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STATE OF ALASKA  
Keith H. Miller, Governor



ANNUAL REPORT OF PROGRESS, 1968 - 1969  
FEDERAL AID IN FISH RESTORATION PROJECT F-9-1  
SPORT FISH INVESTIGATIONS OF ALASKA

ALASKA DEPARTMENT OF FISH AND GAME  
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THE STATE OF ALASKA  
MILLER, GOV.

### INTRODUCTION

This report of progress involves the findings and work accomplished under the State of Alaska, Federal Aid in Fish Restoration, Project F-9-1, "Sport Fish Investigations of Alaska".

The work conducted during this reporting period constitutes effort on nine separate studies which are crucial in evaluating the sport fishing resources of the State. Recreational demands have necessitated broadening our knowledge of the fishery. All 20 jobs were of continuing nature enabling the Department to keep abreast of present and future impacts on certain fish species. Specifically, the work included work on inventory and cataloging of the sport fish and sport fish waters of the State, sport fishery creel census and access. Special emphasis was given to Dolly Varden, silver salmon, anadromous fish, grayling, salmon, sheefish, pike, and char. The information gathered has provided supporting documentation for better fish management and a basis for necessary future investigations.

The subject matter contained in these reports may be inconclusive. The findings and interpretation are subject to re-evaluation as the work progresses.

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## RESEARCH PROJECT SEGMENT

STATE: ALASKA Name: Sport Fish Investigations of Alaska.  
Project No.: F-9-1 Title: Creel Census of the Sport Fish and Sport Fish Waters of the Cook Inlet Drainage.  
Job No.: 11-D

Period Covered: May 1, 1968 to March 31, 1969.

## ABSTRACT

From July 21, 1968, to September 28, 1968, a summer creel census was conducted on nine selected streams in the Palmer area. A total of 992 anglers who had caught 834 pink salmon, Oncorhynchus gorbusha, 150 silver salmon, O. kisutch, 75 red salmon, O. nerka, and 65 chum salmon, O. keta, in 2,678 hours of fishing were interviewed. Sunshine Creek and Montana Creek had the best silver salmon fishery, and Big Willow Creek had the largest pink salmon fishery. The red salmon were all taken from Cottonwood Creek.

A winter creel census was initiated on ten managed lakes and one non-managed lake in the Palmer area and extended from November 21, 1968, to March 31, 1969. A total of 870 ice fishermen who had caught 964 land-locked silver salmon and 49 rainbow trout, Salmo gairdneri, in 1,217.5 hours of angling were contacted.

Finger, Reed, and Matanuska Lakes produced the best catches of land-locked silver salmon. These lakes are estimated to have produced minimum harvests of 4,800, 300, and 380 silver salmon, respectively.

The highest catch rate of stocked rainbow trout was observed on Irene Lake and averaged 0.26 fish per hour. All rainbow trout in Wasilla Lake are the result of natural reproduction, and anglers averaged 0.50 fish per hour. Only 25 stocked rainbow trout were observed in checks on managed lakes.

Approximately 74.0 percent of angling pressure occurred on weekends, and 85.6 percent of the anglers interviewed resided elsewhere than in the Palmer area.

## RECOMMENDATIONS

1. That summer creel census be concentrated on Montana Creek to more accurately define angling effort and harvest rates of silver salmon.
2. That those streams intersecting the Palmer-Talkeetna Highway, other than Montana Creek, be periodically censused during peak angling periods to estimate trends in angling pressure and silver salmon harvests.

3. That winter creel census of Matanuska Valley lakes be conducted periodically to:
  - a. provide continuing harvest information on lakes stocked with silver salmon in 1967.
  - b. provide data for the immediate needs of management.

#### OBJECTIVES

To investigate and evaluate the sport fish harvest, fish population trends, changes in size, and species composition for the recreational waters of the area.

#### TECHNIQUES USED

The summer creel census was conducted on nine selected salmon creeks in the Palmer area.

Creel checks were conducted by interviewing anglers concentrated near highway-stream intersections. Most census checks were conducted during weekends and at times when large numbers of anglers were present. Periodic weekend counts were made of the number of cars in parking areas, and an instantaneous estimate of the total number of anglers on the streams was obtained by multiplying the average number of anglers per car times the number of cars present. The number of anglers per car varied slightly from day to day, and a daily estimate was established for each creel check.

The catch per unit of effort was obtained from angler interviews and information was gained on the timing of the salmon runs.

