A SPAWNING SURVEY REPORT OF HARRY'S RIVER

by
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November, 1966.

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Resource Development Service

Dept. of Fisheries of Canada

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Introduction

During the period between October 30 and November 5, 1966, the Special Projects Unit, with the help of personnel from the Conservation Service, carried out a spawning survey on several sections of Harry's River and its tributaries. The purpose of this survey was to locate and measure Atlantic salmon spawning areas, both active and inactive*, especially areas which will be directly affected by the proposed Industrial Diversion.

A helicopter was to aid in the survey, but this was not available at the appointed time and, therefore, areas which were inaccessible by road had to be eliminated.

The survey on the Main River was discontinued after a few sections were completed because of the high flood levels which made it impossible to observe any salmon redds that may have been present.

Tributaries surveyed included - Browmoore, Long Gull Pond, Rushy, Black Duck, Trout, Roberts, Saunders, Furries, Noname, Ahwachenjeech, North, Gallants, Hickeys, Muskrat, Spruce and Pinchgut Brooks. Each will be discussed separately in this report. Large portions of several tributaries could not be surveyed completely due to their inaccessibility. However, the information collected from the sections which were surveyed and the accounts received from the local Fishery Officers and Wardens who are very familiar with the area, is considered sufficient for identifying productive spawning areas.

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* Active Areas - Areas where salmon redds are found or where salmon are observed spawning.
Inactive Areas - Areas where there is no indication of spawning activity, although conditions are favourable.

Tables I - XIV list the estimates of spawning gravel and other bottom types in sections surveyed on the main river and tributaries.

Fig. 1, A map of the Harry's River Basin, shows the various sections visited during the survey.

River Basin

Harry's River and its tributaries drain approximately 330 square miles. From the mouth at Main Gut, St. Georges Bay, to Georges Lake, there is a distance of approximately 20.5 linear miles.

The basin lies in a Paleozic, mostly sedimentary, Region. Vegetational cover is predominantly Black Spruce, Balsam, Fir and Birch. Logging operations for the Bowaters Pulp and Paper Industry at Corner Brook are currently being carried out in various sections of the basin. However, the river is not used for the transportation of logs.

Settlements on the Harry's River Basin such as Spruce Brook, Gallants and Black Duck, are not believed to pose any Pollution barrier to fish.

Main River

That part of the system from Main Gut to Georges Lake (20.5 linear miles) is the main river. No salmon or salmon redds were observed in the sections surveyed. A high flood level and swift velocities along with the predominantly boulder and rubble bottom suggests poor spawning conditions. The easy access to more favourable conditions on tributaries in the headwater region (e.g. Pinchgut Brook) would indicate that very few salmon utilize the main river for spawning purposes.

Table I lists the potential spawning areas and other bottom types in sections examined on the main river.

Tributaries

(1) Browmoore Brook:

Browmoore Brook enters Harry's River 0.8 miles upstream from the mouth. Only the first 3 miles of this tributary were surveyed (Table II).

The following statistics apply:

Width Range - 15' - 30'

Depth Range - 6" - 5'

The wide depth range is due to the many pools scattered throughout the river.

The section examined is a smooth flowing glide of uniform current with a gravel bottom. The channel meanders and gives way to tumbling riffles over steep gradients. Bottom types are rubble and boulder further upstream.

Vegetation in the area includes alders along the river bank, with black spruce, fir and birch beyond.

No spawning redds were observed, although it is reported to be an excellent trout stream.

(2) Long Gull Pond Brook:

This tributary drains Long Gull Pond and enters Harry's River 3 miles above the mouth. The area examined on this stream extended from Long Gull Pond to the mouth, a distance of approximately 1½ miles (Fig. 1).

Statistics on this section are the following:

Width Range - 5' - 30'

Depth Range - 6" - 5'

In the lower reach this brook is narrow and turbulent, flowing over boulder and rubble. In the upper reach it becomes a sluggish meandering stream with several deep holes and excellent spawning ground. Fourteen salmon redds and three salmon were observed here (Table III).

