Silverthorn

Annual Report on the Passage of Fish
Bonneville Dam

Calendar Year 1946

INTRODUCTION

For the past several years a summary of the data pertaining to the migration of the fish of the Columbia River in relation to Bonneville Dam has been prepared by the Corps of Engineers and distributed to the Department leaders of that organization, and to many state and federal conservation agencies. The Corps of Engineers built and maintains Bonneville Dam and employs a biologist to aid the fish in every possible way to pass Bonneville successfully in their migration upstream, to work in cooperation with the interested conservation agencies, and to prepare the monthly and annual fisheries reports. It is hoped that the material presented in the pages to follow will summarize the fisheries data pertaining to Bonneville Dam, and in some measure aid the personnel who plan the management of the fisheries resources to rebuild the salmon runs. Since everyone is primarily concerned with the trend of the fishery and the influence of Bonneville Dam upon it, the 1946 material is presented together with data of earlier years.

CHINOOK SALMON

Chinook salmon are the most important of all the fishes ascending the Columbia River, therefore, first consideration will be given the chinook run as a whole. It will be noted in Table No. 1 that the total count of chinook salmon during 1946 exceeds all other years except 1941. In that year, 461,443 fish of this species were counted over Bonneville, whereas in 1946 there were 445,743 tallied upstream.

Earlier in the year a discussion arose pertaining to the age classification of the spawning fish. Even though the 1945 Bonneville fisheries report considered the majority of the spring run of fish to be four years old during its spawning migration, it has since been decided that more than half of the spring fish return to spawn in their fifth year. However, the fall fish run is the greater, and by that token many biologists agree that a greater number of yearly spawning chinook migrants return in their fourth year than in the third, fifth and sixth years. Hence, in an incomplete analysis, the bulk of the 1946 run is related to the parent year of 1942. In the latter year, 401,998 chinooks were counted; this figure is fewer by 43,745 fish than the 1946 run.

In the four-year period 1938 to and inclusive of 1941, a total of 1,411,051, or an average of 352,763 fish per year was counted. And in the five-year period from 1942 to 1946, inclusive, 1,699,115, or an average of 339,823 chinooks per year have been registered. This gives an average difference of 12,940 fewer fish per year in the 1942-46 period. This summary does not attempt to analyze the vagaries of cyclic behavior, if any, of the salmon runs.

If it is assumed that the greater percentage of hatched fish return in their fourth year, then the table below shows the trend of the runs in comparison with their parent years:

Year	Count of Parent Year	Year	Count Four Years Later	Difference
1938	271,799	1942	401,998	+ 130,199
1939	286,236	1943	313,123	+ 26,887
1940	391,573	1944	240,763	- 150,810
1941	461,443	1945	297,488	- 163,955
1942	401,998	1946	445,743	+ 43,745
				- 113,934

This comparison shows that in 1942, 1943, and 1946 the returns from the parent year exceeded the runs of the parent year, whereas, in 1944 and 1945 serious deficits occurred. The analysis is further complicated by the fact that many fingerling return to the ocean the same spring they are hatched, while other remain in fresh water for a year or more.

The chinook run began in April, and rose to a peak of 1,566 fish on the 17th of April, and to a lesser peak of 1,252 fish on the 29th of April. Then on May 7, the largest spring peak was reached when 4,135 fish went upstream. From that point it declined but rose again to 3,307 fish on the 20th of May. Between the spring run peaks and the fall run of chinooks, there were two periods, one in June and one in July, of relative abundance of chinooks. However, the numbers were not as great as the daily totals of spring and fall runs.

On August 15, the vanguard of the fall run began to reach Bonneville Dam and thereafter the run rapidly increased until September 10 when 34,619 salmonid fish were counted upstream. In one hour--from 10:00 to 11:00 a.m.- on the 10th, 4,296 salmonid fish traversed the Bradford Island ladder, which is evidently more than one fish per second. By October 30 the yearly chinook run had almost reached its seasonal peak.

When the day by day totals of each species of adult fish were plotted on Chart No. 2, some interesting changes in the daily actions of these migrants was noticed. On many occasions steelheads, bluebacks and chinooks increased to a peak on the same day, and declined similarly on another day. In plotting the daily totals, it was found necessary to use two scales as shown in Chart No. 1 in order to show the daily variations. This was done because the various species differed so greatly in daily numbers that with the fish which ran in great numbers it was necessary to reduce the scale to get them on the graph, and with the less numerous fish, such as blueback and silver salmon, it was necessary to increase the scale in order to show irregularities. These fluctuations seem to be associated with some changing condition in the river. In the following table the dates of these similarities of actions are listed:

	Increased	Decreased
Chinooks and steelheads	April 9	April 10
	April 11	April 13
	April 16	April 23
	April 24	April 25
	April 29	May 2
		May 14
		May 22
		May 24
	May 28	May 30
	June 4	June 5
	June 9	June 10
	June 13	June 15
	June 17	June 19
Bluebacks, steelheads, and chinooks	June 20	June 22
	June 25	June 26
	July 12	July 17
	July 18	July 19
Bluebacks and chinooks	July 26	July 25
Steelheads and chinooks		July 29
Bluebacks, steelheads, and chinooks	August 2	July 31
		August 4
Chinooks and steelheads	August 6	August 8
	August 10	August 9
Bluebacks, steelheads, and chinooks	August 16	August 15
	August 18	
Chinooks and steelheads		August 24
	September 1	September 2
	September 5	September 6
Silvers, chinooks, and steelheads	September 10	September 13
Steelheads and chinooks	September 21	September 20
	October 7	
	October 16	
	October 21	October 24
	October 26	

In 1938 the resident biologist wrote: "It is commonly contended by commercial fishermen that there is an inverse relation between river height or change in height and fish movement. There seems to be such a relation

in the passage of fish at Bonneville. There certainly is some common condition influencing the movement of both salmon and scrap fish. It does not seem that any condition of the fishways or their operation could be responsible for the fluctuations in abundance. This is confirmed by the fact that similar fluctuations are found in the commercial catches. More extensive data will be required to check this relation. The counting of fish passing through the Bonneville fishways will furnish for the first time an accurate means of studying the factors that influence the activity of salmon in the Columbia River."

In the 1945 report it was noted that the steelhead run dropped off as the water temperature receded toward 40° F.

To show the weekly variation in the numbers of fish using each ladder, all salmonid fish were totaled by weeks without regard for the Sunday closed periods in the commercial fishing season, and the percentages computed. It is shown in Table No. 1 and Chart No. 3 that prior to July 29, 1946 the greater number of fish used the Washington shore ladder, whereas, after that date more fish used the Bradford Island ladder. It will be seen that 35% of the whole year's chinook run used the Washington ladder and 65% used the Bradford Island ladder.

The percentage of Jack salmon for one week, October 1 to 7, ranged as high as 24%, but for the year it averaged 10.17%. Chart No. 4 and Table No. 1 show the weekly percentages and fluctuations of the grilse, or Jack salmon migration.

From an examination of Chart No. 5, which was prepared by Mr. Harlan B. Holmes, it can be seen that there are three periods of chinook salmon migration. The spring run began in late March or early April and ended about the last of May. Thence the summer run continued until about the 10th of August, when the vanguard of the fall run usually begin to make their appearance at the dam. Since the spring run formerly was of greater importance and these fish are more desirable as food, it is well to consider the spring migration separately:

Spring Chinooks

Month	1938	1939	1940	1941	1942	1943	1944	1945	1946	Total
Jan	no count	6	-	4	1	11	1	6	1	30
Feb	no count	12	-	-	15	6	2	4	2	41
Mar	no count	121	504	1,360	34	43	65	81	25	2,233
Apr	no count	51,410	37,253	51,486	9,506	12,172	15,670	17,148	14,179	208,824
May	*22,371	25,159	28,621	19,445	30,915	53,268	15,127	26,276	53,313	274,495
Total	22,371	76,708	66,378	72,295	40,471	65,500	30,865	43,515	67,520	485,623

*Fish counting began May 7, 1938.

The table above shows that the 1946 run of spring chinooks compares quite well with that of recent years. The total of 67,520 fish of 1946 was

exceeded only by the runs of 1939, 1940, and 1941.

Investigations by Dr. Willis H. Rich and Mr. Harlan B. Holmes indicate that more spring chinooks return to spawn in their fifth years than those in their fourth years, and many biologists in attempting to learn the trend of the fishery refer to the parent years of any run of fish. It is not a thorough analysis but does give some indication of the increase or decline of the resource.

Years	Count of Parent Year	Years	Count Five Years Later	Difference
1939	76,708	1944	30,865	- 45,843
1940	66,378	1945	43,515	- 66,378
1941	72,295	1946	67,520	- 4,775
1942	40,471			
				-116,996

Thus, a serious decline in the spring run of chinook is indicated, however, the 1946 total is better than the runs of the previous four years.

Summer Chinooks

The 1946 summer run was also superior to almost all other years. In June, 30,051 chinooks were counted, and this figure is nearly one-half of the total June count--60,806--for all the previous years. And in July, too, the 20,960 chinooks is not exceed in that month by any other year. Furthermore, the August run which merges into the fall run has been exceeded only twice.

Fall Chinooks

Even though the fall run is not one of record proportions, it was a sizeable migration, and brought more fish per hour than had been counted heretofore.

Blueback Salmon Escapement - See Table No. 2

After the disastrous 1945 blueback run, almost no one expected the surprisingly large run of this species in 1946. It started at the normal time, for the first fish of the run began to appear in May, and after the July peak the run continued in small numbers through the month of August. When in June the run exceeded the totals of some previous years, fishermen and newspapers began to evidence their surprise, as several local newspaper articles had rung the death knell of this species. The run continued to grow until July 12, when 5,079 bluebacks were counted upstream. This total compares fairly well with the 7,371 on June 30, 1940, which is the highest normal count of a single day. Biologists do not know the happy circumstances that made possible this large run of bluebacks, but the adults spawn in tributaries to certain lakes where the fingerlings feed for a time before passing on out of the lake toward the ocean. It would seem that conditions were more nearly optimum for the fish either in fresh or salt water, or both.

Nine years may not be long enough to enable one to discern the fate of this species, but if the number of fish for the period from 1938 through 1941 is averaged, it is found to be 90,742 per year for this four-year period. In the period 1942 to 1946 inclusive an average of 38,857 bluebacks was tallied.

