Dipneting At Hagwilget Canyon, Terrade-Lakelse Area, 1949.

From observations of the indian Fishery at Hagwilget Canyon, on the Bulkley river it was found that a fairly large percentage of fish were lost to the pawning Ground and to the indian by the methods used in fishing. Gaffs have been used at this point for some time by the Indians and due to the turbulence of the water

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and the steep wall of the Canyon a percentage of fish tear of the hooks and fall back into the river to die. These fish can be con-sidered lost to the Spawning Grounds as well as to the Indian. A trip was made in July this year to the Fraser Canyon, accompanied by Inspector Elliott, who has the same problem at horricetown Falls, to study Indian fishing methods in that area, with the idea of introducing dip nets in the Fishery at Hagwilget and horicetown.

A sample net bag was procurred from Indians in the Fraser Canyon and brought back to Hagwilget for experimental fishing. As it was impractical to transport nat frames by car, they were

made up in this area. The bag of the net used was about 58 inches long and 30 inches wide at itss widest part, tapering towards both ends. (See Sketch). The depth of the bag was approximately 40 inches. It was constructed from heavy gillnet hanging twine about 3/32 in. in diameter, and with a mesh of 3g inches.

The frame was made by bending two sapling spruce and binding them to a pole about 15 feet long.

The net was attached to the toe of the frame and to 5 rings on either side of frame. These rings slide up or down on the frame. .. cord is attached to the uper end of the net and drawn tight to keep the net open in the water. The net is fished in a back eddy, thich keeps the bag extended.

The draw cord is held in the hand and as soon as a fish hits the bag it is felt on the draw cord, which is quickly released and the net given a quick upward jerk. This causes the rings to slide down the frame and the top of the net go therefy at the toe of frame reventing fish from escaping. With the bag closed the operator can lift the net straight up, without fish escaping, whereas if it was not closed would have to be lifted as a brail. In places where the water is very fast the net con be held in place

by inchoring it to the shore by a light rope. (See sketch). This

takes the strain of the operator. The net can also be used on a point where the water is fast. In this method the net is put into the water as f r upstream as possible and swept downstream with the current as pulckly as possible. When а fish hits the net the cord is released and fish trapped in the big. This method can only be used where the operator has good footing and lots of room to swing the net.  $\pm t$  is very strenuous work and not popular with the natives.

on returning to Hagwilget Banyon Fron the Fraser it was found that the peak of the sadkeyerun had passed that point and the majori majority of fish caught were Finks which are not used to any extent by the Indians. Finks are a much alower moving fish than Sockeye tend to be easier caught. and

There were only two places on either side of the canyon in which the nets could be used with any de ree of success without building an elaborate set of staging or platforms. Some of the best looking back eddys could not be reached on account of the high steep walls of the canyon.

In the eddys that could be reached it was found that perhaps 6 or 8 fish could be taken in the first few minutes of fishing, but after a few sets had been made the fish moved out in the current and could not be reached. Fish did not return to these eddys for some time after they had been disturbed. It was found also that due to the excessive turbulence of the water the net was only open half the time and the rest of the time would be tangled in the frame in other words the eddys were only steady about half the time. This condition changes with the rise or fall of water and while fishing would be fairly successful on one day a rise of only a few inches in water levels sould prchibit fishing in the same place the next day.

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Fage 2. Use to the lateness of the season when these experiments were carried out, this method of fishing can not be considered to have had a fair trial. Euch more work must be done and different types of nets and twine tried beforebit can be proved successful or not. It was found that the twine usedin the muddy water of the Fraser river was not suitable in the clearer water of the Bulkley.Nets of lighter twine and colored to blend with the water will be tried next season. An attempt will be made to make use of other eddys that could not be reached this year without staging.

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The reaction of local Indians was varied.Some were very much in favor of the Idea while others appecially the older ones did not think much of the new kind of fishing.one young Indian made a net out of wire that worked very successfully in one place. It is hoped that with a little more work on this type of fishing and a little more success in the operation that they will all be swung over to this method. More education in the reason for the use of nets, and conservation in general, will help some.

Er.Boys, Indian Agent at Hazelton has given his support to this undertaking and has put in a requisition for twine to be used in making nets. He is of the same opinion as myself as regards to this type of fishing. Namely, that if this type of fishing can be put into effect successfully, that/it will save considerable fish for both the Indians and the Spawning Ground, but a lot more work has to be done before it's effectiveness can be proven.

