

HMSC
QL
628
.07
S63
1974

SPAWNING SALMON SURVEYS IN COASTAL WATERSHEDS, 1974

Richard L. Berry

Coastal Rivers Information Report 75-4
Oregon Department of Fish and Wildlife

October 1975

MARILYN POTTS GUIN LIBRARY
BATFIELD MARINE SCIENCE CENTER
OREGON STATE UNIVERSITY
NEWPORT, OREGON 97365

CONTENTS

	<u>Page</u>
GENERAL INFORMATION.....	1
RESULTS.....	3
<u>Fall Chinook Salmon</u>	3
<u>Coho Salmon</u>	5
SUMMARY.....	8
LITERATURE CITED.....	9
APPENDIX TABLES.....	10

TABLES

<u>Table</u>	<u>Page</u>
1 Numbers of Survey Trips and Total Distances Surveyed During the 1974-75 Spawning Salmon Season.....	2
2 Comparison Between 1974 Fish per Mile Counts of Spawning Salmon and the Long-Term Averages of the Annual Counts.....	3
3 Summary of Peak Fish/Mile Counts of Coho in Survey Areas of Tenmile Lakes Tributaries Since 1955.....	6
4 Calculated Escapement and Potential Egg Deposition of Coho in Tenmile Lakes, 1955-74.....	8

FIGURES

<u>Figure</u>	<u>Page</u>
1 Average Number of Fall Chinook/Mile in Standard Survey Areas of Six Coastal Rivers, 1952-74.....	4
2 Average Number of Coho/Mile in Standard Survey Areas of Eight Coastal Rivers, 1950-74.....	4
3 Calculated Coho Escapement into Tenmile Lakes, 1955-74.....	7

APPENDIX TABLES

<u>Table</u>		<u>Page</u>
1	Peak Counts on Nehalem River Spawning Fish Surveys for Fall Chinook Since 1950.....	11
2	Peak Counts on Tillamook Bay Spawning Fish Surveys for Fall Chinook Since 1950.....	12
3	Peak Counts on Nestucca River Spawning Fish Surveys for Fall Chinook Since 1950.....	13
4	Peak Counts on Siletz River Spawning Fish Surveys for Fall Chinook Since 1952.....	14
5	Peak Counts on Yaquina River Spawning Fish Surveys for Fall Chinook Since 1950.....	15
6	Peak Counts on Alsea River Spawning Fish Surveys for Fall Chinook Since 1952.....	16
7	Peak Counts on Siuslaw River Spawning Fish Surveys for Fall Chinook Since 1952.....	17
8	Peak Counts on Coquille River Spawning Fish Surveys for Fall Chinook Since 1952.....	18
9	Peak Counts on Nehalem River Spawning Fish Surveys for Coho Since 1950.....	19
10	Peak Counts on Wilson River Spawning Fish Surveys for Coho Since 1950.....	20
11	Peak Counts on Nestucca River Spawning Fish Surveys for Coho Since 1950.....	21
12	Peak Counts on Yaquina River Spawning Fish Surveys for Coho Since 1950.....	22
13	Peak Counts on Alsea River Spawning Fish Surveys for Coho Since 1950.....	23
14	Peak Counts on Beaver Creek Spawning Fish Surveys for Coho Since 1950.....	24
15	Peak Counts on Tenmile Lakes Spawning Salmon Surveys for Coho Since 1955.....	25
16	Peak Counts on Coos River Spawning Fish Surveys for Coho Since 1950.....	26
17	Peak Counts on Coquille River Spawning Fish Surveys for Coho Since 1950.....	27

Spawning Salmon Surveys in Coastal Watersheds, 1974

GENERAL INFORMATION

Spawning coho, chinook, and chum salmon are annually surveyed in coastal streams by Department of Fish and Wildlife personnel. Annual peak counts of spawning salmon provide data for computing an index of coastal escapement which is plotted each year to chart spawning salmon trends over a period of years. This report presents peak counts for coho and chinook salmon during the 1974-75 spawning season and makes comparisons with similar data from previous years. Information on chum salmon surveys is presented in a separate report (Berry, 1975).

Spawning fish surveys were first established 28 years ago, and additional areas were added as needed to form a coastwide sampling program. In 1971, the project was substantially modified. Surveys that were not representative because of habitat changes, difficult access, or other physical reasons were eliminated. Spring chinook surveys were deleted because the counts were so low no meaningful trends were evident. Statistical analysis and effects of eliminating these surveys were discussed in the 1971 spawning fish survey report (Skeesick, 1972).

The beginning and end point of each survey was redefined in 1974 to calculate the exact distance surveyed. The changes were essential to compute accurate fish per mile averages. Present annual survey distances are 30.8 miles for fall chinook and 38.5 miles for coho. Corrected mileages were used for all tables and figures in this report. Thus, a discrepancy exists between data presented in this report and in earlier spawning fish survey reports.

Each year coho surveys are conducted in the Tenmile lakes system to provide the data base for an estimate of the spawning population and egg

desposition. In 1974 the number of surveys was reduced to minimize the field work. Statistical analysis showed that accurate population estimates could be based on eight of the original 25 surveys. Annual fish per mile counts from these eight surveys were correlated with annual counts obtained from 25 surveys for the years 1955-73, and correlation coefficients (r) for jacks and adults were both 0.99. Total survey mileage was reduced to 7.0 miles for eight surveys, compared to 17.1 miles for the original 25 surveys.

Index areas were often surveyed more than once to ensure that counts were made near the peak of the spawning run. Variability in the timing of the spawning migrations between streams, volume and duration of floods, and silt load frequently forced rescheduling surveys and occasionally resulted in inadequate surveys on some standard index areas. Coho surveys in the mid-coast region were done by personnel from the north and south coast when the area biologist in Newport resigned. These surveys were not necessarily done during peak spawning activity.

Field personnel walked 138.3 miles during the 1974-75 spawning season (Table 1), an increase of 9.5% over the previous year. Surveys started on November 15, 1974, and continued through January 16, 1975.

Table 1. Numbers of Survey Trips and Total Distances Surveyed During the 1974-75 Spawning Salmon Season

River System	Fall Chinook		Coho		Total	
	No.	Miles	No.	Miles	No.	Miles
Nehalem	7	6.0	14	11.8	21	17.8
Kilchis	1	1.0			1	1.0
Wilson	2	1.0	6	7.8	8	8.8
Tillamook	1	1.8			1	1.8
Nestucca	5	3.3	13	11.6	18	14.9
Siletz	4	4.2			4	4.2
Yaquina	7	11.0	9	11.1	16	22.1
Beaver Creek			3	2.3	3	2.3
Alsea	8	13.5	7	7.2	15	20.7
Siuslaw	2	1.1			2	1.1
Tenmile			26	20.0	26	20.0
Coos			6	6.6	6	6.6
Coquille	4	2.4	13	14.6	17	17.0
Total	41	45.3	97	93.0	138	138.3

RESULTS

Fall Chinook Salmon

The count of fall chinook was 27 fish/mile in six coastal rivers, which was 10 fish/mile below the 22-year average from 1952-73 (Table 2). The number of fish/mile among standard surveys in 1974 ranged from 12 on the Alsea River to 51 on tributaries of the Nehalem River. Auxiliary surveys on the Siuslaw and Coquille rivers averaged 116 and 18 fish/mile, respectively. The highest count in a standard survey was on Humbug Creek (Nehalem River) with 157 chinook observed in a 1.0 mile survey. A high count of 199 chinook was observed in a 0.6 mile survey on Lake Creek, an auxiliary survey on the Siuslaw River. All rivers except the Nehalem and Siuslaw had fish/mile counts below their long-term averages.

