

LEGIDA

BUREAU OF FISHERIES
RECLAMATION AND MAINTENANCE
THE SUSITNA VALLEY, ALASKA
1927

By J. E. Wilson

Introduction

In August 1926, acting on instructions from Captain R.L. Cole, Master U.S.F.S. "Kittiwake," I made examinations and reported on a number of creeks and lakes in the Susitna valley, tributary to Knik arm, upper Cook inlet, Alaska

The object of this work was to ascertain the extent and condition of the natural spawning grounds of the salmon entering this area, with the view of rendering aid to the production and of the industry by reclamation and maintenance of these grounds if found to be necessary.

In carrying out this work, I followed out six creeks from their source to salt water, as nearly as possible to do so on foot, my only means of travel. There were numbers of miles running through swamp lands that could be viewed only from a boat.

Also, a seventh, Crooked creek, which flows from Lake Nancy to the Little Susitna river, a distance of about 12 miles.

The names of these creeks, starting from Anchorage and working north along the Alaska railroad are: Spring, Otter, Fire, Cottonwood, Meadow, Fish and Crooked in the order named.

The seven streams have an aggregate length of about 125 miles. Tributary to these streams there were 18 active lakes, (that is, lakes carrying salmon at that time) having an approximate length of shore line of 135 miles, also a number of other lakes delivering their waters to these streams that salmon do not ascend at the present time because of obstruction. These have been idle from two to 15 years but the majority of them could be recovered at a very reasonable cost.

Cavin
Dennis
Day
Stewart

from Lance
2-25-98

All of these streams were found to be in need of attention. Owing to obstructions from fallen timber and other causes, the salmon were not producing as they should, thousands of them dying before reaching unoccupied spawning space.

This was particularly true of Crooked creek where the beaver had the fish shut off with dams to the extent that the nearest any of them got to Lake Nancy was 12 miles.

Considering the fact that this lake has 27 miles of shore line (by actual survey) and has at least three tributaries leading up to four or more other lakes some of which could be recovered and that ordinarily it has a run of from 300,000 to 500,000 salmon annually, it is easily seen that the damage these beaver will cause to the salmon industry, if permitted to occupy this creek for a few years, can hardly be computed.

In planning the work for this season it was found to be to the best advantage to start operation on the headwaters of Meadow creek near Pittman, a station on the Alaska railroad, 50 miles north of Anchorage.

The norther branch of this creek has its source in lakes on the east side of the railroad, but no fish have been able to reach them for from two to eight years.

The eastern branch has its source in a lake about one mile west of the railroad and passes through three other lakes within two miles. The salmon reached these four lakes in 1926, but thousands of them were lost, before spawning on the way up because of timber obstruction, low water and shallow bars.

Meadow creek flows into Big lake, a distance of about 25 miles, thence to Knik arm by way of Fish creek, making a total distance of about 50 miles.

Having visited these waters and knowing them to flow through several miles of swamp lands, and that it would be impossible for a man to relay a camp outfit, food and tools on foot, the need of

a boat was imperative. This, I was fortunate enough to secure, by loan, through the courtesy of Mr. Noel Smith, general manager of the Alaska railroad.

On Tuesday, May 31, 1927, I arrived at Pittman with a few day's rations; the boat, supplies and camp outfit to follow on the freight train, Thursday, June 2.

Wednesday, June 1, 1927

This, the first day of the season, was devoted entirely to exploration work. I was on both branches of Meadow and owing to heavy snowfall last winter and a number of very severe wind storms, I find both creeks to be so badly covered with a tangle of down timber, that the outlook is rather discouraging.

Took quite a number of temperatures, finding a rather wide range; Springs from 38 degrees Fahrenheit to 46 degrees; Creeks, from 50 degrees to 55 degrees; Air, maximum(2:00 p.m.) 65 degrees, minimum(5:30 a.m.) 47 degrees.

Thursday, June 2, 1927

It was the intention to put the boat in on the North Fork of Meadow where it passes under the track, and work down from there. Coming across to the east fork on alternate days and do both creeks from the same camps, as the two streams are not far apart.

But, after looking the ground over thoroughly, and seeing the very great amount of work to be done, I find I will not have time to do both, and as the east fork is the most important at the present time, I shall have the boat carried in to Blodgett lake, its source, and abandon the north fork work for this time.

The train did not come in with the outfit, and it is not known whether it will come through tomorrow or not. I will be unable to procure food from the section foreman here as he has a large crew of men and is out of provisions himself, his provisions also being on this train.

Friday, June 3, 1927

Not being able to get a line-up on the outfit train I walked to Wasilla this morning, a distance of six and a half miles, in

the event it did not come, I could buy food from the store there. But upon arrival I learned from the agent that the train had just left Anchorage, so I waited and when it came through late in the afternoon, I was told by the conductor that my stuff was on board, so I rode through to Pittman with them, where all of my outfit was unloaded in good condition.

Saturday, June 4, 1927

Packed all of the outfit over to the lake, except the boat. On this I shall require help.

Sunday June 5, 1927

Expected to get the men from the section to pack the boat over today, but they had work to do on the track, so have made arrangements for them to bring it over tomorrow night, after working hours. I jointed, set and filed a crosscut saw, and sharpened an axe for I will certainly need them.

Monday, June 6, 1927

Was not at all well, lot the entire day. The men carried the boat over this evening. It is a new one and pretty well dried out. I will have to calk it before launching.

Tuesday, June 7, 1927

Calked and launched the boat. Am feeling much better than yesterday.

Wednesday, June 8, 1927

Broke camp, loaded the outfit into the boat and started at 5:30 a.m. Moved down to lower end of second lake, a distance of one and a half miles. The creek connecting the first and second lakes required no work but the connecting creek of the second and third lakes stopped me. Unloaded and setup camp at 1:30 p.m. After lunch I started in clearing the stream of fallen timber, removed one fish-proof jam.

Temperature: creek, 58; air 65, max. (1:30 p.m.); min. 48, (5:30 a.m.)

Thursday, June 9, 1927

Started at 6:30 a.m., literally carved my way through to third lake about six hundred feet, arriving at 4:30 p.m. In the evening caught 11 rainbow trout, three of them were feeding on fry and fingerlings, specie, whether salmon or trout, not determined.

There is a heavy migration of young salmon from six to eight inches in length, believed to be both chos and reds, and thousands of fry and fingerlings and unbelievable millions of mosquitoes.

Temperatures: Creek, 59; Lakes 60; Air, min. (6:30 a.m.) 50; max. (2:00 p.m.) 70.

Friday, June 10, 1927

Broke camp and moved down to channel connecting third and fourth lakes; while these two lakes lie close together in a straight line, the round about way of the creek is about three-eighths of a mile. I worked my way down about 300 feet and setup camp as I can see at least two day's work on this short distance to the lower lake.

In the afternoon I borrowed Mr. Blodgett's boat (it having oars) and took temperatures and sounding in the upper lake. The greatest depth I found was 18 feet, but as this lake is about one mile long and a fourth of a mile wide, I did not take the time to work it out thoroughly. Therefore, there may be greater depths.

As this lake is formed by springs around the east end and along the south side, for about half its length, in addition to quite a number coming up through the lake bed, in the eastern portion, the temperatures were as follows:

The lowest, in a spring four feet under the surface, near the east end, 38 degrees; Fifty feet off shore, from quite a large spring coming in at the surface on south side one-third way down, 52 degrees, and at the 18-foot sounding, 54 degrees. On the lower end of lake on north side and furthest removed from

possible influence of springs, 60 degrees.

There were several thousand salmon spawning along the shores of this lake when I visited it August 7 last year. The other three lakes of this group have a combined spawning area about equal to this one. All of them are excellent nurseries.

Saturday, June 11, 1927

This channel is in very bad condition. In walking along on the high bank above, it is almost invisible, there being so many trees down across it. However, I made some progress.

Sunday, June 12, 1927

From 5:30 a.m. to 4:30 p.m. and all clear to lower lake except one timber jam, that is an absolute obstruction to salmon. Caught nine rainbow trout, two were feeding on fry and fingerlings, specie unknown. Trout are rising to the fly very readily, some were taken on a small spinner, also.

Temperatures: Creek, 61 degrees; Air, 50 degrees(5:30 a.m.); 80 degrees(2:00 p.m.).