Terrace, B.C. January 21st 1950.

Volions. Giraud, Fisherics Inspector.

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## TERRACE - LAKELSE AREA, DISTRICT NO. 2

Terrace Lakelse District was increased this year to take in the area from Salvus to Scotia Creek. This takes in the Booming Ground of the Columbia Cellulose Corporation and puts all of their Skeena River operations in the Terrace Lakelse Area.

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At present the only work done at Scotia Creek by this Company is the setting up of a boom camp. Other work carried out by this Company during the year was the clearing out of two large logjams, in the main Skeena River in the vicinity of Salvus, and the clearing of a large holding ground on the Kitsumgallum River near Deep Creek.

At the present time the Company has not done any logging themselves, but have a large stockpile of logs on their holding ground that they have purchased from local mill-operators. The sawmill operators who have supplied these logs are using their first grade timber and turning the lower grades over to the Cellulose Co. for pulp.

94 Indian Fishing Permits were issued in this Area and the catch was slightly lower than 1948.

Sockeye Springs Coho Steelhead Pinks Chums	1949 11,190 1,046 2,534 890 1,573 43	1948 13,495 1,886 1,975 1,217 1,378 99 99 1
TOTAL	17,239	20,014

A start was made, in an attempt to introduce dipnetting at Hagwilget Canyon, where the Indians lose and spoil a large number of fish every year with their present method of gaffing.

About a week was spent in the Fraser Canyon studying the methods used by the Indians in that Area. Sample nets were procured and tried at Hagwilget with only moderate success. On returning from the Fraser Canyon it was found that the run at Hagwilget was past its peak and only spotty fishing was the result.

It was found that the heavy twine used in the muddy water of the Fraser was too coarse and too white for the clearer water in the Bulkley River, and better results will, no doubt, be obtained by use of a lighter and coloured twine. The Indian Agent, through the Department of Indian Affairs, at Hazelton has undertaken to obtain some lighter, coloured twine this winter, and some more nnets will be tied for use next season.

Sport fishing was about average through the District, with better than average catches of Coho taken below Hagwilget Canyon by Sportfishermen. Steelhead catches were slightly lighter than last year.

No abuses or violations we'e found and no arrests were made. Steps taken for prevention of illegal fishing were patrols of the area by Guardian and Inspector as frequently as possible and the posting of signs in conspicuous places. Regulations were discussed with fishermen met on patrols.

Periodic visits were made to sawmills and logging operations in course of patrols and only one instance of slashing left in a stream found. In this instance a work to the operator concerned was sufficient to remedy the situation.

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Spawning Ground Inspections were made throughout the area during the Salmon Spawning.

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#### SOCKEYE

The sockeye seeding, taking in the whole area, was fair and com-pares favourably with 1947. Lakelse Lake was very light compared with either 1947 or 1948.

A late run of sockeye was found spawning in Kitsumgallum Lake on October 27th this year. In other years spawning in Kitsumgallum Lake on by September 30th in this area. The seeding for the area without counting at Kitwanga Lake, which is all lake spawning and can not be estimated, would be about 27,000 sockeye. This is much lighter than 1948, which was 59,000, but alittle better than 1947 estimate of 24,000.

Reports on Kitwanga Lake would indicate a normal seeding.

#### SPRINGS

The spring spawning in this area is scattered, with perhaps the heaviest taking place in the Kitsungallum Area, which due to the silty condition of the water is impossible to estimate. From observation of small streams and the Indian catch, it would appear that the escapement was average, perhaps slightly lighter than last y

#### PINKS

Pink seeding while not approaching 1948 figures can be considered much better than the cycle year of 1947. Lakelse River was about five times heavier than 1947. Kispio: River was much better than the cycle year of 1947 and near to 1948. Kitwanga River was heavier than 1947 or 1948.

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This variety not found in this area in large numbers and escapement this year was very light compared to 1947 or 1948. Extu Slough which carried about 900 chums last year was very light with only 50 this year. Other small streams that usually have from 100 to 500 fish did not have one fish this year.

#### <u>COHO</u>

Coho spawning, on the whole was very good this.year. Lakelse River probably accounts for the heaviest concentration with from 20,000 to 25,000 fish. All streams showed as good a seeding as the cycle year and in most cases better than the cycle year.

#### STEELHEAD

Steelhead run was lighter than last year, last year being better than average. As this run is widely scattered over the area the spawning takes place throughout the winter and spring, an accurate check can not be made on this variety. Any information as to size of run is taken from the Indian catch and from catches by Sportfishermen.

