AYK Region
Norton Sound/Kotzebue
Salmon Escapement
Report # 38

1984 Unalakleet River Test Fishing Project

Compiled By:
Charles Lean and Don Peterson

Alaska Department of Fish and Game
Division of Commercial Fisheries
Nome, Alaska 99762
March 1985

Table of Contents

Page

List of Figures..... i

List of Tables.....ii

List of Appendix tables.....iii

Introduction..... 1

Methods..... 1
    Project Deployment..... 1
    Test Fishing..... 1
    Drift Sets/Beach Seines..... 3
    Catch Sampling..... 4
    Subsistence Survey..... 4

Results..... 4
    Test Fishing..... 4
    Drift Sets/Beach Seines..... 5
    Subsistence Survey..... 5

Discussion..... 5

Literature Cited..... 7

List of Figures

Page

Figure 1.
Unalakleet Escapement Project Site Locations..... 8
Figure 2.
Unalakleet Subsistence Chinook Index, 1984..... 9
Figure 3.
Unalakleet Test Fishing, Daily Chinook CPUE
in 8 1/4" Mesh, 1984..... 10
Figure 4.
Unalakleet Test Fishing, Daily Chinook CPUE
in 5 7/8" Mesh, 1984..... 11
Figure 5.
Unalakleet Test Fishing, Daily Coho CPUE
in 5 7/8" Mesh, 1984..... 12
Figure 6.
Unalakleet Test Fishing, Daily Pink CPUE
in 5 7/8" Mesh, 1984..... 13
Figure 7.
Unalakleet Test Fishing, Daily Chum CPUE
in 5 7/8" Mesh, 1984..... 14
Figure 8.
Unalakleet Test Fishing, Cumulative Chinook
CPUE in 8 1/4" Mesh, 1981-84..... 15
Figure 9.
Unalakleet Test Fishing, Cumulative Chinook
CPUE in 5 7/8" Mesh, 1982-84..... 16
Figure 10.
Unalakleet Test Fishing, Cumulative Coho
CPUE in 5 7/8" Mesh, 1981-84..... 17
Figure 11.
Unalakleet Test Fishing, Cumulative Pink
CPUE in 5 7/8" Mesh, 1981-84..... 18
Figure 12.
Unalakleet Test Fishing, Cumulative Pink
CPUE in 4" Mesh, 1982-83..... 19
Figure 13.
Unalakleet Test Fishing, Cumulative Chum
CPUE in 5 7/8" Mesh, 1981-84..... 20
Figure 14.
Unalakleet Cumulative Catch Percentages, 1982..... 21

List of Figures (continued)

Page

Figure 15.
Unalakleet Cumulative Catch Percentages, 1983..... 22
Figure 16.
Unalakleet Cumulative Catch Percentages, 1984..... 23
Figure 17.
Unalakleet Area Temperature, 1984..... 24
Figure 18.
Unalakleet River Turbidity, 1984..... 25

List of Tables

Table 1. Unalakleet Test Fishing, Daily Chinook CPUE in 8 1/4" Mesh, 1984.....26

Table 2. Unalakleet Test Fishing, Daily Chinook CPUE in 5 7/8" Mesh, 1984.....26

Table 3. Unalakleet Test Fishing, Daily Coho CPUE in 5 7/8" Mesh, 1984.....27

Table 4. Unalakleet Test Fishing, Daily Pink CPUE in 5 7/8" Mesh, 1984.....28

Table 5. Unalakleet Test Fishing, Daily Chum CPUE in 5 7/8" Mesh, 1984.....29

Table 6. Unalakleet Test Fishing, Total Fish Caught, 1984.....30

Table 7. Unalakleet River Drift Sets, 1984.....30

Table 8. Unalakleet River Beach Seines, 1984.....31

Table 9. Unalakleet River Subsistence Chinook Index, 1984.....31

List of Appendix Tables

Page

Appendix Table 1.
Unalakleet Test Fishing, Cumulative Chinook CPUE in 8 1/4" Mesh, 1981-1984.....32

Appendix Table 2.
Unalakleet Test Fishing, Cumulative Chinook CPUE in 5 7/8" Mesh, 1981-1984.....33

Appendix Table 3.
Unalakleet Test Fishing, Cumulative Coho CPUE in 5 7/8" Mesh, 1981-1984.....34

Appendix Table 4.
Unalakleet Test Fishing, Cumulative Pink CPUE in 5 7/8" Mesh, 1981-1984.....36

Appendix Table 5.
Unalakleet Test Fishing, Cumulative Pink CPUE in 5 7/8" Mesh, 1981-1984.....38

Appendix Table 6.
Unalakleet Test Fishing, Cumulative Chum CPUE in 5 7/8" Mesh, 1981-1984.....40

Introduction

The Unalakleet River system empties into Norton Sound approximately 130 miles southeast of Nome. The Unalakleet River flows approximately 130 miles from the Nulato Hills westward to the Bering Sea and drains an area of 1087 square miles. Five major tributaries comprise the system, all of which support spawning salmon.

The town of Unalakleet is situated at the mouth of the Unalakleet River, the most important salmon producing river in Norton Sound. Historically, the people of the area have depended on the salmon runs, both for subsistence needs and as the basis of the cash economy.

Attempts to assess salmon escapement have included aerial surveys, counting towers and side scan sonar. In-season subsistence surveys have been used to assess timing, magnitude and the duration of the chinook salmon return. Hydroacoustic counting techniques have been used unsuccessfully in the two prior years (Lean and Peterson, 1982, 1983). Test fishing with set gill nets in the river has been utilized since 1981 to provide an index of return strength by species (Lean and Peterson, 1981). This report presents test fishing results from the 1984 season.

Methods

Project Deployment

Test fishing began June 4 and ended September 27. The same site has been used since 1981 and is located approximately three miles upstream from the Unalakleet River mouth on the north bank (Figure 1). Chinook salmon subsistence fishermen were interviewed daily from June 23 to July 5.

Test Fishing

The set gillnet test fishing has used similar gear since 1981. The large mesh nets have all been made of multifiliment nylon #103 (210/30) cable lay twine, 8 1/4 inch, light green in color

with cork lines of 1/2 braided nylon stretched measure with "spongex" floats at 30 inch intervals and lead lines of braided lead core line with a weight of 95 pounds per 100 feet. The medium sized mesh nets have been 5 7/8" stretched measure multifiliment nylon #63 (210/18) twine light green in color with similar cork and lead lines. The small mesh gear has been 4 1/2 inches stretched measure multifiliment nylon #43 (210/12) twine light green in color with similar cork and lead lines also. All nets were hung at a 2:1 ratio.

An effort has been made over the past four summers to use standard technique in setting the nets. The crew has picked landmarks and tried to set the net in line with a willow bush that serves as the onshore anchor and the down stream point of the island offshore from the net site. The standard nets have been cut to 20 fathoms length which causes the net to cover the northern half of that river channel.

On June 4 and 5, a ten fathom 8 1/4" net was fished primarily to check the feasibility of placing a set net in the run-off laden river. Since the river was dropping and debris was not a problem it was decided to begin the normal test fishing schedule on June 6.

A 20 fathom 8 1/4" stretch mesh net was fished exclusively from June 6 to June 21. From June 22 to July 24 a 20 fathom 5 7/8" stretch mesh net and the 20 fathom 8 1/4" net were fished on alternate twenty-four hour periods to allow for sampling of chinook, chum and pink salmon. From July 25 to September the 5 7/8" net was fished exclusively.

The gill nets were picked at least twice daily and more often if needed to prevent fish or debris saturation. If conditions required frequent net checks the nets were only fished for a portion of the normal 24 hour schedule.

Weights, lengths and scale samples were taken from all chinook, coho and chum captured. Pink salmon were only counted.

All fish caught in the test net were delivered to Martha Nanouk, a local subsistence fisherman, as per agreement for the use of her traditional set net site. Fish that Mrs. Nanouk did not want were distributed among other village elders. Some of whom were: John Auliye, Pete Katongan, Ellen Soxie, and Elizabeth Sarren.

The daily catch of each salmon species along with the actual time fished was recorded for each gear type. From the daily catch and time fished a daily catch/100 fathom/hours could be calculated. Cumulative CPUE (calculated as cumulative catch/100 fathom/cumulative hours) was calculated beginning with the first chinook salmon captured and the tenth fish captured for coho, pink, and chum salmon, to compensate for fishing time expended prior to the beginning of the salmon runs.

Drift Sets/Beach Seines

Drift sets and beach seines were made for comparison with gill net catches and to determine the feasibility of using drift and beach seine techniques in estimating run timing and relative run strengths.

Drift sets were accomplished by drifting a 25 fathom 5 1/4" net rigged similarly to the 5 7/8" set gill net, perpendicular to the shore at four different locations. The 25 fathom net sampled the majority of the 200 foot wide river. Single drift sets were done on July 9 and 13 and durations ranged from three to ten minutes, depending on boat traffic, wind conditions and submerged obstructions.

Beach seines were made during July and August on the main Unalakleet River. The beach seine was an old net made of tarred linen cable lay twine, hung on a 1:1 ration, with a streached mesh measure of 4 inches. The float line was hemp with cylendrical old style floats 2 inches long by 4 inches in diameter spaced at 18 inch intervals. The lead line was hemp with pressed-on lead weights at 6 inch intervals. The seine was stacked in the bow of the skiff with one end line anchored by a crew member on the beach. The skiff then backed out perpendicular to shore until the net ran out. The boat was then idled in the current as the crew on shore walked down stream until the beaching area was approached. The skiff was then brought to the beach and the seine hauled in.

On July 7,10,14, and 18 seine hauls were made at mile 6 on the Unalakleet River. By July 22 heavy rains had caused the river to rise and covered the beaching area at Mile 6. High water lasted for nearly two weeks. The decision was made to use the beach seine net for determining species composition of the sonar counts at Mile 12 of the Unalakleet River. The beach seine was fished on August 9, 13, 15, 16, and 17 in conjunction with that project.

High water on August 18 again covered the beaching areas for seven days, by which time hope of establishing a catch trend was lost.

Catch Sampling

Length, size and weight data were collected from all chinook, coho and chum salmon caught in the test nets. Data were recorded on standard data entry forms for later key punching. Scales were mounted on gum cards and pressed onto acetate cards. Ageing was done by the author and the Kotzebue research biologist by projecting the scale impressions on a microfische reader. Three and sometimes four scales were taken from each fish to compensate for regenerated and unreadable scales. Catch sampling was done outside the bunk house and the catch distributed to subsistence users soon after.

Subsistence Survey

Two to five subsistence fishermen were interviewed daily from June 23 to July 5 as an additional index of the chinook run. Fishermen were chosen for reliability and willingness to share catch information. Mean daily catches and location were compared daily in an effort to track the movement and magnitude of the chinook run.

Results

Test Fishing

A total of 115 chinook (57% male, 43% female), 257 coho (50% male, 50% female), 644 pink and 631 chum (53% male, 47% female) salmon were captured in the test nets from June 4 to September 27. Based on daily CPUE, peak salmon passage occurred on July 6 and 7 for chinook salmon, August 3 for coho salmon, July 13 for pink salmon and July 6 for chum salmon. Daily CPUE data is presented in Tables 1-5 and Figures 2-7.

Appendix Tables 1-6 show the standardized cumulative CPUE for salmon caught in the Unalakleet River test net. All CPUE values shown in these tables are calculated using the same method. The 1981 catch and CPUE are not comparable to subsequent years because of fishing site conflicts during July and August with the Nanouk family. Figures 8-13 are graphs showing yearly cumulative CPUE of salmon caught in the Unalakleet River test nets. These

Tables and Figures show that chinook salmon catches and CPUE are by far the highest in 1984. Coho salmon catches are the second highest when compared to the 1982 catches when the all time record commercial catch occurred.

Drift Sets/Beach Seines

Tables 14-15 show the results of drift netting and beach seines made on the Unalakleet River. Drift sets were of short duration due to the winding nature of the Unalakleet River. Beach seines were only possible when landing sites were exposed. High water conditions interfered with scheduling beach seining activities.

Subsistence Survey

The subsistence surveys conducted during the peak chinook salmon subsistence fishery show fishing effort peaking in the last days of June with relatively high catches even as the fishermen quit fishing (Table 9.). The strong return of chinook salmon seemed to allow subsistence fishermen to fill their needs prior to the end of the run.

Discussion

With the Unalakleet River test fishing project having collected three years usable data, some trends with fisheries management applications seem to be emerging. The 1981 test fishing data should not be considered comparable with the succeeding years because of fishing compeditors and the fact that large mesh gear was fished exclusively until July 16 that year.

By graphing the remaining three years cumulative catch of the commercial fishery and test fishing project the late onset of salmon migration in 1984 becomes apparent in the shortening of the chinook and early chum migrations (Figures 14-16). Another interesting effect shown on the 1984 graph is the result of a storm on July 4. The commercial fleet was able to fish the end of the following period, but the high tides and stormy weather caused the salmon to move upriver depleting the salmon in commercial subdistrict this is evidenced by the slowing of the test fishing immediately after the storm.

The chinook salmon graphs of 1982 and 1983 show that during years of normal timing significant catches in the test net prior to the

first commercial period caused by the manager pursuing a conservative course and allowing some escapement to occur before opening the fishery. The cumulative catch percentages for both the commercial and test catches track fairly closely allowing the fishery manager to estimate escapement strength and react appropriately given the bulk of the run occurs over two weeks time on years when a late breakup does not compress the run. With a few more years data this index may become quite important.

Both the coho and chum salmon commercial fisheries take place over about a months time yet test net catches occur from 5 to 20 days longer making daily comparisons difficult. An additional problem in using the 1983 test net catches is that a 5 1/4" net was used that year until August 12 when a standard 5 7/8" net was delivered. The first commercial catch of chum salmon occurs about June 20, the commercially caught coho salmon occurs about July 23 with only two days variation. The beginning and mid-points of test net catches may vary as much as two weeks.

The coho salmon catches in the test net seems to exhibit a useful relationship to the commercial coho salmon catch. Test net peak cumulative CPUE occurs early in the migration at about 30% of the cumulative test fishing catch and before 50% of the commercial coho salmon catch is in. The test fishing cumulative CPUE at September 10 for each of the past three years are proportional to the commercial and hopefully the escapement. Although the peak cumulative CPUE is not as accurate an index of final commercial catch as the end of the season cumulative CPUE, but it can be calculated early enough in the season to provide the management biologist an index of run strength in time to take appropriate action. The following table compares the 1983 and 1984 to the 1982 data.

	1982	1983	1984
Commercial catch	61343	36098	47904
Percent of 1982	100%	59%	78%
% Peak cum CPUE	100%	65%	126%
% Sept 10 cum CPUE	100%	56%	72%

The drift netting and beach seining did not seem to provide as reliable of index as set netting. Drift netting was possible only for about a 10 minute period due to the character of the river. The clear water in the Unalakleet allowed the salmon to avoid the moving net even during times of peak runs. Bottom irregularities, short net length. and clear water all seemed to work against drift netting.

Beach seining seemed to provide an index of pink and chum salmon but chinook and coho salmon seemed to avoid capture in this gear. Beach seining is commonly used by subsistence fishermen in this area to catch pink salmon but they do not use it as a method for catching coho salmon which also school in suitable areas for seining. Changing water levels affected the fishing efficiency of this method at all sites where it was attempted. Set netting seems to be less affected by water level variations.

Because of changing gear and fishing technology the data this project produces will always require judicious interpretation by the management staff. As the years accumulate so will the data that provides a basis for comparison. At present fishing technology is evolving slowly in the Norton Sound area helping to insure the data collected by this project can be used over a longer period of time.

Literature Cited

Lean, C.F. and D.T. Peterson. 1981. 1981 Unalakleet River Escapement Project. Alaska Dept. of Fish and Game, Division of Commercial Fisheries, AYK Region: Norton Sound-Kotzebue Salmon Escapement Report No. 28. Nome, Alaska. 36pp.

