

Smithers, B.C.
February 29, 1972.

Mr. V.H.B. Giraud
Supervisor, Skeena District,
Fisheries Service,
Prince Rupert, B.C.

Annual Narrative, Babine-Morice
Sub-District, 1971.

1. General Description of Sub-District.

The Babine-Morice is a large sub-district situated in the interior of District # 8, B.C. To the North and East approximately two hundred miles inland from the coast of British Columbia. Situated approximately between , just above the fifty seventh degree North latitude and just above the fifty four degree North latitude, and between one hundred twenty six degrees and one hundred twenty eight degrees West longitude. The sub-district comprises approximately twenty five thousand square miles. The Township of Smithers lies centrally in the sub-district, a small remote village of approximately thirty nine hundred people. The main industries being logging and lumbering, mining, and tourism during the summer.

Babine Lake, situated in the Eastern portion of the sub-district is the largest fresh water lake in the Province of B.C., approximately one hundred miles in length with an average width of approximately two miles, the lake lies in a south-east-north-west direction. Morice Lake lying to the south and west is the second largest in the sub-district.

Houston, situated forty four miles south of Smithers is the second largest town in the sub-district. Other Villages and Towns namely; Topley, Craniole, Telkwa, and smaller places such as Forestdale, Topley Landing, Tendleton Bay, Quik, And outlying farmers making up a white population of approximately 12,500 for the sub-district. Indian population bands at Moricetown, Fort Babine, Topley Landing is given at 1,400 people.

The Canadian National Railway serves the sub-district with the main line through to Prince Rupert. P.W.A. serves the area with scheduled air service, T.P.A. with charter flights, and Okanagan Helicopters Ltd. with charter flights. Coachways Bus Lines supply bus service to the area.

The sub-district has some 2000 miles of river and streams, which consist of the Skeena river drainage above the Kispox river and the Bulkley river commencing at the Skeena river, and includes the upper portion of the Copper river.

Within the sub-district there are sixty six spawning areas, the major areas being the Babine river, upper Skeena and the Morice river. The Babine river, Babine lake and tributaries provide ninety percent of the sockeye spawning ground of the Skeena river system.

2. Fisheries

- (1) Commercial Fisheries. - Nil.
 (2) Sport Fisheries (Tidal Water) - Nil.

Sport Fishery (Non-Tidal Water)

a. Provincial Angling Licences sold in sub-district:

1972	Canadian	Non-Can (Minor)	Non-Can.	Short Term	Total
1971 -	2162	159	570	332	3229
1970 -	2347	141	553	338	3429
1969 -	2201	130	509	407	3347
1968 - 1946	253		403	236	2843

b. Estimated Sport Catch.

1972	Coho	Salmon	Jack Salmon	Steelhead
1970 -	1030	782	354	1032
1969 -	350	475	525	300
1968 - 1997	800	1307	1457	
1971 -	544	421	522	543

Only The 1971 non-tidal sport Fishery for the sub-district was so unfavorably spread out this year that figures cannot be compiled until the Provincial Fish and Game Branch publish their report in mid 1972. The sport fishery at Moricetown & Canyon was almost non-existent this year, due to high water during the main migration, so fishermen spread out over the whole area. The Moricetown sport fish catch was 44 coho, 21 large chinook, 62 jack chinook and 43 steelhead.

In 1970 the Provincial Fish and Game Branch published that 26,400 anglers passed through the Smithers area. These anglers bought their anglers licences before they entered this sub-district. It would seem that the number of anglers licences sold in the sub-district is not representative of the fishing effort in the area.

c. Closures.

Morice river - Lasprey creek to Morice lake - by regulation.
 Fort Babine to Milkikwa river - by regulation.
 Babine river - by regulation.
 Morice river - by regulation.
 Tulon spawning channel - Closed Aug. 17, to Oct. 31. by notice.
 Pinkut Spawning Channel - " " " " " " " "

d. Gear restriction.

Morice river, Babine river and their tributaries, and Moricetown Canyon have a gear restriction on the use of roe. Babine river and Moricetown Canyon have a gear restriction of no angling from boats in the river.

John Paul Steelhead over 20" - by regulation

(3) Indian Food FisheryCatch in pieces.

1972	Place	Sockeye	Coho	Pink	Chum	Chinook	St'hd	Total
1971	Babine	22,950	140	50	0	300	5	23,445
	Moricetn	135	300	309	0	255	54	1,103
1970	Babine	20,043	140	400	0	125	200	21,384
	Moricetn	344	648	329	0	728	211	2,760
1969	Babine	17,293	130	20	0	65	30	17,508
	Moricetn	516	755	431	0	435	75	2,312
1968	Babine	19,146	0	0	0	47	09	19,204
	Moricetn	240	2046	227	0	1017	160	4,790
1967	Babine	11,902	29	13	0	72	1	12,112
	Moricetn	1,111	1,111	1,111	0	1,111	111	3,715
1966	Babine	10,652	137	100	0	149	6	10,952
	Moricetn	2,412	2571	465	0	1233	413	7,129

In the Skeena river above the Kispiox to Kisgegas, permits are usually issued and accounted for by the Terrace officer. The guardian at Hazelton estimates three families fishing at Kisgegas took 600 sockeye, 250 coho, 200 pink, 50 spring and 50 steelhead for food fish this year.

A total of 59 permits to fish for food fish were issued in the area this year.

Fort Babine Indian Band list indicates a population of 859 people. This covers the whole Babine Lake area and not the actual people at Fort Babine. There are approximately 30 families living in or around Fort Babine which live there all year round. Fishing is done by means of gillnet on a four day week, 6 P.M. Sunday to 6 P.M. Thursday during runs of sockeye and usually ends with late coho and char fishing in the fall. Fort Babine people have been taking spring salmon on the grounds above the counting wier with gaff hooks without the sanction of permits. This year a closure was put on from September 19 to October 31, 1971, covering waters $\frac{1}{2}$ mile above to $\frac{1}{2}$ mile below the counting wier, for the protection of spawning salmon. Other places on the lake use gillnets to take food fish.

Moricetown Band list indicates 530 people living in and around the Village. Fishing is done by gillnet from the Suskwa river to just below the estuary of Trout creek, with 6 to 10 nets being used. The remainder is by dipnet or gaff, operating in the Moricetown Canyon at the falls area. Fishing this year was on a split week basis from 12 P.M. Sunday to 12 P.M. Monday, 12 P.M. Tuesday to 12 P.M. Wednesday, 12 P.M. Thursday to 12 P.M. Saturday of each week.

