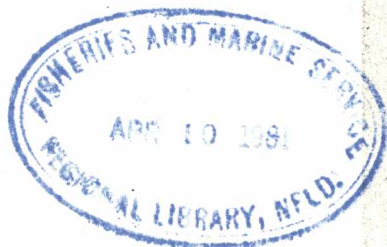


# Angling Survey of the Cains River, Miramichi River System, New Brunswick, 1976

J. L. Peppar and P. R. Pickard



Freshwater and Anadromous Division  
Resource Branch  
Fisheries and Marine Service  
Department of Fisheries and the Environment  
Halifax, Nova Scotia

January, 1978

**Fisheries and Marine Service**  
**Manuscript Report No. 1444**

## Fisheries and Marine Service

### Manuscript Reports

These reports contain scientific and technical information that represents an important contribution to existing knowledge but which for some reason may not be appropriate for primary scientific (i.e. *Journal*) publication. They differ from Technical Reports in terms of subject scope and potential audience: Manuscript Reports deal primarily with national or regional problems and distribution is generally restricted to institutions or individuals located in particular regions of Canada. No restriction is placed on subject matter and the series reflects the broad interests and policies of the Fisheries and Marine Service, namely, fisheries management, technology and development, ocean sciences and aquatic environments relevant to Canada.

Manuscript Reports may be cited as full publications. The correct citation appears above the abstract of each report. Each report will be abstracted by *Aquatic Sciences and Fisheries Abstracts* and will be indexed annually in the Service's index to scientific and technical publications.

Numbers 1-900 in this series were issued as Manuscript Reports (Biological Series) of the Biological Board of Canada, and subsequent to 1937 when the name of the Board was changed by Act of Parliament, as Manuscript Reports (Biological Series) of the Fisheries Research Board of Canada. Numbers 901-1425 were issued as Manuscript Reports of the Fisheries Research Board of Canada. The series name was changed with report number 1426.

Details on the availability of Manuscript Reports in hard copy may be obtained from the issuing establishment indicated on the front cover.

## Service des pêches et des sciences de la mer

### Manuscrits

Ces rapports contiennent des renseignements scientifiques et techniques qui constituent une contribution importante aux connaissances actuelles mais qui, pour une raison ou pour une autre, ne semblent pas appropriés pour la publication dans un journal scientifique. Ils se distinguent des Rapports techniques par la portée du sujet et le lecteur visé; en effet, ils s'attachent principalement à des problèmes d'ordre national ou régional et la distribution en est généralement limitée aux organismes et aux personnes de régions particulières du Canada. Il n'y a aucune restriction quant au sujet; de fait, la série reflète la vaste gamme des intérêts et des politiques du Service des pêches et de la mer, notamment gestion des pêches; techniques et développement, sciences océaniques et environnements aquatiques, au Canada.

Les Manuscrits peuvent être considérés comme des publications complètes. Le titre exact paraît au haut du résumé de chaque rapport, qui sera publié dans la revue *Aquatic Sciences and Fisheries Abstracts* et qui figurera dans l'index annuel des publications scientifiques et techniques du Service.

Les numéros de 1 à 900 de cette série ont été publiés à titre de manuscrits (Série biologique) de l'Office de biologie du Canada, et après le changement de la désignation de cet organisme par décret du Parlement, en 1937, ont été classés en tant que manuscrits (Série biologique) de l'Office des recherches sur les pêcheries du Canada. Les numéros allant de 901 à 1425 ont été publiés à titre de manuscrits de l'Office des recherches sur les pêcheries du Canada. Le nom de la série a été changé à partir du rapport numéro 1426.

La page couverture porte le nom de l'établissement auteur où l'on peut se procurer les rapports sous couverture cartonnée.

Fisheries and Marine Service  
Manuscript Report No. 1444

January, 1978

ANGLING SURVEY OF THE CAINS RIVER,  
MIRAMICHI RIVER SYSTEM, NEW BRUNSWICK, 1976

J.L. Peppar and P.R. Pickard

Freshwater and Anadromous Division  
Resource Branch  
Fisheries and Marine Service  
Department of Fisheries and the Environment  
Halifax, Nova Scotia  
B3J 2S7



## CONTENTS

LIST OF TABLES. . . . .	v
ABSTRACT/RESUME . . . . .	vii
INTRODUCTION. . . . .	1
AREA OF STUDY . . . . .	2
METHODS . . . . .	2
RESULTS . . . . .	2
Field Survey . . . . .	2
Weekly Salmon and Trout Harvest. . . . .	2
Salmon Angling Quality . . . . .	2
Chronological Distribution of Salmon Harvest . . . . .	2
Summary of Angling Effort. . . . .	3
Fishing Camp Survey. . . . .	4
Estimate of Total Salmon Harvest . . . . .	4
Response to Questionnaire. . . . .	4
Angler Residence . . . . .	4
Angler Interest in Sport Fishing . . . . .	5
Predicted Angling Effort . . . . .	5
Past Angling Experience on the Cains River . . . . .	5
Anglers' Preferred Species and Type of Angler Utilizing the Resource. . . . .	6
Type of Angling Conducted. . . . .	6
Angler Interest in Status of the Water . . . . .	7
Predicted Angling Effort Should the Cains be Scheduled . . . . .	7
Other Areas Angled in New Brunswick. . . . .	7
Most Preferred Areas in New Brunswick to Angle . . . . .	7
Predicted Angling Effort on Cains River for Next Year . . . . .	7
DISCUSSION. . . . .	8
ACKNOWLEDGEMENTS. . . . .	9
APPENDIX A - CREEL CENSUS REPORT FORM, 1-A. . . . .	10
APPENDIX B - CREEL CENSUS DATA (FORM), 1-B. . . . .	11
APPENDIX C - CREEL QUESTIONNAIRE: CAINS RIVER (FORM). . . . .	12