Lean, C.F. and D.T. Peterson. 1982. 1982 Unalakleet River Escapement Project. Alaska Dept. of Fish and Game, Division of Commercial Fisheries, AYK Region: Norton Sound-Kotzebue Salmon Escapement Report No. 30. Nome, Alaska. 56pp.

Lean, C.F. and D.T. Peterson. 1983. 1983 Unalakleet River Escapement Project. Alaska Dept of Fish and Game, Division of Commercial Fisheries, AYK Region: Norton Sound-Kotzebue Salmon Escapement Report No. 32. Nome, Alaska. 58pp.

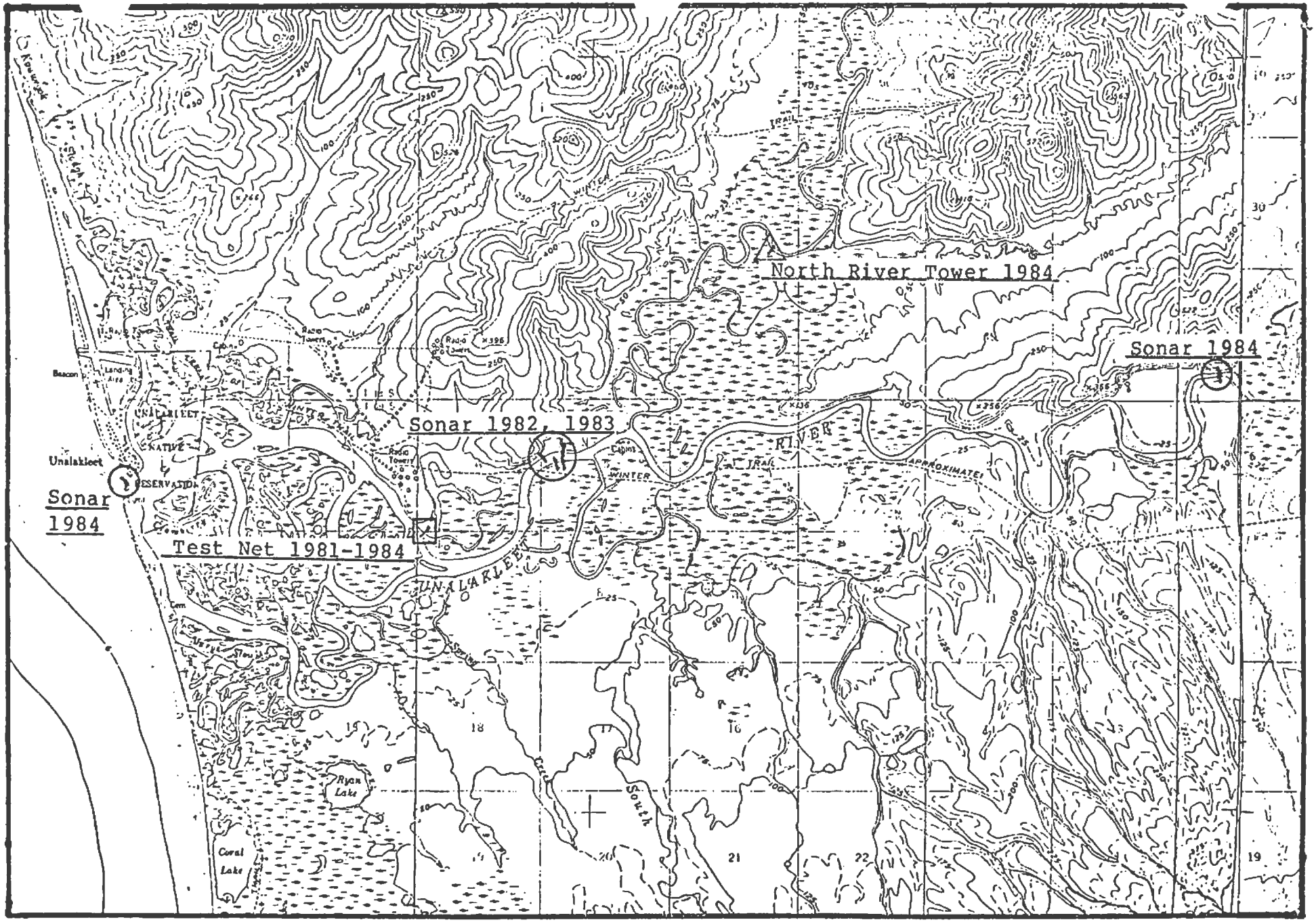

Figure 1. Unalakleet Escapement Project Site Locations.

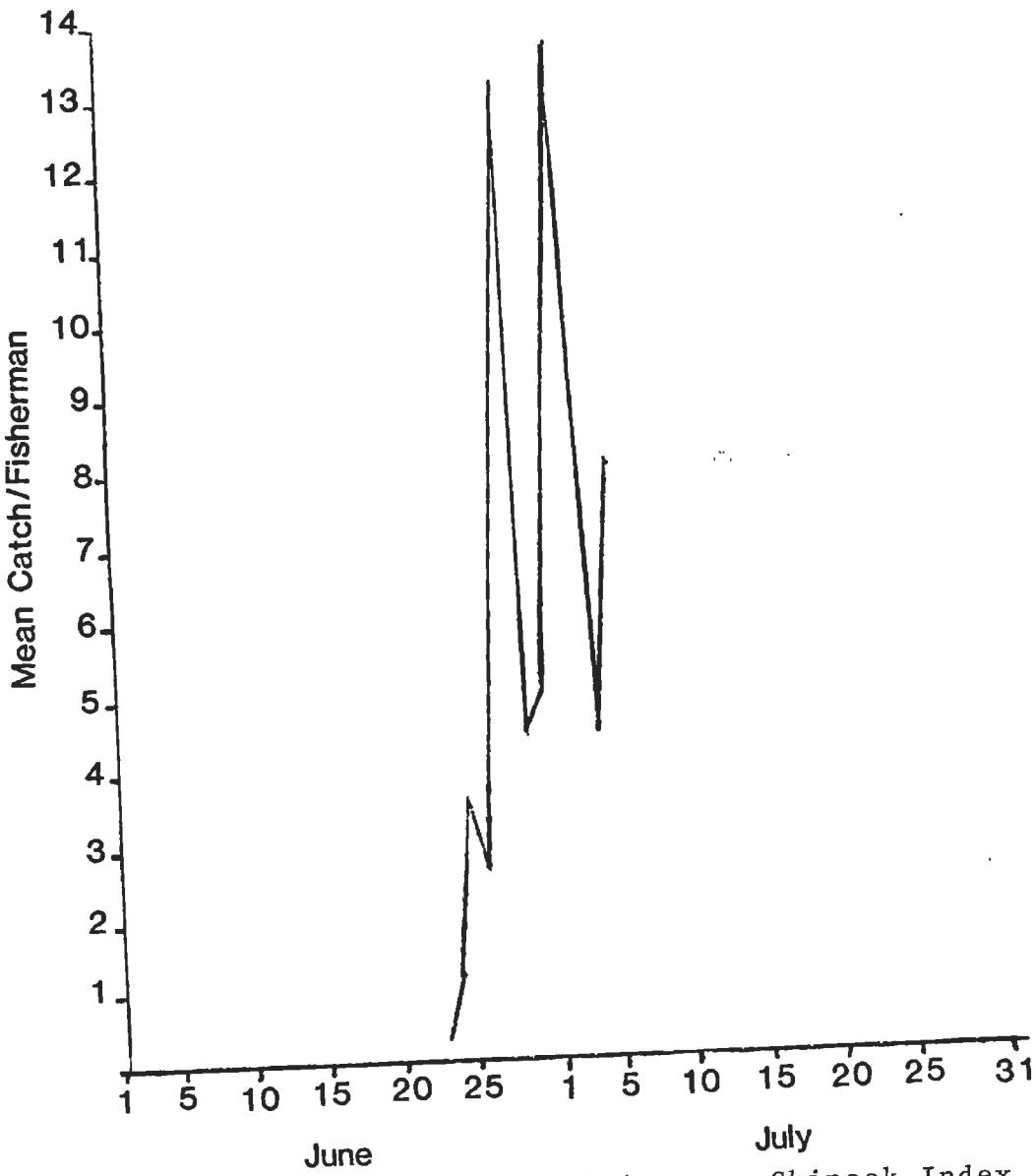

Figure 2. Unalakleet Subsistence Chinook Index, 1984.

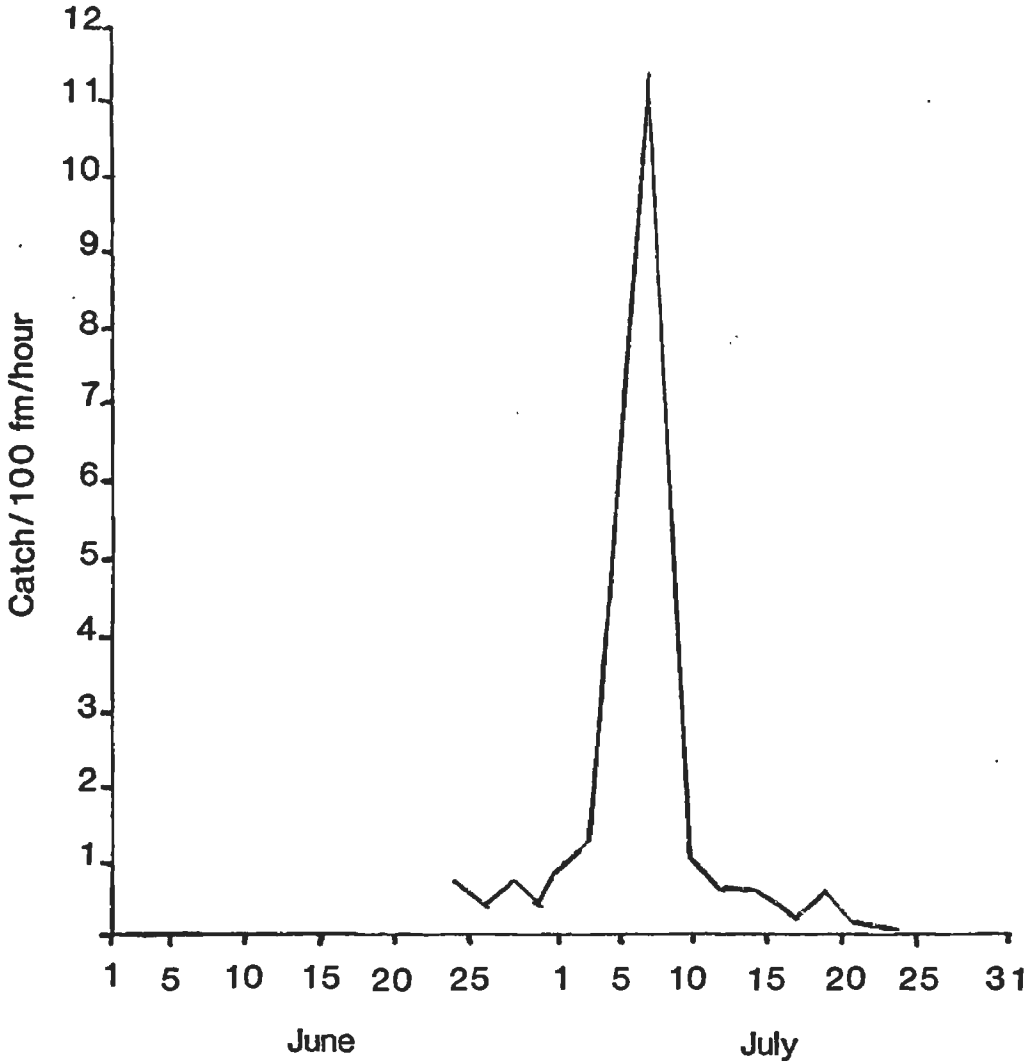

Figure 3. Unalakleet Test Fishing, Daily Chinook CPUE in 8 1/4" Mesh, 1984.

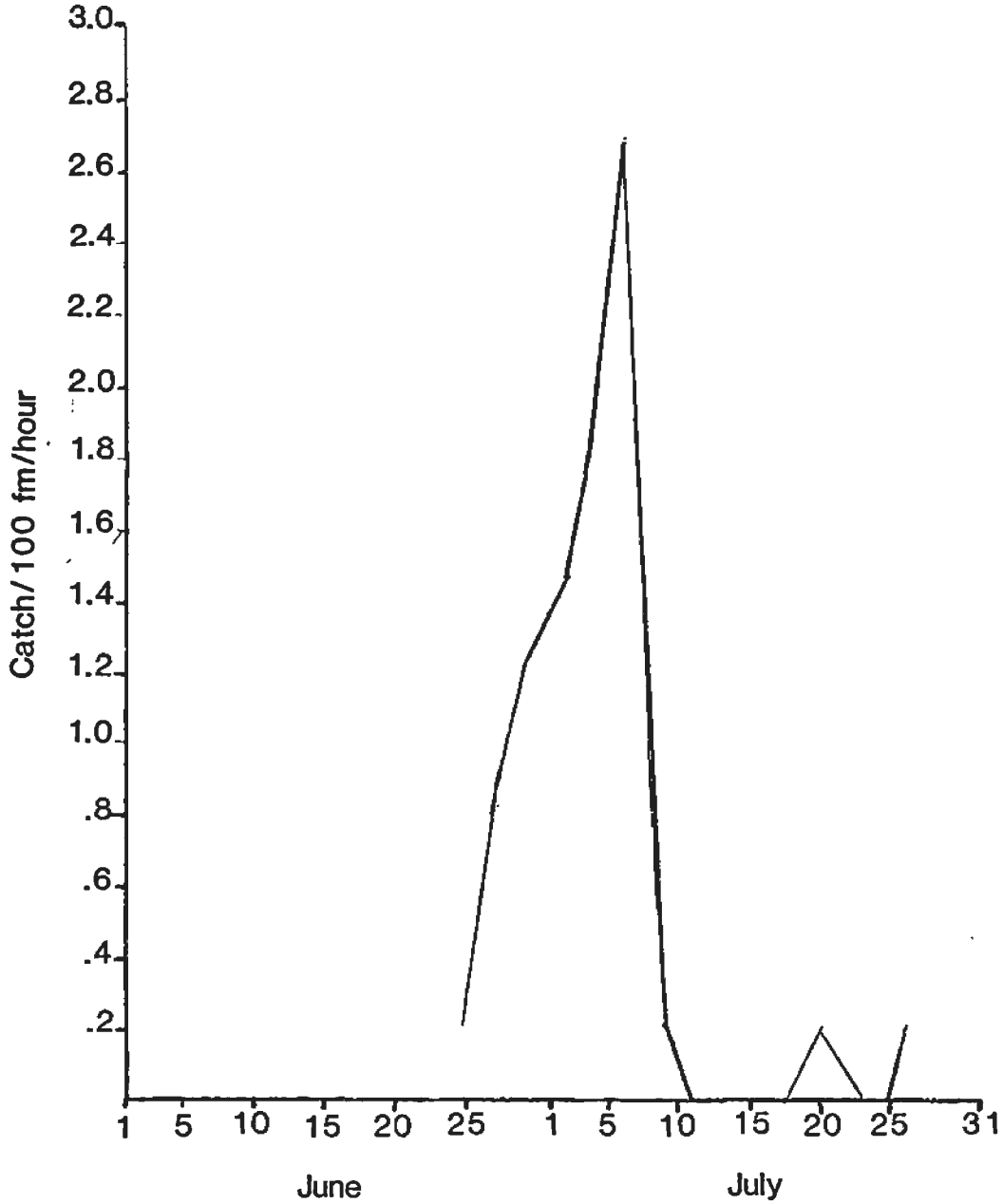

Figure 4. Unalakleet Test Fishing, Daily Chinook CPUE in 5 7/8" Mesh, 1984.