3. Spawning Summary

(a) Salmon

(1) The Babine river and tributary streams in Babine Lake are the main sockeye spawning areas for the Skeena River Watershed. 95% of the Skeena sockeye spawn in this area. The Upper Skeena, Morice, Nanika and upper Copper Rivers, have minor stocks of sockeye. Water levels during the spawning season, normal with adequate water in most streams. Above average snowfalls started in November giving good coverage to the spawning grounds before cold weather started in December.

Sockeye

Sockeye salmon counted through the wier on Babine river by Research Personnel totaled 870,600, composed of 816,000 large and 54,600 jacks by September 24, 1971. Higher than brood years: 1966, 389,000 large and 192,000 jacks. 1967, 603,000 large and 29,300 jacks.

Fulton river and channels had 282,800 mixed sockeye, Pinkut river and channel had 30,000 mixed sockeye, Babine river had 417,000 mixed sockeye. The remaining adults and jacks approximately 131,000 spawned in other tributaries to Babine lake and in the lake itself. Pierre, Twain, Morrison and Grizzly being the bigger producers of the minor spawning streams. Some 19,000 pieces of sockeye were taken by the Indian Food Fishery on Babine Lake.

Coho

An estimated 12,150 coho spawned in the sub-district streams. 1968 brood year escapement was 12,900.

Pinks

An estimated escapement of 104,000 Pink salmon in the sub-district was the second record year. 92,985 of these spawned in the Babine river. Brood year records of 75,000 show a slight increase.

Chum

There were 7 chum salmon counted through the Babine River counting wier. Brood years, 1967 recorded 2 chum and 1968 recorded 3 chum salmon.

Chinook

Estimated total of 8,450 chinook salmon for the sub-district, 953 large and 1,597 jacks went to the Babine lake system, 4200 to the Morice river, 800 to the Bear river and the balance scattered throughout the area. This is a decline from the brood years, 1966 - 11,000 and 1967 - 19,000.

(ii) Weather conditions and Water Levels.

The snow fall for 1971, recorded March 1971 - February 29, 1972, was 4.1 inches higher in water content than the corresponding period the previous year, With 133.8 inches of snow being recorded at the smithers Airport. Medium rains in June and August kept streams at a normal level during the spawning runs, light fall rains holding normal levels until freeze-up.

The winter of 1971-72 turned very cold, but with heavy snows throughout the winter, spawning streams had a good adequate coverage.

Summary of Temperatures and Precipitation

March 1, 1971 - February 29, 1972.

Month 1972	Snowfall	Rainfall	Water content	Temperatures		
				High	Low	Average
March	7.6	.71	.67	45	2	27.3
April	5.8	.33	.74	69	15	39.1
May	.3	.68	.71	80	23	47.4
June	--	2.49	2.49	79	34	55
July	--	1.34	1.34	94	37	61.6
August	--	3.13	3.13	82	33	57.6
September	--	1.52	1.52	70	27	47.9
October 1971	7.5	1.04	1.66	64	06	37.3
November	22.6	.43	2.19	49	06	29.2
December	29.7	--	2.22	42	-33	7.4
January	28.0	.32	2.04	41	-40	5.0
February	32.3 "	tr "	2.17 "	41	-16	16.7
1972	133.8	11.95	20.83			

(iii) Fry Salvage

Nil.

(b) (i) Herring

Nil.

4. Environment, Multiple Water Uses.

(A) Pollution

No pollutions of a major degree occurred during the 1971 season, except a minor oil spill on Babine Lake near Michell Bay, Topley Landing, B.C. This was caused by filling a distillate fuel tank too close to the shore of the lake without first shutting off the outlet valve. Approx. 1,000 gal of fuel oil seeped through the gravel and came up in the Bay causing an oil slick to spread a considerable distance. However wind action during the month of October soon dispersed the slick and no damage was reported. The fuel tank belongs to Bulkley Valley Forest Products and the matter was brought to their attention, with warning letter to go out in 1972. Letters will be sent to both mining companies on the lake and anyone else with fuel storage tanks near the water's edge.

Pacific Inland Resources Ltd. at Telkwa completed a large renovation of their Tee Pee burner to the extent of some thirty thousand dollars in an attempt to stop unburned sawdust from coming from the burner onto the Bulkley river. A horse waste burner was installed along with other renovations to the saw mill made a vast difference to unburned sawdust landing on the river, burned fly ash would appear to be their problem now landing on the village of Telkwa.

Bulkley Valley Forest Products operation at Houston had a loss for the year of some sixty million dollars by the end of the year and sold their holdings to Northwood Pulpwood at Prince George. The only other problem we had with them was their Tee Pee burner which in the spring of 1971 showed sawdust on the ice over the waters of Prince River. This burner was taking an overload and it was hoped that the completion of the new smokeless burner would relieve the situation by spring of 1972.

There was no pollutions from either Granisle or Noranda copper mines during the year. A thorough inspection was made at Granisle after complaint by biologists from our Dept and Fish and Game personnel from Prince George visited the area in company with the inspector for the sub-district on an unannounced visit by speed boat. There was nothing found to substantiate the complaint.

The outflow from the Houston disposal field was ordered closed by the Pollution control board during periods of low flow in the Bulkley river. The two ponds have a holding capacity of forty days for each pond. The village of Smithers have installed a disposal field for their sewage, they are still using the old septic tank but a new sewage line is in use to the field which at present is by-passed until the field is completed early in 1972, which will then be joined to the field and the whole system operative, which will cut down pollution by sewage to the Bulkley River.

Good liaison with Department of Highways has kept problems to a minimum, they now inform us whenever there is work to be done near streams frequented by fish, or culverts to do with road work.

The Pacific Great Eastern Railway required checking and some change for their right of way along Bear Lake and Bear river. They just reached Bear Lake about midway down the lake by end of season with the right of way, so the tops of trees were in the lake, and they were a little careless with barrels of fuel were getting down the river, they were warned and the drums were removed. There is no doubt the river will suffer a little from silting when they progress down it to the Sustut, however it may improve it in the future as they intend to ruck a natural mud slide which has silted the river for years and improve the situation.

The Bradina mine on Owen Lake completed most of their ponds for tailings, the mill is almost completed by end of year, and they will be operational by early spring 1972 to start milling ore.