From November 21, 1968, until March 31, 1969, creel census checks were made on ten managed lakes and one non-managed lake. An attempt was made to make at least two checks each week with one check occurring on a randomly selected weekday and another on a weekend day. The number of anglers per lake was recorded as each group of anglers was interviewed. Information regarding the catch per unit of effort, composition of catch, and the angler's place of residence was requested. The number of anglers present per count and the number and species of fish caught were extrapolated over the entire fishing period to give a minimum estimate of the winter harvest and angler utilization of each lake.

#### FINDINGS

##### Summer Creel Census

The summer creel census results from July 21, 1968, to September 28, 1968, are summarized in Table 1. Data are listed in ten-day increments as used by Redick (1967) to show the peak periods of angler pressure and salmon harvest.

A total of 992 stream anglers who had caught 150 silver salmon, 834 pink salmon, 75 red salmon, and 65 chum salmon in 2,678 hours of fishing were interviewed. The salmon catch per unit of effort for all streams censused was 0.42 fish per hour.

A large run of pink salmon in Sunshine, Caswell, Willow, Little Willow, and Montana Creeks accounted for the seasonal average of 0.45 salmon per hour from these waters. This average represents the number

TABLE 1 - Summer Creel Census of Selected Matanuska Valley Salmon Streams, 1968.

Name of Stream	Time Interval	Census Checks	Anglers	Total Hours	Catch*				Salmon/ Hour	SS/ Hour	Seasonal Salmon/Hr.	Seasonal SS/Hour
					SS	PS	CS	RS				
Sunshine Creek	7/21-7/30	2	31	51.0	1	45	--	--	--	0.02	--	--
	7/31-8/9	1	8	15.0	2	4	--	--	--	0.13	--	--
	8/10-8/19	1	22	51.0	4	28	--	--	--	0.08	0.74	0.06
	8/20-8/29	1	3	7.5	--	8	--	--	--	--	--	--
Cottonwood Creek	7/11-7/20	2	42	119.5	--	--	20	--	--	0.17	--	--
	7/21-7/30	1	42	158.5	--	--	55	--	--	0.35	--	--
	7/31-8/9	0	--	--	--	--	--	--	--	0.27	0.00	--
	8/10-8/19	1	0	--	--	--	--	--	--	--	--	--
Caswell Creek	8/20-8/29	1	5	5.0	--	--	--	--	--	--	--	--
	7/11-7/20	1	3	3.0	--	--	--	--	--	--	--	--
	7/21-7/30	2	41	113.0	--	84	--	--	0.74	--	--	--
	7/31-8/9	0	--	--	--	--	--	--	--	--	--	--
Little Susitna River	8/10-8/19	1	3	1.5	--	--	--	--	--	--	0.71	0.00
	8/20-8/29	1	0	--	--	--	--	--	--	--	--	--
	8/30-9/8	2	0	--	--	--	--	--	--	--	--	--
	9/9-9/18	1	0	--	--	--	--	--	--	--	--	--
	9/19-9/28	1	0	--	--	--	--	--	--	--	--	--
	7/11-7/20	1	0	--	--	--	--	--	--	--	--	--
Sheep Creek	7/21-7/30	2	12	8.0	--	--	--	--	--	--	--	--
	7/31-8/9	0	--	--	--	--	--	--	--	--	--	--
	8/10-8/19	2	9	24.0	--	10	--	--	0.41	--	0.25	--
	8/20-8/29	2	0	--	--	--	--	--	--	--	--	0.00
	8/30-9/8	2	0	--	--	--	--	--	--	--	--	--
Sheep Creek	9/9-9/18	1	2	8.0	--	--	--	--	--	--	--	--
	7/11-7/20	1	0	--	--	--	--	--	--	--	--	--
	7/21-7/30	2	15	31.0	--	2	--	--	0.07	--	--	--
	7/31-8/9	0	--	--	--	--	--	--	--	--	--	--
Sheep Creek	8/10-8/19	1	13	31.0	1	8	1	--	0.32	0.03	0.18	0.02
	8/20-8/29	2	5	4.0	--	--	--	--	--	--	--	--
	8/30-9/8	2	0	--	--	--	--	--	--	--	--	--

TABLE 1 (cont.) - Summer Creel Census of Selected Matanuska Valley Salmon Streams, 1968.