Table 2. Comparison Between 1974 Fish per Mile Counts of Spawning Salmon and the Long-Term Averages of the Annual Counts

	Species	
	Fall Chinook	Coho
1974 average fish/mile <u>1/</u>	27(2)	17(4)
Long-term average <u>2/</u>	37(7)	31(3)
Departure of 1974 from the average	-10	-14
Range	14(2)-59(8)	12(2)-71(6)

1/ Precocial males, in parentheses, are included in the average.

2/ 1952-73 for chinook, 1950-73 for coho.

Peak counts varied considerably after 1956 when the commercial fishery was closed on coastal streams (Figure 1). The overall trend appears to be slightly downward. Counts in only 2 of the past 7 years have been above the long-term average.

Peak counts for fall chinook survey areas are tabulated in Appendix Tables 1-8.

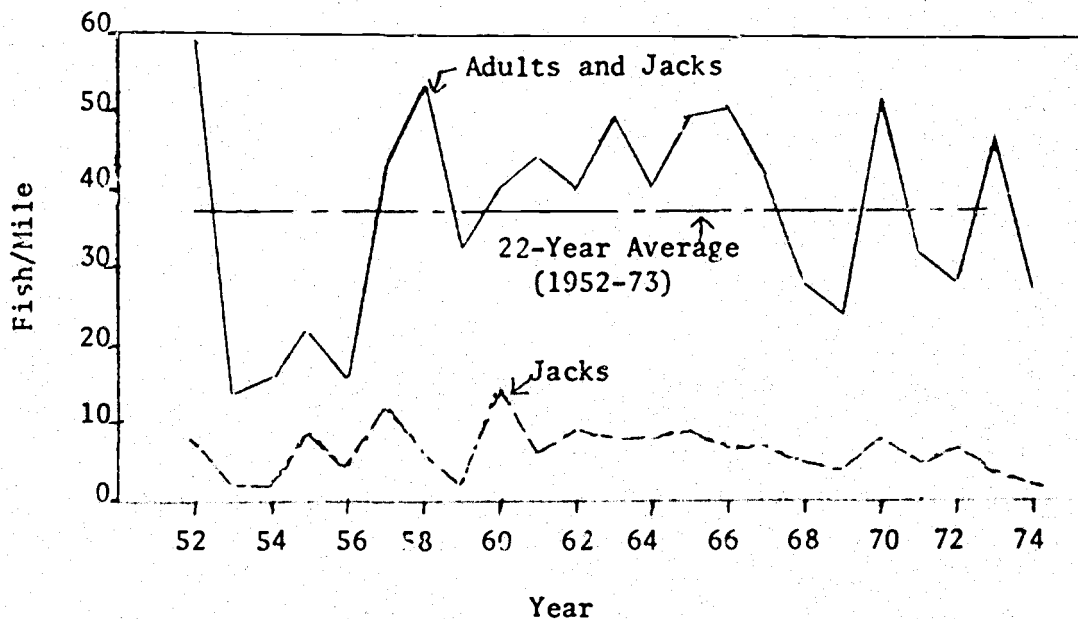


Figure 1. Average Number of Fall Chinook/Mile in Standard Survey Areas of Six Coastal Rivers, 1952-74

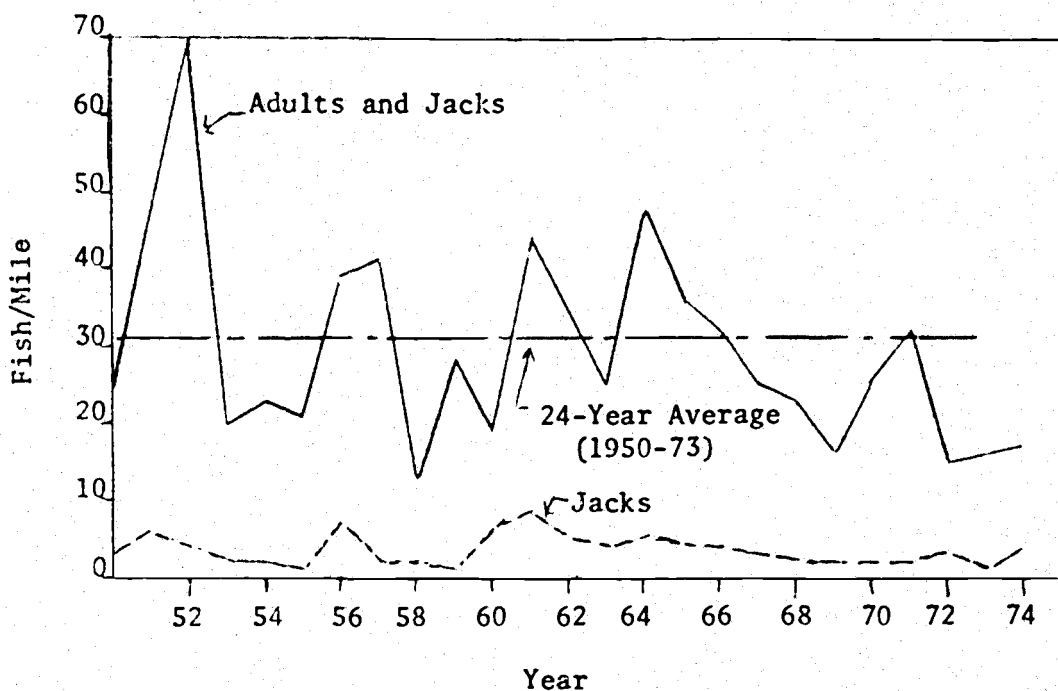


Figure 2. Average Number of Coho/Mile in Standard Survey Areas of Eight Coastal Rivers, 1950-74

Coho Salmon

Peak counts of coho salmon in eight coastal drainages averaged 17 fish/mile (Table 2), continuing the low level of abundance measured the previous year. The average count was 55% of the 1950-73 average. Peak counts on individual watersheds ranged from five fish/mile on Nestucca River tributaries to 42 fish/mile on Coos River. All rivers, except the Wilson and Coos, had counts below their long-term averages.

The coastwide average of peak fish/mile counts was the fourth lowest recorded since the counts began (Figure 2), and was only one fish/mile above the 1973 average. The 1974 counts may have been influenced downward by poor counts in the midcoast area.

Peak counts of coho in survey areas of Tenmile lakes tributaries averaged 70 fish/mile (Table 3), 30% of the 1955-73 average. The data were used to estimate total escapement based upon a population estimate completed in 1955-56 (Morgan and Henry, 1959). Estimated escapements in the Tenmile system indicate a fairly static spawning population level between 1960 and 1967 with a sharp decline in 1968 and again in 1972 (Figure 3). There was a modest increase in 1973, but in 1974 the calculated escapement fell to the lowest on record. The adult escapement produced an estimated deposition of 8.9 million eggs (Table 4) which was 27% of the 1955-73 average. Drastic changes have occurred in the coho population since the lake was chemically treated in 1968 to remove stunted populations of warm-water fish.

Peak counts for each coho survey area are tabulated in Appendix Tables 9-17.

Table 3. Summary of Peak Fish/Mile Counts of Coho ^{1/} in Survey Areas of Tenmile Lakes Tributaries Since 1955

Year	Fish/Mile
1955	686(199)
1956	614(296)
1957	505(164)
1958	239(102)
1959	105(26)
1960	240(174)
1961	318(115)
1962	366(134)
1963	335(200)
1964	381(164)
1965	218(79)
1966	259(93)
1967	276(131)
1968	123(31)
1969	210(126)
1970	546(355)
1971	400(74)
1972	151(28)
1973	212(51)
1974	70(17)
Average	
1955-73	233(97)
Departure	
From Average	-163(-80)
Index Mileage	7.0

^{1/} Numbers in parentheses indicate numbers of jacks included in total count.