In Table No. 1 and Chart No. 5 is depicted the percentages of blueback salmon using the two Bonneville fish ladders. It is surprising to note that a greater number of these fish traversed the Washington ladder, 58% having been counted at the north shore counting station, while only 42% were registered at the Bradford Island ladder. During the 21-week period when few-to-many bluebacks were running, there were only seven weekly period in which the Bradford Island fishway carried more bluebacks than the Washington ladder.

Blueback fingerlings trapped in the fingerling by-passes were usually about 110 to 120 millimeters long, thus indicating that they are one or two years old when enroute to the sea. The Fish and Wildlife Service is currently carrying on research at Bonneville Dam which it is hoped will determine the percentages of fingerlings of the various species which return to the ocean in their first, second and third years.

Silver Salmon Escapement - See Table No. 3

The first silver salmon in 1946 made their appearance in February when ten were counted. Four were counted in March. These are the first recorded for these two months, but previously there had been several counted as early as January. No explanation is forthcoming for this strange action unless these be stray fish from the winter run coastal silvers reared and released as fingerling from the Tanner Creek State Fish Hatchery several years ago. No more were seen until in July when the advance echelon of twenty-two reached the dam. A total of 227 came in August, and in September, 3,609 were recorded. One was seen in October, and 24 in December. The latter figure is the largest total for that month ever recorded. The total of 3,897 silvers for the year is better than the count of 1943 and 1945, but it is far below the earlier years. It will be seen from Table No. 1 that 40% of the silvers used the Washington ladder and 60% the Bradford Island ladder.

Chum Salmon Escapement - See Table No. 4

It was pointed out in the report for 1945 that "for the most part" chum salmon spawn in streams closer to the ocean, but some of these fish that pass up over Bonneville Dam have been observed to spawn in Eagle Creek. The 1946 run compares favorably with those of former years with the exception of the 1938 and 1940 runs. This species quite often begins to run in late September and early October, and reaches its peak in November, then declines during December. In September of 1946 one chum was counted, 303 were tallied in October, 809 in November, and 63 in December. Therefore, this year's run is somewhat below the average for the previous seven years.

Steelhead Trout Escapement - See Table No. 5

The 1946 steelhead trout run for January, February and March fell somewhat below the count for those months last year, but in the 1946 months

thereafter the run increased to nearly equal the two highest years--1940 and 1942. The 1946 run was the largest ever in April, August and December. In last year's report it was pointed out that the steelhead run tends to fall off when the water temperature falls near 40° F. A comparison of the 1946 run with the river water temperature shows that there were almost no steelhead moving when the January and February temperatures were standing near 40° F., but the run increased as the water began to warm up during the latter part of February and in March. Again in December when the warm rains warmed the river from 43° F. to 48° F., a noticeable flurry of steelheads passed over the dam, and ceased again when the water temperature fell to 39° and 40° F.

The steelheads reached a minor peak in April, then a smaller peak was noted in May, and the main run started on the 10th of July, rose to 1,896 and 1,723 fish per day then abruptly fell down to 327 fish on July 31, at which time both bluebacks and chinooks also fell to a surprising low. From that day on the run grew very rapidly, and on the 6th of August reached its annual high daily count with 4,333 fish. The decline was rapid but fluctuated considerably until the September migration of steelhead arrived concommitant with the fall run of chinooks. At that time daily totals of 2,719 and 3,145 fish were recorded. From then on the steelhead run fell off until by the end of October so few fish arrived each day that it was unprofitable to plot on Chart No. 2 the daily salmonid totals.

Miscellaneous Fish Runs - See Tables Nos. 6, 7 and 8

These sixteen or more species vary widely in characteristics. Some, such as shad, sturgeon, trout, crappies, catfish, carp, whitefish, sunfish, and lampreys, have either food, sports or commercial interest. Both the shad and sturgeon fishery of the Columbia River have great value to the peoples of the states adjoining the river, but since the shad run is the larger it will be first considered.

In 1945--the largest run on record--94,308 passed over Bonneville Dam. The 1946 run did not approach this figure but the 20,281 fish exceeds the seven-year average of 11,979 in the period from 1938 through 1944. As in previous years these fish had difficulty ascending the ladders. The number that was not able to ascend to the counting barrier is not known, but after passing through the counting gate many would not go on up the ladder. Instead they would mill about in the relatively quiet water above the counting barrier, where they would weaken and drift against the counting barrier and there die. A great deal of effort was expended to induce the shad to go on upstream, and a description of these activities can be found in the 1945 report. In 1946 it was found that by placing two equidistant wooden walls or leads parallel with the sides of the ladder above the Bradford Island counting station thus creating three equal sized short channels, the shad were prevented from moving back and forth above the counting station by being constrained in the central narrower channel. Somehow this treatment impelled more to go on upstream for after this was done fewer dead fish were found in the ladder. Statistical evidence to support this statement is herewith set forth:

Shad Mortality - Bonneville Dam - 1946

	Bradford Island			Washington Shore		
	Dead	Total Count	% Mortality	Dead	Total Count	% Mortality
June	102	1,263	8.0%	566	2,630	21.5%
July	575	7,571	7.6%	1,449	8,403	17.2%

To further alleviate this condition it is planned to move the counting stations up to the forebay.

In earlier years the sturgeon fishery was vastly more important than in recent times, for at its peak the fishery netted 5,466,831 pounds of sturgeon in one year. Apparently this species will not stand up under intensive exploitation, however, it is still an important industry, and many biologists maintain that with scientific management the resource can be increased. To illustrate the industry's local importance, it can be related that a group of fishermen industriously plied their trade immediately below Bonneville Dam in the spring and summer of 1946. From observation of their activities and from other sources it was reliably reported that many of these fishermen captured 1,000 pounds or more of sturgeon each week. Prices rose to the unprecedented figure of 60¢ per pound for the meat and $1.50 for the roe from which caviar is made.

A few have done so, but rarely does a sturgeon ascend the ladders. The men who are most familiar with their habits are convinced that the sturgeon have a yearly period of migration in the summer months when the water is warm. In 1939, 1942 and 1946 it was demonstrated that these fish will move into the fish elevators, but the migration ceases about the first of October. A Russian fisheries scientist visited the dam during 1946 seeking to learn how to lift sturgeon above the dams being built in Russia. He was given information based on the experience obtained here. The Oregon Fish Commission, in response to the invitation of the District Engineer, has agreed to cooperate in a plan to tag or mark sturgeon at Bonneville Dam in 1947.

Even though lampreys are generally looked upon with disdain and repulsion they have considerable potential value in that they are rich in vitamins and oils, and serve as food to classes of population not squeamish about their food. Lampreys are not a true fish but decreasing thousands ascend the Bonneville fishways with difficulty each year. Many young are taken in the fingerling by-pass traps where they are delayed temporarily in their migration to the ocean. In these traps they appear in such numbers as to exasperate the biological researchers.

In January positive identification of a Mississippi River system channel catfish, Ictalurus punctatus, was made. Many others had previously been seen and tentatively identified. On May 24 a gravid 8½ pound specimen 25½ inches long was taken in the powerhouse fingerling by-pass trap.

Numerous trout perch, Columbia transmontana, are in the spring, fall and winter of the year temporarily captured in these same fingerling by-pass traps. On the 5th of May and on the 8th of July heavily gravid females of this species were taken, the latter containing at least 4,748 eggs. Nearly

all of these downstream migrants are fungused. The first one this fall was taken November 20--a female with eggs small but discernable under a low-powered binocular microscope. A total of 101 were taken in 1946 after November 20. Of these, 83 were examined for saprolegnia or fungus, and 79 were found so infected.

Summary of Physical Conditions and Activities

From 182,000 c.f.s. on January 1, the river flow slowly and steadily declined to the low point of the year of 85,000 c.f.s. on February 19. Then it just as steadily rose with minor fluctuations to the peak of the annual discharge, 585,000 c.f.s. on May 30 and 31. After that the river again declined in a smoother manner until about the 1st of October, when it leveled to a comparatively stable flow for two months of about 100,000 c.f.s. Twice during this period it dropped to 87,000 c.f.s., and from the 9th to through the 15th of December, very heavy rains persisted and it is thought that this precipitation increased the river flow to a winter peak of 257,000 c.f.s. on the 17th.

At no time during the year did the water temperature go below 39° F., and this reading was recorded on only four days - January 28, 29, 30 and December 25. On the 28th of August it reached its annual high point with a recording of 70° F. Plotting of the daily temperature records shows a rather smooth rise and decline with two notable fluctuations. On the 30th and 31st of October the temperature of the water suddenly dropped from 52° F. to 44.5° F. and rose the next day to 49.5° F. Then in December the temperature rose to 48° F. on the 15th as a result of the warm rains.

The turbidity varied rather often and widely between Secchi disc readings of 0.2 of a foot on January 31 to a maximum clarity as shown by the same type of readings of 6 feet during the first half of September.

The barometric pressure readings are shown to best advantage on Chart No. 1.

Operation of the Dam

When it was observed that numerous spring fish were being attracted to the outflow from the trash sluiceway, this water was shut off and remained closed for the remainder of the year. As a fingerling by-pass, it served only the fingerling travelling on the surface. At the peak of the downstream fingerling migration, if enough water is available, the trash sluiceway will again be used as a fingerling by-pass.

Two experienced men each day regulate the outflow of water from the powerhouse fish collecting system so that an optimum current is produced.

The normal pool elevation above Bonneville is 72 feet above sea level, however, when the flood season arrives the water backs up below the dam. Then to preserve the "head", or difference between forebay and tailrace, the forebay is raised to +82 feet. In 1946 the forebay reached +82 on May 21. Here it was held until July 21 when it was changed to +72. To accomplish repairs in certain upstream spillway gate slots, it was lowered to +69 on July 31, and again raised to +72 on August 16 where it was held the remainder of the year.

In January and February Both ladders were drained and necessary repairs and maintenance w ork completed. On June 7 the Tanner Creek fingerling by-pass broke through its retaining walls and two pools had to be partially drained for repairs. A resident population of untold thousands of sticklebacks was found, plus many other spiny rays and minnows.

Fish counting was placed on a one-shift-per-day basis at each ladder on March 29. For sixteen hours daily the fish were counted beginning on April 17, and return to an eight-hour shift at each ladder was made on October 4. The practice of allowing the fish to collect in the counting traps from which they were periodically released began at the Washington shore ladder on November 25, and at the Bradford Island ladder December 1. Previously the fish had been lifted out of these traps in a dip net, but to remedy this former necessity bottoms were so constructed in the traps that since the first days of December, fish have been able to swim out of the traps when the gates are opened by the counter.