Name of Stream	Time Interval	Census Checks	Anglers	Total Hrs	SS			Catch*			Salmon/ Hour	SS/ Hour	Seasonal Salmon/Hr.	Seasonal SS/Hour
					SS	PS	CS	RS	Other**					
Big Willow Creek	7/11-7/20	2	9	6.5	--	--	--	--	--	0.00	--	--	--	
	7/21-7/30	2	93	110.5	--	75	1	--	1 GR	0.69	--	--	--	
	7/31-8/9	0	--	--	--	--	--	--	--	--	--	--	--	
	8/10-8/19	3	126	374.5	7	137	7	--	--	0.40	0.02	--	--	
	8/20-8/29	2	32	57.0	1	3	--	--	1 GR	0.07	0.02	0.42	0.02	
	8/30-9/8	2	0	--	--	--	--	--	--	--	--	--	--	
9/9-9/18	1	1	4.0	1	--	--	--	--	0.25	0.25	--	--		
Little Willow Creek	7/11-7/20	1	11	18.0	--	--	--	--	--	0.00	--	--	--	
	7/21-7/30	2	23	46.0	--	32	--	--	--	0.70	--	--	--	
	7/31-8/9	0	--	--	--	--	--	--	--	--	0.53	0.04	--	
	8/10-8/19	3	33	37.0	4	25	--	--	--	0.78	0.11	--	--	
	8/20-8/29	2	5	14.0	--	--	--	--	--	--	--	--	--	
	8/30-9/8	2	0	--	--	--	--	--	--	--	--	--	--	
9/9-9/18	1	0	--	--	--	--	--	--	--	--	--	--		
Goose Creek	7/21-7/30	1	0	--	--	--	--	--	--	0.00	0.00	--	--	
	7/31-8/9	0	--	--	--	--	--	--	--	0.00	0.00	--	--	
	8/10-8/19	0	--	--	--	--	--	--	--	0.00	0.00	0.00	0.00	
	8/20-8/29	2	6	3.0	--	--	--	--	--	0.00	0.00	--	--	
	8/30-9/8	3	0	--	--	--	--	--	--	0.00	0.00	--	--	
Montana Creek	7/11-7/20	1	0	--	--	--	--	--	--	--	--	--	--	
	7/21-7/30	1	17	57.0	--	34	5	--	--	0.68	0.00	--	--	
	7/31-8/9	5	206	801.5	51	262	46	--	--	0.45	0.06	0.40	0.09	
	8/10-8/19	4	158	442.0	69	77	3	--	--	0.34	0.16	--	--	
	8/20-8/29	2	31	76.5	9	--	2	--	--	0.14	0.12	--	--	
	8/30-9/8	3	0	--	--	--	--	--	--	--	--	--	--	
9/9-9/18	1	0	--	--	--	--	--	--	--	--	--	--		

\*SS = Silver Salmon  
 PS = Pink Salmon  
 CS = Chum Salmon

\*\*GR = Arctic Grayling  
 RB = Rainbow Trout

of salmon observed in the anglers' creel and does not take into consideration the large number of pink salmon hooked and released. With minimum effort, it was possible for the average angler to catch a limit of pink salmon in less than one hour.

The censused catch per unit of effort for silver salmon varied from 0.00 per hour on Cottonwood Creek, Caswell Creek, Goose Creek, and the Little Susitna River to a high of 0.16 silver salmon per hour on Montana Creek. The low harvest rate was possibly brought about by pink salmon acting as a buffer to the silver salmon. Many anglers were observed fishing in areas where pink salmon were concentrated. Had pink salmon been less numerous, these anglers would have fished areas more likely to produce silver salmon. The silver salmon run was late, possibly due to low water in the Susitna River System. All data indicates a low escape-ment of silver salmon into tributaries of the Susitna River.

Three census checks on Cottonwood Creek revealed that anglers were harvesting red salmon at a rate of 0.27 fish per hour. The fishery started in mid-June and was essentially over by July 7. A few silver salmon were reportedly harvested, but none were observed during census checks.

Goose Creek had a large run of pink salmon; however, most anglers drove four miles farther and fished Montana Creek. The larger run of silver salmon in Montana Creek, plus better parking facilities, and more fish visible to the angler probably accounted for the lesser effort on the Goose Creek fishery.

It should be noted that in Table 1 some of the listed catch rates are influenced by one or two days of good fishing. The seasonal rate of 0.06 silver salmon per hour on Sunshine, Montana, Sheep, Willow, and Little Willow Creeks is probably the best indicator of the harvest rate. Approximately 17 hours of angling effort were expended for each silver salmon landed.

Table 2 depicts estimates of instantaneous angling pressure during the weekends on salmon creeks between Willow and Talkeetna and was made by multiplying the number of anglers per car times the number of vehicles in the immediate vicinity of the creeks. Since Table 2 is an instantaneous estimate, it does not attempt to define the total number of anglers present throughout the day.

TABLE 2 - Instantaneous Weekend Angler Estimates on Five Selected Creeks\* From Willow to Talkeetna, 1968.