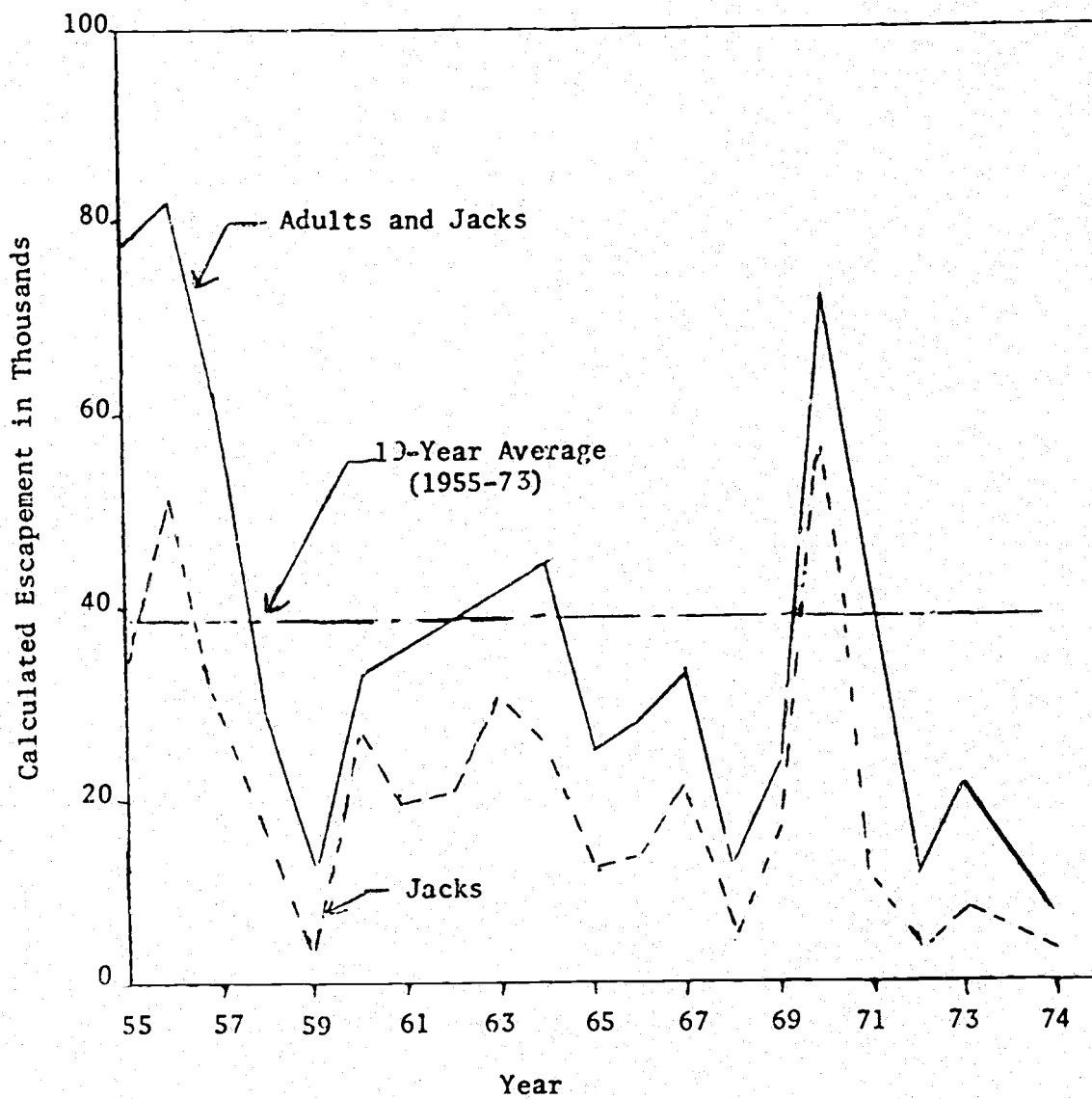


Figure 3. Calculated Coho Escapement into Tenmile Lakes, 1955-74

Table 4. Calculated Escapement and Potential Egg Deposition of Coho in Tenmile Lakes, 1955-74

Year	Calculated Escapement				Potential Egg Deposition in Millions ^{2/}
	Adults	Percentage Females	Jacks	Total	
1955	41,500	66.5 ^{1/}	36,000	77,500	82.8
1956	30,500	66.5 ^{1/}	51,500	82,000	60.9
1957	31,500	65.2	29,000	60,500	61.5
1958	12,500	62.9	16,000	28,500	23.7
1959	8,000	66.5 ^{1/}	4,500	12,500	15.9
1960	5,500	66.8	27,000	32,500	11.1
1961	16,000	66.2	19,500	35,500	31.8
1962	18,500	67.0	20,500	39,000	37.2
1963	11,000	71.6	30,500	41,500	38.7
1964	19,500	66.1	24,500	44,000	38.7
1965	12,500	71.3	12,000	24,500	26.7
1966	13,500	56.8	14,000	27,500	23.1
1967	11,500	60.9	21,000	32,500	21.6
1968	7,500	66.9	5,000	12,500	15.0
1969	6,500	61.8	17,000	23,500	12.0
1970	14,900	65.4	57,000	71,900	29.1
1971	28,000	60.8	10,500	38,500	51.1
1972	8,000	65.4	3,500	11,500	15.7
1973	13,000	61.5	8,000	21,000	23.8
1974	4,500	66.4	3,000	7,500	8.9
1955-73					
Average	16,300		21,400	37,700	32.7

^{1/} Estimated from the average female-to-male ratio of 1957-64.

^{2/} Based on fecundity of 3,000 eggs per female.

SUMMARY

The coastwide fall chinook index of abundance was 73% of the long-term average. Counts were down on all major coastal streams except the Nehalem and Siuslaw indicating the decline was widespread along the Oregon coast. Survey conditions for chinook were generally good, although peak spawning was delayed until late November due to low stream flows earlier in the month.

The coho index of abundance was 55% of its long-term average. Counts of coho were down in every major stream except the Wilson and Coos rivers. The estimated return of jacks to Tenmile lakes was 14% of the long-term average, indicating a low projected adult return to the lake system in 1975.

LITERATURE CITED

- Berry, E. L. 1975. Status of chum salmon runs in selected coastal streams of Oregon, 1974. Fish Comm. Oreg., Coastal Rivers Invest. Info. Rept. 75-2. Mimeo. 15 p.
- Morgan, A. R. and K. A. Henry. 1959. The 1955-56 silver salmon run into the Tenmile lakes system. Fish Comm. Oreg. Res. Briefs, 7(1): 57-77.
- Skeesick, D. G. 1972. Spawning fish surveys in coastal watershed, 1971. Fish Comm. Oreg., Coastal Rivers Invest. Info. Rept. 72-1. Mimeo. 45 p.

APPENDIX TABLES

Appendix tables are organized by species and within species by watershed from north to south. The peak counts and fish/mile figures may not agree with reports from years prior to 1974 because of a reduction in the number of surveys, redefinition of survey distances, and deletion of spring chinook surveys.

Within the tables, the figures in parentheses are the jack salmon counts and these figures are included in the totals. In some instances, the standard survey could not be made. In those cases the numbers of fish were estimated. Estimates were made by determining the ratio of total fish which were seen in that particular survey during the preceding 2 years (with completed surveys) to the total fish seen in all the other streams in that system during the same period. That ratio was applied to the total of the other surveys in the drainage for the year in question and the resulting figure was assumed as the number of fish which should have been seen in the survey area. That figure was then entered into the calculations as if the survey had been completed.