No fish were trapped at Bonneville Dam for any state or federal agency in 1946.

In late summer when the river flow dropped below 100,000 c.f.s. and the power demand increased, all spillway gates were shut off in order to hold the forebay up to +72 feet. At such times all water in the river goes through the powerhouse or down the fishways.

Special Devices

Preliminary to the study of salmon mortality of the Columbia River, in the vicinity of Bonneville Dam, it was decided at a conference between personnel of the Fish and Wildlife Service and representatives of the Corps of Engineers at Bonneville that it would be desirable to observe the action of salmon in the Bonneville fish ladders as the fish passed through the submerged orifices in the weirs. Consequently the Engineering Department built for this purpose a fishways investigation chamber.

The chamber is made of an eight foot section of galvanized-iron culvert pipe, three feet in diameter, the lower end of which is welded to a five-eighths inch thick steel plate, seven feet square. The pipe and its base were strengthened by having four stays of seven-eights inch diameter steel rods fastened to the upper ring of the pipe and the plate base to which it was welded. A four-inch vertical flange was welded to each of the four sides of the base plate forming an open box to hold the iron weights used in submerging the lower part of the chamber. About 3200 pounds of cast iron weights were necessary to overcome buoyance. Two watertight glass observation ports were built into the walls of the chamber. One of the ports was twelve inches and the other twenty-four inches from the floor. The glass ports were made of clear plate glass three sixteenths of an inch thick and about twelve inches square. The device was provided with a cover to exclude light from above.

On September 5 the observation chamber was lowered into the fish ladder in the first pool below the Bradford Island counting station. Large numbers of chinook salmon and steelhead trout passed through the submerged weir opening, but no blueback salmon or scrapfish were seen. Many lampreys were seen clinging to the sides and bottom of the pool oriented with eddies near the east wall which pointed the lamprys downstream in these localized currents.

It appeared that the fish were resting before attempting to go on upstream. Of greater interest was the actions of the fish as they passed through the underwater fish opening which is 18" x 24". With seemingly little effort - a few quick movements of the caudal fin - the fish swam up through the opening into the quiet water below the counting station. Occasionally a fish was observed to swim upward through the orifice, and the dorsal fin would touch the edge of the opening, but observers were agreed that none of the fish thus seen were injured in this manner.

Slightly more often would a fish try to slip through the hole at the edge of the current, but with not enough inertia to penetrate all the way through on one surge of power. Then the fish would twist the front portion of its body to one side and hook on the side of the opening, whereupon more effort would have to be made to get on through. In such cases the fish would rub against the concrete and steel sides of the opening, but while some scales may have been knocked loose, it is believed that no serious injuries were caused in this maneuver.

Occasionally a fish while passing in front of the upstream side of the opening would be caught by the current going down through the hole. Some would willingly go downstream, while others would struggle and come back up, and still others would rub almost exactly as described in the previous paragraph. It is not believed, however, that fall fish are injured by their ascent up the ladder.

Two reels of about 200 feet each of 16 mm. motion picture film showing the actions of the fish while passing through the submerged orifice were taken.

In their studies of fingerling migration the Fish and Wildlife Service designed an inclined plane trap to collect fingerlings without injury. It is so constructed that water pours over the top and runs down through the screen decking leaving the fingerlings on top of the screen. The angle of the inclined screen is adjusted so that a small quantity of water traverses the full length of the screen and washes the fingerling into an inclosed quiet water pool. The first of these highly successful traps was installed in the powerhouse fingerling by-pass between May 1 and 14, 1945. It was made with a wooden framework - all others are made of steel. The second trap was installed in the Tanner Creek by-pass on June 18, 1945. Trap No. 3 at the south by-pass of the Bradford Island end of the main dam was placed in operation November 30, 1945. Trap No. 4 was installed in the north channel of the Washington shore fingerling by-pass system on April 5, 1946. The powerhouse fingerling trap was replaced by a metal one on May 20, 1946. On May 28 trap No. 5 - the second Bradford Island fingerling trap - was fixed into the north channel by-pass located at the south end of the main spillway dam. This makes two such traps at the south end of the main dam.

The Corps of Engineers is also constructing for the Fish and Wildlife Service a device which it is hoped will aid in determing what happens to the fingerling that go through the powerhouse. This information is necessary for intelligent management of the fishery resource.

The Fish and Wildlife Service has assumed responsibility for the fingerling migration studies, therefore, the resident biologist kept no records pertaining to these small migrants.

WAR DEPARTMENT
OFFICE OF THE RESIDENT ENGINEER
BONNEVILLE, OREGON

COUNTS OF FISH FOR JANUARY 1946

Date		Temperature Max.	Min.	Water	Bar.	Weather Sky	River Flow	Turbidity	Chinook	Steelhead	Chum	Silver	Totals
Tue.	1	51	41	41.0	29.85	W. W. Rain	182,000	0.9					0
Wed.	2	51	42	41.5	29.85	W. W. Rain	166,000	0.5					0
Thu.	3	49	41	42.0	29.85	W. W. Cloudy	143,000	0.2					0
Fri.	4	50	39	41.0	29.45	W. W. Rain	145,000	0.3					0
Sat.	5	53	40	41.5	29.85	W. W.Clearing	144,000	0.7		1			1
Sun.	6	44	36	42.0	29.75	W. W. Rain	136,000	0.9		23			23
Mon.	7	42	36	41.5	29.55	W. W. Rain	138,000	0.9		4			4
Tue.	8	43	37	41.0	30.20	L.E.W.Cloudy	138,000	0.7		1			1
Wed.	9	43	31	42.[illegible]	30.15	L.E.W.Clear	135,000	0.7					0
Thu.	10	42	32	41.5	30.15	L.W.W.Cloudy	132,000	0.8					0
Fri.	11	44	30	41.5	30.30	L.E.W.Clear	126,000	0.6		2			2
Sat.	12	40	30	40.5	30.10	L.E.W.Clear	120,000	0.7		4			4
Sun.	13	42	28	40.5	30.10	L.E.W.Clear	116,000	0.8		5			5
Mon.	14	39	29	41.5	30.00	L.E.W.Clear	113,000	1.0					0
Tue.	15	44	28	40.0	30.05	L.E.W.Cloudy	108,000	1.3					0
Wed.	16	40	30	40.5	30.15	L.E.W.Cloudy	106,000	1.8					0
Thu.	17	44	35	40.5	30.05	L.E.W.Clear	104,000	1.9	1	1			1
Fri.	18	45	37	40.0	29.90	W. W. Cloudy	101,000	2.1		2			2
Sat.	19	51	36	40.0	29.95	W. W. Cloudy	99,000	2.1		3			3
Sun.	20	47	37	40.0	30.00	W. W. Cloudy	96,000	2.2		5			5
Mon.	21	48	39	39.5	30.00	L.E.W.Cloudy	94,000	2.7		2			2
Tue.	22	47	35	39.5	30.10	W. W. Cloudy	91,000	2.8					0
Wed.	23	50	36	39.5	30.10	L.E.W. Mist	98,000	2.8		2			2
Thu.	24	54	35	39.5	29.75	W. W. Rain	102,000	2.6		1			1
Fri.	25	43	36	39.5	30.15	W.W.Light Rain	102,000	1.5		1			1
Sat.	26	41	33	39.5	30.05	L.E.W.Cloudy	108,000	1.4		2			2
Sun.	27	40	33	39.5	29.95	L.W.W.Cloudy	104,000	1.4		1			1
Mon.	28	43	32	39.0	29.75	L.W.W.Cloudy	101,000	1.0		1			1
Tue.	29	40	32	39.0	29.85	W. W. Snow	99,000	0.7		3			3
Wed.	30	40	32	39.0	30.25	W. W. Cloudy	99,000	0.5					0
Thu.	31	44	36	39.5	30.10	W. W. Rain	99,000	0.2					0
									1	~~63~~ 64	0	0	~~63~~ 64

O.K. 7/23/51

WAR DEPARTMENT
OFFICE OF THE RESIDENT ENGINEER
BONNEVILLE, OREGON

COUNTS OF FISH FOR FEBRUARY 1946

Date	Temperature Max.	Min.	Water	Weather Bar.	Sky	River Flow	Turbidity	Chinook	Steelhead	Silver	Totals
Fri. 1	47	43	40.0	29.80	L.W.W. Cloudy	99,000	0.4				0
Sat. 2	44	33	39.5	29.80	L.W.W. Cloudy	96,000	0.5	1	1		2
Sun. 3	45	38	39.5	29.80	L.E.W. Cloudy	95,000	0.6				0
Mon. 4	43	31	39.5	29.80	L.W.W. Cloudy	95,000	1.9				0
Tues. 5	35	33	39.0	29.70	E.W. Snow	95,000	2.2				0
Wed. 6	42	31	39.5	29.60	W.W. Clearing	95,000	2.5		2		2
Thur. 7	44	36	39.5	30.10	L.W.W. Cloudy	99,000	2.5		2		2
Fri. 8	42	30	39.5	30.10	L.W.W. Clear	99,000	2.7				0
Sat. 9	46	31	39.5	30.10	E.W. Clear	98,000	2.6		1		1
Sun. 10	45	33	39.5	29.80	E.W. Clear	95,000	2.7				0
Mon. 11	42	32	40.0	30.00	L.E.W.Cloudy	95,000	1.7				0
Tue. 12	41	34	40.5	30.00	L.W.W. Cloudy	92,000	1.8		7		7
Wed. 13	45	31	40.5	30.05	E.W. Cloudy	92,000	1.5		17	2	19
Thur. 14	38	35	40.0	30.00	E.W. Overcast	92,000	0.6	1	38	2	41
Fri. 15	49	36	40.0	29.85	L.E.W. Clear	89,000	0.7		16		16
Sat. 16	51	32	40.0	30.00	L.E.W. Clear	87,000	1.0		67	2	69
Sun. 17	50	33	40.0	30.00	L.W.W. Cloudy	87,000	1.5		12		12
Mon. 18	49	32	40.0	30.10	E.W. Clear	89,000	1.9		19		19
Tue. 19	47	35	39.5	29.80	E.W. Cloudy	85,000	2.1				0
Wed. 20	46	38	39.5	29.80	E.W. Cloudy	87,000	2.4		9		9
Thur. 21	50	38	40.0	29.90	W.W. Cloudy	87,000	2.6		23		23
Fri. 22	52	38	40.0	30.10	W.W. Rain	91,000	2.8		10		10
Sat. 23	44	40	41.0	30.10	L.E.W. Cloudy	91,000	2.8		19		19
Sun. 24	54	41	41.0	30.05	L.E.W. Cloudy	94,000	2.9		26	2	28
Mon. 25	51	41	41.0	30.05	E.W. Cloudy	96,000	2.2		25		25
Tue. 26	59	36	41.0	29.85	E.W. Cloudy	101,000	1.8		137	1	138
Wed. 27	55	37	42.0	29.75	W.W. Cloudy	111,000	1.8		56		56
Thur. 28	55	39	42.0	30.00	W.W. Cloudy	116,000	2.0		64	1	65
								2	551	10	563