<u>Date of Count</u>	<u>Total Number of Anglers</u>
July 27, 1968	646 Anglers
July 28, 1968	No Creel Census
August 3, 1968	960 Anglers
August 4, 1968	396 Anglers (late afternoon)
August 10, 1968	885 Anglers
August 11, 1968	No Creel Census
August 17, 1968	653 Anglers
August 18, 1968	614 Anglers
August 23, 1968	64 Anglers

\* Big Willow, Little Willow, Sheep, Montana, Sunshine Creeks.

On the basis of Table 2 and personal observations it is estimated that as many as 1,200 anglers were fishing these creeks per weekend day during the height of the salmon run. The inadequacies of estimating the total number of anglers by car count are fully recognized; however, Table 2 does provide a reasonably accurate measure of the minimum number of people using the creeks on weekend days during late July and August.

There are certain inherent limitations to the present summer creel census method. It is impossible, with the manpower and budget limitations, to accurately estimate the total number of anglers fishing the streams or to establish the total salmon harvest. It should also be noted that silver salmon anglers fishing Montana, Sunshine, Caswell, and Cottonwood Creeks concentrated at the mouths of the creeks. Fish harvested from these resting areas were not necessarily destined for the creek from which they were caught, and the silver salmon catch per unit effort figures may be more indicative of the total Susitna River run than of individual tributaries.

#### Winter Creel Census

The winter creel census was initiated on November 21 on ten managed lakes and one non-managed lake and was continued until March 31, 1969.

An average of 29 instantaneous counts was made on the lakes with 870 anglers interviewed. These anglers caught a total of 49 rainbow trout and 964 silver salmon. Table 3 lists creel census results covered by this project and presents the number of anglers extrapolated from the monthly instantaneous counts. Weekend and weekday counts were extrapolated separately. The counts were not stratified over the day periods; however, an attempt was made to conduct creel checks at various times of the day.

Finger Lake: had the most active winter fishery in the Palmer area, and 35 creel checks were made on the lake, where 567 anglers who had fished a total of 790 hours were interviewed. Eight hundred and nine silver salmon from a 1967 plant of 210,700 were observed caught, and two silver salmon were observed from the 1966 plant. The silver salmon from the 1967 plant averaged approximately 200 mm, and fish from the 1966 plant averaged approximately 400 mm.

Figure 1 shows the estimated number of anglers using Finger Lake by two-week periods and the accumulated percentage of silver salmon caught. The peak weekend fishery occurred in January, and the weekday fishery was fairly stable except for the period from December 14 to 28, 1968. This weekday peak was probably influenced by the Christmas holidays. The number of weekend and weekday anglers decreased from January to the end of March.

Figure 2 presents the silver salmon catch rate per hour by one week periods from December 1, 1968, to March 31, 1969. The catch per unit of effort decreased at a fairly constant rate and fell from 4.2 fish per hour in early December to less than 1.0 fish per hour by March 8, 1969. The corresponding drop in the number of anglers indicates that fishermen do not ice fish for silver salmon averaging less than 200 mm unless they can harvest them at a fairly rapid rate. More than 85 percent of the estimated total catch from Finger Lake had been caught before January 26, 1969, and the predicted spring increase in angler numbers and increased harvest rates did not materialize during the report period. The decrease in catch per unit effort and angler numbers was also observed on other Palmer area lakes.

TABLE 3 - Creel Census Results on Palmer Area Lakes from November 24, 1968 to April 1, 1969.

<u>Lake Name</u>	<u>Time Interval</u>	<u>Number Checks</u>	<u>Number Anglers</u>	<u>Number Hours</u>	<u>Number RB*</u>	<u>Number SS**</u>	<u>Catch Per Unit Effort</u>	<u>Extrapolated Anglers</u>
Finger	12/1/68 to 12/31/68	9	108	192.5	--	361	1.88	355
	1/1/69 to 1/31/69	8	156	229.5	--	271	1.18	462
	2/1/69 to 2/28/69	7	148	158.0	--	95	0.60	338
	3/1/69 to 3/31/69	<u>11</u>	<u>155</u>	<u>210.0</u>	--	<u>84</u>	<u>0.40</u>	<u>292</u>
	TOTAL	35	567	790.0	--	811	1.03	1,447
Mirror	12/1/68 to 12/31/68	5	3	4.0	--	1	0.25	9
	1/1/69 to 1/31/69	7	0	--	--	--	--	--
	2/1/69 to 2/28/69	8	0	--	--	--	--	--
	3/1/69 to 3/31/69	<u>8</u>	<u>2</u>	<u>2.0</u>	--	<u>6</u>	<u>0.30</u>	<u>5</u>
	TOTAL	28	5	6.0	--	7	1.17	14
Matanuska	11/24/68 to 12/31/68	11	19	23.0	--	38	1.65	46
	1/1/69 to 1/31/69	8	10	33.0	--	15	0.45	20
	2/1/69 to 2/28/69	9	34	22.5	--	16	0.71	78
	3/1/69 to 3/31/69	<u>10</u>	<u>7</u>	<u>10.0</u>	--	<u>0</u>	<u>--</u>	<u>14</u>
	TOTAL	38	70	88.5	--	69	0.78	158
Reed	12/1/68 to 12/31/68	3	1	1.0	--	10	10.00	5
	1/1/69 to 1/31/69	6	25	46.0	1	52	1.13	121
	2/1/69 to 2/28/69	5	21	21.0	2	13	0.71	78
	3/1/69 to 3/31/69	<u>7</u>	<u>2</u>	<u>--</u>	Just Started	--	--	5
	TOTAL	21	49	68.0	3	75	1.15	209
Irene	11/25/69 to 12/31/69	9	0	--	--	--	--	--
	1/1/69 to 1/31/69	6	5	11.0	1	--	0.09	13
	2/1/69 to 2/28/69	9	8	12.0	4	--	0.33	13
	3/1/69 to 3/31/69	<u>9</u>	<u>9</u>	<u>47.0</u>	<u>13</u>	--	<u>0.28</u>	<u>23</u>
	TOTAL	33	22	70.0	18	--	0.26	49

