0 | 0 | 0 | **0** | 1 | 38 | 1 | **40** | **1** | **2607** | **2605** |
| 46 | 11/10-11/16 | 63 | 24 | 3 | **90** | 0 | 0 | 0 | **0** | 0 | 99 | 0 | **99** | **0** | **1886** | **1875** |
| 47 | 11/17-11/23 | 31 | 9 | 1 | **41** | 0 | 0 | 0 | **0** | 0 | 17 | 0 | **17** | **0** | **1358** | **1352** |
| 48 | 11/24-11/30 | 107 | 29 | 2 | **138** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | **0** | **621** | **617** |
| 49 | 12/1-12/7 | 67 | 9 | 1 | **77** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | **0** | **618** | **617** |
| 50 | 12/8-12/14 | 60 | 15 | 4 | **79** | 0 | 0 | 0 | **0** | 0 | 3 | 1 | **4** | **0** | **459** | **453** |
| 51 | 12/15-12/21 | 50 | 34 | 4 | **88** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | **0** | **1116** | **1111** |
| 52 | 12/22-12/28 | 87 | 34 | 2 | **123** | 0 | 0 | 0 | **0** | 0 | 5 | 0 | **5** | **0** | **1263** | **1258** |
| | Total | 3103 | 3038 | 1046 | **7187** | 1090 | 30 | 1 | **1121** | 1009 | 558 | 7 | **1574** | **252** | **47110** | **43719** |
| | % catch | | | | **15.3%** | | | | **2.4%** | | | | **3.3%** | **0.5%** | **100.0%** | **92.8%** |
| | Mean catch | 135 | 132 | 45 | **312** | 47 | 1 | 0 | **49** | 44 | 24 | 0 | **68** | **11** | **2048** | **1901** |
| | St.dev. | 146 | 137 | 78 | **261** | 101 | 5 | 0 | **102** | 123 | 37 | 1 | **120** | **21** | **1342** | **1220** |

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Table A3. 1997 Eastside weekly fyke net catch summary, by species and fork length (mm) categories.

| | Eastside 1998 | | BBH | | | | BC | | | | FH | | | | KL | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **week** | **dates** | **hours** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** |
| 1 | 12/29-1/4 | 48.75 | 0 | 0 | 0 | **0** | 551 | 15 | 2 | **568** | 26 | 0 | 0 | **26** | 0 | 0 | 0 | **0** |
| 2 | 1/5-1/11 | 47.25 | 0 | 0 | 0 | **0** | 31 | 2 | 0 | **33** | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** |
| 3 | 1/12-1/18 | 47.75 | 0 | 0 | 0 | **0** | 6 | 2 | 0 | **8** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 4 | 1/19-1/25 | 48.00 | 0 | 0 | 0 | **0** | 118 | 6 | 2 | **126** | 16 | 0 | 0 | **16** | 0 | 0 | 0 | **0** |
| 5 | 1/26-2/1 | 48.25 | 1 | 0 | 0 | **1** | 337 | 30 | 14 | **381** | 82 | 0 | 0 | **82** | 0 | 0 | 0 | **0** |
| 6 | 2/2-2/8 | 47.50 | 0 | 0 | 1 | **1** | 184 | 20 | 20 | **224** | 54 | 0 | 0 | **54** | 0 | 0 | 0 | **0** |
| 7 | 2/9-2/15 | 46.42 | 0 | 0 | 0 | **0** | 149 | 36 | 34 | **219** | 16 | 0 | 0 | **16** | 0 | 0 | 0 | **0** |
| 8 | 2/16-2/22 | 47.50 | 0 | 0 | 1 | **1** | 98 | 18 | 42 | **158** | 27 | 0 | 0 | **27** | 0 | 0 | 0 | **0** |
| 9 | 2/23-3/1 | 48.25 | 0 | 0 | 0 | **0** | 46 | 7 | 25 | **78** | 9 | 0 | 0 | **9** | 0 | 0 | 0 | **0** |
| 10 | 3/2-3/8 | 47.75 | 0 | 0 | 1 | **1** | 32 | 1 | 5 | **38** | 11 | 0 | 0 | **11** | 0 | 0 | 0 | **0** |
| 11 | 3/9-3/15 | 45.50 | 0 | 0 | 0 | **0** | 139 | 22 | 6 | **167** | 11 | 0 | 0 | **11** | 0 | 0 | 0 | **0** |
| 12 | 3/16-3/22 | 48.25 | 0 | 0 | 1 | **1** | 248 | 17 | 1 | **266** | 403 | 0 | 0 | **403** | 0 | 0 | 0 | **0** |
| 13 | 3/23-3/29 | 48.25 | 0 | 0 | 0 | **0** | 325 | 39 | 4 | **368** | 224 | 0 | 0 | **224** | 0 | 0 | 0 | **0** |
| 14 | 3/30-4/5 | 46.00 | 0 | 0 | 0 | **0** | 289 | 32 | 7 | **328** | 82 | 0 | 0 | **82** | 0 | 0 | 0 | **0** |
| 15 | 4/6-4/12 | 48.25 | 0 | 0 | 0 | **0** | 213 | 17 | 3 | **233** | 90 | 0 | 0 | **90** | 0 | 0 | 0 | **0** |
| 16 | 4/13-4/19 | 48.00 | 0 | 0 | 1 | **1** | 254 | 23 | 8 | **285** | 178 | 0 | 0 | **178** | 0 | 0 | 0 | **0** |
| 17 | 4/20-4/26 | 48.00 | 0 | 0 | 0 | **0** | 478 | 62 | 14 | **554** | 1007 | 0 | 0 | **1007** | 0 | 0 | 0 | **0** |
| 18 | 4/27-5/3 | 45.00 | 0 | 0 | 0 | **0** | 265 | 14 | 3 | **282** | 174 | 0 | 0 | **174** | 0 | 0 | 0 | **0** |
| 19 | 5/4-5/10 | 48.50 | 0 | 0 | 0 | **0** | 321 | 21 | 2 | **344** | 67 | 0 | 0 | **67** | 0 | 0 | 0 | **0** |
| 20 | 5/11-5/17 | 48.75 | 0 | 0 | 0 | **0** | 345 | 61 | 2 | **408** | 26 | 0 | 0 | **26** | 0 | 0 | 0 | **0** |
| 21 | 5/18-5/24 | 47.92 | 0 | 0 | 0 | **0** | 186 | 27 | 0 | **213** | 15 | 0 | 0 | **15** | 0 | 0 | 0 | **0** |
| 22 | 5/25-5/31 | 47.75 | 0 | 0 | 1 | **1** | 452 | 53 | 5 | **510** | 14 | 0 | 0 | **14** | 0 | 0 | 0 | **0** |
| 23 | 6/1-6/7 | 48.75 | 0 | 0 | 0 | **0** | 550 | 117 | 12 | **679** | 306 | 0 | 0 | **306** | 0 | 0 | 0 | **0** |
| 24 | 6/8-6/14 | 48.25 | 0 | 0 | 0 | **0** | 515 | 106 | 8 | **629** | 72 | 0 | 0 | **72** | 0 | 0 | 0 | **0** |
| 25 | 6/15-6/21 | 44.50 | 0 | 0 | 0 | **0** | 185 | 20 | 3 | **208** | 298 | 0 | 0 | **298** | 0 | 0 | 0 | **0** |
| 26 | 6/22-6/28 | 45.75 | 0 | 0 | 0 | **0** | 136 | 15 | 10 | **161** | 130 | 0 | 0 | **130** | 0 | 0 | 0 | **0** |
| 27 | 6/29-7/5 | 46.42 | 0 | 0 | 0 | **0** | 46 | 5 | 2 | **53** | 207 | 1 | 0 | **208** | 0 | 0 | 0 | **0** |
| 28 | 7/6-7/12 | 48.75 | 0 | 0 | 0 | **0** | 33 | 9 | 2 | **44** | 77 | 0 | 0 | **77** | 0 | 0 | 0 | **0** |
| 29 | 7/13-7/19 | 49.17 | 0 | 0 | 0 | **0** | 41 | 10 | 1 | **52** | 137 | 0 | 0 | **137** | 0 | 0 | 0 | **0** |
| 30 | 7/20-7/26 | 47.25 | 0 | 1 | 0 | **1** | 139 | 74 | 13 | **226** | 205 | 0 | 0 | **205** | 0 | 3 | 0 | **3** |
| 31 | 7/27-8/2 | 47.25 | 0 | 0 | 0 | **0** | 2 | 1 | 2 | **5** | 8 | 0 | 0 | **8** | 0 | 0 | 1 | **1** |
| 32 | 8/3-8/9 | 47.75 | 0 | 0 | 0 | **0** | 112 | 57 | 15 | **184** | 197 | 0 | 0 | **197** | 0 | 4 | 0 | **4** |
| 33 | 8/10-8/16 | 47.25 | 0 | 0 | 0 | **0** | 65 | 81 | 15 | **161** | 158 | 0 | 0 | **158** | 0 | 5 | 7 | **12** |
| 34 | 8/17-8/23 | 51.25 | 0 | 0 | 0 | **0** | 49 | 22 | 0 | **71** | 94 | 0 | 0 | **94** | 0 | 0 | 0 | **0** |
| 35 | 8/24-8/30 | 47.5 | 0 | 0 | 0 | **0** | 51 | 24 | 0 | **75** | 68 | 0 | 0 | **68** | 0 | 0 | 1 | **1** |
| 36 | 8/31-9/6 | 47.25 | 0 | 0 | 0 | **0** | 147 | 169 | 5 | **321** | 1141 | 0 | 0 | **1141** | 0 | 0 | 0 | **0** |
| 37 | 9/7-9/13 | 47.75 | 0 | 1 | 0 | **1** | 521 | 122 | 2 | **645** | 1494 | 0 | 0 | **1494** | 0 | 2 | 0 | **2** |
| 38 | 9/14-9/20 | 46.67 | 1 | 1 | 0 | **2** | 140 | 140 | 2 | **282** | 1178 | 0 | 0 | **1178** | 0 | 0 | 1 | **1** |
| 39 | 9/21-9/27 | 47.50 | 0 | 0 | 0 | **0** | 37 | 37 | 0 | **74** | 84 | 0 | 0 | **84** | 0 | 0 | 0 | **0** |
| 40 | 9/28-10/4 | 47.58 | 0 | 0 | 0 | **0** | 9 | 11 | 0 | **20** | 28 | 0 | 0 | **28** | 0 | 0 | 0 | **0** |
| 41 | 10/5-10/11 | 47.25 | 0 | 0 | 0 | **0** | 28 | 10 | 0 | **38** | 58 | 0 | 0 | **58** | 0 | 0 | 0 | **0** |
| 42 | 10/12-10/18 | 47.5 | 0 | 0 | 0 | **0** | 4507 | 984 | 0 | **5491** | 7599 | 0 | 0 | **7599** | 0 | 0 | 0 | **0** |
| 43 | 10/19-10/25 | | no sample- canal closed | | | | | | | | | | | | | | | |
| 44 | 10/26-11/1 | 47.17 | 0 | 0 | 0 | **0** | 1924 | 156 | 0 | **2080** | 1140 | 0 | 0 | **1140** | 0 | 0 | 0 | **0** |
| 45 | 11/2-11/8 | 47.33 | 0 | 0 | 0 | **0** | 565 | 33 | 1 | **599** | 101 | 1 | 0 | **102** | 0 | 1 | 0 | **1** |
| 46 | 11/9-11/15 | 47.5 | 0 | 0 | 0 | **0** | 196 | 19 | 2 | **217** | 40 | 2 | 0 | **42** | 0 | 0 | 0 | **0** |
| 47 | 11/16-11/22 | 46.75 | 0 | 0 | 0 | **0** | 167 | 21 | 1 | **189** | 200 | 0 | 0 | **200** | 0 | 0 | 0 | **0** |
| 48 | 11/23-11/29 | 47.58 | 0 | 0 | 0 | **0** | 205 | 32 | 2 | **239** | 504 | 0 | 0 | **504** | 0 | 0 | 0 | **0** |
| 49 | 11/30-12/6 | 47.42 | 0 | 0 | 0 | **0** | 181 | 29 | 2 | **212** | 373 | 0 | 0 | **373** | 0 | 0 | 1 | **1** |
| 50 | 12/7-12/13 | 44.92 | 0 | 0 | 0 | **0** | 230 | 76 | 3 | **309** | 262 | 0 | 0 | **262** | 0 | 0 | 0 | **0** |
| 51 | 12/14-12/20 | 47.25 | 0 | 0 | 0 | **0** | 231 | 19 | 2 | **252** | 574 | 0 | 0 | **574** | 0 | 0 | 0 | **0** |
| 52 | 12/21-12/27 | 47.5 | 0 | 0 | 0 | **0** | 161 | 29 | 2 | **192** | 152 | 0 | 0 | **152** | 0 | 1 | 0 | **1** |
| | Total | 2422.3 | 2 | 3 | 6 | 11 | 16240 | 2953 | 306 | 19499 | 19418 | 4 | 0 | 19422 | 0 | 16 | 11 | 27 |
| | % Catch | | | | | **0.0%** | | | | **27.9%** | | | | **27.8%** | | | | **0.0%** |
| | Mean catch | 47 | 0 | 0 | 0 | 0 | 318 | 58 | 6 | 382 | 381 | 0 | 0 | 381 | 0 | 0 | 0 | 1 |
| | St.dev. | 1.1 | 0.2 | 0.2 | 0.3 | 0.5 | 664.2 | 138.4 | 8.7 | 793.6 | 1087.8 | 0.3 | 0.0 | 1087.8 | 0.0 | 1.0 | 1.0 | 1.8 |

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Table A3. 1998 Eastside weekly fyke net catch summary, by species and fork length (mm) categories.

| Eastside 1998 | | KS | | | | LMP | | | | LR | | | | MS | | | | RBT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| week | dates | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total |
| 1 | 12/29-1/4 | 9 | 2 | 0 | **11** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 2 | 1/5-1/11 | 0 | 0 | 0 | **0** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** |
| 3 | 1/12-1/18 | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 4 | 1/19-1/25 | 7 | 1 | 0 | **8** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 4 | 3 | **7** |
| 5 | 1/26-2/1 | 7 | 10 | 0 | **17** | 0 | 0 | 2 | **2** | 0 | 0 | 0 | **0** | 1 | 1 | 0 | **2** | 0 | 1 | 5 | **6** |
| 6 | 2/2-2/8 | 8 | 8 | 0 | **16** | 0 | 0 | 3 | **3** | 0 | 0 | 0 | **0** | 1 | 2 | 0 | **3** | 0 | 0 | 3 | **3** |
| 7 | 2/9-2/15 | 20 | 10 | 0 | **30** | 0 | 0 | 7 | **7** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 8 | 2/16-2/22 | 7 | 15 | 0 | **22** | 0 | 0 | 2 | **2** | 0 | 0 | 1 | **1** | 0 | 1 | 0 | **1** | 0 | 0 | 1 | **1** |
| 9 | 2/23-3/1 | 6 | 9 | 0 | **15** | 0 | 0 | 1 | **1** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 10 | 3/2-3/8 | 2 | 4 | 0 | **6** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 11 | 3/9-3/15 | 23 | 8 | 0 | **31** | 0 | 0 | 3 | **3** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** | 0 | 2 | 0 | **2** |
| 12 | 3/16-3/22 | 43 | 33 | 0 | **76** | 0 | 0 | 6 | **6** | 0 | 0 | 0 | **0** | 1 | 19 | 0 | **20** | 0 | 2 | 0 | **2** |
| 13 | 3/23-3/29 | 61 | 33 | 0 | **94** | 0 | 1 | 13 | **14** | 0 | 0 | 0 | **0** | 4 | 21 | 0 | **25** | 0 | 0 | 0 | **0** |
| 14 | 3/30-4/5 | 76 | 11 | 0 | **87** | 0 | 1 | 6 | **7** | 0 | 0 | 0 | **0** | 3 | 10 | 0 | **13** | 0 | 3 | 0 | **3** |
| 15 | 4/6-4/12 | 45 | 6 | 0 | **51** | 0 | 0 | 7 | **7** | 0 | 0 | 0 | **0** | 4 | 3 | 0 | **7** | 0 | 2 | 1 | **3** |
| 16 | 4/13-4/19 | 22 | 2 | 0 | **24** | 0 | 4 | 11 | **15** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | 2 | 0 | **2** |
| 17 | 4/20-4/26 | 48 | 3 | 0 | **51** | 0 | 2 | 23 | **25** | 0 | 0 | 0 | **0** | 4 | 7 | 0 | **11** | 0 | 5 | 0 | **5** |
| 18 | 4/27-5/3 | 24 | 2 | 0 | **26** | 0 | 0 | 5 | **5** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 8 | 0 | **8** |
| 19 | 5/4-5/10 | 6 | 4 | 0 | **10** | 0 | 1 | 7 | **8** | 0 | 0 | 0 | **0** | 4 | 2 | 0 | **6** | 1 | 4 | 0 | **5** |
| 20 | 5/11-5/17 | 20 | 22 | 0 | **42** | 0 | 1 | 5 | **6** | 0 | 0 | 0 | **0** | 2 | 4 | 0 | **6** | 0 | 2 | 0 | **2** |
| 21 | 5/18-5/24 | 6 | 3 | 0 | **9** | 0 | 2 | 4 | **6** | 0 | 0 | 0 | **0** | 4 | 3 | 0 | **7** | 0 | 2 | 0 | **2** |
| 22 | 5/25-5/31 | 12 | 9 | 0 | **21** | 0 | 1 | 2 | **3** | 0 | 0 | 0 | **0** | 9 | 1 | 0 | **10** | 0 | 2 | 0 | **2** |
| 23 | 6/1-6/7 | 59 | 30 | 0 | **89** | 0 | 8 | 9 | **17** | 0 | 0 | 0 | **0** | 9 | 8 | 0 | **17** | 0 | 1 | 0 | **1** |
| 24 | 6/8-6/14 | 68 | 19 | 0 | **87** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 10 | 13 | 0 | **23** | 0 | 4 | 1 | **5** |
| 25 | 6/15-6/21 | 34 | 16 | 0 | **50** | 0 | 0 | 0 | **0** | 0 | 0 | 1 | **1** | 1 | 11 | 0 | **12** | 0 | 0 | 0 | **0** |
| 26 | 6/22-6/28 | 21 | 8 | 0 | **29** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 5 | 14 | 0 | **19** | 0 | 3 | 0 | **3** |
| 27 | 6/29-7/5 | 5 | 8 | 0 | **13** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 10 | 12 | 0 | **22** | 0 | 0 | 0 | **0** |
| 28 | 7/6-7/12 | 21 | 17 | 0 | **38** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 7 | 11 | 0 | **18** | 0 | 1 | 0 | **1** |
| 29 | 7/13-7/19 | 35 | 50 | 0 | **85** | 0 | 0 | 1 | **1** | 0 | 2 | 0 | **2** | 10 | 20 | 0 | **30** | 0 | 0 | 0 | **0** |
| 30 | 7/20-7/26 | 1081 | 256 | 0 | **1337** | 0 | 0 | 0 | **0** | 0 | 6 | 1 | **7** | 15 | 44 | 0 | **59** | 0 | 0 | 0 | **0** |
| 31 | 7/27-8/2 | 315 | 59 | 0 | **374** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 2 | 2 | 0 | **4** | 0 | 0 | 0 | **0** |
| 32 | 8/3-8/9 | 324 | 69 | 0 | **393** | 0 | 0 | 5 | **5** | 0 | 6 | 0 | **6** | 0 | 10 | 0 | **10** | 0 | 0 | 0 | **0** |
| 33 | 8/10-8/16 | 215 | 12 | 0 | **227** | 0 | 0 | 4 | **4** | 0 | 9 | 0 | **9** | 8 | 16 | 0 | **24** | 0 | 0 | 0 | **0** |
| 34 | 8/17-8/23 | 209 | 10 | 0 | **219** | 0 | 0 | 1 | **1** | 0 | 1 | 0 | **1** | 69 | 145 | 0 | **214** | 0 | 0 | 0 | **0** |
| 35 | 8/24-8/30 | 39 | 0 | 0 | **39** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 3 | 22 | 0 | **25** | 0 | 0 | 0 | **0** |
| 36 | 8/31-9/6 | 236 | 1 | 0 | **237** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 13 | 68 | 0 | **81** | 0 | 1 | 0 | **1** |
| 37 | 9/7-9/13 | 187 | 1 | 0 | **188** | 0 | 0 | 3 | **3** | 0 | 0 | 0 | **0** | 20 | 36 | 0 | **56** | 0 | 0 | 0 | **0** |
| 38 | 9/14-9/20 | 39 | 1 | 0 | **40** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 10 | 18 | 0 | **28** | 0 | 0 | 0 | **0** |
| 39 | 9/21-9/27 | 10 | 0 | 0 | **10** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** |
| 40 | 9/28-10/4 | 2 | 0 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 2 | 0 | **3** | 0 | 0 | 0 | **0** |
| 41 | 10/5-10/11 | 3 | 0 | 0 | **3** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 42 | 10/12-10/18 | 9 | 0 | 0 | **9** | 0 | 0 | 2 | **2** | 0 | 5 | 0 | **5** | 5 | 13 | 0 | **18** | 0 | 0 | 0 | **0** |
| 43 | 10/19-10/25 | no sample | | | | | | | | canal closed | | | | | | | | | | | |
| 44 | 10/26-11/1 | 15 | 2 | 0 | **17** | 0 | 0 | 1 | **1** | 0 | 5 | 0 | **5** | 15 | 51 | 0 | **66** | 0 | 1 | 0 | **1** |
| 45 | 11/2-11/8 | 3 | 0 | 0 | **3** | 0 | 0 | 1 | **1** | 0 | 4 | 0 | **4** | 11 | 8 | 0 | **19** | 0 | 0 | 0 | **0** |
| 46 | 11/9-11/15 | 1 | 1 | 0 | **2** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 3 | 3 | 0 | **6** | 0 | 0 | 0 | **0** |
| 47 | 11/16-11/22 | 13 | 1 | 0 | **14** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 5 | 12 | 0 | **17** | 0 | 1 | 0 | **1** |
| 48 | 11/23-11/29 | 17 | 1 | 0 | **18** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 2 | 3 | 0 | **5** | 0 | 0 | 0 | **0** |
| 49 | 11/30-12/6 | 19 | 2 | 0 | **21** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 5 | 5 | 0 | **10** | 0 | 1 | 0 | **1** |
| 50 | 12/7-12/13 | 50 | 2 | 0 | **52** | 0 | 0 | 0 | **0** | 0 | 5 | 0 | **5** | 5 | 2 | 0 | **7** | 0 | 0 | 0 | **0** |
| 51 | 12/14-12/20 | 23 | 3 | 0 | **26** | 0 | 0 | 1 | **1** | 0 | 2 | 0 | **2** | 4 | 1 | 0 | **5** | 0 | 0 | 1 | **1** |
| 52 | 12/21-12/27 | 20 | 1 | 0 | **21** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 1 | 2 | 0 | **3** | 0 | 0 | 0 | **0** |
| | Total | 3525 | 766 | 0 | 4291 | 0 | 21 | 141 | 162 | 0 | 46 | 4 | 50 | 287 | 635 | 0 | 922 | 1 | 53 | 15 | 69 |
| | % Catch | | | | **6.1%** | | | | **0.2%** | | | | **0.1%** | | | | **1.3%** | | | | **0.1%** |
| | Mean catch | 69 | 15 | 0 | 84 | 0 | 0 | 3 | 3 | 0 | 1 | 0 | 1 | 6 | 12 | 0 | 18 | 0 | 1 | 0 | 1 |
| | St.dev. | 164.2 | 37.6 | 0.0 | 199.1 | 0.0 | 1.3 | 4.2 | 5.0 | 0.0 | 2.1 | 0.3 | 2.1 | 10.2 | 23.4 | 0.0 | 33.1 | 0.1 | 1.6 | 0.9 | 2.0 |