LIST OF TABLES

TABLE 1. Weekly salmon and trout harvest, Cains River (Miramichi River system), 1976. . . . . 2

TABLE 2. Salmon angling quality, Cains River (Miramichi River system), 1976. . . . . 3

TABLE 3. Chronological distribution of salmon harvest, Cains River (Miramichi River system), 1976. . . . . 3

TABLE 4. Summary of angling effort, Cains River (Miramichi River system), 1976. . . . . 4

TABLE 5. Question 1: Residence (county, non-resident) locations of anglers utilizing resource . . . . . 4

TABLE 6. Question 2: Residence (city, town, village, community, or non-resident) locations of anglers utilizing resource. . . . . 5

TABLE 7. Question 3: How many days do you normally fish (anywhere) each year? . . . . . 5

TABLE 8. Question 4: How many days do you plan to fish on the Cains River? . . . . . 5

TABLE 9. Question 5: Have you fished the Cains River before? . . . . . 6

TABLE 10. Question 6: What species of fish do you most prefer to catch? . . . . . 6

TABLE 11. Question 7: What species of fish are you most interested in catching here? . . . . . 6

TABLE 12. Question 8: In your opinion, are you predominantly a salmon angler or a trout angler? Or other? . . . 6

TABLE 13. Question 9: What type of fishing are you doing on this trip? What type do you prefer? . . . . . 6

TABLE 14. Question 10: Do you feel that the Cains River should be "scheduled" during the salmon angling season (i.e., fly fishing only?) If yes, why? If no, why? . . . . . 7

TABLE 15. Question 11: If the Cains River should become a scheduled river, will you still continue to fish the river? . . . . . 7

TABLE 16. Question 12: Where else do you angle in New Brunswick? . . . . . 7

TABLE 17.	Question 13: Where in New Brunswick do you most prefer to angle? . . . . .	7
TABLE 18.	Question 14: Do you plan to fish the Cains again next year? . . . . .	8



## ABSTRACT

Pepper, J.L. and P.R. Pickard. 1978. Angling survey of the Cains River, Miramichi River system, New Brunswick, 1976. Fish. Mar. Serv. MS Rep. No. 1444:20 p.

An angling survey was conducted on the Cains River, Miramichi River system, New Brunswick, during the 1976 salmon angling season. Angling, especially on the Crown Open stretches, was monitored closely to assess overall angling quality. In addition to the collection of catch statistics, characteristics and interests of the anglers utilizing the resource were obtained through the use of a questionnaire.

Key words: "Crown Open", "Crown Reserve", creel census, angling quality, angling effort, harvest, scheduled waters, angler characteristics.

## RESUME

Pepper, J.L. and P.R. Pickard. 1978. Angling survey of the Cains River, Miramichi River system, New Brunswick, 1976. Fish. Mar. Serv. MS Rep. No. 1444:20 p.

Une étude de la pêche sportive sur la rivière Cains, affluent de la rivière Miramichi, Nouveau-Brunswick, a été effectuée durant la saison de pêche sportive au saumon de 1976. La pêche sportive, particulièrement dans les parties de la rivière dite "Libres de la Couronne", a été étroitement contrôlé afin d'évaluer la qualité d'ensemble de la pêche. En plus de recueillir des statistiques sur les prises, on a obtenu, grâce à un questionnaire, des données sur les caractéristiques et l'intérêt des pêcheurs sportifs utilisant la ressource.

Mots clés: "Libre de la Couronne", "Réservée de la Couronne", le dénombrement des prises, qualité de la pêche, l'effort de pêche, la prise, eaux règlementées, les caractéristiques des pêcheurs.

## INTRODUCTION

The Cains River is the major late-run tributary of the Southwest Miramichi River, New Brunswick (Fig.). Prior to 1971, angling for salmon on this river closed October 16. In 1971, additional angling restrictions were imposed throughout the Miramichi River system and, as a result, the salmon angling season on the Cains was shortened to September 15. This earlier closure was initiated because of low escapements of late-run salmon to the Cains (as seen in decreasing juvenile salmon levels and low angling catches) and the desire to keep angling effort from increasing on this tributary, should other tributaries be closed earlier.

Since 1972, the year the total ban on commercial salmon fishing in the Miramichi was imposed, adult tagging studies have shown that a major portion of Cains River salmon enter the inner Miramichi estuary in July. Thus, in the years prior to 1972, these fish had been subjected to the commercial fishery even though they were not to enter the Cains until September or October. Because of this fact, then, the commercial closure allowed a higher escapement of salmon to the Cains than was originally estimated.