TABLE 3 (Cont.) - Creel Census Results on Palmer Area Lakes from November 24, 1968 to April 1, 1969.

Lake Name	Time Interval	Number Checks	Number Anglers	Number Hours	Number RB*	Number SS**	Catch Per Unit Effort	Extrapolated Anglers
Long	11/21/68 to 12/31/68	10	19	46.0	3	--	0.07	96
	1/1/69 to 1/31/69	6	7	29.0	--	--	--	19
	2/1/69 to 2/28/69	4	20	32.0	--	--	--	40
	3/1/69 to 3/31/69	7	11	10.0	--	--	--	36
	TOTAL	37	57	117.0	3	--	0.03	191
Echo	11/24/68 to 12/31/68	9	10	17.0	1	2	0.18	29
	1/1/69 to 1/31/69	6	0	--	--	--	--	--
	2/1/69 to 2/28/69	10	7	--	Not Interviewed	--	--	--
	3/1/69 to 3/31/69	13	9	8.0	--	--	--	18
	TOTAL	38	26	25.0	1	2	0.09	47
Bradley	11/25/68 to 12/31/68	9	0	--	--	--	--	--
	1/1/69 to 1/31/69	6	5	8.0	--	--	--	29
	2/1/69 to 2/28/69	9	0	--	--	--	--	--
	3/1/69 to 3/31/69	10	6	6.0	--	--	--	25
	TOTAL	34	11	14.0	--	--	--	54
Kepler	11/25/68 to 12/31/68	10	14	15.0	--	--	--	32
	1/1/69 to 1/31/69	6	0	--	--	--	--	--
	2/1/69 to 2/28/69	8	0	--	--	--	--	--
	3/1/69 to 3/31/69	12	4	4.0	--	--	--	8
	TOTAL	36	18	19.0	--	--	--	40
Lucile	12/18/68 to 12/31/68	3	0	--	--	--	--	--
	1/1/69 to 1/31/69	6	0	--	--	--	--	--
	2/1/69 to 2/28/69	3	0	--	--	--	--	--
	3/1/69 to 3/31/69	8	1	--	Just Started	--	--	2
	TOTAL	20	1	--	--	--	--	2
Knik	1/17/69 to 1/31/69	3	4	10.0	--	--	--	--