Monday, June 13, 1927

I wanted a picture of at least one of these jams, and not having a camera(which for the purpose of making and keeping records of this nature is very much desired) I went back to Mr. Blodgett's home, knowing that his daughter, Mrs. Robinson, who is visiting there had one, and asked for volunteer photographers. They very kindly returned with me and Mrs. Robinson took two snap shots of this jam before it was opened and one afterwards. The weather was partly cloudy, the subject shaded, and almost enough mosquitoes to obscure the view. However, we are hoping they will come out sufficiently clear to illustrate the necessity and importance of the work of removing them.

I then broke camp and moved down across the fourth, or lower lake, and followed a rather wide, or distended stream for about one thousand feet through a marshy meadow to where it narrowed up in the hard ground and timber. There I set up camp again, for I saw all kinds of trouble ahead.

In the afternoon, I worked out about 600 feet of windfalls. I then took a walk down to the junction with the north fork about one mile. Found one total obstruction.

There is one short tributary coming through the left shore, known as Sweet William creek. I did not have time to explore it as it was 9:00 p.m. by the time I returned to camp.

Also, sometime during the afternoon I had the misfortune to loose a two ounce bottle of citronella, the only protection I had against the mosquitoes, except a bed net, which I used while sleeping.

If the reader does not know just what this means, let him pray most devoutly to his god that he may never have the misfortune to learn through actual personal experience.

Temperatures: Lake, 61 degrees; Creek, 31 degrees; Air, 50 degrees(5:20 a.m.); 80 degrees(2:00 p.m.).

Tuesday, June 14, 1927

As no living man can continue living and work on these creeks without protection of some kind from the mosquitoes, and as I did not want to go to bed and sleep until the freezeup, I beat it out of camp this morning at five o'clock for Wasilla, the nearest town, which is ten miles away, for another supply of "dope." I thought I was in for a 20-mile hike (round trip) but was fortunate in getting a gas car from Wasilla to Pittman, on my return, saving me six and one-half miles, but very unfortunate, in that there was no mosquito "dope" of any kind to be had, the demand having been greater than the supply and everything being sold out. All I was able to get was a head net, and for even that I am very thankful.

Wednesday, June 15, 1927

Started work at 6:20 a.m. Cleared everything out to Sweet William creek by 9:00 a.m., then explored this creek. It is formed by dozens of small springs emerging through the bed and around the outer edge of a swampy basin of about 10 acres, total length being about half a mile. Length of main creek is about 600 feet.

Temperature of creek at mouth was 48 degrees. I did about one hour's work on this creek, as it was pretty well choked up with down timber.

Mr. Blodgett informs me there is a very heavy run of salmon in this creek and basin, he having observed it for the past two years. The bed of the creek proper, is clean gravel and sand, from the fact there is quite a good current, but after entering the basin, more than half the spawning ground is covered with a few inches of decomposed vegetable matter dark in color, but so light in weight that it is very easily disturbed.

In wading around in this matter, clearing a "right of way" I was astonished at the amount of dead salmon eggs. All of this muck seemed to be literally filled with them.

Also, there were an unbelievable number of dead salmon lying covered, some of them in full form but would break to pieces at the slightest touch. Numbers of these had not spawned, evidently they had been caught in the freeze-up.

I understand this basin was formerly known as the "stink hole" from the fact that it gives off a very peculiar and slightly obnoxious odor. The latter appellation being given, no doubt, by some passing wag, as a name equally suggestive and less offensive.

For the last hundred feet of the creek, where the water is very active there is a slight odor of sulphur, also a very faint sulphureous taste. I tried out a number of springs and each one separately gave no foreign taste or smell.

Whether the sulphur in the creek is the sum of the combined springs of the entire basin, or all from one single spring that I failed to isolate, I do not know.

The odor of the basin, apart from the creek is not sulphur, but I was unable to identify it, although it was, in a way familiar I just cannot quite name it; but it is positively not that of decomposed fish.

It is not believed that this element whatever it may be, is the cause of these ^{fish} eggs. I rather think the salmon were so overcrowded on the gravel beds that numbers of them were forced to spawn in this sediment, which may have been in an active state of decomposition at the time.

It should be remembered, that practically all of the north branch of Meadow creek, with a few of its lakes, has been lost within the past four years. Or, since the hatching thereof the salmon constituting this year's run and not being able to enter that branch they joined the east branch run, hence the overcrowding.

Working out the remainder of Meadow creek to the forks, I returned to the camp, had lunch and moved to a point about three miles below the forks. Almost all of this was over gravel beds that the salmon used last year. They had the gravel thrown up in "wind rows" and reefs, the tops of which were so near the surface that I was delayed quite a lot by having to wade and drag the boat over, and often I had to shovel off the tops of some of them in order to get sufficient water to allow the boat to pass at all.

As the creek here is running through a muskeg, there are no timber obstructions. The average width of the creek for these three miles is fully 30 feet, and will average about eight inches deep, running about three miles an hour. This is believed to be the entire volume of water to be had at this time.

As the formation of the entire Susitna valley is a glacial deposit of sand, gravel and small boulders, the volume of water in any given stream does not remain constant, for any considerable measure of its length. Its walls and bed being porous, absorb the water to the extent that rarely all of the water is free-flowing in the channel at any one place or time.

To further illustrate this feature, I will say, the channel from the first lake to the second, is thirty feet wide having an average depth of six inches with a current equal to that portion of the creek below the forks just described.

The extra two inches in depth in the main creek being equal to the waters received from the north fork.

While the lower half of the channel between the second and third lakes is only about 15 feet wide and so shallow over the bars that I had to open up a channel through them with a shovel that the salmon could be able to pass. This is true, also, of the creek connecting the third and fourth lakes where I shoveled out a channel fully an eighth of a mile, or one-third of its length.

On the last mile of the creek, before reaching the forks, there was no place carrying more than one-half the volume of water visible in the creek flowing from the upper lake. In a number of places in this mile I had to shovel out a passage for the fish. The proper way to do the work on these shallow bars, is to put in wing dams. This, I did not have time to do.

Therefore, we see, by visible demonstration, that the difference in the volume of water in the maximum above and the minimum below, has found a break in the "false bed-rock" or the porous walls and is passing from the upper level to the lower by infiltration. This maximum and minimum may be likened to the "fat and the lean" and apart from the total obstruction of a stream, by beaver dams, or other causes, these "lean" places in the creeks are our greatest concern.

Another condition with which we have to contend this season which is unusual, is that caused by a very late spring. For notwithstanding, the fact that we had an excellent covering of snow throughout the entire valley and over the boundary hills and mountains, the creeks received no benefit, whatever from this source. The weather remaining cold for at least three weeks longer than usual, and the fact that the water-shed protection of all these creeks has been destroyed by forest fires, this entire mass of snow was taken up by evaporation, the snow just simply disappeared, leaving the ground dry.

Last year there was very little snow, the break-up coming early and the thaw continuing, with the result that the waters were received by the various depressions and traps. Some of it, of course, was taken ^{ab} by evaporation, but the greater part of it sunk to bed-rock and found its way to the creeks.

The precipitations of the first six months, from January to June inclusive, 1926, were only 1.82 inches, yet the creeks had almost twice the volume of water in them on July 15 that year than they had on June 1 this year.

Neverthe less, so far this month there has been a precipitation far above the average June, and should it continue throughout the month, there should be a perceptible increase in the volume of water in the creeks by July 10, even though there should be no rainfall after June 30. As this June water is still in the ground and will be in an active state of delivery to the creeks throughout the month of July.

I am camped near the mouth of a nice looking salmon stream coming in through the right shore. It is filled with down timber and has a temperature of 51 degrees. Meadow creek's temperature was 61 degrees.

Thursday, June 16, 1927

Broke camp at 6:00 a.m. Had deep, slow water through meadow for first half-mile, the next three miles being shoals. In places the creek was broken up into several small channels. Had quite a lot of work to do. Chiefly making openings over the bars by removing small boulders and drift wood.

Took 35 trout in 30 minutes. This means the trout in this stream are too plentiful. Eighteen were feeding on fry and fingerlings, species not determined. All of these trout were rainbow, the larges, 13 inches in length, and having red meat, not pink, but almost as red as the meat of the king or sockeye. This is rather rare in my experience.

Friday, June 17, 1927

Started from camp at 5:30 a.m. Had very little work to do. Arrived at the mouth of Lucille creek at 11:00 a.m. This creek is about 15 miles long, having for its source, Lake Lucille, near Wasilla. This lake is about one and a half miles long and a half mile wide. The salmon were using the lake up to about 15 years ago, when they were shut off by frost heaves in a meadow about midway up the creek, leaving them land-locked.