WAR DEPARTMENT
OFFICE OF THE RESIDENT ENGINEER
BONNEVILLE, OREGON

COUNTS OF FISH FOR MARCH 1946

DATE	TEMPERATURE Max.	Min.	Water	WEATHER Bar.	Sky	RIVER Flow	Tur.	SPECIES Chinook	Steelhead	Silver	Totals
Fri. 1	52	37	42.5	30.0	L.W.W.Cloudy	126,000	2.3		128	1	129
Sat. 2	59	42	42.5	30.0	L.W.W.Cloudy	139,000	1.2	1	172	1	174
Sun. 3	52	39	42.0	30.0	L.W.W.Cloudy	133,000	1.2		254	2	256
Mon. 4	50	39	43.0	30.10	W. W. Mist	129,000	0.8		155		155
Tue. 5	48	43	44.0	29.95	W. W. Mist	133,000	0.3		120		120
Wed. 6	56	41	43.5	30.00	L.W.W.Cloudy	141,000	0.3		33		33
Thu. 7	48	40	43.5	30.10	L.W.W.Cloudy	135,000	0.6		68		68
Fri. 8	53	41	44.0	30.15	L.W.W.Cloudy	134,000	0.7		117		117
Sat. 9	55	37	43.5	30.10	L.E.W.Clear	133,000	1.0		145		145
Sun. 10	59	40	43.5	30.00	L.E.W.Cloudy	130,000	1.0		70		70
Mon. 11	53	42	44.0	29.85	L.W.W.Rain	133,000	0.8		86		86
Tue. 12	51	42	45.0	29.90	W. W. Rain	135,000	1.1		80		80
Wed. 13	46	38	45.0	29.90	W. W. Clear	146,000	1.2		74		74
Thu. 14	50	40	45.0	29.90	L.W.W.Cloudy	153,000	1.2		47		47
Fri. 15	46	32	45.0	29.70	W. W. Rain	163,000	1.5		47		47
Sat. 16	47	37	44.5	29.90	L.E.W.Clear	165,000	0.8		16		16
Sun. 17	52	37	44.5	30.00	L.E.W.Cloudy	158,000	0.7		25		25
Mon. 18	44	32	44.0	30.05	L.E.W.Hazy	152,000	0.5		41		41
Tue. 19	54	36	44.0	29.80	L.E.W.Cloudy	143,000	0.7		39		39
Wed. 20	48	33	43.5	29.85	L.E.W. Clear	141,000	0.8		55		55
Thu. 21	60	42	44.5	29.90	L.W.W. Clear	141,000	0.6	1	85		86
Fri. 22	57	42	45.5	29.90	L.W.W.Cloudy	141,000	0.9		110		110
Sat. 23	44	40	46.0	30.00	L.W.W.Cloudy	151,000	0.8		127		127
Sun. 24	48	38	45.0	30.00	L.W.W.Cloudy	160,000	0.8	2	121		123
Mon. 25	52	41	45.5	30.05	L.W.W. Mist	163,000	0.9	2	82		84
Tue. 26	51	43	45.0	29.70	W.W. Cloudy	163,000	1.1	5	173		178
Wed. 27	65	34	45.0	29.70	L.W.W.Cloudy	160,000	1.3		124		124
Thu. 28	49	35	44.5	29.50	L.E.W.Cloudy	160,000	0.6		82		82
Fri. 29	47	38	46.0	29.60	L.W.W.Cloudy	154,000	0.9	2	113		115
Sat. 30	56	41	46.0	29.65	L.E.W.Cloudy	177,000	1.0	6	109		115
Sun. 31	50	32	46.0	29.85	L.W.W.Cloudy	191,000	1.1	6	142		148
								25	3040	4	3069

WAR DEPARTMENT
OFFICE OF THE RESIDENT ENGINEER
BONNEVILLE, OREGON

COUNTS OF FISH FOR APRIL 1946

Date	Temperature Max.	Temperature Min.	Temperature Water	Weather Bar.	Weather Sky	River Flow	River Turbidity	Species Chinook	Species Steelhead	Species Blueback	Totals
Mon. 1	55	37	46.0	29.90	Cloudy	197,000	0.9	1	117		118
Tue. 2	51	42	45.5	29.90	WW, Cloudy	194,000	1.1	8	89		97
Wed. 3	51	43	45.5	30.00	LEW, Overcast	191,000	0.8	13	184		197
Thu. 4	55	39	46.0	30.05	LEW, Overcast	188,000	0.9	11	275		286
Fri. 5	61	37	46.0	29.85	LWW, Cloudy	185,000	0.8	9	143		152
Sat. 6	52	39	46.0	29.85	LWW, Cloudy	182,000	1.0	19	126		145
Sun. 7	57	38	48.0	29.90	LWW, Cloudy	185,000	1.0	76	156		232
Mon. 8	53	40	49.0	29.90	LWW, Cloudy	191,000	1.0	112	172		284
Tue. 9	50	40	48.0	29.95	LWW, L.Rain	188,000	1.2	213	462		675
Wed. 10	47	40	47.0	30.00	LEW, Rain	190,000	1.2	111	240		351
Thu. 11	53	39	47.0	30.00	LWW, Cloudy	192,000	1.2	147	302		449
Fri. 12	66	44	47.0	29.90	LEW, Cloudy	189,000	1.2	121	147		268
Sat. 13	62	46	48.0	29.90	LWW, Cloudy	189,000	1.2	93	140		233
Sun. 14	58	42	48.0	29.90	LWW, Cloudy	195,000	1.2	131	242		373
Mon. 15	64	46	48.0	29.90	LWW, Cloudy	205,000	1.1	574	969		1,543
Tue. 16	66	40	48.0	29.80	LWW, Cloudy	217,000	1.1	1,279	1,312		2,591
Wed. 17	62	47	50.0	29.80	LEW, Cloudy	232,000	1.1	1,566	948		2,514
Thu. 18	73	51	52.0	29.80	WW, Cloudy	246,000	1.1	1,545	711	1	2,257
Fri. 19	61	41	51.0	29.80	LWW, Cloudy	263,000	1.0	809	322		1,131
Sat. 20	58	44	52.0	29.80	LWW, Cloudy	281,000	1.0	792	510		1,302
Sun. 21	55	41	53.0	29.95	WW, Cloudy	311,000	0.8	~~429~~ 439	194		~~623~~ 633
Mon. 22	57	37	50.0	30.15	LEW, Hazy	325,000	0.7	~~189~~ 196	88		~~277~~ 284
Tue. 23	66	42	50.0	29.90	LEW, Clear	313,000	1.0	113	66		179
Wed. 24	74	43	50.5	29.90	LEW, Clear	303,000	0.9	402	173		575
Thu. 25	78	45	50.5	29.60	WW, Clear	288,000	1.2	289	142	1	432
Fri. 26	68	45	50.5	30.15	WW, Cloudy	292,000	1.2	560	257		817
Sat. 27	55	37	51.0	30.00	WW, Clear	306,000	1.0	1,045	365		1,410
Sun. 28	64	39	51.0	29.95	WW, Cloudy	331,000	1.1	1,197	319	6	1,522
Mon. 29	59	42	51.5	29.85	WW, Cloudy	338,000	1.1	1,252	362		1,614
Tue. 30	53	39	51.5	30.15	LWW, Clear	351,000	1.2	1,073	306	1	1,380
								~~14,179~~ 14196	9,839	9	~~24,027~~ 24044

WAR DEPARTMENT
OFFICE OF THE RESIDENT ENGINEER
BONNEVILLE, OREGON

COUNTS OF FISH FOR MAY 1946

Date		Temperature Max.	Min.	Water	Weather Bar	Sky	River Flow	Turbidity	Chinook	Steelhead	Blueback	Totals
Wed.	1	61	43	50.0	30.00	E. W. Clear	355,000	0.9	605	122		727
Thu.	2	72	53	50.0	29.90	E. W. Clear	358,000	0.9	461	46		507
Fri.	3	80	50	50.5	29.95	W. W. Clear	355,000	1.0	984	251		1235
Sat.	4	71	53	51.5	29.95	L.W.W.Cloudy	348,000	1.2	1869	615		2484
Sun.	5	67	46	51.5	29.95	L.W.W.Clear	351,000	1.3	2544	578		3122
Mon.	6	69	45	52.0	29.95	L.W.W.Clear	355,000	1.0	2733	370	2	3105
Tue.	7	68	45	53.5	29.90	W. W. Cloudy	387,000	1.2	4135	469	2	4606
Wed.	8	51	47	53.5	30.00	W. W. Cloudy	413,000	1.2	2564	284	1	2849
Thu.	9	53	49	53.5	30.00	L.W.W.Cloudy	428,000	1.5	2361	290	1	2652
Fri.	10	68	52	53.5	30.00	L.E.W.Clear	443,000	1.3	2177	219		2396
Sat.	11	75	43	53.5	29.95	L.E.W.Clear	457,000	1.0	2627	258		2885
Sun.	12	79	51	53.0	29.90	W. W. Cloudy	460,000	1.0	2474	177	15	2666
Mon.	13	63	49	53.0	29.80	L.W.W.Cloudy	460,000	1.0	1308	126	4	1438
Tue.	14	59	48	53.0	29.85	L.W.W.Cloudy	464,000	1.0	674	67		741
Wed.	15	56	49	52.0	29.85	L.E.W.Clear	465,000	1.1	1728	112		1840
Thu.	16	70	48	53.5	29.85	L.E.W.Clear	472,000	1.4	1915	152		2067
Fri.	17	80	53	53.5	29.80	W. W. Clear	468,000	1.4	2454	194 /195		2648
Sat.	18	77	48	54.0	29.80	L.W.W.Clear	460,000	1.4	2940	160		3100
Sun.	19	77	50	55.0	29.80	L.E.W.Clear	460,000	1.4	3149	159		3308
Mon.	20	81	50	55.0	29.75	W. W. Rain	460,000	1.5	3307	144		3451
Tue.	21	59	44	54.5	29.60	W. W. Hazy	495,000	1.6	1838	100	2	1940
Wed.	22	68	49	55.0	29.60	W. W. Cloudy	502,000	1.5	1000	65	3	1068
Thu.	23	62	51	55.0	29.70	L.W.W.Cloudy	502,000	1.3	1338	110	3	1451
Fri.	24	64	54	54.5	29.75	Overcast	498,000	1.6	1049	73	1	1123
Sat.	25	70	53	54.5	29.80	L.E.W.Cloudy	506,000	1.5	1211	38	2	1251
Sun.	26	72	54	55.0	29.70	L.W.W.Cloudy	510,000	1.5	1240	66	4	1310
Mon.	27	58	53	55.5	29.80	W. W. Rain	517,000	1.5	893	62	4	959
Tue.	28	58	50	55.5	29.85	L.W.W.Cloudy	533,000	1.7	901	72	7	980
Wed.	29	59	46	55.0	30.05	W. W. Mist	568,000	1.6	489	47	3	539
Thu.	30	61	42	55.0	29.80	L.E.W.Clear	585,000	0.4	115	14	10	139
Fri.	31	78	56	55.0	29.80	L.W.W.Cloudy	585,000	1.0	230	41	3	274
									53313	~~5481~~ 5482	67	58861

