

*REGIONAL INFORMATION  
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*A REVIEW OF HISTORICAL DISTRIBUTIONS OF COHO  
SALMON CATCHES BETWEEN COMMERCIAL GEAR  
TYPES IN SOUTHEAST ALASKA AND FACTORS  
AFFECTING DISTRIBUTIONS*

*ALASKA DEPARTMENT OF FISH AND GAME  
DIVISION OF COMMERCIAL FISHERIES  
JUNEAU, ALASKA*

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A REVIEW OF HISTORICAL DISTRIBUTIONS OF COHO SALMON CATCHES  
BETWEEN COMMERCIAL GEAR TYPES IN SOUTHEAST ALASKA AND  
FACTORS AFFECTING DISTRIBUTIONS

By

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## INTRODUCTION

The Alaska Board of Fisheries, in its spring 1989 meeting, established "historical commercial harvest guideline allocation" percentages for coho salmon. The percentages set by the Board were as follows:

Troll	61%
Purse Seine	19%
Drift Gill Net	13%
Set Gill Net	7%

In establishing the commercial catch allocation percentages the Board stated that subsistence, personal use, and sport harvest of coho are not affected by the commercial allocations. The commercial allocations apply only to the distribution of the commercial coho harvest among the different commercial gear types.

Regarding the commercial allocation guidelines, the Board noted, "These percentages are guidelines only and may vary from season to season given natural fluctuations in salmon abundance and distribution and the limitations of fisheries management. It is, however, the Board's intent that these allocation guidelines be met as closely as possible over the long term."

The purpose of this paper is to investigate the history of gear catch percentages and factors affecting them. Information is also presented on the degree of annual variability which has occurred in gear catch percentages under past management programs. Such will hopefully, provide some fishermen with an idea of the amount of year to year variation to expect given the Board's intent that the Department not "disrupt any of the traditional commercial fisheries upon which this allocation is founded" in managing for the allocations.

## DATA

Data analyzed consisted of weekly and season cumulative catches by commercial purse seine, drift gill net, set gill net and troll gear of coho salmon exclusive of Annette Island and Special Harvest Area catches (Appendix Tables 1 - 4). Troll catches were also tabulated for the Yakutat districts (181, 183, and 189) separately and subtracted from the total troll catch when appropriate (Appendix Table 5). Only data since 1975 to present were used in the analysis as they were thought to best reflect the current fishing structure.

## ANALYSIS

Simple linear correlation analysis of cumulative troll catch by week with total season purse seine, drift gill net and set gill net catches was used to look for trends. Troll catch was used as an early season indicator of coho run strength and as the independent variable because: (1) it accounts for the majority of the coho salmon catch, and (2) timing of the catch is 2 to 4 weeks earlier than other fisheries (Figure 1). Since the directed troll fishery on coho occurs first, it comprises up to 90% of the total catch early in the season. Troll catch as a percentage of the total catch decreases as the season progresses, while purse seine, set gill net and drift gill net percentages increase (Figure 2). Stepwise linear regression was used to examine the relation between season cumulative drift gill net catch (the dependent variable) and the weekly cumulative purse seine and troll catches. Simple linear regression was used to examine: (1) the relationship between abundance of coho and pink salmon, (2) troll catches in the Yakutat area versus set gill net catches in the Yakutat rivers, and (3) the total run size (as indexed by total catch) and the percent of the catch taken by gear type.

## RESULTS

### *Correlation Analysis of Purse Seine, Drift Gill Net Set Gill Net and Troll Catches*

Correlation analysis was run by week beginning with Statistical Week 31 (average midweek date = July 30). Catch totals used were for the actual statistical week in that year. However, average midweek date for that statistical week over all years is reported for convenience of the reader. Significant correlations were found beginning in Week 31 between cumulative troll catch by week and total cumulative purse seine and drift gill net catches (Table 1). Correlation coefficients ( $r^2$ ) were 0.69 for the drift gill net fishery and 0.75 for the purse seine fishery for Week 31. The coefficients improved over time for the purse seine fishery up to 0.82 in week 39 (average midweek date = September 24). Coefficients degraded for the drift gill net fishery over time but improved to 0.67 by week 38 (average midweek date = September 17). Very poor correlations were found between cumulative troll catch by week and set gill net catches. Correlations were as low as 0.06 and peaked at 0.10 in Week 38.

### *Stepwise Linear Regression of Drift Gill Net Catch on Purse Seine and Troll Catch*

Set gill net catches (Yakutat) were excluded in order to more thoroughly investigate the relationship between those fisheries in the contiguous area of Southeast Alaska, the purse seine, troll and drift gill

net fisheries. The troll data set still included the Yakutat catches. Stepwise regression was used to examine the predictive capabilities of the combined troll and purse seine cumulative weekly catches for drift gill net catches. Beginning in Week 31, the first variable to be added to the regression was the troll catch, with a partial  $r^2$  of 0.69. Beginning in Week 34 (average midweek date = August 20), the purse seine catch was the first variable entered, with a partial  $r^2$  of 0.69. The correlation coefficient increased each week until Week 40 (average midweek date = October 1), where it peaked at 0.82.

### *Covarying Abundance of Pink and Coho Salmon*

The troll fishery targets on coho salmon during a major portion of the summer season with the catch directly proportional to the amount of effort expended by the fleet. This is not true for the purse seine fleet as there is no directed purse seine fishery for coho. Fishing time and effort during the period which coho salmon are available to the purse seine fleet is dependent upon pink salmon abundance. A simple linear regression using purse seine coho catches as the dependent variable and purse seine pink salmon catches as the independent variable was used to examine the relationship between the two. A correlation coefficient of 0.82 was found between the two variables (Table 3, Figure 2). Another regression was run to further examine the relationship between pink and coho salmon abundance. The purse seine pink catch was again used as the independent variable, with troll coho catch as the dependent variable (Figure 3). A correlation of 0.77 was found (Table 4). It would appear that the magnitude of the coho salmon catch by the purse seine fleet is not purely a function of extra time but possibly that the abundance of pink and coho salmon vary together positively.

### *Historical Gear Catch Percentages*

Annual gear catch percentages of coho salmon have varied from year to year (Figure 4, Table 5). Since 1960, the percent of catch for the purse seine fleet has varied from 8.2% to 37.6% of the total coho salmon catch (Table 5). In general, the percent of catch was higher than the present Board allocation of 19% until 1972 when it began to oscillate around it. The average from 1960 to 1988 was 21.6% with a standard deviation of 8.4%. Between 1975 and 1988, the average was 16.2% and the standard deviation was reduced to 3.7%.

The drift gill net percent of the catch has varied between 5.6% and 21.6% since 1960 (Figure 4, Table 5). The annual percentage was below the Board allocation of 13% between 1960 to 1966, above it between 1967 and 1978, and again below it from 1979 to 1987. The average percent between 1960 and 1988 was 12.8% with a standard deviation of 4.7%. During the period of 1975 to 1988, the average was also 12.8%, but the standard deviation increased slightly to 5.0%.

The set gill net percent of the coho catch has varied about the Board allocation percentage of 7% (Figure 4, Table 5). A major deviation occurred in 1988 with 20.3% of the catch occurring in set gill nets. The average annual percentage between 1960 and 1988 was 8.6% with a standard deviation of 4.3%. The average between 1975 and 1988 was also 8.6%, while the standard deviation decreased to 4.0%.

Except for 1969, the annual percent of catch for the troll fleet between 1960 and 1973 had been below the Board allocation of 61% (Figure 4, Table 5). It varied about the allocation percentage between 1973 and 1978. Except for 1988, it has always been greater than the Board's allocation since 1979. During the period of 1960 to 1988, the average annual percent was 57.0% with a standard deviation of 9.4%. Between 1975 and 1988, the average annual percentage was 62.3% with a standard deviation of 6.9%.

#### *Annual Catch Percentage by Gear Type Versus Total Yearly Catch*

Finally, scatterplots and regression were used to examine the relationship between run size, using total commercial catch as an index of run size, and percent of the catch by gear type. The regression between purse seine catch and total coho catch was not significant (Table 6) but the data suggests that there is a tendency for the purse seine fleet to take a higher percentage of the catch when the coho run size is large (Figure 5). The regression between drift gill net and total catch was also not significant (Table 6). However, the data shows that there is a tendency for the gill net fleet to take a lower percentage when the run size of coho is large (Figure 6). The regression of set gill net on total coho catch was also not significant (Table 6) and it also tends to take a lower percentage when the total run size is large (Figure 7). Finally, the regression of troll catch on total catch was not significant (Table 6). It showed a tendency for the troll fleet to take a larger percentage of the catch when the run size of coho is large (Figure 8).

#### *Exclusion of Yakutat Set Gill Net*

Because of the poor correlation between the catches of the Yakutat set gill net and the other fisheries, scatterplots and regressions were performed on Yakutat set net catches and Yakutat (Districts 181, 189, 183) troll catches to look for an indicator for size of the set gill net catch. Data show a weak positive relationship between the set gill net and troll catches (Table 7, Figure 9).

The percentage of catch by gear type was also calculated excluding Yakutat set gill net catches. The troll percentage was 67.2%, up 6.1%, purse seine percentage was 18.3%, down .7%, and the drift gill net percentage was 14.5%, up 1.5%. Drift gill net percent of catch ranged from 2.9% to 22.6%, purse seine percentage ranged from 9.0% to 22.9%, and troll percentage ranged from 55% to 80%. All

regressions were not significant and showed the same trends as in the analysis that included Yakutat (Table 8).