A small feeder flowing into Gull Pond Brook at the outlet of Gull Pond was surveyed to a point approximately 1000 feet upstream. At the mouth is a section, 200 feet long by 6 feet wide by 1 foot deep, which could be described as a natural spawning channel, because all conditions for spawning seemed ideal. The remainder of the feeder is a narrow stream, approximately 3 feet wide, consisting mostly of mud and boulders. The channel meanders through thick alder beds. No spawning redds were observed in this feeder.

(3) Rushy Pond Brook:

This Brook is approximately 1¼ miles long and drains Rushy Pond, entering Gull Pond Brook about 1/2 mile upstream from the junction of Gull Pond Brook and Harry's River.

The channel characteristics are the following:

Width Range - 3 - 4 feet

Depth Range - 1 - 2 feet

This stream is typically deep and narrow, meandering through bogland and dense alder beds. It is reported to be dried up completely during the summer, but even at the current high flood level, it is considered to be too small to be utilized by salmon.

Table IV lists the type of bottom found in the area.

(4) Black Duck Brook:

Black Duck Brook connects Black Duck Pond with Harry's River. It is approximately 4 miles long, 15 to 20 feet wide and 1 to 2.5 feet deep. From the mouth to the Stephenville Highway, an approximate distance of 2 miles, the velocity is fast, and the bottom consists of rubble and boulder mixed with gravel. There are patches of good spawning gravel (Table V). The settlement of Black Duck is located along this river near the highway.

The stream is characterized by a fast current over a predominantly boulder bottom in the section 2 miles upstream from the road to Black Duck Pond. Two salmon redds were located in this area.

A short stream approximately 1/2 mile long and connecting Black Duck Pond with Mistaken Pond, was surveyed. It has physical characteristics similar to Black Duck Brook. No redds were found in this section.

(5) Trout Brook:

The 17 miles of main stream from Bottle Neck Pond to Harry's River were surveyed. The width varies from 10 feet in the upper reaches to 100 feet in the lower sections. There are several small brooks tributary to Trout Brook, and most of these were judged to be too small for utilization by salmon.

From Bottle Neck Pond, the river meanders through bogland for approximately 1½ miles. This section is deep, and the bottom types are predominantly mud and sand. Further down river there is steeper gradient

and, consequently, faster velocities. The bottom types here are rubble and boulder. This condition prevails for approximately 2 miles. Where the river gradually widens out, gravel and rubble become more plentiful.

Alders grow densely along the river's edge, and spruce, fir and birch cover the surrounding country.

Although there are favourable conditions for spawning, only 1 salmon redd and 1 salmon were observed. In recent years very few salmon have been reported utilizing this tributary. However, there is a large brook trout population.

Table VI lists the approximate extent of spawning areas and bottom types in the section surveyed.

(6) Roberts Brook:

The section examined on this tributary extended from the mouth to a point approximately 3 miles upstream. The average width was 60 - 70 feet, and the depth averaged 1 - 2 feet. The velocity was fast. Bedrock, boulder, rubble and patches of gravel made up the bottom types. Conditions in this area were considered to be unfavourable for spawning; no redds were observed.

Vegetation in the area consists of alders along the river bank and birch, fir and spruce beyond.

Table VII gives a list of the bottom types in the area surveyed.

(7) Saunders Brook:

According to the topographic maps of the area, this stream originates in small ponds and boglands and enters Harry's River 6.5 miles from the mouth. In the first mile from the mouth of the brook, the average

width is 12 feet, and the depth ranges from 6 inches in riffles and runs to 2 feet in pools.

There is much fine gravel and sand in the slow moving sections, and this material could be used for trout spawning. This brook is reported to be only a shallow trickle during the summer months.

Vegetation in the area surveyed consists of overhanging alders with birch, fir and spruce in the surrounding country.

No spawning redds were found in the section examined. Table VIII gives a list of the various bottom types in the area.

(8) Furries Brook:

Reference to topographic maps of the area, shows that this stream originates in small ponds and bogland. The section surveyed was from the mouth to a point approximately 1½ miles upstream. The width of this section ranges from 6 to 20 feet and depth ranges from 6 inches to 4 feet.