SCRAP FISH COUNTS - May, 1946

Date	Misc.Trout	Carp	Chub	Sucker	Squawfish	Whitefish	Lamprey	Crappie	Shiner	Totals
1				4			3	1	1	8
2				6						6
3				33	1	1	1			36
4				109	2		12			123
5	3			247	3	3				256
6	1			482	11		1			496
7	8			675	43		5		2	733
8				484	27		2			513
9				210	9		5			224
10				145	36		9			190
11				301			4			305
12	1			258	16		7			282
13			8	111	34		2			155
14			1	37	9	2	2			49
15				75	18		1			94
16			1	99	21		3			124
17			16	228	35		7			286
18			15	757	65		14			851
19		3	71	765	141		25			1005
20		1	18	565	207		72			863
21	1	2	5	419	137		11			575
22		1	12	273	117		11			414
23			41	292	77		21			431
24			22	158	44		15			239
25	2	1	6	159	68		1			237
26			13	348	95		76			532
27			4	192	112		55			363
28		2	5	171	119		57			354
29	1		8	101	41		26			177
30				40	16		151			207
31				45	23		89			157
	17	10	246	7789	1527	6	688	1	3	10285

May

WAR DEPARTMENT
OFFICE OF THE RESIDENT ENGINEER
BONNEVILLE, OREGON

COUNTS OF FISH FOR JUNE 1946

Date	Temperature Max.	Min.	Water	Weather Bar	Sky	River Flow	Turbidity	Chinook	Steelhead	Blueback	Totals
Sat. 1	70	43	55.0	29.75	L.E.W.Clear	581,000	0.9	283	95	3	381
Sun. 2	80	58	55.0	29.70	L.W.W.Cloudy	577,000	1.1	577	84	5	666
Mon. 3	70	52	55.5	29.85	Partly Cloudy	569,000	1.2	497	86	1	584
Tue. 4	69	48	55.0	29.85	L.E.W.Cloudy	565,000	1.3	702	170	2	874
Wed. 5	68	54	56.0	29.90	L.W.W.Cloudy	571,000	1.3	390	56	7	453
Thu. 6	62	47	56.0	29.90	W. W. Cloudy	579,000	1.3	656	97	3	756
Fri. 7	59	46	56.0	29.80	L.E.W. Hazy	575,000	1.4	668	104	2	774
Sat. 8	73	50	57.0	29.80	L.E.W.Cloudy	575,000	1.6	660	85	1	746
Sun. 9	66	47	57.5	29.80	L.W.W.Cloudy	563,000	1.6	769	158	5	932
Mon. 10	59	46	58.0	30.00	L.E.W.Clear	551,000	1.7	402	74	4	480
Tue. 11	71	49	58.0	30.05	L.W.W.Cloudy	535,000	1.6	776	130	20	926
Wed. 12	70	49	57.5	29.95	L.E.W.Hazy	523,000	1.7	1195	184	23	1402
Thu. 13	73	53	58.0	29.75	L.W.W.Cloudy	508,000	1.7	~~2296~~ 2388	301	26	2623
Fri. 14	71	53	58.5	29.75	W. W. Cloudy	500,000	1.9	~~2324~~ 2424	169	35	2528
Sat. 15	63	53	59.0	29.90	L.W.W.Cloudy	485,000	1.9	1536	138	47	1721
Sun. 16	64	52	59.0	29.90	L.W.W.Cloudy	485,000	1.9	1671 / 1681	112	99	1882
Mon. 17	58	53	58.0	30.10	L.W.W.Cloudy	485,000	1.9	2281	149	143	2573
Tue. 18	65	49	58.0	30.05	L.E.W.Clear	477,000	1.9	1726	115	203	2044
Wed. 19	81	56	58.0	29.90	L.E.W.Clear	474,000	2.0	1376	114	~~354~~ 364	1844
Thu. 20	89	54	59.0	29.70	L.E.W.Clear	458,000	2.0	2088	221	643	2952
Fri. 21	82	54	59.0	29.80	L.W.W.Clear	451,000	2.0	1461	128	545	2134
Sat. 22	67	50	60.0	29.80	L.W.W.Cloudy	447,000	2.0	644	68	386	1098
Sun. 23	60	49	60.0	29.85	L.W.W.Cloudy	447,000	2.1	589	58	501	1148
Mon. 24	64	53	60.0	29.90	L.W.W. Rain	443,000	2.2	383	41	282	706
Tue. 25	61	49	60.0	29.95	L.W.W.Cloudy	436,000	2.2	708	55	433	1196
Wed. 26	62	50	59.0	29.90	L.W.W.Cloudy	432,000	2.2	333	22	314	669
Thu. 27	64	49	59.0	29.90	L.W.W.Cloudy	429,000	2.3	409	45	517	971
Fri. 28	69	52	59.5	29.70	W. W. Rain	425,000	2.3	797	60	468	1325
Sat. 29	66	52	60.0	29.95	L.W.W.Cloudy	418,000	2.3	1156	63	1233	2452
Sun. 30	68	54	60.5	29.95	L.W.W.Cloudy	410,000	2.3	698	83	1500	2281
								~~30,051~~ 30253	3,265	~~7,805~~ 7815	41,121

SCRAP FISH COUNTS - June, 1946

Date	Misc.Trout	Shad	Carp	Chub	Sucker	Squawfish	Lamprey	Shiner	Bullhead	Dace	Bass	Totals
1				11	319	174	107	4				615
2				2	224	95	58	3				382
3				18	321	298	321					958
4				8	508	206	234					956
5			1	8	686	500	110					1305
6			1	4	476	348	405			3		1237
7		2		5	252	280	83		1	2		625
8	1		1	11	1238	242	168	22				1683
9			1	7	1101	227	399		2			1737
10		7	2	11	606	257	112			6		1001
11		9		15	795	987	163					1969
12		29	1	20	1663	1779	361	1		2		3856
13		35	1	21	1899	1573	257			1		3787
14		43		15	1758	1660	335	40		4		3855
15	1	57		2	3798	564	306	34				4762
16	2	90		38	3225	590	225	40				4210
17		46	1	4	855	1037	124	3				2070
18		79		9	2146	2486	73	14	1	1	[illegible]	4809
19		187	2	24	5416	3859	238	71				9797
20		492		38	6461	4916	902	89				12898
21		640	3	66	4991	3816	1343	51				10910
22	3	543		43	2362	632	1782	45				5410
23		479	4	35	1054	325	1274	43				3214
24		277	2	2	366	292	1050	108				2097
25		108	1		175	107	844	11				1246
26		40		4	191	94	453	18				802
27		74		3	122	53	486	59				797
28		69		3	118	79	303	18				590
29		174		20	1414	406	511	123				2648
30		411	7	125	1587	1147	807	82				4166
	7	3893	28	572	46127	29029	13834	879	4	18	1	94392

June

WAR DEPARTMENT
OFFICE OF THE RESIDENT ENGINEER
BONNEVILLE, OREGON

COUNTS OF FISH FOR JULY 1946

Date	Temperature Max.	Temperature Min.	Temperature Water	Weather Bar	Weather Sky	River Flow	River Turbidity	Chinook	Steelhead	Blueback	Silver	Totals
Mon. 1	75	51	60.5	29.95	L.W.W.Cloudy	395,000	~~7.3~~ 2.3	710	100	2591		3401
Tue. 2	74	58	60.0	29.95	L.W.W.Cloudy	392,000	2.3	754	130	2983		3867
Wed. 3	72	54	61.0	30.00	L.W.W.Cloudy	384,000	2.6	398	85	2995		3478
Thu. 4	69	54	62.0	29.90	W. W. Cloudy	373,000	2.6	458	77	2781		3316
Fri. 5	72	55	62.0	29.90	L.W.W.Clear	363,000	2.6	473	78	2128		2679
Sat. 6	73	55	62.0	29.90	L.W.W.Cloudy	352,000	2.7	526	88	3384		3998
Sun. 7	74	59	63.0	29.85	L.W.W.Cloudy	348,000	2.7	594	77	3664		4335
Mon. 8	74	55	63.0	29.70	L. W.W.Rain	345,000	2.3	497	97	3166		3760
Tue. 9	66	54	63.0	29.95	L.W.W.Clear	333,000	2.2	580	73	2490		3143
Wed. 10	73	56	63.5	29.75	E. W. Clear	326,000	2.4	572	154	4099		4825
Thu. 11	86	60	63.0	28.00	W. W. Cloudy	322,000	2.2	1150	~~195~~ 236	4289		~~5634~~ 5675
Fri. 12	69	57	63.5	29.00	L W.W.Cloudy	326,000	2.7	1116	420	5079		6615
Sat. 13	70	54	63.5	29.80	W. W. Cloudy	318,000	2.6	993	345	3956		5294
Sun. 14	70	57	63.5	29.85	W. W. Cloudy	308,000	2.7	1142	332	3217		4691
Mon. 15	68	55	63.5	30.00	L.W.W.Cloudy	301,000	2.9	1003	536	2773		4312
Tue. 16	71	48	64.0	29.85	W. W. Clear	290,000	2.9	992	600	2793		4385
Wed. 17	73	55	63.5	29.85	W. W. Clear	290,000	3.0	~~478~~ 480	314	2183		~~2975~~ 2977
Thu. 18	75	61	63.0	29.85	L.E.W.Clear	283,000	3.5	~~754~~ 769	654	2226		~~3634~~ 3649
Fri. 19	88	57	63.5	29.80	L.E.W.Clear	283,000	3.7	652	465	1635		2752
Sat. 20	97	66	64.5	29.75	L.E.W.Clear	283,000	3.9	760	550	1089		2399
Sun. 21	103	65	65.5	29.75	L.W.W.Clear	276,000	3.9	~~622~~ 612	739	877		~~2238~~ 2228
Mon. 22	89	62	66.5	29.75	W. W. Clear	272,000	3.8	810	1330	~~869~~ 870		~~3009~~ 3011
Tue. 23	84	58	66.5	29.75	W. W. Clear	265,000	3.7	825	1399	647		2871
Wed. 24	86	58	67.0	29.80	W. W. Clear	254,000	3.7	838	1557	391	2	2788
Thu. 25	84	60	68.0	29.80	W. W. Clear	244,000	3.8	527	1552	293		2372
Fri. 26	84	60	67.5	29.90	W. W. Cloudy	244,000	4.0	643	1449	~~548~~ 558	8	~~2648~~ 2658
Sat. 27	74	59	67.0	29.90	W. W. Cloudy	240,000	4.0	514	1896	466	7	2883
Sun. 28	85	56	67.0	29.80	L.W.W.Clear	237,000	4.0	570	1723	412	4	2709
Mon. 29	84	59	67.0	29.95	W. W. Cloudy	234,000	4.0	394	1604	300		2298
Tue. 30	73	58	66.5	29.90	W. W. Clear	227,000	4.0	449	1613	282	1	2345
Wed. 31	70	56	66.0	29.85	W. W. Clear	223,000	4.0	166	327	98		591
								~~20960~~ 20967	~~20559~~ 20600	~~64704~~ 64715	22	~~106245~~ 106274