## DISCUSSION AND CONCLUSIONS

Good correlations existed for catches of coho salmon between the troll, drift gill net and purse seine fisheries. However, none correlated with catches from the set gill net fishery. The troll catch was the best indicator for the purse seine catch. Timing between the catches was also similar. Troll catches of coho salmon began before purse seine catches, but purse seine catches were finished earlier, with the troll catch extending another couple of weeks. Neither the troll nor purse seine fishery alone provided a good indication of what the drift gill net catch would be even though the drift gill net fishery was approximately 4 weeks later. The purse seine and troll catches together provided a reasonable indication of what could be expected in the drift gill net catch.

Abundance of coho salmon varied positively with abundance of pink salmon. Catches of coho salmon by the purse seine fleet increased during years of high pink salmon abundance through both increased numbers of coho salmon and increased fishing time for pink salmon.

Coho catches by troll, purse seine or drift gill net did not correlate with, or provide an indication of, what the set gill net catches would be. This was because significant numbers of Yakutat-origin fish were not caught by drift gill net or purse seine gear given the relative geographic isolation of the Yakutat systems and coho migratory patterns. Although the troll fishery caught significant numbers of Yakutat origin coho in some years, it was a small percentage of the overall troll coho catch.

Historically, there have been some large oscillations about the average catch percentages. Since 1975, 95% confidence intervals have been 8.1%, 10.9%, 8.7% and 15.0% for the purse seine, drift gill net, set gill net and troll fisheries, respectively.

Although good early season indications of overall coho salmon catch can be obtained, it is not possible for the department to ensure that gear groups receive a constant percentage each year. With the small span of time separating the troll and purse seine catches, and the lag in receiving precise catch information, it would be extremely difficult for the department to manage for a ratio (3.2:1) of troll to purse seine catch and to obtain the subsequent correct share for the drift gill net fishery. Direct management action would be required to attain this goal. This would be difficult since the drift gill net fisheries are managed in most cases for species other than coho salmon. This would also be against the Board's directive of not disrupting traditional fisheries.

The Board recognized these problems when it stated "these percentages are guidelines only and may vary from season to season given natural fluctuations in salmon abundance and distribution and the limitations of fisheries management". In addition, the Board noted that, on average, past allocative percentages were generally met under existing management programs. Although the Board directed the department not to disrupt traditional fisheries, it left valid previous management provisions for allocation including: (1) the 10 day troll closure, (2) the 8 day on - 6 day off regulation for northern inside areas, and (3) the state waters troll weekly fishing periods in the Yakutat area. Given these considerations, it can be expected that the percent of catch by gear type will vary by the historical 95% confidence intervals during the coming years.

Table 1. Coefficient of determination ( $r^2$ ) between the weekly cumulative troll catch and total seasonal catches of coho salmon by purse seine, drift gill net and set gill net fisheries, Southeast Alaska, 1975 to 1988.

Average Midweek Date		Purse Seine	Drift Gill Net	Set Gill Net
July 30	$r^2$	0.86	0.83	0.27
	Prob>F	0.0001	0.0002	0.3536
Aug 6	$r^2$	0.84	0.81	0.24
	Prob>F	0.0002	0.0005	0.3993
Aug 13	$r^2$	0.88	0.81	0.30
	Prob>F	0.0001	0.0005	0.2910
Aug 20	$r^2$	0.88	0.79	0.29
	Prob>F	0.0001	0.0008	0.3090
Aug 27	$r^2$	0.88	0.79	0.27
	Prob>F	0.0001	0.0007	0.3416
Sept 3	$r^2$	0.89	0.80	0.30
	Prob>F	0.0001	0.0005	0.2948
Sept 10	$r^2$	0.90	0.82	0.32
	Prob>F	0.0001	0.0004	0.2702
Sept 17	$r^2$	0.90	0.82	0.32
	Prob>F	0.0001	0.0003	0.2632
Sept 24	$r^2$	0.91	0.82	0.32
	Prob>F	0.0001	0.0003	0.2636
Oct 1	$r^2$	0.91	0.82	0.32
	Prob>F	0.0001	0.0003	0.2633
Oct 8	$r^2$	0.91	0.82	0.32
	Prob>F	0.0001	0.0003	0.2635

Table 2. Partial and full coefficients of determination ( $r^2$ ) between weekly cumulative troll and purse seine catches and cumulative seasonal drift gill net catches of coho salmon in Southeast Alaska exclusive of Annette Island and Special Harvest Areas, 1975 to 1988.

Week	Step	Variable	Partial $r^2$	Model $r^2$	Prob > F
31	1	Troll	.6869	.6869	.0002
	2	Seine	.1637	.8506	.0052
32	1	Troll	.6490	.6490	.0005
	2	Seine	.2087	.8576	.0020
33	1	Troll	.6488	.6488	.0005
	2	Seine	.2009	.8497	.0028
34	1	Seine	.6869	.6869	.0002
	2	Troll	.1429	.8298	.0113
35	1	Seine	.7886	.7886	.0001
	2	Troll	.0531	.8417	.0811
36	1	Seine	.8013	.8013	.0001
	2	Troll	.0543	.8556	.0667
37	1	Seine	.8128	.8128	.0001
	2	Troll	.0516	.8643	.0656
38	1	Seine	.8128	.8128	.0001
	2	Troll	.0516	.8643	.0656
39	1	Seine	.8196	.8196	.0001
	2	Troll	.0473	.8669	.0735
40	1	Seine	.8208	.8208	.0001
	2	Troll	.0463	.8672	.0759
41	1	Seine	.8202	.8202	.0001
	2	Troll	.0469	.8671	.0745

Table 3. Results of regression between the dependent variable total purse seine catch of coho salmon and the independent variable total purse seine catch of pink salmon in Southeast Alaska exclusive of Annette Island and Special Harvest Areas, 1975 to 1988.

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Dependent Variable	=	Purse seine catch of coho salmon
Independent Variable	=	Purse seine catch of pink salmon
Intercept		78961.23
Std err of Y		66761.19
R squared		.8217
No. of observations		14
Degrees of Freedom		12
Slope		.00993
Std err of slope		.00134

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Table 4. Results of regression between the dependent variable total troll catch of coho salmon and the independent variable total purse seine catch of pink salmon in Southeast Alaska exclusive of Annette Island and Special Harvest Areas, 1975 to 1988.

Dependent Variable	=	Troll catch of coho salmon
Independent Variable	=	Purse seine catch of pink salmon
Intercept		403793.8
Std err of Y		249429.5
R squared		.7733
No. of observations		14
Degrees of Freedom		12
Slope		.03191
Std err of slope		.00499

Table 5. Region annual commercial coho salmon catches by purse seine, drift gill net, set gill net and troll in numbers and percent in Southeast Alaska exclusive of Annette Island and Special Harvest Areas, 1960 to 1988.

Year	Purse Seine Number	%	Drift Gill Net Number	%	Set Gill Net Number	%	Troll Number	%	Total
1960	125,871	18.5	37,986	5.6	119,149	17.5	396,211	58.3	679,217
1961	246,524	29.8	52,743	6.4	128,670	15.5	399,932	48.3	827,869
1962	239,382	20.8	98,404	8.5	170,776	14.8	643,740	55.9	1,152,302
1963	316,491	25.0	112,776	8.9	141,365	11.2	693,050	54.8	1,263,682
1964	506,505	32.1	172,411	10.9	169,780	10.7	730,766	46.3	1,579,462
1965	557,005	36.1	166,452	10.8	122,207	7.9	695,887	45.1	1,541,551
1966	452,057	37.6	155,922	13.0	66,252	5.5	528,621	43.9	1,202,852
1967	188,965	21.9	134,029	15.5	97,211	11.3	443,677	51.4	863,882
1968	463,553	30.1	202,965	13.2	92,005	6.0	779,500	50.7	1,538,023
1969	110,415	18.5	65,704	11.0	32,262	5.4	388,459	65.1	596,840
1970	295,683	39.1	163,901	21.7	29,748	3.9	267,647	35.4	756,979
1971	326,264	35.7	159,143	17.4	37,420	4.1	391,279	42.8	914,106
1972	391,204	26.0	275,393	18.3	45,704	3.0	791,947	52.6	1,504,248
1973	129,593	15.5	124,349	14.9	41,213	4.9	540,125	64.7	835,280
1974	166,687	13.1	186,532	14.6	77,556	6.1	844,748	66.2	1,275,523
1975	70,193	16.6	102,321	24.1	37,403	8.8	214,148	50.5	424,065
1976	87,473	10.7	156,469	19.1	51,743	6.3	524,754	64.0	820,439
1977	150,535	16.2	181,322	19.5	92,214	9.9	506,770	54.4	930,841
1978	242,961	14.3	221,134	13.0	137,408	8.1	1,100,846	64.7	1,702,349
1979	176,354	13.9	77,951	6.1	95,873	7.6	918,845	72.4	1,269,023
1980	193,338	17.1	109,881	9.7	119,648	10.6	707,360	62.6	1,130,227
1981	280,270	20.2	113,716	8.2	132,127	9.5	862,173	62.1	1,388,286
1982	446,380	21.3	181,228	8.6	148,994	7.1	1,321,546	63.0	2,098,148
1983	395,938	20.1	210,251	10.7	81,517	4.1	1,279,518	65.0	1,967,224
1984	355,375	19.2	184,222	9.9	182,256	9.8	1,131,732	61.1	1,853,585
1985	409,884	16.3	298,194	11.8	203,193	8.1	1,605,953	63.8	2,517,224
1986	561,129	17.8	376,891	12.0	87,871	2.8	2,126,159	67.5	3,152,050
1987	119,076	8.2	161,001	11.1	124,824	8.6	1,041,134	72.0	1,446,035
1988	153,181	15.1	156,606	15.4	205,866	20.3	499,590	49.2	1,015,243
1960 to 1988 Average and standard deviation									
Avg	281,320	21.6	59,996	12.8	105,940	8.6	771,590	57.0	1,318,847
SD	147,426	8.4	72,698	4.7	51,781	4.3	423,941	9.4	596,003
1975 to 1988 Average and standard deviation									
Avg	260,149	16.2	180,799	12.8	121,496	8.	988,609	62.3	1,551,053
SD	151,059	3.7	79,699	5.0	51,740	4.0	503,271	6.9	726,076