There are scattered patches of spawning gravel throughout, but medium to poor spawning conditions prevail over these patches. In most places the current was too swift for spawning. No redds were found.

(9) No Name Brook:

This small stream, like Furries Brook, originates from small ponds and boglands. The section examined was from the mouth to a point approximately 1 mile upstream. The width ranges from 3 to 12 feet, and the depth ranges from 6 inches to 3 feet.

In many sections the stream is blocked with slash from pulpwood cutting and blown down trees. No spawning redds were found. Table X gives a list of the spawning gravel and other bottom types in the area examined.

(10) North Brook:

The area surveyed on this brook extended from the mouth to approximately 3½ miles upstream. A Falls, which is considered to be a complete obstruction to salmon, is reported 5 miles from the mouth. The mean width of this section is 100 feet, and the depth ranges from 10 to 12 inches. The velocity is medium to fast.

The vegetation consists of densely growing alders along most of the river bank with spruce, birch and fir beyond.

There is very little spawning ground throughout the section except near the mouth. No spawning redds were observed. Local residents report that no salmon have been seen in North Brook in recent years.

Table XI gives a list of the spawning ground and other bottom types in the area surveyed.

(11) Muskrat Brook:

This is a small stream which flows into Georges Lake. The section examined was from the mouth to a point 2½ miles upstream. The average width is 10 feet, and the average depth is 1 foot. There are many pools. The river velocity is medium to slow.

Vegetation in this area consists of overhanging densely growing alders along the stream banks with spruce, fir and birch beyond.

There are some areas with good spawning gravel, especially suitable for trout. Twenty-four trout redds were found in one short stretch. No salmon redds were found.

Table XII gives a list of the spawning areas and other bottom types in the section examined.

(12) Spruce Brook:

Only the lower three miles of Spruce Brook were examined. The width ranges from 15 feet at mouth to 75 feet further upstream, and the depth ranges from 4 feet at mouth to 6 inches in the upper stretches. The first two miles contain some good spawning ground (Table XIII). Approximately 50 salmon were seen in this brook by the local fishery warden two weeks previous to this survey. A very thorough search was made in the area, but no salmon or redds were seen. It is very likely that the heavy rains in the week previous to the survey caused current velocities sufficient to erase evidence of spawning.

Approximately three miles upstream is a series of falls and rapids. The largest fall has a vertical face, 10 feet high by 10 feet wide, and the overflowing water is very turbulent. This fall was considered to be impassable or passable with much difficulty.

Vegetation in the area consists of alders along the river bank, with spruce, fir and birch beyond. Many areas have been cut over for pulpwood. Pulpwood operations are currently active in this area.

(13) Pinchgut Brook:

The survey covered the 4 miles of main stream from Pinchgut Lake to George's Lake. The width of this stream ranges from 60 to 125 feet and the depth ranges from 6 inches to 4 feet. In most places the river is fast, with predominantly boulder and rubble bottom types, but in a few areas the velocity is slower and some good spawning ground is found, especially along the lee sides of river bends. Seventeen redds and a few salmon were observed.

A wooden dam is located at the outlet of Pinchgut Lake. The gates are kept open during most of the year and pose no obstruction to fish migrations.

Densely growing alders line the river in most places, and spruce, birch and fir cover the surrounding country.

Table XIV gives a list of the spawning area and other bottom types in this stream.

(14) Ahwachenjeech Brook:

This brook is only a narrow stream, blocked by beaver dams a short distance from the mouth. These dams pose complete obstructions to salmon. No spawning grounds are reported, and salmon are not known to frequent this stream.

(15) Gallants Brook:

This brook is dammed near the mouth to create a water supply for the town of Gallants. In summer the section below the dam is often dry, and this cancels the possible use of the stream by salmon.

(16) Hickey's Brook:

Hickey's Brook is a very small stream which is often dry during the salmon run. There is no spawning activity carried on in this stream.

Conclusion

Some excellent spawning grounds occur in the main river, but it is not believed that a great number of salmon utilize these for spawning because of the high flood levels and velocities occurring during the spawning season.