On August 7 last year I visited the lower half of Lucille creek and got a count of 5000 salmon to the mile. They were working up into this meadow as far as possible.

*Stevens
made by date*

Lake Lucille could, and should be, recovered. It is about 15 miles from the mouth of Lucille creek to Big lake, a succession of "fat" and "lean" waters for five miles. The last 10 miles of the stretch is slow, deep water, with the creek bed covered in most places with sediment. The land on both sides being marsh, I was unable to find dry ground to camp, so I kept going until I reached the lake.

There I could have camped on one of the islands with some degree of comfort, except for the mosquitoes, but as it was only two and a half miles to Mr. Grondwalts' homestead at the head of Fish creek, where I am to leave the lake for the sea, I ran the boat on down to his place getting there at 8:00 p.m.

Temperatures: Meadow creek, 61 degrees; mouth of Lucille, 52 degrees; Air, 58 degrees, (5:30 a.m.); 78 degrees, (2:00 p.m.).

The migration of salmon fry and fingerlings is still running strong. All of the bays and swift water beds had eels, usually in clusters of from four to six to 10 or 12. They have an average length of perhaps seven inches. Observed suckers on last seven miles of Meadow creek, in schools of from five to 20.

Saturday, June 18, 1927

Remained at Grondwalt's sharpened up the tools, did laundry and took a respite from the mosquitoes, which gave me a much needed rest.

Sunday, June 19, 1927

Started down Fish creek at 7:25 a.m. This creek is rather wide for the first four miles and all good spawning ground. Had no particular trouble other than getting over shallow bars until I struck the rapids at the beginning of the last three miles.

I fully expected to get to the beach this night, but I had been misinformed as to the distance and condition of the creek from the Iditarod trail crossing to the mouth. I had been told that it was about three miles and that the going was fairly good. I found it to be eight miles, the last three of which were rapids for the entire distance. These I had to wade and line the boat down ahead of me.

It was in these rapids that I found the jam that was a "total eclipse." I had been cutting out sweepers and windfalls all along and was working late in order to get to the beach to camp, out of the mosquitoes, and it was 8:00 p.m. when I struck this jam.

Notwithstanding the fact that I had then been continuously fighting my way for 12½ hours, I was still determined to make the beach, so I went to work, but the mass of logs and brush was so closely packed and being about 12 feet wide, I found the difference in the level of the water above and below the jam to be about four feet.

This made it too deep to work in from the upper side and too dangerous from the lower. My only chance was to work down from the top. I soon realized the thing to do was to call it a day and pitch camp, which I did, getting to bed at 10:55 p.m.

Monday, June 20, 1927

Beginning this morning at 7:00 o'clock I finished removing this jam. It took me six hours altogether to work my way through. This afternoon I took the tools and worked out the remainder of the creek to the beach, about one mile. I left the camp as it was.

Tuesday, June 21, 1927

Broke camp at 4:30 a.m. in order to get the flood tide from the mouth of creek to Knik a distance of two miles. Made my way down to the sea by the simple process of lining the boat down ahead of me while wading and hanging on to the willows along the shore to keep from being washed away. Arrived at Knik at 11:00 a.m. Temperature: Knik arm, 52 degrees.

Mr. Allekson, who lives in Knik hauled the outfit to Cottonwood creek, a distance of 17 miles, arriving there at 4:00 p.m. This creek is one and a half miles east of Wasilla.

Notwithstanding the mosquitoes, swamps and rain, which made it very uncomfortable, I am well pleased with the trip as the work accomplished is entirely satisfactory.

I covered every foot of the creek from the head of Blodgett lake to the bay, a total distance of not less than 50 miles, removing at least five fish-proof jams, in addition to a great many other obstruction that would have caused delay and overcrowding, and have made it possible for the salmon to use, not only these 50 miles of stream bed, but also giving them five lakes having an estimated shoreline of about 75 miles.

Township 17 North, Range 3 West, four sections of which are shown on the following page has a water surface of 2122.53 acres. It is estimated that more than one half of Big lake lies in the unsurveyed Township 17 North, Range 4 West. Of the surveyed portion of this lake as shown in my map on page 15, 33 miles of shoreline was meandered.

The lake contains about 20 islands, which add very materially to the spawning area. The group of lakes at the head of the east branch of Meadow creek has a shore line of about 10 miles.

Fish creek ordinarily handles about one million salmon annually. The tracing of Meadow creek and lakes is on a much smaller scale than township 17. Blodgett lake is about one mile long.

Alaska

--15--

R.R.

x Pittman

x Blodgett lake

Blodgett home

x Jams

x Jam

x Jam

x Sweet William

Fork North

Fork East

Creek

x Camp

x Camp

Lucille Creek

Meadow

Sec. 19

Sec 20

T. 17 N.

R.3 W.

Big Lake

Sec. 30

Sec.29

x Grondwaldt's homestead

Camp

Fish

Creek

Camp

x Jam

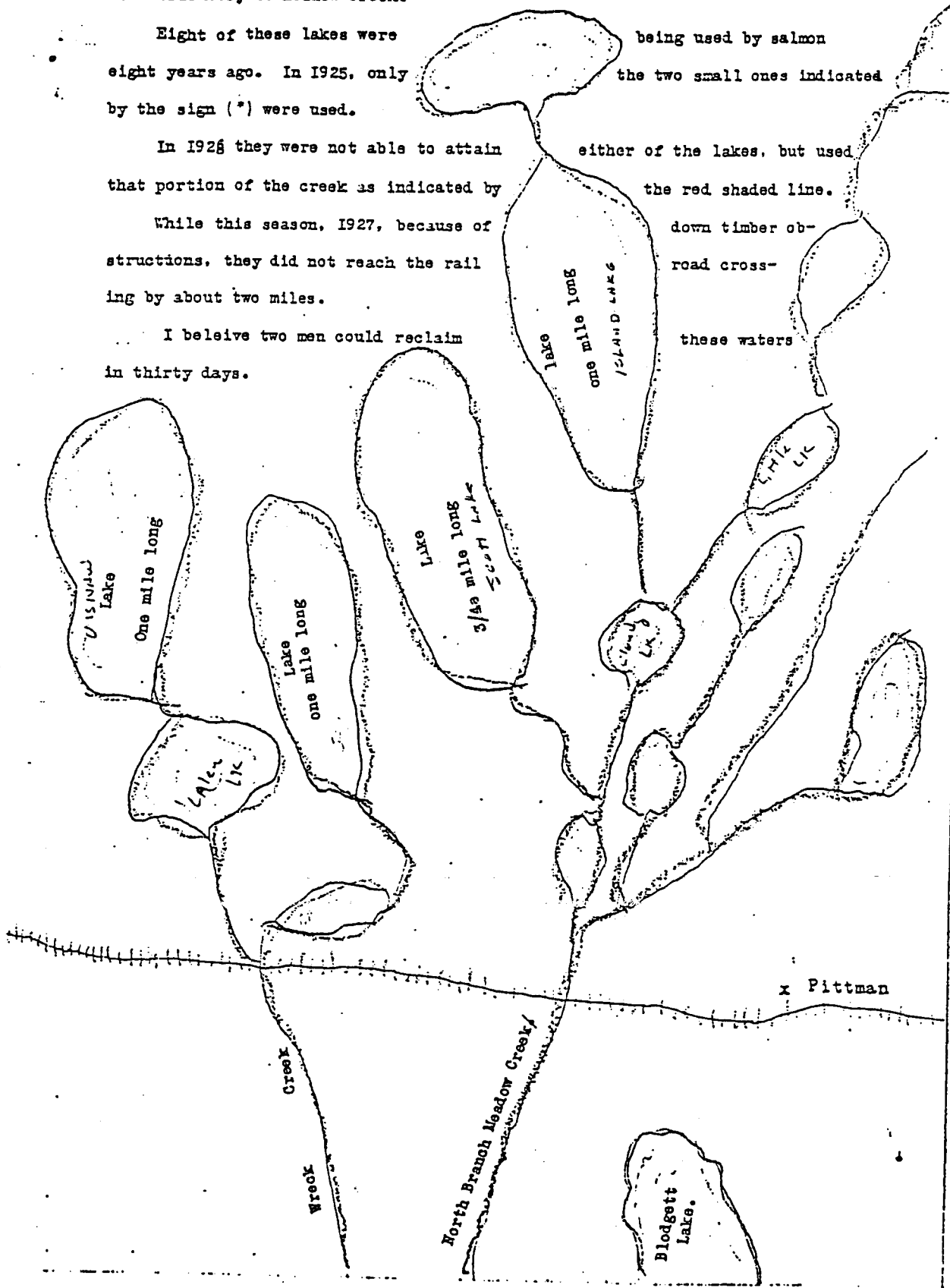
Head waters of the North Branch of Meadow Creek, and of Wreck Creek, which is a tributary to Meadow Creek.