The Cains River has responded to the 1972 fishery restrictions; fry levels increased greatly and angling catches improved. An assessment of these factors after the 1975 season led to a recommendation to extend the salmon angling season on the Cains in 1976. A proposal for this extension was presented at the January 28, 1976, meeting of the Miramichi River Salmon Management Advisory Committee. The adoption of this recommendation led to the inclusion of an angling survey of the Cains River in the Freshwater and Anadromous Division's 1976 salmon management investigations.

This report summarizes results of the survey conducted over the period June 1-September 30, the major portion of the angling season. Angling, especially on the Crown Open stretches, was monitored closely to assess overall angling quality and, particularly, effects of the extended season in terms of catch and effort. In addition to the collection of catch statistics, characteristics and interests of the anglers utilizing the resource were obtained through the use of a questionnaire.

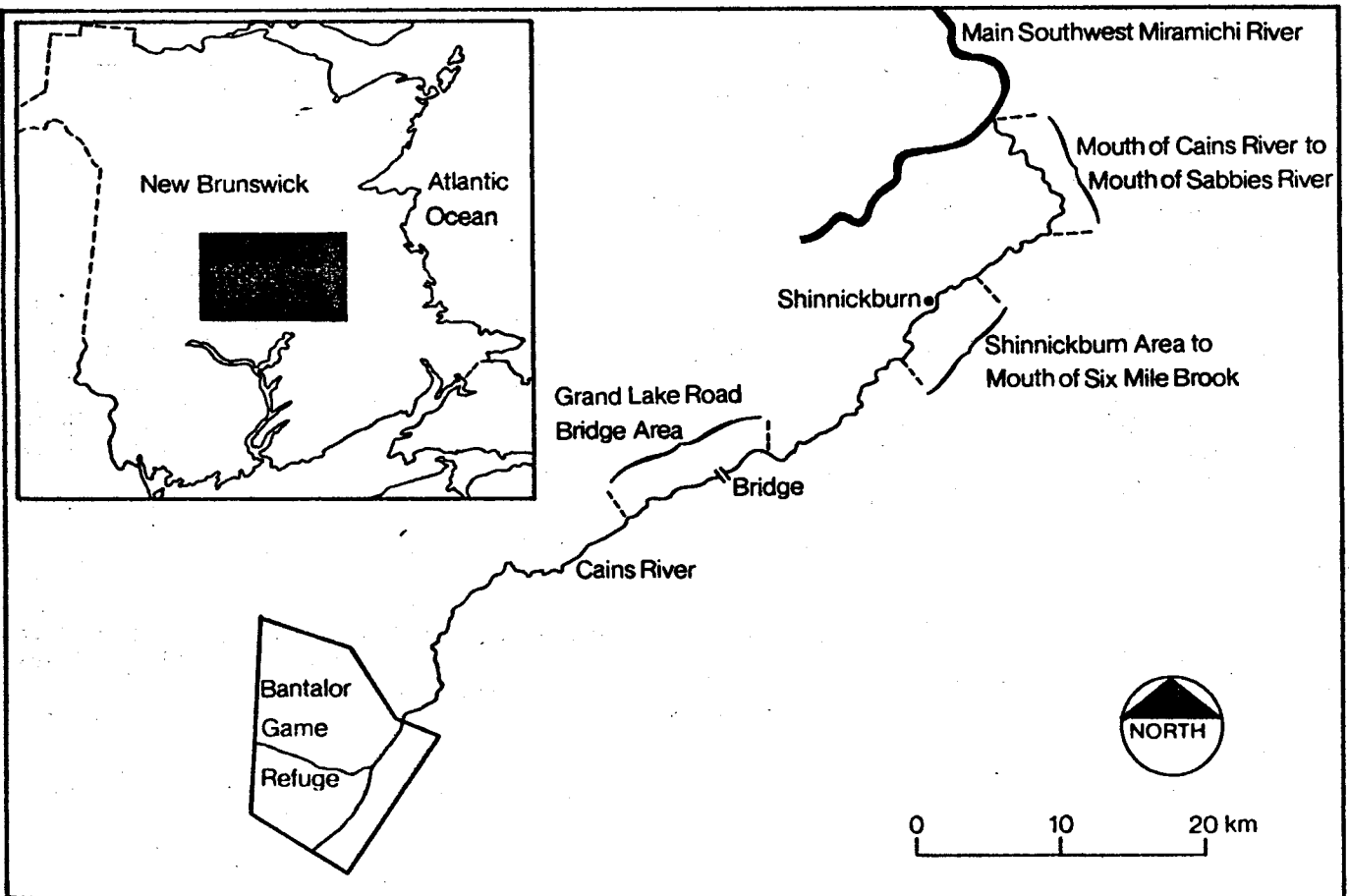


FIG. Cains River study areas, Miramichi River system, 1976.