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Table A3. 1998 Eastside weekly fyke net catch summary, by species and fork length (mm) categories.

| Eastside 1998 | | LP | | | | SD | | | | SN | | | | SS | | | | SU | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **week** | **dates** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** |
| 1 | 12/29-1/4 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 3 | 1 | **5** |
| 2 | 1/5-1/11 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** |
| 3 | 1/12-1/18 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 4 | 1/19-1/25 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 5 | 1/26-2/1 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 1 | 2 | 0 | **3** |
| 6 | 2/2-2/8 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 7 | 2/9-2/15 | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 8 | 2/16-2/22 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 9 | 2/23-3/1 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 10 | 3/2-3/8 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 11 | 3/9-3/15 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 12 | 3/16-3/22 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 13 | 3/23-3/29 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 14 | 3/30-4/5 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 15 | 4/6-4/12 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** |
| 16 | 4/13-4/19 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 17 | 4/20-4/26 | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 18 | 4/27-5/3 | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 19 | 5/4-5/10 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 20 | 5/11-5/17 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 21 | 5/18-5/24 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** |
| 22 | 5/25-5/31 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 3 | 0 | 0 | **3** |
| 23 | 6/1-6/7 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 2 | 0 | **2** | 0 | 1 | 0 | **1** |
| 24 | 6/8-6/14 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 1 | 2 | 0 | **3** |
| 25 | 6/15-6/21 | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | 1 | 0 | **1** |
| 26 | 6/22-6/28 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** |
| 27 | 6/29-7/5 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 28 | 7/6-7/12 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** |
| 29 | 7/13-7/19 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 1 | 1 | 0 | **2** | 1 | 1 | 0 | **2** |
| 30 | 7/20-7/26 | 1 | 0 | 0 | **1** | 0 | 1 | 0 | **1** | 0 | 11 | 0 | **11** | 39 | 1 | 0 | **40** | 4 | 6 | 0 | **10** |
| 31 | 7/27-8/2 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 36 | 0 | 0 | **36** |
| 32 | 8/3-8/9 | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 19 | 1 | **20** | 11 | 0 | 0 | **11** | 463 | 4 | 0 | **467** |
| 33 | 8/10-8/16 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 20 | 3 | **23** | 10 | 0 | 0 | **10** | 1860 | 4 | 0 | **1864** |
| 34 | 8/17-8/23 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 4 | 0 | **4** | 2 | 0 | 0 | **2** | 781 | 3 | 0 | **784** |
| 35 | 8/24-8/30 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 788 | 6 | 0 | **794** |
| 36 | 8/31-9/6 | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** | 2 | 0 | 0 | **2** | 2469 | 269 | 0 | **2738** |
| 37 | 9/7-9/13 | 14 | 0 | 0 | **14** | 2 | 0 | 0 | **2** | 0 | 1 | 0 | **1** | 3 | 0 | 0 | **3** | 2372 | 605 | 0 | **2977** |
| 38 | 9/14-9/20 | 3 | 0 | 0 | **3** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 2 | 1 | 0 | **3** | 525 | 497 | 0 | **1022** |
| 39 | 9/21-9/27 | 2 | 0 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 75 | 84 | 0 | **159** |
| 40 | 9/28-10/4 | 5 | 0 | 0 | **5** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 9 | 17 | 0 | **26** |
| 41 | 10/5-10/11 | 7 | 0 | 0 | **7** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 4 | 8 | 0 | **12** |
| 42 | 10/12-10/18 | 18 | 0 | 0 | **18** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 23 | 175 | 0 | **198** |
| 43 | 10/19-10/25 | no sample | | | | | | | | | | | | | | | | | | | |
| 44 | 10/26-11/1 | 5 | 0 | 0 | **5** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 14 | 0 | **14** | 9 | 63 | 0 | **72** |
| 45 | 11/2-11/8 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 13 | 0 | **13** | 3 | 7 | 0 | **10** | 2 | 28 | 0 | **30** |
| 46 | 11/9-11/15 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 3 | 9 | 0 | **12** | 1 | 3 | 0 | **4** |
| 47 | 11/16-11/22 | 2 | 0 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 3 | 15 | 0 | **18** | 0 | 2 | 0 | **2** |
| 48 | 11/23-11/29 | 3 | 0 | 0 | **3** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 8 | 24 | 0 | **32** | 2 | 6 | 0 | **8** |
| 49 | 11/30-12/6 | 6 | 0 | 0 | **6** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 2 | 25 | 0 | **27** |
| 50 | 12/7-12/13 | 4 | 0 | 0 | **4** | 0 | 0 | 0 | **0** | 0 | 12 | 0 | **12** | 0 | 0 | 0 | **0** | 9 | 60 | 0 | **69** |
| 51 | 12/14-12/20 | 3 | 0 | 0 | **3** | 0 | 0 | 0 | **0** | 0 | 4 | 0 | **4** | 1 | 0 | 0 | **1** | 2 | 13 | 0 | **15** |
| 52 | 12/21-12/27 | 3 | 0 | 0 | **3** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 4 | 27 | 0 | **31** |
| | Total | 78 | 0 | 0 | 78 | 2 | 7 | 0 | 9 | 0 | 98 | 10 | 108 | 89 | 79 | 0 | 168 | 9450 | 1920 | 1 | 11371 |
| | % Catch | | | | **0.1%** | | | | **0.0%** | | | | **0.2%** | | | | **0.2%** | | | | **16.3%** |
| | Mean catch | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 2 | 2 | 0 | 3 | 185 | 38 | 0 | 223 |
| | St.dev. | 3.5 | 0.0 | 0.0 | 3.5 | 0.3 | 0.5 | 0.0 | 0.6 | 0.0 | 4.6 | 0.5 | 4.9 | 5.8 | 4.5 | 0.0 | 7.9 | 550.6 | 115.0 | 0.1 | 630.6 |

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Table A3. 1998 Eastside weekly fyke net catch summary, by species and fork length (mm) categories.

| Eastside 1998 | | TC | | | | UN | | | | YP | | | | DT | | ALL Fish | ALL Fish Except Suckers |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| week | dates | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | no FL | | total | total |
| 1 | 12/29-1/4 | 72 | 19 | 0 | **91** | 0 | 0 | 0 | **0** | 1 | 2 | 0 | **3** | **0** | | **704** | **699** |
| 2 | 1/5-1/11 | 1 | 2 | 0 | **3** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | **0** | | **41** | **40** |
| 3 | 1/12-1/18 | 4 | 2 | 0 | **6** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | **0** | | **15** | **15** |
| 4 | 1/19-1/25 | 11 | 8 | 2 | **21** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** | **0** | | **183** | **182** |
| 5 | 1/26-2/1 | 81 | 43 | 3 | **127** | 0 | 0 | 0 | **0** | 0 | 3 | 2 | **5** | **0** | | **627** | **623** |
| 6 | 2/2-2/8 | 57 | 20 | 2 | **79** | 0 | 0 | 0 | **0** | 0 | 2 | 2 | **4** | **0** | | **388** | **387** |
| 7 | 2/9-2/15 | 38 | 17 | 2 | **57** | 0 | 0 | 0 | **0** | 0 | 5 | 1 | **6** | **0** | | **338** | **337** |
| 8 | 2/16-2/22 | 27 | 8 | 3 | **38** | 0 | 0 | 0 | **0** | 0 | 2 | 1 | **3** | **0** | | **256** | **253** |
| 9 | 2/23-3/1 | 11 | 6 | 3 | **20** | 0 | 0 | 0 | **0** | 0 | 5 | 2 | **7** | **0** | | **131** | **130** |
| 10 | 3/2-3/8 | 15 | 2 | 0 | **17** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | **0** | | **75** | **75** |
| 11 | 3/9-3/15 | 24 | 9 | 3 | **36** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** | **0** | | **256** | **256** |
| 12 | 3/16-3/22 | 57 | 25 | 3 | **85** | 0 | 0 | 0 | **0** | 0 | 27 | 1 | **28** | **0** | | **887** | **887** |
| 13 | 3/23-3/29 | 33 | 5 | 2 | **40** | 0 | 0 | 0 | **0** | 0 | 18 | 0 | **18** | **2** | | **786** | **785** |
| 14 | 3/30-4/5 | 23 | 11 | 6 | **40** | 0 | 0 | 0 | **0** | 0 | 11 | 1 | **12** | **0** | | **573** | **572** |
| 15 | 4/6-4/12 | 31 | 24 | 0 | **55** | 0 | 0 | 0 | **0** | 0 | 10 | 0 | **10** | **0** | | **457** | **457** |
| 16 | 4/13-4/19 | 36 | 17 | 1 | **54** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** | **0** | | **564** | **564** |
| 17 | 4/20-4/26 | 113 | 49 | 1 | **163** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | **0** | | **1819** | **1819** |
| 18 | 4/27-5/3 | 11 | 10 | 0 | **21** | 0 | 0 | 0 | **0** | 0 | 0 | 1 | **1** | **0** | | **521** | **521** |
| 19 | 5/4-5/10 | 12 | 11 | 3 | **26** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | **0** | | **467** | **467** |
| 20 | 5/11-5/17 | 21 | 35 | 0 | **56** | 0 | 0 | 0 | **0** | 0 | 0 | 1 | **1** | **0** | | **547** | **547** |
| 21 | 5/18-5/24 | 10 | 11 | 3 | **24** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | **0** | | **277** | **276** |
| 22 | 5/25-5/31 | 25 | 15 | 1 | **41** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | **0** | | **608** | **604** |
| 23 | 6/1-6/7 | 110 | 96 | 1 | **207** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | **0** | | **1322** | **1320** |
| 24 | 6/8-6/14 | 49 | 40 | 2 | **91** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | **0** | | **912** | **909** |
| 25 | 6/15-6/21 | 20 | 10 | 0 | **30** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | **0** | | **604** | **602** |
| 26 | 6/22-6/28 | 8 | 19 | 2 | **29** | 0 | 0 | 0 | **0** | 2 | 2 | 0 | **4** | **0** | | **379** | **375** |
| 27 | 6/29-7/5 | 17 | 10 | 1 | **28** | 0 | 0 | 0 | **0** | 1 | 1 | 0 | **2** | **0** | | **326** | **326** |
| 28 | 7/6-7/12 | 7 | 9 | 0 | **16** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | **0** | | **195** | **194** |
| 29 | 7/13-7/19 | 10 | 14 | 3 | **27** | 0 | 0 | 0 | **0** | 406 | 0 | 0 | **406** | **0** | | **745** | **740** |
| 30 | 7/20-7/26 | 72 | 72 | 7 | **151** | 0 | 0 | 0 | **0** | 2407 | 1 | 0 | **2408** | **0** | | **4460** | **4429** |
| 31 | 7/27-8/2 | 0 | 21 | 0 | **21** | 0 | 0 | 0 | **0** | 54 | 0 | 0 | **54** | **0** | | **504** | **467** |
| 32 | 8/3-8/9 | 72 | 339 | 26 | **437** | 136 | 0 | 0 | **136** | 836 | 0 | 0 | **836** | **3** | | **2710** | **2213** |
| 33 | 8/10-8/16 | 34 | 139 | 13 | **186** | 256 | 0 | 0 | **256** | 68 | 1 | 0 | **69** | **0** | | **3003** | **1095** |
| 34 | 8/17-8/23 | 11 | 16 | 1 | **28** | 0 | 0 | 0 | **0** | 3 | 0 | 0 | **3** | **0** | | **1421** | **632** |
| 35 | 8/24-8/30 | 13 | 13 | 0 | **26** | 0 | 0 | 0 | **0** | 2 | 0 | 0 | **2** | **0** | | **1032** | **235** |
| 36 | 8/31-9/6 | 165 | 100 | 0 | **265** | 0 | 0 | 0 | **0** | 5 | 3 | 0 | **8** | **0** | | **4798** | **2057** |
| 37 | 9/7-9/13 | 273 | 62 | 5 | **340** | 0 | 0 | 0 | **0** | 5 | 26 | 0 | **31** | **0** | | **5757** | **2777** |
| 38 | 9/14-9/20 | 147 | 56 | 11 | **214** | 0 | 0 | 0 | **0** | 3 | 36 | 0 | **39** | **0** | | **2814** | **1790** |
| 39 | 9/21-9/27 | 19 | 9 | 0 | **28** | 0 | 0 | 0 | **0** | 1 | 4 | 0 | **5** | **0** | | **364** | **205** |
| 40 | 9/28-10/4 | 3 | 8 | 0 | **11** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | **0** | | **96** | **70** |
| 41 | 10/5-10/11 | 6 | 14 | 1 | **21** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | **0** | | **140** | **128** |
| 42 | 10/12-10/18 | 1498 | 2720 | 1 | **4219** | 0 | 0 | 0 | **0** | 9 | 90 | 1 | **100** | | | **17660** | **17456** |
| 43 | 10/19-10/25 | no sample | | | | canal closed | | | | | | | | | | | |
| 44 | 10/26-11/1 | 300 | 71 | 1 | **372** | 0 | 0 | 0 | **0** | 2 | 59 | 0 | **61** | **0** | | **3834** | **3757** |
| 45 | 11/2-11/8 | 55 | 67 | 0 | **122** | 0 | 0 | 0 | **0** | 2 | 42 | 0 | **44** | **0** | | **948** | **900** |
| 46 | 11/9-11/15 | 51 | 53 | 0 | **104** | 0 | 0 | 0 | **0** | 0 | 17 | 2 | **19** | **0** | | **407** | **403** |
| 47 | 11/16-11/22 | 34 | 25 | 2 | **61** | 0 | 0 | 0 | **0** | 0 | 6 | 0 | **6** | **0** | | **512** | **509** |
| 48 | 11/23-11/29 | 41 | 37 | 0 | **78** | 0 | 0 | 0 | **0** | 2 | 239 | 3 | **244** | **0** | | **1134** | **1124** |
| 49 | 11/30-12/6 | 72 | 55 | 0 | **127** | 0 | 0 | 0 | **0** | 7 | 78 | 2 | **87** | **0** | | **866** | **838** |
| 50 | 12/7-12/13 | 110 | 112 | 0 | **222** | 0 | 0 | 0 | **0** | 1 | 13 | 0 | **14** | **0** | | **956** | **870** |
| 51 | 12/14-12/20 | 79 | 42 | 2 | **123** | 0 | 0 | 0 | **0** | 1 | 9 | 1 | **11** | **0** | | **1018** | **997** |
| 52 | 12/21-12/27 | 66 | 33 | 0 | **99** | 0 | 0 | 0 | **0** | 1 | 9 | 1 | **11** | **0** | | **514** | **481** |
| | Total | 4055 | 4611 | 117 | 8783 | 392 | 0 | 0 | 392 | 3821 | 741 | 22 | 4584 | 5 | 0 | 69951 | 58395 |
| | % Catch | | | | **12.6%** | | | | **0.6%** | | | | **6.6%** | **0.0%** | | **100%** | **83.5%** |
| | Mean catch | 80 | 90 | 2 | 172 | 8 | 0 | 0 | 8 | 75 | 15 | 0 | 90 | 0 | | 1372 | 1145 |
| | St.dev. | 211.6 | 379.3 | 4.3 | 586.1 | 40.3 | 0.0 | 0.0 | 40.3 | 357.2 | 37.4 | 0.8 | 356.2 | 0.5 | | 2653.2 | 2492.5 |