Eight of these lakes were being used by salmon eight years ago. In 1925, only the two small ones indicated by the sign (*) were used.

In 1926 they were not able to attain either of the lakes, but used that portion of the creek as indicated by the red shaded line.

While this season, 1927, because of down timber obstructions, they did not reach the railroad crossing these waters by about two miles.

I believe two men could reclaim these waters in thirty days.



Wednesday, June 22, 1927

Broke camp this morning at 6:30 o'clock. Loaded outfit into the boat and made my way up through the Wasilla group of lakes stopping on the north shore of the fourth or last one. Am stopping with Mr. Holden who has very kindly offered to share his home with me until I get the ^{upper,} waters of Cottonwood creek worked out. This was quite a relief from the mosquitoes.

Thursday, June 23, 1927

Did the laundry, sharpened up the tools and took a rest.

Friday, June 24, 1927

On the trail at 6:45 a.m. Went the most direct way by road and trail to the head of Cottonwood creek. The source of this creek is a lake of about 60 acres. Temperature: 58 degrees. The distance to second lake, which is about 100 acres in size, is 600 feet. Temperature of this lake was 62 degrees. Fallen timber and drift wood in creek was removed.

About a fourth of a mile from second to third lake, Removed quite an accumulation of drift wood, old foot logs and rafts.

Three-fourths of a mile from third to fourth lake, where a number of down trees had gathered drift wood. In places the creek was broken up into numbers of smaller streams, most of which were choked with debris.

From the fourth lake of the upper group, down to Holden lake of the Wasilla group, is about one and a half miles. Practically one half of this, which passes through Mr. Bogard's ranch I found to be in very bad condition, owing to the fact that he had the timber cleared off the benches on each side of the creek leaving the trees along the creek unprotected from the winds. A great many of them were down. In places the creek was entirely blocked. Did not get through to Holden lake.

Saturday, June 25, 1927

Finished out to Holden lake this morning by 9:00 o'clock. I then visited Finger lake, which is a land locked lake lying parallel to Holden lake, the two being separated by a glacial moraine

known as "Grassy Ridge." The shortest distance between them being about 300 to 400 feet.

There is a difference of elevation of at least eight feet, Finger being the higher. It is live water. The temperature was 62 degrees. It contains suckers and sticklebacks, also very large leaches. It is not believed trout are present.

It is much larger than either of the eight lakes on Cottonwood creek. The topography shows plainly that the water from this lake passes through the moraine and enters Holden lake as springs. Therefore, its chief value lies in the fact that it acts as a reservoir for Cottonwood creek, and its delivery being constant, we may very properly claim this as one of the headwater lakes of Cottonwood creek, although it is inaccessible.

In the afternoon I loaded the outfit into the boat and started on the return trip down through the four lakes to Wasilla.

Put out a trawling line and caught an unidentified trout 15½ long. I had no means of weighing it. It had none of the markings of the rainbow, cut-throat or dolly varden. Egg roe was about the size of a lead pencil, and three inches long. The flesh being very nearly as red as that of king salmon or red salmon. Mr. White who was trawling in the lake at the same time had taken four fish of the same specie and size.

From Holden lake it is about three-eighths of a mile down to the next lake of the Wasilla group. The channel is kept open by the ranchers who live there about, as they run boats through to Wasilla. This is also true of the connecting stream to third lake, which is a fourth of a mile in length. While the third and fourth lakes are joined by a strait only a few feet long and about 30 feet wide.

Temperatures: Lakes, 62 and 65 degrees; Creeks, 60 and 62 degrees (influenced by springs); Air, 50 degrees (5:30 a.m.); 76, (2:00).

I was caught in a rain storm at 5:00 p.m. and pulled into Mr. Palmer's fox ranch, where I am stopping tonight.

Sunday, June 26, 1927

Left the Palmer ranch at 8:00 a.m. and came down to lower end of Wasilla lake and put up camp. It is about one mile from the lake down to the railroad crossing. The first quarter is open water. There the creek splits up into several small streams that just simply lose themselves down through the forest. I have one of them worked out.

Monday, June 27, 1927

Worked out two more channels through this maze of down timber, marsh grass and small boulders.

Tuesday, June 28, 1927

Another stretch of open water for a fourth of a mile. Then the creek narrows up at the beginning of swift water where there was a bad jam. After working through this and on down to the railroad bridge, I had Mr. Fryedlund haul the outfit (except the boat) down the Knik wagon road to where it touched the creek again, and set up camp. From this point I shall finish the work on this creek.

The length of stream bed, from the track down to salt water is 15 miles. About 10 miles down from my present camp to salt water. The distance by trail is about five miles.

As I had the boat back to a point conveniently near a station on the railroad, and as it was doubtful if I would be able to get it through to the mouth of the creek because of low water, I thought it best to return it to the department of the interior from whom I had borrowed it, so arrangements were made whereby it was received (in the lake) by their agent at Wasilla, Relieving me of the trouble of bringing it out of the lake to the freight depot and the expense of shipping to Anchorage.

The use of the boat saved at least 15 man-days in time on the 50 miles from Elodgett lake to the sea. As it made it possible to advance, each day in the one direction, downstream thus

eliminating the necessity of having to double back repeatedly to relay the outfit, in addition to making it possible to examine and report on at least 12 miles of water flowing through swamp lands that could not have been observed in any other manner.

It also saved the hire of cartage from Wasilla to Holden's ranch, and return, (making two trips) or the two or three days it would have taken to relay "pack-a-back" on foot.

Wednesday, June 29, 1927

Took a bait rod and fished downstream about two miles, using salmon eggs, brown hackle, fly and small spinner, alternately. Took 74 rainbow trout, averaging about seven inches in two and a half hours or an average of one fish every two minutes. The longest one caught was ten inches long. This is too many trout for a salmon stream. The stomachs of eighteen of them contained fry and fingerlings, specie not identified. Their preference of the three lures used was the salmon eggs.

Finished out the day removing windfalls and shoveling out channels through the "lean" bars and shoals. Temperatures: Creek, 62 degrees; Air, 54 degrees(5:30 a.m.); 78 degrees,(2:00 p.m.).

Thursday, June 30, 1927

Beginning at the railroad bridge, where I had left the tools, I worked down toward the camp, making four miles.

Friday, July 1, 1927

Started in at camp at 7:00 a.m. and made two miles downstream sawing out logs and jams over the ground on which I had shoveled out the channels through the bars on June 29. Temperatures: Creek, 62 degrees; Air, 48 degrees,(5:30 a.m.); 72 degrees, (1:30 p.m.).

Saturday, July 2, 1927

Borrowed a camera from Mr. Gerrit Snyder to take a few pictures to illustrate the condition of the creek. Got down to the work at 9:30 a.m. Took half a dozen snap shots, some of the open water, and some of jams. Removed a number of obstructions. Temperatures: Creek, 62 degrees; Air, 52 degrees(5:30 a.m.); 74 degrees, (2:20 p.m.).

Sunday, July 3, 1927

Made about one mile, found quite a lot of down timber and drift. Temperatures: Creek, 62 degrees; Air, 50 degrees, (5:00 a.m.); 80 degrees, (2:00 p.m.).

Monday, July 4, 1927

Made just a fourth of a mile in five and a half hours. This area was almost one continuous mat of fallen timber. Temperatures: Creek, 62 degrees; Air, 61 degrees, (6:00 a.m.); 76 degrees, (2:30 p.m.).

Tuesday, July 5, 1927

Getting farther from the camp. I am walking on the road to a point opposite my work and then going through the forest burn to creek, one hour's walk. Made half a mile in seven hours. Took snap shots of jam. Photograph No. 2 is before opening and No. 2A after opening. This was an absolute fish-tight jam.

Temperatures: Creek, 62 degrees; Air, 56 degrees, (5:30 a.m.); 74 degrees, (2:00 p.m.). Went up to Wasilla this evening to get the mail. Received the negatives of the snap shots taken by Mrs. Robinson of the jam between the third and fourth or lower lake on Meadow creek as described on page 6 under date June 13, 1927.