The supplemental surveys are included for reference. Data from these surveys are not used in computing fish/mile values because, in most cases, the supplemental surveys were started at a later date.

Table 1. Peak Counts on Nehalem River Spawning Fish Surveys for Fall Chinook Since 1950

Year	Standard Surveys					Fish per Mile
	Buchanan Creek	Cronan Creek 1/	East Humbug Creek	Humbug Creek	Total	
1950	6	8	27(1)	13	54(1)	15.4
1951	2	5	14	34(8)	55(8)	15.7
1952	20(4)	55(4)	29	23(2)	127(10)	36.3
1953	5(2)	8(4)	14(3)	66(15)	93(24)	26.6
1954	0	8	7	41(15)	56(15)	16.0
1955	16(5)	12(4)	33(18)	29(18)	90(45)	25.7
1956	4	16	25	42(3)	87(3)	24.9
1957	39(9)	34(8)	57(16)	74(24)	204(57)	58.3
1958	9	21	24	69(11)	123(11)	35.1
1959	22(4)	44(3)	10	68(6)	144(13)	41.1
1960	36(9)	20(1)	46(30)	134(80)	236(120)	67.4
1961	73(5)	32(3)	35(3)	104(8)	244(19)	69.7
1962	24(9)	16(1)	44(7)	78(9)	162(26)	46.3
1963	20(2)	18	36(9)	133(37)	207(48)	59.1
1964	39(5)	10	17(3)	126(14)	192(22)	54.9
1965	40(8)	10(1)	13(2)	143(43)	206(54)	58.9
1966	23	31(6)	6	103(8)	163(14)	46.6
1967	26(1)	10(2)	16(1)	66(2)	118(6)	33.7
1968	12(1)	12(3)	10	46(2)	80(6)	22.9
1969	8(1)	3(0)	0	31(2)	42(3)	12.0
1970	25(1)	13(2) 2/	32(1)	57(3)	127(7)	36.3
1971	30(0)	6(0)	27(2)	94(10)	157(12)	44.9
1972	21(1)	2(0)	5(4)	117(46)	145(51)	41.4
1973	30(5)	6(1)	23(0)	167(28)	226(34)	64.6
1974	7(0)	1(0)	12(1)	157(16)	177(17)	50.6
24 yr avg. (1950-73)	22(3)	17(2)	23(4)	77(16)	139(25)	39.8
Miles	0.5	1.0	1.0	1.0	3.5	

1/ Surveys made by Oregon Wildlife Commission since 1958.

2/ Estimated--surveys not done.

Table 2. Peak Counts on Tillamook Bay Spawning Fish Surveys
for Fall Chinook Since 1950

Year	Standard Surveys				Fish per Mile
	<u>Kilchis River</u> <u>Sam Down Creek</u>	Tillamook River	Lower N. Fk. Wilson River	Total	
1950	-	-	52(1)	52(1)	
1951	-	-	25(1)	25(1)	
1952	7(2)	115	99(24)	221(26)	69.1
1953	0	34(13)	30(2)	64(15)	20.0
1954	4(3)	22(9)	17(1)	43(13)	13.4
1955	0	7(4)	7(2)	14(6)	4.4
1956	3(1)	12(7)	15(5)	30(13)	9.4
1957	37(15)	36(13)	157(48)	230(76)	71.9
1958	64(22)	83(12)	62(6)	209(40)	65.3
1959	62(3)	104(14)	43(1)	209(18)	65.3
1960	65(24)	100(47)	43(3)	208(74)	65.0
1961	71(7)	166(36)	29(4)	266(47)	83.1
1962	54(4)	117(22)	52(4)	223(30)	69.7
1963	70(3)	150(22)	87(2)	307(27)	96.0
1964	55(3)	163(29)	17	235(37)	73.5
1965	36(2)	111(18)	43(21)	190(41)	59.4
1966	104(20)	110(25)	87(15)	301(60)	94.1
1967	93(2)	158(41)	133(7)	384(50)	120.0
1968	66(6)	110(29)	57(6)	233(41)	72.8
1969	6(0)	54(13)	37(1)	97(14)	30.3
1970	32(5)	168(29)	64(13)	264(47)	82.5
1971	19(3)	39(4)	43(15)	101(22)	31.6
1972	23(4)	66(12)	81(31)	170(47)	53.1
1973	22(5)	85(1)	234(7)	341(13)	106.6
1974	18(2)	49(4)	52(3)	119(9)	37.2

24 yr avg. (1950-73)	41(6)	91(18)	63(9)	184(32)	61.6
Miles	1.0	1.7	0.5	3.2	

Table 3. Peak Counts on Nestucca River Spawning Fish Surveys for Fall Chinook Since 1950

Year	Standard Surveys				Fish per Mile
	East Beaver Creek	Moon Creek	Niagara Creek	Total	
1950	17	33(3)	5(1)	55(4)	22.9
1951	15(1)	10	11	36(1)	15.0
1952	130(9)	178(12)	137(2)	445(23)	185.4
1953	7	10(3)	7	24(3)	10.0
1954	19(2)	11(3)	15	45(5)	18.8
1955	17(2)	21(2)	42(7)	80(11)	33.3
1956	4	10(2)	11	25(2)	10.4
1957	30(5)	137(52)	104(19)	271(76)	112.9
1958	59(3)	57(5)	51(2)	167(10)	69.6
1959	63(1)	27	36	126(1)	52.5
1960	60(7)	145(42)	97(29)	302(78)	125.8
1961	34(6)	126(27)	69(4)	229(37)	95.4
1962	69(11)	68(18)	47(8)	184(37)	76.7
1963	53(5)	66(12)	90(2)	209(19)	87.1
1964	42(7)	35(8)	53(8)	130(23)	54.2
1965	68(6)	244(17)	125(2)	437(25)	182.1
1966	48(7)	159(19)	80(7)	287(33)	119.6
1967	64(2)	109(33)	61(6)	234(41)	97.5
1968	32(1)	57(4)	43(2)	132(7)	55.0
1969	16(1)	4(0)	36(8)	56(9)	23.3
1970	47(3)	63(4)	47(8)	157(15)	65.4
1971	27(2)	64(9)	36(1)	127(12)	52.9
1972	1(0)	13(1)	92(10)	106(13)	44.2
1973	28(2)	32(1)	65(4)	125(7)	52.1
1974	26(2)	36(2)	42(0)	104(4)	43.3
24 yr avg. (1950-73)	40(5)	70(12)	57(6)	166(20)	69.3
Miles	1.5	0.5	0.4	2.4	

Table 4. Peak Counts on Siletz River Spawning Fish Surveys for Fall Chinook Since 1952

Year	Standard Surveys				Fish per Mile
	Euchre Creek	N. Fk. Rock Creek	Sunshine Creek	Total	
1952	35(7)	108	51	194(7)	64.6
1953	3	13(4)	17(2)	33(6)	11.0
1954	4(1)	27(1)	12	43(2)	14.3
1955	2	78(51)	1	81(51)	27.0
1956	18(8)	33(7)	8	59(15)	19.6
1957	37(7)	42(6)	51(2)	130(15)	43.3
1958	40(12)	59(5)	131(12)	230(29)	76.6
1959	23(1)	28	37(1)	88(2)	29.3
1960	16(1)	33(16)	46(21)	89(38)	29.6
1961	11(1)	31(5)	63(11)	105(17)	35.0
1962	20(1)	18(8)	160(29)	198(38)	65.9
1963	23(3)	47(11)	71(8)	146(22)	48.6
1964	34(13)	92(26)	25(7)	151(46)	50.3
1965	29(1)	26(6)	40(8)	95(15)	31.6
1966	32(3)	33(1)	42(6)	107(10)	35.6
1967	31(6)	15(1)	42(3)	88(10)	29.3
1968	14(4)	8(2)	23(4)	45(10)	15.0
1969	16(2)	6(3)	10(3)	32(8)	10.7
1970	18(2)	49(5)	60(9)	127(16)	42.3
1971	28(5)	9(0)	45(5)	82(10)	27.3
1972	33(11)	36(11)	41(14)	110(36)	36.7
1973	29(1) <u>1/</u>	16(1)	47(0)	92(2)	30.7
1974	4(1)	20(0)	49(2)	73(3)	24.3
24 yr avg. (1952-73)	23(4)	37(8)	46(7)	106(18)	35.2
Miles	1.0	0.8	1.2	3.0	

1/ Estimated--no count made.