APPENDIX - continued

Table A3. 1998 Eastside weekly fyke net catch summary, by species and fork length (mm) categories.

| **Eastside 1999** | | | **BBH** | | | | **BC** | | | | **FH** | | | | **KL** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| week | dates | hours | <75 | 75-150 | >150 | tot. | <75 | 75-150 | >150 | tot. | <75 | 75-150 | >150 | tot. | <75 | 75-150 | >150 | tot. |
| 1 | 12/28-1/3 | 48.25 | 0 | 0 | 1 | **1** | 64 | 22 | 0 | **86** | 142 | 0 | 0 | **142** | 0 | 0 | 0 | **0** |
| 2 | 1/4-1/10 | 48.25 | 0 | 0 | 0 | **0** | 179 | 16 | 0 | **195** | 242 | 0 | 0 | **242** | 0 | 0 | 0 | **0** |
| 3 | 1/11-1/17 | 47.5 | 0 | 1 | 0 | **1** | 27 | 6 | 0 | **33** | 101 | 1 | 0 | **102** | 0 | 0 | 0 | **0** |
| 4 | 1/18-1/24 | 47.25 | 0 | 0 | 0 | **0** | 6 | 3 | 0 | **9** | 3 | 0 | 0 | **3** | 0 | 0 | 0 | **0** |
| 5 | 1/25-1/31 | 31.5 | 0 | 0 | 0 | **0** | 56 | 11 | 0 | **67** | 280 | 0 | 0 | **280** | 0 | 0 | 0 | **0** |
| 6 | 2/1-2/7 | 47.5 | 0 | 0 | 0 | **0** | 24 | 18 | 0 | **42** | 111 | 0 | 0 | **111** | 0 | 0 | 0 | **0** |
| 7 | 2/8-2/14 | 47.25 | 0 | 0 | 0 | **0** | 8 | 1 | 0 | **9** | 4 | 0 | 0 | **4** | 0 | 0 | 0 | **0** |
| 8 | 2/15-2/21 | 47.67 | 0 | 0 | 0 | **0** | 2 | 2 | 0 | **4** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 9 | 2/22-2/28 | 46.75 | 0 | 0 | 0 | **0** | 8 | 4 | 0 | **12** | 12 | 0 | 0 | **12** | 0 | 0 | 0 | **0** |
| 10 | 3/1-3/7 | | no sample -turbine repair | | | | | | | | | | | | | | | |
| 11 | 3/8-3/14 | 48 | 0 | 0 | 1 | **1** | 453 | 146 | 12 | **611** | 1552 | 0 | 0 | **1552** | 0 | 1 | 0 | **1** |
| 12 | 3/15-3/21 | 47.75 | 0 | 1 | 0 | **1** | 101 | 34 | 2 | **137** | 656 | 0 | 0 | **656** | 0 | 0 | 0 | **0** |
| 13 | 3/22-3/28 | 48.25 | 0 | 0 | 0 | **0** | 78 | 30 | 3 | **111** | 466 | 0 | 0 | **466** | 0 | 0 | 0 | **0** |
| 14 | 3/29-4/4 | 47.25 | 0 | 0 | 0 | **0** | 33 | 16 | 2 | **51** | 184 | 0 | 0 | **184** | 0 | 0 | 0 | **0** |
| 15 | 4/5-4/11 | 46.5 | 0 | 1 | 0 | **1** | 3 | 0 | 0 | **3** | 22 | 0 | 0 | **22** | 0 | 0 | 0 | **0** |
| 16 | 4/12-4/18 | 47.25 | 0 | 1 | 0 | **1** | 15 | 15 | 1 | **31** | 93 | 0 | 0 | **93** | 0 | 0 | 0 | **0** |
| 17 | 4/19-4/25 | 47.5 | 0 | 0 | 0 | **0** | 3 | 0 | 0 | **3** | 10 | 0 | 0 | **10** | 0 | 0 | 0 | **0** |
| 18 | 4/26-5/2 | 47.25 | 0 | 0 | 0 | **0** | 88 | 128 | 0 | **216** | 150 | 0 | 0 | **150** | 0 | 0 | 0 | **0** |
| 19 | 5/3-5/9 | 49 | 0 | 3 | 0 | **3** | 156 | 51 | 0 | **207** | 408 | 0 | 0 | **408** | 0 | 0 | 0 | **0** |
| 20 | 5/10-5/16 | 48.25 | 0 | 0 | 0 | **0** | 8 | 1 | 0 | **9** | 31 | 0 | 0 | **31** | 0 | 0 | 0 | **0** |
| 21 | 5/17-5/23 | 47.42 | 0 | 0 | 2 | **2** | 29 | 24 | 0 | **53** | 152 | 0 | 0 | **152** | 0 | 0 | 0 | **0** |
| 22 | 5/24-5/30 | 48.33 | 0 | 3 | 0 | **3** | 47 | 26 | 0 | **73** | 316 | 1 | 0 | **317** | 0 | 0 | 0 | **0** |
| 23 | 5/31-6/6 | 12 | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** |
| 24 | 6/7-6/13 | | no sample - algal overload | | | | | | | | | | | | | | | |
| 25 | 6/14-6/20 | 47.33 | 0 | 0 | 0 | **0** | 26 | 30 | 1 | **57** | 91 | 0 | 0 | **91** | 0 | 0 | 0 | **0** |
| 26 | 6/21-6/27 | 48.25 | 0 | 0 | 0 | **0** | 17 | 14 | 0 | **31** | 98 | 0 | 0 | **98** | 0 | 1 | 0 | **1** |
| 27 | 6/28-7/4 | 47 | 0 | 0 | 0 | **0** | 89 | 94 | 14 | **197** | 513 | 0 | 0 | **513** | 0 | 1 | 0 | **1** |
| 28 | 7/5-7/11 | 47 | 0 | 0 | 0 | **0** | 13 | 7 | 0 | **20** | 57 | 0 | 0 | **57** | 0 | 0 | 0 | **0** |
| 29 | 7/12-7/18 | 47.25 | 0 | 0 | 0 | **0** | 17 | 16 | 2 | **35** | 78 | 0 | 0 | **78** | 0 | 0 | 0 | **0** |
| 30 | 7/19-7/25 | 47.25 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 10 | 0 | 0 | **10** | 0 | 1 | 0 | **1** |
| 31 | 7/26-8/1 | 47.25 | 0 | 0 | 0 | **0** | 5 | 12 | 2 | **19** | 68 | 0 | 0 | **68** | 0 | 1 | 0 | **1** |
| 32 | 8/2-8/8 | 47.25 | 1 | 0 | 0 | **1** | 1 | 2 | 2 | **5** | 21 | 0 | 0 | **21** | 0 | 0 | 0 | **0** |
| 33 | 8/9-8/15 | 47.67 | 0 | 0 | 0 | **0** | 13 | 0 | 0 | **13** | 2 | 0 | 0 | **2** | 0 | 0 | 0 | **0** |
| 34 | 8/16-8/22 | 47.17 | 0 | 0 | 0 | **0** | 99 | 7 | 0 | **106** | 92 | 0 | 0 | **92** | 0 | 0 | 0 | **0** |
| 35 | 8/23-8/29 | 47 | 0 | 0 | 0 | **0** | 63 | 2 | 0 | **65** | 16 | 0 | 0 | **16** | 0 | 0 | 0 | **0** |
| 36 | 8/30-9/5 | 47.25 | 0 | 0 | 0 | **0** | 83 | 31 | 0 | **114** | 15 | 0 | 0 | **15** | 0 | 0 | 0 | **0** |
| 37 | 9/6-9/12 | 47.25 | 2 | 0 | 2 | **4** | 327 | 44 | 0 | **371** | 150 | 0 | 0 | **150** | 0 | 5 | 1 | **6** |
| 38 | 9/13-9/19 | 47.75 | 0 | 0 | 0 | **0** | 149 | 21 | 0 | **170** | 16 | 0 | 0 | **16** | 0 | 1 | 0 | **1** |
| 39 | 9/20-9/26 | 47.5 | 0 | 0 | 0 | **0** | 1740 | 50 | 3 | **1793** | 150 | 0 | 0 | **150** | 0 | 2 | 0 | **2** |
| 40 | 9/27-10/3 | 48 | 1 | 0 | 0 | **1** | 2650 | 38 | 4 | **2692** | 272 | 0 | 0 | **272** | 0 | 2 | 0 | **2** |
| 41 | 10/4-10/10 | 47.42 | 0 | 0 | 3 | **3** | 2604 | 35 | 2 | **2641** | 581 | 0 | 0 | **581** | 0 | 0 | 0 | **0** |
| 42 | 10/11-10/17 | 47 | 0 | 1 | 0 | **1** | 3586 | 21 | 2 | **3609** | 200 | 0 | 0 | **200** | 0 | 0 | 0 | **0** |
| 43 | 10/18-10/24 | 47.25 | 0 | 0 | 1 | **1** | 368 | 11 | 0 | **379** | 25 | 0 | 0 | **25** | 0 | 0 | 0 | **0** |
| | **Total** | 1896.51 | 4 | 11 | 10 | 25 | 13238 | 991 | 52 | 14281 | 7391 | 2 | 0 | 7393 | 0 | 15 | 1 | 16 |
| | **% Catch** | | | | | **0.1%** | | | | **37.5%** | | | | **19.4%** | | | | **0.0%** |
| | **Mean catch** | 46 | 0 | 0 | 0 | 1 | 323 | 24 | 1 | 348 | 180 | 0 | 0 | 180 | 0 | 0 | 0 | 0 |
| | **St.dev.** | 6.0 | 0.4 | 0.7 | 0.7 | 1.0 | 806.4 | 32.0 | 2.9 | 812.9 | 276.7 | 0.2 | 0.0 | 276.7 | 0.0 | 0.9 | 0.2 | 1.0 |

APPENDIX

Table A3. 1999 Eastside weekly fyke net catch summary, by species and fork length (mm) categories.

| Eastside 1999 | | KS | | | | LMP | | | | LR | | | | MS | | | | RBT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| week | dates | <75 | 75-150 | >150 | tot. | <75 | 75-150 | >150 | tot. | <75 | 75-150 | >150 | tot. | <75 | 75-150 | >150 | tot. | <75 | 75-150 | >150 | tot. |
| 1 | 12/28-1/3 | 5 | 0 | 0 | **5** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 2 | 0 | 0 | **2** | 0 | 0 | 1 | **1** |
| 2 | 1/4-1/10 | 7 | 2 | 0 | **9** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 3 | 2 | 0 | **5** | 0 | 0 | 0 | **0** |
| 3 | 1/11-1/17 | 4 | 1 | 0 | **5** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 4 | 1/18-1/24 | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 5 | 1/25-1/31 | 5 | 4 | 0 | **9** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** |
| 6 | 2/1-2/7 | 3 | 0 | 0 | **3** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** |
| 7 | 2/8-2/14 | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 8 | 2/15-2/21 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** |
| 9 | 2/22-2/28 | 2 | 1 | 0 | **3** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 10 | 3/1-3/7 | no sample -turbine repair | | | | | | | | | | | | | | | | | | | |
| 11 | 3/8-3/14 | 140 | 31 | 0 | **171** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** | 0 | 2 | 4 | **6** |
| 12 | 3/15-3/21 | 164 | 41 | 0 | **205** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 0 | 9 | 0 | **9** | 0 | 1 | 0 | **1** |
| 13 | 3/22-3/28 | 47 | 5 | 0 | **52** | 0 | 0 | 2 | **2** | 0 | 0 | 0 | **0** | 13 | 0 | 0 | **13** | 0 | 3 | 0 | **3** |
| 14 | 3/29-4/4 | 43 | 2 | 0 | **45** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 2 | 0 | **3** | 0 | 0 | 2 | **2** |
| 15 | 4/5-4/11 | 35 | 2 | 0 | **37** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 1 | 0 | **2** | 0 | 0 | 0 | **0** |
| 16 | 4/12-4/18 | 51 | 2 | 0 | **53** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 1 | 6 | 0 | **7** | 0 | 1 | 0 | **1** |
| 17 | 4/19-4/25 | 2 | 0 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 18 | 4/26-5/2 | 24 | 2 | 0 | **26** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** |
| 19 | 5/3-5/9 | 21 | 3 | 0 | **24** | 0 | 4 | 0 | **4** | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 20 | 5/10-5/16 | 8 | 1 | 0 | **9** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 21 | 5/17-5/23 | 57 | 10 | 0 | **67** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 1 | 4 | 0 | **5** | 0 | 1 | 0 | **1** |
| 22 | 5/24-5/30 | 72 | 24 | 0 | **96** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 2 | 3 | 0 | **5** | 0 | 0 | 0 | **0** |
| 23 | 5/31-6/6 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 24 | 6/7-6/13 | no sample - algal overload | | | | | | | | | | | | | | | | | | | |
| 25 | 6/14-6/20 | 14 | 6 | 0 | **20** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 7 | 0 | **7** | 1 | 0 | 0 | **1** |
| 26 | 6/21-6/27 | 21 | 17 | 0 | **38** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 1 | 13 | 0 | **14** | 1 | 1 | 0 | **2** |
| 27 | 6/28-7/4 | 26 | 19 | 0 | **45** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 7 | 18 | 0 | **25** | 1 | 5 | 0 | **6** |
| 28 | 7/5-7/11 | 9 | 14 | 0 | **23** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 24 | 0 | **25** | 0 | 0 | 0 | **0** |
| 29 | 7/12-7/18 | 125 | 150 | 0 | **275** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 4 | 23 | 0 | **27** | 0 | 0 | 0 | **0** |
| 30 | 7/19-7/25 | 9 | 5 | 0 | **14** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 6 | 0 | **7** | 0 | 0 | 0 | **0** |
| 31 | 7/26-8/1 | 37 | 56 | 0 | **93** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 3 | 31 | 0 | **34** | 0 | 0 | 0 | **0** |
| 32 | 8/2-8/8 | 21 | 24 | 0 | **45** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 12 | 0 | **12** | 0 | 0 | 0 | **0** |
| 33 | 8/9-8/15 | 6 | 11 | 0 | **17** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 5 | 0 | **6** | 0 | 0 | 0 | **0** |
| 34 | 8/16-8/22 | 40 | 24 | 0 | **64** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 4 | 14 | 0 | **18** | 0 | 0 | 0 | **0** |
| 35 | 8/23-8/29 | 39 | 7 | 0 | **46** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 5 | 11 | 0 | **16** | 0 | 0 | 0 | **0** |
| 36 | 8/30-9/5 | 38 | 17 | 0 | **55** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 5 | 7 | 0 | **12** | 0 | 0 | 0 | **0** |
| 37 | 9/6-9/12 | 181 | 33 | 0 | **214** | 0 | 0 | 10 | **10** | 0 | 0 | 0 | **0** | 45 | 69 | 0 | **114** | 0 | 7 | 0 | **7** |
| 38 | 9/13-9/19 | 136 | 28 | 0 | **164** | 0 | 0 | 0 | **0** | 0 | 0 | 1 | **1** | 9 | 16 | 0 | **25** | 0 | 0 | 0 | **0** |
| 39 | 9/20-9/26 | 170 | 52 | 0 | **222** | 0 | 0 | 14 | **14** | 0 | 2 | 1 | **3** | 121 | 112 | 0 | **233** | 0 | 6 | 0 | **6** |
| 40 | 9/27-10/3 | 193 | 49 | 0 | **242** | 0 | 0 | 5 | **5** | 0 | 0 | 0 | **0** | 46 | 48 | 0 | **94** | 0 | 3 | 0 | 3 |
| 41 | 10/4-10/10 | 145 | 26 | 0 | **171** | 0 | 0 | 13 | **13** | 0 | 0 | 0 | **0** | 52 | 51 | 0 | **103** | 0 | 3 | 0 | 3 |
| 42 | 10/11-10/17 | 129 | 23 | 0 | **152** | 0 | 0 | 10 | **10** | 0 | 0 | 0 | **0** | 49 | 34 | 0 | **83** | 0 | 2 | 0 | 2 |
| 43 | 10/18-10/24 | 87 | 11 | 0 | **98** | 0 | 0 | 2 | **2** | 0 | 0 | 0 | **0** | 101 | 51 | 0 | **152** | 0 | 2 | 1 | 3 |
| | Total | 2116 | 705 | 0 | 2821 | 0 | 4 | 64 | 68 | 0 | 10 | 2 | 12 | 481 | 585 | 0 | 1066 | 3 | 39 | 8 | 50 |
| | **% Catch** | | | | **7.4%** | | | | **0.2%** | | | | **0.0%** | | | | **2.8%** | | | | **0.1%** |
| | **Mean catch** | 52 | 17 | 0 | 69 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 12 | 14 | 0 | 26 | 0 | 1 | 0 | 1 |
| | St.dev. | 59.4 | 26.3 | 0.0 | 78.1 | 0.0 | 0.6 | 3.6 | 3.6 | 0.0 | 0.6 | 0.2 | 0.7 | 26.9 | 23.0 | 0.0 | 48.6 | 0.3 | 1.7 | 0.7 | 1.9 |

APPENDIX - continued

Table A3. 1999 Eastside weekly fyke net catch summary, by species and fork length (mm) categories.