This jam was eight feet wide, making it impossible for a fish to jump it as there was only about four inches of water on the down stream side, but as the operator was standing on a lower level, being in the stream 25 feet below the jam, the picture does not show the width to be this great.

Photograph No. 1 shows the jam before opening, and 1-A after opening. The difference in the water levels above and below the jam is very apparent in the first picture.

Wednesday, July 6, 1927

Spent one continuous day chopping out windfalls, making about a half mile. Temperatures: Creek, 62 degrees; Air, 52 degrees, (5:30 a.m.); 76 degrees, (2:00 p.m.).

Thursday, July 7, 1927

The going is still heavy and I made about one mile today. Temperatures: Creek, 62 degrees; Air, 52 degrees, (5:00 a.m.); 76 degrees, (2:00 p.m.); 72 degrees, (8:00 p.m.).

Friday, July 8, 1927

With the creek broken up in small channels, filled with down timber, I made satisfactory progress. Temperatures: Creek, 62 degrees, Air 62 degrees, (6:00 a.m.); 76 degrees, (2:00 p.m.).

Saturday, July 9, 1927

Finished out Cottonwood creek to salt water, getting through at 2:30 p.m. There is a half mile or so of very swift water through gulch with large boulders and heavy down timber. Removed two very bad jams. Had a rather painful accident, when I slipped off a boulder in one of the cascades, while trying to break the jam next before the last one. Caught my right arm in a crevice between two boulders under neath the water and sprained the elbow so bad I was unable to use it while finishing the work. My right foot was also jammed so hard that it was very painful walking back to camp, a distance of five and a half miles.

There has been a fire along the south side of this gulch killing all the timber, the most of it has blown over, and quite a lot of it fell into the creek. Some of these logs are as much as two feet in diameter and as they lay piled up and criss-crossed in every conceivable manner, in, and over cascades of white water it is extremely dangerous to try to remove them with a saw and axe. I worked my way down through them as carefully as possible, and made sure there was at least a small opening through which the fish may pass. There should be two men with at least 100 pounds of powder on this half mile of creek before the salmon run again.

Sunday, July 10, 1927

Right arm useless, and foot swollen to large to wear a shoe, so I had to wear a rubber boot. I caught a ride in a passing car and went to Wasilla. The railroad employes were having their

annual picnic there and since I was to lame to work I took advantage of the opportunity to again mix with my kind and eat ice cream and listen to the band.

Monday, July 11, 1927

Foot almost well, but arm no better. At 4 o'clock this afternoon I saw a salmon in the creek here by ^{the} camp. This is the very first salmon to reach this point this season. This is 10 miles up from salt water.

Tuesday, July 12, 1927

Four more salmon appeared today and as a live salmon in broken water may not be identified with certainty, and as we have no official record of the beginning of the run in this creek, or the specie, I thought it best to take these five and record all the facts observed.

Having no means of taking them in the way of net, spear or gaff, the only feasible method available was to trap them. In this I found the most advantageous place to be in a narrow part of the stream about 300 feet ahead of the fish and directly opposite Mr. McNeil's house.

McNeil very kindly volunteered to cooperate in gathering this data, both in work and material. We gathered up three or four small sections of picket fence (which was not being used) together with the necessary stakes and constructed a small trap about five feet in width and connected to the north shore. To further insure the certainty of capture we arranged a wing leading to the trap entrance by utilizing a Yukon sled, a few pieces of plank and such other material to be found at hand. My arm being entirely out of commission yet from the fall, it was only through McNeil's aid that this work was accomplished. Temperatures: Creek, 62 degrees; Air, 50 degrees, (7:00 a.m.); 69 degrees, (2:00 p.m.).

Wednesday, July 13, 1927

Being through with the work here and feeling the need of getting out where I can have my arm cared for, I broke camp and had the outfit hauled into Wasilla this forenoon. There being no fish in the trap this morning, as none advance during the night, McNeil's wife (a native woman) running true to form, fastened a small wire snare to the end of a long pole and made her way in through the lily pads and brought out the first salmon of the season.

Thursday, July 14, 1927

Spent the day in Wasilla, packed up the camp outfit to ship. I cannot use my arm yet.

Friday, July 15, 1927

Walked down to McNeil's this morning. The four remaining salmon had entered the trap.

Observations: The first salmon to reach this point in Cottonwood creek, 10 miles up from salt water, was an unmated female with sex products in active state of development, date July 11.

On July 12, four others appeared, two males and two females. On July 13, an unmated female, taken with a snare, measured 23½ inches and weighed 4½ pounds. On July 14, one pair, male and female entered trap. On July 15, the other pair, also male and female entered trap.

Do these salmon mate by natural selection before spawning? All of these fish were red salmon.

Believing a great deal of important information may be obtained by keeping in communication with men living along these spawning grounds, from the fact that they all fully realize the importance of salmon, to not only their own locality, but to the country at large, and that they declare a willingness to cooperate with the service by recording and reporting their observations as to spawning ground conditions, the time specie and extent of the salmon runs to the best of their knowledge and ability, I have

made arrangements with Mr. J. F. Kinsilla to report on the north branch of Meadow creek along the railroad.

Mr. Vic Blodgett will report the east brach of Meadow and its four headwater lakes.

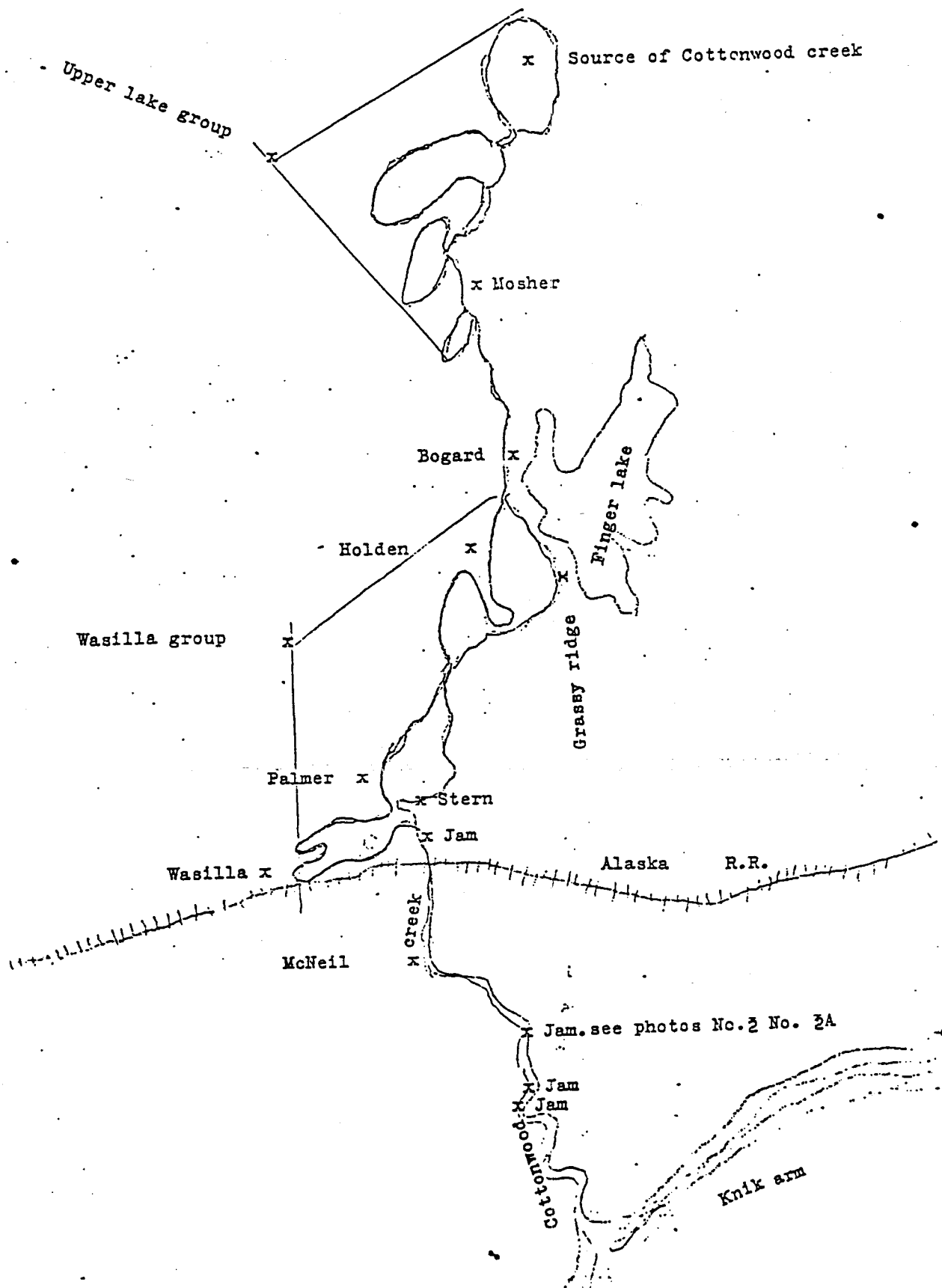
Mr. Herman Grondwaldt, will report the entrance of the salmon into Big lake through fish creek.

