

1960

Weather Conditions.

The winter conditions carried over from 1959 into January 1960 were generally favorable from a fisheries standpoint excepting the one short flash flood that occurred in late December. There was no evidence of any serious scouring out of Redds in the Lakelse area, although Williams creek- considered the main producer of Sockeye in that system was in full volume flood and very muddy for a week. Snowfall 1959-60 averaged about two feet on the lower levels, and appeared normal on surrounding mountain levels from the 1000 foot level to the peaks. Spring runoff started late in March and continued slow throughout the summer months resulting in higher than normal water levels providing adequate spawning levels in most of the rivers and creeks of the area. Water temperatures during spawning period August to November were not excessive, they ranged from a low of 38 degrees F to a high of 44 degrees on the main Kispiox and Allistair lake systems. Heavy rains and strong Southeast winds prevailed generally from early October into November, bringing water levels up to near flood crests until the second week, when a drop in air temperature to a minimum 19 degrees F tightened up the hills runoff and stream levels dropped accordingly. December started out clear and pleasant until week 18th. - 24th. when heavy rains again caused a flash flooding that repeated the process of full volume muddy conditions most noticeable in the Copper river and Williams creek in the immediate Terrace region.

Through the courtesy of the local department of Transport staff the following table of air temperatures and precipitation was made available to give a record for 1960 that may be of interest. Maximum and Minimum air temperature and followed by water content in that order.

Jan: 43-04-5.7 Feb: 44-15-3.88 March: 51-10-5.81 Apr: 70-28-2.59
 May: 72-32-1.81 June: 73-33-1.46 July 90-40-2.00 Aug: 93-40-5.32
 Sept: 78-37-1.62 Oct: 60-34-10.44 Nov: 48-19-5.38 Dec: 40-12-5.17

Briefly for spawning follow up conditions the winter 1961 to date middle of February conditions have been favorable with mild temperatures not yet down below 12 above zero minimum. A quick rise and fall in stream levels occurred weekending February 4th. when heavy rainfall of 5 inches in the twenty-four hour Saturday-Sunday caused an average six foot rise in most of the local streams. Levels then quickly subsided and no severe scouring of the Lakelse streams have been noticeable. Less than normal snowfall to date, a maximum of sixteen inches that mostly fell in early February has now been cleared away by mild temperatures and occasional rain showers. Normal stable low flows with an average 10 degree lower temperature readings reported for the interior Kispiox-Hazelton region that has not experienced the rainfall or near flooding condition of the lower Skeena portion.

Spawning Survivals:

The spring 1960 Pinks investigation program carried out by the staff of the Fisheries Research Board in the area on the Kispiox-Lakelse and Kitwanga rivers that the writer was fortunate to observe and occasionally assist with for educational purposes revealed a better than average output of Pink salmon Fry. Kispiox indicated a 12% survival rate eggs to Alevins, Kitwanga 14% and Lakelse 22%. As it is generally conceded that a 10% survival is good for Pinks, this indicates that 1960 spawning output, at least for Pinks was good. Roughly estimated by indexes used the outputs in numbers were in the order of sixty-eight million from Kispiox: Twenty-nine million out of Kitwanga and Twenty million from Lakelse. The escapements to those rivers in 1959 for Pinks was good to Kispiox with 650,000 adult Pinks estimated, Kitwanga river had a spawning run of approximately 250,000 better than average or brood year, and to Lakelse 185,000 slightly better than brood year.

Spawnings: 1960

Sockeye: Pinks: Chum & Springs adult migrations.

Movement of Sockeye in the Skeena adult migration pattern first became evident to this area's Lakelse system on May 25 when a few were observed in the estuary of the river at the confluence with Skeena. Movement up the river past Terrace first was indicated by Indian Food Fish effort by a net operated at Copper City below Kitselas Canyon, a male Sockeye was landed on Tuesday June 21, thereafter a slow buildup carried through to end of September when nets operating at Hazelton and Kispiox indicated an end to the movement upstream. The Terrace Indian net fishery indicated the end of the run passed through September 10-15. It would appear that peak passed through Terrace around end of July into first week of August.

Pinks were first noticed July 21st. at Terrace and movement continued as light through to weekend September 24th. It would appear that the main body Pinks entered to parent streams between 10th. and 18th Sept.

Chums that are local to Kispiox system appeared in nets first at Terrace and Kitsegukla on the 11th. of August. a light movement through as was indicated on spawning ground surveys on Kispiox river showed spawned out decaying fish on 10th. September. Coho appeared early in August as on the 11th. the first ones showed up in the Indian Net fishery, good signs of a steady run of Coho through to Kalum River and Kispiox up to November 27th. inspections. Spring salmon runs appeared average strength and a fair return was evident at Skeena-Kalum confluence and scattered through Kalum tributaries, particularly the Cedar River flowing into Kalum Lake.