| Eastside 1999 | | LP | | | | SD | | | | SN | | | | SS | | | | SU | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **week** | **dates** | <75 | 75-150 | >150 | **tot.** | <75 | 75-150 | >150 | **tot.** | <75 | 75-150 | >150 | **tot.** | <75 | 75-150 | >150 | **tot.** | <75 | 75-150 | >150 | **tot.** |
| 1 | 12/28-1/3 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 5 | 0 | **5** | 0 | 0 | 0 | **0** | 1 | 8 | 0 | **9** |
| 2 | 1/4-1/10 | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 1 | 0 | **1** | 3 | 9 | 0 | **12** |
| 3 | 1/11-1/17 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** |
| 4 | 1/18-1/24 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 5 | 1/25-1/31 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 1 | 0 | **1** | 0 | 8 | 0 | **8** |
| 6 | 2/1-2/7 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** |
| 7 | 2/8-2/14 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 8 | 2/15-2/21 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 9 | 2/22-2/28 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** |
| 10 | 3/1-3/7 | no sample -turbine repair | | | | | | | **0** | | | | **0** | | | | **0** | | | | **0** |
| 11 | 3/8-3/14 | 3 | 0 | 0 | **3** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 12 | 3/15-3/21 | 2 | 0 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** |
| 13 | 3/22-3/28 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 1 | 2 | 0 | **3** |
| 14 | 3/29-4/4 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 15 | 4/5-4/11 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 16 | 4/12-4/18 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** |
| 17 | 4/19-4/25 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 18 | 4/26-5/2 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 2 | 5 | 0 | **7** |
| 19 | 5/3-5/9 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 1 | 10 | 0 | **11** |
| 20 | 5/10-5/16 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 21 | 5/17-5/23 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 6 | 0 | **6** |
| 22 | 5/24-5/30 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 1 | 0 | **2** |
| 23 | 5/31-6/6 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 24 | 6/7-6/13 | no sample - algal overload | | | | | | | | | | | | | | | | | | | |
| 25 | 6/14-6/20 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 26 | 6/21-6/27 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 27 | 6/28-7/4 | 2 | 0 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 5 | 0 | **5** | 0 | 0 | 0 | **0** | 0 | 14 | 0 | **14** |
| 28 | 7/5-7/11 | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** |
| 29 | 7/12-7/18 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 19 | 8 | 0 | **27** | 0 | 4 | 0 | **4** |
| 30 | 7/19-7/25 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** |
| 31 | 7/26-8/1 | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 7 | 0 | **7** | 0 | 0 | 0 | **0** | 0 | 4 | 0 | **4** |
| 32 | 8/2-8/8 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 40 | 1 | 0 | **41** |
| 33 | 8/9-8/15 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 13 | 0 | 0 | **13** |
| 34 | 8/16-8/22 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 2 | 0 | 0 | **2** | 140 | 11 | 0 | **151** |
| 35 | 8/23-8/29 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 447 | 17 | 0 | **464** |
| 36 | 8/30-9/5 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 442 | 39 | 0 | **481** |
| 37 | 9/6-9/12 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 7 | 0 | **7** | 1 | 0 | 0 | **1** | 2861 | 1192 | 0 | **4053** |
| 38 | 9/13-9/19 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 143 | 195 | 0 | **338** |
| 39 | 9/20-9/26 | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 7 | 1 | **8** | 0 | 1 | 0 | **1** | 282 | 628 | 0 | **910** |
| 40 | 9/27-10/3 | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 4 | 0 | **4** | 18 | 0 | 0 | **18** | 180 | 390 | 0 | **570** |
| 41 | 10/4-10/10 | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 1 | 0 | 0 | **1** | 99 | 251 | 0 | **350** |
| 42 | 10/11-10/17 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 2 | 0 | 0 | **2** | 24 | 142 | 0 | **166** |
| 43 | 10/18-10/24 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 1 | 2 | 0 | **3** | 19 | 90 | 0 | **109** |
| | **Total** | 9 | 5 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 54 | 2 | 56 | 45 | 13 | 0 | 58 | 4701 | 3039 | 0 | 7740 |
| | **% Catch** | | | | **0.0%** | | | | **0.0%** | | | | **0.1%** | | | | **0.2%** | | | | **20.3%** |
| | **Mean catch** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 115 | 74 | 0 | 184 |
| | **St.dev.** | 0.7 | 0.4 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.1 | 0.2 | 2.1 | 4.0 | 1.3 | 0.0 | 4.9 | 452.9 | 216.4 | 0.0 | 642.1 |

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Table A3. 1999 Eastside weekly fyke net catch summary, by species and fork length (mm) categories.

| Eastside 1999 | | TC | | | | UN | | | | YP | | | | DT | All fish | ALL Fish |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **week** | **dates** | <75 | 75-150 | >150 | **total** | <75 | 75-150 | >150 | **tot.** | <75 | 75-150 | >150 | **tot.** | **no FL** | **total** | **Except Suckers** |
| 1 | 12/28-1/3 | 26 | 29 | 0 | **55** | 0 | 0 | 0 | **0** | 0 | 7 | 0 | **7** | **0** | **314** | **299** |
| 2 | 1/4-1/10 | 86 | 41 | 0 | **127** | 0 | 0 | 0 | **0** | 1 | 2 | 0 | **3** | **0** | **598** | **583** |
| 3 | 1/11-1/17 | 27 | 17 | 0 | **44** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | **0** | **190** | **187** |
| 4 | 1/18-1/24 | 1 | 1 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | **0** | **16** | **16** |
| 5 | 1/25-1/31 | 33 | 22 | 0 | **55** | 0 | 0 | 0 | **0** | 0 | 5 | 0 | **5** | **0** | **428** | **419** |
| 6 | 2/1-2/7 | 11 | 17 | 1 | **29** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** | **0** | **191** | **189** |
| 7 | 2/8-2/14 | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | **0** | **16** | **15** |
| 8 | 2/15-2/21 | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | **0** | **7** | **7** |
| 9 | 2/22-2/28 | 1 | 2 | 0 | **3** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | **0** | **32** | **30** |
| 10 | 3/1-3/7 | no sample -turbine repair | | | **0** | | | | **0** | | | | **0** | **0** | **0** | **0** |
| 11 | 3/8-3/14 | 78 | 77 | 6 | **161** | 0 | 0 | 0 | **0** | 2 | 21 | 2 | **25** | **0** | **2535** | **2533** |
| 12 | 3/15-3/21 | 24 | 24 | 0 | **48** | 0 | 0 | 0 | **0** | 3 | 32 | 3 | **38** | **0** | **1103** | **1098** |
| 13 | 3/22-3/28 | 43 | 54 | 2 | **99** | 0 | 0 | 0 | **0** | 1 | 18 | 1 | **20** | **0** | **770** | **766** |
| 14 | 3/29-4/4 | 7 | 7 | 0 | **14** | 0 | 0 | 0 | **0** | 0 | 20 | 0 | **20** | **0** | **320** | **319** |
| 15 | 4/5-4/11 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | **0** | **65** | **65** |
| 16 | 4/12-4/18 | 15 | 20 | 0 | **35** | 0 | 0 | 0 | **0** | 1 | 7 | 0 | **8** | **0** | **232** | **230** |
| 17 | 4/19-4/25 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | **0** | **15** | **15** |
| 18 | 4/26-5/2 | 54 | 42 | 0 | **96** | 0 | 0 | 0 | **0** | 2 | 9 | 0 | **11** | **0** | **507** | **500** |
| 19 | 5/3-5/9 | 114 | 31 | 0 | **145** | 0 | 0 | 0 | **0** | 0 | 5 | 0 | **5** | **0** | **811** | **797** |
| 20 | 5/10-5/16 | 5 | 4 | 0 | **9** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | **0** | **60** | **60** |
| 21 | 5/17-5/23 | 54 | 35 | 1 | **90** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | **0** | **377** | **371** |
| 22 | 5/24-5/30 | 10 | 9 | 0 | **19** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | **0** | **515** | **513** |
| 23 | 5/31-6/6 | 2 | 1 | 1 | **4** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | **0** | **7** | **7** |
| 24 | 6/7-6/13 | no sample - algal overload | | | | | | | | | | | | | | **0** |
| 25 | 6/14-6/20 | 6 | 12 | 1 | **19** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | **0** | **195** | **195** |
| 26 | 6/21-6/27 | 8 | 7 | 3 | **18** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | **0** | **206** | **203** |
| 27 | 6/28-7/4 | 78 | 129 | 2 | **209** | 0 | 0 | 0 | **0** | 39 | 3 | 0 | **42** | **0** | **1061** | **1039** |
| 28 | 7/5-7/11 | 8 | 11 | 0 | **19** | 0 | 0 | 0 | **0** | 4 | 1 | 0 | **5** | **0** | **153** | **150** |
| 29 | 7/12-7/18 | 10 | 32 | 3 | **45** | 0 | 0 | 0 | **0** | 421 | 0 | 0 | **421** | **0** | **913** | **908** |
| 30 | 7/19-7/25 | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 25 | 0 | 0 | **25** | **0** | **62** | **58** |
| 31 | 7/26-8/1 | 5 | 72 | 1 | **78** | 0 | 0 | 0 | **0** | 137 | 6 | 0 | **143** | **0** | **449** | **437** |
| 32 | 8/2-8/8 | 1 | 12 | 0 | **13** | 0 | 0 | 0 | **0** | 10 | 0 | 0 | **10** | **0** | **148** | **107** |
| 33 | 8/9-8/15 | 1 | 11 | 0 | **12** | 0 | 0 | 0 | **0** | 115 | 0 | 0 | **115** | **0** | **179** | **165** |
| 34 | 8/16-8/22 | 48 | 24 | 0 | **72** | 60 | 0 | 0 | **60** | 168 | 26 | 0 | **194** | **0** | **761** | **609** |
| 35 | 8/23-8/29 | 5 | 11 | 0 | **16** | 31 | 0 | 0 | **31** | 8 | 2 | 0 | **10** | **0** | **666** | **202** |
| 36 | 8/30-9/5 | 4 | 2 | 0 | **6** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | **0** | **685** | **204** |
| 37 | 9/6-9/12 | 36 | 38 | 1 | **75** | 4 | 0 | 0 | **4** | 42 | 20 | 2 | **64** | **0** | **5080** | **1014** |
| 38 | 9/13-9/19 | 9 | 9 | 0 | **18** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | **0** | **733** | **393** |
| 39 | 9/20-9/26 | 357 | 51 | 2 | **410** | 0 | 0 | 0 | **0** | 20 | 31 | 1 | **52** | **0** | **3805** | **2882** |
| 40 | 9/27-10/3 | 251 | 54 | 1 | **306** | 0 | 0 | 0 | **0** | 107 | 146 | 1 | **254** | **0** | **4465** | **3889** |
| 41 | 10/4-10/10 | 148 | 55 | 0 | **203** | 0 | 0 | 0 | **0** | 18 | 34 | 0 | **52** | **0** | **4124** | **3772** |
| 42 | 10/11-10/17 | 107 | 31 | 1 | **139** | 0 | 0 | 0 | **0** | 2 | 11 | 3 | **16** | **0** | **4380** | **4214** |
| 43 | 10/18-10/24 | 21 | 9 | 0 | **30** | 0 | 0 | 0 | **0** | 44 | 89 | 0 | **133** | **0** | **936** | **826** |
| | **Total** | 1695 | 1007 | 26 | 2728 | 95 | 0 | 0 | 95 | 1171 | 503 | 13 | 1687 | 0 | 38110 | **30286** |
| | **% Catch** | | | | **7.2%** | | | | **0.2%** | | | | **4.4%** | **0.0%** | **100.0%** | **79.5%** |
| | **Mean catch** | 41 | 25 | 1 | 65 | 2 | 0 | 0 | 2 | 29 | 12 | 0 | 40 | 0 | 907 | 704 |
| | **St.dev.** | 71.1 | 26.5 | 1.2 | 87.5 | 10.4 | 0.0 | 0.0 | 10.3 | 74.5 | 26.9 | 0.8 | 82.4 | 0.0 | 1374.8 | 1079.9 |

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Table A3. 1999 Eastside weekly fyke net catch summary, by species and fork length (mm) categories.

| Westside 1997 | | | BBH | | | | BC | | | | FH | | | | CY | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| week | dates | hours | <75 | 75-150 | >150 | **total** | <75 | 75-150 | >150 | **total** | <75 | 75-150 | >150 | **total** | <75 | 75-150 | >150 | **total** |
| 17 | 4/21-4/27 | 27.0 | 0 | 0 | 0 | **0** | 60 | 156 | 0 | **216** | 330 | 2 | 0 | **332** | 0 | 0 | 0 | **0** |
| 18 | 4/28-5/4 | 47.0 | 0 | 0 | 0 | **0** | 100 | 4 | 0 | **104** | 210 | 1 | 0 | **211** | 0 | 0 | 0 | **0** |
| 19 | 5/5-5/11 | 50.5 | 0 | 0 | 0 | **0** | 209 | 12 | 0 | **221** | 239 | 0 | 0 | **239** | 0 | 0 | 0 | **0** |
| 20 | 5/12-5/18 | 40.7 | 0 | 0 | 0 | **0** | 157 | 18 | 0 | **175** | 94 | 0 | 0 | **94** | 0 | 0 | 0 | **0** |
| 21 | 5/19-5/25 | 41.0 | 0 | 0 | 0 | **0** | 311 | 13 | 0 | **324** | 120 | 0 | 0 | **120** | 0 | 0 | 0 | **0** |
| 22 | 5/26-6/1 | 10 | 0 | 0 | 0 | **0** | 6 | 1 | 0 | **7** | 7 | 0 | 0 | **7** | 0 | 0 | 0 | **0** |
| 23 | 6/2-6/8 | 40.0 | 0 | 0 | 0 | **0** | 1567 | 141 | 2 | **1710** | 291 | 0 | 0 | **291** | 0 | 0 | 0 | **0** |
| 24 | 6/9-6/15 | 47.8 | 0 | 0 | 0 | **0** | 109 | 16 | 0 | **125** | 78 | 0 | 0 | **78** | 0 | 0 | 0 | **0** |
| 25 | 6/16-6/22 | 45.0 | 0 | 0 | 0 | **0** | 54 | 18 | 0 | **72** | 38 | 0 | 0 | **38** | 0 | 0 | 0 | **0** |
| 26 | 6/23-6/29 | 48.5 | 0 | 0 | 0 | **0** | 3 | 5 | 0 | **8** | 17 | 1 | 0 | **18** | 0 | 0 | 0 | **0** |
| 27 | 6/30-7/6 | 44.0 | 0 | 0 | 0 | **0** | 6 | 5 | 1 | **12** | 28 | 0 | 0 | **28** | 0 | 0 | 0 | **0** |
| 28 | 7/7-7/13 | 23.5 | 0 | 0 | 0 | **0** | 8 | 19 | 0 | **27** | 32 | 0 | 0 | **32** | 2 | 0 | 0 | **2** |
| 29&30 | 7/14-7/27 | | no sample - turbine repair | | | | | | | | | | | | | | | |
| 31 | 7/28-8/3 | 38.0 | 0 | 0 | 0 | **0** | 24 | 11 | 0 | **35** | 101 | 0 | 0 | **101** | 0 | 0 | 0 | **0** |
| 32-35 | 8/4-8/31 | | no sample turbine repair | | | | | | | | | | | | | | | |
| 36 | 9/1-9/7 | 35.3 | 0 | 0 | 0 | **0** | 6054 | 375 | 70 | **6499** | 1483 | 0 | 0 | **1483** | 153 | 0 | 0 | **153** |
| 37-44 | 9/8-11/2 | | no sample - water control | | | | | | | | | | | | | | | |
| 45 | 11/3-11/9 | 48.0 | 0 | 0 | 0 | **0** | 3560 | 142 | 0 | **3702** | 235 | 1 | 0 | **236** | 0 | 0 | 0 | **0** |
| 46 | 11/10-11/16 | 48.0 | 0 | 0 | 0 | **0** | 2551 | 86 | 0 | **2637** | 170 | 0 | 0 | **170** | 0 | 0 | 0 | **0** |
| 47 | 11/17-11/23 | 47.5 | 0 | 0 | 0 | **0** | 427 | 92 | 4 | **523** | 67 | 0 | 0 | **67** | 0 | 0 | 0 | **0** |
| 48 | 11/24-11/30 | 47.0 | 0 | 0 | 0 | **0** | 184 | 32 | 0 | **216** | 66 | 0 | 0 | **66** | 0 | 0 | 0 | **0** |
| 49 | 12/1-12/7 | 47.8 | 0 | 0 | 0 | **0** | 128 | 27 | 0 | **155** | 0 | 113 | 0 | **113** | 0 | 0 | 0 | **0** |
| 50 | 12/8-12/14 | 47.0 | 0 | 0 | 1 | **1** | 220 | 23 | 1 | **244** | 160 | 0 | 0 | **160** | 0 | 0 | 0 | **0** |
| 51 | 12/15-12/21 | 48.0 | 0 | 0 | 0 | **0** | 813 | 26 | 0 | **839** | 144 | 0 | 0 | **144** | 0 | 0 | 0 | **0** |
| 52 | 12/22-12/28 | 49.0 | 0 | 0 | 0 | **0** | 1414 | 47 | 1 | **1462** | 369 | 1 | 0 | **370** | 0 | 0 | 0 | **0** |
| | Total | 920.5 | 0 | 0 | 1 | **1** | 17965 | 1269 | 79 | **19313** | 4279 | 119 | 0 | **4398** | 155 | 0 | 0 | **155** |
| | % Catch | | | | | **0.0%** | | | | **68.7%** | | | | **15.6%** | | | | **0.6%** |
| | Mean catch | 42 | 0 | 0 | 0 | 0 | 817 | 58 | 4 | 878 | 195 | 5 | 0 | 200 | 7 | 0 | 0 | 7 |
| | St.dev. | 10 | 0 | 0 | 0 | 0 | 1492 | 86 | 15 | 1579 | 307 | 24 | 0 | 305 | 33 | 0 | 0 | 33 |

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Table B3. 1997 Westside weekly fyke net catch summary, by species and fork length (mm) categories.