Rushy, Saunders, Furries, No Name, Ahwachenjeech, Gallants and Hickey's Brooks are small streams, and in most cases they drain small ponds and bogland. During the summer months they are reported to be dried up completely or only small "trickles".

Roberts Brook is one of the largest tributaries on the main river. It is reported to be the only tributary on the main river below Georges Lake which contains a sizeable run of salmon.

The remaining streams are fairly large and undoubtedly contain sufficient flow for salmon migrations.

This survey revealed very few salmon or little evidence of salmon. Furthermore, it is the contention of the fishery personnel in the area that salmon move upstream to the Georges Lake and Pinchgut Lake areas and do not use the lower tributaries on the main river to any great extent. This may be due to the decrease in flow in the lower streams during the spawning migration.

APPENDIX A

Explanation of Terms used in Tables

(1) Condition of Spawning Area:

(A) Good spawning areas include the following factors -

(1) gravel 3/4 - 4 inches

(2) velocity 1.1 - 1.6 f.p.s.

(3) depth 0.5 - 1.0

(B) Medium spawning areas -

At least one factor optimum and other factors suboptimum

(C) Poor spawning areas -

One or more of the factors so severely limiting that any favourable factor is overridden.

(2) Classification of Bottom Types:

Bedrock - rock strata

Boulders - rocks over 12 inches

Rubble - rocks 4 to 12 inches

Gravel - rocks 0.125 to 4 inches

Sand - particles smaller than fine gravel

Silt - less compact than clay, very slight grittiness

TABLE I. Bottom Composition on the Main River

Section Examined	Distance Section Examined	Extent of Spawning Area (sq. yds.)	Condition of Spawning Area	No. of Redds Observed	Bottom Type (% of total section examined)						Remarks
					Bedrock	Boulder	Rubble	Gravel	Sand	Silt	
From Black Duck Brook - Rushy Pond Brook (3.0 - 4.3 miles from mouth)	1.3 miles	Nil		Nil		50	50				Good rearing area
From Furries Brook - No Name Brook (8.8 - 10.0 miles from mouth)	1.3 miles	800	Poor	Nil		25	50	22	3		Current too swift for spawning
From Gallants upstream (18.0 - 18.3 miles from mouth	0.3 miles	350	Poor	Nil		80	18	2			
Above Gallants (18.3 - 19.3 miles from mouth)	1.0 miles	Nil	-	Nil		80	10				Section very swift with white water

TABLE I. (Cont'd)

Section Examined	Distance Section Examined	Extent of Spawning Area (sq. yds.)	Condition of Spawning Area	No. of Redds Observed	Bottom Type (% of total section examined)						Remarks
					Bedrock	Boulder	Rubble	Gravel	Sand	Silt	
Above Gallants (19.3 - 19.8 miles from mouth)	0.5 miles	100	Poor	Nil		85	10	5			
Above Gallants - outlet of George's Lake (19.8 - 20.3 miles from mouth)	0.5 miles	600	Poor	Nil		80	10	8	2		

TABLE II. Bottom Composition of Browmoore Brook

Section Examined	Distance Section Examined	Extent of Spawning Area (sq. yds.)	Condition of Spawning Area	No. of Redds Observed	Bottom Type (% of total section examined)						Remarks
					Bedrock	Boulder	Rubble	Gravel	Sand	Silt	
From mouth to 1.5 miles upstream	1.5 Miles	300	Medium	Nil				20	50	30	Smooth flowing section of uniform current
From 1.5 miles to 3.0 miles upstream	1.5 Miles	150	Poor	Nil		20	30	45	5		Spawning areas only in patches behind boulders