SCRAP FISH COUNTS - July, 1946

Date	Misc. Trout	Shad	Chub	Sucker	Squawfish	Lamprey	Shiner	Bullhead	Carp	Totals
1	1	444	175	2050	1854	751	55		9	5339
2		973	134	6091	1935	800	71	2	14	10020
3		1233	80	2943	1999	678	115		19	7067
4		947	93	4193	4984	536	354		22	11129
5		731	58	4015	793	386	307		39	6329
6		802	86	4373	1151	283	100		50	6845
7		1070	140	4734	1019	546	317	3	72	7901
8		773	33	2917	1742	460	123		60	6108
9		407	12	1454	2270	324	66		50	4583
10		941	44	3874	3419	485	16		37	8816
11		1285	87	7144	4563	591	7		105	13782
12		1117	47	3954	3923	641	7		254	9943
13		811	98	5863	1120	589	5		171	8657
14		979	81	3599	928	625	20		118	6350
15		461	22	1034	522	325	17		95	2476
16		339	55	840	645	261	14		116	2270
17		356	65	1290	1138	364	13		114	3340
18	1	390	11	1810	1626	372	12		209	4431
19		546	37	1562	1091	520	23		384	4763
20		313	102	2870	654	2122	13		721	6795
21		271	135	3466	697	2254	8		425	7256
22	13	190	93	1097	997	2505	10		998	5903
23		67	114	922	499	7869	22		792	10285
24		30	74	520	498	6080	2		543	7747
25		26	25	227	436	4632	6		444	5796
26		152	52	1099	360	2151	16		810	4640
27		104	47	874	363	1372	37		693	3490
28		93	37	414	185	1467	62		386	2644
29		59	34	236	277	1349	293		231	2479
30		52	60	171	296	1149	136		279	2143
31		12	36	77	140	285	125		375	1050
	15	15974	2167	75713	42724	42772	2372	5	8635	190377

July

WAR DEPARTMENT
OFFICE OF THE RESIDENT ENGINEER
BONNEVILLE, OREGON

COUNTS OF FISH FOR AUGUST 1946

Date	Temperature Max.	Temperature Min.	Temperature Water	Weather Bar	Weather Sky	River Flow	Turbidity	Chinook	Steelhead	Blueback	Silver	Totals
Thu. 1	78	58	66.0	29.95	L.W.W.Clear	213,000	4.0	487	2090	172		2749
Fri. 2	76	53	67.0	29.90	L.W.W.Clear	212,000	4.0	576	3189	229		3994
Sat. 3	80	55	68.0	29.80	L.E.W.Clear	209,000	4.0	499	~~2910~~ 2920	104		3523
Sun. 4	91	54	68.5	29.90	L.W.W.Clear	206,000	4.0	300	2630	81		3011
Mon. 5	78	57	68.0	29.90	W.W.Clear	203,000	4.0	312	3158	88		3558
Tue. 6	78	55	69.0	29.90	L.W.W.Clear	199,000	4.0	359	4333	73		4765
Wed. 7	70	46	68.0	29.90	L.E.W.Clear	196,000	4.2	288	3557	90		3935
Thu. 8	79	51	68.0	29.90	E.W.Clear	190,000	4.7	176	2239	77		2492
Fri. 9	87	54	68.0	29.80	L.E.W.Clear	184,000	5.0	212	2838	99		3149
Sat. 10	89	59	68.0	29.90	L.W. W.Clear	184,000	5.0	595	2243	144		2982
Sun. 11	80	55	68.0	29.90	L.W.W.Cloudy	176,000	5.0	532	1623	184		2339
Mon. 12	72	55	67.0	29.95	L.W.W.Cloudy	170,000	5.0	~~589~~ 590	2049	61	2	2722
Tue. 13	72	56	66.5	30.00	W.W.Cloudy	164,000	5.0	504	1188	50	1	1743
Wed. 14	68	58	66.0	30.00	L.W.W.Cloudy	156,000	5.0	~~457~~ 432	845	34	2	1313
Thu. 15	71	58	67.0	30.00	L.W.W.Clear	150,000	5.4	225	767	27		1019
Fri. 16	73	54	66.0	29.95	L.E.W.Clear	150,000	5.4	408	942	40		1390
Sat. 17	78	54	66.5	30.00	L.E.W.Clear	150,000	5.4	357	1231	22	2	1612
Sun. 18	85	60	67.0	29.90	L.E.W.Clear	145,000	5.4	1089	1796	50	3	2938
Mon. 19	92	59	67.5	29.60	L.E.W.Clear	145,000	5.3	2316	2294	32	5	4647
Tue. 20	97	64	68.5	29.85	W.W.Clear	145,000	5.4	1100	1630	15	3	2748
Wed. 21	82	59	68.0	29.80	L.W.W.Clear	142,000	5.4	1666	~~1297~~ 1397	13	3	3079
Thu. 22	87	58	68.0	29.80	L.E.W.Clear	142,000	5.4	2008	1034	7		3049
Fri. 23	88	62	68.0	29.80	W.W.Cloudy	139,000	5.4	3041	1976	6	3	5026
Sat. 24	84	57	69.0	29.80	W.W.Cloudy	137,000	5.4	1905	1024	5		2934
Sun. 25	77	55	69.5	29.90	W.W.Cloudy	134,000	5.4	2319	1588	8	5	3920
Mon. 26	72	54	69.5	29.90	L.W.W.Clear	131,000	5.5	2289	1166	8	9	3472
Tue. 27	75	55	69.5	29.75	L.E.W.Clear	129,000	5.9	2170	1042	2	3	3217
Wed. 28	89	58	70.0	29.85	W.W.Hazy	131,000	6.0	2212	~~821~~ 827	2	19	3060
Thu. 29	76	59	69.5	29.90	L.W.W.Cloudy	131,000	6.0	3525	1253	2	7	4787
Fri. 30	64	58	69.5	29.90	W.W.Cloudy	131,000	6.0	4771	1524		21	6316
Sat. 31	69	59	68.5	29.85	W.W.Mist	134,000	6.0	8159	2073	2	140	10,374
								~~45,421~~ 45,422	~~58,356~~ 58,466	~~1746~~ 1747	~~227~~ 228	~~105,750~~ 105,843

SCRAP FISH COUNTS - August, 1946

Date	Shad	Carp	Chub	Sucker	Squawfish	Whitefish	Lamprey	Shiner	Misc.Trout	Sturgeon	Bullhead	Crappie	Dace	Totals
1	15	417	11	153	212		228	148						1184
2	34	523	34	341	631		91	410	1					2065
3	46	678	15	421	239		158	77						1634
4	27	521	11	285	471		173	122						1610
5	29	841	36	226	380		170	378	1					2061
6	12	404	21	100	281		239	74						1131
7	3	306	3	82	197		254	63						908
8	2	224	2	64	175		259	101						827
9	17	251	23	103	147		265	70						876
10	42	138	2	204	277		944	41						1648
11	38	125		255	443		658	39	1	3				1562
12	24	213	10	211	461		955	550		13	1	3		2441
13	23	345	36	249	366		519	330	7		1	1		1877
14		60	9	259	452		201	537	3	12		27		1560
15	2	42	8	160	465		361	172		8		6		1224
16	12	63	13	290	374	3	516	330	3	9	1	1		1615
17	17	60	3	424	588		616	512	4	6		2		2232
18	31	129	12	246	339		923	244	2	9				1935
19	36	45	43	263	532	3	2253	402	2	101			1	3681
20	3	85	32	214	525		2707	435		1	1	3		4006
21		124	9	128	227		630	126		95		9	1	1349
22		96	4	101	320		429	144	4	16		21		1135
23	1	108	9	98	675		415	108	3	21		9		1447
24		262	6	295	372		306	78		29		12		1360
25		117	3	385	223		104	102	3	19				956
26		73	16	200	762		429	284	9	12	1	7		1793
27		116	11	319	649		684	289	13	1	1	1		2084
28		149	2	199	716		440	139	6	17				1668
29		56	1	233	375		257	116	5	11	2	4		1060
30		46	4	411	393		106	143	10					1113
31		38	10	476	299		92	54	6		1			976
	414	6655	399	7395	12566	6	16382	6618	83	383	9	106	2	51018

