

Fishery Data Series No. 91-38

**Experimental Hook and Line Fishing at Harding
Lake, Alaska, 1989-1991**

by

**Tim Viavant
and
John H. Clark**

September 1991

Alaska Department of Fish and Game

Division of Sport Fish



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ABSTRACT

Experimental hook and line fishing was conducted in December of 1989, in July, August, November, and December of 1990, and in April of 1991 at Harding Lake, Alaska, using several types of terminal fishing gears fished at a variety of locations and depths. Catch-per-unit-effort was low for most locations and gear types (generally less than one fish-per-angler-hour). Catch-per-unit-effort from winter sampling was better for baited lures than for lures or bait fished alone, and was generally higher for green lures than other colored lures. Salmon eggs had higher catch-per-unit-effort than shrimp or corn. Catch-per-unit-effort for winter fishing was highest near bottom in water 2 - 10 meters deep and low or zero in water over 10 meters deep. Catch-per-unit-effort from summer sampling was higher for bait than for spinners, and was generally highest near the bottom in water over 10 meters deep.

KEY WORDS: Experimental angling, ice fishing, catch-per-unit-effort, terminal gear type, terminal gear location.

INTRODUCTION

Harding Lake is the largest road accessible lake near a major population center in the Tanana drainage (Figure 1). Harding Lake is used extensively for outdoor recreation. Although Harding Lake has the potential to support a large sport fishery, angling at Harding Lake has long been considered to be poor relative to other large stocked lakes in the Tanana drainage. Harding Lake provides substantially fewer angler-days per hectare of surface water than other large lakes located nearby that are stocked with sport fish species (Mills 1987-1990). The Alaska Department of Fish and Game (ADFG) has been attempting to enhance the sport fishery at Harding Lake for years (Doxey 1991). While earlier efforts did not result in substantial increases in harvest nor in recreational fishing effort, recent introductions of Arctic char *Salvelinus alpinus*, lake trout *Salvelinus namaycush*, Arctic grayling *Thymallus arcticus* and rainbow trout *Oncorhynchus mykiss* have provided the potential for increased fishing opportunity.

In order for ADFG enhancement efforts to result in a substantial recreational fishery at Harding Lake, not only must fish be available to anglers, but information regarding the availability of these fish as well as information concerning successful angling methods to capture them needs to be provided to the angling public. Arctic char have not been present in interior lakes until recently; numbers of lake trout in Harding Lake have been low; and Arctic grayling and rainbow trout have not been abundant in Harding Lake nor have these two species been large enough to harvest until recently. Because of this, hook and line fishing methods (gear, depth, etc.) most likely to result in successful angling at Harding Lake have not been known to ADFG staff nor the angling public. With such information available to the general angling public and with continued enhancement efforts, the Harding Lake hook and line fishery should develop into a major recreational fishery.

This study was first implemented in December of 1989 to determine the angling methods most likely to result in the capture of the stocked species that are now present in Harding Lake. In 1990, the study was expanded and included as a Federal Aid Project (Project F-10-6, Job Number E-3-1d). The 1990 objective was to test the hypothesis that catch-per-unit of fishing effort (CPUE) with hook and line gear in various season-zone strata of Harding Lake was greater than a threshold of one fish per angler-hour. This report is written to summarize the experimental hook and line sampling that was conducted by ADFG staff in 1989, 1990, and 1991 as well as to report progress made toward the stated contract objective.

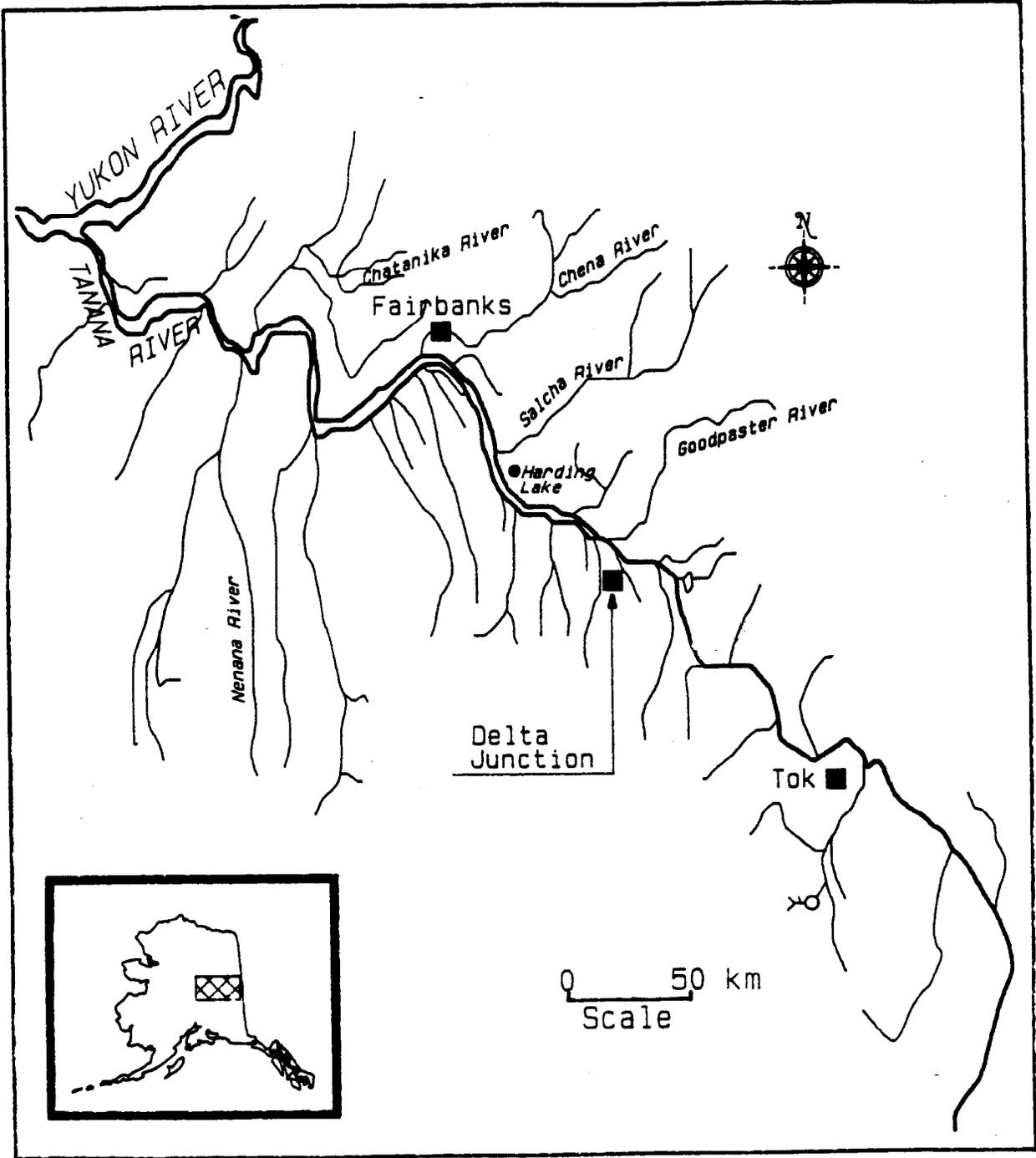


Figure 1. Map of Tanana drainage showing location of Harding Lake relative to Fairbanks.

METHODS AND MATERIALS

To facilitate equal distribution of sampling effort during winter, Harding Lake was divided into four quadrants (Figure 2). Two three-person crews were assigned to fish in each quadrant for one day. Each person fished from two holes, with one pole per hole. Each person was assigned a lure for jigging, and bait, which was left in one position. Combinations of lures and bait were varied among anglers.

For each quadrant, depths were assigned for fishing, based on five water zones: shallow littoral (0-2m); deep littoral (2-5m); shallow benthic (5-10m); deep benthic (10-20m); and pelagic (20-40m; Figure 3). This sampling scheme was chosen because it was thought to resemble the distribution habits of fish present in Harding Lake. For example, *a priori* information indicated that Arctic char are primarily present in the benthic zone, and rainbow trout and Arctic grayling are primarily in the littoral zone. Terminal gear was positioned at depths which were subdivisions of the zone, such as near the bottom of the zone or near the surface. Positioning terminal gear at subdivisions by depth assured that sampling effort was dispersed throughout each zone. Anglers were assigned to fish in the shallow littoral zone near the bottom and surface. In the deep littoral zone, fishing occurred near the bottom, middle and surface. In the three remaining zones, fishing occurred either near the bottom, at the surface, or at one-third or two-thirds the distance from the bottom. About 20 minutes was spent fishing at each depth. As time allowed, the sampling scheme was varied to include additional people, and additional holes in a quadrant (Table 1).

Fishing time per bout during winter, 1989, was variable, and effort was primarily targeted at catching Arctic char. A total of 103 hours of angling took place in 1989.

Sampling in the winter of 1990-91 was conducted in 20 minute time intervals. Sampling effort was spread across depths and gear types. A total of 454.7 hours of angling effort was expended during the winter of 1990-91.

Sampling in summer was different from that in winter, in that quadrants were not used to disperse sampling effort. Sampling in summer, 1990, was conducted such that each fishing bout consisted of one angler-hour in a zone with one gear type. For example, the location to troll was arbitrarily chosen to be perpendicular to some point on shore, as long that the line trolled passed through the desired depth zone, as determined from a contour map and a fathometer. Effort was expended such that each zone/gear combination was fished a minimum of nine hours. If a fish was caught during a fishing bout, that bout was considered a success; if no fish were caught during a bout, that bout was considered a failure.

Effort, catch, gear type, water depth, and gear depth were recorded. Water depths were verified with a fathometer. Summer angling was conducted with standard light-weight spinning gear. Winter angling was conducted with ice fishing tip-ups and light-weight spinning gear. Descriptions of fishing lures and baits are provided in Appendices A through E.

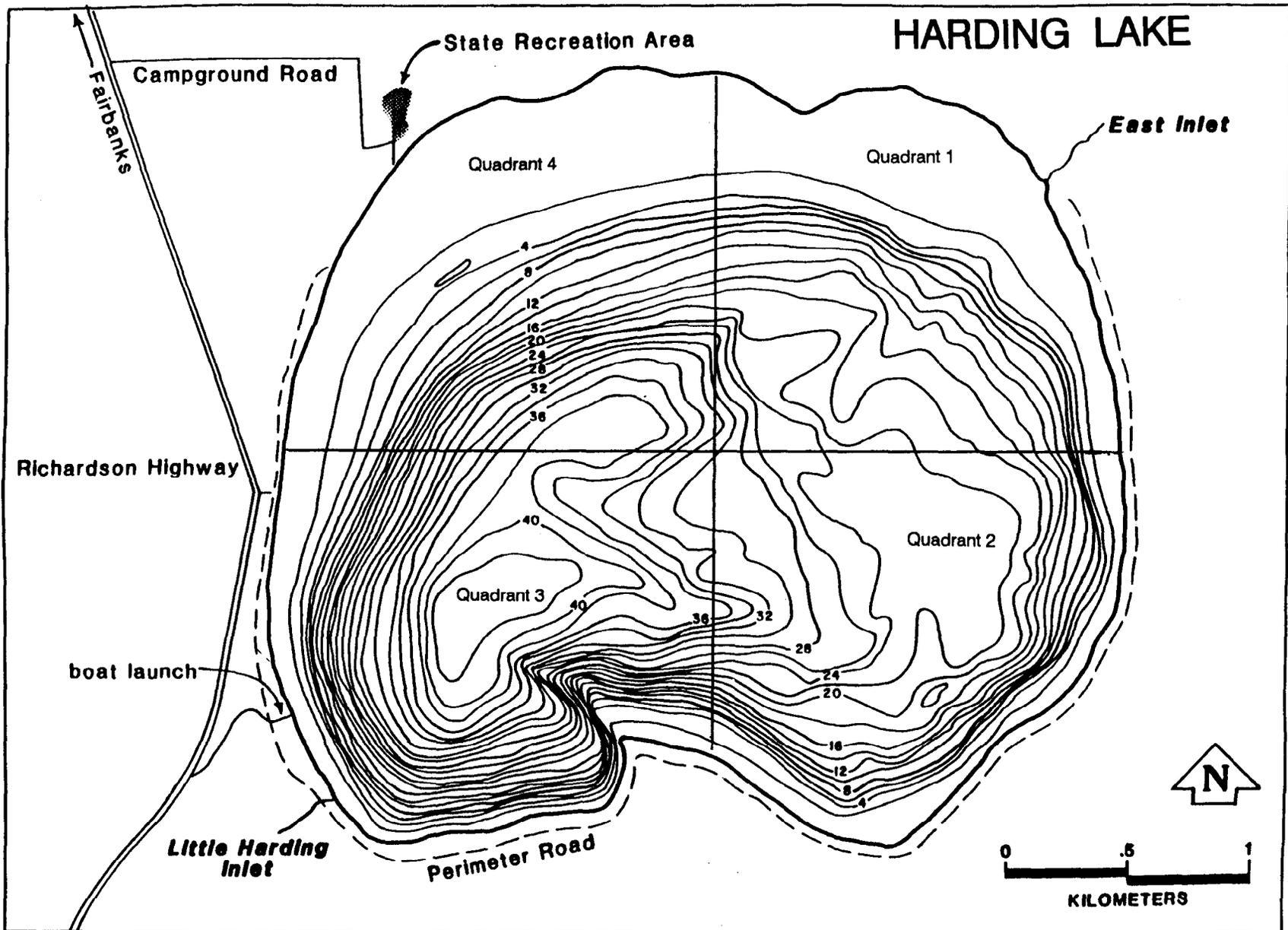
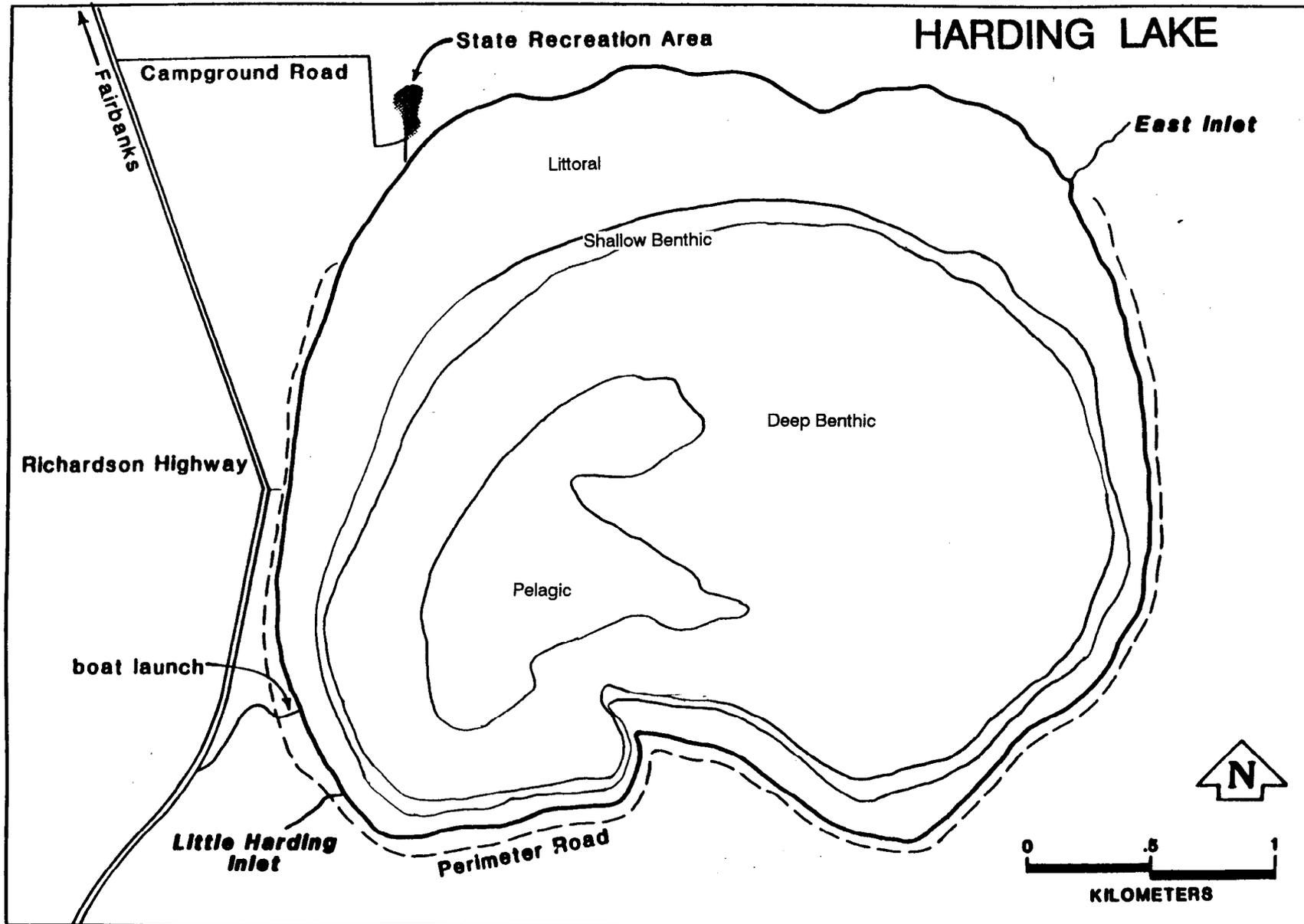


Figure 2. Designation of quadrants for sampling of Harding Lake, 1989 and 1990.



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Figure 3. Designation of depth zones for sampling of Harding Lake, 1989 and 1990.

Table 1. Water depths fished and terminal gear types used while experimental hook and line fishing at Harding Lake, 1989-1991.