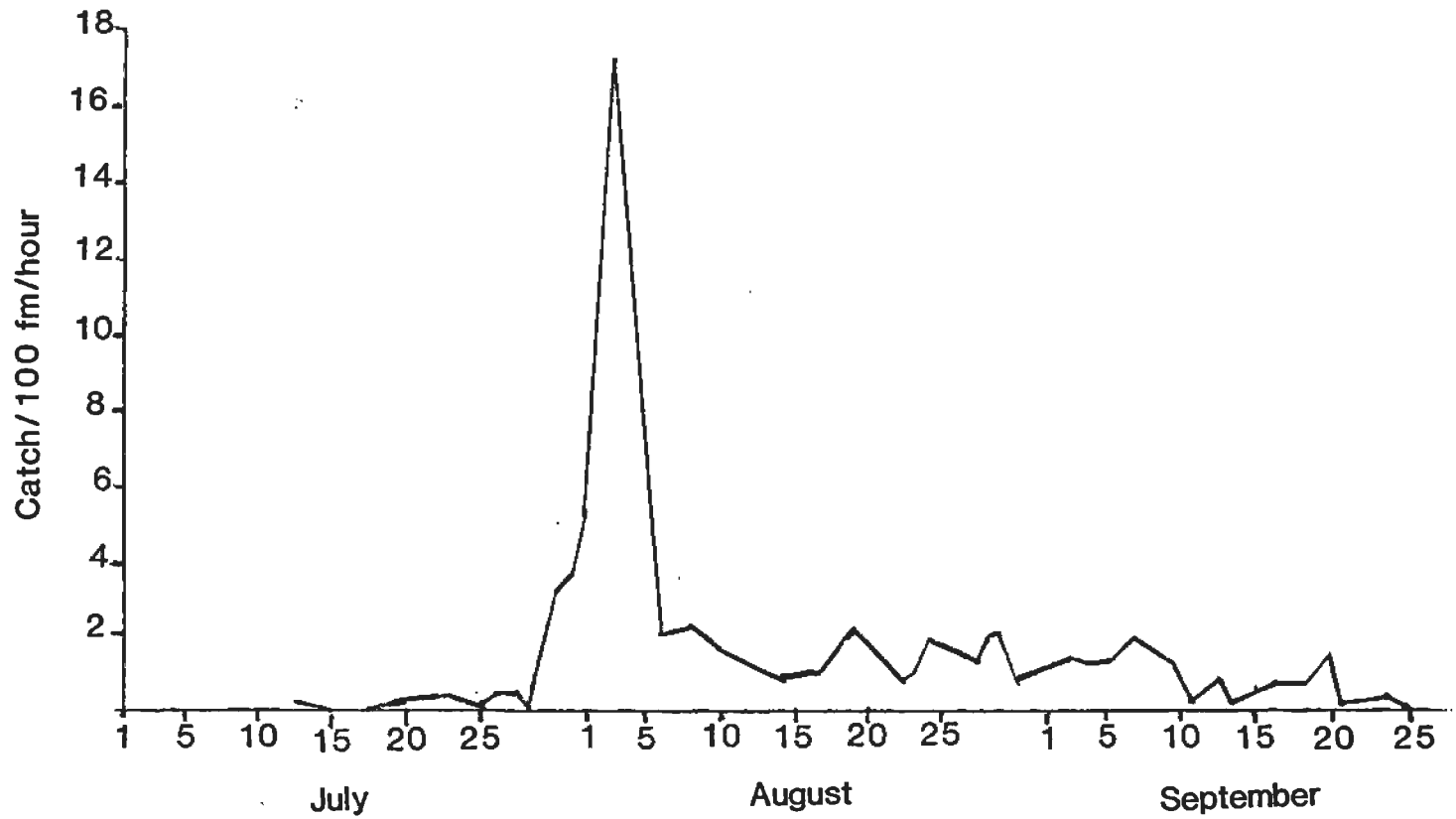

Figure 5. Unalakleet Test Fishing, Daily Coho CPUE in 5 7/8" Mesh, 1984.

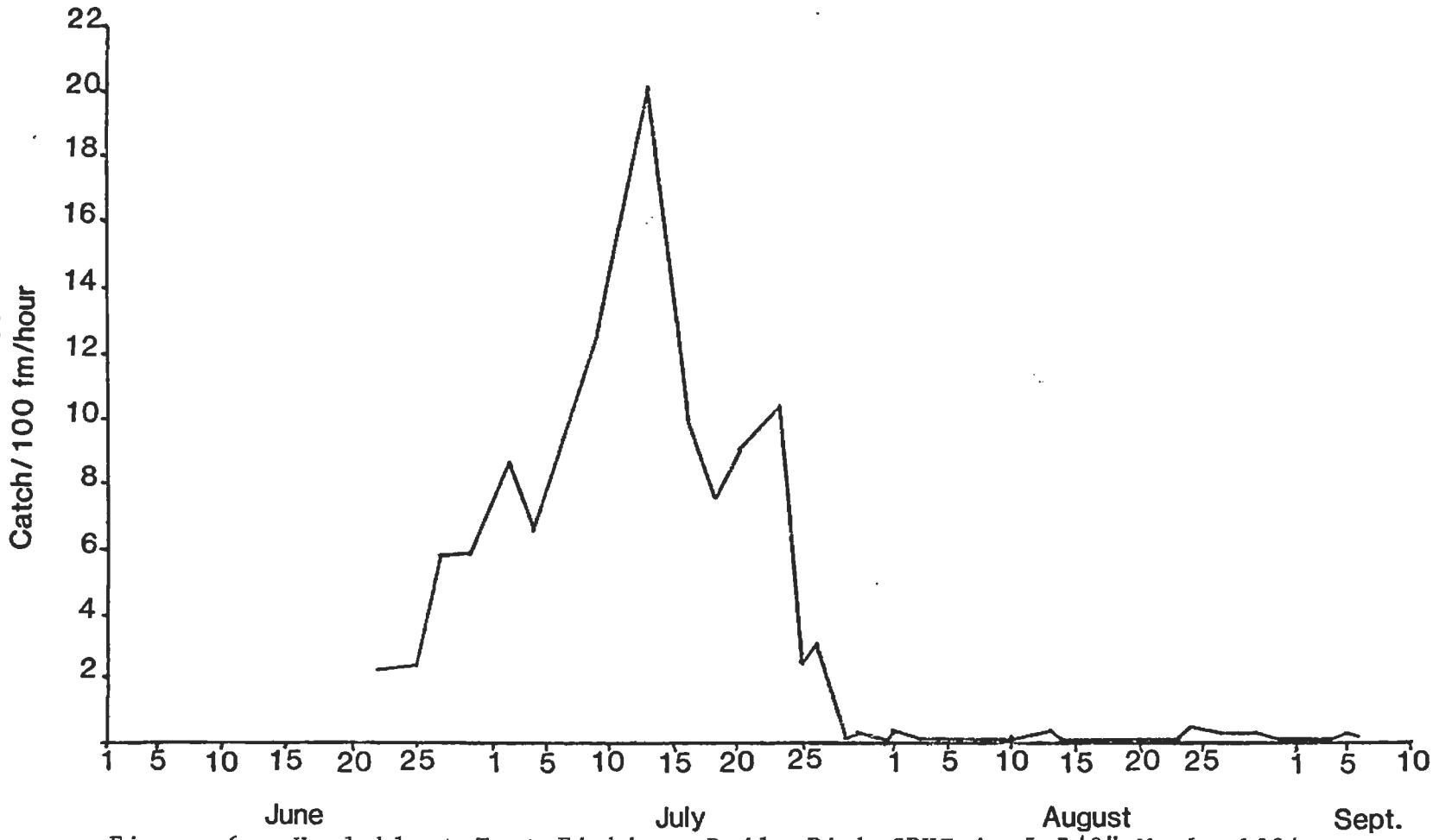

Figure 6. Unalakleet Test Fishing, Daily Pink CPUE in 5 7/8" Mesh, 1984.

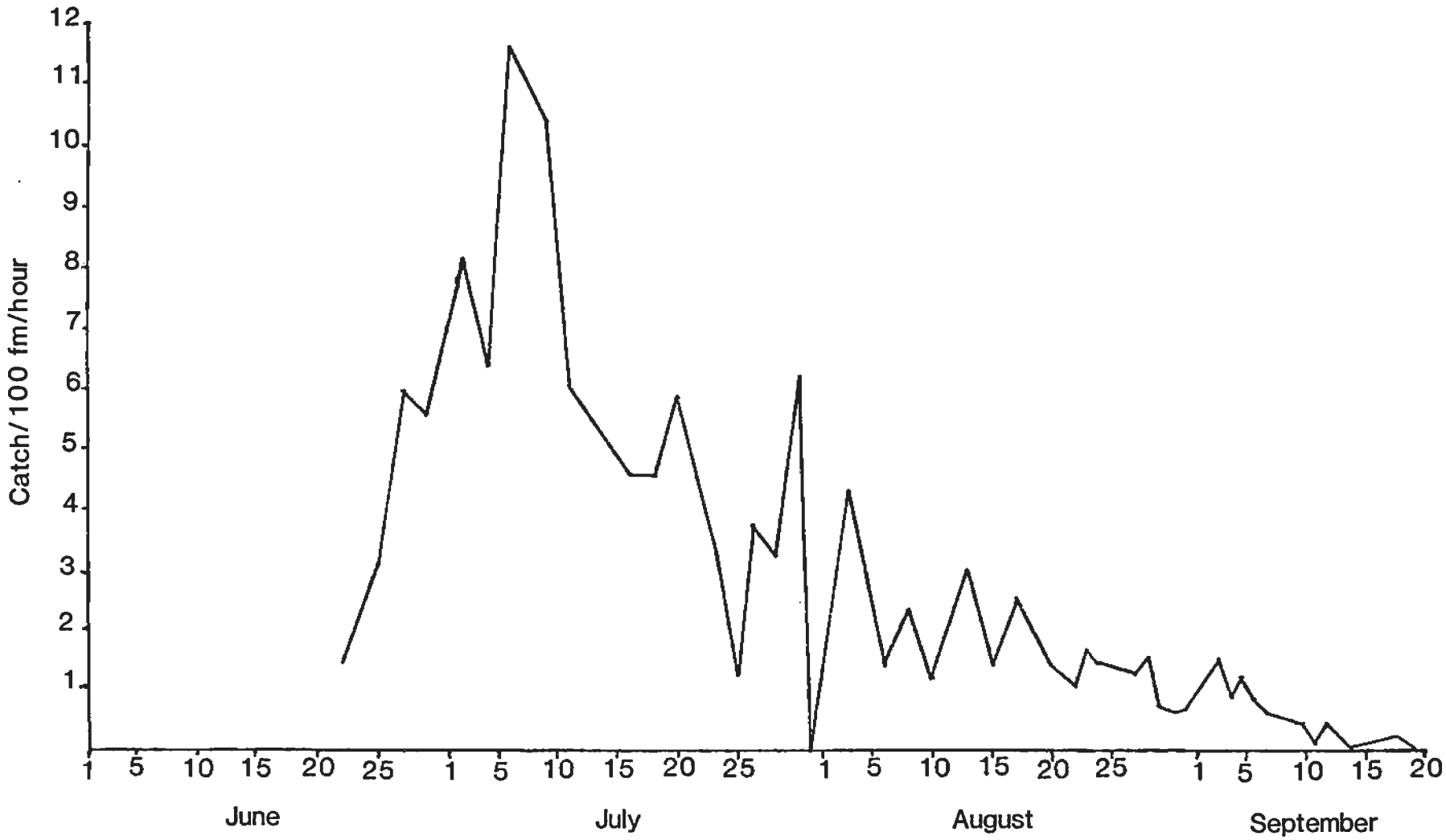

Figure 7. Unalakleet Test Fishing, Daily Chum CPUE in 5 7/8" Mesh, 1984.

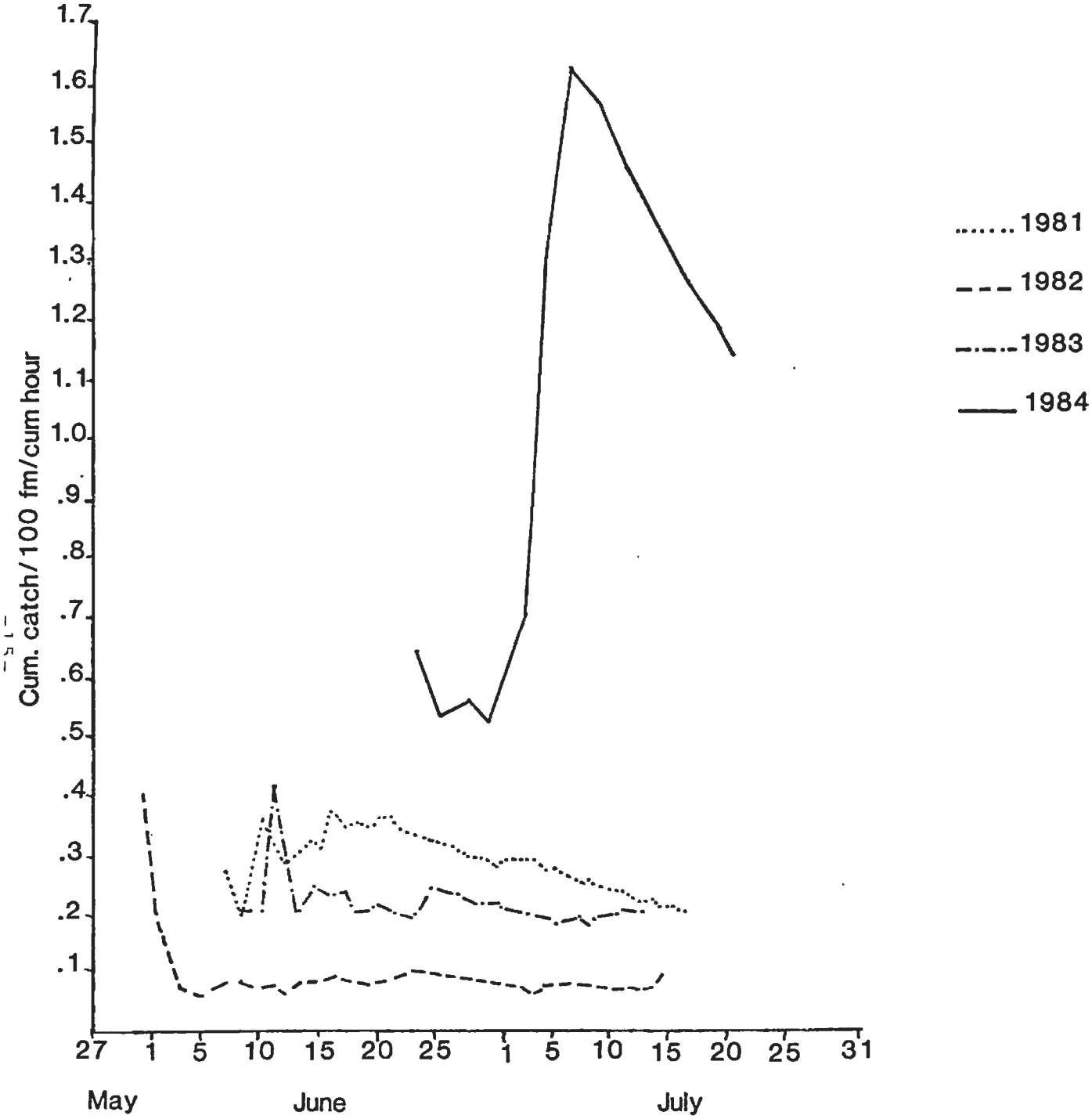

Figure 8. Unalakleet Test Fishing, Cumulative Chinook CPUE in 8 1/4" Mesh, 1981-84.