#### GUARDIANS

Only one Guardian was employed in this area. This Guardian, G. F. Ironside, with his personal car was employed from June 1st until October 31st to patrol the area in the vicinity of Hazelton. This man took care of the Indian Fisheries, at Kitsequecla, Skeena Crossing, Hagwilget Canyon, Hazelton, Glen Vowel and Kispiox as well as doing the Spawning Surveys in that area. His services were satisfactory.

#### EQUIPMENT

A panel delivery truck was supplied to this area this year and a five horsepower motor for use with cance, a rack was built on top of this truck for carrying the cance. With this combination I can more than double the number of trips around the area with less effort than in previous years.

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NNUAL REPORT - TERRACE LAKELSE AREA

### SEAL HUNT

A Hair Seal hunt was planned and carried out with the help of Inspector L. J. Gelley from the Babine Morice Area.

In all 204 seals were killed; 112 of these were retrieved from the water and measurements and stomach content recorded for the Pacific Biological Station. This hunt was more successful than the 1948 hunt on which 152 seals were killed and 58 retrieved.

If this seal hunt is to be continued over a period of years, a heavy repeating shotgun, preferably a Winchester, should be made available. This shotgun chambered for the 3 in. shells was seen in use this spring and tried out for a short time, and its added range and killing power would greatly increase the numbers killed.

#### WEATHER CONDITIONS

There was no spring flood this year as snow melted gradually and water came down slowly. Water levels held up well until fall when there were several flash floods. Inspections were made in some of the key streams in the area, after these floods, and little damage from scouring or silting found.

Stream levels dropped quite low in the momth of December due to a prolonged spell of cold weather. Streams were all frozen over by the end of the month but there is enough snow in most cases to prevent frost from penetrating into the gravel and do not anticipate much loss from this cause as yet.

January 5th, 1950.

V. H. B. Giraud,

DISTRICT NO.

Fisheries Inspector, Terrace, B. C.

Smithers, B.C. December 31st. 1949.

G.S. Reade, Esq., Regional Supervisor of Fisheries, Prince Rupert, B.C.

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Herewith please find my annual report of the fisheries in the Babine - Morice area for season 1949.

### Trend of the several Fisheries.

As there is no commercial fishing in this area it is only possible to follow the trend by watching the Indian fishery for food purposes. This is fairly constant through the years with a gradual decline in most cases. The reason for this being that the Indians are becomming more civilized, eating more of other types of food. This relieves the salmon to some extent. Sockeye are the main sourse of food with Moricetown Canyon as an example they took 7,590 Sockeye, 2,284 Coho, 1,500 Spring, and 169 Steel-head, or a total of 11,543. The catch for 1948 being 13,050 showing the slight decline. The Babine Lake area showed a slight increase in the catch, the reason being that several families have moved to Fort Babine from Bear ake increasing the population Catch for 1948 being 26,547, for 1949 being 28,525. The sport fishermen reported fair catches although more spotty than the previous year. Good catches of rainbow, char and Dolly Vardon with some cutthroat. There was very excellent fishing in Morice "ake although this is very seldom fished.

B. Condition of fleet of fishing vessels. The number of boats are increasing on Babine Lake as Indians are becomming more prosperous and are now building boats and procuring outboard motors. They use flat bottomed river boats to tend their nets although some dug-outs are still used.

C. Development or changes. The Fisheries Research Board operated the Salmon Counting Fence on the Babine River, counting salmon until October 4th. when the fence was removed. The Fish Culture and Development Branch have done considerable work in this area this past season including Stream Clearing in Babine Lake, clearing or partially clearing seven streams with a stream clearing orew. A survey orew under Engineer J.B. Dyson made a survey of the Nanika river with reference to water levels, spawning areas, and a map. Biologist J. Stokes made a trip up the Morice River examining the different streams from a biological view. Engineer M.H. Campbell took watermlevels and got contours of Moricetown Canyon in preparation for a fish ladder to aid fish at this point. This place will become more important depending on the water lost to the Aluminum Co. for power development.

An effort was made to get the Indians at Moricetown Canyon to use dip nets in taking their food supply of salmon. This needs considerable effort to convince them as it is much easier to use a gaff than the dip net. The main run had past before we were able to do much experimenting with the result that most of the salmon were taken by gaff. A more concentrated campaign is scheduled for next season.

#### D. Abusements

There were very few abusements this year, every effort being made to keep them at a minimum.