Table 6. Intercept, slope, coefficient of determination ( $r^2$ ) and sample size for the simple linear regressions of percent of catch by purse seine, drift gill net, set gill net and troll fisheries on the total yearly coho salmon catch in Southeast Alaska exclusive of Annette Island and Special Harvest Areas, 1960 to 1988.

Model	Intercept	Slope	$r^2$	N
Purse Seine % with total coho catch	.134776	.0000000177	.125	29
Drift gill net % with total coho catch	.185416	-.0000000368	.282	29
Set gill net % with total coho catch	.125510	-.0000000258	.275	29
Troll % with total coho catch	.554292	.0000000449	.236	29

Table 7. Results of regression between the dependent variable Yakutat area troll coho catches and the independent variable Yakutat area set gill net catch of coho salmon, 1975 to 1988.

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Dependent Variable	=	Yakutat area troll coho catch
Independent Variable	=	Yakutat area set gill net coho catch
Intercept		90264.09
Std err of Y		40673.05
R squared		.3671
No. of observations		14
Degrees of Freedom		12
Slope		.50100
Std err of slope		.18990

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Table 8. Intercept, slope, coefficient of determination ( $r^2$ ) and sample size for the regressions of percent of catch by purse seine, drift gill net and troll fisheries on the total yearly coho catch exclusive of the set gill net fishery in Southeast Alaska exclusive of Annette Island and Special Harvest Areas, 1960 to 1988.

Model	Intercept	Slope	$r^2$	N
Purse Seine % with total coho catch	.158355	.0000000134	.058	29
Drift gill net % with total coho catch	.204190	-.0000000442	.307	29
Troll % with total coho catch	.637454	.0000000308	.126	29

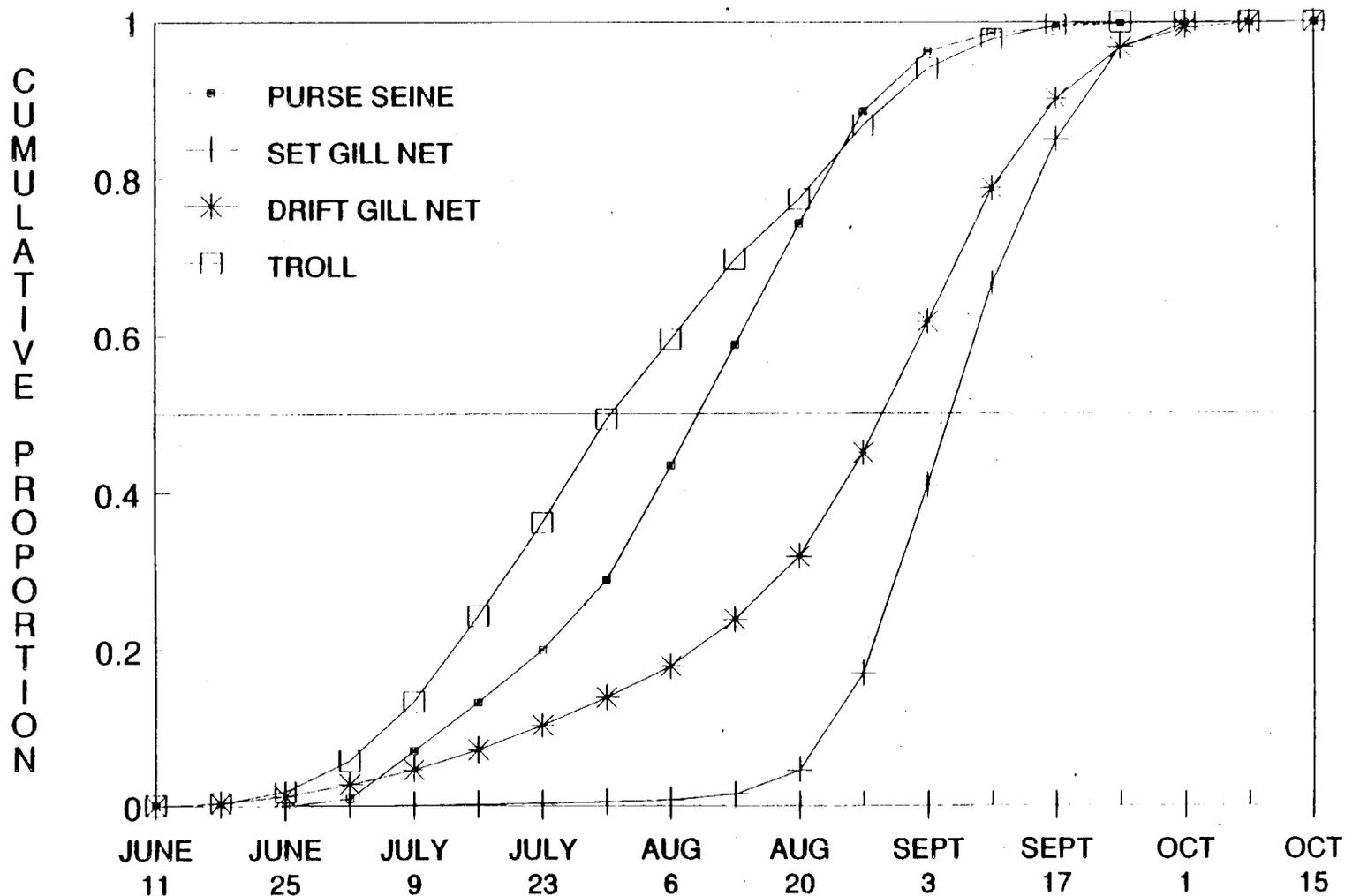


Figure 1. Average cumulative proportions of coho salmon catch by week for purse seine, drift gill net, set gill net and troll gear in Southeast Alaska exclusive of Annette Island and Special Harvest Areas, 1975 to 1988.