PART I. Winter Sampling, 1989.

| Water Depth (m) | Gear Depth | Terminal Gear ^a | Bait |
|-----------------|--------------|----------------------------|-------------|
| 0 - 2 | near surface | pink lure | none |
| 2 - 5 | near surface | green lure | none |
| 2 - 5 | mid-depth | orange lure | none |
| 2 - 5 | near bottom | single snelled hook | salmon eggs |
| 5 - 10 | near surface | single snelled hook | shrimp |
| 5 - 10 | near bottom | | |
| 10 - 20 | near surface | | |
| 10 - 20 | near bottom | | |

PART II. Summer Sampling, 1990.

| Water Depth (m) | Zone | Gear ^a |
|----------------------------------|-----------------|--|
| Shore based, less than 5 m | Littoral | Spinners Bait (under bobber) |
| Boat based, 5 - 10 m | Shallow Benthic | Spinners Bait (off bottom) |
| Boat based, greater than 10 m | Deep Benthic | Down riggers (trolling) Bait (off bottom) |
| Boat based, 0 - 36 m | Pelagic | Spinners (jigging) Bait (under bobber) |

PART III. Winter Sampling, 1990 and 1991.

| Water Depth (m) | Gear Depth | Terminal Gear ^a | Bait |
|-----------------|--------------|----------------------------|-------------|
| 0 - 2 | near surface | pink lure | none |
| 0 - 2 | near bottom | green lure | none |
| 2 - 5 | near surface | orange lure | none |
| 2 - 5 | mid-depth | single snelled hook | salmon eggs |
| 2 - 5 | near bottom | single snelled hook | shrimp |
| 5 - 10 | near surface | single snelled hook | corn |
| 5 - 10 | 1/3 depth | pink lure | salmon eggs |
| 5 - 10 | 2/3 depth | pink lure | shrimp |
| 5 - 10 | near bottom | orange lure | salmon eggs |
| 10 - 20 | near surface | orange lure | shrimp |
| 10 - 20 | 1/3 depth | green lure | salmon eggs |
| 10 - 20 | 2/3 depth | green lure | shrimp |
| 10 - 20 | near bottom | | |
| 20 - 40 | near surface | | |
| 20 - 40 | 1/3 depth | | |
| 20 - 40 | 2/3 depth | | |
| 20 - 40 | near bottom | | |

^a Full descriptions of each gear type are provided in Appendices A-E.

RESULTS

Winter Sampling, 1989

The CPUE for winter sampling in 1989 was highest for baited lures among all terminal gears used (Figure 4). Of the three types of lures used, green lures had the highest CPUE when fished unbaited, and pink lures had the lowest. Of the bait types used, CPUE was only slightly higher for salmon eggs than for shrimp (Table 2).

Angling success from 1989 winter sampling was best near bottom in water 2 - 5 m deep and water 5 - 10 m deep (Figure 4). The highest CPUE (2.3 fish per angler-hour) resulted from angling near bottom in water 2 - 5 m deep. Angling at the bottom in water 5 - 10 m deep resulted in a CPUE of 1.9 fish per angler-hour and angling near the surface over water 5 - 10 m deep resulted in a CPUE of 1.0 fish per angler-hour. Angling in water deeper than 10 m resulted in zero catches and angling in the three shallowest depth categories all resulted in CPUE's of less than 0.25 fish per angler-hour (Figure 4).

At the depth with the highest catch rates (near bottom in water 2 - 5 m, and in water 5 - 10 m), the highest CPUE (3.6 fish per angler-hour) resulted from fishing pink lures baited with shrimp (Appendix A). Unfortunately, pink lures were not fished with bait of any kind at any of the other depths, so comparison of CPUE with this terminal gear among depth categories is not possible. Most gear combinations fished at the bottom of the 2.5 m depth category resulted in CPUE's higher than 1.0, and none resulted in zero catches. In depths with low catch rates, all gear combinations had CPUE's of 1.0 or lower, and many combinations resulted in zero catches. A total of 176 Arctic char were caught in 103 hours of angling during the 1989 winter sampling, resulting in an overall average CPUE of 1.7 fish per angler-hour.

Summer Sampling, 1990

The highest catch rate during summer 1990 angling occurred when spinners were jigged in water 10 - 30 m deep during July (Figure 5). Catch-per-unit-effort was generally higher in July than in August (Figure 5). The zone/gear combinations resulting in the highest proportion of successful fishing bouts (both in July and August) were bait fished off the bottom in the deep benthic zone and spinners jigged in the deep benthic zone (Table 3). These zone/gear combinations had higher catch rates in July than in August (Appendices B and C).

The majority of fish caught during summer 1990 angling were Arctic char (86%), all of which were caught at mid-depth or off the bottom over water 10 - 30 m deep (Table 4). Northern pike *Esox lucius* comprised 12% of all fish caught during summer sampling, and all were caught using spinners in less than 10 m of water. Two rainbow trout (2% of all fish caught during summer sampling) were caught using bait in water less than 10 m deep. A total of 73 fish were caught in July, 1990, during 133 hours of angling, resulting in an overall CPUE of 0.55 fish per angler-hour. A total of 26 fish were caught in August,

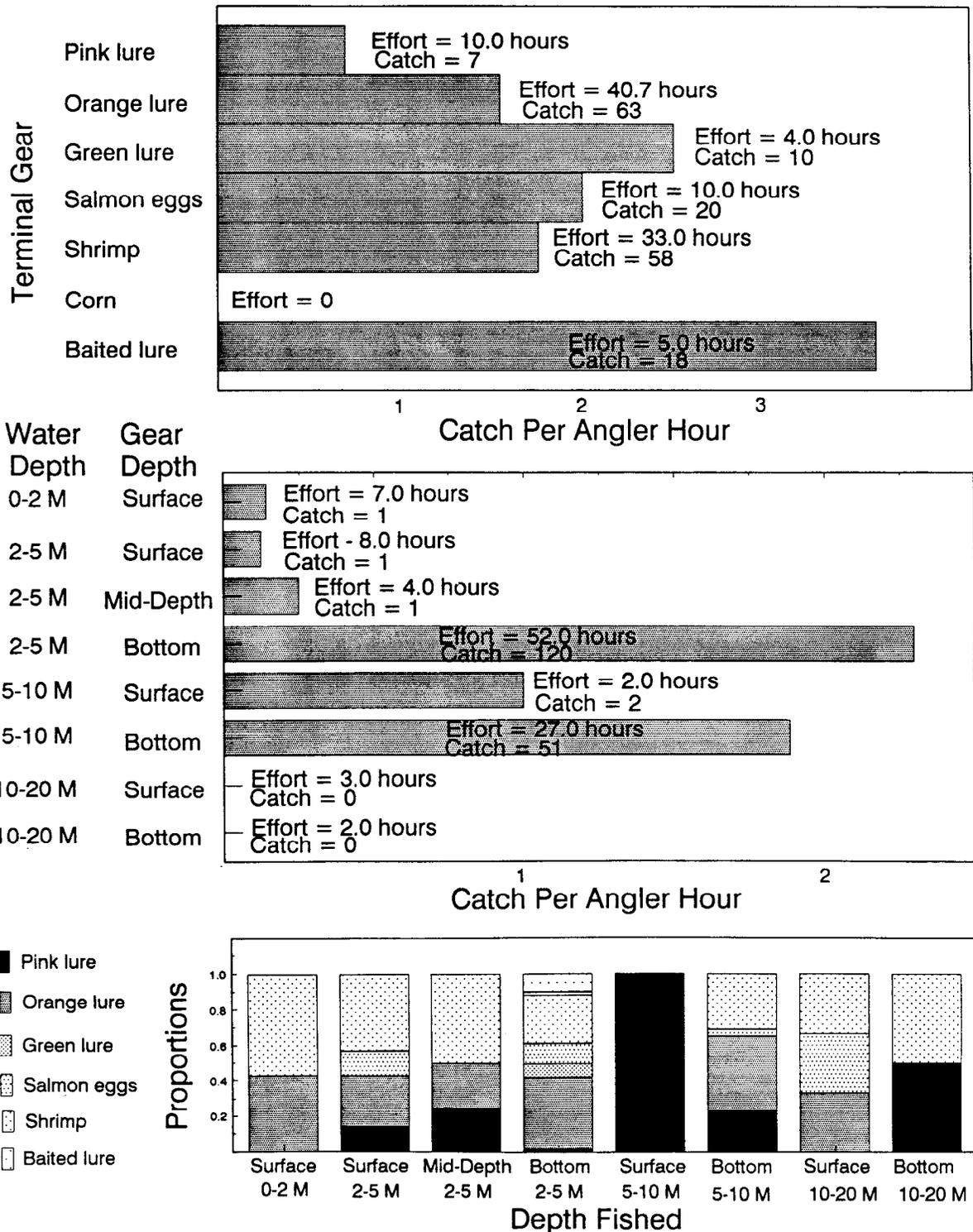


Figure 4. Catch per angler hour by gear type (upper panel) and by terminal gear depth (middle panel), and the proportional use of each type of gear at each depth (lower panel) for experimental hook and line fishing at Harding Lake during December, 1989.

Table 2. Terminal gear used, fishing effort, catches, and catch per hour while experimentally fishing with hook and line gear at Harding Lake, 1989-1991.

| Sample Period | Terminal gear ^a | Fishing Effort (hr) | Total Catch ^b | CPUE ^c |
|-----------------|----------------------------|---------------------|--------------------------|-------------------|
| Dec. '89 | Pink lure | 10.0 | 7 AC | 0.7 |
| Dec. '89 | Orange lure | 40.6 | 63 AC | 1.6 |
| Dec. '89 | Green lure | 4.0 | 10 AC | 2.5 |
| Dec. '89 | Salmon eggs | 10.0 | 20 AC | 2.0 |
| Dec. '89 | Shrimp | 34.0 | 58 AC | 1.8 |
| Dec. '89 | Corn | 0.0 | 0 | 0 |
| Dec. '89 | Baited lure | 5.0 | 18 AC | 3.6 |
| July '90 | Spinners | 93.0 | 3 NP, 35 AC | 0.4 |
| July '90 | Bait | 40.0 | 35 AC | 0.9 |
| Aug. '90 | Spinners | 112.0 | 9 NP, 3 AC | 0.1 |
| Aug. '90 | Bait | 38.0 | 2 RB, 12 AC | 0.4 |
| Nov. - Dec. '90 | Pink lure | 37.0 | 1 RB, 2 AC | 0.1 |
| Nov. - Dec. '90 | Orange lure | 36.0 | 1 RB, 7 AC | 0.2 |
| Nov. - Dec. '90 | Green lure | 26.6 | 7 AC | 0.3 |
| Nov. - Dec. '90 | Salmon eggs | 35.0 | 4 AC | 0.1 |
| Nov. - Dec. '90 | Shrimp | 39.6 | 1 AC | 0.1 |
| Nov. - Dec. '90 | Corn | 29.6 | 0 | 0 |
| Nov. - Dec. '90 | Baited lure | 62.3 | 1 RB, 23 AC | 0.4 |
| April '91 | Pink lure | 33.3 | 3 AC | 0.1 |
| April '91 | Orange lure | 32.0 | 1 AC | 0.0 |
| April '91 | Green lure | 29.6 | 1 NP, 3 AC | 0.1 |
| April '91 | Salmon eggs | 33.0 | 1 AC | 0.0 |
| April '91 | Shrimp | 34.6 | 0 | 0 |
| April '91 | Corn | 28.0 | 0 | 0 |
| April '91 | Baited lure | 5.0 | 5 AC | 1.0 |
| Totals | | 847.2 | 318 AC 5 RB 13 NP | 0.4 ^d |

^a Complete descriptions of terminal gears are provided in Appendices A - E.

^b Catches are as follows: NP = northern pike, RB = rainbow trout, AC = Arctic char.

^c Total fish caught per angler-hour.

^d Total catch divided by total fishing effort.

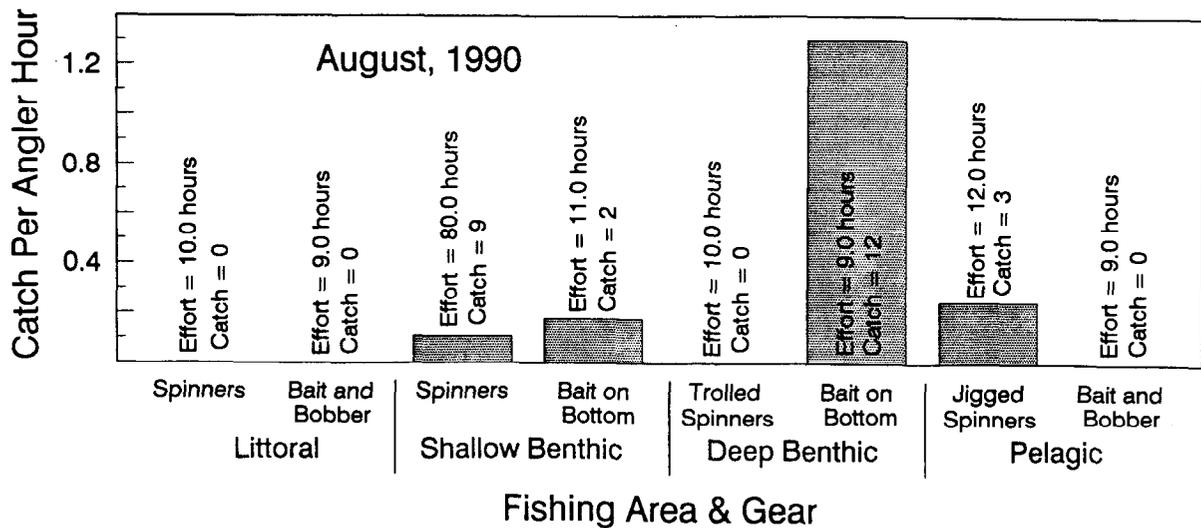
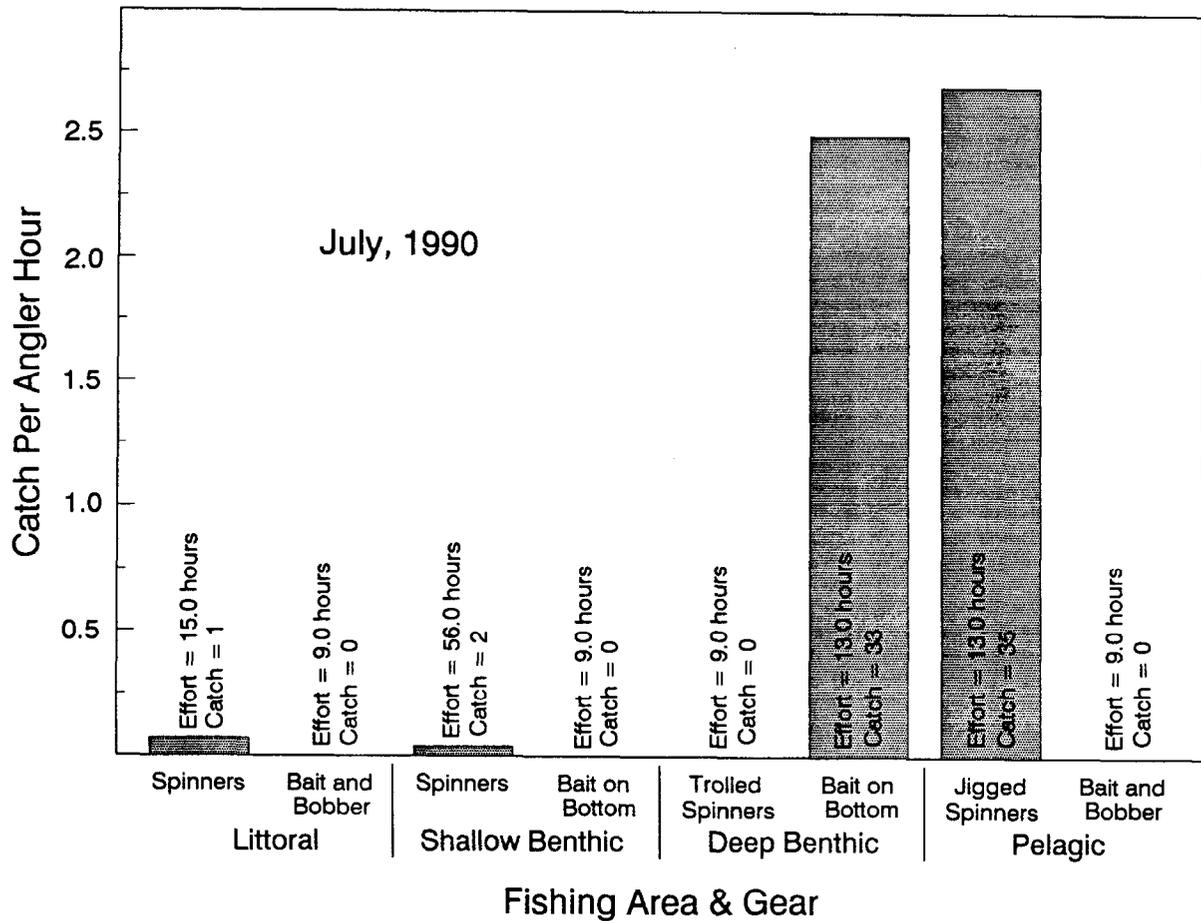


Figure 5. Catch per angler hour by type of terminal fishing gear and zone of the lake fished while experimentally angling at Harding Lake during summer, 1990.

Table 3. Proportion of fishing bouts at or above the threshold level of one fish per angler hour during experimental angling at Harding Lake during summer, 1990.