#### Close Seasons

Close seasons were very well kept this year with no trouble being experienced in enforcing them.

Steps taken for prevention of illegal fishing. A Department owned truckwas given to the area in January and has been used extensively in making patrols to prevent illegal fishing and to stop the sale of fish by Indians,

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Two Inspectors were in the area, the junior Inspector doing a patrolmans work in the Babine # 2 area.

A Patrolman in the Babine # 1 area watched Indian fishing and for any illegal fishing.

A Guardian at Moricetown Canyon watched Indian fishing and for any illegal fishing.

#### The protection of waters frequented by fish. G.

The panel truck was used to make an inspection of all the sawmills in the area to check on sawdust disposal and for slash in the creeks. All sawmills were co-operating very well although some mill owners did not know that there were laws governing such, they however had not been violating them.

Conditions of Fishways. H.

There is only one place at Moricetown Canyon where a few rocks were blasted years ago, this is in good condition and is looked after to the best of our ability.

Spawning Conditions. I.

Sockeye.

The sockeye run started out very slowly in Babine Lake with the main run arriving about Aug. 24th. when generally the main run is through the fence. The first part spawned on the upper tributaries of the Lake which was considered adequate to give the grounds a light to medium seeding. The main run arriving late concentrated on the Babine River with a heavy seeding. This part of the River is very difficult to count or estimate because of its size. The count at the fence was 509,138 sockeys comparing fairly well with previous years. The first part of the run were small and medium fish and the main run into Babine River almost all large fish. Approximately 2% of the entire run could be called Jacks. The sex ratio averaged out about even although some creeks were one way or the other slightly. It is very difficult to compare with brood years as the age grouping in this river system changes each year. The 1949 run in Babine river was some heavier than

either 1947 or 1948, The 1949 run in the tributaries of the Lake somewhat lighter than either 1947 or 1948.

There was a fairly good escapement to the Morice Lake area, it does not quite compare with 1947 or 1948, both of these years being heavier. The fish were of medium and large sizes with sexes even. A Medium escapement reached the ear take area with average fish and sexes about even.

### Spring

In Babine River springs were somewhat lighter than 1947 but heavier than 1948. There was an excellent escapement into Morice River comparing well with any run seen there so far. There was a wory heavy run on Bear River but unable to make any comparisons with other years. Springs in general were large fish with sex ratios about even,

### Coho

A medium run passed into this area, about equal to 1948, the general size of the fish were medium to large with very few Jacks. A good run passed up the Bulkley River but we were unable to get a good count of them on the spawning grounds.

#### Chums

Five were counted passing through the counting fence on the Babine River.

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#### Steelhead

Most areas received a medium run of large fish although lighter than 1948.

Dolly Vardon This predator abunds in Babine Lake and constitutes considerably to the depletion of eggs and fry. They are also · quite a favorite with sport fishermen because of their size.

Trout fishing was not as good as previous years, being more spotty, fishing could still be called excellent.

As far as possible the spawning areas have been well supervised. There are of course many places in this district which are impossible to keep track of, some have not even been properly explored. There was a shortage of water in some areas but did not effect the spawning to any extent, rains finally came relieving the shortage.

### J. Guardian Service.

The Guardian service comprises a Guardian at Moricetown Canyon and a Patrolman at Fort Babine, both have been quite conscientious in their work. The Guardian at Moricetown used his car to carry out patrols and to stop illegal fishing and selling of salmon. The Patrolman was satisfactory although it is quite difficult to find the calibre of men needed to meet the requirements and to live in this isolated place for five months employment.

#### K. Summary

Conditions have been fairly good in all parts of the area with much work being done with regards to stream clearing, engineering work with respect to how the Aluminum Co. will effect spawning conditions and engineering work in preparation for a fishway at Moricetown Canyon. The Department owned truck was used to give as much assistance as possible by transporting supplies etc. to these different camps. All men employed worked hard and managed as well as san be expected. Water on the spawning grounds became quite low on the upper parts of Babine Lake but there was sufficient to accomodate the number of spawning salmon. Heavy rains finally brought all streams up to a good level.

Wh. C.C. W.K. Elliott Fishery Officer.

PINKS

Supplies of spawners were generally light to the whole area. POpulation was estimated at 34,660 parent fish, and of the amount 28,500 were observed in the Babine River. Reasons for the light return are not known, as the pink run was reported as satisfactory in the lower reaches of the Skeena.