Table 5. Peak Counts on Yaquina River Spawning Fish Surveys for Fall Chinook Since 1950

Year	Standard Surveys					Total	Fish per Mile
	Feagles Creek	Grant Creek	Simpson Creek	Salmon Creek	Yaquina River		
1950	15	91(23)	11(1)	-	-	-	
1951	32	105	26	-	-	-	
1952	89(18)	226(46)	71(39)	0	84(22)	470(125)	62.7
1953	5	34	19(1)	3	28(3)	89(4)	11.9
1954	41(4)	56(1)	3(1)	6	52(7)	158(13)	21.1
1955	24(1)	112(46)	36(9)	25(3)	31(9)	228(68)	30.4
1956	9(5)	69(36)	11(2)	4	3(3)	96(46)	12.8
1957	76(18)	97(27)	5(2)	3(2)	14(3)	195(52)	26.0
1958	87(14)	88(6)	25(1)	29(2)	67(2)	296(25)	39.5
1959	43(3)	74(4)	15	24(4)	15	171(11)	22.8
1960	27(14)	31(9)	21(11)	9(6)	30(8)	118(48)	15.7
1961	34(3)	52(1)	47(9)	8	35(1)	176(14)	23.5
1962	38(10)	47(15)	63(34)	16(8)	29(2)	193(69)	25.7
1963	40(4)	80(13)	40(10)	3	74(19)	237(46)	31.6
1964	39(7)	25(3)	50(13)	33(10)	47(4)	194(37)	25.9
1965	35(9)	78(34)	46(23)	3(2)	14(5)	176(73)	23.5
1966	34(4)	82(15)	56(10)	16(7)	44(5)	232(41)	30.9
1967	34(7)	48(13)	41(15)	19(3)	2	144(38)	19.2
1968	29(9)	41(9)	47(9)	16(5)	36(6)	169(38)	22.5
1969	38(13)	88(20)	80(8)	19(4)	25(0)	250(45)	33.3
1970	60(4)	115(10)	113(40)	12(1)	26(4)	326(59)	43.5
1971	44(11)	95(17)	35(9)	10(0)	13(6)	197(43)	26.3
1972	9(1)	48(12)	1(1)	7(2)	3(2)	68(18)	9.1
1973	11(1)	52(4)	55(5)	56(10)	19(1)	193(21)	25.7
1974	16(3)	93(0)	40(1)	13(4)	6(0)	168(8)	22.4
24 yr avg. (1950-73)	37(7)	76(15)	38(11)	15(3)	31(5)	199(42)	26.5
Miles	2.0	1.5	1.5	0.5	2.0	7.5	

Table 6. Peak Counts on Alsea River Spawning Fish Surveys
for Fall Chinook Since 1952

Year	Standard Surveys					Total	Fish per Mile
	Buck Creek	Drift Creek	Fall Creek	Lobster Creek	N. Fk. Alsea River		
1952	69(20)	53	5	18(5)	3(1)	148(26)	19.2
1953	1	38(2)	3(2)	9(5)	25(1)	76(10)	9.9
1954	6	16(4)	21(6)	20(7)	11(2)	74(19)	9.6
1955	24(19)	44(37)	15(8)	13(9)	25	121(73)	15.7
1956	1	34(17)	-	-	-	-	-
1957	33(9)	66(17)	35(5)	11(3)	10(3)	155(37)	20.1
1958	-	67(6)	21(3)	2	4	-	-
1959	5(2)	79(2)	14(1)	11	12	121(5)	15.7
1960	19(8)	73(38)	14(3)	10(6)	11(3)	127(58)	16.5
1961	46(8)	71(8)	31	18(5)	5	171(21)	22.2
1962	13(5)	49(13)	22(7)	29(13)	14(3)	127(41)	16.5
1963	51(12)	60(12)	36(4)	45(12)	20(4)	212(44)	27.6
1964	29(7)	86(31)	29(5)	18(8)	22(4)	184(55)	23.9
1965	45(14)	38(4)	73(9)	33(5)	36(4)	225(36)	29.2
1966	62(20)	64(7)	24(1)	32(8)	85(11)	267(47)	34.7
1967	26(14)	46(15)	14	18(3)	52(4)	156(36)	20.3
1968	30(12)	34(10)	2(1)	0	23(5)	89(28)	11.6
1969	15(2)	71(6)	29(4)	33(10)	35(5)	183(27)	23.8
1970	77(34)	78(10)	64(5)	123(23)	84(4)	426(76)	55.3
1971	46(8)	41(2)	30(3) ^{1/}	42(14)	39(6)	198(33)	25.7
1972	5(2)	39(7)	6(2)	73(27)	41(8)	164(46)	21.3
1973	24(4)	-	-	24(4)	-	280(23) ^{1/}	36.4
1974	13(0)	5(0)	9(1) ^{1/}	37(7)	27(0)	91(8)	11.8
22 yr avg. (1952-73)	28(9)	55(12)	24(4)	28(8)	28(3)	175(37)	22.8
Miles	1.0	1.5	1.2	2.5	1.5	7.7	

^{1/} Estimated.

Table 7. Peak Counts on Siuslaw River Spawning Fish Surveys
for Fall Chinook Since 1952

Year	Auxiliary Surveys				Fish per Mile
	N. F. Siuslaw River	Esmond Creek	Lake Creek	Total	
1952	13(1)	-	-	-	-
1953	-	-	29(10)	-	-
1954	-	-	-	-	-
1955	16(6)	-	-	-	-
1956	13(3)	8	2(1)	23(4)	12.1
1957	0	4(2)	25(8)	29(10)	15.3
1958	35(9)	58(17)	58(16)	151(42)	79.5
1959	4	17(5)	40(5)	61(10)	32.1
1960	-	-	-	-	-
1961	4(2)	7(5)	48(22)	59(29)	31.1
1962	72(14)	5(0)	16(4)	93(18)	48.9
1963	7(1)	32(1)	29(2)	68(4)	35.8
1964	44(13)	23(3)	247(35)	314(51)	165.3
1965	9(1)	28(5)	39(11)	76(17)	40.0
1966	35(13)	41(1)	122(11)	198(25)	104.2
1967	14(4)	11(3)	141(31)	166(38)	87.4
1968	7(2)	17(7)	84(32)	108(41)	56.8
1969	7(0)	31(10)	192(53)	230(63)	121.0
1970	29(12)	39(9)	332(76)	400(97)	210.5
1971	3(0)	17(4)	59(10)	79(14)	41.6
1972	3(0)	4(1)	144(56)	151(57)	79.5
1973	5(2)	2(1)	-	-	-
1974	2(0)	20(5) ^{1/}	199(68)	221(73)	116.3
22 yr avg. (1952-73)	17(4)	20(4)	94(22)	138(32)	72.6
Miles	0.5	0.8	0.6	1.9	

^{1/} Estimated.