## AREA OF STUDY

The mouth of the Cains River lies in Northumberland County, at 46°40'N; 65°47'W. The angling survey concentrated on three major areas: (1) Cains River mouth to Sabbies River mouth, (2) Shinnickburn to Six Mile Brook mouth, and (3) Grand Lake Road Bridge area.

## METHODS

A student assistant and a casual employee conducted the field portion of the survey. Censusing was conducted over the major portion of the angling season, June 1-September 30.

Censusing consisted of: (1) surveying stretches of river by canoe, and censusing/interviewing fishermen while they were on the water; and (2) travelling by truck to access points to the river, and censusing/interviewing fishermen as they entered or left the water. These access points were rather limited and consisted primarily of the three areas indicated above.

Work schedules of the census clerks during the month of June did not allow full coverage of daylight hours on a seven-day week basis. However, beginning July 1, schedules were arranged to ensure that at least one clerk was on duty each day of the week, including both clerks on every weekend. As many hours of daylight were covered as possible, by staggering hours of work each day (to enable coverage of the heavier angling periods of the morning and late afternoon/evening).

The daily field surveys were conducted by interviewing anglers and obtaining information pertaining to number of hours fished, and the number and weight of all fish caught. These data were recorded on creel-report forms (Appendices A and B) for later compilation and analysis. In addition, anglers were asked to verbally complete a questionnaire pertaining to their residence and angling interests (Appendix C).

Catch statistics from those private pools and fishing camps not covered during the daily field surveys were collected at the end of the season by obtaining camp records from owners or managers. These data were then added to those collected from the day-to-day field survey, and a total salmon-catch estimate was derived for the Cains River for the 1976 season.

## RESULTS

### FIELD SURVEY

Data presented in the following tables and analysis were derived from the field survey, and do not include data gathered at the end of the season from the fishing camps.

## Weekly Salmon and Trout Harvest

In the survey, 655 anglers were interviewed, and weekly catches of salmon and trout over the duration of the 1976 season were summarized (Table 1). The total harvest of 126 salmon was comprised of 82% grilse and 18% large salmon.

TABLE 1. Weekly salmon and trout harvest, Cains River (Miramichi River system), 1976.

Period	Numbers of salmon			No. of trout
	Grilse	Large salmon	Totals	
May 31-Jun 6	0	0	0	5
Jun 7-13	0	0	0	18
Jun 14-20	0	1	1	58
Jun 21-27	0	0	0	12
Jun 28-Jul 4	0	0	0	8
Jul 5-11	0	0	0	22
Jul 12-18	5	0	5	0
Jul 19-25	3	0	3	1
Jul 26-Aug 1	12	2	14	3
Aug 2-8	10	0	10	10
Aug 9-15	4	3	7	0
Aug 16-22	4	0	4	1
Aug 23-29	9	1	10	5
Aug 30-Sep 5	12	1	13	1
Sep 6-12	2	0	2	1
Sep 13-19	17	4	21	1
Sep 20-26	10	3	13	0
Sep 27-30	15	8	23	0
Totals	103 <sup>1</sup>	23 <sup>2</sup>	126	146

<sup>1</sup>42 of 103 grilse were caught September 16-30 inclusive.

<sup>2</sup>15 of 23 salmon were caught September 16-30 inclusive.

Grilse were angled from mid-July through to the end of the angling season; 41% of the total grilse catch was taken during September 16-30. The first large salmon was angled in mid-June; the majority were angled through August and September. September 16-30 accounted for 65% of the total large-salmon harvest. The 146 trout harvested were taken during the early part of the season (64% during June).

### Salmon Angling Quality

Of the 655 anglers interviewed, 107 were successful in catching at least one grilse or large salmon (Table 2). This represents an average of 0.19 fish/angler, or 0.08 fish/hour fished.

### Chronological Distribution of Salmon Harvest

Weekly catches and cumulative totals of salmon harvested over the season are summarized (Table 3). By the week of September 13-19, about 76% of the total grilse catch for the season had been recorded; whereas, only 52% of the large-

salmon stock had been taken by this time. Thus, during the last two weeks of September, a much greater proportion of large salmon than grilse was angled.

fished a total of 1,557 hours, with 53% of this effort expended during September. The estimated total numbers of hours fished by all anglers over the season was 2,069.

TABLE 2. Salmon angling quality, Cains River (Miramichi River system), 1976.

Period	Numbers of fish <sup>1</sup> angled			Number of anglers interviewed	Successful anglers	
	Totals per week	Average per hour fished	Average per angler		Numbers	Percent
May 31-Jun 6	0	0.00	0.00	11	0	0.0
Jun 7-13	0	0.00	0.00	6	0	0.0
Jun 14-20	1	0.02	0.04	24	1	4.2
Jun 21-27	0	0.00	0.00	7	0	0.0
Jun 28-Jul 4	0	0.00	0.00	12	0	0.0
Jul 5-11	0	0.00	0.00	28	0	0.0
Jul 12-18	5	0.26	0.42	12	2	16.7
Jul 19-25	3	0.06	0.14	21	3	14.3
Jul 26-Aug 1	14	0.11	0.31	45	12	26.7
Aug 2-8	10	0.10	0.25	40	8	20.0
Aug 9-15	7	0.08	0.24	29	7	24.1
Aug 16-22	4	0.04	0.10	42	4	9.5
Aug 23-29	10	0.12	0.31	32	6	18.8
Aug 30-Sep 5	13	0.07	0.17	77	12	15.6
Sep 6-12	2	0.07	0.12	17	1	5.9
Sep 13-19	21	0.10	0.26	80	18	22.5
Sep 20-26	13	0.07	0.14	94	12	12.8
Sep 27-30	23	0.11	0.29	78	21	26.9
Totals	126	0.08	0.19	655	107	16.3

<sup>1</sup>"Fish" denotes grilse and large salmon.