| Westside 1997 | | GU | | | | KL | | | | KS | | | | LMP | | | | LP | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| week | dates | <75 | 75-150 | >150 | **total** | <75 | 75-150 | >150 | **total** | <75 | 75-150 | >150 | **total** | <75 | 75-150 | >150 | **total** | <75 | 75-150 | >150 | **total** |
| 17 | 4/21-4/27 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 2 | 0 | 0 | **2** | 0 | 0 | 13 | **13** | 0 | 0 | 0 | **0** |
| 18 | 4/28-5/4 | 13 | 0 | 0 | **13** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 0 | 10 | 1 | **11** | 0 | 0 | 0 | **0** |
| 19 | 5/5-5/11 | 2 | 0 | 0 | **2** | 0 | 0 | 0 | **0** | 2 | 1 | 0 | **3** | 0 | 33 | 3 | **36** | 0 | 0 | 0 | **0** |
| 20 | 5/12-5/18 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 11 | 5 | 0 | **16** | 0 | 1 | 1 | **2** | 0 | 0 | 0 | **0** |
| 21 | 5/19-5/25 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 16 | 7 | 0 | **23** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 22 | 5/26-6/1 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 23 | 6/2-6/8 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 3 | 5 | 0 | **8** | 0 | 1 | 2 | **3** | 0 | 0 | 0 | **0** |
| 24 | 6/9-6/15 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 5 | 3 | 0 | **8** | 2 | 17 | 1 | **20** | 0 | 0 | 0 | **0** |
| 25 | 6/16-6/22 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 7 | 3 | 0 | **10** | 1 | 8 | 0 | **9** | 0 | 0 | 0 | **0** |
| 26 | 6/23-6/29 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 8 | 6 | 0 | **14** | 0 | 9 | 0 | **9** | 0 | 0 | 0 | **0** |
| 27 | 6/30-7/6 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 18 | 6 | 0 | **24** | 0 | 11 | 1 | **12** | 0 | 0 | 0 | **0** |
| 28 | 7/7-7/13 | 23 | 0 | 0 | **23** | 0 | 0 | 0 | **0** | 42 | 9 | 0 | **51** | 0 | 23 | 1 | **24** | 0 | 0 | 0 | **0** |
| 29&30 | 7/14-7/27 | no sample - turbine repair | | | | | | | | | | | | | | | | | | | |
| 31 | 7/28-8/3 | 12 | 0 | 0 | **12** | 0 | 0 | 0 | **0** | 78 | 2 | 0 | **80** | 0 | 4 | 0 | **4** | 0 | 0 | 0 | **0** |
| 32-35 | 8/4-8/31 | no sample - turbine repair | | | | | | | | | | | | | | | | | | | |
| 36 | 9/1-9/7 | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 23 | 0 | 0 | **23** | 0 | 0 | 1 | **1** | 1 | 0 | 0 | **1** |
| 37-44 | 9/8-11/2 | no sample - water control | | | | | | | | | | | | | | | | | | | |
| 45 | 11/3-11/9 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 5 | 0 | 0 | **5** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 46 | 11/10-11/16 | 0 | 0 | 0 | **0** | 0 | 0 | 1 | **1** | 2 | 0 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 47 | 11/17-11/23 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 2 | 1 | 0 | **3** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** |
| 48 | 11/24-11/30 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 3 | 0 | 0 | **3** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** |
| 49 | 12/1-12/7 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 5 | 0 | 0 | **5** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** |
| 50 | 12/8-12/14 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 3 | 1 | 0 | **4** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 51 | 12/15-12/21 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 52 | 12/22-12/28 | 0 | 0 | 0 | **0** | 0 | 0 | 1 | **1** | 2 | 0 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| | Total | 50 | 0 | 0 | **50** | 0 | 2 | 2 | **4** | 238 | 50 | 0 | **288** | 3 | 120 | 24 | **147** | 1 | 0 | 0 | **1** |
| | % Catch | | | | **0.2%** | | | | **0.0%** | | | | **1.0%** | | | | **0.5%** | | | | **0.0%** |
| | Mean catch | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 11 | 2 | 0 | 13 | 0 | 5 | 1 | 7 | 0 | 0 | 0 | 0 |
| | St.dev. | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 1 | 18 | 3 | 0 | 19 | 0 | 9 | 3 | 10 | 0 | 0 | 0 | 0 |

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Table B3. 1997 Westside weekly fyke net catch summary, by species and fork length (mm) categories.

| Westside 1997 | | LR | | | | MS | | | | RBT | | | | SC | | | | SD | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| week | dates | <75 | 75-150 | >150 | **total** | <75 | 75-150 | >150 | **total** | <75 | 75-150 | >150 | **total** | <75 | 75-150 | >150 | **total** | <75 | 75-150 | >150 | **total** |
| 17 | 4/21-4/27 | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 2 | 0 | 0 | **2** |
| 18 | 4/28-5/4 | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 1 | 0 | **2** | 1 | 0 | 0 | **1** |
| 19 | 5/5-5/11 | 0 | 3 | 0 | **3** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 20 | 5/12-5/18 | 0 | 5 | 0 | **5** | 2 | 3 | 0 | **5** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 2 | 0 | 0 | **2** |
| 21 | 5/19-5/25 | 1 | 3 | 0 | **4** | 0 | 7 | 0 | **7** | 0 | 0 | 0 | **0** | 7 | 0 | 0 | **7** | 4 | 0 | 0 | **4** |
| 22 | 5/26-6/1 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 23 | 6/2-6/8 | 0 | 3 | 0 | **3** | 0 | 4 | 0 | **4** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** |
| 24 | 6/9-6/15 | 0 | 5 | 0 | **5** | 1 | 6 | 0 | **7** | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** |
| 25 | 6/16-6/22 | 2 | 0 | 0 | **2** | 2 | 13 | 0 | **15** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** |
| 26 | 6/23-6/29 | 0 | 3 | 0 | **3** | 0 | 14 | 0 | **14** | 0 | 0 | 0 | **0** | 2 | 0 | 0 | **2** | 0 | 0 | 0 | **0** |
| 27 | 6/30-7/6 | 0 | 3 | 0 | **3** | 1 | 6 | 0 | **7** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 28 | 7/7-7/13 | 0 | 1 | 1 | **2** | 1 | 11 | 0 | **12** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 29&30 | 7/14-7/27 | no sample - turbine repair | | | | | | | | | | | | | | | | | | | |
| 31 | 7/28-8/3 | 0 | 1 | 0 | **1** | 9 | 5 | 0 | **14** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 2 | 2 | 0 | **4** |
| 32-35 | 8/4-8/31 | no sample - turbine repair | | | | | | | | | | | | | | | | | | | |
| 36 | 9/1-9/7 | 0 | 4 | 1 | **5** | 15 | 19 | 0 | **34** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 4 | 2 | 0 | **6** |
| 37-44 | 9/8-11/2 | no sample - water control | | | | | | | | | | | | | | | | | | | |
| 45 | 11/3-11/9 | 0 | 0 | 0 | **0** | 4 | 0 | 0 | **4** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 46 | 11/10-11/16 | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 47 | 11/17-11/23 | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 48 | 11/24-11/30 | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 49 | 12/1-12/7 | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 0 | 3 | 0 | **3** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 50 | 12/8-12/14 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 51 | 12/15-12/21 | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 52 | 12/22-12/28 | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| | Total | 3 | 34 | 3 | **40** | 36 | 93 | 0 | **129** | 1 | 7 | 0 | **8** | 10 | 1 | 0 | **11** | 17 | 7 | 0 | **24** |
| | % Catch | | | | **0.1%** | | | | **0.5%** | | | | **0.0%** | | | | **0.0%** | | | | **0.1%** |
| | Mean catch | 0 | 2 | 0 | 2 | 2 | 4 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| | St.dev. | 0 | 2 | 0 | 2 | 4 | 5 | 0 | 8 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 2 | 1 | 1 | 0 | 2 |

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Table B3. 1997 Westside weekly fyke net catch summary, by species and fork length (mm) categories.

| Westside 1997 | | SN | | | | SS | | | | SU | | | | TC | | | | UN | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| week | dates | <75 | 75-150 | >150 | **total** | <75 | 75-150 | >150 | **total** | <75 | 75-150 | >150 | **total** | <75 | 75-150 | >150 | **total** | <75 | 75-150 | >150 | **total** |
| 17 | 4/21-4/27 | 1 | 6 | 0 | **7** | 0 | 0 | 0 | **0** | 2 | 6 | 0 | **8** | 39 | 25 | 0 | **64** | 1 | 0 | 0 | **1** |
| 18 | 4/28-5/4 | 0 | 5 | 0 | **5** | 0 | 0 | 0 | **0** | 3 | 0 | 0 | **3** | 15 | 6 | 0 | **21** | 1 | 0 | 0 | **1** |
| 19 | 5/5-5/11 | 2 | 7 | 0 | **9** | 0 | 0 | 0 | **0** | 5 | 1 | 0 | **6** | 44 | 23 | 1 | **68** | 0 | 0 | 0 | **0** |
| 20 | 5/12-5/18 | 0 | 8 | 0 | **8** | 0 | 0 | 0 | **0** | 9 | 13 | 0 | **22** | 27 | 24 | 2 | **53** | 0 | 0 | 0 | **0** |
| 21 | 5/19-5/25 | 1 | 8 | 0 | **9** | 0 | 0 | 0 | **0** | 3 | 10 | 0 | **13** | 28 | 28 | 2 | **58** | 0 | 0 | 0 | **0** |
| 22 | 5/26-6/1 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** |
| 23 | 6/2-6/8 | 0 | 9 | 0 | **9** | 0 | 0 | 0 | **0** | 4 | 6 | 0 | **10** | 51 | 154 | 3 | **208** | 0 | 0 | 0 | **0** |
| 24 | 6/9-6/15 | 1 | 4 | 0 | **5** | 0 | 0 | 0 | **0** | 1 | 4 | 0 | **5** | 12 | 22 | 6 | **40** | 0 | 0 | 0 | **0** |
| 25 | 6/16-6/22 | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 3 | 1 | 0 | **4** | 5 | 10 | 7 | **22** | 0 | 0 | 0 | **0** |
| 26 | 6/23-6/29 | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 1 | 3 | 0 | **4** | 0 | 4 | 0 | **4** | 0 | 0 | 0 | **0** |
| 27 | 6/30-7/6 | 1 | 2 | 0 | **3** | 0 | 0 | 0 | **0** | 24 | 0 | 0 | **24** | 1 | 4 | 3 | **8** | 0 | 0 | 0 | **0** |
| 28 | 7/7-7/13 | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 3 | 0 | 0 | **3** | 0 | 11 | 4 | **15** | 0 | 0 | 0 | **0** |
| 29&30 | 7/14-7/27 | no sample - turbine repair | | | | | | | | | | | | | | | | | | | |
| 31 | 7/28-8/3 | 0 | 7 | 0 | **7** | 0 | 0 | 0 | **0** | 12 | 0 | 0 | **12** | 31 | 24 | 8 | **63** | 2 | 0 | 0 | **2** |
| 32-35 | 8/4-8/31 | no sample - turbine repair | | | | | | | | | | | | | | | | | | | |
| 36 | 9/1-9/7 | 0 | 28 | 15 | **43** | 0 | 0 | 0 | **0** | 69 | 18 | 0 | **87** | 375 | 191 | 49 | **615** | 0 | 0 | 0 | **0** |
| 37-44 | 9/8-11/2 | no sample - water control | | | | | | | | | | | | | | | | | | | |
| 45 | 11/3-11/9 | 0 | 0 | 0 | **0** | 4 | 4 | 0 | **8** | 0 | 0 | 0 | **0** | 123 | 72 | 1 | **196** | 0 | 0 | 0 | **0** |
| 46 | 11/10-11/16 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 141 | 66 | 0 | **207** | 0 | 0 | 0 | **0** |
| 47 | 11/17-11/23 | 0 | 0 | 0 | **0** | 2 | 4 | 0 | **6** | 0 | 0 | 0 | **0** | 32 | 15 | 1 | **48** | 0 | 0 | 0 | **0** |
| 48 | 11/24-11/30 | 0 | 0 | 1 | **1** | 0 | 4 | 0 | **4** | 0 | 0 | 0 | **0** | 34 | 2 | 0 | **36** | 0 | 0 | 0 | **0** |
| 49 | 12/1-12/7 | 0 | 0 | 0 | **0** | 1 | 4 | 0 | **5** | 0 | 1 | 0 | **1** | 60 | 10 | 0 | **70** | 0 | 0 | 0 | **0** |
| 50 | 12/8-12/14 | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 50 | 13 | 0 | **63** | 0 | 0 | 0 | **0** |
| 51 | 12/15-12/21 | 0 | 0 | 1 | **1** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 34 | 21 | 0 | **55** | 0 | 0 | 0 | **0** |
| 52 | 12/22-12/28 | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 80 | 20 | 0 | **100** | 0 | 0 | 0 | **0** |
| | Total | 6 | 87 | 19 | **112** | 7 | 19 | 0 | **26** | 140 | 63 | 0 | **203** | 1182 | 746 | 87 | **2015** | 4 | 0 | 0 | **4** |
| | % Catch | | | | **0.4%** | | | | **0.1%** | | | | **0.7%** | | | | **7.2%** | | | | **0.0%** |
| | Mean catch | 0 | 4 | 1 | 5 | 0 | 1 | 0 | 1 | 6 | 3 | 0 | 9 | 54 | 34 | 4 | 92 | 0 | 0 | 0 | 0 |
| | St.dev. | 1 | 6 | 3 | 9 | 1 | 2 | 0 | 2 | 15 | 5 | 0 | 19 | 81 | 49 | 10 | 132 | 1 | 0 | 0 | 1 |

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Table B3. 1997 Westside weekly fyke net catch summary, by species and fork length (mm) categories.

| Westside 1997 | | YP | | | | DT | ALL FISH | ALL Fish Except Suckers |
|---|---|---|---|---|---|---|---|---|
| week | dates | <75 | 75-150 | >150 | **total** | **no FL** | **TOTAL** | **total** |
| 17 | 4/21-4/27 | 0 | 1 | 0 | **1** | **0** | **648** | **633** |
| 18 | 4/28-5/4 | 0 | 1 | 0 | **1** | **1** | **377** | **367** |
| 19 | 5/5-5/11 | 0 | 0 | 0 | **0** | **1** | **589** | **571** |
| 20 | 5/12-5/18 | 0 | 0 | 0 | **0** | **0** | **382** | **347** |
| 21 | 5/19-5/25 | 0 | 0 | 0 | **0** | **0** | **569** | **543** |
| 22 | 5/26-6/1 | 0 | 0 | 0 | **0** | **6** | **22** | **22** |
| 23 | 6/2-6/8 | 50 | 0 | 0 | **50** | **0** | **2298** | **2276** |
| 24 | 6/9-6/15 | 0 | 3 | 0 | **3** | **0** | **298** | **283** |
| 25 | 6/16-6/22 | 1 | 0 | 0 | **1** | **0** | **177** | **170** |
| 26 | 6/23-6/29 | 0 | 0 | 0 | **0** | **0** | **78** | **69** |
| 27 | 6/30-7/6 | 16 | 0 | 0 | **16** | **0** | **137** | **107** |
| 28 | 7/7-7/13 | 45 | 0 | 0 | **45** | **0** | **237** | **231** |
| 29&30 | 7/14-7/27 | no sample - turbine repair | | | | | | |
| 31 | 7/28-8/3 | 78 | 9 | 0 | **87** | **1** | **423** | **403** |
| 32-35 | 8/4-8/31 | no sample - turbine repair | | | | | | |
| 36 | 9/1-9/7 | 0 | 11 | 0 | **11** | **0** | **8963** | **8826** |
| 37-44 | 9/8-11/2 | no sample - water control | | | | | | |
| 45 | 11/3-11/9 | 0 | 432 | 1 | **433** | **0** | **4584** | **4584** |
| 46 | 11/10-11/16 | 0 | 253 | 4 | **257** | **0** | **3275** | **3274** |
| 47 | 11/17-11/23 | 2 | 119 | 0 | **121** | **0** | **770** | **770** |
| 48 | 11/24-11/30 | 0 | 33 | 0 | **33** | **0** | **361** | **360** |
| 49 | 12/1-12/7 | 0 | 40 | 0 | **40** | **0** | **394** | **393** |
| 50 | 12/8-12/14 | 0 | 28 | 0 | **28** | **0** | **504** | **504** |
| 51 | 12/15-12/21 | 0 | 21 | 1 | **22** | **0** | **1063** | **1061** |
| 52 | 12/22-12/28 | 0 | 16 | 0 | **16** | **0** | **1954** | **1950** |
| | Total | 192 | 967 | 6 | **1165** | **9** | **28103** | **27744** |
| | % Catch | | | | **4.1%** | **0.0%** | **100%** | **98.7%** |
| | Mean catch | 9 | 44 | 0 | 53 | 0 | 1277 | 1261 |
| | St.dev. | 21 | 104 | 1 | 103 | 1 | 2062 | 2041 |

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Table B3. 1997 Westside weekly fyke net catch summary, by species and fork length (mm) categories.