Mr. H. J. McNeil, the lower half of Cottonwood creek.

Mr. Vale will report the run through this creek in the lake at Wasilla..

Mr. H. F. Holden will report on the headwaters of Cottonwood creek.

Left Wasilla this morning at 10:45 by train, arriving in Anchorage at 12:45 p.m. to consult with Captain J. J. O'Donnell, Master U.S.F.S. "Kittiwake" and Mr. Cadwallader, a representative of the Biological Survey, relative to proposed removal of beaver dams on salmon spawning grounds, and to receive medical attention for the arm which is still useless.



Wednesday July 20, 1927.

Have been layed up with the arm since my return to town last Friday. Have met Commissioner O'Malley while here and Dr. Gilbert, the naturalist, also A. J. Sprague, Territorial Commissioner. But Captain O'Donnell of the "Kittiwake" with whom I came in to confer, has, I understand, had an accident to the boat somewhere in the lower Inlet and will not be able to get to this port for several days yet.

Thursday July 21, 1927.

With the view of giving the arm a tryout,-it being much improved-I left town at six O'clock this morning for Spring Creek, about six miles out on the wagon road to Otter Lake. This creek is only five or six miles in length, is formed by springs, has no lakes and flows into Knik Arm. It has a run of a few thousand fish each year consisting of Humpbacks, Cohos and Dogs. This year's run not on yet. Temperature of creek 46 degrees F. Removed quite a lot of fallen timber obstructions on the lower end, extending over about one mile.

After leaving Spring Creek I came on to Otter Lake, the source of Otter Creek. The lake contains about one hundred acres, has several acres of spawning ground and is an excellent nursery. The creek is about five miles in length, the upper portion for a mile and a half running through a forest burn with most of the timber down, and is in very bad condition; while the lower part of the creek passes out through a salt-water meadow to Eagle River in the tide lands.

This is a splendid salmon stream carrying each of the four smaller species of salmon to the lake, while the King Salmon spawn in Eagle River and possibly in the lower portion of the creek, as there are hundreds of young King Salmon about six inches in length, and in their second year seen feeding in the lake at this time. Also hundred of Coho in their second year. Very few fry were observed as this creek was so badly jammed last year that only

a few parent fish were able to return.

Friday July 22, 1927.

Worked out three fourths of a mile of the creek through the burn and found a number of places impossible for salmon to pass. Just at the close of work I met the first salmon, it was a male red salmon and was hopelessly entangled in the midst of a jam. It was very badly bruised, some of the fins torn and one eye mutilated to blindness.

Took snapshots of logs and brush in the creek to be enclosed herewith. Nos. 3, before removing impassible obstructions and after. Nos. 4, before and after, and No. 5, Otter Lake. The course of forest fires is to a limited degree shown here.

Temperatures: lake 64 degrees F., creek 62 degrees F., air 5:00 A.M. 50 degrees F., 2:00 74 degrees F.

Saturday July 23, 1927.

Beginning at an early hour, was able to complete the work on this creek by 7:00 P.M. There was one female red salmon found dead in a bad jam of driftwood. She had made only about four hundred yards up from the open water in the marsh land. Showed plainly that in trying to make her way through the jam she had land-locked herself in a small pocket of debris in which there was not water sufficient for her to survive. She, too, was badly bruised and torn.

After working out the upper portion of the creek, which passes through the timber, I followed the creek down to its entrance into Eagle River within a short distance of the bay. All was clear. There were no salmon seen other than the two recorded above, these two being early arrivals. The run is not on yet. On returning to the lake I was fortunate in getting a passing car to bring me into town arriving at 9:00 P.M.

The arm is not in condition to be of much value in work of this nature. I was compelled to do most of the work with the left hand.

Thursday July 28, 1927.

Since completing the work on Otter Creek last Saturday, I remained in town until the arrival of the "Kittiwake". I then took up with Captain O'Donnell the matter of Beaver Dams on Crooked Creek, -out of Lake Nancy- and Caswell Creek. He informed me that he had received no permit as yet for the removal of these dams; or an order for money to buy the powder, but expected to receive them any day. It was then agreed that I go to Lake Nancy to do exploration work pending the arrival of these orders.

Leaving Anchorage at 1:45 this afternoon I arrived at Nancy at 4:22.

Friday July 29, 1927.

Took temperatures and soundings in lake-see map-took two Rainbow Trout on trawling line, weight about two pounds each, they were feeding on Stickle Backs. One Red Salmon was observed entering the lake.

I visited this lake on the 10th of August 1926, and as there were no salmon present I followed down the creek to locate the trouble. The creek bed is about 12 miles long and very well named, as the valley floor is only about 6 miles in length. The creek flows into the Little Susitna River. There were 5 beaver dams all told, either of which would have prevented a salmon from entering the lake. Therefore the first fish I encountered was below the last dam down, and within a few hundred feet of the mouth of the creek. There were hundreds of them there, dead. The water was passing around each end of this dam and spilling back into the creek over the cut banks on each side below, in columns of water of sufficient volume to permit the fish to gain the upper level where they would land-lock themselves in the brush and grass, where they perished. I was informed later in the season, that the Natives opened these dams during the last of September that they might take the beaver for food. Therefore the appearance of this salmon today was not

LAKE EMERY

This is just a free sketch of the lake, but is enough right to give one a fair conception of its contour. The Northern portion of the lake lies in Township 19 North, Range 4 West, which has been surveyed. The south line crossing the lake is indicated. While the Southern part lies in the unsurveyed Township 18 North, Range 4 West.

The length of the numbered shore-line as given by the Surveyors is 27 miles.

Lake Emery communicates with the sea through Crooked Creek to the Little Susitna River, a distance of about 12 miles, thence to Cook Inlet, a total distance of about 75 miles.

It is possible to go by row boat from Emery to the Bay, but impractical to attempt to make the return by that method.

Beginning July 29, and ending August 6, 1877, there were fifty soundings made of this lake, with temperatures of the air, the lake surface and the lake bottom recorded.