(b) Industrial Development

Noranda Mine on Newman Peninsula have almost completed all phases of their operation, including mill site, tailing ponds, roads, wharves, water intakes etc. They are a little behind a starting up date, but will be milling ore by mid 1972. Ore will be trucked across the lake to Granisle and hence to Topley where it will be loaded on Canadian National box cars.

Bradina Mine on or near Owen Lake, the name derives from an amalgamation of the old Bradina Mine and Bralorne Mine, have also completed most of their operations and will start milling ore by early 1972, the concentrates will be loaded on CNR box cars at Houston, B.C.

Bulkley Valley Forest Products at Houston, B.C., had many problems and much expenditures by end of 1971, they were not able to keep up with their mill productions and other phases of work in the woods. Subsequently by the end of 1971 they were some sixty million dollars in the red, and Northwood Pulp of Prince George bought out Bulkley Valley Forest Products interests. This action caused a large job loss to personnel in Houston and Smithers. It created a hardship of the township of Houston to a point they were talking of Houston dropping back as a village. Possibly in time things will pick up under the new management.

Pacific Great Eastern Railway at Bear Lake have reached Bear River with their right of way clearing by end of season, will most likely be starting rock cutting and earth moving as soon as possible in the spring of 1972.

Other Mining Operations no change from operations from 1970 report, no further activities from Climax Molybdenum, Silver Standard other than their exploration work.

Other a road is being constructed from the Noranda's westerly ferry landing to the Smithers landing road in hopes to draw people from Granisle and the Noranda townsite for shopping purposes in Smithers therefore adding some dollars to Smithers economy.

At Smithers a new Safeway Store has been added expected to open after Christmas 1971, several new service stations for auto service have opened mostly at Houston. Most of the homes on the Mountain View properties at Houston were completed by end of season. The ground work for a new Provincial building was completed at Smithers by year end, building erection will most likely be completed by end of 1972.

(c) Obstructions and River Diversions

Stream clearance work was somewhat hampered this year by attending an Indian hiring program for displaced natives out of the fishing industry, four crews of three men were hired for a seven week period of work to clear trails up Tobogan creek, Owen creek, Pierre Creek and Twaine. The crews were staggered out so that one crew was finished when another started utilized a lot of time and effort to keep them on the job.

Beaver dams continue numerous throughout the area and were removed by hand when necessary by fishery personnel or trail cutting crews. Water levels were mostly high during the season or adequate to get fish up the creeks obviated the necessity of much removal. There was no blasting operations carried out on stream work for the year. Log jams were removed by hand only by guardians and the native trail cutting crews. Attached list indicates effort.

4. (C) Obstructions and River Diversions
Labine Morice sub-district, 1971.

Date	Place	Obstruction	Equipment Used	Personnel	Costs	Days	Remarks
June 21	Moricetown Cyn.	Log jams	Hand, tractor	R.D.	400.00	1	Indians set fire to jam.
July 6	Aiken Crk	Beaver dam	Hand	Roys	25.00	1	
July 10	Buck Crk	"	"	"	25.00	1	
July 15	Peacock Crk	"	"	"	25.00	1	
July 17	Knockholt	" , log	"	"	25.00	1	
July 19	Bulkley, Forsdl.	Log jams	"	"	25.00	1	
July 24	Bulkley falls	"	"	"	25.00	1	
Aug 10	6 mile	"	"	Wall	25.00	1	
Aug 11	Twain	Beaver dam	"	"	25.00	1	
Aug 12	Pierre	"	"	"	25.00	1	
Aug 16	Sutherland	Debris, logs	"	"	25.00	1	
Aug 16	Bulkley, Knhlt.	Log jams	"	Roys	25.00	1	
Aug 17	Sutherland	"	"	Wall	25.00	1	
Aug 26	Twain	Beaver jam	"	Wall	25.00	1	
Aug 26	Houston Bulkly.	"	"	Roys	25.00	1	
Aug 30	Twain	"	"	Wall	25.00	1	
Aug 31	Bulkley Lake	"	"	Roys	25.00	1	
Sept 20	4 mile	Debris	"	Wall	25.00	1	
Sept 21	6 mile	"	"	Wall	25.00	1	
Sept 22	6 mile	"	"	Wall	25.00	1	
Sept 22	Dennis Lake	Beaver dam	"	Meyers	30.00	1	
					<u>905.00</u>	<u>21</u>	

- (C) (1) Early in the season a program was set up with Indian Affairs to hire displaced natives from the Fishing Industry to cut trails along streams considered necessary to assist inspections. The first crews were hired from Moricetown consisted of three men, these were older men from the village who had large families and were not displaced fishermen under the hiring program. They worked steady on Tobogan crk. for their seven week period without no problems. The next crews were supposed to be the displaced fishermen, and they the trouble started. They either left their job without warning, went on liquor srees, trotted off to jail by R.C.M.P. for other violations, didn't show up for work and every other holdup that could be thought of.

There was some Sixteen thousand dollars alloted for four three man crews with an additional eighteen hundred for a special guardian wages, the guardian ended up in a car accident after three weeks, also the special native girl they skpylied for the office for steno work was involved in a car accident.

After much effort I was able to have a trail cut on Tobogan Crk., Wen Crk, Pierre Crk., and Twain Crks. There was still some six thousand dollars left which I turned back for a project counting fish in the Aspioux River and got clear of the project.

- (D) Gravel Removal - Gravel removal orders were in effect for the Bulkley River system and tributaries, Morice River and tributaries, there was no gravel removal permits issued for the 1971 season in the area.

- (E) Logging Operations.

The Bulkley Valley Forest Products had control of practically all of the sub-district, with operations mostly on the east side of Babine Lake, the Morice River area, the remainder was cleaning up areas they had taken over.

Pacific Inland Resources at Telkwa operated in the Telkwa Valley area are the second largest logging operators in the sub-district.

The Dielman Planer mill on Atlow Road outside Smithers continues to operate under new management and produces small amounts of local supplies.

Small mill on Snake Rd. and another along Hwy. 16 toward Moricetown continue to operate for local supplies.

By the end of 1971 season Bulkley Valley Forest Products practically came to a standstill, a lot of people were laid off and the mill cut back to practically 1 shift operating, there was some two hundred workers laid off by end of season.

- (1) Area Forestry Cut for 1971 (Forestry figures).