| Westside 1998 | | | BBH | | | | BC | | | | FH | | | | KL | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **week** | **dates** | **hours** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** |
| 1 | 12/29-1/4 | 49.0 | 0 | 0 | 0 | **0** | 801 | 39 | 1 | **841** | 437 | 0 | 0 | **437** | 0 | 0 | 0 | **0** |
| 2 | 1/5-1/11 | 48.2 | 0 | 0 | 0 | **0** | 727 | 64 | 2 | **793** | 146 | 2 | 0 | **148** | 0 | 0 | 0 | **0** |
| 3 | 1/12-1/18 | 48.5 | 0 | 0 | 0 | **0** | 114 | 9 | 2 | **125** | 45 | 0 | 0 | **45** | 0 | 0 | 0 | **0** |
| 4 | 1/19-1/25 | 48.5 | 0 | 0 | 1 | **1** | 1573 | 110 | 0 | **1683** | 1155 | 1 | 0 | **1156** | 0 | 0 | 0 | **0** |
| 5 | 1/26-2/1 | 48.8 | 0 | 0 | 0 | **0** | 691 | 64 | 1 | **756** | 239 | 2 | 0 | **241** | 0 | 0 | 0 | **0** |
| 6 | 2/2-2/8 | 48.0 | 0 | 0 | 0 | **0** | 273 | 21 | 2 | **296** | 159 | 5 | 0 | **164** | 0 | 0 | 0 | **0** |
| 7 | 2/9-2/15 | 46.5 | 0 | 0 | 0 | **0** | 112 | 27 | 7 | **146** | 59 | 2 | 0 | **61** | 0 | 0 | 0 | **0** |
| 8 | 2/16-2/22 | 48.0 | 0 | 0 | 0 | **0** | 78 | 12 | 11 | **101** | 64 | 1 | 0 | **65** | 0 | 0 | 0 | **0** |
| 9 | 2/23-3/1 | 48.5 | 0 | 0 | 0 | **0** | 78 | 7 | 12 | **97** | 62 | 0 | 0 | **62** | 0 | 0 | 0 | **0** |
| 10 | 3/2-3/8 | 48.2 | 0 | 0 | 0 | **0** | 195 | 8 | 4 | **207** | 70 | 0 | 0 | **70** | 0 | 0 | 0 | **0** |
| 11 | 3/9-3/15 | 47.8 | 0 | 0 | 0 | **0** | 383 | 12 | 2 | **397** | 116 | 1 | 0 | **117** | 0 | 0 | 0 | **0** |
| 12 | 3/16-3/22 | 48.0 | 0 | 0 | 0 | **0** | 578 | 72 | 0 | **650** | 368 | 1 | 0 | **369** | 0 | 0 | 0 | **0** |
| 13 | 3/23-3/29 | 49.0 | 0 | 0 | 0 | **0** | 214 | 57 | 1 | **272** | 398 | 6 | 0 | **404** | 0 | 0 | 0 | **0** |
| 14 | 3/30-4/5 | 45.8 | 0 | 0 | 0 | **0** | 105 | 11 | 0 | **116** | 160 | 1 | 0 | **161** | 0 | 0 | 0 | **0** |
| 15 | 4/6-4/12 | 48.5 | 0 | 0 | 0 | **0** | 130 | 7 | 0 | **137** | 190 | 1 | 0 | **191** | 0 | 0 | 0 | **0** |
| 16 | 4/13-4/19 | 48.5 | 0 | 0 | 0 | **0** | 153 | 3 | 0 | **156** | 259 | 0 | 0 | **259** | 0 | 0 | 0 | **0** |
| 17 | 4/20-4/26 | 47.7 | 0 | 0 | 0 | **0** | 418 | 58 | 1 | **477** | 904 | 0 | 0 | **904** | 0 | 0 | 0 | **0** |
| 18 | 4/27-5/3 | | no sample- turbine repair | | | | | | | | | | | | | | | |
| 19 | 5/3-5/10 | 24.3 | partial sample | | 0 | **0** | 598 | 33 | 0 | **631** | 295 | 0 | 0 | **295** | 0 | 0 | 0 | **0** |
| 20 | 5/11-5/17 | 48.5 | 0 | 0 | 0 | **0** | 1047 | 54 | 3 | **1104** | 128 | 0 | 0 | **128** | 0 | 0 | 0 | **0** |
| 21 | 5/18-5/24 | 49.0 | 0 | 0 | 0 | **0** | 670 | 101 | 3 | **774** | 61 | 1 | 0 | **62** | 0 | 0 | 0 | **0** |
| 22 | 5/25-5/31 | 48.3 | 0 | 0 | 0 | **0** | 529 | 96 | 0 | **625** | 45 | 1 | 0 | **46** | 0 | 0 | 0 | **0** |
| 23 | 6/1-6/7 | 48.5 | 0 | 0 | 0 | **0** | 797 | 94 | 2 | **893** | 396 | 0 | 0 | **396** | 0 | 0 | 0 | **0** |
| 24 | 6/8-6/14 | 48.0 | 0 | 0 | 0 | **0** | 496 | 48 | 5 | **549** | 367 | 1 | 0 | **368** | 0 | 0 | 0 | **0** |
| 25 | 6/15-6/21 | 48.0 | 0 | 0 | 0 | **0** | 359 | 33 | 0 | **392** | 337 | 1 | 0 | **338** | 0 | 0 | 0 | **0** |
| 26 | 6/22-6/28 | 48.0 | 0 | 0 | 0 | **0** | 211 | 18 | 2 | **231** | 269 | 0 | 0 | **269** | 0 | 0 | 0 | **0** |
| 27 | 6/29-7/5 | 48.0 | 0 | 0 | 0 | **0** | 123 | 27 | 0 | **150** | 358 | 0 | 0 | **358** | 0 | 0 | 0 | **0** |
| 28 | 7/6-7/12 | 47.5 | 0 | 0 | 0 | **0** | 79 | 63 | 1 | **143** | 226 | 0 | 0 | **226** | 0 | 0 | 0 | **0** |
| 29 | 7/13-7/19 | 47.8 | 0 | 0 | 0 | **0** | 50 | 255 | 2 | **307** | 100 | 0 | 0 | **100** | 0 | 0 | 0 | **0** |
| 30 | 7/20-7/26 | 24.0 | partial sample | | 0 | **0** | 16 | 75 | 1 | **92** | 34 | 0 | 0 | **34** | 0 | 0 | 0 | **0** |
| 31-33 | 7/27-8/16 | | no sample- turbine repair | | | | | | | | | | | | | | | |
| 34 | 8/17-8/23 | 48.5 | 1 | 0 | 0 | **1** | 547 | 630 | 4 | **1181** | 2061 | 0 | 0 | **2061** | 0 | 0 | 0 | **0** |
| 35 | 8/24-8/30 | 49 | 0 | 0 | 0 | **0** | 433 | 708 | 3 | **1144** | 690 | 0 | 0 | **690** | 0 | 0 | 0 | **0** |
| 36 | 8/31-9/6 | 48.5 | 0 | 1 | 0 | **1** | 666 | 1164 | 7 | **1837** | 1229 | 0 | 0 | **1229** | 0 | 1 | 0 | **1** |
| 37 | 9/7-9/13 | 48.5 | 0 | 0 | 0 | **0** | 929 | 282 | 0 | **1211** | 1160 | 0 | 0 | **1160** | 0 | 1 | 1 | **2** |
| 38 | 9/14-9/20 | 47.5 | 0 | 0 | 0 | **0** | 2596 | 464 | 2 | **3062** | 4457 | 0 | 0 | **4457** | 0 | 0 | 0 | **0** |
| 39 | 9/21-9/27 | 48.3 | 0 | 1 | 0 | **1** | 751 | 239 | 0 | **990** | 1561 | 0 | 0 | **1561** | 0 | 0 | 0 | **0** |
| 40 | 9/28-10/4 | 48.5 | 0 | 0 | 0 | **0** | 726 | 241 | 2 | **969** | 795 | 0 | 0 | **795** | 0 | 0 | 0 | **0** |
| 41 | 10/5-10/11 | 48.5 | 0 | 0 | 0 | **0** | 481 | 91 | 1 | **573** | 416 | 0 | 0 | **416** | 0 | 0 | 0 | **0** |
| 42-45 | 10/12-11/8 | | no sample- water control | | | | | | | | | | | | | | | |
| 46 | 11/9-11/15 | 46.5 | 0 | 0 | 0 | **0** | 440 | 80 | 0 | **520** | 288 | 0 | 0 | **288** | 0 | 1 | 0 | **1** |
| 47 | 11/16-11/22 | 48.3 | 0 | 0 | 0 | **0** | 117 | 61 | 1 | **179** | 97 | 0 | 0 | **97** | 0 | 0 | 0 | **0** |
| 48 | 11/23-11/29 | 48.8 | 0 | 1 | 0 | **1** | 251 | 85 | 1 | **337** | 281 | 0 | 0 | **281** | 0 | 0 | 0 | **0** |
| 49 | 11/30-12/6 | 49.0 | 0 | 0 | 0 | **0** | 96 | 28 | 1 | **125** | 289 | 0 | 0 | **289** | 0 | 0 | 0 | **0** |
| 50 | 12/7-12/13 | 48.0 | 0 | 2 | 0 | **2** | 641 | 151 | 0 | **792** | 1571 | 0 | 0 | **1571** | 0 | 0 | 0 | **0** |
| 51 | 12/14-12/20 | 48.5 | 0 | 0 | 0 | **0** | 176 | 41 | 0 | **217** | 1460 | 0 | 0 | **1460** | 0 | 0 | 0 | **0** |
| 52 | 12/21-12/27 | 48.5 | 0 | 0 | 0 | **0** | 196 | 21 | 0 | **217** | 484 | 0 | 0 | **484** | 0 | 0 | 0 | **0** |
| | Total | 2072.2 | 1 | 5 | 1 | 7 | 20644 | 5764 | 87 | 26495 | 24286 | 27 | 0 | 24313 | 0 | 3 | 1 | 4 |
| | % Catch | | | | | **0.0%** | | | | **33.6%** | | | | **30.8%** | | | | **0.0%** |
| | Mean catch | 47 | 0 | 0 | 0 | 0 | 469 | 131 | 2 | 602 | 552 | 1 | 0 | 553 | 0 | 0 | 0 | 0 |
| | St.dev. | 5.1 | 0.2 | 0.4 | 0.2 | 0.4 | 462.9 | 221.3 | 2.7 | 576.5 | 778.3 | 1.2 | 0.0 | 778.1 | 0.0 | 0.3 | 0.2 | 0.4 |

APPENDIX

Table B3. 1998 Westside weekly fyke net catch summary, by species and fork length (mm) categories.

## Westside 1998

| week | dates | KS <75 | KS 75-150 | KS >150 | KS total | LMP <75 | LMP 75-150 | LMP >150 | LMP total | LR <75 | LR 75-150 | LR >150 | LR total | MS <75 | MS 75-150 | MS >150 | MS total | LP <75 | LP 75-150 | LP >150 | LP total | RBT <75 | RBT 75-150 | RBT >150 | RBT total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12/29-1/4 | 1 | 2 | 0 | **3** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 1 | **2** |
| 2 | 1/5-1/11 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 3 | 1/12-1/18 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 4 | 1/19-1/25 | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 5 | 1/26-2/1 | 2 | 0 | 0 | **2** | 0 | 5 | 0 | **5** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 6 | 2/2-2/8 | 2 | 0 | 0 | **2** | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 7 | 2/9-2/15 | 1 | 0 | 0 | **1** | 0 | 4 | 2 | **6** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 8 | 2/16-2/22 | 1 | 0 | 0 | **1** | 0 | 0 | 3 | **3** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 9 | 2/23-3/1 | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 10 | 3/2-3/8 | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 11 | 3/9-3/15 | 1 | 1 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 12 | 3/16-3/22 | 7 | 2 | 0 | **9** | 0 | 7 | 0 | **7** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 13 | 3/23-3/29 | 12 | 3 | 0 | **15** | 0 | 12 | 3 | **15** | 0 | 0 | 0 | **0** | 0 | 4 | 0 | **4** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 14 | 3/30-4/5 | 3 | 1 | 0 | **4** | 0 | 3 | 2 | **5** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 15 | 4/6-4/12 | 4 | 1 | 0 | **5** | 0 | 5 | 1 | **6** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 16 | 4/13-4/19 | 4 | 1 | 0 | **5** | 0 | 4 | 1 | **5** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 17 | 4/20-4/26 | 6 | 3 | 0 | **9** | 0 | 80 | 41 | **121** | 0 | 0 | 0 | **0** | 2 | 3 | 0 | **5** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 18 | 4/27-5/3 | no sample- turbine repair | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | 5/3-5/10 | 1 | 4 | 0 | **5** | 0 | 3 | 0 | **3** | 0 | 1 | 0 | **1** | 1 | 1 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** |
| 20 | 5/11-5/17 | 8 | 8 | 0 | **16** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 3 | 1 | 0 | **4** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 21 | 5/18-5/24 | 8 | 8 | 0 | **16** | 0 | 6 | 0 | **6** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 22 | 5/25-5/31 | 3 | 4 | 0 | **7** | 0 | 1 | 4 | **5** | 0 | 0 | 0 | **0** | 0 | 4 | 0 | **4** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 23 | 6/1-6/7 | 13 | 8 | 0 | **21** | 0 | 1 | 1 | **2** | 0 | 0 | 0 | **0** | 7 | 6 | 0 | **13** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 24 | 6/8-6/14 | 7 | 9 | 0 | **16** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 9 | 3 | 0 | **12** | 0 | 0 | 0 | **0** | 1 | 1 | 0 | **2** |
| 25 | 6/15-6/21 | 9 | 8 | 0 | **17** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 14 | 9 | 0 | **23** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 26 | 6/22-6/28 | 9 | 6 | 0 | **15** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 10 | 8 | 0 | **18** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 27 | 6/29-7/5 | 7 | 8 | 0 | **15** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 9 | 17 | 0 | **26** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 28 | 7/6-7/12 | 23 | 14 | 0 | **37** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 9 | 18 | 0 | **27** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 29 | 7/13-7/19 | 15 | 45 | 0 | **60** | 0 | 2 | 0 | **2** | 0 | 2 | 1 | **3** | 9 | 15 | 0 | **24** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** |
| 30 | 7/20-7/26 | 24 | 6 | 0 | **30** | 0 | 3 | 0 | **3** | 0 | 1 | 0 | **1** | 3 | 4 | 0 | **7** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 31-33 | 7/27-8/16 | no sample- turbine repair | | | | | | | | | | | | | | | | | | | | | | | |
| 34 | 8/17-8/23 | 1353 | 5 | 0 | **1358** | 0 | 2 | 1 | **3** | 0 | 1 | 0 | **1** | 20 | 153 | 0 | **173** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 35 | 8/24-8/30 | 784 | 1 | 0 | **785** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 29 | 129 | 0 | **158** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 36 | 8/31-9/6 | 1765 | 0 | 0 | **1765** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 59 | 48 | 0 | **107** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 37 | 9/7-9/13 | 646 | 0 | 0 | **646** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 35 | 11 | 0 | **46** | 16 | 0 | 0 | **16** | 0 | 0 | 0 | **0** |
| 38 | 9/14-9/20 | 123 | 0 | 0 | **123** | 0 | 1 | 1 | **2** | 0 | 0 | 0 | **0** | 41 | 20 | 0 | **61** | 10 | 1 | 0 | **11** | 0 | 0 | 0 | **0** |
| 39 | 9/21-9/27 | 85 | 0 | 0 | **85** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 15 | 12 | 0 | **27** | 3 | 0 | 0 | **3** | 0 | 0 | 0 | **0** |
| 40 | 9/28-10/4 | 25 | 0 | 0 | **25** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 8 | 4 | 0 | **12** | 19 | 1 | 0 | **20** | 0 | 0 | 0 | **0** |
| 41 | 10/5-10/11 | 11 | 0 | 0 | **11** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 5 | 7 | 0 | **12** | 7 | 0 | 0 | **7** | 0 | 1 | 0 | **1** |
| 42-45 | 10/12-11/8 | no sample- water control | | | | | | | | | | | | | | | | | | | | | | | |
| 46 | 11/9-11/15 | 3 | 0 | 0 | **3** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 2 | 2 | 0 | **4** | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** |
| 47 | 11/16-11/22 | 1 | 0 | 0 | **1** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 48 | 11/23-11/29 | 11 | 2 | 0 | **13** | 0 | 2 | 0 | **2** | 0 | 1 | 0 | **1** | 1 | 5 | 0 | **6** | 2 | 0 | 0 | **2** | 0 | 0 | 0 | **0** |
| 49 | 11/30-12/6 | 1 | 2 | 0 | **3** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 50 | 12/7-12/13 | 5 | 0 | 0 | **5** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 4 | 0 | 0 | **4** | 0 | 0 | 0 | **0** |
| 51 | 12/14-12/20 | 8 | 0 | 0 | **8** | 0 | 3 | 0 | **3** | 0 | 0 | 0 | **0** | 1 | 1 | 0 | **2** | 2 | 0 | 0 | **2** | 0 | 1 | 0 | **1** |
| 52 | 12/21-12/27 | 4 | 1 | 0 | **5** | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 2 | 0 | 0 | **2** | 0 | 0 | 0 | **0** |
| | Total | 4996 | 156 | 0 | 5152 | 0 | 156 | 62 | 218 | 0 | 7 | 1 | 8 | 292 | 497 | 0 | 789 | 66 | 2 | 0 | 68 | 1 | 15 | 1 | 17 |
| | % Catch | | | | **6.5%** | | | | **0.3%** | | | | **0.0%** | | | | **1.0%** | | | | **0.1%** | | | | **0.0%** |
| | Mean catch | 114 | 4 | 0 | 117 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 7 | 11 | 0 | 18 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| | St.dev. | 355.6 | 7.2 | 0.0 | 355.1 | 0.0 | 12.0 | 6.2 | 18.1 | 0.0 | 0.4 | 0.2 | 0.5 | 12.5 | 30.0 | 0.0 | 38.1 | 4.0 | 0.2 | 0.0 | 4.2 | 0.2 | 0.6 | 0.2 | 0.7 |

APPENDIX - continued

Table B3. 1998 Westside weekly fyke net catch summary, by species and fork length (mm) categories.

| Westside 1998 | | SC | | | | SD | | | | SN | | | | SS | | | | SU | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **week** | **dates** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** | **<75** | **75-150** | **>150** | **total** |
| 1 | 12/29-1/4 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 5 | 0 | **6** |
| 2 | 1/5-1/11 | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** |
| 3 | 1/12-1/18 | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 4 | 1/19-1/25 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 1 | **2** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 5 | 1/26-2/1 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** |
| 6 | 2/2-2/8 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 7 | 2/9-2/15 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 8 | 2/16-2/22 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 9 | 2/23-3/1 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 10 | 3/2-3/8 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 11 | 3/9-3/15 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 12 | 3/16-3/22 | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 13 | 3/23-3/29 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 14 | 3/30-4/5 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 1 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 15 | 4/6-4/12 | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 16 | 4/13-4/19 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 17 | 4/20-4/26 | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 18 | 4/27-5/3 | no sample- turbine repair | | | | | | | | | | | | | | | | | | | |
| 19 | 5/3-5/10 | 0 | 0 | 0 | **0** | 0 | 5 | 0 | **5** | 0 | 8 | 0 | **8** | 0 | 0 | 0 | **0** | 1 | 1 | 0 | **2** |
| 20 | 5/11-5/17 | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** |
| 21 | 5/18-5/24 | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 22 | 5/25-5/31 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** |
| 23 | 6/1-6/7 | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 1 | 1 | 0 | **2** |
| 24 | 6/8-6/14 | 0 | 0 | 0 | **0** | 1 | 1 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** |
| 25 | 6/15-6/21 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 2 | 0 | 0 | **2** |
| 26 | 6/22-6/28 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 27 | 6/29-7/5 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** |
| 28 | 7/6-7/12 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 29 | 7/13-7/19 | 696 | 0 | 0 | **696** | 0 | 1 | 0 | **1** | 0 | 2 | 0 | **2** | 1 | 2 | 0 | **3** | 1 | 1 | 0 | **2** |
| 30 | 7/20-7/26 | 629 | 0 | 0 | **629** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 11 | 0 | 0 | **11** | 6 | 0 | 0 | **6** |
| 31-33 | 7/27-8/16 | no sample- turbine repair | | | | | | | | | | | | | | | | | | | |
| 34 | 8/17-8/23 | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 9 | 0 | **9** | 14 | 1 | 0 | **15** | 856 | 6 | 0 | **862** |
| 35 | 8/24-8/30 | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 1 | 0 | **1** | 3 | 0 | 0 | **3** | 2237 | 43 | 0 | **2280** |
| 36 | 8/31-9/6 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 4 | 0 | **4** | 3 | 0 | 0 | **3** | 941 | 99 | 0 | **1040** |
| 37 | 9/7-9/13 | 0 | 0 | 0 | **0** | 2 | 0 | 0 | **2** | 0 | 1 | 1 | **2** | 0 | 1 | 0 | **1** | 609 | 227 | 0 | **836** |
| 38 | 9/14-9/20 | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** | 2 | 0 | 0 | **2** | 598 | 615 | 0 | **1213** |
| 39 | 9/21-9/27 | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 140 | 215 | 0 | **355** |
| 40 | 9/28-10/4 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 23 | 60 | 0 | **83** |
| 41 | 10/5-10/11 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 1 | 0 | **2** | 7 | 20 | 0 | **27** |
| 42-45 | 10/12-11/8 | no sample- water control | | | | | | | | | | | | | | | | | | | |
| 46 | 11/9-11/15 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 13 | 0 | **13** | 4 | 2 | 0 | **6** | 0 | 0 | 0 | **0** |
| 47 | 11/16-11/22 | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 0 | 2 | 0 | **2** | 1 | 5 | 0 | **6** | 1 | 0 | 0 | **1** |
| 48 | 11/23-11/29 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 12 | 0 | **12** | 2 | 2 | 0 | **4** | 0 | 4 | 0 | **4** |
| 49 | 11/30-12/6 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 3 | 0 | **4** | 2 | 4 | 0 | **6** |
| 50 | 12/7-12/13 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 12 | 0 | **12** | 0 | 0 | 0 | **0** | 4 | 16 | 0 | **20** |
| 51 | 12/14-12/20 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 1 | 6 | 0 | **7** |
| 52 | 12/21-12/27 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 1 | 4 | 0 | **5** |
| | Total | 1325 | 0 | 0 | 1325 | 7 | 18 | 0 | 25 | 0 | 72 | 3 | 75 | 43 | 19 | 0 | 62 | 5436 | 1331 | 0 | 6767 |
| | % Catch | | | | **1.7%** | | | | **0.0%** | | | | **0.1%** | | | | **0.1%** | | | | **8.6%** |
| | Mean catch | 30 | 0 | 0 | 30 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 1 | 124 | 30 | 0 | 154 |
| | St.dev. | 139.8 | 0.0 | 0.0 | 139.8 | 0.4 | 0.9 | 0.0 | 0.9 | 0.0 | 3.5 | 0.3 | 3.5 | 2.7 | 1.0 | 0.0 | 3.1 | 394.7 | 102.5 | 0.0 | 439.0 |