# 1673

#### SPAWNING REPORT

Smithers, B. C. December 10, 1949.

### BEAR LAKE AREA 1949

Inspector Gelley and I spent four days in this area and found that we only had time to make a very preliminary idea of what is in that area. In future a more thorough inspection will be necessary.

As there were only two Indian families in the area and they were going to leave there were only about 400 fish taken for food purposes.

<u>Variety</u> Intensity Stream 1943 1944 1945 1946 1947 1948 1949 Azuklotz Creek Sockeye Med. F. Coho Had not entered and no idea how many. L. ear River Springs hvy. Pinks hvy. G. Steelhead Known as an excellent steelhead area, numbers not known. F. Salix Creek Sockeye Med.

Coho Med. reported by Indians

Lake Spawning Sockeye hvy.

It was estimated that there was approx. 10,00 sockeye spawning along the bars of the Lake. There is plenty of evidence to this with dead fish in places where it would be impossibl for them to drift to.

The Indians reported a good run of Sockeye and coho that go into the Lake and that there was an excellent run of Springs. The Pinks did not interest them but from evidence seen there seemed to have been a fairly heavy run.

> "W. K. Elliott" Fishery Officer.

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Smithers, B.C. Sept. 26th.,1949

G.S. Reade, <sup>E</sup>sq., Regional Supervisor of Fisheries, Prince Rupert, B.C.

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Herewith please find a report of Spawning area trip into Bear Lake.

. Sept. 17. After getting supplies at Burns Lake it took about 2 hours to take off and had to lighten the load considerably leaving the mechanic behind. We flew over Taltapin Lake and down 15 Mile creek to look at the area above the falls. Then we flew along the upper reaches of the creeks of Babine Lake to get an idea of the source for each of these, stopping at Topley Ldg; so that Insp. Gelley could get some clothes etc. We also picked up Father De Keyzer & brought him into Bear L\_ke to his church. He returned with the plane to Burns Lake.

Sept. 18. From our camp at Hanawald Point we went by boat down Bear River about 1 mile and then left it. This boat belongs to the Fisheries Research Board and we were fortunate in being able to use itas there are no other boat available there. This boat is much in the need of repair and kept on man busy bailing. On inspection of the Bear River wefound a lovely run of Spring salmon estimated at between 45,000 and 50,000 . All large fish with sexes about even. It was a very beautiful sight. There were a few Finks still spawning and several thousand dead. There is a small falls about 21 miles downstream where the Springs and pinks have difficulty, only a few eprings were seen above. There were about 2,000 dead springs observed along the banks all spawned out. The area should receive a heavy seeding.

There are two Indian families still on the River with a total catch of 210 Sockeys and 180 Springs for food purposes They are moving out in Oct. that is why they have taken so few fish. The whole day was very wet and we returned to camp with out a dry stitch of clothing.

Sept. 19. Weather much clearer and we were able to Inspect Salix Creek showing 125 alive and 25 dead. We had missed the main run however and it is difficult to give an estimate as there were many birds to take the dead away. The Redds were well worked and we judged that there was a medium run of Sockeye. This creek is difficult to inspect because of overhanging willows and alders and many deep pools. Indians told us that there had been a good run of sockeye and coho into the Lake. The coho had not as yet entered the creeks. We found the same conditions existing on Azuglots Creek but noticed a school of Coho about to enterthe creek.

Beach spawning is quite evident in many parts of the kake from the numbers of dedd on the beach and floating on the Lake. The actual beds we e not seen though. The absence of all wild life was noticeable, only one bear track seen.

Sept. 20. We tried to make an inspection of the Lake spawning but found it unsuccessful because of heavy rain and a very strong S.E. wind The balance of the day being utilized trying to get warm and dry, and making out rough reports. It is estimated that have there would be about 5,000 dead Sockeys on the beaches.

Sept. 21. The plane arrived at noon and an idea of the country was gained by following the Bear through to the Skeena down it to the Babine River, up it to Babine Lake leaving Inspector Gelley at Topley Landing, because of shortage of gas we then landed at Smithers. There were no severe obstructions seen on this trip, two difficult places were seen on the Babine River about 15 miles below the fence where there was fast shallow water. Several streams were observed which looked as though Salmon would enter and spawn. They were all very inexcessable though.

I wish to thank Pilot Mc Queen for the splendid service and Co-operation shown us on these Trips. I shall be pleased to have him make any other trips necessary.

will Elina Fichinis Inspector