Hazelton	4010 acres out	41,655 CU	1,223 LF
Smithers	1650 acres out	67,778 CU	
Houston	4331 acres out	179,628 CU	

- (f) Water Licence Applications

In 1971, 28 water applications were processed and inspected. 9 reinspections were carried out and found satisfactory.

- (g) Placer Mining.

There were not any placer mining leases applied for in the area this year, and no active operations in the area.

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5. Trends in the fishing industry.

Nil.

6. Enforcement.

(a) Commercial

Nil.

(b) Sport

Nil.

Indian Fishery.

Nil.

(b) Trends Re: Closed seasons

Closure to fishing with roe at Moricetown Canyon raised many complaints from sport fishermen and from the Indian people at Moricetown. The Sport fishermen claimed that they could not catch fish by other means, and the Indians claimed that the ban on roe ruined their tourist business. Other closed seasons for sport and Indian Food fisheries seem to be well observed.

(c) Patrols to tourist assessable areas. Notices posted. Talks with lodge operators, sport fishermen and native peoples.

7. Predators.

(a) Sea Lions. - Nil.

(b) Hair Seals. - Nil.

(c) Bear. - Grizzly and Black.

Grizzly and black bear were extremely heavy on the spawning streams this year, due possibly to the lack of berries throughout the area.

Eight male grizzly, 4 female grizzly, 12 male black bear and 5 female black bear were taken by sportsmen in the area

(d) Grayfish - Nil.

(e) Killer Whales - Nil.

(f) Eagles and crows numerous, particularly in the Sabine Lake area, preying heavily on spawning salmon. Mergansers medium to heavy throughout area, preying heavily on roe and fry. Seagulls and ducks light, preying on fry and smolts.

8. Administrati

(a) Staff

- (i) Fisheries Officer A.M. Groat - G.T. 111
Fisheries Officer D.N. Meyers - G.T. 11

(ii) F.P.L. Babine River.

(iii) Three Guardians were signed on for the season, for the Moricetown Canyon, Fort Babine and Donalds Landing positions. Their main function was stream clearance, area patrol, Indian Food Fishery and stream spawning enumeration.

Three crews of three men each, were sent from Indian affairs to cut trails on streams. One man was sent by Indian affairs to act as an assistant guardian in the area.

(iv) Comments and Recommendations.

Staff efficiency was satisfactory except for the guardians at Moricetown and the area assistant guardian. The first Moricetown guardian was terminated mid-way through the season and another hired. The second finished the season but it is not recommended that he be hired again. One trail cutting crew employed on Toboggan creek did an extremely good job and one man on the trail cutting crew on Pierre and Twain creeks did a good job, but the others were not reliable.

Recommendations for 1972:

Moricetown - Five months, June 1, to October 31.
Fort Babine - Five months, June 1, to October 31.
Donalds Landing - Seven months, May 1, to November 30.
Upper Bulkley - Five months, June 1, to October 31.

(b) Equipment.

- (i) 2 - 4 wheel drive vehicles; one 1971 pick-up.
one 1967 panel.

- 1 - inboard-outboard patrol launch.
- 1 - 12 foot fibreglass dingy
- 1 - 22 foot, plank, lake work boat.
- 1 - 24 foot, lake work boat, plywood.
- 1 - 12 foot, aluminum car top boat.
- 1 - 18 foot, aluminum river boat.
- 2 - 2 wheel boat trailers.
- 1 - 65 H.P. outboard with jet attachment.
- 3 - 40 H.P. outboards.
- 1 - 20 H.P. outboards.
- 2 - 18 H.P. outboards.
- 1 - 6 H.P. outboard.
- 2 - 5½ H.P. outboards.
- 2 - power chain saws.

(ii) All equipment was used extensively during the season. The F.P.L. Babine river broke down in August and was out of service for the balance of the season. The 12 foot fibreglass dingy split on both sides and is out of service. One 40 H.P. outboard became unserviceable and was sent out for repairs. The rest of the equipment was satisfactory.

- (iii) Repair of F.P.L. Babine River.
Replacement of 12 foot fibreglass dingy.
One 10 foot aluminum flat bottom car top boat required for stream clearance.
Two way radio's required in vehicles and cabins for communications.
Two mobile trailers to be used as guardian cabins.

9. Information, Educational and Other Programs.

(a) Public relations visits were made to industry and other organizations particularly in regard to pollution. Information given to students on pollution, spawning channels, hatcheries and commercial fisheries. Information given to sportsmen on closures and Fisheries Acts and Regulations.

(b) Work closely with R.D. Branch, Fisheries Research Board and Pollution Branch.

(c) Many contacts were made and co-operation given to:

Town councils.
Fish and Game Branch.
Government Agency.
Health And Welfare.
Department of Public Works.
Department of Forestry.
Department of Transport.
Canadian National Railways.
Department of Indian Affairs.
Water Board.
Canada Pension Plan.
Rod and Gun Club.

A.M. Groat
Fisheries Officer.

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Annual Report for 1971
For the Terrace-Lakelse, Sub-District, Terrace B.C.

FILE NO. 12-4

MAR 27 1972

LETTER NO.

691

Fisheries

Indian Food Fishery

There are approximately 2,500 Registered Indians living in the municipalities of Terrace and Hazelton and the nine reservations in this Sub-District.

In 1971, 154 Indian Permits were issued for domestic fishing, a decrease of 11 from 1970.

Fishing was restricted to 4 days per week / 6:00 P.M. Sunday till 6:00 P.M. Thursday/. For a three week period / August 14th till September 4th/ fishing was further restricted to one day per week / 6:00 P.M. Sunday till 6:00 P.M. Monday/.

The purpose of this restriction is to minimize damage to pink salmon stocks. Prior to 1970 large numbers of this species were taken incidentally and discarded while fishing for sockeye. When this restriction was initiated in 1970 a large number of complaints were received. However, in 1971 few complaints were received, a little difficulty was encountered enforcing this restriction.

Permits were issued to heads of households only, and the amount of gear was limited to one, 10 fathom set net. Wherever practical fishing was restricted to set nets. A few permits authorizing the use of drift nets were issued for the Kitwanga Area. This was necessary as there are not sufficient locations suitable for set nets to accommodate the permit holders on this reservation.

With the exception of a small fishery carried on by the Kitwancool Indians on the Kitwanga River and Kitwancool Creek, Indian permit fishing was restricted to the Main Stem Skeena. A main stem fishery distributes exploitation, and tends to minimize over fishing of an particular stock.