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Table B3. 1998 Westside weekly fyke net catch summary, by species and fork length (mm) categories.

| Westside 1998 | | TC | | | | UN | | | | YP | | | | DT | ALL FISH | ALL Fish Except Sucker |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| week | dates | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | no FL | TOTAL | TOTAL |
| 1 | 12/29-1/4 | 73 | 22 | 0 | **95** | 0 | 0 | 0 | **0** | 0 | 9 | 1 | **10** | 0 | **1395** | **1389** |
| 2 | 1/5-1/11 | 104 | 34 | 1 | **139** | 0 | 0 | 0 | **0** | 0 | 281 | 0 | **281** | 0 | **1364** | **1362** |
| 3 | 1/12-1/18 | 7 | 6 | 0 | **13** | 0 | 0 | 0 | **0** | 0 | 5 | 0 | **5** | 0 | **189** | **189** |
| 4 | 1/19-1/25 | 231 | 117 | 1 | **349** | 0 | 0 | 0 | **0** | 0 | 52 | 0 | **52** | 0 | **3246** | **3243** |
| 5 | 1/26-2/1 | 88 | 27 | 0 | **115** | 0 | 0 | 0 | **0** | 0 | 7 | 2 | **9** | 0 | **1130** | **1129** |
| 6 | 2/2-2/8 | 140 | 19 | 1 | **160** | 0 | 0 | 0 | **0** | 0 | 2 | 1 | **3** | 0 | **628** | **627** |
| 7 | 2/9-2/15 | 41 | 20 | 0 | **61** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** | 0 | **278** | **278** |
| 8 | 2/16-2/22 | 58 | 9 | 1 | **68** | 0 | 0 | 0 | **0** | 0 | 7 | 0 | **7** | 0 | **246** | **246** |
| 9 | 2/23-3/1 | 17 | 7 | 1 | **25** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** | 0 | **188** | **188** |
| 10 | 3/2-3/8 | 49 | 12 | 0 | **61** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | **341** | **341** |
| 11 | 3/9-3/15 | 263 | 7 | 0 | **270** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | **788** | **788** |
| 12 | 3/16-3/22 | 251 | 104 | 0 | **355** | 0 | 0 | 0 | **0** | 0 | 25 | 0 | **25** | 0 | **1421** | **1419** |
| 13 | 3/23-3/29 | 38 | 45 | 0 | **83** | 0 | 0 | 0 | **0** | 0 | 26 | 0 | **26** | 1 | **819** | **819** |
| 14 | 3/30-4/5 | 5 | 8 | 0 | **13** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** | 3 | **307** | **306** |
| 15 | 4/6-4/12 | 12 | 7 | 0 | **19** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | **364** | **364** |
| 16 | 4/13-4/19 | 22 | 9 | 0 | **31** | 0 | 0 | 0 | **0** | 0 | 5 | 0 | **5** | 1 | **462** | **462** |
| 17 | 4/20-4/26 | 775 | 199 | 0 | **974** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** | 0 | **2497** | **2496** |
| 18 | 4/27-5/3 | no sample- turbine repair | | | | | | | | | | | | | | |
| 19 | 5/3-5/10 | 705 | 584 | 0 | **1289** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | **2243** | **2232** |
| 20 | 5/11-5/17 | 147 | 86 | 1 | **234** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | **1492** | **1491** |
| 21 | 5/18-5/24 | 122 | 85 | 0 | **207** | 0 | 0 | 0 | **0** | 0 | 6 | 0 | **6** | 0 | **1075** | **1075** |
| 22 | 5/25-5/31 | 94 | 21 | 0 | **115** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | **805** | **804** |
| 23 | 6/1-6/7 | 181 | 139 | 0 | **320** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | **1651** | **1649** |
| 24 | 6/8-6/14 | 60 | 36 | 2 | **98** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | **1049** | **1048** |
| 25 | 6/15-6/21 | 87 | 85 | 1 | **173** | 0 | 0 | 0 | **0** | 1 | 1 | 0 | **2** | 0 | **947** | **945** |
| 26 | 6/22-6/28 | 20 | 30 | 0 | **50** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | **583** | **583** |
| 27 | 6/29-7/5 | 7 | 5 | 0 | **12** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | **564** | **563** |
| 28 | 7/6-7/12 | 18 | 36 | 1 | **55** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | **488** | **488** |
| 29 | 7/13-7/19 | 13 | 107 | 1 | **121** | 0 | 0 | 0 | **0** | 1732 | 1 | 0 | **1733** | 0 | **3057** | **3050** |
| 30 | 7/20-7/26 | 1 | 19 | 2 | **22** | 0 | 0 | 0 | **0** | 559 | 0 | 0 | **559** | 0 | **1396** | **1388** |
| 31-33 | 7/27-8/16 | no sample- turbine repair | | | | | | | | | | | | | | |
| 34 | 8/17-8/23 | 368 | 225 | 2 | **595** | 0 | 0 | 0 | **0** | 13 | 6 | 0 | **19** | 0 | **6279** | **5407** |
| 35 | 8/24-8/30 | 149 | 325 | 4 | **478** | 0 | 0 | 0 | **0** | 5 | 13 | 0 | **18** | 0 | **5558** | **3277** |
| 36 | 8/31-9/6 | 229 | 178 | 3 | **410** | 0 | 0 | 0 | **0** | 1 | 3 | 0 | **4** | 0 | **6402** | **5356** |
| 37 | 9/7-9/13 | 335 | 131 | 0 | **466** | 0 | 0 | 0 | **0** | 2 | 4 | 0 | **6** | 0 | **4394** | **3554** |
| 38 | 9/14-9/20 | 885 | 612 | 1 | **1498** | 0 | 0 | 0 | **0** | 2 | 46 | 1 | **49** | 0 | **10479** | **9266** |
| 39 | 9/21-9/27 | 141 | 88 | 0 | **229** | 0 | 0 | 0 | **0** | 1 | 186 | 1 | **188** | 0 | **3441** | **3086** |
| 40 | 9/28-10/4 | 252 | 200 | 0 | **452** | 0 | 0 | 0 | **0** | 0 | 35 | 1 | **36** | 0 | **2393** | **2310** |
| 41 | 10/5-10/11 | 82 | 67 | 1 | **150** | 0 | 0 | 0 | **0** | 0 | 28 | 0 | **28** | 1 | **1227** | **1200** |
| 42-45 | 10/12-11/8 | no sample- water control | | | | | | | | | | | | | | |
| 46 | 11/9-11/15 | 40 | 14 | 0 | **54** | 0 | 0 | 0 | **0** | 2 | 57 | 1 | **60** | 1 | **951** | **937** |
| 47 | 11/16-11/22 | 31 | 11 | 0 | **42** | 0 | 0 | 0 | **0** | 0 | 11 | 0 | **11** | 1 | **343** | **340** |
| 48 | 11/23-11/29 | 46 | 19 | 0 | **65** | 0 | 0 | 0 | **0** | 0 | 138 | 3 | **141** | 1 | **870** | **853** |
| 49 | 11/30-12/6 | 43 | 16 | 0 | **59** | 0 | 0 | 0 | **0** | 0 | 31 | 0 | **31** | 1 | **520** | **514** |
| 50 | 12/7-12/13 | 63 | 47 | 0 | **110** | 0 | 0 | 0 | **0** | 0 | 32 | 0 | **32** | 1 | **2550** | **2518** |
| 51 | 12/14-12/20 | 36 | 11 | 0 | **47** | 0 | 0 | 0 | **0** | 2 | 8 | 1 | **11** | 1 | **1760** | **1752** |
| 52 | 12/21-12/27 | 19 | 12 | 0 | **31** | 0 | 0 | 0 | **0** | 1 | 14 | 0 | **15** | 0 | **764** | **758** |
| | Total | 6348 | 3841 | 24 | 10213 | 0 | 0 | 0 | 0 | 2321 | 1061 | 12 | 3394 | 13 | **78944** | **72090** |
| | % Catch | | | | **12.9%** | | | | **0.0%** | | | | **4.3%** | **0.0%** | **100%** | **91.3%** |
| | Mean catch | 144 | 87 | 1 | 232 | 0 | 0 | 0 | 0 | 53 | 24 | 0 | 77 | 0 | 1794 | 1638 |
| | St.dev. | 199.9 | 133.6 | 0.9 | 321.4 | 0.0 | 0.0 | 0.0 | 0.0 | 272.4 | 53.1 | 0.6 | 273.0 | 0.6 | 2059.5 | 1734.9 |

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Table B3. 1998 Westside weekly fyke net catch summary, by species and fork length (mm) categories.

| **Westside 1999** | | | **BBH** | | | | **BC** | | | | **FH** | | | | **KL** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| week | dates | hours | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total |
| 1 | 12/28-1/3 | 49 | 0 | 0 | 0 | **0** | 68 | 8 | 0 | **76** | 285 | 0 | 0 | **285** | 0 | 0 | 0 | **0** |
| 2 | 1/4-1/10 | 49 | 0 | 0 | 0 | **0** | 569 | 68 | 0 | **637** | 827 | 0 | 0 | **827** | 0 | 0 | 0 | **0** |
| 3 | 1/11-1/17 | 49 | 0 | 0 | 0 | **0** | 233 | 10 | 0 | **243** | 353 | 0 | 0 | **353** | 0 | 0 | 0 | **0** |
| 4 | 1/18-1/24 | 48.2 | 0 | 0 | 0 | **0** | 24 | 2 | 0 | **26** | 161 | 0 | 0 | **161** | 0 | 0 | 0 | **0** |
| 5 | 1/25-1/31 | 48.5 | 0 | 0 | 0 | **0** | 1195 | 87 | 0 | **1282** | 2594 | 0 | 0 | **2594** | 0 | 0 | 0 | **0** |
| 6 | 2/1-2/7 | 48.5 | 0 | 0 | 0 | **0** | 500 | 24 | 0 | **524** | 719 | 0 | 0 | **719** | 0 | 0 | 0 | **0** |
| 7 | 2/8-2/14 | 48.3 | 0 | 0 | 0 | **0** | 195 | 9 | 0 | **204** | 271 | 0 | 0 | **271** | 0 | 0 | 0 | **0** |
| 8 | 2/15-2/21 | 48.3 | 0 | 0 | 0 | **0** | 95 | 10 | 0 | **105** | 83 | 0 | 0 | **83** | 0 | 0 | 0 | **0** |
| 9 | 2/22-2/28 | 47.7 | 0 | 0 | 0 | **0** | 24 | 152 | 0 | **176** | 240 | 0 | 0 | **240** | 0 | 0 | 0 | **0** |
| 10 | 3/1-3/7 | 48.5 | 0 | 0 | 0 | **0** | 223 | 4 | 0 | **227** | 127 | 0 | 0 | **127** | 0 | 0 | 0 | **0** |
| 11 | 3/8-3/14 | 50 | 0 | 0 | 0 | **0** | 87 | 78 | 4 | **169** | 184 | 0 | 0 | **184** | 0 | 0 | 0 | **0** |
| 12 | 3/15-3/21 | | no sample - shutdown | | | | | | | **0** | | | | **0** | | | | **0** |
| 13 | 3/22-3/28 | 48.5 | 0 | 1 | 1 | **2** | 462 | 11 | 0 | **473** | 447 | 0 | 0 | **447** | 0 | 0 | 0 | **0** |
| 14 | 3/29-4/4 | 48.3 | 0 | 1 | 0 | **1** | 845 | 130 | 0 | **975** | 603 | 0 | 0 | **603** | 0 | 0 | 0 | **0** |
| 15 | 4/5-4/11 | 48 | 0 | 0 | 0 | **0** | 96 | 10 | 0 | **106** | 746 | 0 | 0 | **746** | 0 | 0 | 0 | **0** |
| 16 | 4/12-4/18 | 48.2 | 0 | 0 | 0 | **0** | 59 | 6 | 0 | **65** | 1083 | 0 | 0 | **1083** | 0 | 0 | 0 | **0** |
| 17 | 4/19-4/25 | 48.5 | 0 | 0 | 0 | **0** | 98 | 12 | 0 | **110** | 1215 | 0 | 0 | **1215** | 0 | 0 | 0 | **0** |
| 18 | 4/26-5/2 | 48.5 | 0 | 0 | 0 | **0** | 64 | 10 | 0 | **74** | 770 | 0 | 0 | **770** | 0 | 0 | 0 | **0** |
| 19 | 5/3-5/9 | 48 | 0 | 0 | 0 | **0** | 125 | 10 | 0 | **135** | 1450 | 0 | 0 | **1450** | 0 | 0 | 0 | **0** |
| 20 | 5/10-5/16 | 49.5 | 0 | 0 | 1 | **1** | 131 | 18 | 2 | **151** | 935 | 0 | 0 | **935** | 0 | 0 | 0 | **0** |
| 21 | 5/17-5/23 | 48.1 | 0 | 0 | 0 | **0** | 123 | 28 | 0 | **151** | 780 | 0 | 0 | **780** | 0 | 0 | 0 | **0** |
| 22 | 5/24-5/30 | 48.5 | 0 | 2 | 0 | **2** | 219 | 97 | 0 | **316** | 1513 | 0 | 0 | **1513** | 0 | 0 | 0 | **0** |
| 23 | 5/31-6/6 | 48.5 | 0 | 0 | 0 | **0** | 38 | 20 | 0 | **58** | 538 | 0 | 0 | **538** | 0 | 0 | 0 | **0** |
| 24 | 6/7-6/13 | 48.8 | 0 | 0 | 0 | **0** | 49 | 14 | 0 | **63** | 299 | 0 | 0 | **299** | 0 | 0 | 0 | **0** |
| 25 | 6/14-6/20 | 48.2 | 0 | 0 | 0 | **0** | 113 | 18 | 0 | **131** | 345 | 0 | 0 | **345** | 0 | 0 | 0 | **0** |
| 26 | 6/21-6/27 | 48.3 | 1 | 0 | 0 | **1** | 23 | 16 | 0 | **39** | 900 | 0 | 0 | **900** | 0 | 0 | 0 | **0** |
| 27 | 6/28-7/4 | 49 | 0 | 0 | 1 | **1** | 124 | 133 | 0 | **257** | 693 | 0 | 0 | **693** | 0 | 0 | 0 | **0** |
| 28 | 7/5-7/11 | 49 | 0 | 0 | 0 | **0** | 148 | 1207 | 0 | **1355** | 1491 | 0 | 0 | **1491** | 0 | 2 | 0 | **2** |
| 29 | 7/12-7/18 | 49 | 0 | 1 | 1 | **2** | 34 | 505 | 2 | **541** | 302 | 0 | 0 | **302** | 0 | 0 | 0 | **0** |
| 30 | 7/19-7/25 | 48.5 | 0 | 0 | 0 | **0** | 3 | 24 | 0 | **27** | 194 | 0 | 0 | **194** | 0 | 0 | 0 | **0** |
| 31 | 7/26-8/1 | 49 | 0 | 0 | 0 | **0** | 13 | 30 | 0 | **43** | 333 | 0 | 0 | **333** | 0 | 0 | 0 | **0** |
| 32 | 8/2-8/8 | 48.7 | 0 | 0 | 0 | **0** | 397 | 14 | 0 | **411** | 476 | 0 | 0 | **476** | 0 | 0 | 0 | **0** |
| 33-39 | 8/9-9/25 | | no sample - shutdown | | | | | | | **0** | | | | **0** | | | | **0** |
| 40 | 9/27-10/3 | 49.5 | 0 | 0 | 0 | **0** | 7491 | 147 | 0 | **7638** | 648 | 0 | 0 | **648** | 0 | 0 | 0 | **0** |
| 41-43 | 10/4-10/24 | | no sample - shutdown | | | | | | | | | | | | | | | |
| | Total | 1555.6 | 1 | 5 | 4 | **10** | 13868 | 2912 | 8 | **16788** | 21605 | 0 | 0 | **21605** | 0 | 2 | 0 | **2** |
| | % Catch | | | | | **0.0%** | | | | **31.7%** | | | | **40.8%** | | | | **0.0%** |
| | Mean catch | 49 | 0 | 0 | 0 | 0 | 433 | 91 | 0 | 494 | 675 | 0 | 0 | 635 | 0 | 0 | 0 | 0 |
| | St.dev. | 0 | 0 | 0 | 0 | 1 | 1314 | 224 | 1 | 1307 | 536 | 0 | 0 | 544 | 0 | 0 | 0 | 0 |

APPENDIX

Table B3. 1999 Westside weekly fyke net catch summary, by species and fork length (mm) categories.