\*Rainbow

\*\*Silver Salmon

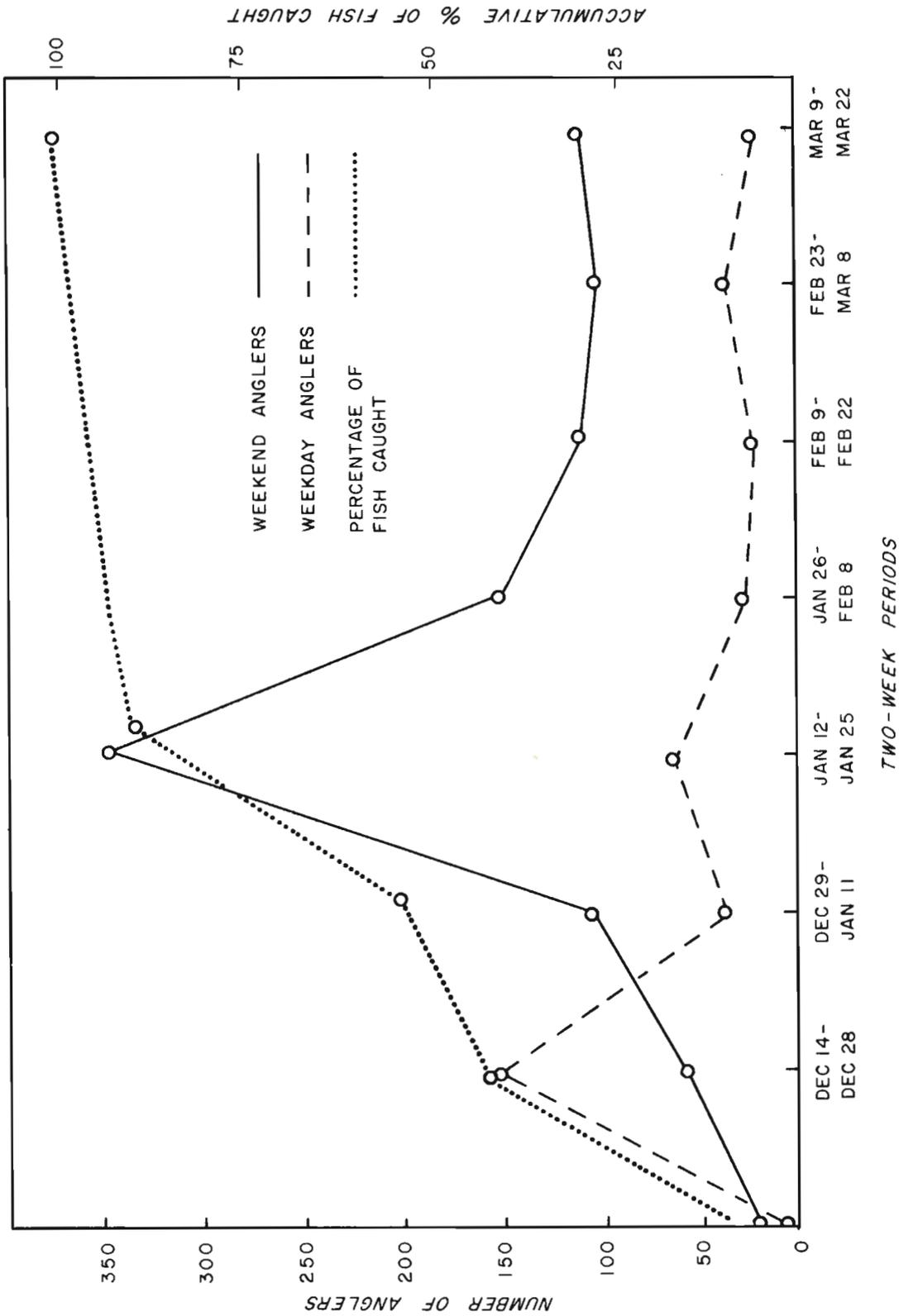


FIGURE 1. ESTIMATED NUMBER OF ANGLERS USING FINGER LAKE AND THE ACCUMULATED PERCENTAGE OF FISH CAUGHT BY TWO-WEEK PERIODS FROM DECEMBER 14, 1968 TO MARCH 22, 1969