This fishery was conducted mainly on Babine sockeye. The take of other species was much smaller, and in the case of some species such as pinks and chums incidental.

The following is a resume of the catch figures for the Terrace-Lakelse, Sub-District for the 5 year period 1967 till 1971.

<u>Year</u>	<u>Sockeye</u>	<u>Cohoe</u>	<u>Pinks</u>	<u>Chums</u>	<u>Scrimps</u>	<u>Steelhead</u>
1967	17,049	1,709	2,407	66	1,158	681
1968	10,353	2,492	1,212	190	1,124	717
1969	13,741	1,307	1,203	23	845	680
1970	25,100	1,700	21,000	300	2,425	700
1971	42,550	4,450	11,800	800	2,260	850

The large increase in the reported sockeye catch for 1970 and 1971 over the preceeding years reflects a different method of enumeration. Previously catch figures were obtained by interviewing permit holders.

In 1970 and 1971 figures were arrived at by observing the fishery and estimating the fishing effort and the catch per unit of effort. The unit of effort used was one, 10 fathom net in the water for a 24 hour period, which was tended once during that period.

The number of fish a set net will take during a given period at a particular location depends to large extent on how many times it is tended. For this reason it is very difficult to accurately estimate catch figures.

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Sport Fishery

During the summer of 1971 a Sport Fishing Officer /Larry Gray/ operating out of Prince Rupert covered the sport fishery on the Skeena River Watershed.

Due to the pressure of other work neither the Patrolmen in this Sub-District, or myself were able to devote much time to covering the sport fishery in this area. However, whenever possible the personnel in this Sub-District rendered all possible assistance. Consequently I will confined my remarks on this subject to a few general observations.

Springs -The catch of this species by anglers was up from the 1970 season. This was due mainly to more favorable weather and water levels during the peak of the run in July and August.

Cohoe-Good catches of this species were taken by anglers in the Main Stem Skeena and in tributary streams/Gitnadoix, Kasiks, Kalum, Lakelse, Zymoetz River/.

Spawning Summary

Sockeye- The total estimated escapement of this species to the secondary tributaries of the Skeena, approximately 15-16,000 was down 45% from the main brood year return of 25,000.

The return to all sockeye producing tributaries of the Lower Skeena/Gitnadoix, Lakelse, Kalum, Kispiox, Zymoetz/was below average and the main cycle year.

Cohoe-The total escapement of this species to the tributaries of the Skeena an estimated 30-55,000, was down approximately 50% from the cycle year return of 90-100,000.

Returns to the Gitnadoix, Kasiks, Exchamsiks, Exstew were comparable to the brood year escapements.

Escapements to the Kalum, Kispiox and Lakelse systems were well below average and the brood year returns.

Pink- The escapement of this species, an estimated 950,000, exceeded the brood year return of 768,000.

The escapement to the Lakelse System, 250,000, was approximately 50% of the expected return, and well below the 1969 return of 368,000.

The escapement to the Kispiox was 400,000-VS- 175,000 in 1969.

The escapement to the Kitwanga was 235,000-VS-180,000 in 1969.

The return of this species to the minor pink producing streams on the Lower Skeena /Scotia, Kalum, Exchamsiks River and Wilson Creek etc./was estimated at 12,000 -13,000.

Insufficient work was done to accurately estimate the number of pink spawners on the Main Stem Skeena. However, it was apparent that the 1971 return was larger than the 1970 return, which was estimated at 20,000. On this basis an estimate of 40-50,000 was submitted for this stream.

Springs- The total estimated escapement of this species 10-11,000 was well above the main cycle year return of 6-7,000 spawners.

For the third consecutive year there was a good return 7-8,000 spawners to the Kalum System.

The escapement to the minor spring producing tributaries of the Lower Skeena System/Gitnadoix, Kasiks, Exchamsiks, Exstew, Lakelse/ was average and comparable to the main cycle year return.

Chums- The chum escapement, an estimated 2400-2,500 spawners was comparable to the main cycle year return.

Steelhead-The catch per unit of effort in both the Indian Food Fishery and the Sport Fishery indicated at least an average return of this species to the Skeena System.

Good returns were apparent in the Kasiks, Lakelse, Kalum and Zymoetz River.

The return of this species to the Kispiox was light, as it has been for the past several years.

General- Generally favorable water levels and weather conditions prevailed throughout the spawning season/August till December/. There were no extreme fluctuations in water levels that would adversely affect spawn survival.

The heavy snowfall in November and December of 1971 and the early months of 1972 was more than adequate to protect the spawning beds from the lower than normal temperatures that prevailed in the Skeena Valley during this period.

	<u>Snowfall</u>	<u>Precipitation Water Content</u>	<u>Temperatures</u>		
			<u>High</u>	<u>Low</u>	<u>Mean</u>
January	71.4	9.13	43	-6	20.9
February	9.0	3.83	43	4	28.8
March	62.0	5.61	46	17	32.0
April	3.2	3.81	70	27	40.6
May	5.6	5.6	77	28	43.7
June		2.34	77	40	55.8
July		.95	96	14	65.7
August		4.29	84	42	60.5
September		2.75	70	33	51.9
October	1.6	5.61	60	23	41.8
November	28.4	7.74	48	21	34.1
December	48.7	4.30	40	-9	16.8

Fry Salvage

No fry salvage carried out in this Sub-District during 1971.

Herring

Not applicable to this Sub-District.

Environment, Multiple Water Use

The following is a resume of the various industries and human activities in this Sub-District outlining their relationship to water resources and pollution.

Logging and Lumbering

Pollution attributable to this industry is not a serious problem in this Sub-District.

In 1971 28 logging inspections were carried out. In 6 cases it was necessary to take action to prevent damage to streams. Two companies were prosecuted under Sub Section 3 of Section 33 of the Fisheries Act for placing logging debris into waters frequented by fish. In the other 4 cases a verbal warning was sufficient to effect a clean up.

Agriculture and Ranching

Agriculture and Ranching

Farming and ranching in the Skeena Valley is limited by the small amount of arable land.

These activities are confined to the Kalum and Kispiox Valleys, and the Skeena Valley between Terrace and Hazelton.

Farming is confined mainly to raising fodder crops for cattle, and does not require irrigation.

Obstructions and Stream Diversions

Beaver dams are a reoccurring problem in this Sub-District. Mainly on the tributaries of the Kispiox River. Occasionally on the tributaries of the Gitnadoix, Kalum and Lakelse River.