August

WAR DEPARTMENT
OFFICE OF THE RESIDENT ENGINEER
BONNEVILLE, OREGON

COUNTS OF FISH FOR SEPTEMBER 1946

Date	Temperature Max.	Temperature Min.	Water	Weather Bar	Weather Sky	Sky	River Flow	Turbidity	Chinook	Steelhead	Blueback	Silver	Chum	Humpback	Totals
Sun. 1	68	56	68.5	29.85	L.E.W.	Clear	133,000	6.0	10,186	2635		171			12,992
Mon. 2	81	62	68.5	29.75	L.W.W.	Cloudy	133,000	6.0	9,059	2056	4	309			11,428
Tue. 3	70	61	68.0	29.75	L.W.W.	Cloudy	133,000	6.0	12,421	2225	4	171			14,821
Wed. 4	73	60	67.0	29.80	L.W.W.	Cloudy	128,000	6.0	14,700	2719	4	231			17,654
Thurs. 5	68	56	67.5	29.85	W.W.	Cloudy	128,000	6.0	~~17,482~~ 17572	3145		291		21,008	~~20,918~~
Fri. 6	66	55	67.0	29.90	W.W.	Cloudy	120,000	6.0	14,080	2366	5	171			16,622
Sat. 7	62	52	67.5	30.00	W.W.	Cloudy	118,000	6.0	14,444	2344	2	234			17,024
Sun. 8	68	50	67.0	29.90	L.W.W.	Cloudy	115,000	6.0	22,959	2043	1	335		1	25,339
Mon. 9	74	53	66.5	29.90	L.E.W.	Clear	120,000	6.0	26,596	2186		265			29,047
Tue. 10	81	55	66.0	29.80	L.E.W.	Hazy	125,000	6.0	34,619	2694		618			37,931
Wed. 11	86	56	66.0	29.95	W.W.	Cloudy	118,000	6.0	~~34,750~~ 31739	~~3260~~ 3262		399		35,370	~~35,409~~
Thu. 12	71	56	66.0	29.90	L.W.W.	Cloudy	118,000	6.0	19,003	~~2346~~ 2347		122			21,471
Fri. 13	80	62	66.5	29.75	L.W.W.	Cloudy	120,000	6.0	~~14,509~~ 14499	1628		96		14,223	~~16,233~~
Sat. 14	72	57	66.5	29.65	L.W.W.	Cloudy	123,000	6.0	12,014	~~1940~~ 2040	~~123~~	103			14,157
Sun. 15	60	51	67.0	29.65	L.E.W.	Rain	123,000	6.0	6,172	1035		47			7,254
Mon. 16	60	49	66.5	29.70	W.W.	Rain	120,000	3.7	4,088	900		19			5,007
Tue. 17	57	51	66.5	29.75	L.W.W.	Cloudy	118,000	3.6	2,822	589		18		1	3,430
Wed. 18	64	46	66.5	29.85	L.E.W.	Clear	118,000	3.6	1,203	198		6			1,407
Thu. 19	75	53	65.5	29.90	E.W.	Clear	120,000	4.0	~~1,104~~ 1107	200				1307	~~1,304~~
Fri. 20	79	56	64.0	29.90	E.W.	Cloudy	118,000	3.8	529	131		1			661
Sat. 21	65	54	63.0	29.90	E.W.	Clear	118,000	3.8	1,492	305		1			1,798
Sun. 22	67	44	63.0	29.90	E.W.	Clear	120,000	3.8	~~1,190~~ 1194	220				1414	~~1,410~~
Mon. 23	75	46	63.0	29.80	E.W.	Clear	120,000	3.8	768	207					975
Tue. 24	80	51	63.0	29.80	E.W.	Clear	115,000	3.9	691	160		1			852
Wed. 25	78	51	62.0	29.80	E.W.	Clear	115,000	3.5	621	107					728
Thu. 26	65	50	62.0	30.00	W.W.	Clear	115,000	3.3	~~590~~ 591	116					707
Fri. 27	61	43	61.5	29.90	L.E.W.	Clear	115,000	3.2	487	123			1		611
Sat. 28	63	45	61.5	29.80	L.W.W.	Clear	113,000	3.4	464	136					600
Sun. 29	72	50	61.0	29.80	W.W.	Cloudy	108,000	3.4	636	175	1				812
Mon. 30	78	55	60.5	29.70		Cloudy	103,000	3.0	396	107					503
									~~277075~~ 277152	~~38296~~ ~~38376~~ 38399	21	3609	1	2	~~319004~~

95

SCRAP FISH COUNTS - September 1940

Date	Misc.Trout	Carp	Chub	Sucker	Squawfish	Whitefish	Lamprey	Shiner	Crappie	Bullhead	Sturegon	Bass	Catfish	Totals
1	4	23	8	306	192		34	44						611
2	3	18	1	245	315	[illegible]	32	100			7			721
3	4	12		206	223		49	108	5		6			613
4	4	3		191	178		78	93						547
5	5	13	1	191	221		51	114	8	2	31			637
6	16	9		192	166		131	54			35			603
7	13	6	2	191	151		74	24	1		9			471
8	20	44		112	83		38	9						306
9	13	18	3	91	135		64	7	1		5			337
10	6	14		42	49		34	21						166
11	9	5		120	151		37	65			5			402
12	4	2		156	176		59	69	2	1	12			501
13	11	5		247	254		40	67	7	1	29	1		662
14	11	3		207	207		129	83						640
15	10	9	1	223	64		239	61						607
16	1	20	2	159	211		81	76						550
17	14	53	6	251	293		56	58						731
18	8			140	182		46	48						424
19	10	8		139	162		125	33	6		33			516
20	12			161	57		60	17	5		207			519
21	15	5		187	60		39	34						340
22	5	5		163	105		42	31						351
23	2	4	6	277	140	8	31	30			13			511
24	14	2	9	283	146		33	70			12			569
25	9	8		369	158		11	55			14	1		625
26	10	6		224	96		26	20			16			398
27	11	7	5	123	73		8	12			3			242
28	6	1		72	44	3	2	1						129
29	6	1	3	146	65	14	[illegible]	3	1					251
30	1	2	1	74	66	7		4	1		11		1	173
	257	306	48	5488	4433	32		1431	37	4	448	2	1	14153

WAR DEPARTMENT
OFFICE OF THE RESIDENT ENGINEER
BONNEVILLE, OREGON

COUNTS OF FISH FOR OCTOBER 1946

Date	Temperature Max.	Temperature Min.	Temperature Water	Weather Bar	Weather Sky	River Flow	Turbidity	Chinook	Steelhead	Blueback	Silver	Humpback	Chum	Totals
Tue. 1	60	49	60.0	29.70	L.W.W.Cloudy	103,000	3.6	~~385~~ 384	111					496
Wed. 2	62	50	60.0	29.70	W.W.Cloudy	101,000	3.6	305	~~129~~ 133	1				435
Thu. 3	54	45	59.0	29.70	L.W.W.Cloudy	98,000	4.0	323	113					436
Fri. 4	61	47	59.0	29.70	L.W.W.Cloudy	98,000	4.0	236	~~80~~ 77					313
Sat. 5	58	39	59.0	30.50	L.E.W.Clear	96,000	4.0	308	59					367
Sun. 6	61	41	58.0	30.50	L.E.W.Clear	96,000	4.0	272	98					370
Mon. 7	65	45	58.0	29.80	L.W.W.Cloudy	98,000	4.0	345	123					468
Tue. 8	55	49	57.5	30.24	L.W.W.Cloudy	98,000	4.0	222	63					285
Wed. 9	59	50	57.0	30.35	L.W.W.Cloudy	101,000	3.9	163	~~72~~ 74					237
Thu. 10	61	41	57.0	30.50	L.E.W.Clear	102,000	3.8	199	65					264
Fri. 11	64	40	57.0	30.50	L.E.W.Clear	94,000	3.5	165	70					235
Sat. 12	67	43	56.5	30.30	L.W.W.Cloudy	94,000	3.5	175	103		1			279
Sun. 13	58	46	56.5	30.22	L.W.W.Clear	94,000	3.5	103	47					150
Mon. 14	57	46	56.5	30.20	L.W.W.Cloudy	94,000	3.5	98	51				4	153
Tue. 15	58	44	56.0	30.30	L.E.W.Clear	94,000	3.0	107	31				2	140
Wed. 16	61	34	55.5	30.22	L.E.W.Clear	97,000	3.0	125	78					203
Thu. 17	57	36	55.5	30.10	L.E.W.Cloudy	99,000	3.0	85	37	1			2	125
Fri. 18	52	42	55.0	30.22	L.E.W.Cloudy	92,000	2.6	~~101~~ 102	42				5	149
Sat. 19	55	43	54.0	30.10	L.E.W.Cloudy	89,000	2.8	58	64				6	128
Sun. 20	54	44	53.5	29.87	L.E.W.Cloudy	89,000	2.8	92	30				~~13~~ 16	138
Mon. 21	60	48	53.5	30.15	L.E.W.Cloudy	89,000	3.2	115	86				23	224
Tue. 22	57	49	53.5	29.95	L.E.W.Cloudy	89,000	3.0	~~58~~ 60	54				7	121
Wed. 23	56	44	53.0	30.34	L.W.W.Cloudy	87,000	3.2	65	46				5	116
Thu. 24	55	47	53.0	29.90	L.W.W.Cloudy	87,000	3.5	39	17				9	65
Fri. 25	60	54	53.0	30.50	L.W.W.Cloudy	91,000	4.0	81	59				11	151
Sat. 26	61	41	53.0	30.00	L.W.W.Cloudy	101,000	4.0	103	94				20	217
Sun. 27	45	40	52.5	30.04	L.E.W.Cloudy	99,000	4.0	64	56				60	180
Mon. 28	51	31	52.0	30.24	L.E.W.Cloudy	106,000	3.5	49	45				60	154
Tue. 29	46	35	52.0	30.10	L.W.W.Cloudy	121,000	3.5	29	44				17	90
Wed. 30	45	39	45.0	29.85	L.W.W.Cloudy	113,000	2.6	33	42				28	103
Thu. 31	50	39	44.5	29.90	W.W.Rain	108,000	2.7	18	58				31	107
								~~4521~~ 4523	~~2067~~ 2070	2	1		~~303~~ 306	~~6894~~ 6902