TABLE III. Bottom Composition of Long Gull Pond Brook

Section Examined	Distance Section Examined	Extent of Spawning Area (sq. yds.)	Condition of Spawning Area	No. of Redds Observed	Bottom Type (% of total section examined)						Remarks
					Bedrock	Boulder	Rubble	Gravel	Sand	Silt	
From mouth to 600 ft. upstream (0 - 600 ft. from mouth)	600 ft.	50		Nil		40	45	5	5	5	
From Highway Bridge to 1600 ft. upstream (600 ft. - 1600 ft. from mouth)	1000 ft.	Nil		Nil		40	45	5	5	5	
From 1600 ft. to 2600 ft. upstream	1000 ft.	2000 sq.yds.	Poor	2			15	80	5		50% of spawning ground non-usable because of swift current
From 2600 ft. to 3600 ft.	1000 ft.	2100	Good	12			1	95	4		3 salmon in this section
From 3600 ft. to 4600 ft.	1000 ft.	Nil	-	Nil			4		2	90	Slow current; stream meanders

TABLE III. (Cont'd)

Section Examined	Distance Section Examined	Extent of Spawning Area (sq. yds.)	Condition of Spawning Area	No. of Redds Observed	Bottom Type (% of total section examined)						Remarks
					Bedrock	Boulder	Rubble	Gravel	Sand	Silt	
From 4600 ft. to 5600 ft.	1000 ft.	90	Poor	Nil			80	10	5	5	
From 5600 ft. to 6600 ft.	1000 ft.	3000	Medium	Nil			50	40	10		Upper Section excellent for spawning but lower section too swift and rocky
From 6600 ft. to Gull Pond (Including first 1000 ft. of feeder flowing into Gull Pond Brook at outlet of Gull Pond)	2000 ft.	1200	Good	Nil			2	95	2	1	Excellent spawning ground at outlet of Gull Pond

TABLE IV. Bottom Composition of Rushy Pond Brook

Section Examined	Distance Section Examined	Extent of Spawning Area (sq. yds.)	Condition of Spawning Area	No. of Redds Observed	Bottom Type (% of total section examined)						Remarks
					Bedrock	Boulder	Rubble	Gravel	Sand	Silt	
From mouth to Railway Line (0 - 0.8 miles from mouth)	0.8 miles	Nil	-	Nil		10	20	10		60	
From Railway Line to Rushy Pond (0.8 - 1.3 miles from mouth)	0.5 miles	Nil	-	Nil				10		90	This stream too small for salmon even at high flood levels.

TABLE V. Bottom Composition of Black Duck Brook

Section Examined	Distance Section Examined	Extent of Spawning Area (sq. yds.)	Condition of Spawning Area	No. of Redds Observed	Bottom Type (% of total section examined)						Remarks
					Bedrock	Boulder	Rubble	Gravel	Sand	Silt	
From mouth - Highway (0 - 2 miles)	2 miles	4000	Medium	Nil		20	30	40	10		Generally gravel mixed with rubble and boulder
From Highway to Black Duck Pond (2 - 4 mi.)	2 miles	125	Medium	2		90	10	Trace			Current Fast
Stream between Black Duck Pond and Mistaken Pond	0.5 mile	40	Medium	Nil		90	10	Trace			

TABLE VI. Bottom Composition of Trout Brook

Section Examined	Distance Section Examined	Extent of Spawning Area (sq. yds.)	Condition of Spawning Area	No. of Redds Observed	Bottom Type (% of total section examined)						Remarks
					Bedrock	Boulder	Rubble	Gravel	Sand	Silt	
From mouth to 2 miles upstream (0 - 2 miles from mouth)	2 miles	10,000	Medium	Nil		30	30	30	5	5	
From 2 mile point to 4 miles from mouth	2 miles	10,000	Medium	Nil		30	30	30	5	5	
From 4 miles to 5½ miles from mouth	1½ miles	8,000	Medium	Nil		30	30	30	5	5	
From 5½ miles to 6½ miles from mouth	1 mile	10,000	Medium	Nil		15	20	50	10	5	
From 6½ miles to 7½ miles from mouth	1 mile	Nil	-	Nil		20	60	10	5	5	Gravel mixed with rubble
From 7½ miles to 9 miles from mouth	1½ miles	4,000	Medium	Nil		20	60	15	3	2	
From 9 miles - 10 miles from mouth	1 mile	4,000	Medium	Nil		20	60	15	3	2	

TABLE VI. (Cont'd)