Cohoe, and to a smaller extent sockeye are the species affected by beaver dams.

The following is a resume of obstruction clearance work carried out in this Sub-District during the year.

<u>Name of Stream</u>	<u>Obstruction Removed</u>	
Scotia River	Log jams.	200 man days
Deep Creek	Log jam, logging debris	27 man days
Furlong Creek	Beaver dams, logging debris	6 man days
MacQueen Creek	2 beaver dams	2 man days
Ironsides Creek	1 beaver dam	1 man day
Mission Creek	Large boulder	1 man day

The work on MacQueen, Ironsides and Mission Creek was carried out by the Fisheries Patrolman from Hazelton and a blaster hired for that purpose.

The work on the other streams was carried out by personell hired under a program designed to employ Indians displaced from the commercial fishery.

The purpose of the work on the Scotia River was to make this stream accessible by boat to facilitate enumeration of salmon spawners.

Water Licence Applications

During 1971 a total of 8 water licence applications were processed in this Sub-District. All applications were for domestic purposes.

An estimated 6 man days were spent checking out water licence applications.

Logging Operations

The logging industry and related service industries are the dominate economic factor in this Sub-District.

In 1971 approximately 1350 men/750 in 1970/ were employed in the logging and lumbering industry.

The production of lumber, pulp logs and cedar poles totaled 60,000,000 cubic feet.

Approximately 7,500 acres were logged off on the Skeena River water shed/7,000 in 1970/.

Enforcement

During 1971 a total of 23 prosecutions were carried out for violations of the Fisheries Act and the British Columbia Fishery Regulations. One charge was dismissed by the court.

The following is a breakdown of the various types of offences.

Sport fishing -----	8
Violations of Section 32 of the B.C. Regs.	
Illegal disposition of Indian Food Fish -----	8
Illegal possession of Indian Food Fish by Non Indians -----	3
Violations of Section 33 of the Fisheries Act. -----	4
	<hr/>
Total	23

In addition 4 gill nets that were being used illegally were siezed from 1 Person or Persons Unknown.

A total of \$2,755.00 in fines was levied by the court for the offences listed above. In one case the defendent served time in lieu of paying his fine.

Little difficulty was encountered enforcing the various regulations pertaining to the Indian Food Fishery/closed times, maximum length of gear used etc./. Only one prosecution for an offence of this type was necessary during the past year. This is an improvement, formerly a number of prosecutions for this type of offence was necessary each year.

In 1971 it was necessary to prosecute 3 logging companies for violations of Section 33 of the Fisheries Act. One charge was laid against Twinriver Timber Ltd. and another against a contractor employed by this company.

These prosecutions brpught about a very pronouced change in the attitude of the local representatives of this company towards practices that result in pollution of streams with logging debris.

During the past year it became increasingly apparent that the major enforcement problem in the Skeena Area is illegal trafficking in spring and sockeye salmon, and that illegal trafficking in fish has been and still is being carried on, on a very large scale.

After studying this problem for several years I have come to the following conclusions;

- (1) That this problem cannot be solved by further restrictions/restrictions other than the restrictions presently being enforced/ on the Indian Food Fishery.

While the Indian Food Fishery is the focal point of this problem, people from other ethnic groups are both directly engaged in, and in many other cases the prime motivation behind this illegal activity.

- (2) That our present organization does not and could not deal effectively with illegal trafficking in salmon. The source of these fish is mainly in one Sub-District while the market for most of these fish is outside the Skeena River Area.
- (3) That at present we are not properly equipped to employ the techniques that could reasonably be expected to detect and apprehend people engaged in illegal trafficking.
- (4) That the personnel presently available /short term guardians/ do not, and could not be expected to possess the expertize necessary to be of much assistance in this legally complicated type of enforcement.

- (5) That the sections /Section 32, Section 73/ of the British Columbia Fishery Regulations pertinent to net fishing in Non-tidal waters are poorly written. Consequently it is difficult ,and in some cases impossible to obtain convictions under these sections.

Predators

Sea Lions - Not applicable to this Sub-District.

Seals - Hair seals enter the Skeena River Estuary in May and June to have their pups. While occasionally strays go as far inland as Babine Lake, large concentrations are seldom seen upstream from the Khyex River.

While it is impossible to accurately estimate the extent of the predation on Skeena River salmon by seals, it is no doubt considerable.

Bears (Grizzly, Black) - There is no evidence that either of these species are a problem in this area.

Grayfish (Dogfish) Not applicable in this Sub-District.

Killer Whales - Not applicable

Others (Mergansers) - There are a few mergansers in this area, but not enough to be considered a problem.

Administration

Staff

Fishery Officers - Morris E. Bogart - Permanent duty in the Terrace-Lakelse, Sub-District.

Patrolmen - The following patrolmen were employed in this Sub-District during 1971.

D. Parent - FS5-6563 - June 1st till October 12th - Stationed at Hazelton.

James Warner - FS5-6565 - July 12th till October 6th - Stationed at Terrace.

Ben Bolton - June 1st till December 13th - Stationed at Terrace.

Bruce Robinson - July 12th till October 23rd - Stationed at Terrace.

Norman Weget - August 16th till Sept. 3rd - Stationed at Hazelton.

Equipment

Departmental Vehicle - A 1970 model D-IIIC-4 wheel drive International - Travelall is on charge to this Station. It has 23,000 miles on it, and has proved to be completely satisfactory in all respects.

River Boat - An 13 ft. Smokercraft powered with a 65 H.P. jet drive for use on tributary streams, and a 50 H.P. Mercury propellor drive for use on the Main Stem Skeena.

This craft, a 1969 model, was satisfactory as a river patrol boat for controlling the Indian Food Fishery on the Skeena River, and for spawning assessment work on shallow tributaries.

Unfortunately it proved to be structurally weak, and all the frames in the bow section broke due to metal fatigue. It was written off as unserviceable in Sept. 1971.

Outboard Motors - There are 6 outboard motors on charge to this Sub-District.

I-5.5 H.P. Evinrude ----- I- 3 H.P. Johnson ----- I-9.8 H.P. Mercury

I-4.6 H.P. Johnson ----- I-65 H.P. Mercury with Jet Drive ---- I-50 H.P. Mercury

Information, Educational and Other Programs

During the past year a number of Department of Fisheries films were shown at various schools in this Area.