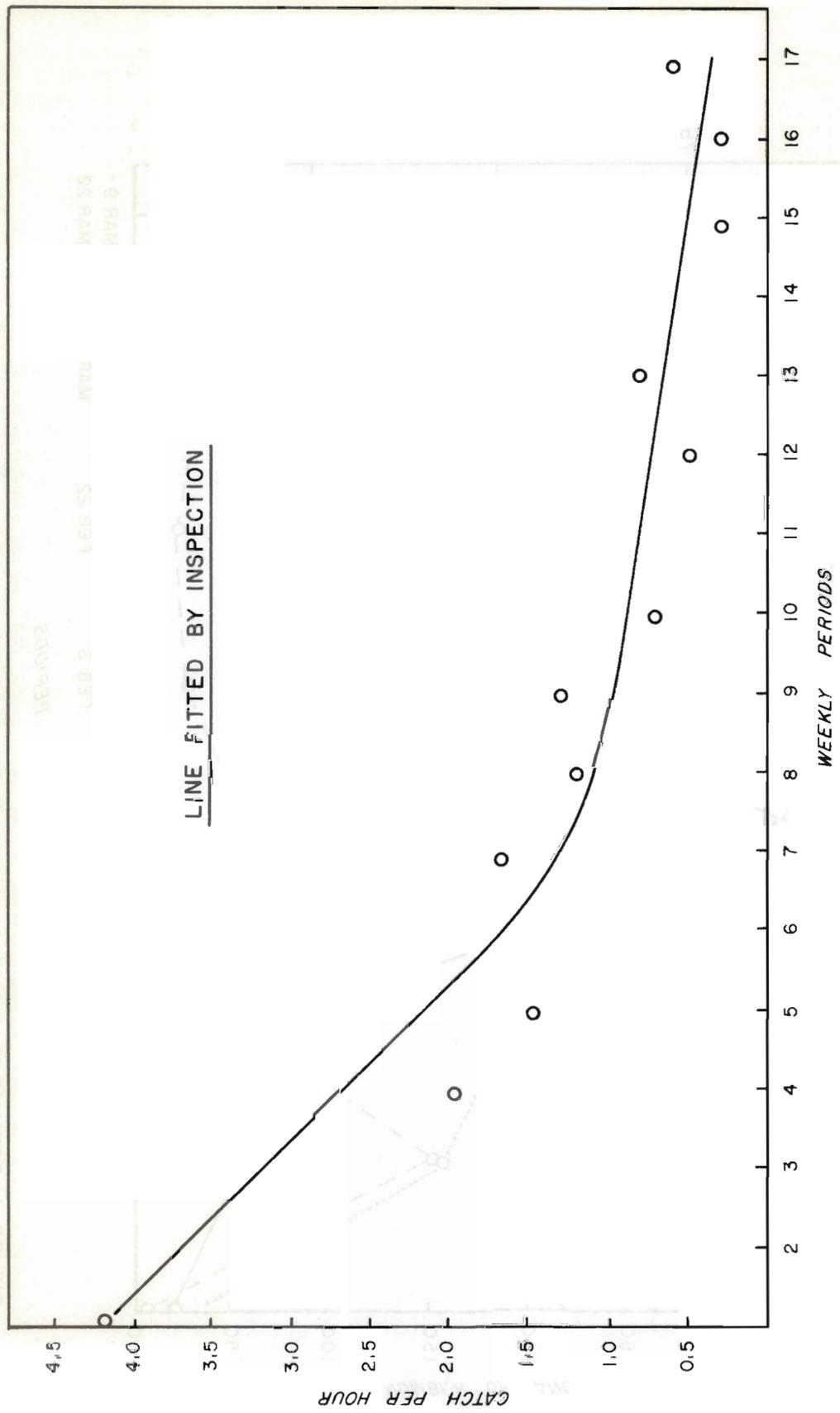


FIGURE 2. WEEKLY SILVER SALMON CATCH PER HOUR ON FINGER LAKE FROM DECEMBER 1, 1968 TO MARCH 31, 1969.

Mirror Lake: contains a dense population of stickleback, Gasterosteus aculeatus, and 1968 test netting by Redick (1969) indicated that many silver salmon ranging from 100 to 120 mm were present from the 1967 plant of 40,000 fry. During 28 creel checks on the lake, only five anglers were observed. These anglers were all noted on weekends and had caught seven silver salmon from the 1967 plant. The small fish did not appeal to ice fishermen; consequently, the lake produced a very poor ice fishery.

Matanuska Lake: was stocked with 13,000 silver salmon in 1967 and also contains a natural population of stickleback. During 38 creel checks on the lake, 70 anglers were observed and interviewed. These anglers had fished 88.5 hours and had caught 69 silver salmon at a rate of 0.78 fish per hour.

Reed Lake: provided a very successful winter fishery. During 21 spot checks, 49 anglers were observed with a catch of three rainbow trout and 75 silver salmon in 68.0 hours of fishing. This is the first winter that anglers have been observed on this lake, and it is felt that news releases and television broadcasts prompted the fishery.

Those anglers interviewed during the census checks were not completed anglers and had only fished an average of 1.4 hours. By assuming that the anglers fished as long after the interview as before, and by using the monthly silver salmon catch per unit of effort from the interviews, it is possible to estimate the minimum total catch. Finger, Reed, and Matanuska Lakes provided successful winter fisheries, and Table 4 presents the estimated total catch, harvest rates, and 1967 silver salmon stocking densities for these lakes. With the exception of two fish from the 1966 silver salmon plant in Finger Lake, all salmon observed were from the 1967 plant.

TABLE 4 - Estimated Catch of Silver Salmon From Three Palmer Area Lakes, November 24, 1968, to March 31, 1969.

Lake Name	Estimated No. Anglers	Average Catch/ Hour	Estimated No. Fish Caught*	1967 Fry Per Surface Area	Percent of Planted Fish Caught
Finger	1447	1.02	4810	482	2.2
Matanuska	158	0.78	302	224	2.3
Reed	210	1.10	384	281	7.3

\*Extrapolated from the monthly catch per unit of effort figures.