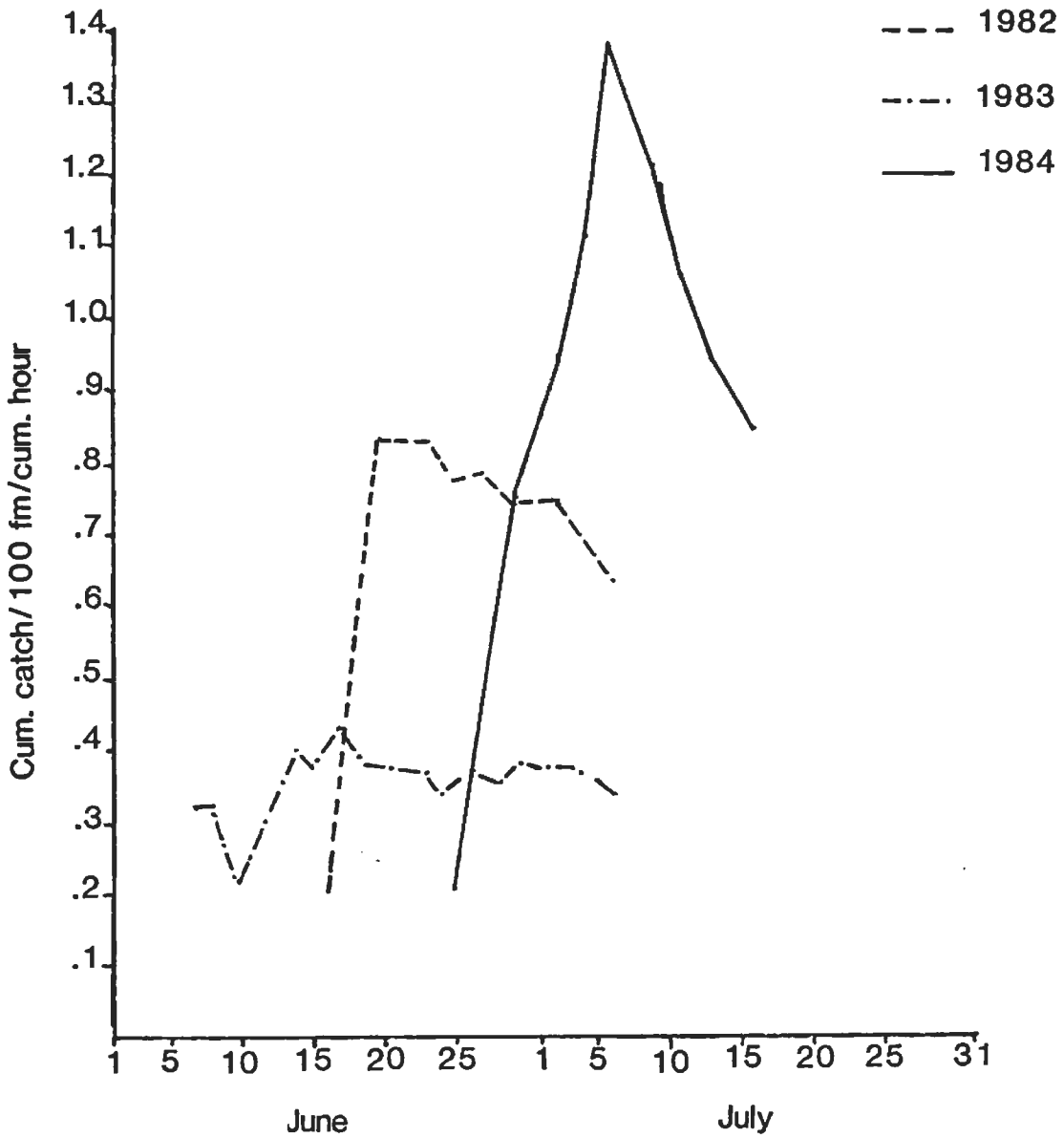

Figure 9. Unalakleet Test Fishing, Cumulative Chinook CPUE in 5 7/8" Mesh, 1982-84.

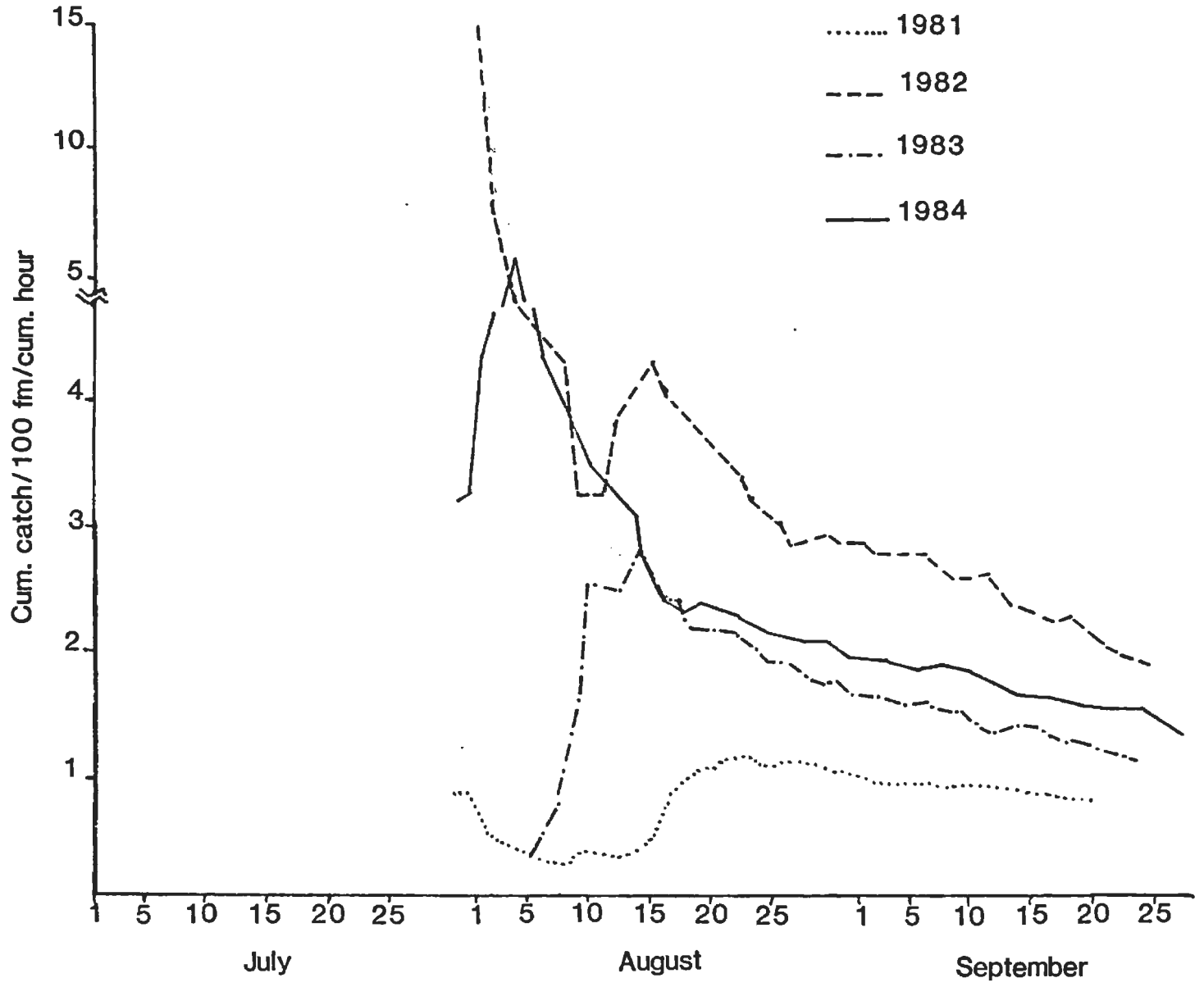

Figure 10. Unalakleet Test Fishing, Cumulative Coho CPUE in 5 7/8" Mesh, 1981-84.

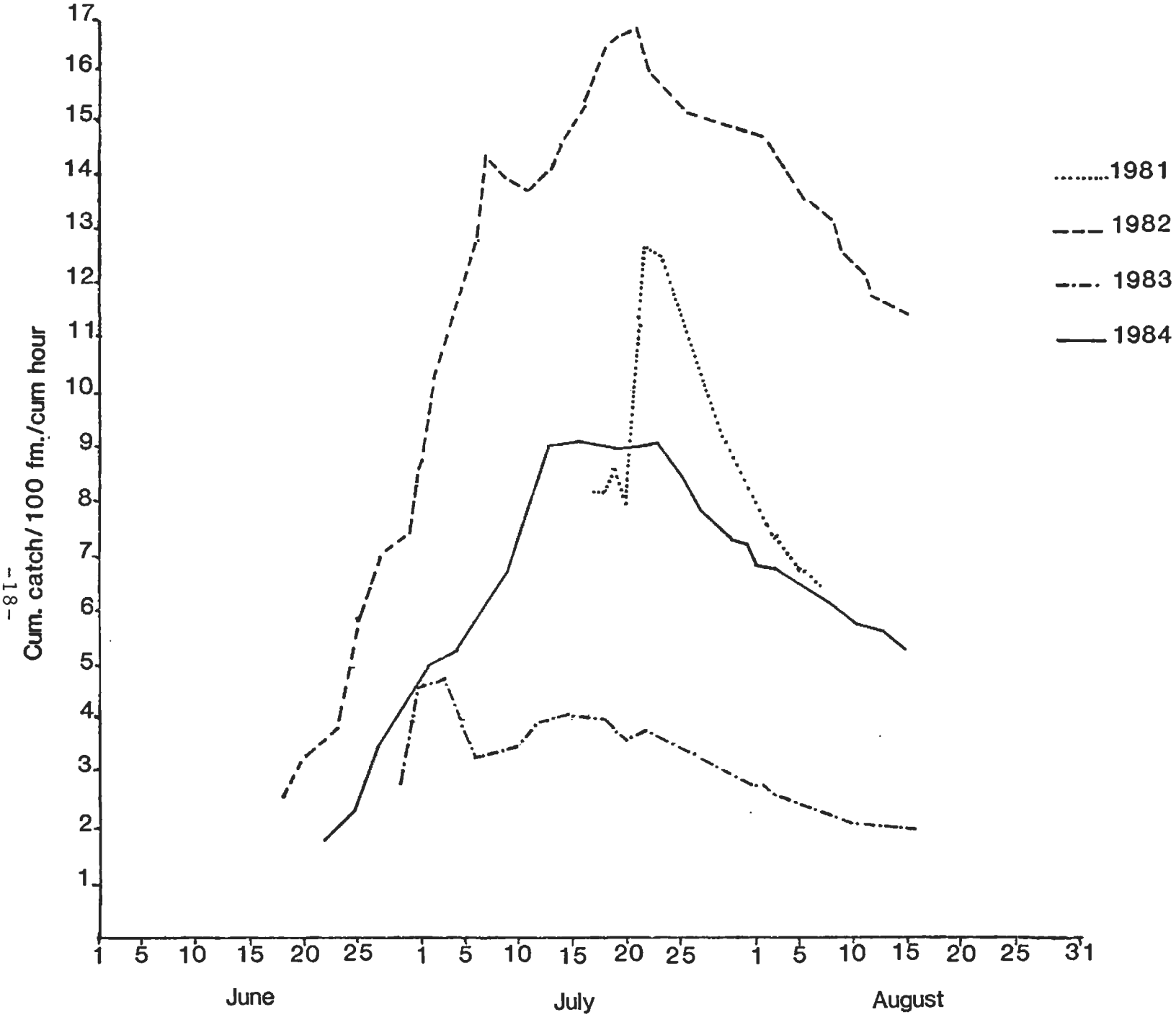

Figure 11. Unalakleet Test Fishing, Cumulative Pink CPUE in 5 7/8" Mesh, 1981-84.

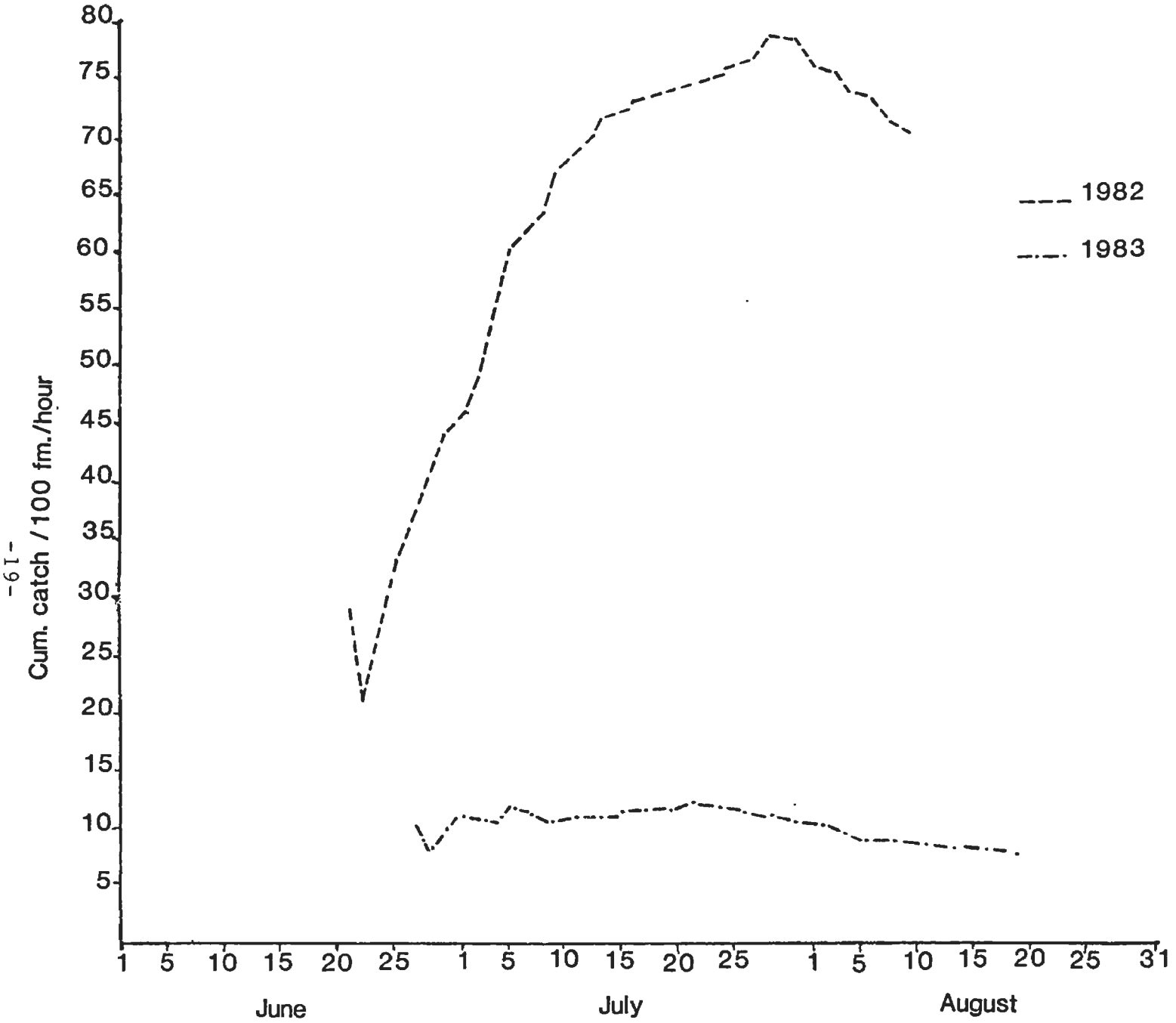

Figure 12. Unalakleet Test Fishing, Cumulative Pink CPUE in 4" Mesh, 1982-83.