Table 8. Peak Counts on Coquille River Spawning Fish Surveys
for Fall Chinook Since 1952

Year	Auxiliary Surveys				Fish per Mile
	N. Fk. Coquille River	Salmon Creek	S. Fk. Coquille R.	Total	
1952	-	-	10(1)	-	-
1953	-	14(1)	14(1)	-	-
1954	2	-	-	-	-
1955	-	-	-	-	-
1956	-	-	-	-	-
1957	12(7)	13(2)	2	27(9)	16.9
1958	11(2)	16(7)	6	33(9)	20.6
1959	10(4)	7	0	17(4)	10.6
1960	0	-	-	-	-
1961	0	24(14)	0	-	-
1962	7(2)	1	2(1)	10(3)	6.2
1963	13(1)	3	10	26(1)	16.2
1964	13(6)	11(2)	1	25(8)	15.6
1965	19(5)	140(49)	20	179(54)	111.9
1966	10(1)	74(19)	52	136(20)	85.0
1967	9(1)	17	41(4)	67(5)	41.9
1968	27(17)	20(4)	5	52(21)	32.5
1969	16(5)	7(0)	5(1)	28(6)	17.5
1970	39(20)	59(23)	10(2)	108(45)	67.5
1971	15(7)	22(5)	5(0)	42(12)	26.2
1972	20(8)	12(4)	3(1)	33(13)	20.6
1973	-	18(0)	1(0)	-	-
1974	7(2)	20(7)	1(1)	28(10)	17.5
22 yr avg. (1952-73)	13(5)	27(8)	10(1)	56(15)	34.9
Miles	0.3	0.8	0.5	1.6	

Table 9. Peak Counts on Nehalem River Spawning Fish Surveys for Coho
Since 1950

Year	Standard Surveys								Total	Fish per Mile
	Cow Creek	N. Fk. Cronin Creek 1/	Fish- hawk Creek No. 2	Ham- ilton. Creek	West Humbug Creek	N.Fk. Wolf Creek	North- west Creek	Oak Ranch Creek		
1950	8	11	36	6(1)	9	8	4	29(3)	111(4)	16.6
1951	24(3)	29(3)	36(2)	30	63(5)	55(3)	24(1)	40(3)	301(20)	44.9
1952	20	27(3)	93(2)	45(3)	15(1)	76(3)	27(3)	0	303(15)	45.2
1953	7(2)	20(2)	45	8	29	7	1	11	128(4)	19.1
1954	8(3)	12(2)	9(1)	4(1)	10	5(1)	1	10	59(8)	8.8
1955	11	23(1)	12	8	7	12	39(3)	5	117(4)	17.5
1956	20	35(3)	27	27	56	60(2)	22(1)	36	283(6)	42.3
1957	24	7	71	24	80	106	37(7)	45(4)	394(11)	58.8
1958	2(1)	14	2	0	11	6(1)	6(1)	0	41(3)	6.1
1959	2	10(1)	8(1)	4	23(1)	44	20(1)	28	139(4)	20.8
1960	11(3)	10(2)	15(2)	34(13)	5	38(13)	9(1)	18(3)	140(37)	20.9
1961	28(3)	8(2)	48(4)	16	28	70(4)	27	41(1)	266(14)	39.7
1962	12(3)	10	17(1)	17(4)	49(7)	26(3)	11(1)	57(8)	199(27)	29.7
1963	12(1)	3(1)	17(2)	6	34	32	7(2)	16(2)	127(8)	19.0
1964	18(3)	19(2)	38(2)	26	48(1)	75(5)	9	52(7)	285(20)	42.6
1965	18(2)	2	43(4)	16	56(2)	86(3)	5	4	230(11)	34.3
1966	8	7(1)	4	12(1)	24(2)	33(2)	5(4)	54(1)	147(11)	21.9
1967	1	13(3)	18(1)	17	18(1)	45(1)	5	5(1)	122(7)	18.2
1968	-	-	-	-	-	-	-	-	-	-
1969	0	8(1)	14	3	34(4)	30	24(5)	1	114(10)	17.0
1970	4(0)	22(1) ^{2/}	12(0)	10(0)	12(0)	65(6)	17(0)	10(0)	152(7)	22.7
1971	3(0)	7(0)	39(1)	7(0)	70(0)	71(3)	26(1)	28(1)	251(6)	37.5
1972	6(0)	1(0)	27(2)	4(0)	8(0)	15(0)	42(9)	11(0)	114(11)	17.0
1973	0	1(1)	19(0)	6(1)	21(0)	11(1)	16(1)	29(1)	103(5)	15.4
1974	1(0)	1(0)	38(0)	2(0)	11(0)	17(0)	6(0)	6(0)	82(0)	12.2
24 yr avg. (1950-73)	11(1)	13(1)	28(1)	14(1)	31(1)	42(2)	17(2)	23(2)	179(11)	26.8
Miles	0.5	0.5	1.0	1.0	1.1	1.1	0.5	1.0	6.7	

^{1/} Surveys made by Oregon Wildlife Commission since 1958.

^{2/} Estimated.

Table 10. Peak Counts on Wilson River Spawning Fish Surveys
for Coho Since 1950

Year	Standard Surveys				Fish per Mile
	Cedar Creek & trib.	Devils Lake* Fork Wilson River		Total	
		Lower	Upper		
1950	27	4	5	36	9.2
1951	118(8)	8	6	132(8)	33.8
1952	75(3)	19(4)	1	95(7)	24.4
1953	49(3)	16(2)	0	65(5)	16.7
1954	14(3)	7	2(1)	23(4)	5.9
1955	27	9	2	38(0)	9.7
1956	18(1)	3(1)	0	21(2)	5.4
1957	9	47	0	56(0)	14.4
1958	8	10	0	18(0)	4.6
1959	26	62	0	88(0)	22.6
1960	38(4)	63(3)	4(1)	105(8)	26.9
1961	77(7)	66(4)	14(2)	157(13)	40.3
1962	88(4)	44(6)	13(1)	145(11)	37.2
1963	45(4)	49	17	111(4)	28.5
1964	47(1)	56(2)	39(5)	142(8)	36.4
1965	51(7)	2	6	59(7)	15.1
1966	11(1)	15	20	46(1)	11.8
1967	122(8)	12(1)	18(1)	152(10)	39.0
1968	54(4)	10	14	78(4)	20.0
1969	42(7)	20(4)	2	64(11)	16.4
1970	116(8)	60	11	187(8)	47.9
1971	71(2)	26(2)	22(3)	119(7)	30.5
1972	31(2)	11(0)	8(1)	50(3)	12.8
1973	82(4)	8(0)	24(0)	114(4)	29.2
1974	49(0)	14(1)	31(2)	94(3)	24.1

24 yr avg. (1950-73)	52(3)	26(1)	10(1)	88(5)	22.4
Miles	2.9	0.5	0.5	3.9	

Table 11. Peak Counts on Nestucca River Spawning Fish Surveys
for Coho Since 1950