Part I. Hook and Line Sampling During July.

| Fishing Zone | Fisherman Location | Gear Type | Gear Location | Number of Bouts | Number of Successful Bouts | Proportion of Successful Bouts | |
|-----------------|--------------------|--------------------|--------------------------------|-----------------|----------------------------|--------------------------------|-----------------------|
| | | | | | | Estimate | 95% C.I. ^a |
| Littoral | Shore | Spinner | Shallow | 15 | 1 | 0.07 | 0.00-0.22 |
| Littoral | Shore | Bait & Bobber | Shallow | 9 | 0 | 0.00 | 0.00-0.34 |
| Shallow Benthic | Boat | Spinner | Shallow | 56 | 2 | 0.04 | 0.00-0.14 |
| Shallow Benthic | Boat | Bait | Bottom | 9 | 0 | 0.00 | 0.00-0.34 |
| Deep Benthic | Boat | Spinner | Trolling Deep With Down-Rigger | 9 | 0 | 0.00 | 0.00-0.34 |
| Deep Benthic | Boat | Bait | Bottom | 13 | 12 | 0.92 | 0.92-1.00 |
| Pelagic | Boat | Spinners (Jigging) | Deep | 13 | 13 | 1.00 | 0.99-1.00 |
| Pelagic | Boat | Bait & Bobber | Shallow | 9 | 0 | 0.00 | 0.00-0.34 |

Part II. Hook and Line Sampling During August.

| Fishing Zone | Fisherman Location | Gear Type | Gear Location | Number of Bouts | Number of Successful Bouts | Proportion of Successful Bouts | |
|-----------------|--------------------|--------------------|--------------------------------|-----------------|----------------------------|--------------------------------|-----------|
| | | | | | | Estimate | 95 % C.I. |
| Littoral | Shore | Spinner | Shallow | 10 | 0 | 0.00 | 0.00-0.31 |
| Littoral | Shore | Bait & Bobber | Shallow | 9 | 0 | 0.00 | 0.00-0.34 |
| Shallow Benthic | Boat | Spinner | Shallow | 80 | 9 | 0.11 | 0.05-0.21 |
| Shallow Benthic | Boat | Bait | Bottom | 11 | 1 | 0.09 | 0.00-0.41 |
| Deep Benthic | Boat | Spinner | Trolling Deep With Down-Rigger | 10 | 0 | 0.00 | 0.00-0.31 |
| Deep Benthic | Boat | Bait | Bottom | 11 | 9 | 0.82 | 0.47-0.90 |
| Pelagic | Boat | Spinners (Jigging) | Deep | 12 | 2 | 0.17 | 0.02-0.47 |
| Pelagic | Boat | Bait & Bobber | Shallow | 9 | 0 | 0.00 | 0.00-0.34 |

^a Confidence intervals around proportions are from Steele and Torrie (1960).

Table 4. Water depths, terminal fishing gear locations, fishing effort and catches made while experimental hook and line fishing at Harding Lake, 1989-1991.

| Sample Period | Water Depth (m) | Terminal Gear Location | Fishing Effort (hr) ^a | Total Catch By Species ^b |
|---------------|-----------------|------------------------|----------------------------------|-------------------------------------|
| Dec. '89 | 0 - 2 | surface | 7.0 | 1 AC |
| Dec. '89 | 2 - 5 | surface | 8.0 | 1 AC |
| Dec. '89 | 2 - 5 | mid-depth | 4.0 | 1 AC |
| Dec. '89 | 2 - 5 | bottom | 52.0 | 120 AC |
| Dec. '89 | 5 - 10 | surface | 2.0 | 2 AC |
| Dec. '89 | 5 - 10 | bottom | 27.0 | 51 AC |
| Dec. '89 | 10 - 20 | surface | 3.0 | 0 |
| Dec. '89 | 10 - 20 | bottom | 2.0 | 0 |
| July '90 | 0 - 5 | variable | 21.0 | 1 NP |
| July '90 | 5 - 10 | variable | 65.0 | 2 NP |
| July '90 | 10 - 30 | bottom | 22.0 | 33 AC |
| July '90 | 0 - 30 | surface - mid-depth | 21.0 | 35 AC |
| Aug. '90 | 0 - 5 | variable | 19.0 | 0 |
| Aug. '90 | 5 - 10 | variable | 91.0 | 9 NP, 2 RB |
| Aug. '90 | 10 - 30 | bottom | 19.0 | 12 AC |
| Aug. '90 | 0 - 30 | surface - mid-depth | 21.0 | 3 AC |
| Nov/Dec '90 | 0 - 2 | surface | 36.3 | 2 RB, 3 AC |
| Nov/Dec '90 | 0 - 2 | bottom | 35.0 | 1 RB, 7 AC |
| Nov/Dec '90 | 2 - 5 | surface | 11.0 | 2 AC |
| Nov/Dec '90 | 2 - 5 | mid-depth | 11.3 | 1 AC |
| Nov/Dec '90 | 2 - 5 | bottom | 17.3 | 8 AC |
| Nov/Dec '90 | 5 - 10 | surface | 19.3 | 0 |
| Nov/Dec '90 | 5 - 10 | 1/3 depth | 18.3 | 0 |
| Nov/Dec '90 | 5 - 10 | 2/3 depth | 17.7 | 5 AC |
| Nov/Dec '90 | 5 - 10 | bottom | 19.0 | 15 AC |
| Nov/Dec '90 | 10 - 20 | surface | 14.0 | 0 |
| Nov/Dec '90 | 10 - 20 | 1/3 depth | 12.7 | 0 |
| Nov/Dec '90 | 10 - 20 | 2/3 depth | 12.7 | 0 |
| Nov/Dec '90 | 10 - 20 | bottom | 15.0 | 2 AC |
| Nov/Dec '90 | 20 - 40 | surface | 8.7 | 0 |
| Nov/Dec '90 | 20 - 40 | 1/3 depth | 11.0 | 1 AC |
| Nov/Dec '90 | 20 - 40 | 2/3 depth | 7.3 | 1 AC |
| Nov/Dec '90 | 20 - 40 | bottom | 9.7 | 0 |

-continued-

Table 4. (Page 2 of 2).

| Sample Period | Water Depth (m) | Terminal Gear Location | Fishing Effort (hr) ^a | Total Catch By Species ^b |
|---------------|-----------------|------------------------|----------------------------------|-------------------------------------|
| April '91 | 0 - 2 | surface | 13.3 | 3 AC |
| April '91 | 0 - 2 | bottom | 10.0 | 0 |
| April '91 | 2 - 5 | surface | 10.3 | 2 AC |
| April '91 | 2 - 5 | mid-depth | 8.3 | 1 AC |
| April '91 | 2 - 5 | bottom | 21.7 | 1 NP, 7 AC |
| April '91 | 5 - 10 | surface | 10.0 | 1 AC |
| April '91 | 5 - 10 | 1/3 depth | 10.0 | 0 |
| April '91 | 5 - 10 | 2/3 depth | 10.0 | 0 |
| April '91 | 5 - 10 | bottom | 10.0 | 0 |
| April '91 | 10 - 20 | surface | 14.0 | 0 |
| April '91 | 10 - 20 | 1/3 depth | 14.0 | 0 |
| April '91 | 10 - 20 | 2/3 depth | 12.0 | 0 |
| April '91 | 10 - 20 | bottom | 12.0 | 0 |
| April '91 | 20 - 40 | surface | 4.0 | 0 |
| April '91 | 20 - 40 | 1/3 depth | 4.0 | 0 |
| April '91 | 20 - 40 | 2/3 depth | 6.0 | 0 |
| April '91 | 20 - 40 | bottom | 8.0 | 0 |
| Totals | | | 847.2 | 318 AC 5 RB 13 NP |

^a Descriptions of terminal gear types and amount of effort each gear type was fished are provided in Appendix Tables A through E.

^b Species are as follows: RB = rainbow trout, NP = northern pike, AC = Arctic char

1990, during 150 hours of angling, resulting in an overall CPUE of 0.17 fish per angler-hour.

The proportion of fishing bouts during July sampling with CPUE at or above a threshold of one fish per angler-hour was below 0.2 for all zone/gear combinations except bait fished off the bottom in water deeper than 10 m and spinners jigged in water 0 - 30 m deep (Figure 6). The upper 95% confidence limits of these low CPUE proportions exceed 0.2 in most cases, but are below 0.4 in all cases (Table 4). During August sampling, the proportion of fishing bouts with CPUE at or above the threshold was below 0.2 for all zone/gear combinations except bait fished off the bottom in water deeper than 10 m. While the upper 95% confidence limits for these low CPUE strata in August exceed 0.2, the upper confidence limits are below 0.5 in all cases (Table 4).

Winter Sampling, 1990-1991

Catch rates were highest for baited lures during angling that occurred in November and December, 1990 (Figure 7). Catch rates while angling with unbaited lures were generally higher than when using baited hooks. Catch rates when angling with green and orange lures were over twice the catch rate when using pink lures. Angling with salmon eggs produced the highest CPUE of the bait types used while use of shrimp resulted in a very low CPUE (0.02 fish per angler-hour), and use of corn resulted in zero catches during 29.7 angler-hours of effort.

The location fished while angling during November and December of 1990 with the highest overall CPUE was bottom in water 5 - 10 m deep. All depths had combined catch rates less than 1.0 and fishing at many depths was unsuccessful (Figure 6). In general, CPUE was lower near the surface than near the bottom, except in shallower water (Figure 7).

Most depths and gear combinations that were fished in November and December of 1990 resulted in zero catches (Appendix D). A total of 49 fish were caught during 277.2 hours of angling during November and December of 1990, resulting in an overall CPUE of 0.18 fish per angler-hour. Of the 49 fish caught, 47 (96%) were Arctic char and 2 (4%) were rainbow trout.

The catch rate when using baited lures (1.0 fish per angler-hour) was by far the highest of all gear types during April 1991, over 5 times higher than any other gear type (Figure 8). All other gear types resulted in catch rates below 0.2 fish per angler-hour. Of the lures used, green lures resulted in the highest CPUE, and of the baits used, shrimp and corn produced non-zero catches.

The depths fished during April of 1991 that resulted in the highest CPUE was near bottom in water 2 - 5 m deep. Most non-zero catches occurred at shallower depths, and only one depth sampled greater than 5 m resulted in non-zero catches (Figure 8).

Most depths and gear combinations fished in April of 1991, resulted in zero catches (Appendix E). A total of 15 fish were caught during 177.5 hours of angling during April of 1991, resulting in an overall CPUE of 0.08 fish per

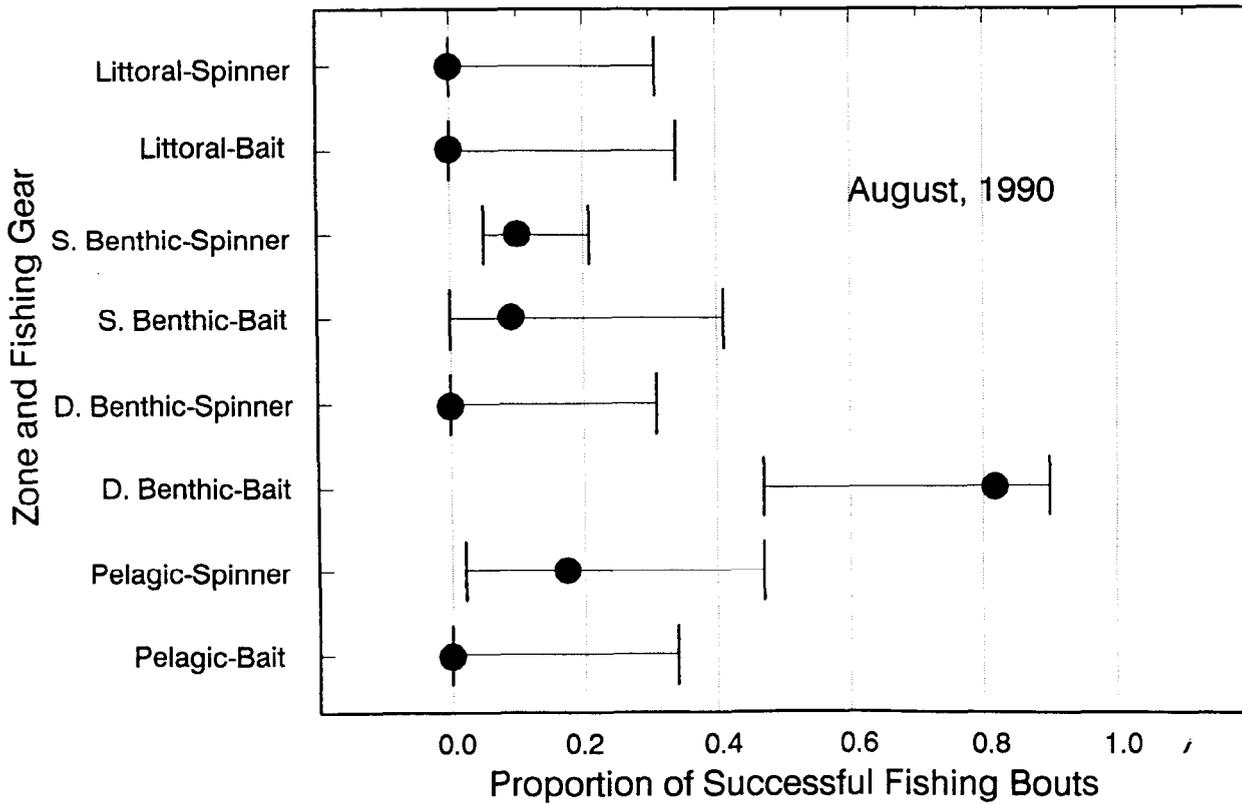
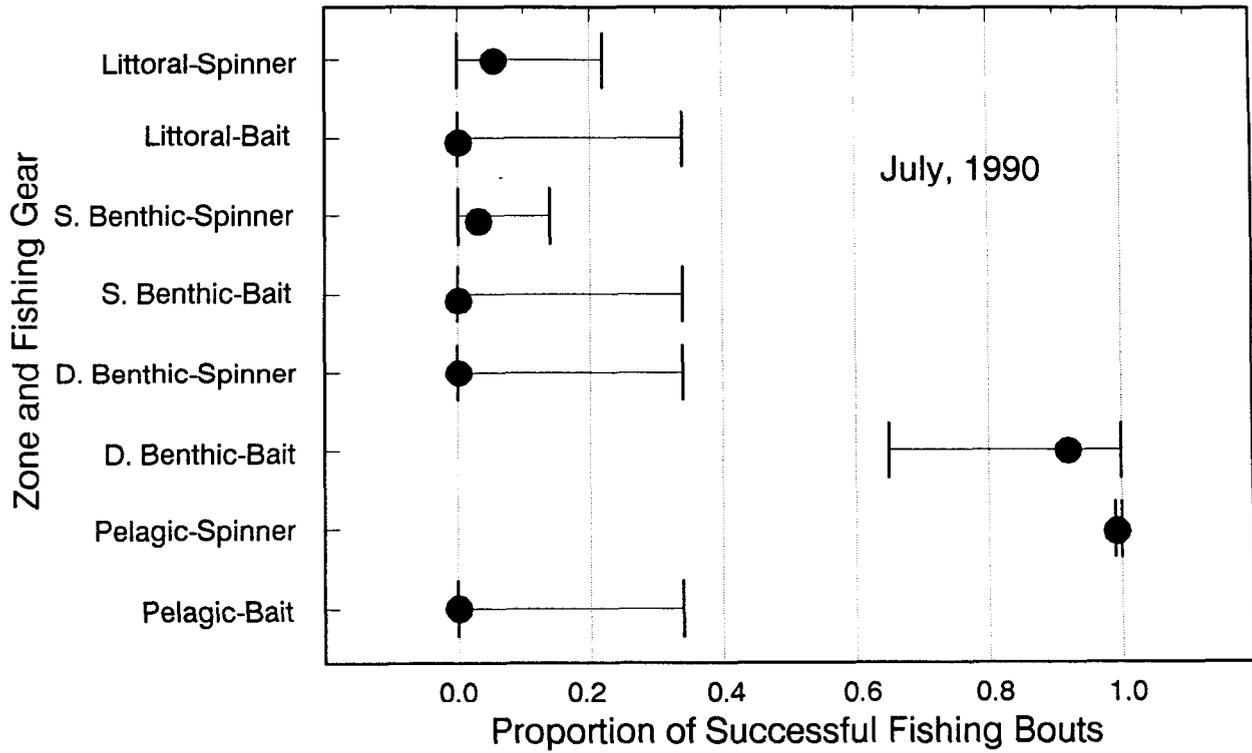


Figure 6. Proportion of successful fishing bouts for eight zone-gear combinations tested at Harding Lake during July and August, 1990 (bars represent the lower and upper 95% confidence interval; circles represent point estimates of the proportions).