Section Examined	Distance Section Examined	Extent of Spawning Area (sq. yds.)	Condition of Spawning Area	No. of Redds Observed	Bottom Type (% of total section examined)						Remarks
					Bedrock	Boulder	Rubble	Gravel	Sand	Silt	
From 10 miles from mouth - Trans Canada Highway approx. 11 miles from mouth	1 mile	2,300	Poor	Nil		30	35	17.5	10	7.5	
From Trans Canada Highway (11 miles from mouth - 13 miles from mouth)	2 miles	10,000	Good	1		30	30	30	5	5	1 Salmon
From 13 mi. - 14 miles from mouth	1 mile	4,000	Medium	Nil		30	30	30	5	5	
From 14 mi. - 15 miles from mouth	1 mile	Nil		Nil		60	30	5	3	2	River velocity - fast
From 15 mi. - 16 miles from mouth	1 mile	Nil	-	Nil		40	20	10	15	15	Gravel - very fine
From 16 mi. - 17 miles from mouth (outlet of Bottle Neck Pond)	1 mile	Nil	-	Nil			5			95	River velocity - slow River meanders through Bogland

TABLE VII. Bottom Composition of Roberts Brook

Section Examined	Distance Section Examined	Extent of Spawning Area (sq. yds.)	Condition of Spawning Area	No. of Redds Observed	Bottom Type (% of total section examined)						Remarks
					Bedrock	Boulder	Rubble	Gravel	Sand	Silt	
From Mouth - 2000 ft. upstream	2000 ft.	Nil	-	Nil		60	40				
From 2000 ft. - 4000 ft. from mouth	2000 ft.	Nil	-	Nil		45	35	15	5		Gravel mixed with rubble
From 4000 ft. - 6000 ft. from mouth	2000 ft.	Nil		Nil	0.5	10	60	20	8	1.5	Gravel mixed with rubble and boulder. River velocity-fast.
From 6000 ft. - 8000 ft. from mouth	2000 ft.	Nil		Nil	40	10	30	20			River velocity - fast
From 8000 ft. - 10,000 ft. from mouth	2000 ft.	Nil		Nil	10	20	60	10			River velocity - fast
From 10,000 ft. to 15,000 ft. from mouth (approx. 3 miles)	5000 ft.	Nil		Nil	25	30	33	10	2		River velocity - fast

TABLE VIII. Bottom Composition of Saunders Brook

Section Examined	Distance Section Examined	Extent of Spawning Area (sq. yds.)	Condition of Spawning Area	No. of Redds Observed	Bottom Type (% of total section examined)						Remarks
					Bedrock	Boulder	Rubble	Gravel	Sand	Silt	
From mouth - 1500 ft. upstream from mouth	1500 ft.	Nil	-	Nil			75	20	3	2	Very fine gravel - probably suitable for trout spawning
From 1500 ft. - 2500 ft. from mouth	1000 ft.	Nil	-	Nil			80	15	3	2	" "
From 2500 ft. - 3500 ft. from mouth	1000 ft.	Nil	-	Nil					50	50	
3500 ft. - 4000 ft. from mouth	500 ft.	Nil		Nil			70	25	3	2	
4000 ft. - 5000 ft. from mouth	1000 ft.	Nil		Nil				10	45	45	Steady area

TABLE IX. Bottom Composition of Furries Brook

Section Examined	Distance Section Examined	Extent of Spawning Area (sq. yds.)	Condition of Spawning Area	No. of Redds Observed	Bottom Type (% of total section examined)						Remarks
					Bedrock	Boulder	Rubble	Gravel	Sand	Silt	
From mouth - 1000' upstream	1000 ft.	Nil	-	Nil		80	10	10			Current - swift
From 1000' - 2000 ft. from mouth	1000 ft.	100 sq.yds.	Medium	Nil		5	20	75			
From 2000 ft. - 3000 ft. from mouth	1000 ft.	200 sq.yds.	Poor	Nil		1	15	80	5		
From 3000 ft. - 4000 ft. from mouth	1000 ft.	100 sq.yds.	Poor	Nil			40	50	10		
From 4000 ft. - 5000 ft. from mouth	1000 ft.	Nil	-	Nil			60	30	8		Current - swift Bottom compact
From 5000 ft. - 6000 ft. from mouth	1000 ft.	Nil	-	Nil			80	10	10		
From 6000 ft - 7000 ft. upstream	1000 ft.	Nil	-	Nil			80	18	2		