Year	Standard Surveys					Total	Fish per Mile
	Bear Creek	Clear Creek	East Creek	Moon Creek Upper	Niagara Creek		
1950	5(1)	19(5)	25	10	18	77(6)	16.0
1951	45(1)	46(5)	132	62	33	318(6)	66.2
1952	22(1)	50(4)	25(1)	131	47(1)	275(7)	57.3
1953	21	7(1)	32	16	13(1)	89(2)	18.5
1954	1	16(3)	49(1)	21(4)	9	96(8)	20.0
1955	14	5(1)	40	0	9	68(1)	14.2
1956	11(1)	4(1)	11(1)	6	16(2)	48(5)	10.0
1957	11(2)	23(5)	13(1)	3	15(1)	65(9)	13.5
1958	5(1)	11(4)	16(1)	4(1)	10	46(7)	9.6
1959	2	6	20	14(1)	13	55(1)	11.5
1960	0	18(8)	13	10	4(1)	45(9)	9.4
1961	5(1)	23(6)	38(1)	13(1)	16(2)	95(11)	19.8
1962	4	7(1)	28(1)	16(3)	3	58(5)	12.1
1963	13(3)	20(7)	37(4)	25(4)	15(1)	110(19)	22.9
1964	16(3)	31(3)	42(1)	61(16)	19(2)	169(25)	35.2
1965	14(2)	29(15)	56(5)	36(4)	9	144(26)	30.0
1966	17(5)	14(7)	63(6)	33(2)	16	143(20)	29.8
1967	19(2)	11(1)	15(1)	21(4)	37(2)	105(10)	21.9
1968	6(3)	9(4)	50(5)	24	12	101(12)	21.0
1969	1	5(1)	3(1)	4	3	16(2)	3.3
1970	39(6)	24(7)	5(1)	13(2)	28(1)	109(17)	22.7
1971	20(1)	13(0)	1(0)	19(1)	13(2)	66(4)	13.8
1972	14(2)	3(0)	8(1)	20(2)	5(0)	50(5)	10.4
1973	16(2)	12(1)	25(0)	8(0)	6(0)	67(3)	14.0
1974	4(0)	6(0)	6(1)	5(0)	3(0)	24(1)	5.0

24 yr avg. (1950-73)	13(2)	17(4)	31(2)	24(2)	15(1)	101(9)	21.0
Miles	1.5	0.8	1.3	0.8	0.4	4.8	

Table 12. Peak Counts on Yaquina River Spawning Fish Surveys
for Coho Since 1950

Year	Standard Surveys						Fish per Mile
	Feagles Trib.	Grant Creek	Salmon Creek	Simpson Creek	Yaquina River	Total	
1950	4	2	6	17(3)	36(2)	65	11.6
1951	27	135(3)	43	54(14)	190(4)	449(19)	80.2
1952	9	51	14(3)	15(1)	45(1)	134(5)	23.9
1953	5	15(1)	4(2)	0	5	29(3)	5.2
1954	6	32(1)	25(3)	5(1)	43(3)	111(8)	19.8
1955	10(1)	10(1)	9	4	35	68(2)	12.1
1956	15(3)	24(3)	30(4)	9(3)	79(6)	157(19)	28.0
1957	3	49	58(7)	28(6)	117	255(13)	45.5
1958	0	11	12(3)	8(2)	46(7)	77(12)	13.8
1959	11	12(2)	27	12(1)	87(1)	149(4)	26.6
1960	5(2)	19(10)	20(9)	3(1)	62(21)	109(43)	19.5
1961	15(2)	35(2)	48(5)	9(5)	269(4)	376(18)	67.2
1962	7(1)	30(5)	25(12)	11(1)	128(11)	201(30)	35.9
1963	3(1)	56(9)	18(5)	42(12)	72(4)	101(31)	34.1
1964	46(5)	57(2)	6(1)	26(2)	171(20)	306(30)	54.7
1965	31(5)	35(3)	29(4)	42(19)	153(16)	290(47)	51.8
1966	24(3)	27(3)	9	54(7)	212(17)	326(30)	58.2
1967	21(3)	25(3)	12(3)	10(4)	82(16)	150(29)	26.8
1968	37(7)	20(3)	8(1)	19(5)	113(4)	197(20)	35.2
1969	11(2)	8	4	5	59(13)	87(15)	15.5
1970	12(1)	28(1)	7(0)	42(5)	154(4)	243(11)	43.4
1971	25(1)	26(0)	11(1)	13(0)	251(10)	326(12)	58.2
1972	15(1)	4(0)	4(1)	2(1)	36(10)	61(13)	10.9
1973	22(4)	11(0)	7(1)	11(2)	58(4)	109(11)	19.5
1974	2(1)	11(1)	7(0)	5(1)	20(1)	45(4)	8.1
24 yr avg. (1950-73)	15(2)	30(2)	18(3)	18(4)	104(7)	186(18)	33.2
Miles	0.1	1.5	0.5	1.5	2.0	5.6	

Table 13. Peak Counts on Alsea River Spawning Fish Surveys
for Coho Since 1950

Year	Standard Surveys						Fish per Mile
	Bummer Creek	Cherry Creek	Horse Creek	Lobster Creek	Wilson Creek	Total	
1950	15(3)	6	23(5)	4(1)	10(1)	58(10)	11.4
1951	76	62	58(4)	56(3)	46(4)	298(11)	58.4
1952	57(3)	23(5)	49(4)	44(1)	46(4)	219(17)	42.9
1953	17(1)	8	12(3)	14	14(1)	65(5)	12.7
1954	40(2)	14(1)	56(1)	44(1)	36	190(5)	37.3
1955	23	18	34	65	34(9)	174(9)	34.1
1956	41(3)	20(6)	18(2)	89(12)	65(7)	233(30)	45.7
1957	3	12(2)	14	85(3)	40(4)	154(9)	30.2
1958	9(1)	1	10	35	6	61(1)	12.0
1959	4(3)	19(1)	9(1)	75(4)	36(2)	143(11)	28.0
1960	14(3)	17(5)	17(3)	50(12)	17(7)	115(30)	22.6
1961	54(10)	26(6)	61(4)	72(5)	30(8)	243(33)	47.7
1962	33(4)	13(4)	21(1)	24(1)	19	110(10)	21.6
1963	10(3)	22(4)	38(2)	73(5)	60(18)	203(32)	39.8
1964	75(17)	40(12)	34	116(3)	59(9)	324(41)	63.5
1965	25	26(4)	34(4)	37(4)	36(8)	158(20)	31.0
1966	40(7)	55(16)	33(1)	40(6)	46(6)	214(36)	42.0
1967	24(8)	24(3)	46(7)	30(1)	24(3)	148(22)	29.0
1968	37(5)	25(3)	29	17	25	133(8)	26.1
1969	17(2)	7(3)	4	14	6(2)	48(7)	9.4
1970	12(0)	8(1)	10(2)	15(2)	16(3)	61(8)	12.0
1971	32(1)	15(0)	27(1)	82(0)	9(0)	165(2)	32.4
1972	3(2)	2(0)	5(2)	13(0)	4(1)	27(5)	5.3
1973	6(0)	12(1)	10(0)	18(0)	24(2)	70(3)	13.7
1974	2(0)	2(0)	9(0)	16(1)	1(0)	30(1)	5.9
24 yr avg. (1950-73)	28(3)	20(3)	27(2)	46(3)	30(4)	156(15)	29.5
Miles	1.0	0.8	1.0	1.0	1.3	5.1	

Table 14. Peak Counts on Beaver Creek Spawning
Fish Surveys for Coho Since 1950

Year	Standard Surveys			Total	Fish per Mile
	N. Fk. Beaver Creek	N. Fk. of Beaver Creek	S. Fk. of N. Fk. Beaver Creek		
1950	12(2)	5(2)	17(4)	34(8)	14.8
1951	179	80(8)	115(11)	374(19)	162.6
1952	47(4)	25(4)	20(1)	92(9)	40.0
1953	11(2)	2	9(2)	22(4)	9.6
1954	11	13(3)	13(3)	37(6)	16.1
1955	24	20(3)	8(2)	52(5)	22.6
1956	24(4)	18(4)	27(1)	69(9)	30.0
1957	52(2)	22(3)	32(2)	106(7)	46.1
1958	15(2)	0	9(1)	24(3)	10.4
1959	32(1)	5	6	43(1)	18.7
1960	29(4)	0	1	30(4)	13.0
1961	23(5)	5(1)	21(4)	49(10)	21.3
1962	37(3)	9(1)	20(3)	66(7)	28.7
1963	25(10)	18(11)	15(4)	58(25)	25.2
1964	20(0)	17(5)	45(3)	82(8)	35.7
1965	26(5)	25(5)	12	63(10)	27.4
1966	40(1)	42(11)	18	100(12)	43.5
1967	15(5)	14(5)	2	31(10)	13.5
1968	39(3)	21(1)	6	66(4)	28.7
1969	17(3)	6(2)	9(3)	32(8)	13.9
1970	46(5)	15(2)	5(0)	66(7)	28.7
1971	52(3)	12(1)	3(0)	67(4)	29.1
1972	8(1)	17(5)	2(0)	27(6)	11.7
1973	12(1)	2(0)	1(0)	15(1)	6.5
1974	4(1)	22(9)	0(0)	26(10)	11.3