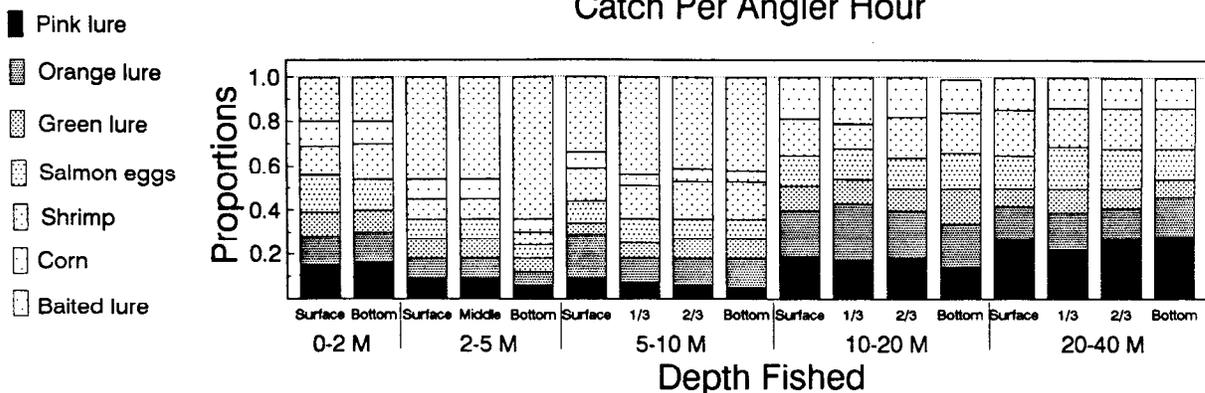
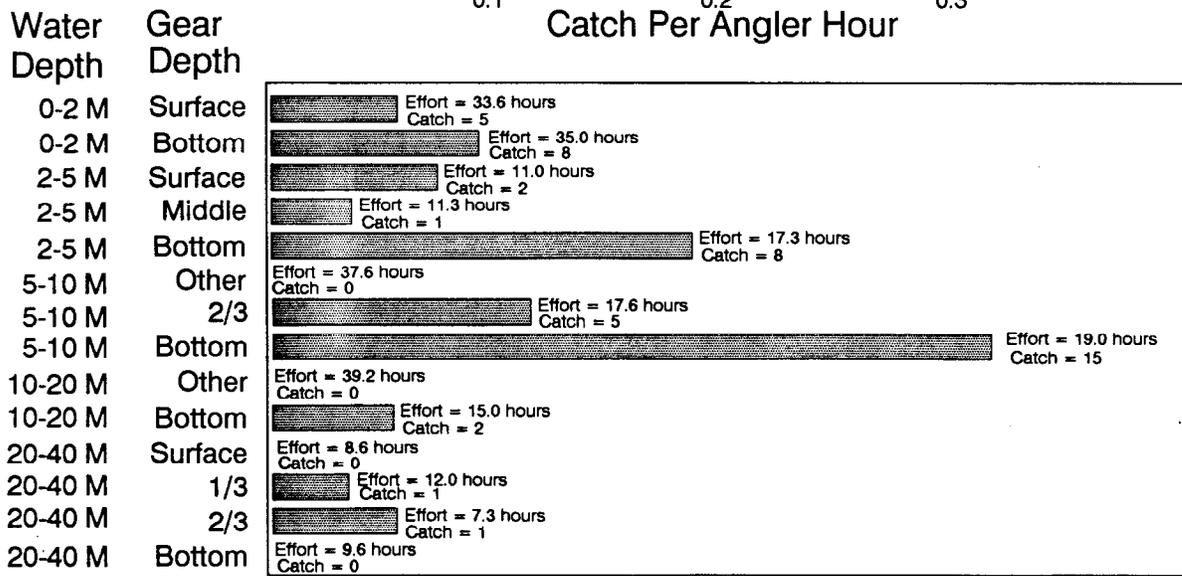
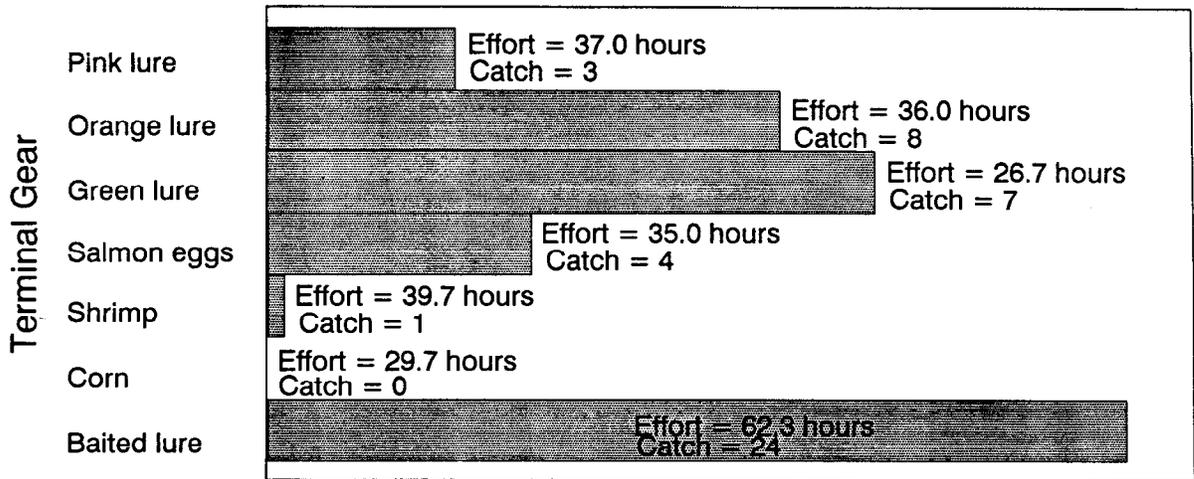


Figure 7. Catch per angler hour by gear type (upper panel) and by terminal gear depth (middle panel), and the proportional use of each type of gear at each depth (lower panel) for experimental hook and line fishing at Harding Lake during November and December, 1990.

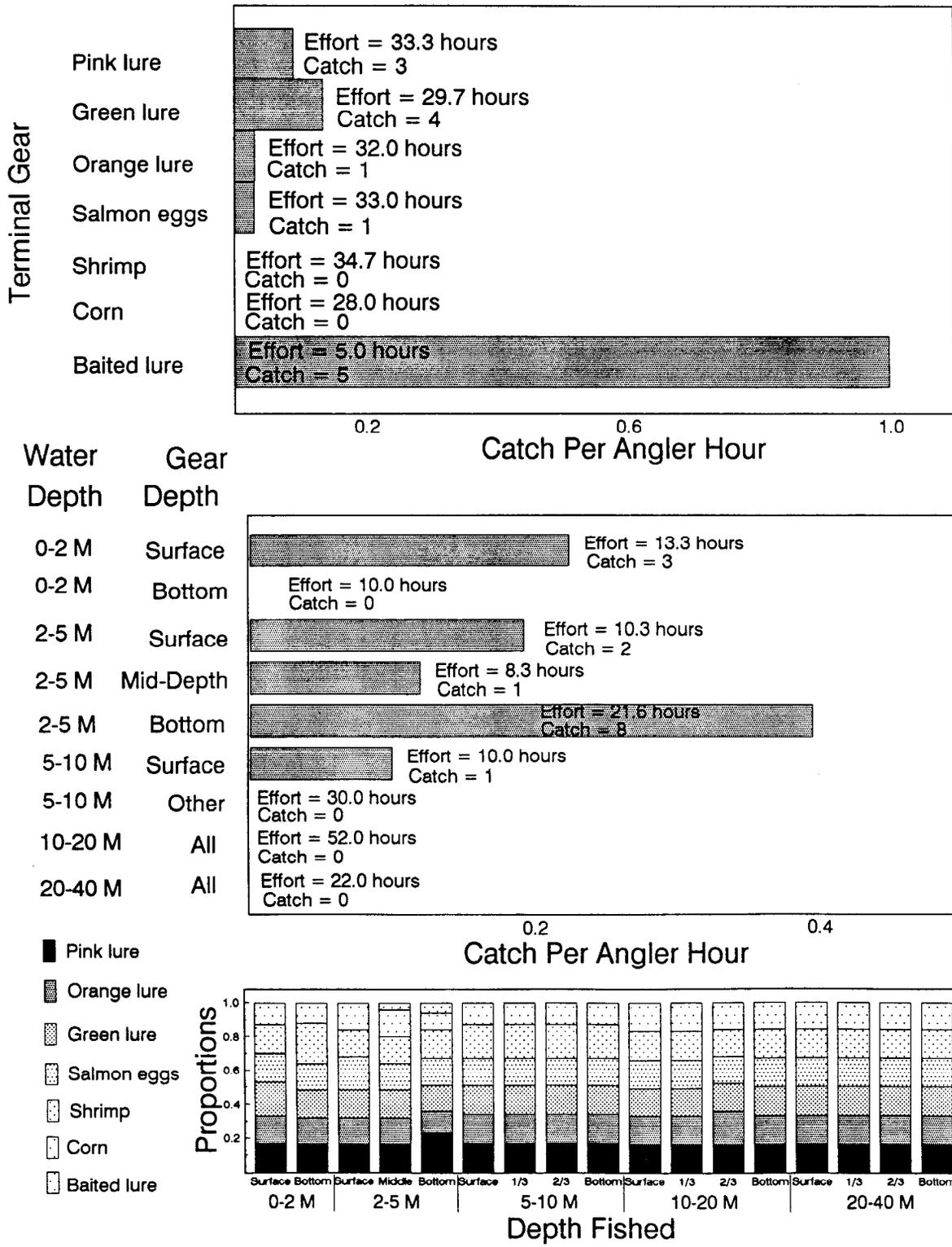


Figure 8. Catch per angler hour by gear type (upper panel) and by terminal gear depth (middle panel), and the proportional use of each type of gear at each depth (lower panel) for experimental hook and line fishing at Harding Lake during April, 1991.

angler-hour. Of the 15 fish caught, 14 (93%) were Arctic char and 1 (7%) was a northern pike.

DISCUSSION

Differences in CPUE between seasons (summer, winter) and years (1989, 1990, and 1991) were probably influenced by many factors including variations in the number of fish stocked, size at stocking, time of stocking, survival of stocked cohorts available to the fishery and fish behavior. It was not the intent of this study to relate variability in CPUE to causative factors, but rather to examine trends in CPUE as related to angling methods. Anglers cannot control for stocking and fish behavior, but they can greatly influence their CPUE by the gear they choose and the depths at which they seek fish. Results of this study are intended to guide the prospective angler in improving their CPUE for stocked fish at Harding Lake.

Catch rates during winter angling were highest for baited lures during all three sample periods. However, catch rates from almost all gear types fished during winter 1989 were higher than the catch rates achieved during winter 1990-91. This is probably because sampling effort was dispersed across various depths during the 1990-91 angling, whereas winter angling during 1989 was concentrated at those depths where Arctic char were being caught. The highest catch rates during 1989 angling occurred near the bottom in 2 - 5 m and 5 - 10 m of water and these depths also produced relatively high catch rates during winter 1990-91 sampling (Table 5). Because fewer depth categories were fished during the 1989 sampling, compared to the 1990-1991 winter sampling and because gear types were not equally applied among depths (Figures 4, 7, and 8), comparisons between the 1989 winter sampling and the 1990-91 winter sampling should be made with caution.

Among the various gear types used during winter sampling, lures produced slightly higher catch rates than baited hooks, but only during the angling events when effort was spread evenly across gear types and depths. Green lures produced slightly higher catch rates than other colors during all winter sampling events, however, these catch rates were only marginally higher for those sampling events when gear was spread relatively evenly across depths. While this study does not attempt to separate the effects of gear type and depth fished, the data do suggest that baited lures are more likely to catch fish in Harding Lake through the ice than plain baited hooks or unbaited lures. The data also indicate that angling success in the winter is likely to be best at depths between 2 and 10 m, and that winter angling at depths greater than 10 m is not likely to be successful.

The zone/gear combinations during the summer that resulted in the highest catch rates were fishing bait near bottom in water over 10 m deep and jigging spinners deep. While the catch rates that resulted from these zone/gear combinations were highest of all zone/gear combinations in both July and August, they were over twice as high in July as in August. The reason for these differential catch rates is probably due to the behavioral habits of Arctic char. Harding Lake water temperatures can reach over 20 degrees C

Table 5. Fishing effort, catches, and catch per hour by fishing location while experimental hook and line fishing at Harding Lake during winter (1989-1991) and summer (1990).

PART I. Winter Sampling.

| Water Depth | Gear Depth | Fishing Effort (hr) | Catch ^a | CPUE |
|-------------|------------|---------------------|--------------------|-------------------|
| 0 - 2 | Surface | 56.6 | 2 RB, 7 AC | 0.16 |
| 0 - 2 | Bottom | 45.0 | 1 RB, 7 AC | 0.2 |
| 2 - 5 | Surface | 29.3 | 5 AC | 0.2 |
| 2 - 5 | Mid-depth | 23.6 | 3 AC | 0.1 |
| 2 - 5 | Bottom | 91.0 | 1 NP, 135 AC | 1.5 |
| 5 - 10 | Surface | 31.3 | 3 AC | 0.1 |
| 5 - 10 | 1/3 depth | 23.3 | 0 | 0 |
| 5 - 10 | 2/3 depth | 27.6 | 5 AC | 0.2 |
| 5 - 10 | Bottom | 56.0 | 66 AC | 1.2 |
| 10 - 20 | Surface | 31.0 | 0 | 0 |
| 10 - 20 | 1/3 depth | 26.6 | 0 | 0 |
| 10 - 20 | 2/3 depth | 25.6 | 0 | 0 |
| 10 - 20 | Bottom | 27.0 | 2 AC | 0.1 |
| 20 - 40 | Surface | 12.6 | 0 | 0 |
| 20 - 40 | 1/3 depth | 16.0 | 1 AC | 0.1 |
| 20 - 40 | 2/3 depth | 13.3 | 1 AC | 0.1 |
| 20 - 40 | Bottom | 17.6 | 0 | 0 |
| Totals | | 553.4 | 1 NP, 3 RB, 235 AC | 0.43 ^b |

PART II. Summer Sampling.

| Water Depth | Gear Depth | Fishing Effort (hr) | Catch ^a | CPUE |
|-------------|------------|---------------------|--------------------|-------------------|
| 0 - 5 | Variable | 40.0 | 1 NP | 0.0 |
| 5 - 10 | Variable | 156.0 | 11 NP, 2 RB | 0.1 |
| 10 - 30 | Bottom | 41.0 | 45 AC | 1.1 |
| 0 - 30 | Mid-depth | 42.0 | 38 AC | 0.9 |
| Totals | | 279.0 | 12 NP, 2 RB, 83 AC | 0.35 ^b |

^a Catches are as follows; NP = northern pike, RB = rainbow trout, AC = Arctic char.

^b Total catch divided by total fishing effort.

during mid-summer, even down as deep as 4 m (LaPerriere et al. 1977), and Arctic char have a low tolerance for temperatures this high.

It is not clear why catch rates in the zone/gear combinations that did have high catch rates were so much higher in July than in August. Since all Arctic char caught during these sampling events were recently stocked in Harding Lake, it is possible that harvest of fish by the angling public between July and August reduced the number of available fish resulting in the lower catch rates. While catch rates differed between July and August, the data indicate that the best open water fishing at Harding Lake would be with bait off the bottom in 10 - 30 m of water, or jigging spinners in deep water. Although baited lures were not fished during summer sampling, judging by the gear types that had the highest catch rates during the winter, baited lures jigged deep would probably result in relatively high catch rates during the summer.

ACKNOWLEDGEMENTS

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APPENDIX A

Appendix A. Summary of effort and catches from experimental hook and line fishing at Harding Lake, Alaska, December, 1989.

| Lake Quadrant | Water Depth (m) | Gear Depth | Terminal Gear ^a | Bait Type | Effort (hours) | Catch ^b |
|------------------|--------------------|---------------|-------------------------------|--------------|-------------------|--------------------|
| 1 | 2 - 5 | surface | orange lure | none | 2.0 | 1 AC |
| 1 | 2 - 5 | surface | snelled hook | shrimp | 2.0 | 0 |
| 1 | 2 - 5 | mid-depth | pink lure | none | 1.0 | 1 AC |
| 1 | 2 - 5 | mid-depth | orange lure | none | 1.0 | 0 |
| 1 | 2 - 5 | mid-depth | snelled hook | shrimp | 2.0 | 0 |
| 1 | 2 - 5 | bottom | green lure | none | 4.0 | 10 AC |
| 1 | 2 - 5 | bottom | pink lure | shrimp | 5.0 | 18 AC |
| 1 | 2 - 5 | bottom | orange lure | none | 11.0 | 18 AC |
| 1 | 2 - 5 | bottom | snelled hook | salmon eggs | 3.0 | 10 AC |
| 1 | 2 - 5 | bottom | snelled hook | shrimp | 8.0 | 14 AC |
| 2 | 0 - 2 | surface | orange lure | none | 3.0 | 0 |
| 2 | 0 - 2 | surface | snelled hook | shrimp | 3.0 | 0 |
| 2 | 2 - 5 | surface | pink lure | none | 1.0 | 0 |
| 2 | 2 - 5 | surface | snelled hook | shrimp | 1.0 | 0 |
| 2 | 2 - 5 | surface | snelled hook | salmon eggs | 1.0 | 0 |
| 2 | 5 - 10 | surface | orange lure | none | 2.0 | 2 AC |
| 2 | 10 - 20 | surface | orange lure | none | 1.0 | 0 |
| 2 | 10 - 20 | surface | snelled hook | shrimp | 1.0 | 0 |
| 2 | 10 - 20 | surface | snelled hook | salmon eggs | 1.0 | 0 |
| 3 | 2 - 5 | bottom | orange lure | none | 6.0 | 13 AC |
| 3 | 2 - 5 | bottom | snelled hook | salmon eggs | 2.0 | 1 |
| 3 | 2 - 5 | bottom | snelled hook | shrimp | 2.0 | 7 |
| 3 | 5 - 10 | bottom | pink lure | none | 2.0 | 3 AC |
| 3 | 5 - 10 | bottom | orange lure | none | 4.0 | 14 AC |
| 3 | 5 - 10 | bottom | snelled hook | shrimp | 2.0 | 7 AC |
| 3 | 5 - 10 | bottom | snelled hook | salmon eggs | 2.0 | 6 AC |
| 4 | 0 - 2 | surface | snelled hook | shrimp | 1.0 | 1 AC |
| 4 | 2 - 5 | bottom | pink lure | none | 1.0 | 1 AC |
| 4 | 2 - 5 | bottom | orange lure | none | 3.7 | 5 AC |
| 4 | 2 - 5 | bottom | snelled hook | shrimp | 5.0 | 20 AC |
| 4 | 2 - 5 | bottom | snelled hook | salmon eggs | 1.0 | 3 AC |
| 4 | 5 - 10 | bottom | pink lure | none | 4.0 | 2 AC |
| 4 | 5 - 10 | bottom | orange lure | none | 7.0 | 10 AC |
| 4 | 5 - 10 | bottom | snelled hook | shrimp | 6.0 | 9 AC |
| 4 | 10 - 20 | bottom | pink lure | none | 1.0 | 0 |
| 4 | 10 - 20 | bottom | snelled hook | shrimp | 1.0 | 0 |
| Totals | | | | | 103.0 | 176 AC |

^a Terminal gear used was as follows: pink lure = pink mini-jig, # 8 barbed single hook; green lure = green pixie, # 6 barbed treble hook; orange lure = orange Gibbs Alaskan, # 6 barbed treble hook; snelled hook = # 8 barbed single hook.

^b Catches are as follows: AC = Arctic char, RB = rainbow trout, NP = northern pike.

APPENDIX B

Appendix B. Summary of effort and catches from experimental hook and line fishing at Harding Lake, Alaska, July, 1990.

| Zone and water depth (m) | Gear Type and Depth | Effort (hours) | Species Caught |
|--|-------------------------|----------------|----------------|
| Littoral (Shore based) (less than 5 m) | Spinners | 15 | 1 NP |
| | Bait (under bobber) | 9 | 0 |
| Shallow Benthic (Boat based) (less than 10 m) | Spinners | 56 | 2 NP |
| | Bait (off bottom) | 9 | 0 |
| Deep Benthic (Boat based) (greater than 10 m) | Down riggers (trolling) | 9 | 0 |
| | Bait (off bottom) | 13 | 33 AC |
| Pelagic (Boat based) | Spinners (jigging) | 13 | 35 AC |
| | Bait (under bobber) | 9 | 0 |
| Totals | | 133 | 3 NP 68 AC |

^a Gear types were as follows: spinners = orange Gibbs Alaskan or green Mepps Cyclops, all with # 6 barbed treble hooks; bait = salmon eggs or shrimp fished on a single # 8 barbed hook; Down riggers = spinners (see above) trolled behind a pink lady down rigger.