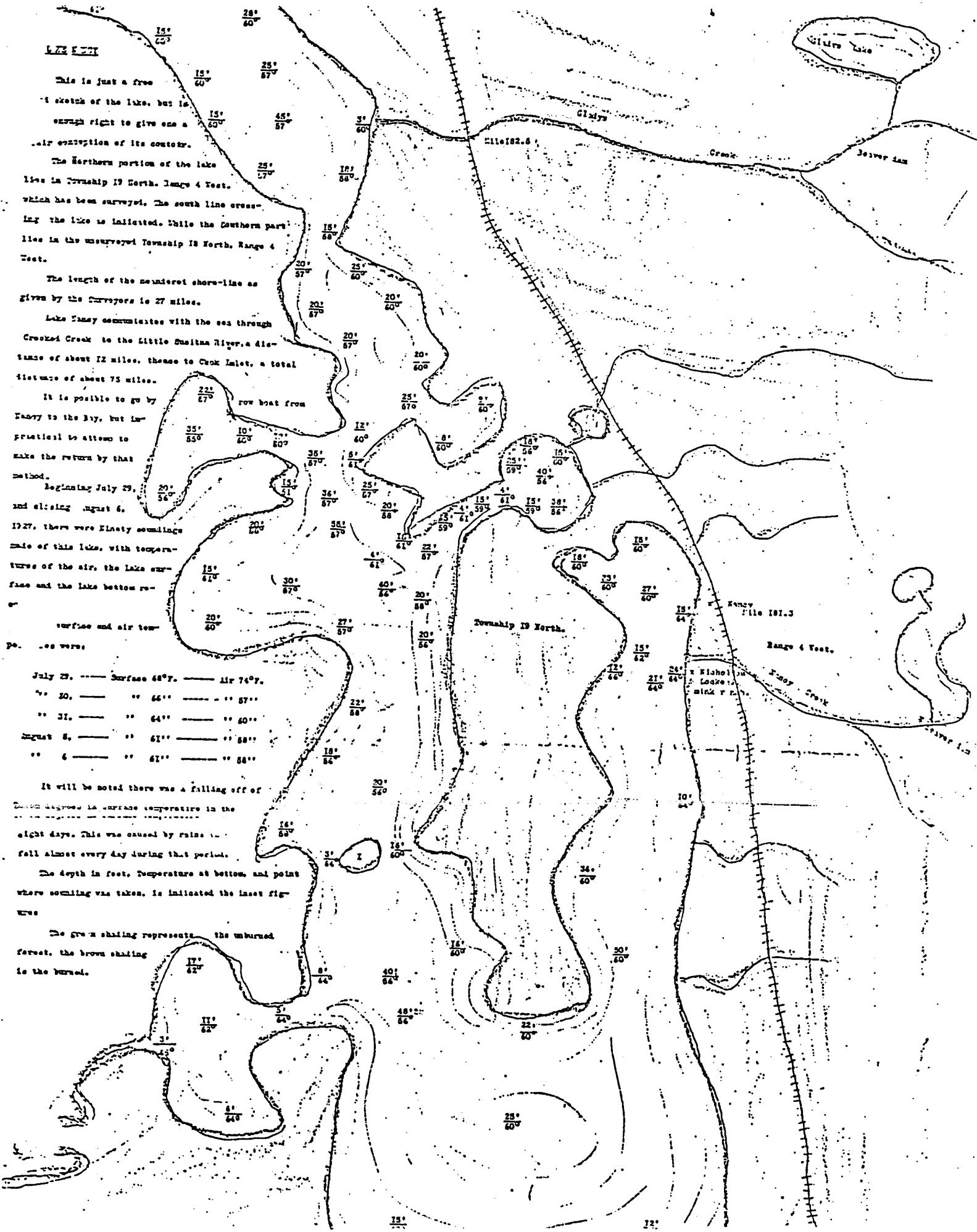
surface and air temperatures were:

July 29.	Surface	68° F.	Air	76° F.
" 30.	"	66°	"	57°
" 31.	"	64°	"	50°
August 5.	"	61°	"	58°
" 6.	"	61°	"	58°

It will be noted there was a falling off of about degrees in surface temperature in the eight days. This was caused by rains to fall almost every day during that period.

The depth in feet, temperature at bottom, and point where sounding was taken, is indicated the inset figures.

The green shading represents the unburned forest, the brown shading is the burned.



unexpected.

It is a matter of common knowledge that during the construction days of the Alaska Rail Road, which passes along the east shore of this lake, that salmon were taken from the lake each year in sufficient quantities to feed more than two hundred dogs that the Alaska Engineering Commission found necessary to maintain as work dogs during this construction. And that during that time private parties built a three story dry house, fifty feet long by thirty feet wide, in addition to other drying racks set up here and there and that there were hundreds of bales of salmon prepared as dog feed, shipped from this place to all parts of the railroad built as a commercial business. And was carried on until about 1924, by which time the demand for this product had fallen off to such a degree that the place was abandoned. The creek being immediately invaded by beaver who have held possession continuously since. While the buildings were consumed by forest fires in June 1926. This unrestrained fishing, followed by three year's beaver dams has reduced the salmon run in this, the second largest lake among more than one thousand we have in this valley, to a very harmful degree.

Therefore, believing it to be to the best interest of the industry to get as accurate a survey as possible of the salmon entering this lake this season, i.e. their species, numbers and conditions, I have gathered up stakes, boards and odd sections of poultry netting, all being parts of traps used in other days, and have put in a weir to be used in making these observations.

As I say, I ran this creek out last year, from its source in Lake Nancy to its delivery into the river, and I can truly say it is the hardest trip I have ever made in Alaska. The valley floor is wide, flat and swampy, partly covered with an overflow of backwater from the beaver dams, while the bed of the creek is in most places mud, and in places peat to an undetermined depth. Therefore I do not believe it possible to make a clean and satisfactory

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job of these dams without dynamite to blow them out, and a boat from which to work. I shall make no attempt to go down, even for a "look see" until the powder and permit are received.

Saturday July 30, 1927.

Took soundings and temperatures of the lake, see map.

Sunday July 31, 1927.

Sounding and temperatures of lake.

Monday August 1, 1927.

Made an exploration of the water-shed of the east branch of Nancy Creek with the view of making a survey of a lake said to be used by salmon a few years ago.

The first two miles out from Nancy were through a second forest burn and very easy going. After that, encountered down timber from a first burn, muskeg and swamp lands with small areas of native "Red-top" hay, growing very dense and higher than I could reach, which made extremely bad going. And just in the midst of this it began to rain. This made it impractical to proceed further so I layed out the shortest course to open ground and in due time made my way out to a point on the railroad four miles south of camp, arriving home at 5:00 P.M.

Owing to the many detours I was forced to make and the fact that on two separate occasions I made the mistake of following a tributary instead of the main creek I did not reach the lake.

I found sufficient water in the creek to carry salmon, and it's bed to be excellent spawning ground. But no salmon can get farther from the lake at Nancy in this creek than the railroad crossing, a fourth of a mile, because of down timber obstructions.

Tuesday August 2, 1927.

Made a reconnaissance of territory on west side of lake. There are no salmon bearing waters tributary to the lake on this side.

Wednesday August 3, 1927.

Went south along the railroad a distance of six miles to the crossing of the Little Susitna River. The King Salmon run in this river is over, but I fully expected to find some of the other species of salmon present. That is, either or each of the Humpback, Coho or Dog Salmon. The Red Salmon does not appear in the river at this point, as there are no lakes accessible to the river above the mouth of Crooked Creek, which is about five miles down from the bridge, but there were no fish found. On my return to camp, and after having supper, I borrowed a boat from Mr. Nicholson who lives on the lake shore here, and accompanied by him, rowed down to the lower end of the lake, one and a quarter miles, to the lake outlet where I had put in the weir. There was just one lone female Humpback to be counted through. This weir had been visited each day since its construction either by myself or Mr. Nicholson, who had very kindly volunteered in the service and has assisted me in many ways; a help I fully appreciate.

Thursday August 4, 1927.

Took soundings and temperatures of the lake. Was informed by a Native that there was a "white man trap" in the Little Susitna about eighteen miles up from its mouth. If this is true,--and it is more likely true than not-- it accounts for there being no fish running.

Friday August 5, 1927.

Believing the report of the Native in regard to the trap in the lower river to be true, and if true, it could be regarded only as a great calamity, for the reason that an obstruction that near the mouth of a salmon bearing river, one hundred and fifty miles in length, would interfere with, retard or possibly shut off entirely the salmon run to all the creeks and lakes tributary to that river, as well as the river itself above that point. And that would mean, in this case, on an average year, more than one million fish, and not knowing if I could get in communication with Captain J.J. O'Donnell, Master U.S.F.S. "Kittiwake", to whom I could refer the matter without loss

of valuable time, and considering the matter to be in the nature of an emergency, I took the liberty of sending a letter into Anchorage by this day's mail addressed to Joe Magil, President of the Alaska General Fisheries, asking him to ship a boat out to me on the freight train Monday August 8th. Also telling him for what purpose I wished to use it, and if for any reason he did not or could not send the boat, to write me on Monday's mail.

Took twenty-seven soundings in the lake; am getting more than one hour's row from camp.

Saturday August 6, 1927.

Made thirty-six soundings of the lake today which completes that part of the work. Have made ninety soundings all together and have viewed every foot of the shore-line.

Lake Nancy, a map of which is here attached, is second in size of the Susitna Valley. It has a very irregular shore-line, twenty-seven miles in length. Lake bed composed of small rock and gravel. It has innumerable small areas of lily beds and grass plots which forms ideal covering and excellent feeding grounds for the young salmon nursery stock.

There are several small tributary creeks to this lake, two of which, Nancy Creek and Gladys Creek, were carrying salmon to other lakes on their headwaters only a few years ago. These two creeks with their tributary lakes could be reclaimed for a nominal sum.

Sunday August 7, 1927.

Did the laundry work and mending, then finished out the day reading and resting.

Monday August 8, 1927.