TABLE 3. Chronological distribution of salmon harvest, Cains River (Miramichi River system), 1976.

Period	Numbers harvested		Cumulative totals			
	Grilse	Large salmon	Numbers of fish		Percent of harvest	
			Grilse	Large salmon	Grilse	Large salmon
May 31-Jun 6	0	0	0	0	0	0
Jun 7-13	0	0	0	0	0	0
Jun 14-20	0	1	0	1	0	4
Jun 21-27	0	0	0	1	0	4
Jun 28-Jul 4	0	0	0	1	0	4
Jul 5-11	0	0	0	1	0	4
Jul 12-18	5	0	5	1	5	4
Jul 19-25	3	0	8	1	8	4
Jul 26-Aug 1	12	2	20	3	19	13
Aug 2-8	10	0	30	3	29	13
Aug 9-15	4	3	34	6	33	26
Aug 16-22	4	0	38	6	37	26
Aug 23-29	9	1	47	7	46	30
Aug 30-Sep 5	12	1	59	8	57	35
Sep 6-12	2	0	61	8	59	35
Sep 13-19	17	4	78	12	76	52
Sep 20-26	10	3	88	15	85	65
Sep 27-30	15	8	103	23	100	100
Totals	103	23	103	23		

#### Summary of Angling Effort

Weekly effort data were also recorded over the season (Table 4). A total of 871 anglers was observed on the Cains River over the 1976 season. Of this total, 75% (655 anglers) were interviewed. They

TABLE 4. Summary of angling effort, Cains River (Miramichi River system), 1976.

Period	Numbers of anglers		Number of hours fished	
	Observed	Interviewed	By anglers interviewed	Estimated total, all anglers
May 31-Jun 6	13	11	28.00	33
Jun 7-13	9	6	7.25	11
Jun 14-20	38	24	53.50	85
Jun 21-27	14	7	14.50	29
Jun 28-Jul 4	18	12	31.25	47
Jul 5-11	29	28	37.50	39
Jul 12-18	25	12	19.50	41
Jul 19-25	42	21	46.25	93
Jul 26-Aug 1	63	45	128.75	180
Aug 2-8	53	40	96.75	128
Aug 9-15	43	29	88.75	132
Aug 16-22	61	42	103.00	150
Aug 23-29	39	32	84.00	102
Aug 30-Sep 5	101	77	175.75	230
Sep 6-12	22	17	27.25	35
Sep 13-19	99	80	214.50	266
Sep 20-26	117	94	197.25	246
Sep 27-30	85	78	203.00	222
Totals	871	655	1,557.00	2,069

## FISHING CAMP SURVEY

Not included in the above harvests were those catches made entirely on some specific private-lease waters not covered or recorded by the angling survey. These statistics were gathered at the end of the season.

The total harvest recorded from these camps amounted to 134 grilse and 23 large salmon.

## ESTIMATE OF TOTAL SALMON HARVEST

The angling survey recorded catch and effort data from anglers primarily (not exclusively) using the open water areas of the Cains. Seventy-five percent of the anglers observed over the season were interviewed, and reported a harvest of 103 grilse and 23 large salmon. Thus, total harvest was estimated to be at least 168 salmon (137 grilse and 31 large salmon).

Therefore, including the total catch recorded from the fishing camps, the total estimated angling catch of salmon from the Cains in 1976 was 325 salmon (271 grilse and 54 large salmon).

## RESPONSE TO QUESTIONNAIRE

Use of the questionnaire was more limited than the general creel census forms because of the time involved in its administration, and its use being a possible annoyance to any angler engaged in the act of fishing. The questionnaire was completed by 271 (41%) of the 655 anglers interviewed.

Responses to the questionnaire have been compiled by question (Tables 5-18).

## Angler Residence

Resident anglers questioned came from 11 New Brunswick counties (Table 5), representing 4 cities, 5 towns, 13 villages and 19 communities (Table 6). The majority of these anglers came from Northumberland, Westmorland and York counties—mostly from the cities of Moncton and Fredericton, the town of Newcastle, and the village of Blackville.

Non-resident Americans and Canadians accounted for approximately 16% of the total number of anglers interviewed. Residence locations of these anglers were indicated as "non-resident" only, and not further broken down, as was done for the New Brunswick resident anglers.

TABLE 5. Question 1: Residence (county, non-resident) locations of anglers utilizing resource.