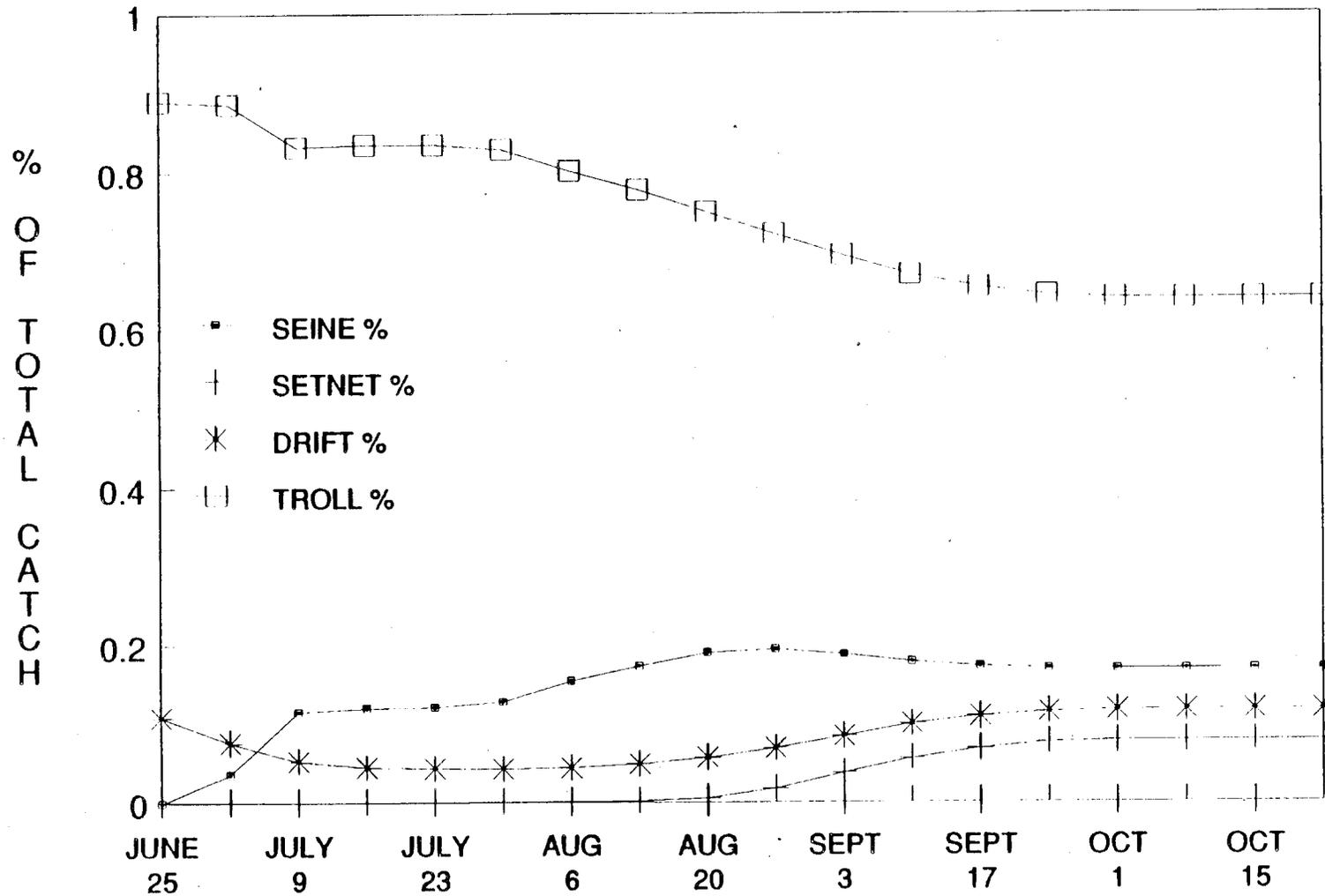


Figure 2. Percent of total commercial catch of coho salmon for purse seine, drift gill net, set gill net and troll by date in Southeast Alaska, 1975 to 1988.

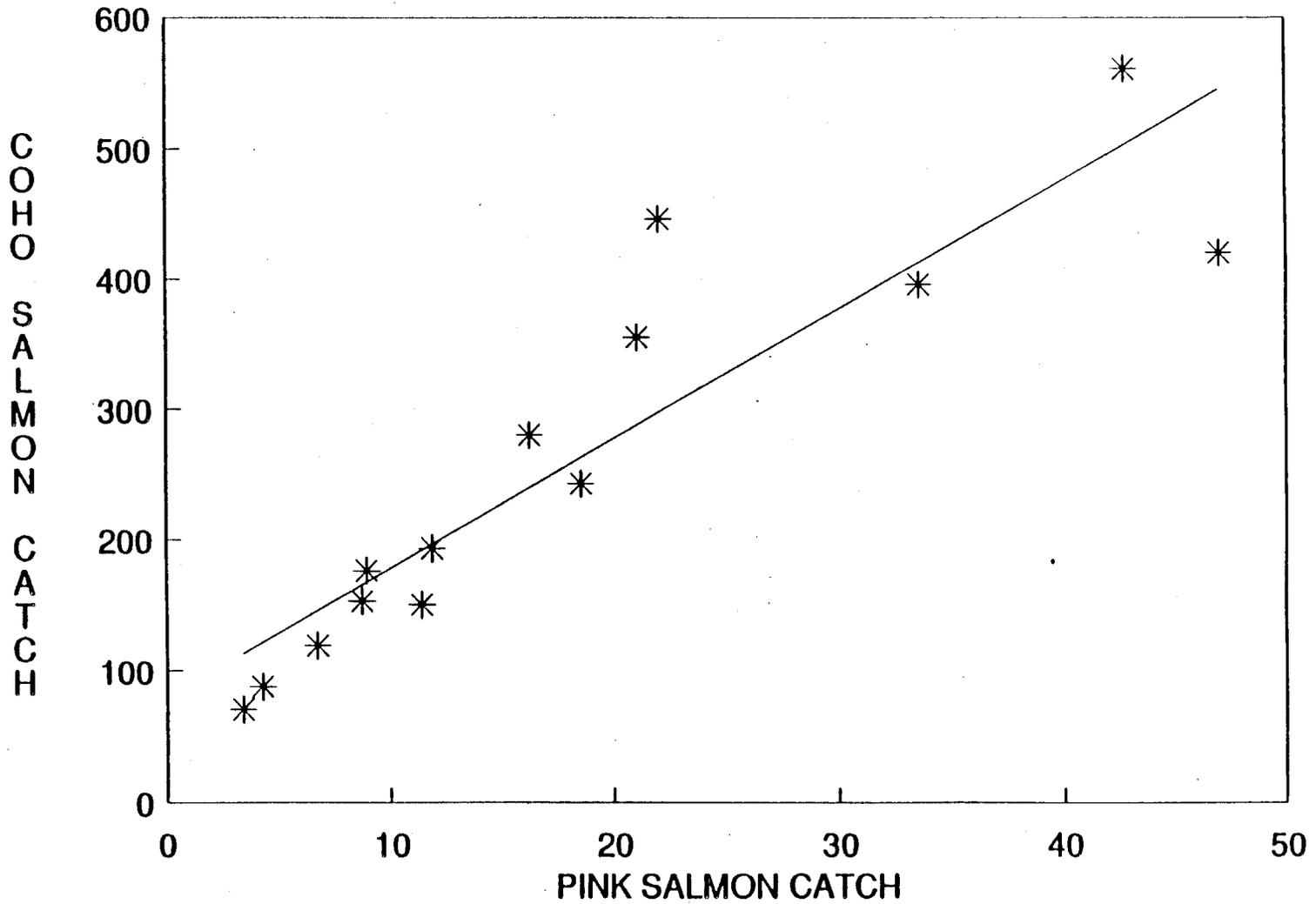


Figure 3. Purse seine catch of coho salmon in thousands versus purse seine catch of pink salmon in millions in Southeast Alaska exclusive of Annette Island and Special Harvest Areas, 1975 to 1988.

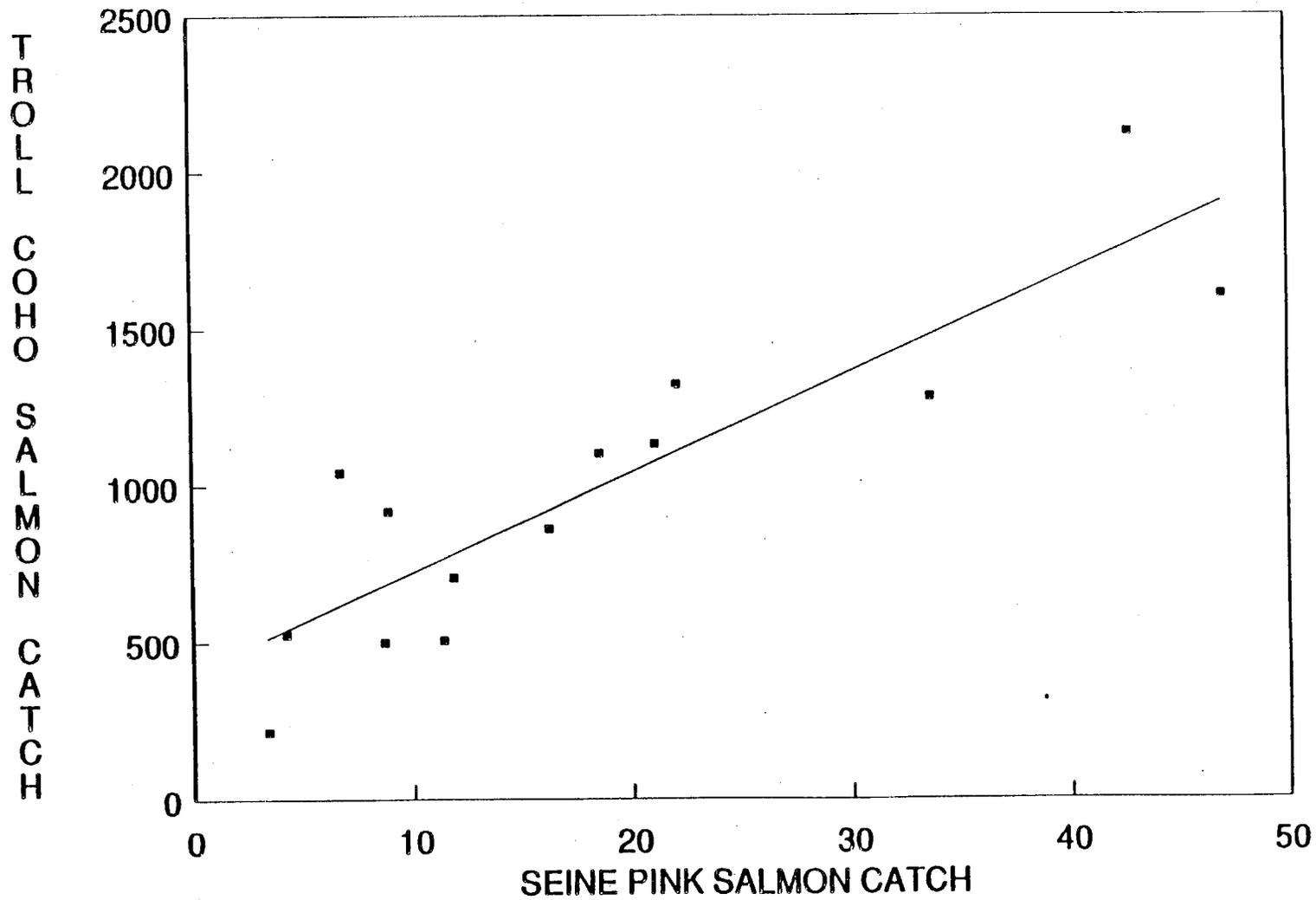
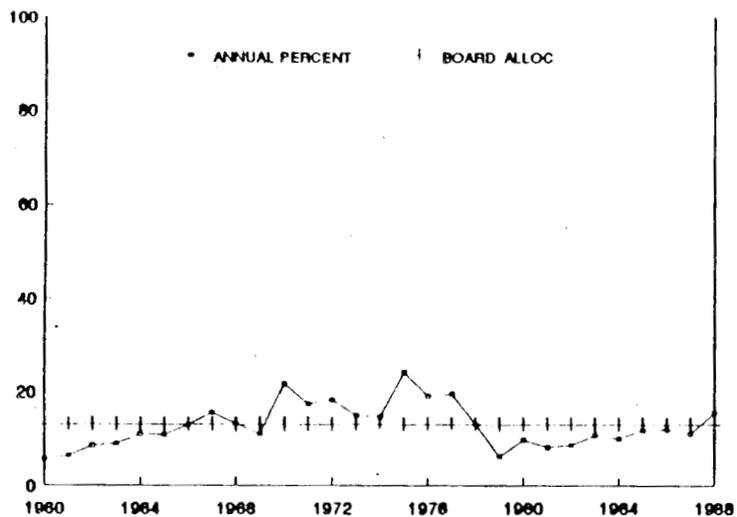
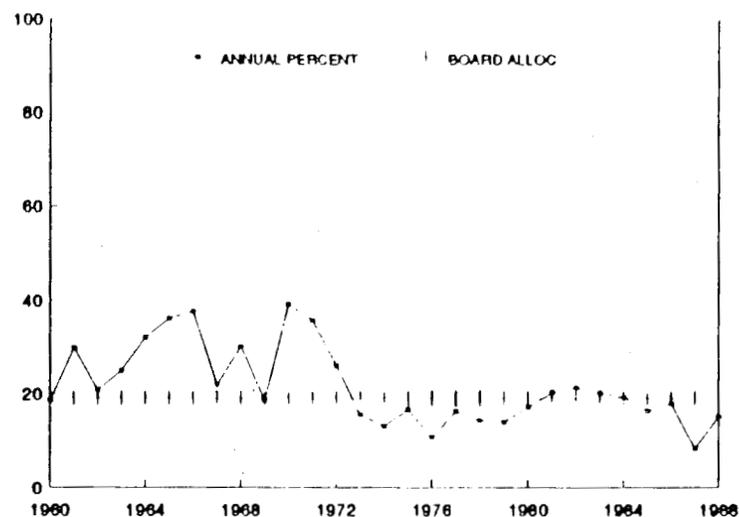