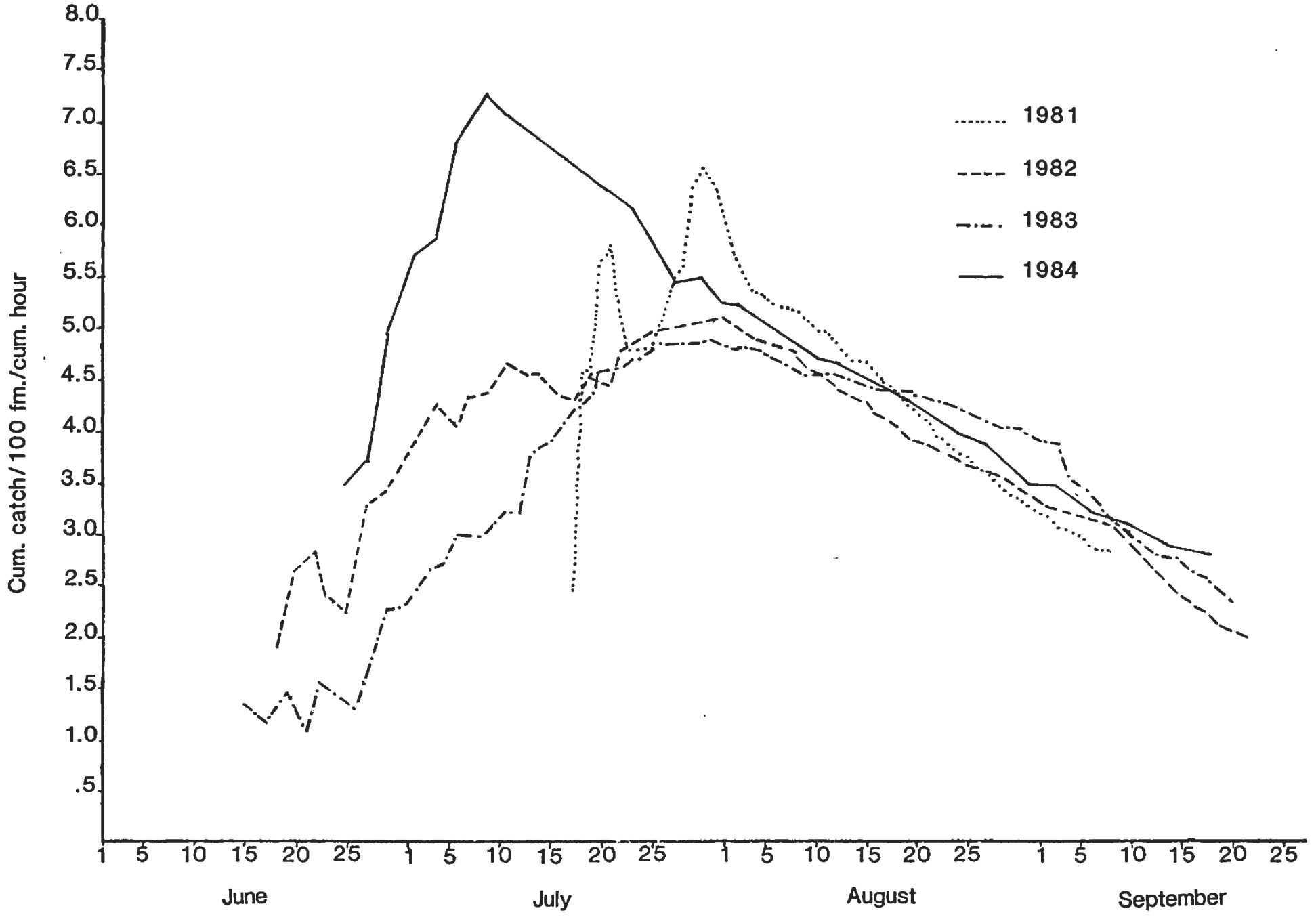

Figure 13. Unalakleet Test Fishing, Cumulative Chum CPUE in 5 7/8" Mesh, 1981-84.

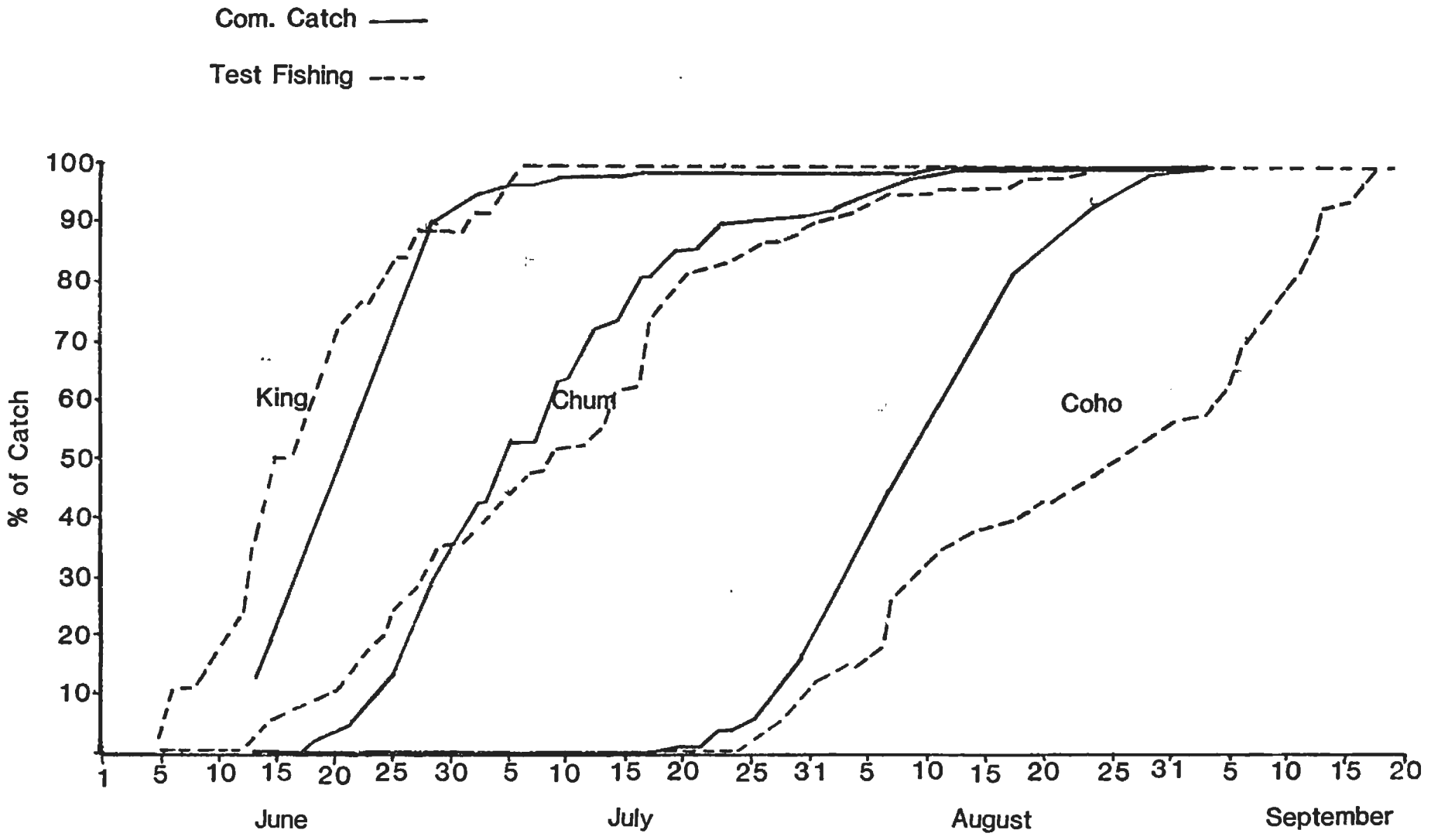

Figure 14. Unalakleet Cumulative Catch Percentages, 1982.

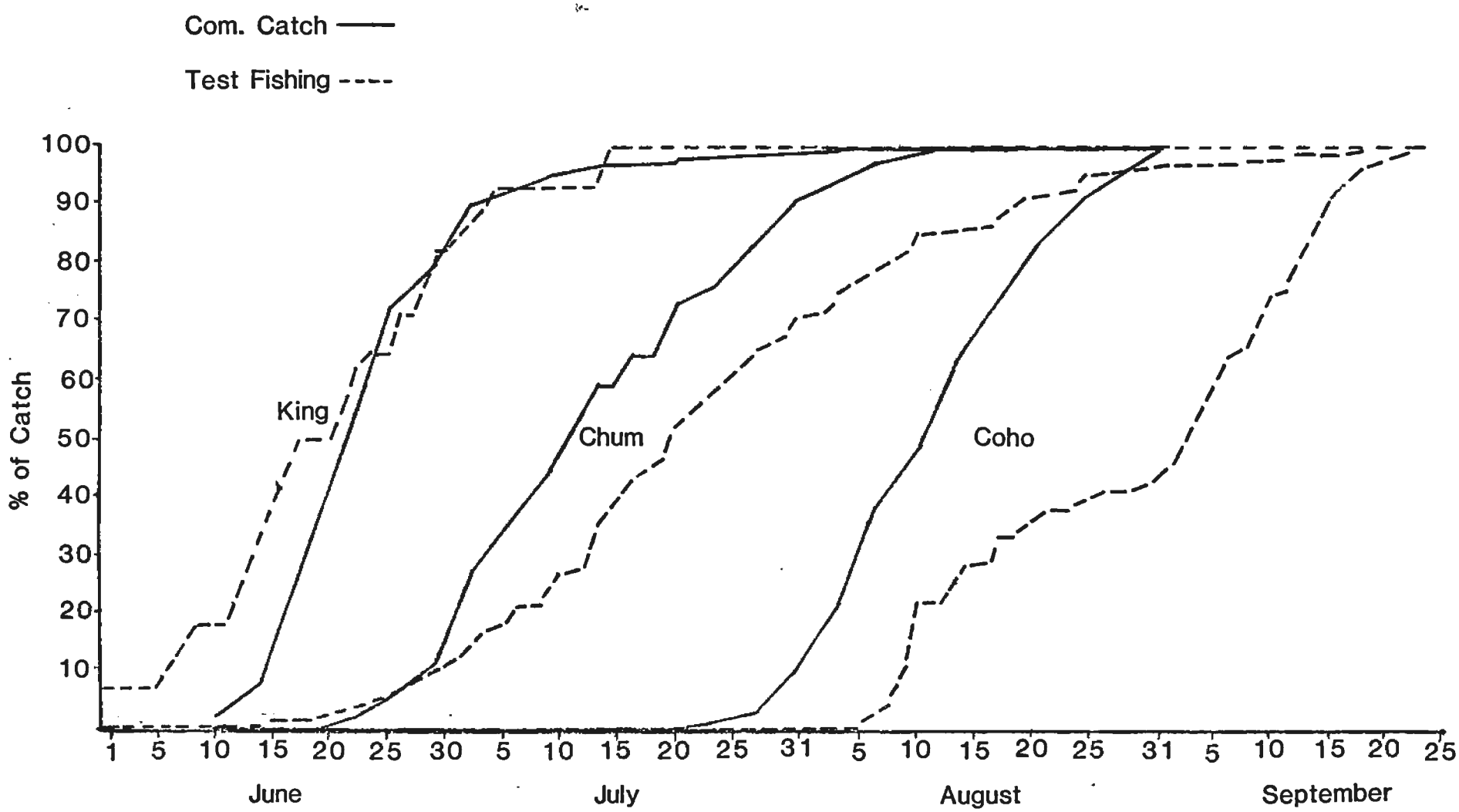

Figure 15. Unalakleet Cumulative Catch Percentages, 1983.

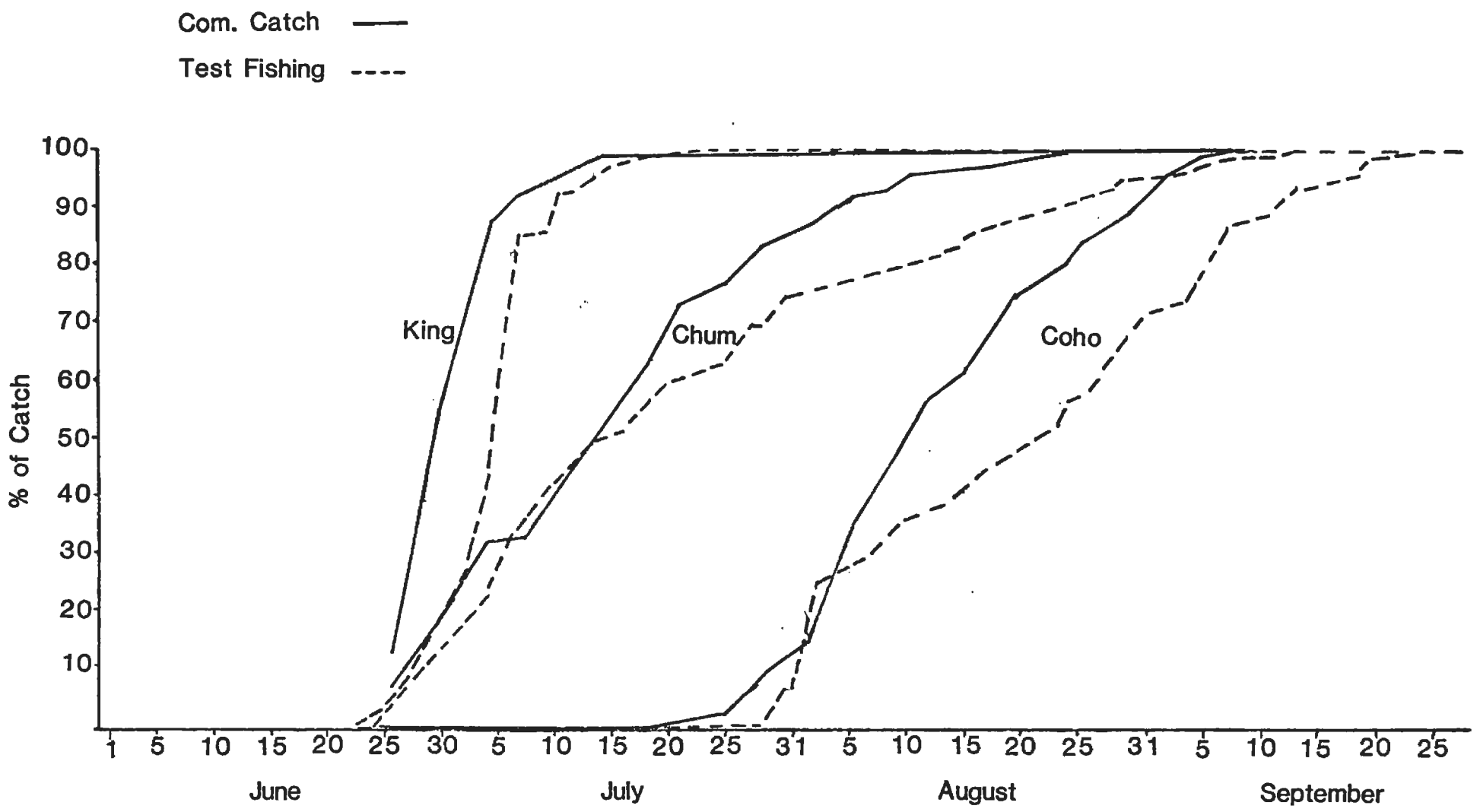

Figure 16. Unalakleet Cumulative Catch Percentages, 1984.