Spawning assessments.

Sockeye overall assessment light in comparison to brood year with Lakelse only considered similar to the 1956 escapement in population estimate, Kispiox runs appeared slightly down from brood comparisons, but all of the available stocks may not have been observed as only a one day survey was possible on account of weather. Allistair Lake also was only seen once in late August (26th) and it appeared to have a good seeding then, although previous years observations would suggest that a late run could be expected well into October.

Pinks:

An assessment from observations and fence count data suggests a light overall area escapement for 1960 down approximately 50% from brood year strength. My estimates indicate a population in the order of 200,000 with Lakelse taking 111,000 Kispiox approx estimation 60 to 65,000 and a Kitwanga run of 25,000 from fence count data provided. Very few Pinks were visible to this area staff in the lower Skeena usual locations, the higher than usual water levels and covered bars did not provide good observations, only noticeable Pink carcasses observed were at a slough at Shames and off the Zimacord river mouth bars.

Chums:

Those observed indicated a light overall average year movement upriver with main body seen in Kispiox lower reaches and side channels.

Springs:

Average assessment for 1960 as good signs were indicated at Kalum river and Skeena bars in that vicinity; A light few signs observed in Kispiox river from 25 miles upstream to confluence with Skeena. None observed in the Stevens-Club upper Kispiox grounds. Overall assessed normal Medium

Coho:

A full coverage of all Coho stocks was not possible as delays by weather delayed inspections past peak movement time, and only scattered few were actually observed on the grounds of the Kalum system. Gitnadoix river, a good producer was not inspected in season 1960 so assessment may err on the Coho as none were seen this year in or near that river, whereas in previous year and brood year 1957 it was estimated to hold a run of 10 to 20 thousand. Good stocks were observed in Stevens Lake outlet stream on Sept. 29th. and fish seen were in my comparisons to coastal runs all of larger size than usual to coastal escapements. Lakelse River system received a better than brood year stock as comparison estimates and fence counts indicate. I would assess Lakelse as 25-30,000 adult Coho run as compared to a 10-20,000 run in 1957. An average good year overall assessment recorded.

Indian Fishery:

The numbers of families and the number of permits issued annually varies depending on the movement of the population to the coastal commercial fishery. The catch total fluctuates accordingly as the table hereunder indicates. Contacts and observations of the effort suggest that with the exception of the Sockeye requirements of the Kitwancool residents all obtained their annual fish food needs. The run of Sockeye to the Kitwanga -Kitwancool river system was light in 1960, of short duration during high water period, and only a few (4) nets operated at the lake outlet had any degree of success. Forty Sockeye was known to have been taken there in 1960 as compared to a reported catch of 875 in 1959 and 2,000 in 1958. Pinks provided the bulk of the catch to the Kitwancool village with the odd Spring and some Coho taken in the six nets operated. Kispiox village operations provided good catches of Sockeye, all were satisfied there. At Skeena Crossing- Kitsegukla a heavy catch was taken for the 12 nets when villagers reported and observations of smoke houses indicated 3,000 Sockeye taken from the Skeena at that point. Requirements at Hazelton Glen Vowell were readily obtained. Terrace-Usk-Copper City residents reported a longer period was required this year to obtain annual need as water levels restricted to some degree, and the light overall runs were scattered in the migration movement upriver. The HaHagwilget band requirements were augmented by a program instituted by the Fish Culture Branch of the Pacific Area to supplement and provide a measure of assistance to that band in view of the removal of the obstruction at the Hagwilget Canyon by the department. A full report of this Hagwilget-Fish Culture operation has been issued and the data indicates that 1,051 fish was distributed to natives of the village from the fishery carried out by personnel of the Fish Culture branch.

Permits were issued to 155 applications in 1960 as compared to 181 in 1959 and 204 individual families in 1958. Nets operated do not necessarily total the number of permits issued. Many families are left behind when menfolk move to the commercial fishery, and although in possession of a permit to comply with regulations of possession of fish, these family members -women and children- can be provided with food requirements by operation of perhaps one net handled by a one or two person effort. The trend indicated is towards more modern methods of preservation of the fish product by canning, salting, drying rather than any increase in number or upkeep of smokehouses, these new trends techniques will present a problem in controls of this fishery to deter possibility of illegal traffic-bartering with Whites for gain and such, as the natives now can take the fish from the river and freely move around with it in possession as long as the activity is confined above a commercial fishing boundary. Possession by an Indian off a reservation or in transit to the home inside the commercial boundary applicable to this area -Terrace/Lakelse gives a wide latitude for traffic in fish other than for own consumption, and poses a difficult problem to resolve in attempting to minimize the possibilities of abuses of the privilege. There is no evidence of any increase in abuses in this area.