^b Catches are as follows: AC = Arctic char, RB = rainbow trout, NP = northern pike.

APPENDIX C

Appendix C. Summary of effort and catches from experimental hook and line fishing at Harding Lake, Alaska, August, 1990.

| Zone and water depth (m) | Gear Type ^a and Depth | Effort (hours) | Species Caught |
|--|----------------------------------|----------------|-----------------------|
| Littoral (Shore based) (less than 5 m) | Spinners | 10 | 0 |
| | Bait (under bobber) | 9 | 0 |
| Shallow Benthic (Boat based) (less than 10 m) | Spinners | 80 | 9 NP |
| | Bait (off bottom) | 11 | 2 RB |
| Deep Benthic (Boat based) (greater than 10 m) | Down riggers (trolling) | 10 | 0 |
| | Bait (off bottom) | 9 | 12 AC |
| Pelagic (Boat based) | Spinners (jigging) | 12 | 3 AC |
| | Bait (under bobber) | 9 | 0 |
| Totals | | | 9 NP 2 RB 15 AC |

^a Gear types were as follows: spinners = orange Gibbs Alaskan or green Mepps Cyclops, all with # 6 barbed treble hooks; bait = salmon eggs or shrimp fished on a single # 8 barbed hook; Down riggers = spinners (see above) trolled behind a pink lady down rigger.

^b Catches are as follows: AC = Arctic char, RB = rainbow trout, NP = northern pike.

APPENDIX D

Appendix D. Summary of effort and catches from experimental hook and line fishing at Harding Lake, Alaska, November-December, 1990.

| Lake Quadrant | Water Depth (m) | Gear Depth | Terminal Gear ^a | Bait Type | Effort (hours) | Catch ^b |
|------------------|--------------------|---------------|-------------------------------|--------------|-------------------|--------------------|
| 1 | 0 - 2 | surface | pink lure | salmon eggs | 0.3 | 0 |
| 1 | 0 - 2 | surface | orange lure | shrimp | 0.3 | 0 |
| 1 | 0 - 2 | bottom | pink lure | salmon eggs | 0.3 | 0 |
| 1 | 0 - 2 | bottom | orange lure | shrimp | 0.3 | 0 |
| 2 | 0 - 2 | surface | pink lure | none | 3.0 | 1 RB |
| 2 | 0 - 2 | surface | green lure | none | 0.7 | 0 |
| 2 | 0 - 2 | surface | orange lure | none | 2.3 | 1 AC, 1 RB |
| 2 | 0 - 2 | surface | snelled hook | salmon eggs | 2.7 | 0 |
| 2 | 0 - 2 | surface | snelled hook | shrimp | 2.7 | 0 |
| 2 | 0 - 2 | surface | snelled hook | corn | 0.7 | 0 |
| 2 | 0 - 2 | surface | orange lure | shrimp | 0.7 | 1 AC |
| 2 | 0 - 2 | surface | pink lure | salmon eggs | 0.3 | 1 AC |
| 2 | 0 - 2 | bottom | pink lure | none | 2.3 | 1 AC |
| 2 | 0 - 2 | bottom | green lure | none | 0.7 | 0 |
| 2 | 0 - 2 | bottom | orange lure | none | 1.3 | 0 |
| 2 | 0 - 2 | bottom | snelled hook | salmon eggs | 3.0 | 4 AC |
| 2 | 0 - 2 | bottom | snelled hook | shrimp | 1.3 | 0 |
| 2 | 0 - 2 | bottom | snelled hook | corn | 0.3 | 0 |
| 2 | 0 - 2 | bottom | orange lure | shrimp | 1.3 | 0 |
| 2 | 0 - 2 | bottom | pink lure | shrimp | 0.7 | 1 RB |
| 3 | 0 - 2 | surface | pink lure | none | 1.0 | 0 |
| 3 | 0 - 2 | surface | green lure | none | 1.3 | 0 |
| 3 | 0 - 2 | surface | orange lure | none | 1.3 | 0 |
| 3 | 0 - 2 | surface | snelled hook | salmon eggs | 1.0 | 0 |
| 3 | 0 - 2 | surface | snelled hook | shrimp | 1.3 | 0 |
| 3 | 0 - 2 | surface | snelled hook | corn | 1.3 | 0 |
| 3 | 0 - 2 | surface | pink lure | salmon eggs | 0.7 | 0 |
| 3 | 0 - 2 | surface | green lure | salmon eggs | 0.7 | 0 |
| 3 | 0 - 2 | surface | green lure | shrimp | 0.7 | 0 |
| 3 | 0 - 2 | bottom | pink lure | none | 1.3 | 0 |
| 3 | 0 - 2 | bottom | green lure | none | 1.3 | 0 |
| 3 | 0 - 2 | bottom | orange lure | none | 1.3 | 1 AC |
| 3 | 0 - 2 | bottom | snelled hook | salmon eggs | 1.3 | 0 |
| 3 | 0 - 2 | bottom | snelled hook | shrimp | 1.3 | 0 |
| 3 | 0 - 2 | bottom | snelled hook | corn | 1.3 | 0 |
| 3 | 0 - 2 | bottom | pink lure | salmon eggs | 0.7 | 0 |
| 3 | 0 - 2 | bottom | green lure | salmon eggs | 0.7 | 0 |
| 3 | 0 - 2 | bottom | green lure | shrimp | 0.7 | 0 |
| 4 | 0 - 2 | surface | pink lure | none | 1.7 | 0 |
| 4 | 0 - 2 | surface | green lure | none | 1.7 | 0 |
| 4 | 0 - 2 | surface | orange lure | none | 1.7 | 0 |
| 4 | 0 - 2 | surface | snelled hook | salmon eggs | 1.7 | 0 |
| 4 | 0 - 2 | surface | snelled hook | shrimp | 1.7 | 0 |

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Appendix D. (Page 2 of 10).

| Lake Quadrant | Water Depth (m) | Gear Depth | Terminal Gear ^a | Bait Type | Effort (hours) | Catch ^b |
|------------------|--------------------|---------------|-------------------------------|--------------|-------------------|--------------------|
| 4 | 0 - 2 | surface | snelled hook | corn | 1.7 | 0 |
| 4 | 0 - 2 | surface | pink lure | shrimp | 1.7 | 0 |
| 4 | 0 - 2 | surface | green lure | shrimp | 1.7 | 0 |
| 4 | 0 - 2 | bottom | pink lure | none | 1.7 | 0 |
| 4 | 0 - 2 | bottom | green lure | none | 1.7 | 1 AC |
| 4 | 0 - 2 | bottom | orange lure | none | 1.7 | 0 |
| 4 | 0 - 2 | bottom | snelled hook | salmon eggs | 1.7 | 0 |
| 4 | 0 - 2 | bottom | snelled hook | shrimp | 1.7 | 0 |
| 4 | 0 - 2 | bottom | snelled hook | corn | 1.7 | 0 |
| 4 | 0 - 2 | bottom | pink lure | shrimp | 1.7 | 0 |
| 4 | 0 - 2 | bottom | green lure | shrimp | 1.7 | 0 |
| 1 | 2 - 5 | surface | orange lure | shrimp | 0.7 | 0 |
| 1 | 2 - 5 | surface | pink lure | salmon eggs | 0.7 | 0 |
| 1 | 2 - 5 | mid-depth | orange lure | shrimp | 0.7 | 0 |
| 1 | 2 - 5 | mid-depth | pink lure | salmon eggs | 0.7 | 0 |
| 1 | 2 - 5 | bottom | orange lure | shrimp | 0.7 | 0 |
| 1 | 2 - 5 | bottom | pink lure | salmon eggs | 0.7 | 0 |
| 2 | 2 - 5 | surface | pink lure | none | 0.3 | 0 |
| 2 | 2 - 5 | surface | green lure | none | 0.3 | 0 |
| 2 | 2 - 5 | surface | orange lure | none | 0.3 | 0 |
| 2 | 2 - 5 | surface | snelled hook | salmon eggs | 0.3 | 0 |
| 2 | 2 - 5 | surface | snelled hook | shrimp | 0.3 | 0 |
| 2 | 2 - 5 | surface | snelled hook | corn | 0.3 | 0 |
| 2 | 2 - 5 | surface | pink lure | shrimp | 0.7 | 0 |
| 2 | 2 - 5 | surface | orange lure | shrimp | 1.3 | 2 AC |
| 2 | 2 - 5 | surface | pink lure | shrimp | 0.3 | 0 |
| 2 | 2 - 5 | mid-depth | pink lure | none | 0.3 | 0 |
| 2 | 2 - 5 | mid-depth | green lure | none | 0.3 | 0 |
| 2 | 2 - 5 | mid-depth | orange lure | none | 0.3 | 0 |
| 2 | 2 - 5 | mid-depth | snelled hook | salmon eggs | 0.3 | 0 |
| 2 | 2 - 5 | mid-depth | snelled hook | shrimp | 0.3 | 0 |
| 2 | 2 - 5 | mid-depth | snelled hook | corn | 0.3 | 0 |
| 2 | 2 - 5 | mid-depth | pink lure | shrimp | 0.7 | 0 |
| 2 | 2 - 5 | mid-depth | orange lure | shrimp | 1.3 | 1 AC |
| 2 | 2 - 5 | mid-depth | pink lure | salmon eggs | 0.7 | 0 |
| 2 | 2 - 5 | bottom | pink lure | none | 0.3 | 0 |
| 2 | 2 - 5 | bottom | green lure | none | 0.3 | 0 |
| 2 | 2 - 5 | bottom | orange lure | none | 0.3 | 0 |
| 2 | 2 - 5 | bottom | snelled hook | salmon eggs | 0.3 | 0 |
| 2 | 2 - 5 | bottom | snelled hook | shrimp | 0.3 | 0 |
| 2 | 2 - 5 | bottom | snelled hook | corn | 0.3 | 0 |
| 2 | 2 - 5 | bottom | pink lure | shrimp | 2.0 | 1 AC |
| 2 | 2 - 5 | bottom | orange lure | shrimp | 1.3 | 4 AC |
| 2 | 2 - 5 | bottom | pink lure | salmon eggs | 5.3 | 2 AC |

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Appendix D. (Page 3 of 10).

| Lake Quadrant | Water Depth (m) | Gear Depth | Terminal Gear ^a | Bait Type | Effort (hours) | Catch ^b |
|------------------|--------------------|---------------|-------------------------------|--------------|-------------------|--------------------|
| 3 | 2 - 5 | surface | pink lure | none | 0.3 | 0 |
| 3 | 2 - 5 | surface | green lure | none | 0.3 | 0 |
| 3 | 2 - 5 | surface | orange lure | none | 0.3 | 0 |
| 3 | 2 - 5 | surface | snelled hook | salmon eggs | 0.3 | 0 |
| 3 | 2 - 5 | surface | snelled hook | shrimp | 0.3 | 0 |
| 3 | 2 - 5 | surface | snelled hook | corn | 0.3 | 0 |
| 3 | 2 - 5 | surface | pink lure | shrimp | 0.3 | 0 |
| 3 | 2 - 5 | surface | green lure | shrimp | 0.3 | 0 |
| 3 | 2 - 5 | mid-depth | pink lure | none | 0.3 | 0 |
| 3 | 2 - 5 | mid-depth | green lure | none | 0.3 | 0 |
| 3 | 2 - 5 | mid-depth | orange lure | none | 0.3 | 0 |
| 3 | 2 - 5 | mid-depth | snelled hook | salmon eggs | 0.3 | 0 |
| 3 | 2 - 5 | mid-depth | snelled hook | shrimp | 0.3 | 0 |
| 3 | 2 - 5 | mid-depth | snelled hook | corn | 0.3 | 0 |
| 3 | 2 - 5 | mid-depth | pink lure | shrimp | 0.3 | 0 |
| 3 | 2 - 5 | mid-depth | green lure | shrimp | 0.3 | 0 |
| 3 | 2 - 5 | bottom | pink lure | none | 0.3 | 0 |
| 3 | 2 - 5 | bottom | green lure | none | 0.3 | 0 |
| 3 | 2 - 5 | bottom | orange lure | none | 0.3 | 0 |
| 3 | 2 - 5 | bottom | snelled hook | salmon eggs | 0.3 | 0 |
| 3 | 2 - 5 | bottom | snelled hook | shrimp | 0.3 | 0 |
| 3 | 2 - 5 | bottom | snelled hook | corn | 0.3 | 0 |
| 3 | 2 - 5 | bottom | pink lure | shrimp | 0.3 | 0 |
| 3 | 2 - 5 | bottom | green lure | shrimp | 0.3 | 1 AC |
| 4 | 2 - 5 | surface | pink lure | none | 0.3 | 0 |
| 4 | 2 - 5 | surface | green lure | none | 0.3 | 0 |
| 4 | 2 - 5 | surface | orange lure | none | 0.3 | 0 |
| 4 | 2 - 5 | surface | snelled hook | salmon eggs | 0.3 | 0 |
| 4 | 2 - 5 | surface | snelled hook | shrimp | 0.3 | 0 |
| 4 | 2 - 5 | surface | snelled hook | corn | 0.3 | 0 |
| 4 | 2 - 5 | surface | pink lure | shrimp | 0.3 | 0 |
| 4 | 2 - 5 | surface | green lure | shrimp | 0.3 | 0 |
| 4 | 2 - 5 | mid-depth | pink lure | none | 0.3 | 0 |
| 4 | 2 - 5 | mid-depth | green lure | none | 0.3 | 0 |
| 4 | 2 - 5 | mid-depth | orange lure | none | 0.3 | 0 |
| 4 | 2 - 5 | mid-depth | snelled hook | salmon eggs | 0.3 | 0 |
| 4 | 2 - 5 | mid-depth | snelled hook | shrimp | 0.3 | 0 |
| 4 | 2 - 5 | mid-depth | snelled hook | corn | 0.3 | 0 |
| 4 | 2 - 5 | mid-depth | pink lure | shrimp | 0.3 | 0 |
| 4 | 2 - 5 | mid-depth | green lure | shrimp | 0.3 | 0 |
| 4 | 2 - 5 | bottom | pink lure | none | 0.3 | 0 |
| 4 | 2 - 5 | bottom | green lure | none | 0.3 | 0 |
| 4 | 2 - 5 | bottom | orange lure | none | 0.3 | 0 |
| 4 | 2 - 5 | bottom | snelled hook | salmon eggs | 0.3 | 0 |

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Appendix D. (Page 4 of 10).

| Lake Quadrant | Water Depth (m) | Gear Depth | Terminal Gear ^a | Bait Type | Effort (hours) | Catch ^b |
|------------------|--------------------|---------------|-------------------------------|--------------|-------------------|--------------------|
| 4 | 2 - 5 | bottom | snelled hook | shrimp | 0.3 | 0 |
| 4 | 2 - 5 | bottom | snelled hook | corn | 0.3 | 0 |
| 4 | 2 - 5 | bottom | pink lure | salmon eggs | 0.3 | 0 |
| 4 | 2 - 5 | bottom | green lure | salmon eggs | 0.3 | 0 |
| 1 | 5 - 10 | surface | pink lure | none | 0.3 | 0 |
| 1 | 5 - 10 | surface | orange lure | none | 0.3 | 0 |
| 1 | 5 - 10 | surface | snelled hook | salmon eggs | 0.3 | 0 |
| 1 | 5 - 10 | surface | snelled hook | shrimp | 0.3 | 0 |
| 1 | 5 - 10 | surface | pink lure | shrimp | 0.7 | 0 |
| 1 | 5 - 10 | surface | orange lure | shrimp | 0.7 | 0 |
| 1 | 5 - 10 | 1/3-depth | pink lure | none | 0.3 | 0 |
| 1 | 5 - 10 | 1/3-depth | green lure | none | 0.3 | 0 |
| 1 | 5 - 10 | 1/3-depth | orange lure | none | 0.7 | 0 |
| 1 | 5 - 10 | 1/3-depth | snelled hook | salmon eggs | 0.7 | 0 |
| 1 | 5 - 10 | 1/3-depth | snelled hook | shrimp | 0.7 | 0 |
| 1 | 5 - 10 | 1/3-depth | pink lure | shrimp | 1.3 | 0 |
| 1 | 5 - 10 | 1/3-depth | orange lure | shrimp | 0.7 | 0 |
| 1 | 5 - 10 | 1/3-depth | pink lure | salmon eggs | 0.7 | 0 |
| 1 | 5 - 10 | 2/3 depth | green lure | none | 0.3 | 0 |
| 1 | 5 - 10 | 2/3 depth | orange lure | none | 0.3 | 0 |
| 1 | 5 - 10 | 2/3 depth | snelled hook | salmon eggs | 0.3 | 0 |
| 1 | 5 - 10 | 2/3 depth | snelled hook | shrimp | 0.3 | 0 |
| 1 | 5 - 10 | 2/3 depth | pink lure | salmon eggs | 0.7 | 0 |
| 1 | 5 - 10 | 2/3 depth | orange lure | shrimp | 0.7 | 0 |
| 1 | 5 - 10 | bottom | orange lure | none | 1.0 | 3 AC |
| 1 | 5 - 10 | bottom | snelled hook | salmon eggs | 0.3 | 0 |
| 1 | 5 - 10 | bottom | snelled hook | shrimp | 0.7 | 0 |
| 1 | 5 - 10 | bottom | pink lure | shrimp | 0.7 | 0 |
| 1 | 5 - 10 | bottom | pink lure | salmon eggs | 1.3 | 0 |
| 1 | 5 - 10 | bottom | orange lure | shrimp | 0.7 | 0 |
| 2 | 5 - 10 | surface | pink lure | none | 0.7 | 0 |
| 2 | 5 - 10 | surface | green lure | none | 0.3 | 0 |
| 2 | 5 - 10 | surface | orange lure | none | 2.7 | 0 |
| 2 | 5 - 10 | surface | snelled hook | salmon eggs | 1.0 | 0 |
| 2 | 5 - 10 | surface | snelled hook | shrimp | 1.0 | 0 |
| 2 | 5 - 10 | surface | snelled hook | corn | 0.7 | 0 |
| 2 | 5 - 10 | surface | pink lure | shrimp | 1.3 | 0 |
| 2 | 5 - 10 | surface | pink lure | salmon eggs | 2.0 | 0 |
| 2 | 5 - 10 | 1/3 depth | pink lure | none | 0.3 | 0 |
| 2 | 5 - 10 | 1/3 depth | green lure | none | 0.3 | 0 |
| 2 | 5 - 10 | 1/3 depth | orange lure | none | 0.7 | 0 |
| 2 | 5 - 10 | 1/3 depth | snelled hook | salmon eggs | 0.7 | 0 |
| 2 | 5 - 10 | 1/3 depth | snelled hook | shrimp | 0.3 | 0 |
| 2 | 5 - 10 | 1/3 depth | snelled hook | corn | 0.3 | 0 |