TABLE X. Bottom Composition of Noname Brook

Section Examined	Distance Section Examined	Extent of Spawning Area (sq. yds.)	Condition of Spawning Area	No. of Redds Observed	Bottom Type (% of total section examined)						Remarks
					Bedrock	Boulder	Rubble	Gravel	Sand	Silt	
From mouth - 1500' from mouth	1500 ft.	10 sq. yds.	Poor	Nil		50	20	20	10		
From 1500 ft. - 2500 ft. from mouth	1000 ft.	300 sq. yds.	Medium	Nil			5	60	30	5	
From 2500' - 3500 ft. from mouth	1000 ft.	Nil	-	Nil			15	60	5	20	

TABLE XI. Bottom Composition of North Brook

Section Examined	Distance Section Examined	Extent of Spawning Area (sq. yds.)	Condition of Spawning Area	No. of Redds Observed	Bottom Type (% of total section examined)						Remarks
					Bedrock	Boulder	Rubble	Gravel	Sand	Silt	
From mouth - 1 mile from mouth	1 mile	500 sq. yds.	Medium	Nil		50	40	5	5		
From 1 mile - 2 miles from mouth	1 mile	Nil		Nil		50	50				
From 2 miles - 3 miles from mouth	1 mile	Nil		Nil		50	50				
From 3 miles - 3½ miles from mouth	½ mile	Nil		Nil		50	50				

TABLE XII. Bottom Composition of Muskrat Brook

Section Examined	Distance Section Examined	Extent of Spawning Area (sq. yds.)	Condition of Spawning Area	No. of Redds Observed	Bottom Type (% of total section examined)						Remarks
					Bedrock	Boulder	Rubble	Gravel	Sand	Silt	
From mouth - 1 mile upstream	1 mile	100 sq. yds.	Medium	Nil			10	10	80		Many pools in this section
From 1 mile - 1½ miles from mouth	1/2 mile	2000 sq.yds.	Good	24 Trout Redds			10	70	20		
From 1½ miles to 2½ miles from mouth	1 mile	Nil	-	Nil		80	20				

TABLE XIII. Bottom Composition of Spruce Brook

Section Examined	Distance Section Examined	Extent of Spawning Area (sq. yds.)	Condition of Spawning Area	No. of Redds Observed	Bottom Type (% of total section examined)						Remarks
					Bedrock	Boulder	Rubble	Gravel	Sand	Silt	
From mouth - 1 mile upstream	1 mile	3000 sq.yds.	Good	Nil				98	2		
From 1 mile - 1½ miles from mouth	1/2 mile	5000 sq.yds.	Good	Nil			10	80	5	5	No Redds found; although salmon previously reported in this area.
From 1½ miles - 3 miles from mouth	1½ miles	1000 sq.yds.	Good	Nil	20	40	20	15	2	3	Falls at end of this section.

TABLE XIV. Bottom Composition of Pinchgut Brook

Section Examined	Distance Section Examined	Extent of Spawning Area (sq. yds.)	Condition of Spawning Area	No. of Redds Observed	Bottom Type (% of total section examined)						Remarks
					Bedrock	Boulder	Rubble	Gravel	Sand	Silt	
From mouth - 3/4 mile upstream	0.8 mile	1200 sq.yds.	Good	9			90	10			1 salmon seen in this area
From 3/4 mile - 1½ mile from mouth	1.8 miles	650 sq.yds.	Good	3		10	80	10			
From 1.5 miles (Trans Canada Highway) - 1.8 miles from mouth	0.3 miles	Nil	-	Nil	25	75					
From 1.8 miles - 3.0 miles from mouth	1¼ miles	1300 sq.yds.	Good	5		5	60	35			
From 3.0 mile to 4.0 mile from mouth (outlet of Pinchgut Lake)	1 mile	500 sq.yds.	Medium	Nil		75	20	5			