Table of catch and families; 1955-1960.

<u>Year.</u>	<u>Sockeye.</u>	<u>Springs</u>	<u>Coho</u>	<u>Steelhead</u>	<u>Pinks</u>	<u>Chums</u>	<u>Families</u>
1960	11,282	841	1,700	131	1,010	162	155
1959	24,716	5,541	8,396	637	2,856	1,004	181
1958	31,000	2,400	8,750	1330	11,400	900	204
1957	34,700	3,170	8,750	980	17,500	600	208
1956	10,750	2,000	3,100	1,350	1,200	200	162
1955	5,275	1,310	2,330	1,010	1,550	140	132

In view of the trends of modernization, processes of intergration and intermingling with other nationals, off reservation domiciles, and less dependency on fish for food purposes I would recommend a review of the existing applicable regulations to meet the problem the latitudes of the regulations now permit.

Logging & Lumbering:

The logging and Lumbering industry in the area in 1960 increased to the extent of a one-third better volume of production than 1959. In 1960 approximately 225 million BFM of logs and one million lineal feet of Poles were scaled in the immediate Terrace area. Truck and rail facilities handled approximately 209 million BFM of logs and water towing on the Skeena to Tidewater amounted to roughly 16 million board feet. There was no log towing or log drive in the waters of the Kalum system in 1960. This is expected to develop again 1961. There were eleven logging outfits operating in the Terrace district in 1960, which appears similar to records of 1959. Approximately 550 men engaged in logging industry in this area. Columbia Cellulose engaging more than half of the total employed. Main operations carried out on that company's management licence in the Kalum to Nass River section. Skeena river west operations on the South bank of the river continued steadily extending further west, and an indication by surveys party reports would suggest an increase in logging operations still further west to tie in with new management licences extending eastward from Scotia river may be expected in 1961. The impact of the new Prince Rupert sawmill will show more activity along salmon streams of the lower Skeena south bank. Booming grounds and holding area for Lakelse and Skeena south bank area had the mouth of Lakelse River at the confluence with Skeena added in 1960, although to date no activity at that location commenced. It is expected that lease will be obtained for 1961 operations. Departmental approval of the site was obtained in 1960 with protective clauses to safeguard fisheries interests on the Lakelse river in force. Hemlock and Spruce and Balsam the main species logging. The Celanese mill at Port Edward the main processing plant for pulp grade timber of the area.

The sawmill operations in the Terrace area were increased by the addition of one large mill in 1960 'Skeena Forest Products' commenced operations in August with a daily capacity of approximately 64 Thousand BFM in comparison to the previous largest with a 24 thousand daily output. Approximately 200 men engaged in mill operations in 10 operating plants. An overall Terrace daily sawmill cut volume approximates 200 Thousand BFM. Activity in Pole cutting was very active as demands for Hydro and export use were strong in 1960.

High productions in all phases resulted in an increase inventory stock of timber products that curtailed operations from middle of December to date Feb. 1961 when cutting has been reduced to approx 2/3 of pre winter cut, although export and shipping locally is again at capacity rate.

There was no pollution problems from logging or sawmill operations detected during 1960. Sawmills not situate in close proximity to water courses excepting the new mill that is on the Horseshoe Terrace drainage level that empties into Skeena. No evidence of any millwastes in the creek flow as the incinerator is close to the source at the mill.

There was one active sawmill operating in the Kitwanga -Kitwancool area that provided some employment for the natives in that valley, poles active activity there also into Kitwancool valley by mostly Indians there. The Hazelton-Kispiox mill and logging operations appeared up to the intensity of past years reports. There was no evidence of the indicated sawmill operation on the Kispiox river as it appears that the enterprise was abandoned. This was started 1959 approximately 25 miles above Kispiox village and a tressel crossing was proposed for the river. This was observed removed with river bank abutments only remaining when observed during spawning inspections in September 1960. Columbia Cellulose Company opened up the Copper River licence operation road past the canyon during winter 1959-60 to reach their large plot in that watershed where operations are expected to commence in 1961. Timber sales have increased from 4 in 1959 to 14 in 1960 and operating quotas effective 1960 will increase the activities towards fuller use of and smaller logging operations becoming more numerous. It is reported that a stepped up logging developments can be expected for the Lakelse and Kitimat watersheds in the coming year. A very satisfactory arrangement exists in district No 2 where working clauses to protect fisheries interests are included in licences issued by the Forestry department of the Province.