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Appendix D. (Page 5 of 10).

| Lake Quadrant | Water Depth (m) | Gear Depth | Terminal Gear ^a | Bait Type | Effort (hours) | Catch ^b |
|------------------|--------------------|---------------|-------------------------------|--------------|-------------------|--------------------|
| 2 | 5 - 10 | 1/3 depth | pink lure | shrimp | 1.3 | 0 |
| 2 | 5 - 10 | 1/3 depth | pink lure | salmon eggs | 1.3 | 0 |
| 2 | 5 - 10 | 1/3 depth | green lure | salmon eggs | 0.7 | 0 |
| 2 | 5 - 10 | 2/3 depth | pink lure | none | 0.3 | 0 |
| 2 | 5 - 10 | 2/3 depth | green lure | none | 0.7 | 1 AC |
| 2 | 5 - 10 | 2/3 depth | orange lure | none | 1.0 | 1 AC |
| 2 | 5 - 10 | 2/3 depth | snelled hook | salmon eggs | 0.7 | 0 |
| 2 | 5 - 10 | 2/3 depth | snelled hook | shrimp | 1.0 | 0 |
| 2 | 5 - 10 | 2/3 depth | snelled hook | corn | 0.3 | 0 |
| 2 | 5 - 10 | 2/3 depth | pink lure | shrimp | 1.3 | 0 |
| 2 | 5 - 10 | 2/3 depth | pink lure | salmon eggs | 2.0 | 3 AC |
| 2 | 5 - 10 | 2/3 depth | orange lure | salmon eggs | 0.7 | 0 |
| 2 | 5 - 10 | bottom | pink lure | none | 0.3 | 1 AC |
| 2 | 5 - 10 | bottom | green lure | none | 1.0 | 3 AC |
| 2 | 5 - 10 | bottom | orange lure | none | 0.7 | 0 |
| 2 | 5 - 10 | bottom | snelled hook | salmon eggs | 0.7 | 0 |
| 2 | 5 - 10 | bottom | snelled hook | shrimp | 1.0 | 0 |
| 2 | 5 - 10 | bottom | snelled hook | corn | 0.3 | 0 |
| 2 | 5 - 10 | bottom | pink lure | shrimp | 1.3 | 2 AC |
| 2 | 5 - 10 | bottom | pink lure | salmon eggs | 0.7 | 2 AC |
| 2 | 5 - 10 | bottom | orange lure | shrimp | 1.3 | 4 AC |
| 3 | 5 - 10 | surface | pink lure | none | 0.3 | 0 |
| 3 | 5 - 10 | surface | green lure | none | 0.3 | 0 |
| 3 | 5 - 10 | surface | orange lure | none | 0.3 | 0 |
| 3 | 5 - 10 | surface | snelled hook | salmon eggs | 0.3 | 0 |
| 3 | 5 - 10 | surface | snelled hook | shrimp | 1.3 | 0 |
| 3 | 5 - 10 | surface | snelled hook | corn | 0.3 | 0 |
| 3 | 5 - 10 | surface | green lure | salmon eggs | 0.7 | 0 |
| 3 | 5 - 10 | 1/3 depth | pink lure | none | 0.3 | 0 |
| 3 | 5 - 10 | 1/3 depth | green lure | none | 0.3 | 0 |
| 3 | 5 - 10 | 1/3 depth | orange lure | none | 0.3 | 0 |
| 3 | 5 - 10 | 1/3 depth | snelled hook | salmon eggs | 0.3 | 0 |
| 3 | 5 - 10 | 1/3 depth | snelled hook | shrimp | 1.3 | 0 |
| 3 | 5 - 10 | 1/3 depth | snelled hook | corn | 0.3 | 0 |
| 3 | 5 - 10 | 1/3 depth | green lure | salmon eggs | 0.7 | 0 |
| 3 | 5 - 10 | 2/3 depth | pink lure | none | 0.3 | 0 |
| 3 | 5 - 10 | 2/3 depth | green lure | none | 0.3 | 0 |
| 3 | 5 - 10 | 2/3 depth | orange lure | none | 0.3 | 0 |
| 3 | 5 - 10 | 2/3 depth | snelled hook | salmon eggs | 0.3 | 0 |
| 3 | 5 - 10 | 2/3 depth | snelled hook | shrimp | 1.3 | 0 |
| 3 | 5 - 10 | 2/3 depth | snelled hook | corn | 0.3 | 0 |
| 3 | 5 - 10 | 2/3 depth | green lure | salmon eggs | 0.7 | 0 |
| 3 | 5 - 10 | bottom | pink lure | none | 0.3 | 0 |

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Appendix D. (Page 6 of 10).

| Lake Quadrant | Water Depth (m) | Gear Depth | Terminal Gear ^a | Bait Type | Effort (hours) | Catch ^b |
|------------------|--------------------|---------------|-------------------------------|--------------|-------------------|--------------------|
| 3 | 5 - 10 | bottom | green lure | none | 0.3 | 0 |
| 3 | 5 - 10 | bottom | orange lure | none | 0.3 | 0 |
| 3 | 5 - 10 | bottom | snelled hook | salmon eggs | 0.3 | 0 |
| 3 | 5 - 10 | bottom | snelled hook | shrimp | 1.3 | 0 |
| 3 | 5 - 10 | bottom | snelled hook | corn | 0.3 | 0 |
| 3 | 5 - 10 | bottom | green lure | salmon eggs | 0.7 | 0 |
| 4 | 5 - 10 | surface | pink lure | none | 0.3 | 0 |
| 4 | 5 - 10 | surface | green lure | none | 0.3 | 0 |
| 4 | 5 - 10 | surface | orange lure | none | 0.3 | 0 |
| 4 | 5 - 10 | surface | snelled hook | salmon eggs | 0.3 | 0 |
| 4 | 5 - 10 | surface | snelled hook | shrimp | 0.3 | 0 |
| 4 | 5 - 10 | surface | snelled hook | corn | 0.3 | 0 |
| 4 | 5 - 10 | surface | pink lure | shrimp | 0.7 | 0 |
| 4 | 5 - 10 | surface | green lure | shrimp | 0.7 | 0 |
| 4 | 5 - 10 | 1/3 depth | pink lure | none | 0.3 | 0 |
| 4 | 5 - 10 | 1/3 depth | green lure | none | 0.3 | 0 |
| 4 | 5 - 10 | 1/3 depth | orange lure | none | 0.3 | 0 |
| 4 | 5 - 10 | 1/3 depth | snelled hook | salmon eggs | 0.3 | 0 |
| 4 | 5 - 10 | 1/3 depth | snelled hook | shrimp | 0.3 | 0 |
| 4 | 5 - 10 | 1/3 depth | snelled hook | corn | 0.3 | 0 |
| 4 | 5 - 10 | 1/3 depth | pink lure | shrimp | 0.7 | 0 |
| 4 | 5 - 10 | 1/3 depth | green lure | shrimp | 0.7 | 0 |
| 4 | 5 - 10 | 2/3 depth | pink lure | none | 0.3 | 0 |
| 4 | 5 - 10 | 2/3 depth | green lure | none | 0.3 | 0 |
| 4 | 5 - 10 | 2/3 depth | orange lure | none | 0.3 | 0 |
| 4 | 5 - 10 | 2/3 depth | snelled hook | salmon eggs | 0.3 | 0 |
| 4 | 5 - 10 | 2/3 depth | snelled hook | shrimp | 0.3 | 0 |
| 4 | 5 - 10 | 2/3 depth | snelled hook | corn | 0.3 | 0 |
| 4 | 5 - 10 | 2/3 depth | pink lure | shrimp | 0.7 | 0 |
| 4 | 5 - 10 | 2/3 depth | green lure | shrimp | 0.7 | 0 |
| 4 | 5 - 10 | bottom | pink lure | none | 0.3 | 0 |
| 4 | 5 - 10 | bottom | green lure | none | 0.3 | 0 |
| 4 | 5 - 10 | bottom | orange lure | none | 0.3 | 0 |
| 4 | 5 - 10 | bottom | snelled hook | salmon eggs | 0.3 | 0 |
| 4 | 5 - 10 | bottom | snelled hook | shrimp | 0.3 | 0 |
| 4 | 5 - 10 | bottom | snelled hook | corn | 0.3 | 0 |
| 4 | 5 - 10 | bottom | pink lure | shrimp | 0.7 | 0 |
| 4 | 5 - 10 | bottom | green lure | shrimp | 0.7 | 0 |
| 1 | 10 - 20 | surface | pink lure | none | 1.0 | 0 |
| 1 | 10 - 20 | surface | orange lure | none | 2.0 | 0 |
| 1 | 10 - 20 | surface | snelled hook | salmon eggs | 1.0 | 0 |
| 1 | 10 - 20 | surface | snelled hook | shrimp | 1.0 | 0 |
| 1 | 10 - 20 | surface | snelled hook | corn | 1.0 | 0 |
| 1 | 10 - 20 | 1/3 depth | pink lure | none | 1.0 | 0 |

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Appendix D. (Page 7 of 10).

| Lake Quadrant | Water Depth (m) | Gear Depth | Terminal Gear ^a | Bait Type | Effort (hours) | Catch ^b |
|------------------|--------------------|---------------|-------------------------------|--------------|-------------------|--------------------|
| 1 | 10 - 20 | 1/3 depth | orange lure | none | 2.0 | 0 |
| 1 | 10 - 20 | 1/3 depth | snelled hook | salmon eggs | 1.0 | 0 |
| 1 | 10 - 20 | 1/3 depth | snelled hook | shrimp | 1.0 | 0 |
| 1 | 10 - 20 | 1/3 depth | snelled hook | corn | 1.0 | 0 |
| 1 | 10 - 20 | 2/3 depth | pink lure | none | 1.0 | 0 |
| 1 | 10 - 20 | 2/3 depth | orange lure | none | 2.0 | 0 |
| 1 | 10 - 20 | 2/3 depth | snelled hook | salmon eggs | 1.0 | 0 |
| 1 | 10 - 20 | 2/3 depth | snelled hook | shrimp | 1.0 | 0 |
| 1 | 10 - 20 | 2/3 depth | snelled hook | corn | 1.0 | 0 |
| 1 | 10 - 20 | bottom | pink lure | none | 1.0 | 0 |
| 1 | 10 - 20 | bottom | orange lure | none | 2.0 | 0 |
| 1 | 10 - 20 | bottom | green lure | none | 0.3 | 1 AC |
| 1 | 10 - 20 | bottom | snelled hook | salmon eggs | 1.0 | 0 |
| 1 | 10 - 20 | bottom | snelled hook | shrimp | 1.0 | 0 |
| 1 | 10 - 20 | bottom | snelled hook | corn | 1.0 | 0 |
| 2 | 10 - 20 | surface | pink lure | none | 0.7 | 0 |
| 2 | 10 - 20 | surface | green lure | none | 1.0 | 0 |
| 2 | 10 - 20 | surface | orange lure | none | 0.3 | 0 |
| 2 | 10 - 20 | surface | snelled hook | salmon eggs | 0.3 | 0 |
| 2 | 10 - 20 | surface | snelled hook | shrimp | 0.7 | 0 |
| 2 | 10 - 20 | surface | snelled hook | corn | 1.0 | 0 |
| 2 | 10 - 20 | 1/3 depth | pink lure | none | 0.7 | 0 |
| 2 | 10 - 20 | 1/3 depth | green lure | none | 1.0 | 0 |
| 2 | 10 - 20 | 1/3 depth | orange lure | none | 0.3 | 0 |
| 2 | 10 - 20 | 1/3 depth | snelled hook | salmon eggs | 0.3 | 0 |
| 2 | 10 - 20 | 1/3 depth | snelled hook | shrimp | 0.7 | 0 |
| 2 | 10 - 20 | 1/3 depth | snelled hook | corn | 1.0 | 0 |
| 2 | 10 - 20 | 2/3 depth | pink lure | none | 0.7 | 0 |
| 2 | 10 - 20 | 2/3 depth | green lure | none | 1.0 | 0 |
| 2 | 10 - 20 | 2/3 depth | orange lure | none | 0.7 | 0 |
| 2 | 10 - 20 | 2/3 depth | snelled hook | salmon eggs | 0.3 | 0 |
| 2 | 10 - 20 | 2/3 depth | snelled hook | shrimp | 1.0 | 0 |
| 2 | 10 - 20 | 2/3 depth | snelled hook | corn | 1.0 | 0 |
| 2 | 10 - 20 | bottom | pink lure | none | 0.7 | 0 |
| 2 | 10 - 20 | bottom | green lure | none | 1.0 | 1 AC |
| 2 | 10 - 20 | bottom | orange lure | none | 0.7 | 0 |
| 2 | 10 - 20 | bottom | snelled hook | salmon eggs | 0.3 | 0 |
| 2 | 10 - 20 | bottom | snelled hook | shrimp | 1.0 | 0 |
| 2 | 10 - 20 | bottom | snelled hook | corn | 1.0 | 0 |
| 3 | 10 - 20 | surface | pink lure | none | 0.3 | 0 |
| 3 | 10 - 20 | surface | green lure | none | 0.3 | 0 |
| 3 | 10 - 20 | surface | orange lure | none | 0.3 | 0 |
| 3 | 10 - 20 | surface | snelled hook | salmon eggs | 0.3 | 0 |

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Appendix D. (Page 8 of 10).

| Lake Quadrant | Water Depth (m) | Gear Depth | Terminal Gear ^a | Bait Type | Effort (hours) | Catch ^b |
|------------------|--------------------|---------------|-------------------------------|--------------|-------------------|--------------------|
| 3 | 10 - 20 | surface | snelled hook | shrimp | 0.3 | 0 |
| 3 | 10 - 20 | surface | snelled hook | corn | 0.3 | 0 |
| 3 | 10 - 20 | 1/3 depth | pink lure | none | 0.3 | 0 |
| 3 | 10 - 20 | 1/3 depth | green lure | none | 0.3 | 0 |
| 3 | 10 - 20 | 1/3 depth | orange lure | none | 0.3 | 0 |
| 3 | 10 - 20 | 1/3 depth | snelled hook | salmon eggs | 0.3 | 0 |
| 3 | 10 - 20 | 1/3 depth | snelled hook | shrimp | 0.3 | 0 |
| 3 | 10 - 20 | 1/3 depth | snelled hook | corn | 0.3 | 0 |
| 3 | 10 - 20 | 2/3 depth | pink lure | none | 0.3 | 0 |
| 3 | 10 - 20 | 2/3 depth | green lure | none | 0.3 | 0 |
| 3 | 10 - 20 | 2/3 depth | snelled hook | salmon eggs | 0.3 | 0 |
| 3 | 10 - 20 | 2/3 depth | snelled hook | shrimp | 0.3 | 0 |
| 3 | 10 - 20 | bottom | pink lure | none | 0.3 | 0 |
| 3 | 10 - 20 | bottom | green lure | none | 0.3 | 0 |
| 3 | 10 - 20 | bottom | snelled hook | salmon eggs | 0.3 | 0 |
| 3 | 10 - 20 | bottom | snelled hook | shrimp | 0.3 | 0 |
| 4 | 10 - 20 | surface | pink lure | none | 0.3 | 0 |
| 4 | 10 - 20 | surface | green lure | none | 0.3 | 0 |
| 4 | 10 - 20 | surface | orange lure | none | 0.3 | 0 |
| 4 | 10 - 20 | surface | snelled hook | salmon eggs | 0.3 | 0 |
| 4 | 10 - 20 | surface | snelled hook | shrimp | 0.3 | 0 |
| 4 | 10 - 20 | surface | snelled hook | corn | 0.3 | 0 |
| 4 | 10 - 20 | 1/3 depth | orange lure | none | 0.3 | 0 |
| 4 | 10 - 20 | 1/3 depth | snelled hook | shrimp | 0.3 | 0 |
| 4 | 10 - 20 | 2/3 depth | pink lure | none | 0.3 | 0 |
| 4 | 10 - 20 | 2/3 depth | snelled hook | corn | 0.3 | 0 |
| 4 | 10 - 20 | bottom | pink lure | none | 0.3 | 0 |
| 4 | 10 - 20 | bottom | green lure | none | 0.7 | 0 |
| 4 | 10 - 20 | bottom | orange lure | none | 0.3 | 0 |
| 4 | 10 - 20 | bottom | snelled hook | salmon eggs | 0.7 | 0 |
| 4 | 10 - 20 | bottom | snelled hook | shrimp | 0.3 | 0 |
| 4 | 10 - 20 | bottom | snelled hook | corn | 0.3 | 0 |
| 1 | 20 - 40 | bottom | pink lure | none | 0.3 | 0 |
| 1 | 20 - 40 | bottom | snelled hook | shrimp | 0.3 | 0 |
| 2 | 20 - 40 | surface | pink lure | none | 1.7 | 0 |
| 2 | 20 - 40 | surface | orange lure | none | 0.7 | 0 |
| 2 | 20 - 40 | surface | snelled hook | salmon eggs | 0.7 | 0 |
| 2 | 20 - 40 | surface | snelled hook | shrimp | 1.0 | 0 |
| 2 | 20 - 40 | surface | snelled hook | corn | 0.7 | 0 |
| 2 | 20 - 40 | 1/3 depth | pink lure | none | 1.3 | 0 |
| 2 | 20 - 40 | 1/3 depth | orange lure | none | 0.7 | 0 |
| 2 | 20 - 40 | 1/3 depth | snelled hook | salmon eggs | 0.7 | 0 |
| 2 | 20 - 40 | 1/3 depth | snelled hook | shrimp | 1.0 | 0 |
| 2 | 20 - 40 | 1/3 depth | snelled hook | corn | 0.3 | 0 |