24 yr avg. (1950-73)	33(3)	16(3)	17(2)	67(8)	29.1
Miles	1.0	0.5	0.8	2.3	

Table 15. Peak Counts on Tenmile Lakes Spawning Salmon Surveys
for Coho Since 1955

Year	Standard Surveys			Fish per Mile
	Adams Creek	Big Creek	Johnson Creek	
1955	700(144)	1591(541)	2513(711)	686(199)
1956	681(301)	1344(520)	2270(1248)	614(296)
1957	592(215)	996(356)	1946(577)	505(164)
1958	106(49)	586(178)	983(484)	239(102)
1959	90(21)	257(33)	388(129)	105(26)
1960	104(82)	755(573)	821(563)	240(174)
1961	123(59)	1221(468)	883(281)	318(115)
1962	76(33)	1494(514)	994(396)	366(134)
1963	216(144)	905(510)	1224(749)	335(200)
1964	180(56)	1214(574)	1276(515)	381(164)
1965	137(59)	693(230)	695(261)	218(79)
1966	57(28)	857(302)	899(318)	259(93)
1967	250(118)	686(301)	997(495)	276(131)
1968	61(16)	407(67)	396(135)	123(31)
1969	118(82)	562(317)	791(486)	210(126)
1970	710(529)	1345(961)	1763(994)	546(355)
1971	359(18)	1373(361)	1068(136)	400(74)
1972	56(9)	520(40)	480(150)	151(28)
1973	120(36)	436(83)	929(238)	212(51)
1974	83(21)	111(38)	297(63)	70(17)

19 yr avg. (1955-73)	260(105)	908(365)	1122(467)	326(134)
Miles	1.5	2.2	3.3	7.0

Table 16. Peak Counts on Coos River Spawning Fish
Surveys for Coho Since 1950

Year	Standard Surveys			Total	Fish per Mile
	Larson <u>1/</u> Creek	Morgan Creek	Marlow Creek		
1950	158(21)	6(1)	15	179(22)	54.2
1951	327(77)	28(3)	33	388(80)	117.6
1952	254(26)	68(12)	20(6)	342(44)	103.6
1953	65(19)	18(2)	18(3)	101(24)	30.6
1954	67(33)	15	15(6)	97(39)	29.4
1955	96(18)	17	1	114(18)	34.5
1956	195(72)	40(19)	32(2)	267(93)	80.9
1957	49(6)	11(2)	19(2)	79(10)	23.9
1958	24(6)	2	0	26(6)	7.9
1959	63(7)	10	3	76(7)	23.0
1960	47(30)	10(3)	7(7)	64(40)	19.4
1961	192(116)	8(4)	46(12)	246(132)	74.5
1962	129(31)	25(12)	27(19)	181(62)	54.8
1963	53(17)	26(4)	7(1)	86(22)	26.1
1964	52(11)	26(3)	43(3)	121(17)	36.7
1965	28(2)	7	15(4)	51(6)	15.5
1966	50(10)	7	6	63(10)	19.1
1967	53(11)	21(5)	6(1)	80(17)	24.2
1968	26(3)	16(2)	6	48(5)	14.5
1969	45(7)	16(5)	3(1)	64(13)	19.4
1970	35(5)	16(2)	4(1)	55(8)	16.7
1971	18(2)	25(5)	33(1)	76(8)	23.0
1972	53(29)	18(10)	19(5)	90(44)	27.3
1973	58(16)	6(1)	24(12)	88(29)	26.7
1974	103(42)	15(5)	22(5)	140(52)	42.4

24 yr avg. (1950-73)	89(24)	18(4)	17(4)	124(32)	37.6
Miles	1.3	1.0	1.0	3.3	

1/ Counts made by Oregon Wildlife Commission.

Table 17. Peak Counts on Coquille River Spawning Fish Surveys
for Coho Since 1950

Year	Standard Surveys							Fish per Mile
	N. Fk. Coquille River			E. Fk. Coquille River	M. Fk. Coquille River 1/	S. Fk. Coquille River 1/	Total	
	Cherry Creek	Middle Creek	North Fork	Steel Creek	Big Creek	Salmon Creek		
1950	57(16)	94(18)	61	2	77(23)	39(11)	330(68)	48.5
1951	57(13)	144(22)	86	7(1)	145(12)	54	493(48)	72.5
1952	383(15)	316(20)	232(14)	5	191(15)	117(3)	1,244(67)	182.9
1953	22(2)	65(6)	36(4)	32(7)	59(9)	63(17)	279(45)	41.0
1954	24	55	91(2)	5	56(2)	44(7)	275(11)	40.4
1955	50	50	33	14(1)	14(2)	23(2)	184(5)	27.1
1956	76(24)	110(18)	77(18)	31(8)	96(17)	69(35)	459(120)	67.5
1957	121(7)	96(5)	143(13)	11	63	71(6)	505(31)	74.3
1958	38(9)	26(6)	31(2)	9(2)	25(3)	28(4)	157(26)	23.1
1959	79(3)	45(3)	184(4)	5	55	35(1)	403(11)	59.3
1960	21(1)	20(12)	29(18)	15(7)	11(1)	11(2)	107(41)	15.7
1961	67(21)	78(23)	52(12)	49(18)	38(9)	1	285(83)	41.9
1962	38(3)	100(7)	62(4)	43(12)	73(4)	67(11)	383(41)	56.3
1963	20(9)	7	43(12)	10(1)	11(5)	2(1)	93(28)	13.7
1964	113(5)	33(3)	63(3)	114(13)	95(5)	27(4)	445(33)	65.4
1965	35(2)	36(1)	95(4)	148(25)	77(2)	16(1)	407(35)	53.8
1966	28(1)	5(1)	22(1)	44(10)	60(2)	36(17)	195(32)	28.7
1967	19(2)	11(3)	1	50(15)	51(3)	33(6)	165(29)	24.3
1968	6	5	1	46(7)	32	5(1)	95(8)	14.0
1969	55(9)	40(5)	12(2)	68(14)	9(0)	4(0)	188(30)	27.6
1970	46(5)	15(4)	21(0)	20(4)	7(0)	15(3)	124(16)	18.2
1971	28(4)	17(0)	18(3)	56(4)	22(1)	20(3)	161(15)	23.7
1972	43(13)	43(4)	20(1)	40(9)	3(0)	17(3)	166(30)	24.4
1973	24(1)	9(0)	7(0)	12(0)	0(0)	14(1)	66(2)	9.7
1974	39(19)	17(5)	79(28)	24(5)	49(15)	0(0)	208(72)	30.6

24 yr avg. (1950-73)	60(7)	59(7)	59(5)	35(7)	53(5)	34(6)	300(36)	44.2
Miles	1.8	1.0	1.0	1.0	1.0	1.0	6.8	

1/ Counts made by Oregon Wildlife Commission since 1958.