Walked north on the railroad two and a half miles to the crossing of Gladys Creek and up this creek about one mile to Gladys Lake. It has an area of about one hundred acres; lying on the north side of the creek. Had not the time to explore the right branch, which is said to have two or more lakes for its source. Because of beaver dams, and down timber from forest fires, this creek with

it's lakes have been lost to salmon within the past few years. I believe it could all be recovered by one man in ten days.

The freight train did not pass through today so of course I did not get the boat and as I did not receive a letter from Mr. Magill I am afraid he was not in town, and has not yet received my request.

Tuesday August 9, 1927.

Went south again this morning to the railroad crossing over the Little Susitna River, -six miles-, there were no fish present. I talked with members of the section crew, also with Mr. Heaven who has a mink ranch; they all living near by, but none of them have seen any salmon since the run of Kings. The report of the Native as to the "white man trap" in the lower river must be true.

The freight train passed through after I had retired last night but did not stop, so no boat yet, also there was a mail train through from Anchorage today and no letters.

Wednesday August 10, 1927.

Made a trip up to Big Willow Creek about six miles north of Nancy. Did not see one single salmon. Talked with several members of a bridge crew who are working over the creek; they say they have only seen a very few of the smaller species of salmon but the King Salmon run was very good. On the eleventh of this month last year I visited this creek at this point, and the Humpbacks with a few Cohos and Dog Salmon were so plentiful it was impossible to count them. Hundreds of them were already spawned out and were either dead or dying.

Thursday August 11, 1927.

Leaving camp this morning at an early hour, I worked out a portion of the left branch of Nancy Creek. It is about two miles from Lake Nancy up to the forks and about one mile further to the first lake on the left branch. The lake is about one mile in length and a fourth of a mile wide, with a slough letting out near the upper end on the left side connecting with a smaller lake. There was a beaver dam in the creek just at the outlet upon which

the beaver were still working. It was already sufficiently high to cause the water in the lake to overflow all of the lower grassy shore-lands. Also to form a positive barrier to the passage of fish. There were quite a number of rainbow trout, one foot in length, lying below this dam that had evidently dropped down the creek to spawn and now are unable to return. And as there is not water enough in the creek from here down to the main branch because of the sudden stoppage by these beaver for them to pass down to Lake Nancy and as the creek will not regain its normal volume of water until the beaver cease work and every bit of available overflow space is filled, I see no hope for these trout to escape being caught in the freeze-up. I took a snap-shot of this dam, if it proves to be sufficiently clear to illustrate, will be enclosed herewith as photo No. 6.

This stream and lake could be returned to the salmon at a cost low enough to be a good investment. There are two streams entering this lake, each having, it is said, a lake for its source. These two streams however, are too small for salmon to pass.

Temperatures: lake 62 degrees F., first tributary 50 degrees F., second one 51 degrees F., while the creek from the lake down ranges from 60 degrees F. to 52 degrees F., being influenced by springs.

I made no attempt to clear these streams of fallen timber as that would have been of no avail unless the beaver dams were removed also, and these I had no permit to molest.

The arm is still too lame to be of much use, it was only by keeping it bent in a certain position and swinging the body back and forth that I was able to row the boat.

Friday August 12, 1927.

It was understood before leaving town that in the event I did not receive word from Captain O'Donnell in regard to the beaver dams, that I should return to Anchorage by August 15th, for a further conference in the matter, and as I have received no word

from him yet, I am on my way in.

Leaving Nancy at 10:06 A.M. by train, I came to Wasilla arriving at 10:53 A.M., I spent the afternoon looking over the nearby portion of Cottonwood Creek and Wasilla Lake. There are very few salmon in the creek at this time, It is reported that a thousand or so have entered the lake, but it is the belief of the residents here that this run is far below the average for even short run years.

Saturday August 13, 1927.

The object in stopping off at Wasilla yesterday was to enable me to visit Wasilla Creek which passes under the railroad near Mile 155, being about midway between Wasilla and Katanuska Junction. I have understood this creek to be of minor importance as a salmon stream, and for that reason and lack of time, have passed it by. But while in Wasilla last month I was told by two or three different parties that Red Salmon have been taken in this creek, however upon inquiry of the men making this report, and others as to accessible tributary lakes to the creek, I found the evidence to be so conflicting that I had determined to visit these waters during the Red Salmon run this season, if possible to do so without neglecting more important work.

I left Wasilla this morning at 2:00 O'clock. Walked down the railroad track to the creek and worked it down to the tide lands about three miles. Did not see a salmon of any species. Three men who have been living for several years on the part of the creek visited, informed me that to their knowledge no Red Salmon had ever passed up the creek, but had been seen at it's mouth. They further said that the Humpback, Dog Slamon and possibly the Coho, used this stream each year to the extent the condition of the creek will permit.

Wasilla Creek is about twenty-five miles long. It has it's source in innumerable springs in the foot-hills, and so far as I

have been able to learn has no lakes, this is supported by it's low temperature; the average for the three miles worked out today being 45 degrees F.

Last year, while engaged in work on Cottonwood Creek, I had occasion to pass along this creek for a few miles termination just below the confluence of it's many tributaries, and there I found the water to be of sufficient volume to spawn salmon, and an ideal spawning bed. Today on the lower section I found the stream bed to be unsurpassed for natural salmon culture. All the evidence gathered is to the effect that salmon do appear in the mouth of this creek each year and that a few dozen individuals succeed in fighting their way up stream for a matter of ten or twelve miles, and the only reason they do not invade this creek in hundreds instead of dozens is obstructions of down timber. The removal of, which would prove to be a splendid investment.

After leaving the creek at it's entrance to tide lands, I walked on to Katanuska Junction, and there connecting with a main-line train at 11:15 A.M., I arrived in Anchorage at 12:45 P.M.

Within an hour after my arrival I called up the Alaska General Fisheries, and asked for Mr. Magill; after a short delay I was told that Mr. Magill was on the premises but could not conveniently come to the phone just now, but would look me up during the afternoon or evening.

Sunday August 14, 1927.

Mr. Magill did not look me up yesterday as promised and after waiting until 2:00 P.M. today I again called his office and was informed that Mr. Magill had taken the train this morning, 9:00 O'clock, for Seward on his way to Seattle. So I don't know yet why he did not send the boat or write.

Monday August 15, 1927.

Upon my arrival in town Saturday I found a letter awaiting me from Captain J. J. O'Donnell, Master U.S.F.S. "Kittiwake" to

the effect that orders had been received to close field work immediately for the season. An order I very much regret receiving. Not so much because of being thrown out of employment in the middle of the season, which of course hurts, tho I can easily make a living elsewhere, but for the reason that to my own personal knowledge there are beaver dams and other obstructions within the scope of my limited survey of this valley, in sufficient numbers and magnitude to constitute an emergency.

It is a matter to be deeply deplored, that the Bureau is so handicapped by lack of funds that they are unable to reclaim and maintain these waters and thus provide for the natural reproduction of the salmon, this being, by far, the most important factor in the conservation and perpetuation of the industry.

There has been an unusually low run of salmon in Cottonwood Creek, Fish Creek, and the Little Susitna River so far this season, and upon my return to town I learned that the two canneries operating here have put up a greater pack than any previous year.

These two facts: The exceedingly low run of fish above the fished grounds, and the excessive pack taken from these grounds, indicate clearly that the escapement was nowhere near a just division. This was made possible by the fact that the territory covered by Captain O'Donnell and myself is so large, and the nature of our work together with the lack of facilities for prompt communication kept us too widely separated.

I was up on the creeks believing the short run was caused by a depleted return from the sea; while the Captain and the packers having no means of making a determination as to the escapement must necessarily act on the assumption that it was sufficient. Weirs are very much needed.

As already mentioned: I have arranged with a few residents in the vicinity of the tributary waters of Knik Arm to report their observation, at intervals, of the salmon in the waters near their respective homes. A few of these reports have been received and

are enclosed herein. When all are in, after the close of the season I shall forward them to the Bureau.

In closing, I shall take the liberty to recommend:

A weir in Fish Creek- Knik Arm to Big Lake - to count escapement 1928.

A weir in the Little Susitna River.

That the reclamation work begin not later than May 1st, and continue until the freeze-up.

That as a matter of protection in case of an accident, and as a matter of economy, two men work together in the field.

That a way be provided to pay the traveling and freight expenses of the men as they go; that they may not be compelled to borrow the money as I had to do this season in order to carry on the work.

That the check be sent directly to the man earning it instead of to a third party whom he may not meet for several weeks.

Very respectfully submitted.

D. E. Wilson