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Appendix D. (Page 9 of 10).

| Lake Quadrant | Water Depth (m) | Gear Depth | Terminal Gear ^a | Bait Type | Effort (hours) | Catch ^b |
|------------------|--------------------|---------------|-------------------------------|--------------|-------------------|--------------------|
| 2 | 20 - 40 | 2/3 depth | pink lure | none | 1.3 | 0 |
| 2 | 20 - 40 | 2/3 depth | orange lure | none | 0.7 | 1 AC |
| 2 | 20 - 40 | 2/3 depth | snelled hook | salmon eggs | 0.7 | 0 |
| 2 | 20 - 40 | 2/3 depth | snelled hook | shrimp | 1.0 | 0 |
| 2 | 20 - 40 | 2/3 depth | snelled hook | corn | 0.3 | 0 |
| 2 | 20 - 40 | bottom | pink lure | none | 1.7 | 0 |
| 2 | 20 - 40 | bottom | orange lure | none | 0.7 | 0 |
| 2 | 20 - 40 | bottom | snelled hook | salmon eggs | 0.7 | 0 |
| 2 | 20 - 40 | bottom | snelled hook | shrimp | 1.0 | 0 |
| 2 | 20 - 40 | bottom | snelled hook | corn | 0.3 | 0 |
| 3 | 20 - 40 | surface | pink lure | none | 0.3 | 0 |
| 3 | 20 - 40 | surface | green lure | none | 0.3 | 0 |
| 3 | 20 - 40 | surface | orange lure | none | 0.3 | 0 |
| 3 | 20 - 40 | surface | snelled hook | salmon eggs | 0.3 | 0 |
| 3 | 20 - 40 | surface | snelled hook | shrimp | 0.3 | 0 |
| 3 | 20 - 40 | surface | snelled hook | corn | 0.3 | 0 |
| 3 | 20 - 40 | 1/3 depth | pink lure | none | 0.3 | 0 |
| 3 | 20 - 40 | 1/3 depth | green lure | none | 0.3 | 0 |
| 3 | 20 - 40 | 1/3 depth | orange lure | none | 0.3 | 0 |
| 3 | 20 - 40 | 1/3 depth | snelled hook | salmon eggs | 0.3 | 0 |
| 3 | 20 - 40 | 1/3 depth | snelled hook | shrimp | 0.3 | 0 |
| 3 | 20 - 40 | 1/3 depth | snelled hook | corn | 0.3 | 0 |
| 3 | 20 - 40 | 1/3 depth | pink lure | none | 0.3 | 0 |
| 3 | 20 - 40 | 1/3 depth | green lure | none | 0.3 | 0 |
| 3 | 20 - 40 | 1/3 depth | orange lure | none | 0.7 | 1 AC |
| 3 | 20 - 40 | 1/3 depth | snelled hook | salmon eggs | 0.3 | 0 |
| 3 | 20 - 40 | 1/3 depth | snelled hook | shrimp | 0.3 | 0 |
| 3 | 20 - 40 | 1/3 depth | snelled hook | corn | 0.7 | 0 |
| 3 | 20 - 40 | bottom | pink lure | none | 0.3 | 0 |
| 3 | 20 - 40 | bottom | green lure | none | 0.3 | 0 |
| 3 | 20 - 40 | bottom | orange lure | none | 0.7 | 0 |
| 3 | 20 - 40 | bottom | snelled hook | salmon eggs | 0.3 | 0 |
| 3 | 20 - 40 | bottom | snelled hook | shrimp | 0.3 | 0 |
| 3 | 20 - 40 | bottom | snelled hook | corn | 0.7 | 0 |
| 4 | 20 - 40 | surface | pink lure | none | 0.3 | 0 |
| 4 | 20 - 40 | surface | green lure | none | 0.3 | 0 |
| 4 | 20 - 40 | surface | orange lure | none | 0.3 | 0 |
| 4 | 20 - 40 | surface | snelled hook | salmon eggs | 0.3 | 0 |
| 4 | 20 - 40 | surface | snelled hook | shrimp | 0.3 | 0 |
| 4 | 20 - 40 | surface | snelled hook | corn | 0.3 | 0 |
| 4 | 20 - 40 | 1/3 depth | pink lure | none | 0.7 | 0 |
| 4 | 20 - 40 | 1/3 depth | green lure | none | 0.7 | 0 |
| 4 | 20 - 40 | 1/3 depth | orange lure | none | 0.3 | 0 |
| 4 | 20 - 40 | 1/3 depth | snelled hook | salmon eggs | 1.0 | 0 |

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Appendix D. (Page 10 of 10).

| Lake Quadrant | Water Depth (m) | Gear Depth | Terminal Gear ^a | Bait Type | Effort (hours) | Catch ^b |
|------------------|--------------------|---------------|-------------------------------|--------------|-------------------|--------------------|
| 4 | 20 - 40 | 1/3 depth | snelled hook | shrimp | 0.3 | 0 |
| 4 | 20 - 40 | 1/3 depth | snelled hook | corn | 0.3 | 0 |
| 4 | 20 - 40 | 2/3 depth | pink lure | none | 0.7 | 0 |
| 4 | 20 - 40 | 2/3 depth | green lure | none | 0.7 | 0 |
| 4 | 20 - 40 | 2/3 depth | orange lure | none | 0.3 | 0 |
| 4 | 20 - 40 | 2/3 depth | snelled hook | salmon eggs | 0.7 | 0 |
| 4 | 20 - 40 | 2/3 depth | snelled hook | shrimp | 0.3 | 0 |
| 4 | 20 - 40 | 2/3 depth | snelled hook | corn | 0.7 | 0 |
| 4 | 20 - 40 | bottom | pink lure | none | 0.3 | 0 |
| 4 | 20 - 40 | bottom | green lure | none | 0.3 | 0 |
| 4 | 20 - 40 | bottom | orange lure | none | 0.3 | 0 |
| 4 | 20 - 40 | bottom | snelled hook | salmon eggs | 0.3 | 0 |
| 4 | 20 - 40 | bottom | snelled hook | shrimp | 0.3 | 0 |
| 4 | 20 - 40 | bottom | snelled hook | corn | 0.3 | 0 |
| Totals | | | | | 277.2 | 47 AC 2 RB |

^a Terminal gear used was as follows: pink lure = pink mini-jig, # 8 barbed single hook; green lure = green pixie, # 6 barbed treble hook; orange lure = orange Gibbs Alaskan, # 6 barbed treble hook; snelled hook = # 8 barbed single hook.

^b Catches are as follows: AC = Arctic char, RB = rainbow trout, NP = northern pike.

APPENDIX E

Appendix E. Summary of effort and catches from experimental hook and line fishing at Harding Lake, Alaska, April, 1991.

| Lake Quadrant | Water Depth (m) | Gear Depth | Terminal Gear ^a | Bait Type | Effort (hours) | Catch ^b |
|------------------|--------------------|---------------|-------------------------------|--------------|-------------------|--------------------|
| 1 | 0 - 2 | surface | pink lure | none | 1.0 | 0 |
| 1 | 0 - 2 | surface | green lure | none | 1.0 | 1 AC |
| 1 | 0 - 2 | surface | orange lure | none | 1.0 | 2 AC |
| 1 | 0 - 2 | surface | snelled hook | salmon eggs | 1.0 | 0 |
| 1 | 0 - 2 | surface | snelled hook | shrimp | 1.0 | 0 |
| 1 | 0 - 2 | surface | snelled hook | corn | 1.0 | 0 |
| 1 | 0 - 2 | bottom | pink lure | none | 0.3 | 0 |
| 1 | 0 - 2 | bottom | green lure | none | 0.3 | 0 |
| 1 | 0 - 2 | bottom | orange lure | none | 0.3 | 0 |
| 1 | 0 - 2 | bottom | snelled hook | salmon eggs | 0.3 | 0 |
| 1 | 0 - 2 | bottom | snelled hook | shrimp | 0.3 | 0 |
| 1 | 0 - 2 | bottom | snelled hook | corn | 0.3 | 0 |
| 2 | 0 - 2 | surface | pink lure | none | 0.7 | 0 |
| 2 | 0 - 2 | surface | green lure | none | 0.7 | 0 |
| 2 | 0 - 2 | surface | orange lure | none | 0.7 | 0 |
| 2 | 0 - 2 | surface | snelled hook | salmon eggs | 0.7 | 0 |
| 2 | 0 - 2 | surface | snelled hook | shrimp | 0.7 | 0 |
| 2 | 0 - 2 | surface | snelled hook | corn | 0.7 | 0 |
| 2 | 0 - 2 | bottom | pink lure | none | 0.7 | 0 |
| 2 | 0 - 2 | bottom | green lure | none | 0.7 | 0 |
| 2 | 0 - 2 | bottom | orange lure | none | 0.7 | 0 |
| 2 | 0 - 2 | bottom | snelled hook | salmon eggs | 0.7 | 0 |
| 2 | 0 - 2 | bottom | snelled hook | shrimp | 0.7 | 0 |
| 2 | 0 - 2 | bottom | snelled hook | corn | 0.7 | 0 |
| 4 | 0 - 2 | surface | pink lure | none | 0.7 | 0 |
| 4 | 0 - 2 | surface | green lure | none | 1.0 | 0 |
| 4 | 0 - 2 | surface | orange lure | none | 0.3 | 0 |
| 4 | 0 - 2 | surface | snelled hook | salmon eggs | 0.7 | 0 |
| 4 | 0 - 2 | surface | snelled hook | shrimp | 0.7 | 0 |
| 4 | 0 - 2 | bottom | pink lure | none | 0.7 | 0 |
| 4 | 0 - 2 | bottom | green lure | none | 0.7 | 0 |
| 4 | 0 - 2 | bottom | orange lure | none | 0.7 | 0 |
| 4 | 0 - 2 | bottom | snelled hook | salmon eggs | 1.3 | 0 |
| 4 | 0 - 2 | bottom | snelled hook | shrimp | 0.7 | 0 |
| 1 | 2 - 5 | surface | pink lure | none | 0.3 | 0 |
| 1 | 2 - 5 | surface | green lure | none | 0.3 | 0 |
| 1 | 2 - 5 | surface | orange lure | none | 0.3 | 0 |
| 1 | 2 - 5 | surface | snelled hook | salmon eggs | 0.3 | 0 |
| 1 | 2 - 5 | surface | snelled hook | shrimp | 0.3 | 0 |
| 1 | 2 - 5 | surface | snelled hook | corn | 0.3 | 0 |
| 1 | 2 - 5 | bottom | pink lure | none | 0.7 | 0 |
| 1 | 2 - 5 | bottom | green lure | none | 0.7 | 0 |
| 1 | 2 - 5 | bottom | orange lure | none | 0.7 | 0 |

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Appendix E. (Page 2 of 7).

| Lake Quadrant | Water Depth (m) | Gear Depth | Terminal Gear ^a | Bait Type | Effort (hours) | Catch ^b |
|------------------|--------------------|---------------|-------------------------------|--------------|-------------------|--------------------|
| 1 | 2 - 5 | bottom | snelled hook | salmon eggs | 0.7 | 0 |
| 1 | 2 - 5 | bottom | snelled hook | shrimp | 0.7 | 0 |
| 1 | 2 - 5 | bottom | snelled hook | corn | 0.7 | 0 |
| 2 | 2 - 5 | surface | pink lure | none | 0.3 | 0 |
| 2 | 2 - 5 | surface | green lure | none | 0.3 | 0 |
| 2 | 2 - 5 | surface | orange lure | none | 0.3 | 0 |
| 2 | 2 - 5 | surface | snelled hook | salmon eggs | 0.7 | 2 AC |
| 2 | 2 - 5 | surface | snelled hook | shrimp | 0.7 | 0 |
| 2 | 2 - 5 | surface | snelled hook | corn | 0.3 | 0 |
| 2 | 2 - 5 | mid-depth | pink lure | none | 0.3 | 0 |
| 2 | 2 - 5 | mid-depth | green lure | none | 0.3 | 0 |
| 2 | 2 - 5 | mid-depth | orange lure | none | 0.3 | 0 |
| 2 | 2 - 5 | mid-depth | snelled hook | salmon eggs | 0.3 | 0 |
| 2 | 2 - 5 | mid-depth | snelled hook | shrimp | 0.3 | 0 |
| 2 | 2 - 5 | mid-depth | snelled hook | corn | 0.3 | 0 |
| 2 | 2 - 5 | bottom | pink lure | none | 1.0 | 0 |
| 2 | 2 - 5 | bottom | green lure | none | 1.0 | 0 |
| 2 | 2 - 5 | bottom | orange lure | none | 1.0 | 1 AC |
| 2 | 2 - 5 | bottom | snelled hook | salmon eggs | 1.0 | 0 |
| 2 | 2 - 5 | bottom | snelled hook | shrimp | 1.7 | 0 |
| 2 | 2 - 5 | bottom | snelled hook | corn | 0.3 | 0 |
| 2 | 2 - 5 | bottom | pink lure | salmon eggs | 0.7 | 2 AC |
| 3 | 2 - 5 | surface | pink lure | none | 0.3 | 0 |
| 3 | 2 - 5 | surface | green lure | none | 0.3 | 0 |
| 3 | 2 - 5 | surface | orange lure | none | 0.3 | 0 |
| 3 | 2 - 5 | surface | snelled hook | salmon eggs | 0.3 | 0 |
| 3 | 2 - 5 | surface | snelled hook | shrimp | 0.3 | 0 |
| 3 | 2 - 5 | surface | snelled hook | corn | 0.3 | 0 |
| 3 | 2 - 5 | mid-depth | pink lure | none | 0.3 | 0 |
| 3 | 2 - 5 | mid-depth | green lure | none | 0.3 | 0 |
| 3 | 2 - 5 | mid-depth | orange lure | none | 0.3 | 0 |
| 3 | 2 - 5 | mid-depth | snelled hook | salmon eggs | 0.3 | 0 |
| 3 | 2 - 5 | mid-depth | snelled hook | shrimp | 0.3 | 0 |
| 3 | 2 - 5 | mid-depth | snelled hook | corn | 0.3 | 0 |
| 3 | 2 - 5 | mid-depth | pink lure | salmon eggs | 0.3 | 1 AC |
| 3 | 2 - 5 | bottom | pink lure | none | 2.3 | 2 AC |
| 3 | 2 - 5 | bottom | green lure | none | 0.7 | 0 |
| 3 | 2 - 5 | bottom | orange lure | none | 0.3 | 1 NP |
| 3 | 2 - 5 | bottom | snelled hook | salmon eggs | 1.0 | 0 |
| 3 | 2 - 5 | bottom | snelled hook | shrimp | 1.3 | 0 |
| 3 | 2 - 5 | bottom | snelled hook | corn | 0.7 | 0 |
| 3 | 2 - 5 | bottom | pink lure | salmon eggs | 0.7 | 2 AC |
| 4 | 2 - 5 | surface | pink lure | none | 0.7 | 0 |
| 4 | 2 - 5 | surface | green lure | none | 0.7 | 0 |

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Appendix E. (Page 3 of 7).

| Lake Quadrant | Water Depth (m) | Gear Depth | Terminal Gear ^a | Bait Type | Effort (hours) | Catch ^b |
|------------------|--------------------|---------------|-------------------------------|--------------|-------------------|--------------------|
| 4 | 2 - 5 | surface | orange lure | none | 0.7 | 0 |
| 4 | 2 - 5 | surface | snelled hook | salmon eggs | 0.7 | 0 |
| 4 | 2 - 5 | surface | snelled hook | shrimp | 0.7 | 0 |
| 4 | 2 - 5 | surface | snelled hook | corn | 0.7 | 0 |
| 4 | 2 - 5 | mid-depth | pink lure | none | 0.7 | 0 |
| 4 | 2 - 5 | mid-depth | green lure | none | 0.7 | 0 |
| 4 | 2 - 5 | mid-depth | orange lure | none | 0.7 | 0 |
| 4 | 2 - 5 | mid-depth | snelled hook | salmon eggs | 0.7 | 0 |
| 4 | 2 - 5 | mid-depth | snelled hook | shrimp | 0.7 | 0 |
| 4 | 2 - 5 | mid-depth | snelled hook | corn | 0.7 | 0 |
| 4 | 2 - 5 | bottom | pink lure | none | 0.7 | 0 |
| 4 | 2 - 5 | bottom | green lure | none | 0.7 | 0 |
| 4 | 2 - 5 | bottom | orange lure | none | 0.7 | 0 |
| 4 | 2 - 5 | bottom | snelled hook | salmon eggs | 0.7 | 0 |
| 4 | 2 - 5 | bottom | snelled hook | shrimp | 1.0 | 0 |
| 4 | 2 - 5 | bottom | snelled hook | corn | 0.3 | 0 |
| 1 | 5 - 10 | surface | pink lure | none | 0.3 | 1 AC |
| 1 | 5 - 10 | surface | green lure | none | 0.3 | 0 |
| 1 | 5 - 10 | surface | orange lure | none | 0.3 | 0 |
| 1 | 5 - 10 | surface | snelled hook | salmon eggs | 0.3 | 0 |
| 1 | 5 - 10 | surface | snelled hook | shrimp | 0.3 | 0 |
| 1 | 5 - 10 | surface | snelled hook | corn | 0.3 | 0 |
| 1 | 5 - 10 | 1/3 depth | pink lure | none | 0.3 | 0 |
| 1 | 5 - 10 | 1/3 depth | green lure | none | 0.3 | 0 |
| 1 | 5 - 10 | 1/3 depth | orange lure | none | 0.3 | 0 |
| 1 | 5 - 10 | 1/3 depth | snelled hook | salmon eggs | 0.3 | 0 |
| 1 | 5 - 10 | 1/3 depth | snelled hook | shrimp | 0.3 | 0 |
| 1 | 5 - 10 | 1/3 depth | snelled hook | corn | 0.3 | 0 |
| 1 | 5 - 10 | 2/3 depth | pink lure | none | 0.3 | 0 |
| 1 | 5 - 10 | 2/3 depth | green lure | none | 0.3 | 0 |
| 1 | 5 - 10 | 2/3 depth | orange lure | none | 0.3 | 0 |
| 1 | 5 - 10 | 2/3 depth | snelled hook | salmon eggs | 0.3 | 0 |
| 1 | 5 - 10 | 2/3 depth | snelled hook | shrimp | 0.3 | 0 |
| 1 | 5 - 10 | 2/3 depth | snelled hook | corn | 0.3 | 0 |
| 1 | 5 - 10 | bottom | pink lure | none | 0.3 | 0 |
| 1 | 5 - 10 | bottom | green lure | none | 0.3 | 0 |
| 1 | 5 - 10 | bottom | orange lure | none | 0.3 | 0 |
| 1 | 5 - 10 | bottom | snelled hook | salmon eggs | 0.3 | 0 |
| 1 | 5 - 10 | bottom | snelled hook | shrimp | 0.3 | 0 |
| 1 | 5 - 10 | bottom | snelled hook | corn | 0.3 | 0 |
| 2 | 5 - 10 | surface | pink lure | none | 0.7 | 0 |
| 2 | 5 - 10 | surface | green lure | none | 0.7 | 0 |
| 2 | 5 - 10 | surface | orange lure | none | 0.7 | 0 |
| 2 | 5 - 10 | surface | snelled hook | salmon eggs | 0.7 | 0 |