Figure 4. Total troll catch in thousands of coho salmon versus the total purse seine catch in millions of pink salmon in Southeast Alaska exclusive of Annette Island and Special Harvest Areas, 1975 to 1988.

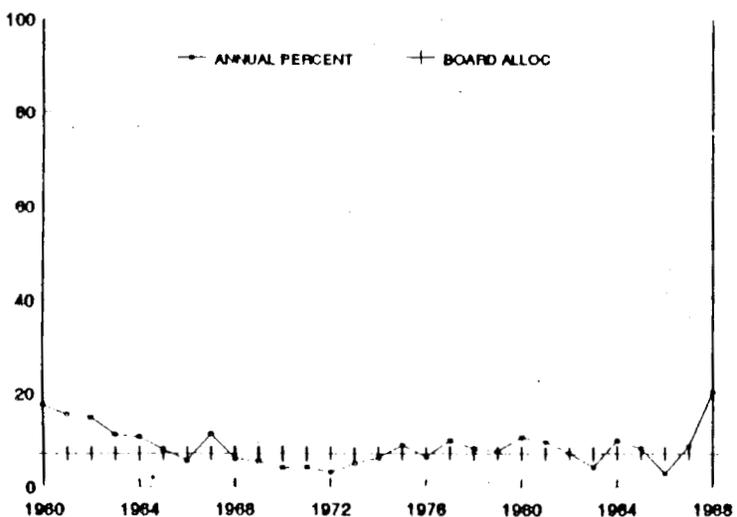
DRIFT NET



PURSE SEINE



SET NET



TROLL

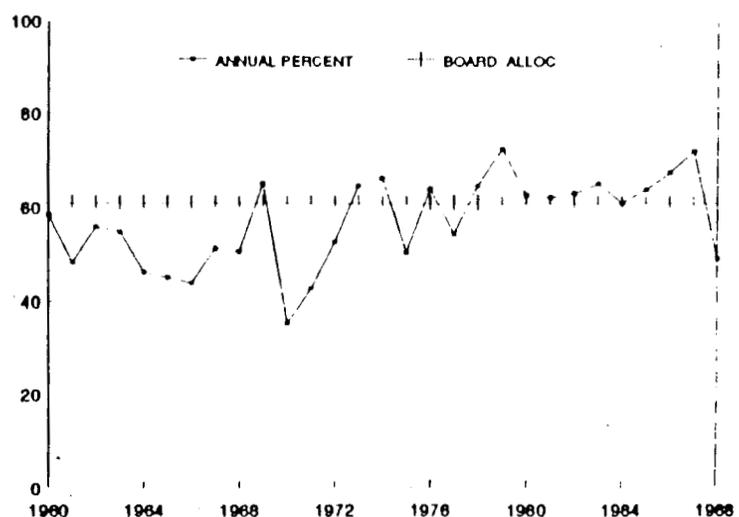


Figure 5. Annual percent of yearly coho catch by gear group and percentage directed by the Board of Fisheries for Southeast Alaska exclusive of Annette Island and Special Harvest Areas, 1960 to 1988.

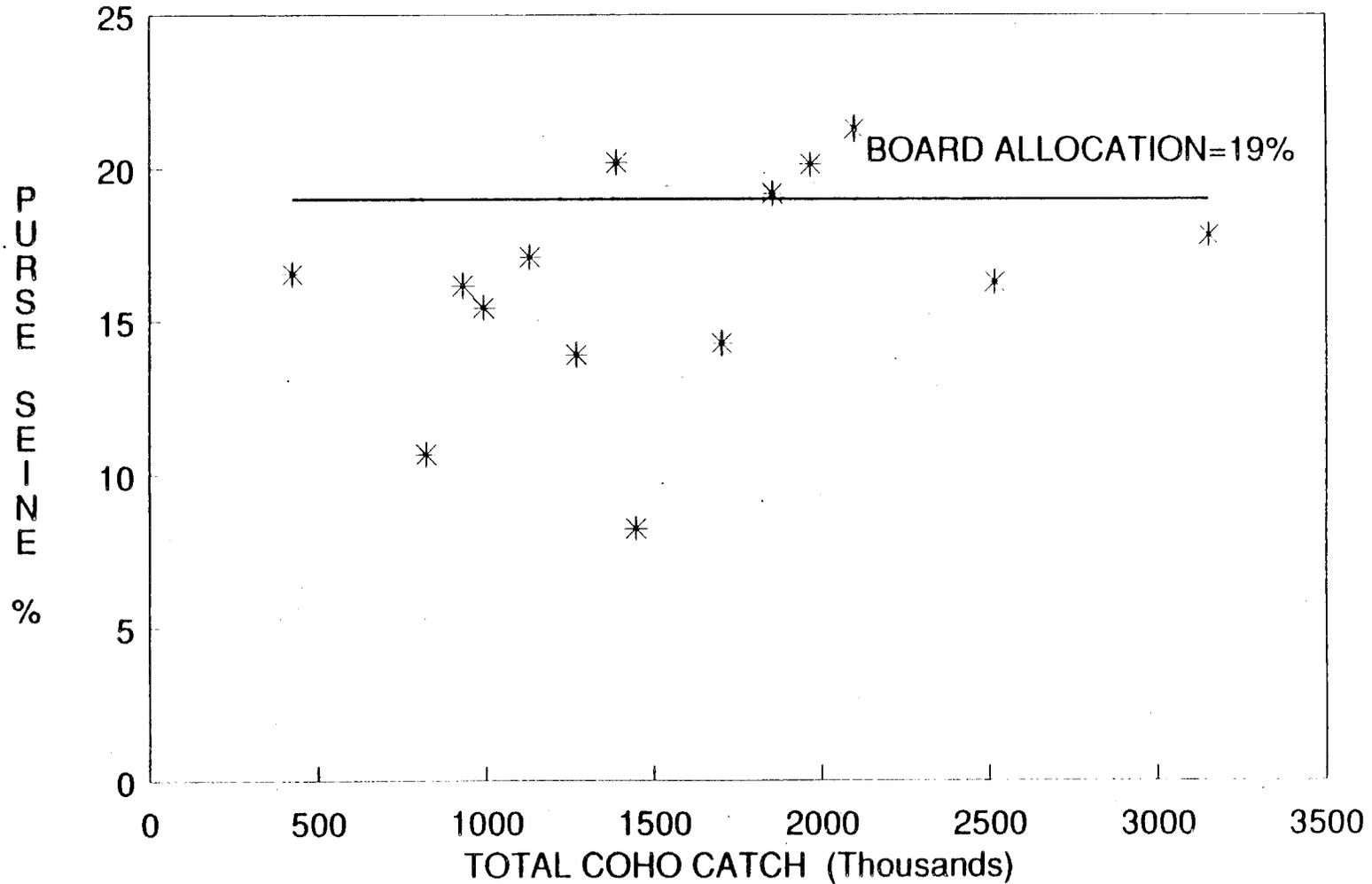


Figure 6. Purse seine percentage of total coho catch versus regional total coho catch in Southeast Alaska exclusive of Annette Island and Special Harvest Areas, 1960 to 1988.