A close liaison has been established and maintained with the Municipality, the various branches of the Provincial Government in this Area and the R.C.M.P.

Morris E. Bogart
Fishery Officer

ANNUAL NARRATIVE REPORT

SKEENA DISTRICT #8

- 1 9 7 1 -

1. GENERAL DESCRIPTION OF DISTRICT

District No. 8 is the most northerly coastal Conservation District in British Columbia and embraces the area from Ulric Point on Aristazabel Island to the Alaska Canadian boundary, but not including the waters of Douglas Channel. The main watersheds in the area are the Nass and Skeena Rivers and tributaries.

There are 243 separate streams and spawning areas covered on Salmon Spawning Ground Inspection Reports on a yearly basis as well as numerous less important small streams that are not covered as far as reports go but have to be inspected from time to time when timber licence and water licence applications are made.

The District is divided into 5 sub-districts, the Nass, Skeena and Grenville-Prince areas on the coast and the Terrace-Lakelse and Babine-Morice in the interior.

The District is mountainous, extending through the Coast Mountain and Babine Mountain Ranges. Many of the streams are glacial, making spawning inspection difficult.

The Skeena River System is the largest and most important salmon producing river in the District. This river carries all species of Pacific salmon as well as steelhead. Lakes and streams are well stocked with trout, Dolly Vardens and Rocky Mountain white fish.

The major sockeye producing area in the Skeena watershed is Babine Lake and River. About 90% of the sockeye production of the Skeena system is in the Babine.

The Nass River system, while not as productive as the Skeena, carries all species of Pacific salmon, steelhead and trout.

The City of Prince Rupert, including the Village of Port Edward, with a population of about 18,000 is the hub of the fishing industry. It is the terminal for the Northern Branch of the Canadian National Railway, the Northern terminal for British Columbia Ferries and has a terminal for Alaska Ferries which is used in the summer months. The city is served by Canadian Pacific and Pacific Western Airlines from an airport on Digby Island. The city is the western terminus of the Yellowhead Highway, the Northern Cross-Canada route. There is a pulpmill complex operated by Canadian Cellulose situated at Port Edward. Several salmon canneries operate in the District with large cold storages situated in Prince Rupert. Salmon production is canned in the District from the District itself as well as areas further south in the Queen Charlotte Islands. Halibut, groundfish, herring and shellfish, as well as salmon, are processed by fish plants and cold storage plants in the area for the fresh and frozen fish markets. Prince Rupert is known as the "Halibut Capital of the World". Halibut from local areas, Queen Charlotte Islands and as far north as the Bering Sea are processed here.

Lumbering is a very important industry in the District, with wood being processed at the pulpmill at Prince Rupert. Sawmills are situated at Terrace, Kitwanga, Hazelton, Smithers, Telkwa and Houston.

The population of the District is about 60,000 people, including about 6,000 Native Indians.

2. FISHERIES

(1) Commercial Fisheries

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Skeena Area

<u>Locality</u>	<u>Sockeye</u>	<u>Cohoe</u>	<u>Pinks</u>	<u>Chums</u>	<u>Chinooks</u>	<u>Steelhead</u>
Skeena Estuary	7,144	32	483	12	28	83
Shawatlans	50	-	-	-	-	-
Chatham Sound	<u>4,762</u>	<u>21</u>	<u>322</u>	<u>8</u>	<u>18</u>	<u>56</u>
Total (1971):	11,956	53	805	20	46	139

Summary - Indian Food Fishing - Skeena

The Native Food Fishing in Area 4 during 1971 was concentrated with one minor exception in lower Chatham Sound and the Skeena River Estuary. One permit was issued for a 3 day period in the vicinity of Shawatlan Creek. The fishery in Chatham Sound and the lower Skeena River was primarily to harvest sockeye migrating to the Skeena River. A total of 5 permits were issued during May and June with 8½ inch mesh restrictions enforced to save chinooks. The remainder of the fishery took place during a 7 hour period on July 23, 1971, at which time 99% of the 1971 total food fish catch was taken. This was a very intensive fishery with an excess of 100 vessels taking part. Normal commercial length gillnets were used and most people were able to obtain more than sufficient quantities of sockeye for their needs.

The food fishery in this sub-district is undertaken by transient native people from all areas of the province. Approximately 130 families totalling 780 people utilized the privilege of the food fishery during 1971.

The majority of the salmon is canned by the use of two local companies and their facilities. Both Nelson Bros. at Port Edward and Cassiar Packing Company at Inverness Pass process the native caught salmon and supply the finished product to the native people. There has been some criticism by the native people involved that the processed food fish is not being fairly or evenly distributed once it has reached the processing facilities.

The total 1971 food fish catch is two and one-half times greater than the catch recorded in 1970.

Grenville-Principe

<u>Locality</u>	<u>Sockeye</u>	<u>Cohoe</u>	<u>Pinks</u>	<u>Chums</u>	<u>Chinooks</u>	<u>Steelhead</u>
Principe Channel	2,200	150	50	150	10	-
West Coast Banks Is.	300	10	10	50	2	-
Kitkatla Inlet	<u>-</u>	<u>20</u>	<u>30</u>	<u>10</u>	<u>20</u>	<u>-</u>
Total (1971):	2,500	180	90	210	32	-

Indian Food Fishery - Grenville Principe

The food fishery in Area 5 is carried out by the residents of Kitkatla Village and a few natives at Hartley Bay. Method of capture is by gillnet and is restricted to periods prior to, and subsequent to the commercial fishing season. Sixty permits were issued in 1971.

Terrace-Lakelse

<u>Locality</u>	<u>Sockeye</u>	<u>Cohoe</u>	<u>Pinks</u>	<u>Chums</u>	<u>Chinooks</u>	<u>Steelhead</u>
Terrace	12,000	1,200	3,000	500	700	250
Cedarvale	900	100	300	25	50	25
Kitwanga	6,000	600	1,800	100	450	150
Kitsequecla	6,000	600	1,800	100	450	150
Hazelton	9,000	700	2,400	100	600	200
Glen Vowel	4,000	400	1,000	100	200	100
Kispiox	6,000	600	1,800	100	450	150
Kitwantcool	<u>1,500</u>	<u>300</u>	<u>1,000</u>	<u>50</u>	<u>200</u>	<u>100</u>
Total:	45,400	4,500	12,600 13,100	1,075	3,100	1,125

Indian Food Fishery - Terrace-Lakelse

There are approximately 2,500 Registered Indians living in the municipalities of Terrace and Hazelton and the nine reservations in this Sub-District.