Sport Fishery:

There were 1,256 resident angler licences issued through Provincial Govt. agencies and 37 Non-resident (U.S.A.) licences issued for the 1960 season. The trend indicated was towards an increase in visitor anglers, many more USA sportsmen than licences issued were observed and reported, most had licences issued previous to arriving in the area. 15 trailer camps were set up on the Kispiox river and Indian reserve land in that region. Good catches of Coho and Steelhead were reported for Kispiox. Hotel facilities were utilized more in 1960 as contacts reported a better than average year catch inducements attracted 25-30 more revenue producing anglers to the hotels in the Hazelton area in 1960 than the previous year. The Kalum and Lakelse rivers were fished heavily during coho runs, and the Kalum open portion below the CNR bridge provided the best Spring salmon catches. 60 to 70 lb. springs were noticeable in catches observed in the Kalum estuary and Skeena confluence. An estimated 250 Springs taken from Kalum mouth would be a conservative total. and an estimated 1,000 Coho from Lakelse River, good spawning runs provided the anglers with sport stocks. Pinks were noticeably in abundance during the fresh Coho run period in August-Sept. in Lakelse and the nuisance angle by restriction forbidding taking of Pinks requiring the anglers to attempt to avoid them and the patrol activity keeping the Pink run under observation deterred many more than would normally have operated on the Lakelse from operating. There were as many as 100 anglers on a 500 yd. stretch of the Lakelse near the Research Fence at favorable weather weekends. Some steelhead were taken from Lakelse in October also indications of a fair run throughout the main lower Skeena systems. A Steelhead Derby commenced in December into January 1961 with approx 70 anglers engaged. 119 fish were taken, most from the Kalum river (69) of the total. The largest fish (Steelhead) was taken from the Lakelse early in December 24 lb. weight, the total weight landed averaged out at 10.5 lb. per fish. Copper River was poor for angling generally during 1960 in comparison to the other streams. Kitwanga River -Kispiox reports indicate a fair winter run of steels. Lakelse system- Eaker slough and Kalum provided the best trout fishery. No abuses or violations in regards to illegal methods or over limit catches observed or reported. The closure to all salmon fishing in the Kalum river above the CNR bridge from dates Aug. 10 to Sept 30 inclusive was well respected. The better access roads now in comparison to previous years with continuing improvements in hard surfacing and opening up of logging roads provide easy travel to most of the areas best producing streams and spawning grounds. Concern is evidently being felt by Provincial Game department for the conservation of Steelhead as it is reported that restrictions are considered for Kispiox -Morice and Moricetown areas for the coming year.

Industrial Development:

Apart from the apparent increase logging interest, hydro distribution would appear to be the main development that occurred in 1960. Power from Kemano was delivered by transmission line service to the Terrace area in December, severe interruptions to delivery of steady power has been experienced by the whole district on numerous occasions whilst adjustments and modifications of transformers were being attended to. Most of the areas residential and farm properties as well as local mills are now being supplied with electric power generated at Kemano.

Oil exploration enterprises that began surveys in 1958 have been curtailed and most of the holdings abandoned with the exception of a reported 10,000 acre tract in the region referred to as the Groundhog zone, this I am told extends into Nass valley from Kalum lake, but to date I am unable to definitely establish the location in relation to the immediate Terrace area with any degree of pinpoint accuracy.

Properties in the municipality are experiencing a brisk upward valuation and changeover in anticipation of further expansion in business economy potential that northern development and tourist increase might provide. Oil station modernization, large hotel and addition of new modern hotel for the main centre of the town is in hand for 1961. The expected marine and road developments towards Alaska all points to further development and expansion in the area from an industrial standpoint.

There is no conclusive evidence that any mining of major proportions will develop, a few prospectors have been observed in the Kalum system in 1960.

Stream Improvements:

A total of 126 man hours labor and an expenditure for powder of twenty-nine dollars eliminated blockages that were forming in streams in the area during 1960. Windfall debris was the causes of the blockages forming. A follow up inspection in early months annually has been the policy in the area to reveal any occurrences of that nature that can be attended to by local area seasonal staff before salmon movements begin. There are no fishways operating in the area. No serious obstructions were observed in 1960 that will require the attention of the engineering staff. Studies are in hand for migration patterns at Kitselas canyon on the Skeena near Uak and at Gitwanguk canyon in the Kispiox system. A report will be submitted after spawning runs have been observed in the event that any delays in upstream movement occurs.