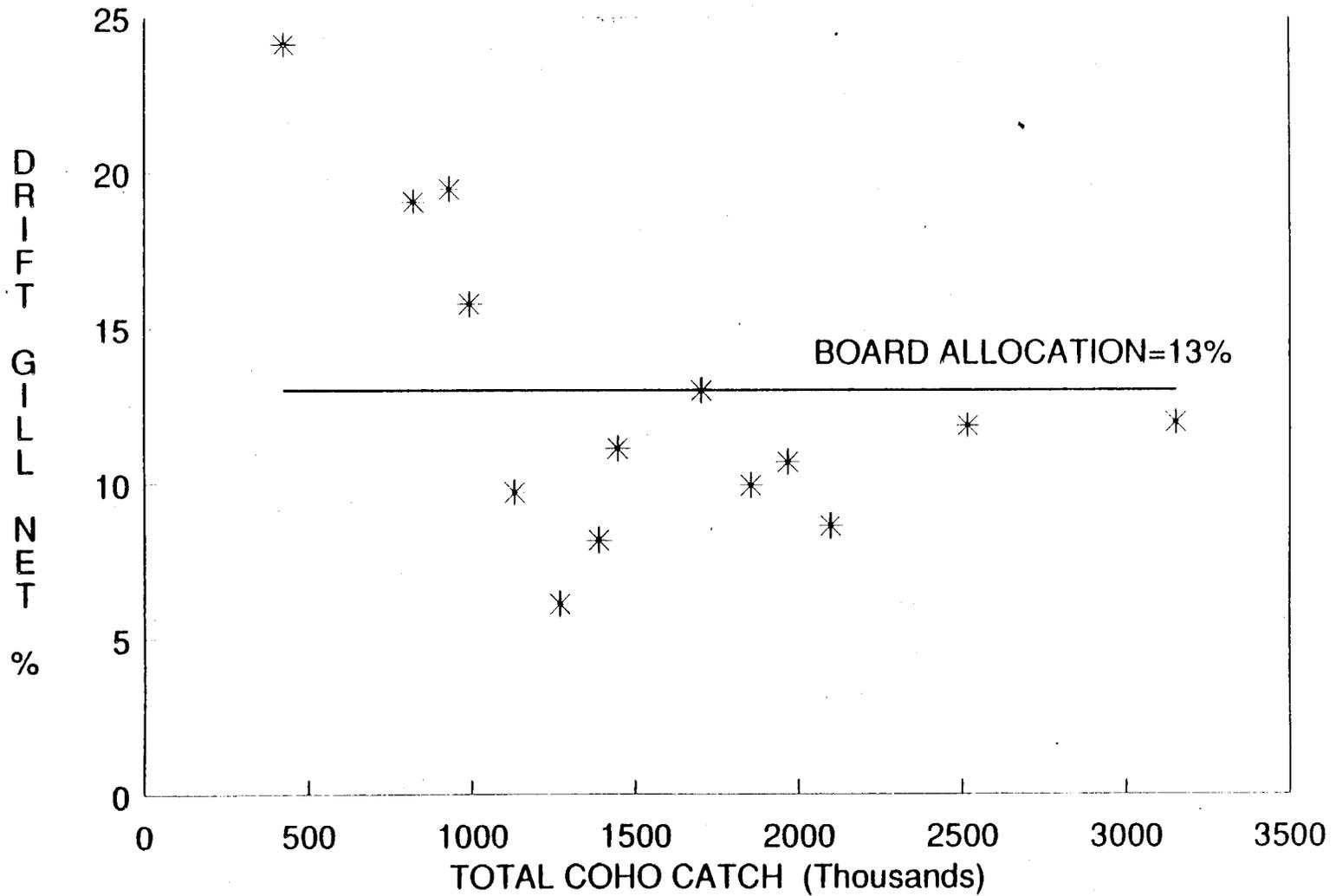


Figure 7. Drift gill net percentage of total coho catch versus regional total coho catch in Southeast Alaska exclusive of Annette Island and Special Harvest Areas, 1960 to 1988.

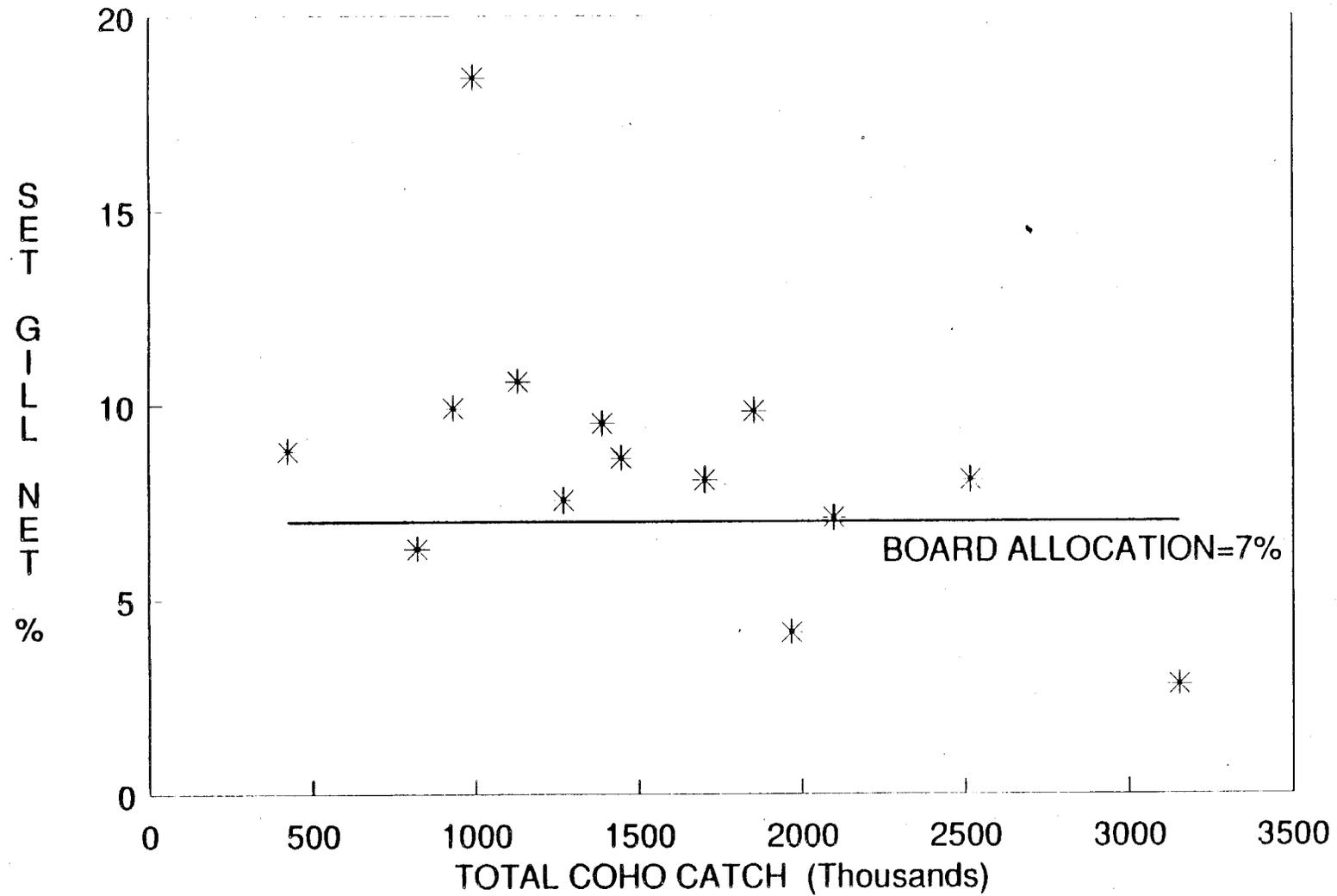


Figure 8. Set gill net percentage of total coho catch versus regional total coho catch in Southeast Alaska exclusive of Annette Island and Special Harvest Areas, 1960 to 1988.