In 1971, 154 Indian Permits were issued for domestic fishing, a decrease of 2 from 1970:

Fishing was restricted to 4 days per week/6:00 P.M. Sunday till 6:00 P.M. Thursday. For a three week period /August 14th till September 4th/ fishing was further restricted to one day per week /6:00 P.M. Sunday till 6:00 P.M. Monday/.

The purpose of this restriction is to minimize damage to pink salmon stocks. Prior to 1970 large numbers of this species were taken incidentally and discarded while fishing for sockeye. When this restriction was initiated in 1970 a large number of complaints were received. However, in 1971 few complaints were received, little difficulty was encountered enforcing this restriction.

Permits were issued to heads of households only, and the amount of gear was limited to one, 10 fathom set net. Wherever practical, fishing was restricted to set nets. A few permits authorizing the use of drift nets were issued for the Kitwanga area. This was necessary as there are not sufficient locations suitable for set nets to accommodate the permit holders on this reservation.

This fishery was conducted mainly on Babine sockeye. The take of other species was much smaller, and in the case of some species such as pinks and chums, incidental.

The following is a resume of the catch figures for the Terrace-Lakelse, Sub-District for the 5 year period 1967 till 1971.

<u>Year</u>	<u>Sockeye</u>	<u>Cohoe</u>	<u>Pinks</u>	<u>Chums</u>	<u>Springs</u>	<u>Steelhead</u>
1967	17,049	1,709	2,407	66	1,158	681
1968	10,353	2,492	1,212	190	1,124	717
1969	13,741	1,307	1,203	23	845	680
1970	25,100	1,700	21,000	300	2,425	700
1971 <i>Don't agree with previous totals</i>	42,550	4,450	11,800	800	2,260	850

The large increase in the reported sockeye catch for 1970 and 1971 over the preceding years reflects a different method of enumeration. Previously catch figures were obtained by interviewing permit holders.

In 1970 and 1971 figures were arrived at by observing the fishery and estimating the fishing effort and the catch per unit of effort. The unit of effort used was one, 10 fathom net in the water for a 24 hour period, which was tended once during that period.

The number of fish a set net will take during a given period at a particular location depends to a large extent on how many times it is tended. For this reason it is very difficult to accurately estimate catch figures.

Babine-Morice - 1971

<u>Locality</u>	<u>Sockeye</u>	<u>Cohoe</u>	<u>Pinks</u>	<u>Chums</u>	<u>Chinooks</u>	<u>Steelhead</u>
Moricetwon	185	300	310	-	255	55
Fort Babine	18,900	140	50	-	250	5
Kisgegas	600	250	200	-	50	50
Sunderland River	500	-	-	-	50	-
Bear Lake	1,500	200	-	-	300	10
Total:	21,685	890	560	-	905	120

*2260
3100
6365*

(Babine-Morice cont'd)

In the Skeena River above the Kispiox to Kisgegas, permits are usually issued and accounted for by the Terrace Officer. The guardian at Hazelton estimates three families fishing at Kisgegas took 600 sockeye, 250 coho, 200 pink, 50 spring and 50 steelhead for food fish this year.

A total of 59 permits to fish for food fish were issued in the area this year.

Fort Babine Indian Band list indicates a population of 859 people. This covers the whole Babine Lake area and not the actual people at Fort Babine. There are approximately 30, families living in or around Fort Babine which live there all year round. Fishing is done by means of gillnet on a four day week, 6 P.M. Sunday to 6 P.M. Thursday during runs of sockeye and usually ends with late coho and char fishing in the fall. Fort Babine people have been taking spring salmon on the grounds above the counting wier with gaff hooks without the sanction of permits. This year a closure was put on from September 19 to October 31, 1971, covering waters $\frac{1}{2}$ mile above to $\frac{1}{2}$ mile below the counting wier, for the protection of spawning salmon. Other places on the lake use gillnets to take food fish.

Moricietown Band list indicates 530 people living in and around the Village. Fishing is done by gillnet from the Suskwa River to just below the estuary of Trout Creek, with 6 to 10 nets being used. The remainder is by dipnet or gaff operating in the Moricietown Canyon at the falls area. Fishing this year was on a split week basis from 12 P.M. Sunday to 12 P.M. Monday, 12 P.M. Tuesday to 12 P.M. Wednesday, 12 P.M. Thursday to 12 P.M. Saturday of each week.

District 8 Food Fishery Totals

<u>Year</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Chinook</u>	<u>Steelhead</u>	<u>No. People</u>	<u>No. Permits</u>
1971	89,710	7,427	15,977	1,432	4,484	1,310	3,900	421
1970	61,453	3,420	26,107	1,221	4,254	1,201	6,223	420
1969	49,961	3,864	22,859	440	1,761	877	5,948	337
1968	52,300	13,253	6,832	1,234	3,436	1,147	4,335	377
1967	53,641	7,501	8,291	1,495	6,024	881	4,207	409

There were no prosecutions in the Nass Area in the Food Fishery but 11 sets confiscated from persons unknown were thought to have been set by Indians.

Oulachon Fishery

About 200 tons of Oulachons were taken from the Nass River and Estuary by Indians for food.

5. SPAWNING SUMMARY

Area 3 - Nass River

Sockeye

An escapement totalling 253,150 sockeye is well above the ten year average of 115,260 and is slightly more than triple the brood year escapement of 84,000 spawners. The area density is considered heavy and may be attributed to a very strong return late in the migration period which occurred during the area closure for pink salmon conservation. All the major producing streams were well stocked as follows: Meziadin Lake - 192,000, Bowser Lake - 23,000, Kwinigeese - 20,000 and Damdochax - 15,000, all of which showed an increase over brood year supplies. Four minor producers showed minor decreases and two were stocked similar to the brood year.

Cohoe

This year's escapement of 44,500 coho is down somewhat from the brood year total of 56,200 but compares equally with the ten year average of 44,630. The major streams received the following seedings: Chanberry - 5,000, Ishkeenich - 1,500, Khutzemateen - 1,500, Kiteen - 2,500, Kwinimass - 12,000, Meziadin - 2,000, and Tseax - 10,000. Of the 25 coho streams 14 remained the same, 6 showed a decrease and 5 increased compared with brood year stocks. The area spawning density is classed as medium.