Residence/location (county/non-resident)	Number of responses	Percent of total response
Albert	12	4.4
Gloucester	2	0.7
Kent	10	3.7
Kings	3	1.1
Northumberland	76	28.0
Queens	1	0.4
Saint John	3	1.1
Sunbury	4	1.5
Victoria	4	1.5
Westmorland	67	24.7
York	45	16.6
Non-resident		
-American	36	13.0
-Canadian	8	3.0
Total	271	

TABLE 6. Question 2: Residence (city, town, village, community, or non-resident) locations of anglers utilizing resource.

Residence location (specific/non-resident)	Number of responses	Percent of total response
<b>City</b>		
Bathurst	2	0.7
Fredericton	36	13.3
Moncton	59	21.8
Saint John	3	1.1
<b>Town</b>		
Chatham	4	1.5
Marysville	1	0.4
Newcastle	13	4.8
Oromocto	3	1.1
Shediac	3	1.1
<b>Village</b>		
Aroostook	1	0.4
Blackville	20	7.4
Buctouche	3	1.1
Burtts Corner	1	0.4
Doaktown	7	2.6
Douglastown	1	0.4
Havelock	2	0.7
Minto	1	0.4
Nelson	4	1.5
Perth-Andover	3	1.1
Rogersville	2	0.7
Salisbury	4	1.5
Tracy	1	0.4
<b>Community</b>		
Basse-Aboujgane	1	0.4
Blissfield	2	0.7
Boiestown	3	1.1
Douglasfield	1	0.4
East Riverside	1	0.4
Gray Rapids	2	0.7
Harcourt	6	2.2
Ludlow	2	0.7
Millerton	1	0.4
Nashwaak Village	1	0.4
Notre-Dame	1	0.4
Penniac	3	1.1
Quarryville	2	0.7
Red Bank	1	0.4
Renous	1	0.4
Riverview	12	4.4
Taymouth	2	0.7
Upper Blackville	10	4.0
Williamsburg	1	0.4
<b>Non-resident</b>		
-American	36	13.3
-Canadian	8	3.0
<b>Total</b>	<b>271</b>	

#### Angler Interest in Sport Fishing

Approximately 70% of the anglers questioned responded that they normally sport fish (anywhere) up to 30 days each year (Table 7).

#### Predicted Angling Effort

Approximately 67% of the anglers

questioned responded that they had fished, or intended to fish, at least five days on the Cains River in 1976 (Table 8).

TABLE 7. Question 3: How many days do you normally fish (anywhere) each year?

Number of days spent angling	Number of responses	Percent of total response
1-10	66	25.2
11-20	59	22.5
21-30	58	22.1
31-40	21	8.0
41-50	17	6.5
51-60	11	4.2
61-70	4	1.5
71-80	3	1.2
81-90	1	0.4
91-100	14	5.3
101-110	0	0.0
111-120	5	1.9
121-130	1	0.4
131-140	1	0.4
141-150	1	0.4
<b>Total</b>	<b>262</b>	

TABLE 8. Question 4: How many days do you plan to fish on the Cains River?

Number of angling days	Number of responses	Percent of total response
1	39	14.4
2	54	20.0
3	30	11.1
4	25	9.3
5	33	12.2
6	11	4.1
7	8	3.0
8	4	1.5
10	25	9.3
12	6	2.2
14	9	3.3
15	10	3.7
20	7	2.6
21	1	0.4
25	4	1.5
30	2	0.7
50	1	0.4
63	1	0.4
<b>Total</b>	<b>270</b>	

#### Past Angling Experience on the Cains River

Seventy-three percent of the anglers questioned stated that they had fished the Cains River prior to 1976 (Table 9).

TABLE 9. Question 5: Have you fished the Cains River before?

Response	Number of responses	Percent of total response
Yes	198	73.1
No	73	26.9
Total	271	

#### Anglers' Preferred Species and Type of Angler Utilizing the Resource

Seventy-seven percent of the anglers questioned stated that their most preferred species to catch was salmon, as opposed to trout and other species (Table 10). Seventy-five percent stated that they were on the Cains to angle for salmon, as opposed to trout (Table 11). The majority of the anglers (66%) considered themselves to be predominantly salmon anglers, as opposed to trout anglers or anglers for other species (Table 12).

TABLE 10. Question 6: What species of fish do you most prefer to catch?

Response	Number of responses	Percent of total response
Salmon	208	77.0
Trout	59	21.9
Salmon & trout	2	0.7
Pickereel	1	0.4
Total	270	

TABLE 13. Question 9: What type of fishing are you doing on this trip? What type do you prefer?

Type of angling	Number of responses (doing)	Percent of total response	Number of responses (prefer)	Percent of total response
Shoreline on river	266	98.2	233	86.0
Boat on river	3	1.1	25	9.2
Boat on lake	0	0.0	1	0.4
Shoreline & boat on river	2	0.7	9	3.3
No preference	0	0.0	3	1.1
Totals	271		271	

TABLE 11. Question 7: What species of fish are you most interested in catching here?

Response	Number of responses	Percent of total response
Salmon	203	74.9
Trout	66	24.4
Salmon & trout	2	0.7
Total	271	

TABLE 12. Question 8: In your opinion, are you predominantly a salmon angler or a trout angler? Or other?