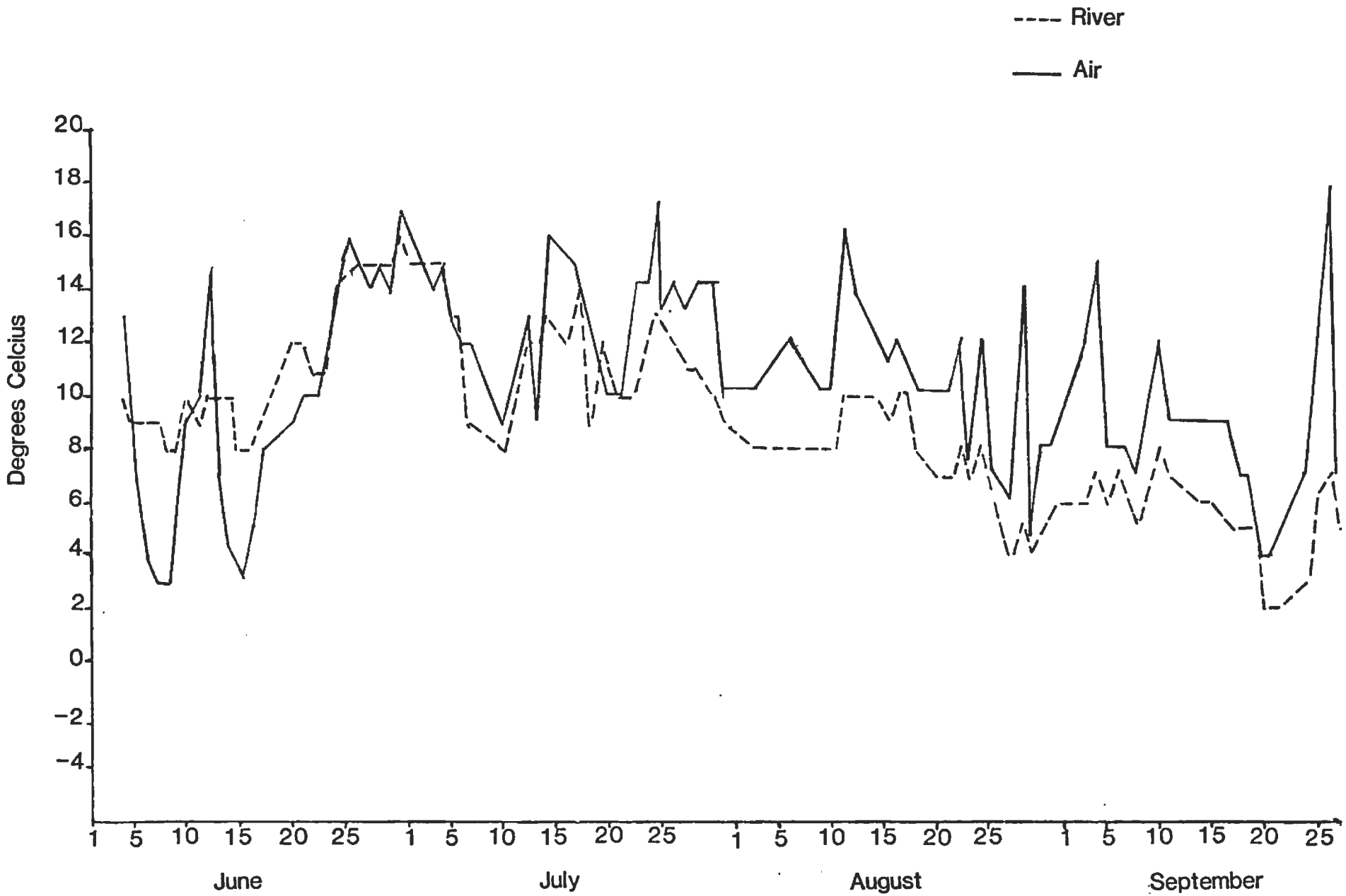

Figure 17. Unalakleet Area Temperatures, 1984.

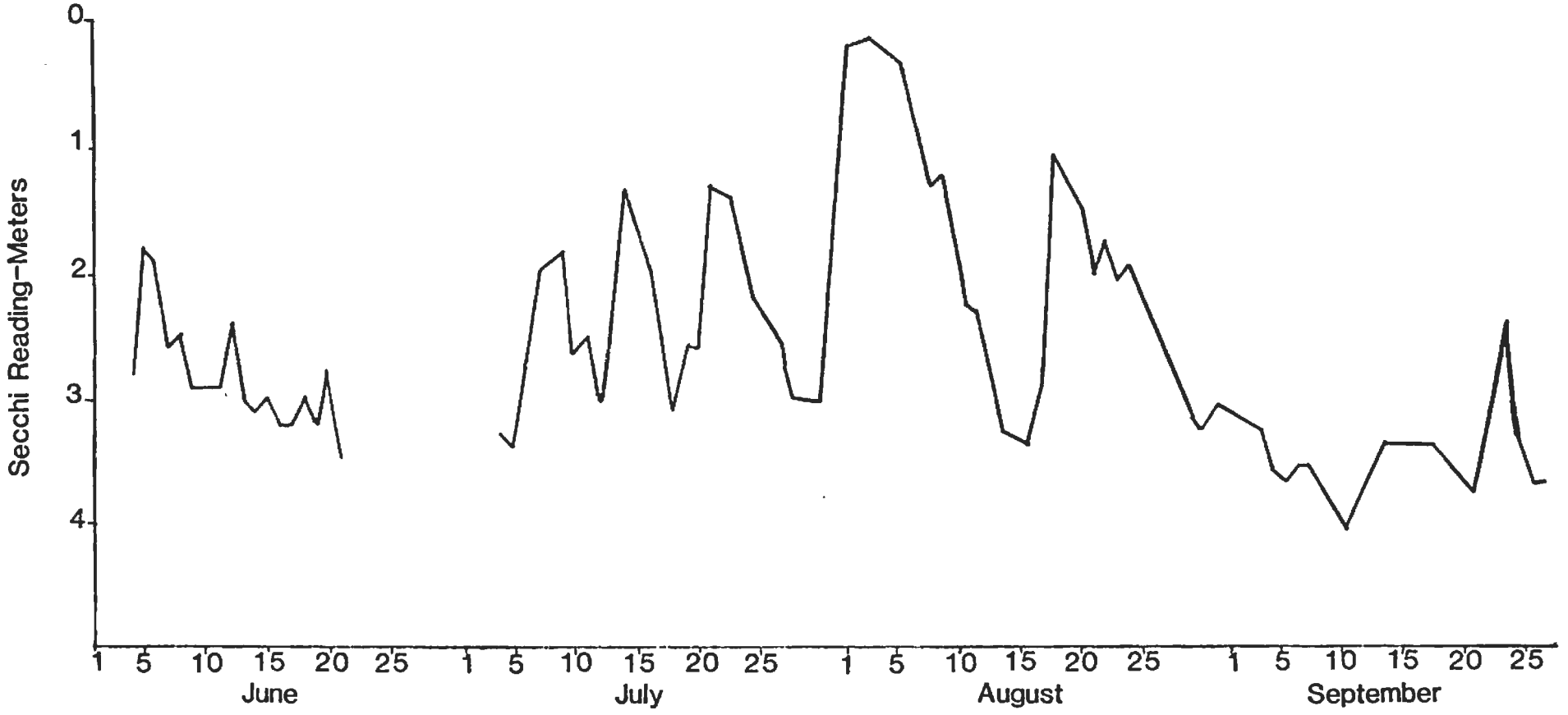

Figure 18. Unalakleet River Turbidity, 1984.

Table 1. Unalakleet Test Fishing, Daily Chinook CPUE in 8 1/4" Mesh, 1984

Date	Hours	Catch	CPUE
June 24	23.0	3	.65
26	23.7	2	.42
28	23.5	3	.64
30	23.8	2	.42
July 1	24.0	4	.83
3	23.8	6	1.26
5	24.0	23	4.79
7	5.7	13	11.40
10	23.9	5	1.05
12	23.4	3	.64
14	24.2	3	.62
17	23.7	1	.21
19	23.6	3	.64
21	24.2	1	.21
24	24.5	0	.00
		72	

Table 2. Unalakleet Test Fishing, Daily Chinook CPUE in 5 7/8" Mesh, 1984

Date	Hours	Catch	CPUE
June 25	24.2	1	.21
27	24.5	4	.82
29	24.4	6	1.23
July 2	23.8	7	1.47
4	24.0	9	1.87
6	24.1	13	2.70
9	24.1	1	.21
11	23.9	0	.00
13	24.1	0	.00
16	24.0	0	.00
18	24.2	0	.00
20	24.0	1	.21
23	23.5	0	.00
25	23.9	0	.00
26	24.0	1	.21
		43	

Table 3. Unalakleet Test Fishing, Daily Coho CPUE in 5 7/8" Mesh, 1984

Date	Hours	Catch	CPUE
July 13	24.1	1	.21
16	24.0	0	.00
18	24.2	0	.00
20	24.0	1	.21
23	23.5	2	.43
25	23.9	1	.21
26	24.0	2	.42
27	24.1	2	.42
28	11.4	0	.00
30	24.6	16	3.25
31	2.7	2	3.70
Aug. 1	23.3	26	5.58
3	4.6	16	17.39
6	24.3	10	2.06
8	23.3	10	2.06
10	23.9	8	1.67
13	24.0	5	1.04
14	24.2	4	.83
15	23.8	4	.83
17	25.0	6	1.20
20	24.0	11	2.29
22	24.7	4	.81
23	23.2	6	1.29
24	24.0	9	1.87
27	23.0	6	1.30
28	22.8	9	1.97
29	25.3	11	2.17
30	24.2	4	.83
31	30.7	7	1.14
Sept. 3	16.7	5	1.50
4	23.0	6	1.30
5	24.2	7	1.45
6	24.2	9	1.86
7	24.3	10	2.06
10	23.5	5	1.06
11	33.1	2	.30
12	22.0	3	.68
13	17.0	3	.88
14	23.7	1	.21
17	24.6	4	.81
18	24.4	4	.81
19	23.2	4	.86
20	23.8	7	1.47
21	8.6	0	.00
24	23.6	2	.42
25	27.5	0	.00
26	20.3	0	.00
27	23.7	0	.00

		257	

Table 4. Unalakleet Test Fishing, Daily Pink CPUE in 5 7/8" Mesh, 1984

Date	Hours	Catch	CPUE
June 22	24.1	11	2.28
25	24.2	12	2.48
27	24.5	29	5.92
29	24.4	29	5.94
July 2	23.8	41	8.61
4	24.0	32	6.67
6	24.1	45	9.34
9	24.1	61	12.66
11	23.9	81	16.95
13	24.1	97	20.12
16	24.0	48	10.00
18	24.2	37	7.64
20	24.0	44	9.17
23	23.5	49	10.43
25	23.9	12	2.51
26	24.0	15	3.12
27	24.1	9	1.87
28	11.4	0	.00
30	24.6	1	.20
31	2.7	0	.00
Aug. 1	23.3	2	.43
3	4.6	0	.00
6	24.3	0	.00
8	23.3	0	.00
10	23.9	0	.00
13	24.0	2	.42
14	24.2	0	.00
15	23.8	0	.00
17	25.0	0	.00
20	24.0	0	.00
22	24.7	0	.00
23	23.2	0	.00
24	24.0	2	.42
27	23.0	1	.22
28	22.8	1	.22
29	25.3	1	.20
30	24.2	0	.00
31	30.7	0	.00
Sept. 3	16.7	0	.00
4	23.0	0	.00
5	24.2	1	.21
6	24.2	1	.21
		664	

Table 5. Unalakleet Test Fishing, Daily Chum CPUE in 5 7/8" Mesh, 1984

Date	Hours	Catch	CPUE
June 22	24.1	7	1.45
25	24.2	15	3.10
27	24.4	29	5.92
29	24.4	27	5.53
July 2	23.8	39	8.19
4	24.0	31	6.46
6	24.1	56	11.62
9	24.1	50	10.37
11	23.9	29	6.07
13	24.1	26	5.39
16	24.0	22	4.58
18	24.2	22	4.55
20	24.0	28	5.83
23	23.5	15	3.19
25	23.9	6	1.26
26	24.0	18	3.75
27	24.1	16	3.32
28	11.4	3	1.32
30	24.6	30	6.10
31	2.7	0	.00
Aug. 1	23.3	7	1.50
3	4.6	4	4.35
6	24.3	7	1.44
8	23.3	11	2.36
10	23.9	6	1.26
13	24.0	14	2.92
14	24.2	12	2.48
15	23.8	7	1.47
17	25.0	13	2.60
20	24.0	7	1.46
22	24.7	5	1.01
23	23.2	8	1.72
24	24.0	7	1.46
27	23.0	6	1.30
28	22.8	7	1.54
29	25.3	4	.79
30	24.2	3	.62
31	30.7	4	.65
Sept. 3	16.7	5	1.50
4	23.0	4	.87
5	24.2	6	1.24
6	24.2	4	.83
7	24.3	3	.62
10	23.5	2	.43
11	33.1	1	.15
12	22.0	2	.45
13	17.0	1	.45
14	23.7	0	.00
17	24.6	1	.20
18	24.4	1	.20
19	23.2	0	.00
		631	

Table 6. Unalakleet Test Fishing, Total Fish Caught, 1984

Species	Net	Males	Females	Total
Chinook	8 1/4"	34 (47%)	38 (53%)	72
Chinook	5 7/8"	32 (74%)	11 (26%)	43
Coho	5 7/8"	129 (50%)	128 (50%)	257
Pink	5 7/8"			664
Chum	5 7/8"	337 (53%)	294 (47%)	631

Table 7. Unalakleet River Drift Sets, 1984

Date	Location	Duration	Catch
July 9	Mile 1.5	10 minutes	3 chinook, 1 chum
	Mile .5	3 minutes	1 chum, 1 pink
July 13	Mile 4	10 minutes	No catch
	Mile 3	10 minutes	1 chinook
	Mile 1.5	10 minutes	2 chinook, 6 chum, 2 pink
	Mile .5	7 minutes	1 chinook, 2 chum, 2 pink

Table 8. Unalakleet River Beach Seines, 1984

Date	Location	Duration	Catch
July 7	Mile 6	150 yds.	74 chum, 98 pink
10	Mile 6	150 yds.	94 chum, 124 pink
14	Mile 6	150 yds.	1 chinook, 10 chum, 513 pink
18	Mile 6	100 yds.	1 chum, 500 pink
Aug. 9	Mile 13	200 yds.	5 coho, 5 pink
13	Mile 13	200 yds.	1 pink
15	Mile 13	200 yds.	No catch
16	Mile 13	200 yds.	1 pink
16	Mile 12	150 yds.	1 coho, 1 chum
17	Mile 12	150 yds.	1 coho, 1 chum

Table 9. Unalakleet River Subsistence Chinook Index, 1984

Date	Fishermen	Catch	$\bar{x}$
June 23	3	1	.3
24	4	5	1.2
25	5	18	3.6
26	5	13	2.6
27	4	20	5.0
28	5	66	13.2
29	5	22	4.4
30	5	25	5.0
July 1	4	33	8.2
2	3	41	13.7
3	2	16	8.0
4	2	9	4.5
5	2	16	8.0
		285	

Appendix Table 1. Unalaklect Tent Fishing, Cumulative Chinook CPUE in 8 1/4" Mesh, 1981-1984. 1/