| Westside 1999 | | KS | | | | LMP | | | | LR | | | | MS | | | | LP | | | | RBT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| week | dates | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total |
| 1 | 12/28-1/3 | 1 | 0 | 0 | **1** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** |
| 2 | 1/4-1/10 | 2 | 0 | 0 | **2** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** |
| 3 | 1/11-1/17 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** |
| 4 | 1/18-1/24 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 5 | 1/25-1/31 | 0 | 0 | 0 | **0** | 0 | 2 | 1 | **3** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 6 | 2/1-2/7 | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 7 | 2/8-2/14 | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 8 | 2/15-2/21 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 9 | 2/22-2/28 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 10 | 3/1-3/7 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 11 | 3/8-3/14 | 2 | 1 | 0 | **3** | 0 | 3 | 0 | **3** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** |
| 12 | 3/15-3/21 | no sample - shutdown | | | | | | | **0** | | | | **0** | | | | **0** | | | | **0** | | | | **0** |
| 13 | 3/22-3/28 | 0 | 0 | 0 | **0** | 0 | 4 | 0 | **4** | 0 | 0 | 0 | **0** | 0 | 6 | 0 | **6** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 14 | 3/29-4/4 | 2 | 0 | 0 | **2** | 2 | 2 | 0 | **4** | 0 | 0 | 0 | **0** | 0 | 6 | 0 | **6** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 15 | 4/5-4/11 | 12 | 0 | 0 | **12** | 0 | 6 | 1 | **7** | 0 | 0 | 0 | **0** | 1 | 1 | 0 | **2** | 0 | 0 | 0 | **0** | 2 | 3 | 0 | **5** |
| 16 | 4/12-4/18 | 11 | 0 | 0 | **11** | 0 | 4 | 2 | **6** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 17 | 4/19-4/25 | 3 | 0 | 0 | **3** | 0 | 25 | 14 | **39** | 0 | 0 | 0 | **0** | 1 | 5 | 0 | **6** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 18 | 4/26-5/2 | 4 | 0 | 0 | **4** | 0 | 9 | 3 | **12** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 19 | 5/3-5/9 | 9 | 0 | 0 | **9** | 0 | 17 | 7 | **24** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 20 | 5/10-5/16 | 5 | 2 | 0 | **7** | 17 | 3 | 0 | **20** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 21 | 5/17-5/23 | 7 | 8 | 0 | **15** | 0 | 30 | 2 | **32** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 22 | 5/24-5/30 | 12 | 9 | 0 | **21** | 0 | 20 | 2 | **22** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** |
| 23 | 5/31-6/6 | 7 | 2 | 0 | **9** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 24 | 6/7-6/13 | 2 | 0 | 0 | **2** | 0 | 5 | 2 | **7** | 0 | 0 | 0 | **0** | 0 | 4 | 0 | **4** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 25 | 6/14-6/20 | 0 | 1 | 0 | **1** | 0 | 2 | 1 | **3** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 26 | 6/21-6/27 | 7 | 4 | 0 | **11** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 1 | 2 | 0 | **3** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 27 | 6/28-7/4 | 0 | 6 | 0 | **6** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 16 | 0 | **16** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 28 | 7/5-7/11 | 12 | 13 | 0 | **25** | 0 | 10 | 5 | **15** | 0 | 1 | 0 | **1** | 3 | 38 | 0 | **41** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 29 | 7/12-7/18 | 61 | 57 | 0 | **118** | 0 | 50 | 7 | **57** | 0 | 1 | 0 | **1** | 2 | 14 | 0 | **16** | 8 | 2 | 0 | **10** | 0 | 0 | 1 | **1** |
| 30 | 7/19-7/25 | 3213 | 7 | 0 | **3220** | 0 | 35 | 0 | **35** | 0 | 0 | 0 | **0** | 0 | 31 | 0 | **31** | 1 | 1 | 0 | **2** | 0 | 0 | 0 | **0** |
| 31 | 7/26-8/1 | 767 | 1 | 0 | **768** | 0 | 11 | 0 | **11** | 0 | 0 | 0 | **0** | 1 | 5 | 0 | **6** | 2 | 0 | 0 | **2** | 0 | 0 | 0 | **0** |
| 32 | 8/2-8/8 | 280 | 0 | 0 | **280** | 0 | 6 | 0 | **6** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 33-39 | 8/9-9/25 | no sample - shutdown | | | | | | | **0** | | | | **0** | | | | **0** | | | | **0** | | | | **0** |
| 40 | 9/27-10/3 | 43 | 4 | 0 | **47** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 7 | 3 | 0 | **10** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 41-43 | 10/4-10/24 | no sample - shutdown | | | | | | | | | | | | | | | | | | | | | | | |
| | Total | 4463 | 115 | 0 | **4578** | 19 | 248 | 47 | **314** | 0 | 4 | 0 | **4** | 16 | 149 | 0 | **165** | 16 | 3 | 0 | **19** | 2 | 6 | 1 | **9** |
| | % Catch | | | | **8.6%** | | | | **0.6%** | | | | **0.0%** | | | | **0.3%** | | | | **0.0%** | | | | **0.0%** |
| | Mean catch | 139 | 4 | 0 | 143 | 1 | 8 | 1 | 9 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 5 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| | St.dev. | 578 | 10 | 0 | 579 | 3 | 12 | 3 | 14 | 0 | 0 | 0 | 0 | 1 | 9 | 0 | 9 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 1 |

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Table B3. 1999 Westside weekly fyke net catch summary, by species and fork length (mm) categories.

| Westside 1999 | | SC | | | | SD | | | | SN | | | | SS | | | | SU | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| week | dates | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total |
| 1 | 12/28-1/3 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** |
| 2 | 1/4-1/10 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** | 0 | 0 | 0 | **0** | 1 | 9 | 0 | **10** |
| 3 | 1/11-1/17 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 2 | 0 | **3** |
| 4 | 1/18-1/24 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 5 | 1/25-1/31 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 5 | 0 | **5** | 0 | 0 | 0 | **0** | 0 | 5 | 0 | **5** |
| 6 | 2/1-2/7 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 7 | 2/8-2/14 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 0 | 1 | 0 | **1** |
| 8 | 2/15-2/21 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 9 | 2/22-2/28 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 10 | 3/1-3/7 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 11 | 3/8-3/14 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 12 | 3/15-3/21 | no sample - shutdown | | | | | | | **0** | | | | **0** | | | | **0** | | | | **0** |
| 13 | 3/22-3/28 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 14 | 3/29-4/4 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** |
| 15 | 4/5-4/11 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 16 | 4/12-4/18 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** |
| 17 | 4/19-4/25 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 18 | 4/26-5/2 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 19 | 5/3-5/9 | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 20 | 5/10-5/16 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 21 | 5/17-5/23 | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** | 0 | 4 | 0 | **4** | 0 | 0 | 0 | **0** | 0 | 4 | 0 | **4** |
| 22 | 5/24-5/30 | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** |
| 23 | 5/31-6/6 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 24 | 6/7-6/13 | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** |
| 25 | 6/14-6/20 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** |
| 26 | 6/21-6/27 | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** |
| 27 | 6/28-7/4 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 0 | 0 | **0** | 6 | 0 | 0 | **6** |
| 28 | 7/5-7/11 | 0 | 0 | 0 | **0** | 3 | 7 | 0 | **10** | 0 | 20 | 0 | **20** | 0 | 1 | 0 | **1** | 6 | 5 | 0 | **11** |
| 29 | 7/12-7/18 | 0 | 0 | 0 | **0** | 0 | 5 | 0 | **5** | 0 | 4 | 0 | **4** | 25 | 4 | 0 | **29** | 12 | 1 | 0 | **13** |
| 30 | 7/19-7/25 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** | 1 | 0 | 0 | **1** | 25 | 0 | 0 | **25** |
| 31 | 7/26-8/1 | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 42 | 0 | 0 | **42** |
| 32 | 8/2-8/8 | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 160 | 1 | 0 | **161** |
| 33-39 | 8/9-9/25 | no sample - shutdown | | | | | | | **0** | | | | **0** | | | | **0** | | | | **0** |
| 40 | 9/27-10/3 | 0 | 0 | 0 | **0** | 2 | 0 | 0 | **2** | 0 | 0 | 1 | **1** | 2 | 1 | 0 | **3** | 39 | 76 | 0 | **115** |
| 41-43 | 10/4-10/24 | no sample - shutdown | | | | | | | | | | | | | | | | | | | |
| | Total | 0 | 0 | 0 | **0** | 7 | 20 | 0 | **27** | 0 | 49 | 1 | **50** | 30 | 6 | 0 | **36** | 296 | 110 | 0 | **406** |
| | % Catch | | | | **0.0%** | | | | **0.1%** | | | | **0.1%** | | | | **0.1%** | | | | **0.8%** |
| | Mean catch | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 1 | 9 | 3 | 0 | 12 |
| | St.dev. | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 2 | 0 | 4 | 0 | 4 | 4 | 1 | 0 | 5 | 30 | 13 | 0 | 34 |

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Table B3. 1999 Westside fyke net weekly catch for all fish by size category and by fork length (mm).

| Westside 1999 | | TC | | | | UN | | | | YP | | | | DT | All Fish | ALL Fish Except Sucker |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| week | dates | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | <75 | 75-150 | >150 | total | no FL | TOTAL | TOTAL |
| 1 | 12/28-1/3 | 6 | 9 | 0 | **15** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | 382 | **381** |
| 2 | 1/4-1/10 | 16 | 21 | 0 | **37** | 0 | 0 | 0 | **0** | 0 | 12 | 0 | **12** | 0 | 1531 | **1518** |
| 3 | 1/11-1/17 | 18 | 13 | 0 | **31** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 632 | **629** |
| 4 | 1/18-1/24 | 5 | 0 | 0 | **5** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 193 | **193** |
| 5 | 1/25-1/31 | 61 | 17 | 0 | **78** | 0 | 0 | 0 | **0** | 0 | 4 | 0 | **4** | 0 | 3971 | **3961** |
| 6 | 2/1-2/7 | 31 | 25 | 0 | **56** | 0 | 0 | 0 | **0** | 0 | 3 | 0 | **3** | 0 | 1306 | **1303** |
| 7 | 2/8-2/14 | 3 | 2 | 0 | **5** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 0 | 484 | **483** |
| 8 | 2/15-2/21 | 3 | 5 | 0 | **8** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 196 | **196** |
| 9 | 2/22-2/28 | 3 | 1 | 0 | **4** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 421 | **420** |
| 10 | 3/1-3/7 | 1 | 4 | 0 | **5** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 361 | **361** |
| 11 | 3/8-3/14 | 2 | 26 | 5 | **33** | 0 | 0 | 0 | **0** | 0 | 7 | 0 | **7** | 0 | 401 | **401** |
| 12 | 3/15-3/21 | no sample - shutdown | | | | | | | **0** | | | | **0** | | 0 | **0** |
| 13 | 3/22-3/28 | 190 | 37 | 1 | **228** | 0 | 0 | 0 | **0** | 0 | 6 | 0 | **6** | 0 | 1167 | **1166** |
| 14 | 3/29-4/4 | 76 | 33 | 0 | **109** | 0 | 0 | 0 | **0** | 2 | 2 | 0 | **4** | 0 | 1706 | **1704** |
| 15 | 4/5-4/11 | 5 | 0 | 0 | **5** | 0 | 0 | 0 | **0** | 2 | 5 | 0 | **7** | 0 | 890 | **890** |
| 16 | 4/12-4/18 | 16 | 8 | 0 | **24** | 0 | 0 | 0 | **0** | 0 | 2 | 0 | **2** | 0 | 1196 | **1195** |
| 17 | 4/19-4/25 | 36 | 19 | 0 | **55** | 0 | 0 | 0 | **0** | 1 | 3 | 0 | **4** | 0 | 1432 | **1432** |
| 18 | 4/26-5/2 | 10 | 10 | 0 | **20** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 0 | 885 | **884** |
| 19 | 5/3-5/9 | 42 | 23 | 0 | **65** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1687 | **1686** |
| 20 | 5/10-5/16 | 28 | 22 | 0 | **50** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1165 | **1165** |
| 21 | 5/17-5/23 | 24 | 55 | 1 | **80** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1070 | **1062** |
| 22 | 5/24-5/30 | 33 | 35 | 1 | **69** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1950 | **1948** |
| 23 | 5/31-6/6 | 15 | 19 | 0 | **34** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 0 | 642 | **642** |
| 24 | 6/7-6/13 | 11 | 80 | 0 | **91** | 0 | 0 | 0 | **0** | 0 | 4 | 0 | **4** | 0 | 472 | **471** |
| 25 | 6/14-6/20 | 7 | 35 | 0 | **42** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 525 | **523** |
| 26 | 6/21-6/27 | 10 | 21 | 1 | **32** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 991 | **987** |
| 27 | 6/28-7/4 | 17 | 129 | 0 | **146** | 0 | 0 | 0 | **0** | 9 | 0 | 0 | **9** | 0 | 1136 | **1128** |
| 28 | 7/5-7/11 | 33 | 714 | 0 | **747** | 0 | 0 | 0 | **0** | 3595 | 6 | 0 | **3601** | 0 | 7320 | **7286** |
| 29 | 7/12-7/18 | 7 | 385 | 0 | **392** | 0 | 0 | 0 | **0** | 1295 | 0 | 0 | **1295** | 0 | 2786 | **2768** |
| 30 | 7/19-7/25 | 1 | 100 | 0 | **101** | 0 | 0 | 0 | **0** | 271 | 0 | 0 | **271** | 0 | 3910 | **3882** |
| 31 | 7/26-8/1 | 32 | 90 | 0 | **122** | 0 | 0 | 0 | **0** | 159 | 0 | 0 | **159** | 0 | 1488 | **1446** |
| 32 | 8/2-8/8 | 20 | 42 | 0 | **62** | 0 | 0 | 0 | **0** | 8 | 0 | 0 | **8** | 0 | 1407 | **1246** |
| 33-39 | 8/9-9/25 | no sample - shutdown | | | | | | | **0** | | | | **0** | 0 | 0 | **0** |
| 40 | 9/27-10/3 | 556 | 177 | 0 | **733** | 0 | 0 | 0 | **0** | 7 | 46 | 2 | **55** | 0 | 9253 | **9137** |
| 41-43 | 10/4-10/24 | no sample - shutdown | | | | | | | | | | | | | | |
| | Total | 1318 | 2157 | 9 | 3484 | 0 | 0 | 0 | 0 | 5351 | 106 | 2 | 5459 | 0 | 52956 | 52494 |
| | % Catch | | | | 6.6% | | | | 0.0% | | | | 10.3% | 0.0% | 100.0% | 99.1% |
| | Mean catch | 41 | 67 | 0 | 109 | 0 | 0 | 0 | 0 | 167 | 3 | 0 | 161 | 0 | 1558 | 1544 |
| | St.dev. | 100 | 139 | 1 | 182 | 0 | 0 | 0 | 0 | 667 | 8 | 0 | 648 | 0 | 1960 | 1942 |

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Table B3. 1999 Westside fyke net weekly catch for all fish by size category and by fork length (mm).

| Disposition | Date | Average canal flow ($ft^3/s$) | # released | Efficiency | Lake level | Distance to nets (ft) |
|---|---|---|---|---|---|---|
| live | 11/5/1997 | 562 | 207 | 57% | 4140.4 | 20 |
| live | 11/5/1997 | 562 | 246 | 64% | 4140.4 | 20 |
| live | 11/5/1997 | 562 | 204 | 71% | 4140.4 | 20 |
| live | 4/27/1998 | 396 | 135 | 34% | 4142.9 | 20 |
| live | 5/6/1998 | 1095 | 150 | 60% | 4143.1 | 20 |
| live | 4/6/1999 | 421 | 157 | 23% | 4141.7 | 20 |
| | | | | | | |
| dead | 7/8/1999 | 569 | 50 | 90% | 4142.9 | 2.5 |
| dead | 5/4/1999 | 942 | 148 | 28% | 4142.4 | 20 |
| dead | 5/11/1999 | 510 | 48 | 94% | 4142.5 | 0 |
| dead | 5/18/1999 | 1028 | 48 | 98% | 4142.6 | 0 |

Table A4. Efficiency test results from the Eastside fyke net. Live fish were released from submerged paper bags in front of the nets. Dead fish were placed in the nets to determine retention or were released from bags ahead of the nets. The distance at which fish were released is noted in the last column.

## A) Eastside

| | BBH | BC | FH | GU | KS | LMP | LP | MS | RBT | S-All | SC | SD | SS | TC | UN | YP | DT | All Fish | 70% east efficiency |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1997** | 22 | 93831 | 14422 | 59 | 13936 | 755 | 7 | 9973 | 343 | 13922 | 0 | 166 | 173 | 29533 | 4671 | 5463 | 1034 | 188,312 | 269,016 |
| | 0% | 50% | 8% | 0% | 7% | 0% | 0% | 5% | 0% | 7% | 0% | 0% | 0% | 16% | 2% | 3% | 1% | 100% | |
| **1998** | 41 | 60601 | 58506 | 0 | 15864 | 568 | 250 | 3398 | 245 | 42209 | 0 | 30 | 582 | 25946 | 1582 | 16579 | 19 | 226,419 | 323,456 |
| | 0% | 27% | 26% | 0% | 7% | 0% | 0% | 2% | 0% | 19% | 0% | 0% | 0% | 11% | 1% | 7% | 0% | 100% | |
| **1999** | 90 | 52573 | 28404 | 0 | 10404 | 241 | 51 | 3990 | 193 | 27808 | 0 | 0 | 215 | 9801 | 345 | 6118 | 0 | 140,232 | 200,332 |
| | 0% | 37% | 20% | 0% | 7% | 0% | 0% | 3% | 0% | 20% | 0% | 0% | 0% | 7% | 0% | 4% | 0% | 100% | |
| **Totals** | **153** | **207006** | **101332** | **59** | **40204** | **1564** | **307** | **17362** | **781** | **83939** | **0** | **196** | **971** | **65280** | **6598** | **28160** | **1053** | **554,965** | **792,808** |
| **Percent** | **0%** | **37%** | **18%** | **0%** | **7%** | **0%** | **0%** | **3%** | **0%** | **15%** | **0%** | **0%** | **0%** | **12%** | **1%** | **5%** | **0%** | **100%** | |

## B) Westside

| | BBH | BC | FH | GU | KS | LMP | LP | MS | RBT | S-All | SC | SD | SS | TC | UN | YP | DT | All Fish |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1997** | 4 | 62122 | 14951 | 0 | 1271 | 617 | 3 | 508 | 30 | 1293 | 50 | 84 | 82 | 6752 | 52 | 3719 | 36 | 91,574 |
| | 0% | 68% | 16% | 0% | 1% | 1% | 0% | 1% | 0% | 1% | 0% | 0% | 0% | 7% | 0% | 4% | 0% | 100% |
| **1998** | 22 | 87519 | 80163 | 0 | 16068 | 660 | 177 | 2165 | 54 | 22518 | 5021 | 78 | 181 | 32734 | 0 | 12583 | 43 | 259,986 |
| | 0% | 34% | 31% | 0% | 6% | 0% | 0% | 1% | 0% | 9% | 2% | 0% | 0% | 13% | 0% | 5% | 0% | 100% |
| **1999** | 30 | 55524 | 71859 | 0 | 16108 | 1079 | 65 | 555 | 25 | 1679 | 3 | 31 | 124 | 11535 | 0 | 18726 | 0 | 177,345 |
| | 0% | 31% | 41% | 0% | 9% | 1% | 0% | 0% | 0% | 1% | 0% | 0% | 0% | 7% | 0% | 11% | 0% | 100% |
| **Totals** | **56** | **205167** | **166973** | **0** | **33447** | **2356** | **245** | **3228** | **110** | **25490** | **5074** | **193** | **387** | **51021** | **52** | **35028** | **79** | **528,906** |
| **Percent** | **0%** | **39%** | **32%** | **0%** | **6%** | **0%** | **0%** | **1%** | **0%** | **5%** | **1%** | **0%** | **0%** | **10%** | **0%** | **7%** | **0%** | **100%** |

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Table A5. 1997-1999 extrapolated entrainment indices for all fish, including all combined suckers (S-All), at the Eastside (A) and the Westside (B) canals. Estimates are based on summation of weekly entrainment totals through the 2.5 year study. The Westside was sampled from April 21, 1997 to October 20, 1999. The Eastside was sampled from July 14, 1997 to October 20, 1999. Consequently, only 1998 represents a full year of sampling. Size class refers to fork length (mm). The 70% efficiency values assume that the Eastside fyke net was 70% efficient at all flows. Rounding errors during extrapolation prevent all columns and rows from adding up.