Response	Number of responses	Percent of total response
Salmon	179	66.0
Trout	77	28.4
Salmon & trout	14	5.2
Pickereel	1	0.4
Total	271	

#### Type of Angling Conducted

Ninety-eight percent of the anglers questioned stated that they were fishing from the shoreline of the river, as opposed to fishing from a boat or canoe (Table 13). The majority (86%) responded that they preferred this type of fishing, as opposed to fishing from a boat or canoe.

### Angler Interest in Status of the Water

The majority (72%) of anglers questioned stated that they would like to see the Cains River "scheduled" during the salmon angling season (Table 14).

TABLE 14. Question 10: Do you feel that the Cains River should be "scheduled" during the salmon angling season (i.e., fly fishing only)? If yes, why? If no, why?

Response	Number of responses	Percent of total response
Yes	196	72.3
No	62	22.9
No opinion	13	4.8
Total	271	

### Predicted Angling Effort Should the Cains Be Scheduled

Ninety-four percent of the anglers questioned stated that they would continue to fish the Cains River should it become a scheduled river during the salmon angling season (Table 15).

TABLE 15. Question 11: If the Cains River should become a scheduled river, will you still continue to fish the river?

Response	Number of responses	Percent of total response
Yes	255	94.1
No	14	5.2
No opinion	2	0.7
Total	271	

### Other Areas Angled in New Brunswick

Fifty-four percent of the anglers questioned stated that they angled primarily in the Miramichi River system (Table 16). Responses were highly varied, as the question was too general.

### Most Preferred Areas in New Brunswick to Angle

The majority of anglers questioned (75.6%) stated that they most preferred to angle in the Miramichi River system, as opposed to other areas in New Brunswick (Table 17).

### Predicted Angling Effort on Cains River for Next Year

Ninety-five percent of the anglers questioned stated that they intend to fish

the Cains River in 1977 (Table 18).

TABLE 16. Question 12: Where else do you angle in New Brunswick?

River system or locality	Number of responses	Percent of total response
Miramichi	147	54.2
Saint John	8	3.0
Nepisiguit	1	0.4
Tabusintac	1	0.4
Salmon	1	0.4
Richibucto	1	0.4
Canaan	1	0.4
Miramichi & Saint John	30	11.1
Miramichi & Restigouche	1	0.4
Miramichi & Nepisiguit	1	0.4
Miramichi & Richibucto	1	0.4
Miramichi & Salmon	1	0.4
Miramichi & Canaan	1	0.4
Miramichi & Tabusintac	1	0.4
Saint John & Kouchibouguac	1	0.4
Richibucto & Salmon	1	0.4
Miramichi, Saint John & Restigouche	4	1.5
Miramichi, Saint John & Big Salmon	1	0.4
Miramichi, Saint John & Salmon	1	0.4
Miramichi, Saint John & Hammond	1	0.4
Saint John, Restigouche & Pokemouche	1	0.4
Miramichi, Nepisiguit & Jacquet	1	0.4
Nepisiguit, Salmon & Gaspereau	1	0.4
Other localities - non-specific	53	19.6
Nowhere	10	4.0
Total	271	

TABLE 17. Question 13: Where in New Brunswick do you most prefer to angle?

River system or locality	Number of responses	Percent of total response
Miramichi	204	75.6
Saint John	15	5.6
Restigouche	7	2.6
Nepisiguit	3	1.1
Tabusintac	1	0.4
Salmon	2	0.7
Richibucto	1	0.4
Canaan	1	0.4
Bass & Molus	1	0.4
All salmon rivers	1	0.4
Anywhere, non-specific	34	12.6
Total	270	



TABLE 18. Question 14: Do you plan to fish the Cains again next year?

Response	Number of responses	Percent of total response
Yes	257	94.8
No	1	0.4
No opinion	13	4.8
Total	271	

#### DISCUSSION

The angling season on the Cains River in 1976 was extended two weeks (September 16-30) over that previously allowed since 1971. In terms of the salmon catch as recorded by the angling survey, this 2-week period accounted for 65% of the total large-salmon catch, and 41% of the total grilse catch. Thus, inclusion of this 2-week period into the 1976 angling season was an important factor in the overall salmon angling quality recorded for the season.

In terms of number of hours fished, the effort expended over the 2-week extension to the season was almost double that expended over the first half of September. An increase in angling effort over this period was expected, as it was assumed that many anglers would choose to fish the Cains once angling on other rivers closed September 15.

The total bright salmon catch for the Cains River in 1976 was estimated to be at least 325 fish (271 grilse and 54 large salmon). This figure is the best estimate of total catch; i.e., it includes catches from the "open waters" and the private "leased waters". The proportion of grilse and large salmon (83% grilse, 17% large salmon) closely approximates that recorded at the Millbank sampling trap over the season (84% grilse, 16% large salmon).