	1981 - 30 fm					1982 - 20 fm					1983 - 20 fm					1984 - 20 fm				
Date	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE
May 31											24.6	24.6	2	2	.41					
June 1											23.7	48.3	0	2	.21					
2											25.6	73.4	0	2	.16					
3											58.5	132.4	0	2	.08					
4																				
5											16.0	148.4	0	2	.07					
6											12.0	160.4	1	3	.09					
7	24	24	2	2	.28															
8	24	48	1	3	.21						12.5	172.9	0	3	.09					
9	24	72	3	6	.28						12.2	185.1	0	3	.08					
10	24	96	2	8	.37	24.0	24.0	1	1	.21										
11	24	120	4	12	.33	24.0	48.0	3	4	.42	11.7	196.8	0	3	.08					
12	24	144	1	13	.30	24.0	72.0	0	4	.28	12.6	209.4	0	3	.07					
13	24	168	3	16	.31	24.0	96.0	0	4	.21	11.7	221.1	1	4	.09					
14	24	192	3	19	.33	24.0	120.0	2	6	.25										
15	24	216	2	21	.32	24.0	144.0	1	7	.24	11.8	232.9	0	4	.09					
16	24	240	7	28	.38						11.6	244.5	1	5	.10					
17	24	264	1	29	.36	24.0	168.0	1	8	.24										
18	24	288	2	31	.36	24.0	192.0	0	8	.21	24.0	268.5	0	5	.09					
19	24	312	2	33	.35						12.1	280.6	0	5	.09					
20	24	336	5	38	.37	12.0	204.0	1	9	.22	11.6	292.2	0	5	.09					
21	24	360	2	40	.37	12.0	216.0	0	9	.21										
22	24	384	1	41	.35						11.8	304.0	1	6	.10					
23	24	408	1	42	.34	12.0	228.0	0	9	.20	11.9	315.9	1	7	.11					
24	24	432	3	45	.34	11.9	239.9	3	12	.25						23.0	23.0	3	3	.65
25	24	456	1	46	.33						24.0	339.9	0	7	.10					
26	24	480	0	46	.32						11.9	351.8	0	7	.10	23.7	46.7	2	5	.54
27	24	504	0	46	.30	12.0	251.9	0	12	.24	11.9	363.7	0	7	.10					
28	24	528	2	48	.30	11.5	263.4	0	12	.23						23.5	70.2	3	8	.57
29	24	552	2	50	.30						12.0	375.7	0	7	.09					
30	24	576	1	51	.29	12.0	275.4	0	12	.22	12.0	387.7	0	7	.09	23.8	94.0	2	10	.53
July 1	24	600	4	55	.30	13.5	288.9	0	12	.21						24.0	118.0	4	14	.59
2	24	624	2	57	.30						23.0	411.5	0	7	.09					
3	24	648	1	58	.30						11.8	423.3	0	7	.08	23.8	141.8	6	20	.71
4	24	672	0	58	.28	11.0	299.9	0	12	.20	11.8	435.1	1	8	.09					
5	24	696	0	58	.28	12.0	311.9	0	12	.19						24.0	165.8	23	43	1.30
6	24	720	1	59	.27						12.2	447.3	0	8	.09					
7	24	744	0	59	.26	13.0	324.9	1	13	.20	11.6	458.9	0	8	.09	5.7	171.5	13	56	1.63
8	24	768	1	60	.26	14.0	338.9	0	13	.19										
9	24	792	1	61	.25															
10	24	816	0	61	.25						12.6	471.5	0	8	.08	23.9	195.4	5	61	1.56
11	24	840	0	61	.24	12.0	350.9	3	16	.23	11.9	483.4	0	8	.08					
12	24	864	0	61	.23	11.8	362.7	0	16	.22						23.4	218.8	3	64	1.46
13	24	888	1	62	.23						11.6	495.0	0	8	.08					
14	24	912	0	62	.22	12.2	374.9	0	16	.21	11.9	506.9	2	10	.10	24.2	243.0	3	67	1.38
15	24	936	0	62	.22															
16	24	960	0	62	.21															
17																23.7	266.7	1	68	1.27
18																				
19																23.6	290.3	3	71	1.22
20																				
21																24.2	314.5	1	72	1.14
22																				
23																				
24																24.5	339.0	0	72	1.06

1/ Calculated from 1st fish caught.

Appendix Table 2. Unalakleet Test Fishing, Cumulative Chinook CPUE in 5 7/8" mesh, 1981-1984. 1/

	1981					1982 - 20 fm					1983 - 5 1/4" - 25 fm					1984 - 20 fm				
Date	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE
May 31																				
June 1																				
2																				
3																				
4																				
5																				
6																				
7											12.6	12.6	1	1	.32					
8											12.7	25.3	1	2	.32					
9																				
10											11.4	36.7	0	2	.22					
11																				
12											11.3	48.0	2	4	.33					
13																				
14											11.9	59.9	2	6	.40					
15											11.6	71.5	1	7	.39					
16						24.0	24.0	1	1	.21										
17											11.6	83.1	2	9	.43					
18						24.0	48.0	5	6	.62										
19											11.8	94.9	0	9	.38					
20						12.0	60.0	4	10	.83										
21											11.8	106.7	1	10	.37					
22						12.0	72.0	2	12	.83	11.7	118.4	1	11	.37					
23						12.0	84.0	2	14	.83										
24											11.6	130.0	0	11	.34					
25						11.9	95.9	1	15	.78						24.2	24.2	1	1	.21
26											11.9	141.9	2	13	.37					
27						12.1	108.0	2	17	.79						24.5	48.7	4	5	.51
28											11.8	153.7	1	14	.36					
29						12.2	120.2	1	18	.75	11.5	165.2	2	16	.39	24.4	73.1	6	11	.75
30						13.5	133.7	2	20	.75										
July 1											11.9	177.1	1	17	.38					
2						12.0	145.7	2	22	.75						23.8	96.9	7	18	.93
3											11.9	189.0	1	18	.38					
4						13.5	159.2	0	22	.69						24.0	120.9	9	27	1.12
5											11.9	200.9	0	18	.36					
6						12.0	171.2	0	22	.64	12.0	212.9	0	18	.34	24.1	145.0	13	40	1.38
7																				
8																				
9																24.1	169.1	1	41	1.21
10																				
11																23.9	193.0	0	41	1.06
12																				
13																24.1	217.1	0	41	.94
14																				
15																				
16																24.0	241.1	0	41	.85
17																				
18																				
19																				

1/ Calculated from 1st fish caught.

Appendix Table 3. Unalaklect Test Fishing, Cumulative Coho CPUE in 5 7/8" Mesh, 1981-1984. 1/

	1981 - 30 fm					1982 - 20 fm					1983 - 5 1/4 - 25 fm					1984 - 20 fm				
Date	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE
July 30	24	24	6	6	.82											24.6	24.6	16	16	3.25
31	24	48	6	12	.82											2.7	27.3	2	18	3.30
Aug. 1	24	72	3	15	.69	3.0	3.0	9	9	15.00						23.3	50.6	26	44	4.35
2	24	96	0	15	.52	4.4	7.4	3	12	8.11										
3	24	120	3	18	.49											4.6	55.2	16	60	5.43
4	24	144	0	18	.41	13.2	20.6	8	20	4.85										
5	24	168	0	18	.35	7.3	27.9	6	26	4.66	11.8	11.8	1	1	.34					
6	24	192	0	18	.31											24.3	79.5	10	70	4.40
7	24	216	3	21	.32						12.8	24.6	4	5	.81					
8	24	240	0	21	.29	12.6	40.5	9	35	4.32						23.3	102.8	11	81	3.94
9	24	264	9	30	.37	12.9	53.4	0	35	3.28	25.7	50.3	14	19	1.51					
10	24	288	3	33	.38						12.5	62.8	21	40	2.55	23.9	126.7	8	89	3.51
11	24	312	0	33	.35	12.2	65.6	8	43	3.28										
12	24	336	3	36	.35	12.5	78.1	17	60	3.84	1.3	64.1	0	40	2.50					
13	24	360	3	39	.36											24.0	150.7	5	94	3.12
14	24	384	5	44	.38						10.7	74.8	12	52	2.78	24.2	174.9	4	98	2.80
15	24	408	17	61	.49	12.3	90.4	18	78	4.31						23.8	198.7	5	103	2.59
16	24	432	36	97	.74	12.2	102.6	5	83	4.04	12.2	87.0	2	54	2.48					
17	24	456	27	124	.90						12.3	99.3	6	60	2.42	25.0	223.7	6	109	2.44
18	24	480	21	145	1.00	12.0	114.6	5	88	3.84	11.8	111.1	1	61	2.20					
19	24	504	20	165	1.08	12.2	126.8	1	89	3.51										
20	24	528	10	175	1.09											24.0	247.7	11	120	2.42
21	24	552	17	192	1.15						11.2	122.3	6	67	2.19					
22	24	576	10	202	1.16	12.2	139.0	6	95	3.42						24.7	272.4	4	124	2.28
23	24	600	13	215	1.18	11.8	150.8	2	97	3.22	12.0	134.3	2	69	2.06	23.2	295.6	6	130	2.20
24	24	624	2	217	1.15						11.5	145.8	2	71	1.95	24.0	319.6	9	139	2.17
25	24	648	5	222	1.13	12.1	162.9	3	100	3.07										
26	24	672	13	235	1.15	12.2	175.1	0	100	2.86	11.5	157.3	5	76	1.93					
27	24	696	5	240	1.14											23.0	342.6	6	145	2.12
28	24	720	4	244	1.12						11.9	169.2	0	76	1.80	22.8	365.4	9	154	2.11
29	24	744	1	245	1.09	12.5	187.6	11	111	2.96						25.3	390.7	11	165	2.11
30	24	768	0	245	1.05	11.3	198.9	5	116	2.92	11.9	181.1	4	80	1.77	24.2	414.9	4	169	2.04
31	24	792	3	248	1.03						11.7	192.8	1	81	1.68	30.7	445.6	7	176	1.97

Appendix Table 3. Unalakleet Test Fishing, Cumulative Coho CPUE in 5 7/8" Mesh, 1981-1984. (Continued)

	1981 - 30 fm					1982 - 20 fm					1983 - 5 1/4 - 25 fm					1984 - 20 fm				
Date	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE
Sept. 1	24	816	2	250	1.01	12.2	211.1	6	122	2.89										
2	24	840	1	251	.99	11.5	222.6	2	124	2.79	12.3	205.1	5	86	1.68					
3	24	864	2	253	.97											16.7	462.3	5	181	1.96
4	24	888	3	256	.95						47.9	253.0	15	101	1.60	23.0	485.3	6	187	1.93
5	24	912	6	262	.95	11.6	234.2	8	132	2.82						24.2	509.5	7	194	1.90
6	24	936	6	268	.94	9.8	244.0	3	135	2.77	23.8	276.8	11	112	1.62	24.2	533.7	9	203	1.90
7	24	960	3	271	.93						23.7	300.5	5	117	1.56	24.3	558.0	10	213	1.91
8	24	984	6	277	.93	11.8	255.8	0	135	2.64	23.8	324.3	6	123	1.52					
9	24	1008	6	283	.93						24.2	348.5	10	133	1.53					
10	24	1032	9	292	.93	28.5	284.3	13	148	2.60	24.2	372.7	3	136	1.46	23.5	581.5	5	218	1.87
11	24	1056	3	295	.92	23.5	307.8	14	162	2.63	24.2	396.9	2	138	1.39	33.1	614.6	2	220	1.79
12	24	1080	3	298	.91	25.6	333.4	8	170	2.55	24.1	421.0	8	146	1.39	22.0	636.6	3	223	1.75
13	24	1104	6	304	.91	25.6	359.0	5	175	2.44						17.0	653.6	3	226	1.73
14	24	1128	0	304	.89	21.3	380.3	6	181	2.38	22.7	443.7	14	160	1.44	23.7	677.3	1	227	1.68
15	24	1152	0	304	.87	26.7	407.0	7	188	2.31	24.2	467.9	9	169	1.44					
16	24	1176	3	307	.86	22.2	429.2	5	193	2.25	21.0	488.9	3	172	1.41					
17	24	1200	0	307	.84	24.8	454.0	10	203	2.24	23.9	512.8	2	174	1.36	24.6	701.9	4	231	1.65
18	24	1224	0	307	.83	22.1	476.1	15	218	2.29	23.0	535.8	2	176	1.31	24.4	726.3	4	235	1.62
19	24	1248	0	307	.81	30.2	506.3	4	222	2.19										
20	24	1272	3	310	.80	19.1	525.4	0	222	2.11	48.9	584.7	4	180	1.23	23.8	750.1	7	242	1.61
21						26.2	551.6	4	226	2.05	24.0	608.7	3	183	1.20	8.6	758.7	0	242	1.59
22						27.6	579.2	6	232	2.00	24.2	632.9	0	183	1.17					
23						20.2	599.4	2	234	1.95	23.4	656.3	1	184	1.12					
24						23.8	623.2	1	235	1.89						23.6	782.3	2	244	1.56
25																27.5	809.8	0	244	1.51
26																20.3	830.1	0	244	1.47
27																23.7	853.8	0	244	1.43

1/ Calculated from day 10th fish caught (that day's catch is included).

Appendix Table 4. Unalakleet Test Fishing, Cumulative Pink CPUE in 5 7/8" Mesh 1981-1984. 1/

	1981 - 10 fm					1982 - 20 fm					1983 - 5 1/4 - 25 fm					1984 - 20 fm				
Date	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE
June 17						24.0	24.0	13	13	2.71										
18																				
19																				
20						12.0	36.0	11	24	3.33										
21																				
22						12.0	48.0	10	34	3.54						24.1	24.1	11	11	1.83
23						12.0	60.0	13	47	3.92										
24																				
25						11.9	71.9	36	83	5.77						24.2	48.3	12	23	2.38
26																				
27						12.1	84.0	37	120	7.14						24.5	72.8	29	52	3.57
28																				
29						12.2	96.2	24	144	7.48	11.5	11.5	8	8	2.78	24.4	97.2	29	81	4.17
30						13.5	109.7	23	167	7.61										
July 1											11.9	23.4	19	27	4.62					
2						12.0	121.7	87	254	10.44						23.8	121.0	41	122	5.04
3											11.9	35.3	6	33	4.67					
4						13.5	135.2	61	315	11.65						24.0	145.0	32	154	5.31
5											11.9	47.2	15	48	4.07					
6						12.0	147.2	64	379	12.87	12.0	59.2	2	50	3.38	24.1	169.1	45	199	5.88
7						5.5	152.7	63	442	14.47										
8											12.1	71.3	12	62	3.48					
9						9.0	161.7	12	454	14.04						24.1	193.2	61	260	6.73
10											11.4	82.7	12	74	3.58					
11						6.5	168.2	12	466	13.85						23.9	217.1	81	341	7.85
12											11.5	94.2	19	93	3.95					
13						12.2	180.4	49	515	14.27	11.6	105.8	15	108	4.08	24.1	241.2	97	438	9.08
14						9.0	189.4	40	555	14.65										
15											11.7	117.5	13	121	4.12					
16						11.8	201.2	64	619	15.39						24.0	265.2	48	486	9.16

Appendix Table 4. Unalakleet Test Fishing, Cumulative Pink CPUE 5 7/8" Mesh 1981-1984. (Continued)

	1981 - 10 fm					1982 - 20 fm					1983 - 5 1/4 - 25 fm					1984 - 20 fm				
Date	Hrs.	Cum. Hrs.	Catch	Cum. Catch	cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE
17	24	24	20	20	8.33						11.8	129.3	10	131	4.05					
18	24	48	20	40	8.33	12.0	213.2	80	699	16.39						24.2	289.4	37	523	9.03
19	24	72	23	63	8.75	12.0	225.2	53	752	16.70	11.8	141.1	9	140	3.97					
20	24	96	15	78	8.12						11.5	152.6	0	140	3.67	24.0	313.4	44	567	9.05
21	24	120	51	129	10.75	11.8	237.0	49	801	16.90										
22	24	144	55	184	12.78	24.5	261.5	37	838	16.02	12.2	164.8	19	159	3.86					
23	24	168	28	212	12.62											23.5	336.9	49	616	9.14
24	24	192	17	229	11.93						11.5	176.3	2	161	3.65					
25	24	216	22	251	11.62	12.6	274.1	8	846	15.43						23.9	360.8	12	628	8.70
26	24	240	14	265	11.04	2.5	276.6	1	847	15.31	12.0	188.3	3	164	3.48	24.0	384.8	15	643	8.35
27	24	264	12	277	10.49						11.7	200.0	2	166	3.32	24.1	408.9	9	652	7.97
28	24	288	5	282	9.79											11.4	420.3	0	652	7.76
29	24	312	9	291	9.33	4.6	281.2	2	849	15.10	11.7	211.7	0	166	3.14					
30	24	336	8	299	8.90											24.6	444.9	1	653	7.34
31	24	360	10	309	8.58						11.6	223.3	0	166	2.97	2.7	447.6	0	653	7.29
Aug. 1	24	384	4	313	8.15											23.3	470.9	2	655	6.95
2	24	408	4	317	7.77	4.4	285.6	0	849	14.86	12.1	235.4	0	166	2.82					
3	24	432	6	323	7.48						12.2	247.6	0	166	2.68	4.6	475.5	0	655	6.89
4	24	456	4	327	7.17	13.2	298.8	1	850	14.22										
5	24	480	2	329	6.85	7.3	306.1	0	850	13.88	11.8	259.4	1	167	2.58					
6	24	504	10	339	6.73											24.3	499.8	0	655	6.55
7	24	528	12	351	6.65						12.8	272.2	0	167	2.45					
8	24	552	1	352	6.38	12.6	318.7	0	850	13.34						23.3	523.1	0	655	6.26
9	24	576	1	353	6.13	12.9	331.6	0	850	12.82	25.7	297.9	0	167	2.24					
10	24	600	2	355	5.92						12.5	310.4	0	167	2.15	23.9	547.0	0	655	5.99
11	24	624	2	357	5.72	12.2	343.8	0	850	12.36										
12	24	648	3	360	5.56	12.5	356.3	0	850	11.93	1.3	311.7	0	167	2.14					
13	24	672	0	360	5.36											24.0	571.0	2	657	5.75
14	24	696	0	360	5.17						10.7	322.4	1	168	2.08	24.2	595.2	0	657	5.52
15						12.3	368.6	1	851	11.54						23.8	619.0	0	657	5.31
16											12.2	334.6	1	169	2.02					

1/ Calculated from day 10th fish is caught (that day's catch is included.