The silver salmon in Reed, Finger, and Matanuska Lakes averaged less than 150 mm in June, 1968, and very few of these fish are thought to have been harvested during the 1968 summer fishery.

A more accurate estimate of the total harvest would have been obtained by stratifying the daily count periods and interviewing completed anglers; however, due to the distance between the lakes and the number of lakes involved it was logistically impossible to stratify the counts.

The winter fishery on the remaining lakes in Table 3 did not include sufficient anglers to form any immediate conclusions. Irene, Long, and Echo Lakes produced a few rainbow trout from the 1968 plant; however, no fish were checked on Kepler, Bradley, and Lucile Lakes. Test netting in Lucile Lake by Redick (1969) indicated that very few fish are available to anglers, and only one ice fisherman was noted on the lake in 20 checks.

Table 5 is a resumé of the census data collected on Wasilla Lake. This lake has 370 surface areas and has large flowing inlets and outlets. The rainbow trout stock in Wasilla Lake is all from natural reproduction.

TABLE 5 - Wasilla Lake Creel Census Results, December 14, 1968, to March 31, 1969.

<u>Time Interval</u>	<u>Number Checks</u>	<u>Number Anglers</u>	<u>Number Hours</u>	<u>Number Rainbow</u>	<u>Catch Per Unit Effort</u>
December 14-31	2	4	4.0	10	2.5
January 1-31	4	6	8.0	4	0.5
February 1-28	4	12	9.0	7	0.8
March 1-31	6	18	26.5	3	0.1
TOTALS	16	40	47.5	24	0.5

The catch rate per hour was 0.50 rainbow trout from Wasilla Lake. The highest catch per hour for stocked rainbow trout from managed lakes was 0.26 on Irene Lake. All of the lakes in Table 3 have been stocked with rainbow trout except Matanuska, Mirror, Lucile and Knik Lakes. Test netting in Kepler, Bradley and Long Lakes indicated large populations of stocked rainbow trout ranging from 400 mm to 600 mm. Why these trout did not enter the winter fishery cannot presently be explained.

During census interviews, 437 anglers were asked their place of residence. Table 6 lists the origin of the anglers, by lake. No anglers were interviewed from other parts of the state or other categories.

TABLE 6 - Origin of Anglers Interviewed on Palmer Area Lakes, November 21, 1968, to March 31, 1969.

<u>Lake Name</u>	<u>Number Anglers</u>	<u>Origin of Angler (Percent)</u>			
		<u>Anchorage</u>	<u>Military</u>	<u>Local</u>	<u>Non-Resident</u>
Finger	346	72.3	15.6	12.0	0.0
Matanuska	44	54.5	9.0	25.0	11.5
Irene	9	---	100.0	---	---
Long	11	72.7	27.3	---	---
Echo	9	100.0	---	---	---
Bradley	5	100.0	---	---	---
Kepler	4	---	100.0	---	---
Reed	38	42.1	18.4	39.5	---
Mirror	7	100.0	---	---	---
TOTALS	473	67.4	16.5	14.4	1.7

Anchorage area fishermen comprised 67.4 percent of the angling pressure with military and local fishermen accounting for 16.5 percent and 14.4 percent, respectively. Non-resident fishermen constituted 1.7 percent of the angling pressure. More than 85 percent of all anglers resided in areas other than the immediate Palmer area. The greatest percentage of the fishing pressure on the lakes checked occurred on the weekends, and Table 7 lists the percent of the extrapolated number of fishermen by weekend and weekday.

TABLE 7 - Percentage of Angling Pressure Occurring on Weekends and Weekdays for Selected Palmer Area Lakes, November 24, 1968, to March 31, 1969.

<u>Lake Name</u>	<u>Total Estimated No. Anglers</u>	<u>Percent Extrapolated From Weekend Counts</u>	<u>Percent Extrapolated From Weekday Counts</u>
Finger	1,447	72.7	27.3
Mirror	14	100.0	---
Matanuska	158	77.2	22.8
Reed	209	44.4	55.6
Irene	49	100.0	---
Long	191	100.0	---
Echo	47	100.0	---
Bradley	54	50.0	50.0
Kepler	<u>40</u>	<u>80.0</u>	<u>20.0</u>
TOTALS	2,209	73.6	26.4

One exception to the trend noted above was Reed Lake on which 55.6 percent of the anglers fished during weekdays and 39.5 percent were local fishermen.

More than 76.0 percent of angling pressure occurred on the remaining eight lakes during the weekend days. A creel census conducted on weekends only would have enumerated approximately 77 percent of the winter fishery.

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Cook Inlet, Russian River fly fishery for red salmon attracts large numbers of anglers.