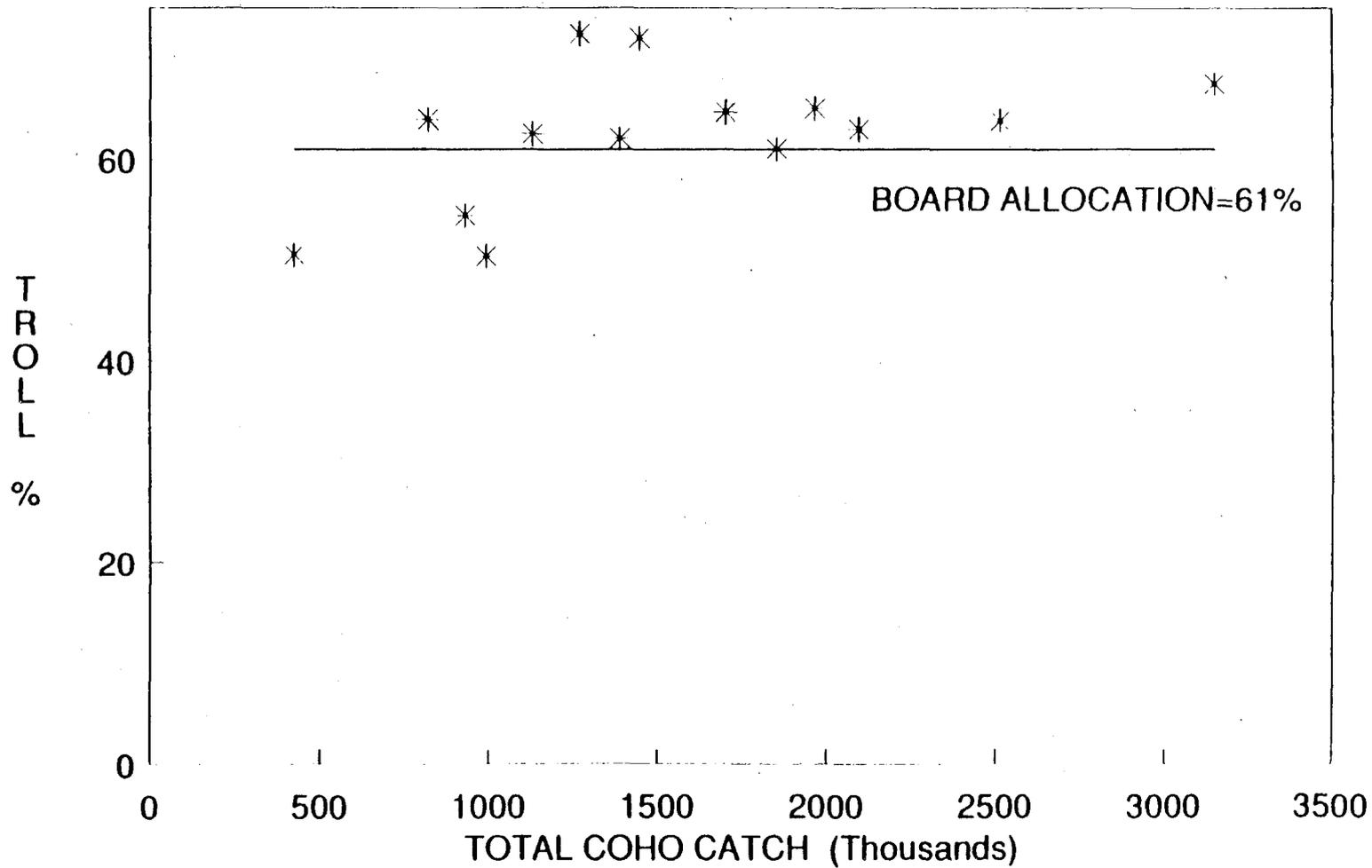


Figure 9. Troll percentage of total coho catch versus regional total coho catch in Southeast Alaska exclusive of Annette Island and Special Harvest Areas, 1960 to 1988.

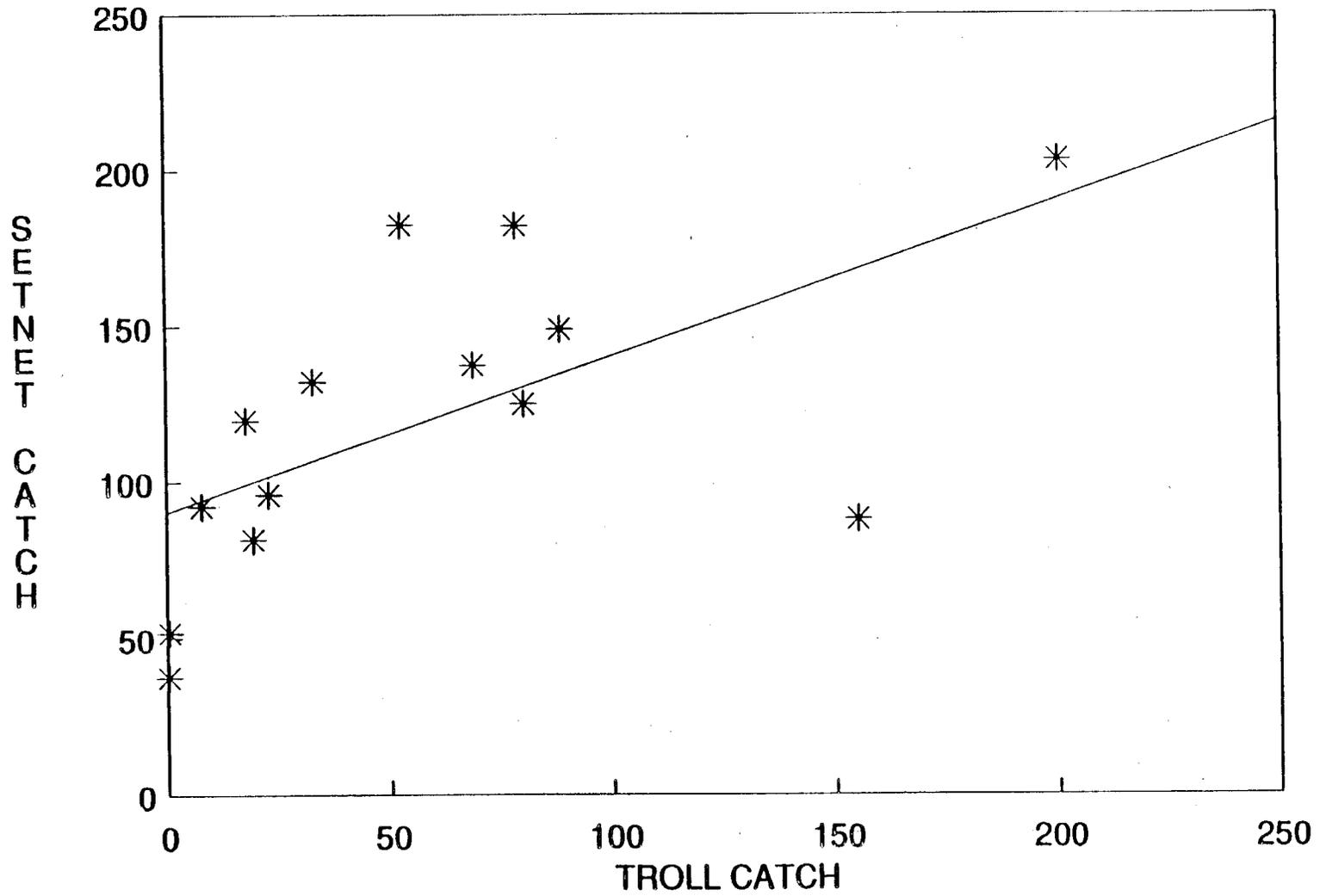


Figure 10. Troll catch in thousands of coho salmon in the Yakutat area versus the catch in thousands of coho salmon in the Yakutat set gill net fishery, 1975 to 1988.

APPENDICES

Appendix Table 1. Cumulative weekly catches of coho salmon by purse seine gear in Southeast Alaska exclusive of Annette Island and Special Harvest Areas, 1975 to 1988.

Week	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
23	0	0	0	0	0	0	0	0	0	21	0	0	0	0
24	0	0	0	0	0	0	0	0	0	21	0	0	0	0
25	0	0	0	0	0	0	0	0	0	21	14	0	0	0
26	0	0	0	0	0	0	0	0	0	21	14	0	0	0
27	0	0	0	14447	16238	167	18	223	0	975	14	0	141	0
28	1767	7219	1377	24988	55170	44901	20030	18528	51475	3494	9027	8904	4713	2721
29	7984	10700	5738	49023	84042	62747	30593	54278	83993	8082	28076	23160	18448	14103
30	7984	12995	8675	74190	96991	81801	58217	74176	111683	24467	59788	60631	30141	23384
31	7984	12995	26866	116739	106296	93970	109963	83755	157332	56211	90286	116903	46083	25512
32	13280	12995	51666	133140	125101	114823	184629	132465	231038	112301	151785	195161	73829	47220
33	22504	13384	75537	160173	157533	132933	232500	230172	284421	201498	200618	270943	82698	76699
34	41970	18999	88639	189275	171678	162860	263899	304657	327333	288964	314745	342402	94086	95366
35	60101	36536	103584	228187	171678	179367	273716	375407	374462	339761	389663	469722	94086	127531
36	60101	64650	132871	242956	171678	191822	279913	431318	394261	346501	403826	534691	105717	144266
37	67720	84423	144542	242956	176224	191916	279913	442930	394261	353041	407716	540276	115723	148710
38	67720	86106	149717	242956	176224	193219	280270	443188	395938	354388	409080	548438	117618	150957
39	69790	87244	150535	242956	176224	193332	280270	443247	395938	355344	409080	557193	118925	153013
40	70177	87422	150535	242956	176344	193332	280270	444557	395938	355375	409878	561086	118963	153107
41	70193	87473	150535	242956	176354	193332	280270	446379	395938	355375	409884	561129	119076	153174
42	70193	87473	150535	242956	176354	193332	280270	446380	395938	355375	409884	561129	119076	153181
43	70193	87473	150535	242961	176354	193338	280270	446380	395938	355375	409884	561129	119076	153181

Appendix Table 2. Cumulative weekly catches of coho salmon by drift gill net gear in Southeast Alaska exclusive of Annette Island and Special Harvest Areas, 1975 to 1988.