Angling statistics for the Cains River, as for the rest of the Miramichi River system, are generally supplied by field personnel of the Field Services Branch (Conservation and Protection Division). The 1976 catch for the Cains River, as estimated by our angling survey (271 grilse and 54 large salmon), compares with catches over the 1970-76 period as supplied by the Conservation and Protection Division as follows:

Year	No. of bright salmon caught		
	Grilse	Large salmon	Totals
1970	258	49	307
1971 <sup>1</sup>	—	—	—
1972	1,135	425	1,560
1973	150	103	253
1974	246	162	408
1975	22	8	30
1976	101	124	225

<sup>1</sup>No statistics available.

The 1976 angling catch estimated from our survey contrasts rather strongly with the estimate of catch as supplied by the Conservation and Protection Division. The difference between estimates is most apparent in the reported grilse:large-salmon ratio of the catches. Large salmon comprised only 17% of the total angling catch, as recorded by our survey; whereas, Conservation and Protection reported that large salmon comprised 55% of the total catch. Both the anglers interviewed and the camps covered had angling catches of grilse in excess of the numbers reported by Conservation and Protection; neither recorded large-salmon catches in the magnitude indicated the Conservation and Protection statistics.

In terms of total catch, and disregarding the discrepancy in grilse:large-salmon ratio of catch, the 1976 catch approximates catches reported for 1973 and 1974. Thus, despite the extended season and its corresponding increase in angling effort, the 1976 catch did not show a corresponding increase over previous catches during the 1972-75 period.

There is no doubt that the season extension provided for better salmon angling on the Cains River (especially large salmon). However, even though the angling catch did not increase greatly over preceding seasons (with the exception of the extremely poor 1975 season), it is felt that the overall low level of late-run stocks noted at the Millbank sampling trap in 1976 would preclude any further relaxation of restrictions on the Cains River angling season at this time.

Responses to the questionnaire indicated that the majority of the anglers interviewed (75%) were on the Cains River to angle for salmon, as opposed to trout. When asked whether they would favor scheduling of the Cains during the salmon season, 72% of the total anglers interviewed stated that they were in favor of scheduling. And an even higher majority (94%) stated that they would still continue to fish the Cains should it become a scheduled river.

Those anglers favoring scheduling did so primarily for the following reasons: that scheduling provides better protection, conservation and preservation of the salmon resource; provides for better control of illegal fishing activities; and promotes fly fishing (considered as "art" by many salmon anglers). Those opposing scheduling of the Cains cited the following reasons: that spin fishing is enjoyed by many anglers, especially those anglers fishing for trout; the late-run timing of salmon to the Cains prevents any serious damage to salmon from spin and bait fishing methods; and the dark water of the Cains River reduces the threat of jigging for salmon.

Overall, angling on the Cains River in 1976 was popular, and attracted anglers from all over the province of New Brunswick. A very high majority of these

anglers (95% of those interviewed) stated that they intend to fish the Cains again in 1977. The season extension provided for a great deal of this interest and the result, as recorded by the survey, did not indicate any increase in harvest to seriously affect spawning escapement to the river. This factor will be assessed in juvenile population-assessment studies to be conducted throughout the Cains in 1977.

#### ACKNOWLEDGEMENTS

The authors wish to express their gratitude to E. LeBlanc, student assistant, and T. Matheson, the casual employee, who conducted the field surveys, for their most ambitious support in all phases of the field activities.





Environment Canada  
Fisheries and Marine

Environnement Canada  
Pêches et sciences de la mer

CREEL CENSUS DATA

1 - B

DATE: \_\_\_\_\_

TIME OF PATROL:      Began: \_\_\_\_\_ a.m. \_\_\_\_\_ p.m.  
                                  Ended: \_\_\_\_\_ a.m. \_\_\_\_\_ p.m.

SECTION COVERED: \_\_\_\_\_ miles (include written description of section covered)

TOTAL NUMBER OF ANGLERS IN SECTION: \_\_\_\_\_

COMMENTS:

## APPENDIX C

Creel Questionnaire: Cains River.

Date: \_\_\_\_\_ Location: \_\_\_\_\_

1. Residence (county): \_\_\_\_\_
2. Residence (city, town, village): \_\_\_\_\_
3. How many days do you normally fish (anywhere) each year? \_\_\_\_\_
4. How many days do you plan to fish on the Cains River  
this year? \_\_\_\_\_
5. Have you fished the Cains River before? \_\_\_\_\_
6. What species of fish do you most prefer to catch? \_\_\_\_\_
7. What species of fish are you most interested in catching here? \_\_\_\_\_
8. In your opinion, are you predominantly a salmon angler or a  
trout angler? \_\_\_\_\_  
or other? \_\_\_\_\_
9. What type of fishing are you doing on this trip?  
What type do you prefer?

DoingPrefer

shoreline on river	_____	_____
boat (canoe) on river	_____	_____
other	_____	_____

10. Do you feel that the Cains River should be "scheduled" during the  
salmon angling season (ie., fly fishing only)? \_\_\_\_\_  
If yes, why? \_\_\_\_\_  
If no, why? \_\_\_\_\_
11. If the Cains River should become a scheduled river will you still  
continue to fish the river? \_\_\_\_\_
12. Where else do you angle in New Brunswick? \_\_\_\_\_
13. Where in N.B. do you most prefer to angle? \_\_\_\_\_
14. Do you plan to fish the Cains again next year? \_\_\_\_\_