Seasonal staff:

In the Terrace-Lakelse area two employees are taken on strength annually on season basis to assist in the patrol coverage of the area that extends from headwaters of the Kispiox to the commercial boundary with area 4 the lower Skeena area. Good cooperation between Research personnel in the area and the previous incumbent in the Terrace area, Inspector Giraud made it easy for the writer to take over the supervision of this area in 1960. More extensive coverage is contemplated and reemployment of the same satisfactory assistance will give a better understanding and knowledge of the areas function. The acquisition of a suitable water craft is indicated for the estuarial section of the Skeena, and valuable use can be obtained from this added equipment.

Provision for occasional use of Helicopter facilities would be of benefit, as first year observations reveal large watersheds to be fully covered and spawning fully assessed would warrant and justify reasonable expenditures of this nature.

Predator Control:


Departmental personnel under Inspector Giraud destroyed 72 hair or harbor seals in the Skeena estuary section in 1960. None destroyed in 1959 as no hunt was carried out due to transfers in the officer personnel in the area. In 1958 there were 96 recorded kills of seal predators. Wolves, Bears, Beaver, are normally considered as predatory in the area, although in 1960 no serious evidence of any unusual destruction of salmon stocks by these animals observed.

General.

Research hatchery operations at Kleanza creek were carried out, and in the order of 200,000 eggs Pinkie mainly were developed to eyed stage and shipped out of the area to the Nanaimo station. There is advise to indicate a similar hatchery facility being considered for Schulubuchand (Scully) creek in the Lakelse system for installation in 1961.

The writer wishes to acknowledge the good cooperation and assistance of the personnel of the Fisheries Research staff that operated in the area in 1960. Mr. MacDonald; Mr. Martell and Mr. Lucif all gave valuable information and every assistance to the departmental protection staff in the area. The Forest Service officers for their continued good support and the department of transport for data provided to make this report statistics possible.

Respectfully submitted.


Fishery Officer
Terrace-Lakelse Area.
February 13, 1961

Inspection trips were made to the Bear Lake System Sept 2nd and 12th to 19th and October 4th. The springs were spawning earlier than usual with a medium escapement to the Bear River. This was an off year for Pinks and none were seen. Sockeye were down in number but of extra large size. General spawning conditions were good.

INDIAN FOOD FISHING Only two permits were issued and they took 300 sockeye, 337 Springs. Indians arrived too late for good fishing of Springs which ripened much sooner than they expected. These Indians are rebuilding cabins and trails and appear to be moving back to Bear Lake. A few years back, the Indian Department encouraged them to move to Takla but this year the H.B.C. took away the trading post from Takla, now they feel they will be better off in their good trapping and fishing Country at Bear Lake.

SOCKEYE A few sockeye were observed in the Sustat & Johannson Creeks while Azuklotz River had 1200 and Bear Lake itself had in the vicinity of 250, all told a light escapement.

Springs The Bear River had a medium escapement of close to 15,000 with only a small percentage of Jacks noted.

PINKS Off year and none observed.

COHO Spawmed after trips made into Bear Lake system but from numbers seen, would judge it to be a medium run with a 1000 plus to Bear Lake and up the Sustat River.

STEELHEAD Good Steelhead Fly Fishing was seen at Sustat and Johannsen, fished mostly by Americans using aircraft. Would consider it to be only a light to medium escapement this year.

SPAWNING GROUND SUMMARY									
Stream	Specie	Inten.	1954	1955	1956	1957	1958	1959	1960
Azuklotz Cr.	Sockeye	Lt	E	E	E	E	C	G	F
	Coho	Med	C	C	D	N.O.	Fin	C	C
Bear River	Spring	Med	D K	K	K	H	K	K	K
	Pink	Nil	F	H	Nil	K	Nil	L	Nil
	St'hd	Lt	D	N.O.	N.O.	E	E	A	A
	Sockeye	Nil							
	Coho					N.E.	N.E.	D	N.O.
Bear Lake	Sockeye	Lt	KH	G	H	H	H	F	C
	Coho	Med	N.O.	fin	fin	fin	fin	fin	E
Salix Ck	Sockeye	Nil	C	nil	A	No	Nil	Nil	Nil
	Coho	Nil							
Sustut Lake	Sockeye	Lt				E	D	N.O.	B
	Coho	Lt							B
	St'hd	Med				D	D	D	F
Asitka Lake	Sockeye	N.O.				C	N.O.	N.O.	N.O.
Johansen Lake	Sockeye	Lt				B	N.O.	N.O.	A
	St'hd	Med				E	N.O.	E	D
	Coho	N.O.						B	N.O.

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