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Appendix E. (Page 4 of 7).

| Lake Quadrant | Water Depth (m) | Gear Depth | Terminal Gear ^a | Bait Type | Effort (hours) | Catch ^b |
|------------------|--------------------|---------------|-------------------------------|--------------|-------------------|--------------------|
| 2 | 5 - 10 | surface | snelled hook | shrimp | 0.7 | 0 |
| 2 | 5 - 10 | surface | snelled hook | corn | 0.7 | 0 |
| 2 | 5 - 10 | 1/3 depth | pink lure | none | 0.7 | 0 |
| 2 | 5 - 10 | 1/3 depth | green lure | none | 0.7 | 0 |
| 2 | 5 - 10 | 1/3 depth | orange lure | none | 0.7 | 0 |
| 2 | 5 - 10 | 1/3 depth | snelled hook | salmon eggs | 0.7 | 0 |
| 2 | 5 - 10 | 1/3 depth | snelled hook | shrimp | 0.7 | 0 |
| 2 | 5 - 10 | 1/3 depth | snelled hook | corn | 0.7 | 0 |
| 2 | 5 - 10 | 2/3 depth | pink lure | none | 0.7 | 0 |
| 2 | 5 - 10 | 2/3 depth | green lure | none | 0.7 | 0 |
| 2 | 5 - 10 | 2/3 depth | orange lure | none | 0.7 | 0 |
| 2 | 5 - 10 | 2/3 depth | snelled hook | salmon eggs | 0.7 | 0 |
| 2 | 5 - 10 | 2/3 depth | snelled hook | shrimp | 0.7 | 0 |
| 2 | 5 - 10 | 2/3 depth | snelled hook | corn | 0.7 | 0 |
| 2 | 5 - 10 | bottom | pink lure | none | 0.7 | 0 |
| 2 | 5 - 10 | bottom | green lure | none | 0.7 | 0 |
| 2 | 5 - 10 | bottom | orange lure | none | 0.7 | 0 |
| 2 | 5 - 10 | bottom | snelled hook | salmon eggs | 0.7 | 0 |
| 2 | 5 - 10 | bottom | snelled hook | shrimp | 0.7 | 0 |
| 2 | 5 - 10 | bottom | snelled hook | corn | 0.7 | 0 |
| 4 | 5 - 10 | surface | pink lure | none | 0.7 | 0 |
| 4 | 5 - 10 | surface | green lure | none | 0.7 | 0 |
| 4 | 5 - 10 | surface | orange lure | none | 0.7 | 0 |
| 4 | 5 - 10 | surface | snelled hook | salmon eggs | 0.7 | 0 |
| 4 | 5 - 10 | surface | snelled hook | shrimp | 1.0 | 0 |
| 4 | 5 - 10 | surface | snelled hook | corn | 0.3 | 0 |
| 4 | 5 - 10 | 1/3 depth | pink lure | none | 0.7 | 0 |
| 4 | 5 - 10 | 1/3 depth | green lure | none | 0.7 | 0 |
| 4 | 5 - 10 | 1/3 depth | orange lure | none | 0.7 | 0 |
| 4 | 5 - 10 | 1/3 depth | snelled hook | salmon eggs | 0.7 | 0 |
| 4 | 5 - 10 | 1/3 depth | snelled hook | shrimp | 1.0 | 0 |
| 4 | 5 - 10 | 1/3 depth | snelled hook | corn | 0.3 | 0 |
| 4 | 5 - 10 | 2/3 depth | pink lure | none | 0.7 | 0 |
| 4 | 5 - 10 | 2/3 depth | green lure | none | 0.7 | 0 |
| 4 | 5 - 10 | 2/3 depth | orange lure | none | 0.7 | 0 |
| 4 | 5 - 10 | 2/3 depth | snelled hook | salmon eggs | 0.7 | 0 |
| 4 | 5 - 10 | 2/3 depth | snelled hook | shrimp | 1.0 | 0 |
| 4 | 5 - 10 | 2/3 depth | snelled hook | corn | 0.3 | 0 |
| 4 | 5 - 10 | bottom | pink lure | none | 0.7 | 0 |
| 4 | 5 - 10 | bottom | green lure | none | 0.7 | 0 |
| 4 | 5 - 10 | bottom | orange lure | none | 0.7 | 0 |
| 4 | 5 - 10 | bottom | snelled hook | salmon eggs | 0.7 | 0 |
| 4 | 5 - 10 | bottom | snelled hook | shrimp | 1.0 | 0 |
| 4 | 5 - 10 | bottom | snelled hook | corn | 0.3 | 0 |

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Appendix E. (Page 5 of 7).

| Lake Quadrant | Water Depth (m) | Gear Depth | Terminal Gear ^a | Bait Type | Effort (hours) | Catch ^b |
|------------------|--------------------|---------------|-------------------------------|--------------|-------------------|--------------------|
| 1 | 10 - 20 | surface | pink lure | none | 1.0 | 0 |
| 1 | 10 - 20 | surface | green lure | none | 1.0 | 0 |
| 1 | 10 - 20 | surface | orange lure | none | 1.0 | 0 |
| 1 | 10 - 20 | surface | snelled hook | salmon eggs | 1.0 | 0 |
| 1 | 10 - 20 | surface | snelled hook | shrimp | 1.0 | 0 |
| 1 | 10 - 20 | surface | snelled hook | corn | 1.0 | 0 |
| 1 | 10 - 20 | 1/3 depth | pink lure | none | 1.0 | 0 |
| 1 | 10 - 20 | 1/3 depth | green lure | none | 1.0 | 0 |
| 1 | 10 - 20 | 1/3 depth | orange lure | none | 1.0 | 0 |
| 1 | 10 - 20 | 1/3 depth | snelled hook | salmon eggs | 1.0 | 0 |
| 1 | 10 - 20 | 1/3 depth | snelled hook | shrimp | 1.0 | 0 |
| 1 | 10 - 20 | 1/3 depth | snelled hook | corn | 1.0 | 0 |
| 1 | 10 - 20 | 2/3 depth | pink lure | none | 1.0 | 0 |
| 1 | 10 - 20 | 2/3 depth | green lure | none | 1.0 | 0 |
| 1 | 10 - 20 | 2/3 depth | orange lure | none | 1.0 | 0 |
| 1 | 10 - 20 | 2/3 depth | snelled hook | salmon eggs | 1.0 | 0 |
| 1 | 10 - 20 | 2/3 depth | snelled hook | shrimp | 1.0 | 0 |
| 1 | 10 - 20 | 2/3 depth | snelled hook | corn | 1.0 | 0 |
| 1 | 10 - 20 | bottom | pink lure | none | 1.0 | 0 |
| 1 | 10 - 20 | bottom | green lure | none | 1.0 | 0 |
| 1 | 10 - 20 | bottom | orange lure | none | 1.0 | 0 |
| 1 | 10 - 20 | bottom | snelled hook | salmon eggs | 1.0 | 0 |
| 1 | 10 - 20 | bottom | snelled hook | shrimp | 1.0 | 0 |
| 1 | 10 - 20 | bottom | snelled hook | corn | 1.0 | 0 |
| 2 | 10 - 20 | surface | pink lure | none | 0.7 | 0 |
| 2 | 10 - 20 | surface | green lure | none | 0.7 | 0 |
| 2 | 10 - 20 | surface | orange lure | none | 0.7 | 0 |
| 2 | 10 - 20 | surface | snelled hook | salmon eggs | 0.7 | 0 |
| 2 | 10 - 20 | surface | snelled hook | shrimp | 0.7 | 0 |
| 2 | 10 - 20 | surface | snelled hook | corn | 0.7 | 0 |
| 2 | 10 - 20 | 1/3 depth | pink lure | none | 0.7 | 0 |
| 2 | 10 - 20 | 1/3 depth | green lure | none | 0.7 | 0 |
| 2 | 10 - 20 | 1/3 depth | orange lure | none | 0.7 | 0 |
| 2 | 10 - 20 | 1/3 depth | snelled hook | salmon eggs | 0.7 | 0 |
| 2 | 10 - 20 | 1/3 depth | snelled hook | shrimp | 0.7 | 0 |
| 2 | 10 - 20 | 1/3 depth | snelled hook | corn | 0.7 | 0 |
| 2 | 10 - 20 | 2/3 depth | pink lure | none | 0.3 | 0 |
| 2 | 10 - 20 | 2/3 depth | green lure | none | 0.3 | 0 |
| 2 | 10 - 20 | 2/3 depth | orange lure | none | 0.3 | 0 |
| 2 | 10 - 20 | 2/3 depth | snelled hook | salmon eggs | 0.3 | 0 |
| 2 | 10 - 20 | 2/3 depth | snelled hook | shrimp | 0.3 | 0 |
| 2 | 10 - 20 | 2/3 depth | snelled hook | corn | 0.3 | 0 |
| 2 | 10 - 20 | bottom | pink lure | none | 0.3 | 0 |
| 2 | 10 - 20 | bottom | green lure | none | 0.3 | 0 |

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Appendix E. (Page 6 of 7).

| Lake Quadrant | Water Depth (m) | Gear Depth | Terminal Gear ^a | Bait Type | Effort (hours) | Catch ^b |
|------------------|--------------------|---------------|-------------------------------|--------------|-------------------|--------------------|
| 2 | 10 - 20 | bottom | orange lure | none | 0.3 | 0 |
| 2 | 10 - 20 | bottom | snelled hook | salmon eggs | 0.3 | 0 |
| 2 | 10 - 20 | bottom | snelled hook | shrimp | 0.3 | 0 |
| 2 | 10 - 20 | bottom | snelled hook | corn | 0.3 | 0 |
| 4 | 10 - 20 | surface | pink lure | none | 0.7 | 0 |
| 4 | 10 - 20 | surface | green lure | none | 0.7 | 0 |
| 4 | 10 - 20 | surface | orange lure | none | 0.7 | 0 |
| 4 | 10 - 20 | surface | snelled hook | salmon eggs | 0.7 | 0 |
| 4 | 10 - 20 | surface | snelled hook | shrimp | 0.7 | 0 |
| 4 | 10 - 20 | surface | snelled hook | corn | 0.7 | 0 |
| 4 | 10 - 20 | 1/3 depth | pink lure | none | 0.7 | 0 |
| 4 | 10 - 20 | 1/3 depth | green lure | none | 0.7 | 0 |
| 4 | 10 - 20 | 1/3 depth | orange lure | none | 0.7 | 0 |
| 4 | 10 - 20 | 1/3 depth | snelled hook | salmon eggs | 0.7 | 0 |
| 4 | 10 - 20 | 1/3 depth | snelled hook | shrimp | 0.7 | 0 |
| 4 | 10 - 20 | 1/3 depth | snelled hook | corn | 0.7 | 0 |
| 4 | 10 - 20 | 2/3 depth | pink lure | none | 0.7 | 0 |
| 4 | 10 - 20 | 2/3 depth | green lure | none | 0.7 | 0 |
| 4 | 10 - 20 | 2/3 depth | orange lure | none | 0.7 | 0 |
| 4 | 10 - 20 | 2/3 depth | snelled hook | salmon eggs | 0.7 | 0 |
| 4 | 10 - 20 | 2/3 depth | snelled hook | shrimp | 0.7 | 0 |
| 4 | 10 - 20 | 2/3 depth | snelled hook | corn | 0.7 | 0 |
| 4 | 10 - 20 | bottom | pink lure | none | 0.7 | 0 |
| 4 | 10 - 20 | bottom | green lure | none | 0.7 | 0 |
| 4 | 10 - 20 | bottom | orange lure | none | 0.7 | 0 |
| 4 | 10 - 20 | bottom | snelled hook | salmon eggs | 0.7 | 0 |
| 4 | 10 - 20 | bottom | snelled hook | shrimp | 0.7 | 0 |
| 4 | 10 - 20 | bottom | snelled hook | corn | 0.7 | 0 |
| 2 | 20 - 40 | surface | pink lure | none | 0.3 | 0 |
| 2 | 20 - 40 | surface | green lure | none | 0.3 | 0 |
| 2 | 20 - 40 | surface | orange lure | none | 0.3 | 0 |
| 2 | 20 - 40 | surface | snelled hook | salmon eggs | 0.3 | 0 |
| 2 | 20 - 40 | surface | snelled hook | shrimp | 0.3 | 0 |
| 2 | 20 - 40 | surface | snelled hook | corn | 0.3 | 0 |
| 2 | 20 - 40 | 1/3 depth | pink lure | none | 0.3 | 0 |
| 2 | 20 - 40 | 1/3 depth | green lure | none | 0.3 | 0 |
| 2 | 20 - 40 | 1/3 depth | orange lure | none | 0.3 | 0 |
| 2 | 20 - 40 | 1/3 depth | snelled hook | salmon eggs | 0.3 | 0 |
| 2 | 20 - 40 | 1/3 depth | snelled hook | shrimp | 0.3 | 0 |
| 2 | 20 - 40 | 1/3 depth | snelled hook | corn | 0.3 | 0 |
| 2 | 20 - 40 | 2/3 depth | pink lure | none | 0.7 | 0 |
| 2 | 20 - 40 | 2/3 depth | green lure | none | 0.7 | 0 |
| 2 | 20 - 40 | 2/3 depth | orange lure | none | 0.7 | 0 |
| 2 | 20 - 40 | 2/3 depth | snelled hook | salmon eggs | 0.7 | 0 |

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Appendix E. (Page 7 of 7).

| Lake Quadrant | Water Depth (m) | Gear Depth | Terminal Gear ^a | Bait Type | Effort (hours) | Catch ^b |
|------------------|--------------------|---------------|-------------------------------|--------------|-------------------|--------------------|
| 2 | 20 - 40 | 2/3 depth | snelled hook | shrimp | 0.7 | 0 |
| 2 | 20 - 40 | 2/3 depth | snelled hook | corn | 0.7 | 0 |
| 2 | 20 - 40 | bottom | pink lure | none | 1.0 | 0 |
| 2 | 20 - 40 | bottom | green lure | none | 1.0 | 0 |
| 2 | 20 - 40 | bottom | orange lure | none | 1.0 | 0 |
| 2 | 20 - 40 | bottom | snelled hook | salmon eggs | 1.0 | 0 |
| 2 | 20 - 40 | bottom | snelled hook | shrimp | 1.0 | 0 |
| 2 | 20 - 40 | bottom | snelled hook | corn | 1.0 | 0 |
| 2 | 20 - 40 | surface | pink lure | none | 0.3 | 0 |
| 2 | 20 - 40 | surface | green lure | none | 0.3 | 0 |
| 2 | 20 - 40 | surface | orange lure | none | 0.3 | 0 |
| 2 | 20 - 40 | surface | snelled hook | salmon eggs | 0.3 | 0 |
| 2 | 20 - 40 | surface | snelled hook | shrimp | 0.3 | 0 |
| 2 | 20 - 40 | surface | snelled hook | corn | 0.3 | 0 |
| 2 | 20 - 40 | 1/3 depth | pink lure | none | 0.3 | 0 |
| 2 | 20 - 40 | 1/3 depth | green lure | none | 0.3 | 0 |
| 2 | 20 - 40 | 1/3 depth | orange lure | none | 0.3 | 0 |
| 2 | 20 - 40 | 1/3 depth | snelled hook | salmon eggs | 0.3 | 0 |
| 2 | 20 - 40 | 1/3 depth | snelled hook | shrimp | 0.3 | 0 |
| 2 | 20 - 40 | 1/3 depth | snelled hook | corn | 0.3 | 0 |
| 2 | 20 - 40 | 2/3 depth | pink lure | none | 0.3 | 0 |
| 2 | 20 - 40 | 2/3 depth | green lure | none | 0.3 | 0 |
| 2 | 20 - 40 | 2/3 depth | orange lure | none | 0.3 | 0 |
| 2 | 20 - 40 | 2/3 depth | snelled hook | salmon eggs | 0.3 | 0 |
| 2 | 20 - 40 | 2/3 depth | snelled hook | shrimp | 0.3 | 0 |
| 2 | 20 - 40 | 2/3 depth | snelled hook | corn | 0.3 | 0 |
| 2 | 20 - 40 | bottom | pink lure | none | 0.3 | 0 |
| 2 | 20 - 40 | bottom | green lure | none | 0.3 | 0 |
| 2 | 20 - 40 | bottom | orange lure | none | 0.3 | 0 |
| 2 | 20 - 40 | bottom | snelled hook | salmon eggs | 0.3 | 0 |
| 2 | 20 - 40 | bottom | snelled hook | shrimp | 0.3 | 0 |
| 2 | 20 - 40 | bottom | snelled hook | corn | 0.3 | 0 |
| Totals | | | | | 177.5 | 1 NP 14 AC |

^a Terminal gear used was as follows: pink lure = pink mini-jig, # 8 barbed single hook; green lure = green pixie, # 6 barbed treble hook; orange lure = orange Gibbs Alaskan, # 6 barbed treble hook; snelled hook = # 8 barbed single hook.

^b Catches are as follows: AC = Arctic char, RB = rainbow trout, NP = northern pike.