Appendix Table 5. Unalakleet Test Fishing, Cumulative Pink CPUE in 4" Mesh, 1981-1984. 1/

Date	1981 Hrs.	1981 Cum. Hrs.	1981 Catch	1981 Cum. Catch	1981 Cum. CPUE	1982 - 25 fm Hrs.	1982 Cum. Hrs.	1982 Catch	1982 Cum. Catch	1982 Cum. CPUE	1983 - 25 fm Hrs.	1983 Cum. Hrs.	1983 Catch	1983 Cum. Catch	1983 Cum. CPUE	1984 Hrs.	1984 Cum. Hrs.	1984 Catch	1984 Cum. Catch	1984 Cum. CPUE
	4" not fished															4" not fished				
June 21						12.0	12.0	87	87	29.00										
22						12.0	24.0	40	127	21.17										
23																				
24						12.0	36.0	147	274	30.44										
25						11.5	47.5	126	400	33.68										
26																				
27											11.6	11.6	30	30	10.34					
28						12.5	60.0	222	622	41.47	12.0	23.6	22	52	8.81					
29						7.0	67.0	116	738	44.06										
30											12.0	35.6	40	92	10.34					
July 1						9.0	76.0	134	872	45.89	11.5	47.1	36	128	10.87					
2						10.5	86.5	184	1056	48.83										
3																				
4											12.2	59.3	30	158	10.66					
5						9.5	96.0	387	1443	60.12	11.4	70.7	47	205	11.60					
6						3.0	99.0	75	1518	61.33										
7											11.8	82.5	30	235	11.39					
8						2.2	101.2	86	1604	63.40	12.0	94.5	24	259	10.96					
9						3.0	104.2	144	1748	67.10										
10																				
11											12.2	106.7	42	301	11.28					
12						2.1	106.3	112	1860	69.99	12.0	118.7	29	330	11.12					
13						3.5	109.8	110	1970	71.77										
14											11.6	130.3	37	367	11.27					
15						2.0	111.8	52	2022	72.34	11.8	142.1	40	407	11.46					
16						1.5	113.3	61	2083	73.54										
17																				
18						1.5	114.8	35	2118	73.80	12.1	154.2	60	467	12.11					
19											11.9	166.1	30	497	11.97					
20						1.6	116.4	59	2177	74.81										

Appendix Table 5. Unalakleet Test Fishing, Cumulative Pink CPUE in 4" Mesh, 1981-1984. 1/ (continued)

	1981					1982 - 25 fm					1983 - 25 fm									
Date	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE
21						1.6	118.0	61	2238	75.86	12.5	178.6	61	558	12.50					
22											11.8	190.4	25	583	12.25					
23						2.4	120.4	43	2281	75.78										
24																				
25						1.1	121.5	43	2324	76.51	12.2	202.6	16	599	11.83					
26											11.6	214.2	15	614	11.47					
27						.6	122.1	52	2376	77.84										
28						2.4	124.5	100	2476	79.55	12.2	226.4	28	642	11.34					
29											11.7	238.1	11	653	10.97					
30						1.4	125.9	9	2485	78.95										
31																				
Aug. 1						3.5	129.4	6	2491	77.00	12.0	250.1	7	660	10.56					
2											11.9	262.0	9	669	10.21					
3						1.8	131.2	18	2509	76.49										
4						4.7	135.9	34	2543	74.85	12.0	274.0	3	672	9.81					
5											11.8	285.8	5	677	9.48					
6						1.2	137.1	0	2543	74.19										
7																				
8						4.5	141.6	2	2545	71.89	11.4	297.2	7	684	9.21					
9																				
10						2.8	144.4	0	2545	70.50										
11											12.3	309.5	7	691	8.93					
12																				
13																				
14																				
15											11.8	321.3	2	693	8.63					
16											11.3	332.6	5	698	8.39					
17																				
18											9.8	342.4	3	701	8.19					
19											11.9	354.3	1	702	7.93					

1/ Calculated from day 10th fish is caught (that day's catch is included).

Appendix Table 6. Unalakleet Test Fishing, Cumulative Chum CPUE in 5 7/8" Mesh, 1981-1984.

Date	1981 - 30 fm Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	1982 - 20 fm Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	1983 - 5 1/4" - 25 fm Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	1984 - 20 fm Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE
June 15											11.6	11.6	4	4	1.38					
16																				
17											11.6	23.2	3	7	1.21					
18						24.0	24.0	9	9	1.88										
19											11.8	35.0	6	13	1.49					
20						12.0	36.0	10	19	2.64										
21											11.8	46.8	0	13	1.11					
22						12.0	48.0	8	27	2.81	11.7	58.5	10	23	1.57					
23						12.0	60.0	2	29	2.42										
24											11.6	70.1	3	26	1.48					
25						11.9	71.9	3	32	2.23						24.2	24.2	17	17	3.51
26											11.9	82.0	11	37	1.80					
27						12.1	84.0	23	55	3.27						24.5	48.7	29	46	3.78
28											11.8	93.8	10	47	2.00					
29						12.2	96.2	11	66	3.43	11.5	105.3	13	60	2.28	24.4	73.1	27	73	4.99
30						13.5	109.7	13	79	3.60										
July 1											11.9	117.2	8	68	2.32					
2						12.0	121.7	17	96	3.94						23.8	96.9	39	112	5.78
3											11.9	129.1	17	85	2.63					
4						13.5	135.2	20	116	4.29						24.0	120.9	31	143	5.91
5											11.9	141.0	13	98	2.78					
6						12.0	147.2	4	120	4.08	12.0	153.0	17	115	3.01	24.1	145.0	56	199	6.86
7						5.5	152.7	12	132	4.32										
8											12.1	165.1	7	122	2.96					
9						9.0	161.7	9	141	4.36						24.1	169.1	50	249	7.36
10											11.4	176.5	18	140	3.17					
11						6.5	168.2	16	157	4.67						23.9	193.0	29	278	7.20
12											11.5	188.0	12	152	3.23					
13						12.2	180.4	8	165	4.57	11.6	199.6	37	189	3.79	24.1	217.1	26	304	7.00
14						9.0	189.4	8	173	4.57										
15											11.7	211.3	16	205	3.88					
16						11.8	201.2	3	176	4.37						24.0	241.1	22	326	6.76
17	24	24	18	18	2.47						11.8	223.1	31	236	4.23					
18	24	48	48	66	4.54	12.0	213.2	8	184	4.32						24.2	265.3	22	348	6.56
19	24	72	36	102	4.67	12.0	225.2	19	203	4.51	11.8	234.9	18	254	4.33					
20	24	96	60	162	5.57						11.5	246.4	29	283	4.59	24.0	289.3	28	376	6.50
21	24	120	48	210	5.77	11.8	237.0	8	211	4.45										
22	24	144	12	222	5.09	24.5	261.5	38	249	4.76	12.2	258.6	17	300	4.64					
23	24	168	21	243	4.77											23.5	312.8	15	391	6.25
24	24	192	36	279	4.79						11.5	270.1	24	324	4.80					
25	24	216	33	312	4.77	12.6	274.1	23	272	4.96						23.9	336.7	6	397	5.90
26	24	240	60	372	5.11	2.5	276.6	3	275	4.97	12.0	282.1	19	343	4.86	24.0	360.7	18	415	5.75
27	24	264	63	435	5.44						11.7	293.8	11	354	4.82	24.1	384.8	16	431	5.60
28	24	288	52	487	5.58											11.4	396.2	3	434	5.48
29	24	312	111	598	6.32	4.6	281.2	8	283	5.03	11.7	305.5	14	368	4.82					
30	24	336	66	664	6.52											24.6	420.8	30	464	5.51
31	24	360	36	700	6.42						11.6	317.1	18	386	4.87	2.7	423.5	0	464	5.48

Appendix Table 6. Unalakleet Test Fishing, Cumulative Chum CPUE in 5 7/8" Mesh, 1981-1984. (Continued)

	1981 - 30 fm					1982 - 20 fm					1983 - 5 1/4" - 20 fm					1984 - 20 fm				
Date	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE	Hrs.	Cum. Hrs.	Catch	Cum. Catch	Cum. CPUE
Aug. 1	24	384	9	709	6.09	3.0	284.2	3	291	5.12						23.3	446.8	7	471	5.27
2	24	408	0	709	5.73	4.4	288.6	1	292	5.06	12.1	329.2	9	395	4.80					
3	24	432	12	721	5.51						12.2	341.4	17	412	4.83	4.6	451.4	4	475	5.26
4	24	456	21	742	5.37	13.2	301.8	5	297	4.92										
5	24	480	33	775	5.33	7.3	309.1	5	302	4.89	11.8	353.2	8	420	4.76					
6	24	504	24	799	5.23											24.3	475.7	7	482	5.07
7	24	528	33	832	5.20						12.8	366.0	19	439	4.80					
8	24	552	33	865	5.17	12.6	321.7	6	308	4.79						23.3	499.0	11	493	4.94
9	24	576	27	892	5.11	12.9	334.6	2	310	4.63	25.7	391.7	10	499	4.59					
10	24	600	18	910	5.00						12.5	404.2	14	463	4.58	23.9	522.9	6	499	4.77
11	24	624	27	937	4.96	12.2	346.8	4	314	4.53										
12	24	648	21	958	4.88	12.5	359.3	3	317	4.41	1.3	405.5	1	464	4.58					
13	24	672	3	961	4.72											24.0	546.9	14	513	4.69
14	24	696	25	986	4.67						10.7	416.2	5	469	4.51	24.2	571.1	12	525	4.60
15	24	720	30	1016	4.66	12.3	371.6	2	319	4.29						23.8	594.9	7	532	4.47
16	24	744	14	1030	4.57	12.2	383.8	2	321	4.18	12.2	428.4	4	473	4.42					
17	24	768	9	1039	4.46						12.3	440.7	15	488	4.43	25.0	619.9	13	545	4.40
18	24	792	14	1053	4.39	12.0	395.8	0	321	4.06										
19	24	816	8	1061	4.29	12.2	408.0	1	322	3.95	11.8	452.5	11	499	4.41					
20	24	840	6	1067	4.19											24.0	643.9	7	552	4.29
21	24	864	7	1074	4.10						11.2	463.7	3	502	4.33					
22	24	888	1	1075	3.99	12.2	420.2	1	323	3.84						24.7	668.6	5	557	4.17
23	24	912	1	1076	3.89	11.8	432.0	4	327	3.78	12.0	475.7	6	508	4.27	23.2	691.8	8	565	4.08
24	24	936	2	1078	3.80						11.5	487.2	7	515	4.23	24.0	715.8	7	572	4.00
25	24	960	2	1080	3.71	12.1	444.1	1	328	3.69										
26	24	984	2	1082	3.63	12.2	456.3	0	328	3.59	11.5	498.7	5	520	4.17					
27	24	1008	7	1089	3.57											23.0	738.8	6	578	3.91
28	24	1032	2	1091	3.49						11.9	510.6	1	521	4.08	22.8	761.6	7	585	3.84
29	24	1056	1	1092	3.41	12.5	468.8	3	331	3.53						25.3	786.9	4	589	3.74
30	24	1080	0	1092	3.34	11.3	480.1	0	331	3.45	11.9	522.5	4	525	4.02	24.2	811.1	3	592	3.65
31	24	1104	2	1094	3.27						11.7	534.2	0	528	3.95	30.7	841.8	4	596	3.54
Sept. 1	24	1128	2	1096	3.21	12.2	492.3	0	331	3.36										
2	24	1152	0	1096	3.14	11.5	503.8	0	331	3.29	12.3	546.5	3	528	3.86					
3	24	1176	0	1096	3.08											16.7	858.5	5	601	3.50
4	24	1200	0	1096	3.01						47.9	594.4	2	530	3.57	23.0	881.5	4	605	3.43
5	24	1224	1	1097	2.96	11.6	515.4	0	331	3.21						24.2	905.7	6	611	3.37
6	24	1248	1	1098	2.90	9.8	525.2	0	331	3.15	23.8	618.2	1	531	3.44	24.2	929.9	4	615	3.31
7	24	1272	2	1100	2.85						23.7	641.9	0	531	3.31	24.3	954.2	3	618	3.24
8	24	1296	2	1102	2.81	11.8	537.0	3	334	3.11	23.8	665.7	1	532	3.20					
9											24.2	689.9	2	534	3.10					
10						28.5	565.5	0	334	2.95	24.2	714.1	3	537	3.01	23.5	977.7	2	620	3.17
11						23.5	589.0	0	334	2.84	24.2	738.3	0	537	2.91	33.1	1010.8	1	621	3.07
12						25.6	614.6	0	334	2.72	24.1	762.4	2	539	2.83	22.0	1032.8	2	623	3.02
13						25.6	640.2	0	334	2.61						17.0	1049.8	1	624	2.97
14						21.3	661.5	0	334	2.52	22.7	785.1	3	542	2.76	23.7	1073.5	0	624	2.91
15						26.7	688.2	0	334	2.43	24.2	809.3	0	542	2.68					
16						22.2	710.4	0	334	2.35	21.0	830.3	1	543	2.62					
17						24.8	735.2	0	334	2.27	23.9	854.2	2	545	2.55	24.6	1098.1	1	625	2.85
18						22.1	757.3	0	334	2.21	23.0	877.2	0	545	2.49	24.4	1122.5	1	626	2.79
19						30.2	787.5	0	334	2.12										
20						19.1	806.6	0	334	2.07	48.9	926.1	0	545	2.35					
21						26.2	832.8	1	335	2.01	24.0	950.1	2	547	2.30					