Week	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
23	0	0	0	0	0	27	0	0	0	0	0	0	0	0
24	3	0	0	0	0	133	0	0	0	109	0	0	0	0
25	853	5	0	3534	412	702	854	145	0	726	578	1058	0	0
26	2493	1143	347	9608	890	2123	1384	1968	1289	2412	2081	2941	1050	227
27	5098	3726	2315	14722	1706	4113	2375	5657	4814	4390	7500	6117	3348	2192
28	6957	7907	4032	21157	4053	6928	4870	9911	8206	6460	17740	7238	6630	3855
29	9663	11167	5509	26581	7795	11539	8341	15190	11457	10385	28819	14257	11256	7906
30	9663	13636	6603	37146	11900	16428	14025	22301	19611	15205	40571	23226	18712	10719
31	9663	14615	9902	47834	14816	20736	20051	26588	28076	21910	53044	44303	26292	12897
32	12724	15475	13072	55737	20671	26023	25877	30723	38223	29646	64843	66389	36252	16282
33	18400	15762	19624	73978	30565	33596	35914	39060	50152	41681	85654	92797	44295	20850
34	28336	19971	26281	99621	40899	46274	44590	51726	66694	61518	111288	133176	47834	28552
35	44524	39344	45411	131924	48237	64725	61144	74592	89342	85368	154324	193903	64178	42237
36	48961	65758	76870	179631	62620	79827	87651	101502	126968	112465	193297	265852	85036	77092
37	58551	99581	122906	213210	73281	97407	107734	124187	161619	152971	240258	317668	114198	111354
38	69333	119354	164319	221028	77951	103991	110074	147329	184347	173984	271543	360950	141086	136200
39	87122	143324	181322	221134	77951	109881	113716	164853	198444	182689	289829	370766	154997	151776
40	100215	150258	181322	221134	77951	109881	113716	176778	208698	183865	296464	376254	159610	155499
41	102020	155134	181322	221134	77951	109881	113716	180467	210032	184188	297951	376891	160289	156606
42	102314	156258	181322	221134	77951	109881	113716	181149	210251	184222	298194	376891	161001	156606
43	102321	156469	181322	221134	77951	109881	113716	181228	210251	184222	298194	376891	161001	156606

Appendix Table 3. Cumulative weekly catches of coho salmon by set gill nets in Southeast Alaska, 1975 to 1988.

Week	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	6	2	0	0	0
25	0	0	1	0	1	3	10	0	25	17	10	30	12	0
26	0	9	1	6	4	5	11	0	25	56	94	82	24	1
27	0	9	29	243	12	9	11	43	69	79	253	92	137	29
28	2	9	71	420	61	24	15	156	96	79	491	207	215	36
29	2	11	74	491	108	31	30	442	286	163	877	302	501	91
30	3	33	79	510	130	46	63	945	608	328	1160	332	977	171
31	3	42	162	588	377	69	125	1581	775	469	2277	439	1026	237
32	20	85	382	642	543	274	311	1969	1275	1447	2874	682	1244	472
33	214	313	1118	1341	1553	979	1947	2877	2095	3097	3581	1785	1922	1442
34	1042	1967	2859	4981	4494	3409	3398	5403	4152	19624	10614	4972	3736	4827
35	5153	4885	8478	26149	20026	20427	19571	22388	7385	45103	36847	20386	28659	18598
36	13745	15572	24148	63715	47607	52953	48434	56495	23927	99832	91604	36690	63426	48136
37	21716	30639	50333	91348	73442	85084	90744	88251	42542	149887	151193	58345	82004	101972
38	32040	42084	69631	112919	89522	107371	109218	121916	66689	170396	183535	76858	103154	139324
39	37117	48640	84586	137408	95873	119648	132127	137409	76111	179387	200630	83803	120254	170166
40	37403	51743	92214	137408	95873	119648	132127	148994	81517	182256	203193	87871	124824	179580
41	37403	51743	92214	137408	95873	119648	132127	148994	81517	182256	203193	87871	124824	182520
42	37403	51743	92214	137408	95873	119648	132127	148994	81517	182256	203193	87871	124824	182520
43	37403	51743	92214	137408	95873	119648	132127	148994	81517	182256	203193	87871	124824	182520

Appendix Table 4. Cumulative weekly catches of coho salmon by troll gear in Southeast Alaska exclusive of Annette Island and Special Harvest Areas, 1975 to 1988.

Week	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
23	2	0	20	0	0	0	0	96	0	4	0	0	0	0
24	2	0	130	2754	634	9	0	96	0	671	11	0	0	0
25	2949	1010	712	19044	3884	6291	4189	1658	0	4982	11	1595	3308	0
26	7636	5578	3754	57685	11951	26415	16586	19800	0	26915	49	37984	31126	0
27	20459	19978	9148	122057	29864	80798	17141	44416	8458	33793	204945	125367	72798	3065
28	31721	35353	20051	210525	74814	165434	72962	86821	117408	78742	347743	429717	145560	24462
29	46446	70227	35350	294770	161913	216471	159180	234309	288158	209211	555471	750225	271769	65396
30	61396	97606	63589	390956	281677	233455	259829	401261	520578	361693	765416	1042786	399828	125286
31	77316	133197	121995	521740	430254	325744	413617	531646	713793	562709	975233	1318468	550577	147684
32	109823	200375	190299	637824	575445	432593	530904	531708	871475	714259	1101416	1511764	652114	178282
33	162013	282816	250579	773345	700340	534884	601496	777813	879310	860407	1231888	1641677	681853	277237
34	164286	363996	317599	888744	792876	593738	628047	1017135	982537	863699	1234179	1702200	830636	337331
35	165410	425418	370829	984435	874370	647649	723013	1159521	1116994	934398	1373774	1935300	937553	363372
36	185269	476064	437098	1053798	918651	680879	814532	1246406	1189028	1030082	1502771	2050151	995487	438906
37	201638	504378	479378	1088790	918664	698550	842931	1289284	1230413	1097469	1566974	2105649	1029383	480371
38	214148	520768	498237	1100343	918843	706867	858070	1310408	1266872	1125911	1603109	2123889	1037971	497246
39	214148	524754	506770	1100846	918845	707360	862045	1321546	1278943	1131732	1604532	2125335	1041123	499590
40	214148	524754	506770	1100846	918845	707360	862111	1321546	1279518	1131732	1605953	2125344	1041134	499590
41	214148	524754	506770	1100846	918845	707360	862173	1321546	1279518	1131732	1605953	2126159	1041134	499590
42	214148	524754	506770	1100846	918845	707360	862173	1321546	1279518	1131732	1605953	2126159	1041134	499590
43	214148	524754	506770	1100846	918845	707360	862173	1321546	1279518	1131732	1605953	2126159	1041134	499590

Appendix Table 5. Cumulative weekly catches of coho salmon by troll gear in the Yakutat area, Districts 181, 183, 189, 1975 to 1988.

Week	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
23	0	0	0	0	0	0	0	96	0	2	0	0	0	0
24	0	0	0	138	0	0	0	96	0	3	0	0	0	0
25	0	0	43	836	33	15	3	96	0	66	0	2	0	0
26	7	2	411	2105	52	94	90	113	0	152	0	66	84	0
27	7	3	631	2906	141	506	90	125	0	338	5715	149	597	163
28	10	3	719	4258	398	789	280	181	335	3142	9556	544	1040	1024
29	10	220	1246	6515	927	1830	1388	666	1060	8800	16040	2194	2078	2882
30	20	220	1869	9407	1044	1856	1738	2793	3884	13066	34166	8554	2677	4311
31	29	259	2745	18552	2271	2000	4365	6399	4304	17218	77964	34616	5595	4935
32	147	297	3028	29413	3588	3461	5269	6399	6449	23882	102396	59448	8159	6497
33	254	403	3160	40843	5006	6132	5469	11177	9412	39239	120192	77355	9977	9276
34	254	408	3836	48866	11463	8508	5469	29691	11912	39340	120192	80963	22205	12660
35	254	462	4496	54973	15676	12676	9571	50641	14779	42632	133375	117930	48873	14721
36	260	495	6879	63694	22877	14935	20975	73411	16705	54762	169880	141704	66466	33378
37	268	504	7672	67598	22877	16315	26503	86283	18074	64614	189729	152428	79676	48465
38	270	509	7816	68814	22877	17385	32102	86852	18619	72799	200533	154543	80142	52648
39	270	509	7817	68814	22877	17814	32925	88433	19409	78523	200533	154543	80142	52737
40	270	509	7817	68814	22877	17814	32925	88433	19409	78523	200533	154543	80142	52737
41	270	509	7817	68814	22877	17814	32925	88433	19409	78523	200533	155358	80142	52737
42	270	509	7817	68814	22877	17814	32925	88433	19409	78523	200533	155358	80142	52737
43	270	509	7817	68814	22877	17814	32925	88433	19409	78523	200533	155358	80142	52737

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