SCRAP FISH COUNTS - October 1946

Date	Misc.Trout	Carp	Chub	Sucker	Squawfish	Whitefish	Lamprey	Shiner	Crappie	Bullhead	Sturegon	Bass	Catfish	Totals
1				104	59	10	2	2	1					178
2	6		3	90	44	10	15	5	32	3				208
3	13	3	3	65	25	17	14	9	1					150
4	3	1		20	21	13	5	4	22	2				91
5	5	1		23	14	11	6							60
6	1	3		16	5	17								42
7	3			17	13	21	2	1						57
8	5	7		20	6	31	2							71
9	6		1	23	6	30	2	4						72
10	10			29	22	12		7						80
11	5			42	28	15			4	5	1			100
12	1	3	3	40	8	30	3							88
13		3	1	47	11	10	3							75
14	9	1	2	11	14	8	2							47
15	8		2	23	16	11	2							62
16	2			40	4	17	7							70
17	9	1	3	32	15	8	16							84
18	4	2	2	18	6	10	8							50
19	6	3		15	5	6	3							38
20	12			18	3	15		1						49
21	9	2	2	10	4	4	1							32
22	15	1	3	8	1	17								45
23	4	1	2	7		17	1							32
24	3		2	8	8	4	1	1						27
25	3			6	5									14
26	7	2		6	8	16		2						41
27	5			15	3	18	1							42
28	26		3	8	5	6								48
29	5	1	1	14	6	5	1					1		34
30	6			10	2	6								24
31				5		6								11
	191	35	33	790	367	401	97	36	60	10	1	1	—	2022

October

WAR DEPARTMENT
OFFICE OF THE RESIDENT ENGINEER
BONNEVILLE, OREGON

COUNTS OF FISH FOR NOVEMBER 1946

Date	Temperature Max.	Temperature Min.	Water	Weather Bar	Weather Sky	River Flow	Turbidity	Chinook	Steelhead	Chum	Totals
Fri. 1	49	38	49.5	29.95	W.W.Cloudy	101,000	2.7	17	30	16	63
Sat. 2	48	32	49.0	30.15	L.E.W.Clear	101,000	2.6	10	7	~~8~~ 7	25 24
Sun. 3	49	33	48.0	30.10	L.E.W.Clear	101,000	2.8	5	4	16	25
Mon. 4	50	38	47.0	30.15	E.W.Clear	99,000	2.5	9	11	~~8~~ 7	28 27
Tue. 5	50	36	46.0	30.00	E.W.Overcast	94,000	3.5	14	25	27	66
Wed. 6	49	37	46.0	29.90	W.W.Rain	94,000	3.5	~~9~~ 10	17	23	49 50
Thu. 7	53	36	46.0	29.90	W.W.Cloudy	94,000	3.5	5	6	19	30
Fri. 8	46	32	46.0	29.95	L.W.W.Cloudy	91,000	3.5	8	6	~~8~~ 9	22 23
Sat. 9	45	34	47.0	29.95	L.W.W.Cloudy	91,000	3.5	4	3	32	39
Sun.10	47	39	46.5	29.90	L.W.W.Cloudy	91,000	3.5	3	8	30	41
Mon.11	47	31	46.5	29.90	L.E.W.Clear	94,000	3.5	3	9	35	47
Tue.12	50	35	46.0	29.90	E.W.Clear	91,000	3.6	~~4~~ 5	5	61	70 71
Wed.13	49	36	46.0	29.90	E.W.Clear	92,000	3.7	8	12	55	75
Thu.14	48	31	45.5	29.75	E.W.Cloudy	89,000	3.8	3	1	34	38
Fri.15	50	34	45.5	30.00	W.W.Cloudy	89,000	3.8		2	18	20
Sat.16	49	31	46.0	30.00	L.E.W.Ptly.Cldy	87,000	4.0		3	25	28
Sun.17	47	33	46.0	29.80	L.E.W.Cloudy	87,000	4.0		6	41	47
Mon.18	47	33	45.5	29.25	W. W. Rain	89,000	3.8	41	40	96	177
Tue.19	60	34	45.0	29.40	L.E.W.Clear	89,000	2.7	11	14	55	80
Wed.20	45	31	45.0	29.35	W.W.Snow	89,000	3.4	4	6	45	55
Thu.21	33	31	45.0	29.75	E.W.Snow	91,000	3.6	4	16	28	48
Fri.22	42	29	45.5	29.60	E.W.Cloudy	101,000	2.4		6	7	13
Sat.23	36	31	43.0	29.55	L.E.W.Cloudy	106,000	3.5	~~2~~ 3	4	36	42 43
Sun.24	49	33	44.0	29.80	L.W.W.Cloudy	108,000	3.6		4	25	29
Mon.25	48	37	43.5	29.70	E.W.Rain	106,000	4.0	1		12	13
Tue.26	56	38	43.0	29.70	L.E.W.Rain	106,000	4.0	4	2	14	20
Wed.27	53	42	42.0	29.70	L.W.W.Rain	111,000	3.5		3	8	11
Thu.28	52	32	42.5	29.90	L.E.W.Cloudy	116,000	3.4		1	8	9
Fri.29	47	38	42.5	29.90	L.E.W.Cloudy	121,000	3.1	1	1	11	13
Sat.30	47	37	42.0	29.90	L.E.W.Cloudy	123,000	2.3		10	8	18
								~~170~~ 173	262	~~809~~ 808	~~1241~~ 1243

SCRAP FISH COUNTS - November 1946

Date	Misc. Trout	Sucker	Squawfish	Whitefish	Lamprey	Carp	Cutthroat Trout	Totals
1	18	6						24
2	4	6	1	6				17
3	6	23	3	4				36
4	1	1		9				11
5	14	1		3				18
6	11	1		4				16
7	16	4	2	8				30
8	14	3		14				31
9	6			11				17
10	10			33				43
11	9			2		1		12
12	12			3		1		16
13	11	1						12
14	1			7				8
15	6			28				34
16	7			18				25
17	14			16				30
18	11			2				13
19	8	1	1	3				13
20	6			1				7
21	5			3				8
22				2				2
23	2			1		1		4
24	4			4				8
25	5			1				6
26	3			1			2	6
27	2							2
28	2							2
29	1							1
30	9							9
	218	47	7	184		3	2	461

Novemb

WAR DEPARTMENT
OFFICE OF THE RESIDENT ENGINEER
BONNEVILLE, OREGON

COUNTS OF FISH FOR DECEMBER 1946

Date	Temperature Mas.	Min.	Water	Weather Bar	Sky	River Flow	Turbidity	Chinook	Steelhead	Silver	Chum	Totals
Sun. 1	42	37	43.0	29.75	L.E.W.Cloudy	131,000	2.3	3	6		14	23
Mon. 2	43	33	42.5	29.75	L.E.W.Cloudy	128,000	1.5	5	50	3	8	66
Tue. 3	48	40	42.0	29.60	L.E.W. Rain	126,000	1.3	4	23	2	7	36
Wed. 4	51	41	44.0	29.70	L.E.W.Cloudy	123,000	1.1		4	1		5
Thu. 5	48	41	44.0	29.65	L.W.W.Cloudy	123,000	1.6	1	9		3	13
Fri. 6	49	40	44.0	29.65	L.E.W.Cloudy	121,000	1.7	1	3		1	5
Sat. 7	45	39	44.0	29.70	L.E.W.Cloudy	118,000	1.9				2	2
Sun. 8	51	39	44.0	29.85	L.W.W.Cloudy	111,000	2.0		1		1	2
Mon. 9	47	40	44.0	29.90	W. W. Rain	106,000	2.5		3		6	9
Tue. 10	53	45	44.5	30.00	W. W. Rain	108,000	2.6		8		2	10
Wed. 11	59	48	45.5	29.70	W. W. Rain	106,000	2.7	1	32		2	35
Thu. 12	57	45	47.0	29.60	W. W. Rain	116,000	1.7	3	166		6	175
Fri. 13	58	48	46.0	29.60	W. W. Rain	126,000	1.7	3	81	1	3	88
Sat. 14	59	50	46.5	29.50	W. W. Rain	193,000	1.5		41		5	46
Sun. 15	57	39	48.0	29.70	W. W. Rain	211,000	1.7	1	158		2	161
Mon. 16	45	31	47.0	30.15	E. W. Clear	238,000	0.8	1	145	4		150
Tue. 17	40	31	45.0	30.20	E. W. Clear	257,000	0.6		15	6		21
Wed. 18	39	27	45.0	30.10	W. W. Clear	251,000	0.6		4	1		5
Thu. 19	42	29	43.0	30.05	W. W.Cloudy	210,000	0.6		4	3		7
Fri. 20	48	30	42.0	29.90	L.E.W.Cloudy	184,000	0.8		No Fish			No Fish
Sat. 21	43	34	41.0	29.80	L.E.W.Cloudy	178,000	1.0		2			2
Sun. 22	46	36	41.0	29.85	L.W.W.Cloudy	166,000	1.2		2			2
Mon. 23	48	31	41.0	30.00	E. W. Clear	161,000	2.0	1	2	1		4
Tue. 24	44	31	40.5	30.35	E. W. Cloudy	155,000	1.8			1		1
Wed. 25	38	31	39.0	29.95	E.W.Ptly. "	152,000	2.1	1	1	1	1	4
Thu. 26	37	32	39.5	29.65	L. E. W.Rain	147,000	2.2		No Fish			No Fish
Fri. 27	42	32	40.0	29.80	W. W. Cloudy	136,000	2.2		4			4
Sat. 28	40	29	40.0	30.32	L.E.W.Cloudy	141,000	2.9		No Fish			No Fish
Sun. 29	34	28	40.0	30.40	L.E.W. Clear	141,000	3.1		" "			" "
Mon. 30	36	25	40.0	30.65	L.E.W.Cloudy	159,000	3.1		4			4
Tue. 31	37	26	41.0	30.10	L.W.W.Ptly "	133,000	4.0		1			1
								25	769	24	63	881

SCRAP FISH COUNTS - December 1946

Date	Misc. Trout	Cutthroat Trout	Whitefish	Sucker	Squawfish	Shiner	Lamprey	Bullhead	Totals
1	5		3						8
2	9	3							12
3	3	1							4
4		No Fish							No Fish
5	8								8
6	7								7
7	7								7
8	1		1						2
9	2	1							3
10	3		3						6
11	16	12	6	1					35
12	12	3	1						16
13	9		1		2	1			13
14	8		5	2					15
15	4		1	1	1				7
16	6						1	1	8
17		No Fish							No Fish
18		" "							" "
19		" "							" "
20		" "				1			1
21		" "							No Fish
22		" "							" "
23		" "							" "
24	2								2
25		" "							No Fish
26		" "							" "
27			1						1
28		2							2
29		1	1						2
30			1						1
31			1						1
	102	23	25	4	3	2	1	1	161

December