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The Socio-Economic Importance of Outdoor Recreational Resources in Northwestern British Columbia: The Sport Fisheries of the Stewart-Cassiar Area

by
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Technical Report Series No. PAC/T-76-11
NOB/ECON 10-76
Northern Operations Branch
Pacific Region

THE SOCIO-ECONOMIC IMPORTANCE OF OUTDOOR RECREATIONAL RESOURCES IN NORTHWESTERN BRITISH COLUMBIA: THE SPORT FISHERIES OF THE STEWART-CASSIAR AREA

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PREFACE

This is the second report based on information gathered in recreational surveys carried out by the Fisheries and Marine Service in the Stewart-Cassiar area of northwestern British Columbia. The first report, entitled A Preliminary Overview on the Impact of Outdoor Recreational Activity in Northwestern British Columbia: The Stewart-Cassiar Area, was based on surveys conducted during the summer of 1974. It was a preliminary statement on the extent and impact of recreational activity in the area. It was also intended to give direction to further research.

The preliminary report contains information which might be useful to many resource agencies including the Fisheries and Marine Service. Of particular interest to the Fisheries and Marine Service is the role of sport fishing in relation to the total outdoor recreational potential of the area. Information contained in the preliminary report suggested that sport fishing is an important component of the recreational opportunities available in the area. It was felt that this importance required further study. It is hoped that this second report will help to fill this need.

This report is based primarily on information gathered during the summer of 1975. It also draws on information contained in the preliminary report and is intended to update that information. Because of improved data gathered since the time of writing the first report, there may be slight discrepancies between information contained in the two reports. Whenever such discrepancies occur, information contained in this second report should be accepted as correct.

I would like to acknowledge the many people who provided assistance during the course of this study. I am indebted to Brian Lewis, Neil

Huckvale, and Robert MacGuire who carried out the field surveys. Robert Morley and Ljuba Pavlovic compiled and tabulated the data once it was collected. Robert Morley also provided helpful comment throughout the report's preparation. Sharon Henderson handled the computer tabulations.

I am very much indebted to Janice Clark who typed the many drafts of this report. The maps were prepared by Ian Roberts and Konrad Johansen of the Fisheries and Marine Service. The cover photograph was provided by Information Canada.

I am especially indebted to William F. Sinclair. He provided valuable advice and constructive criticism throughout all stages of the study.

Others to whom I am indebted include Charles Walker of the Fisheries and Marine Service and Henry Delmonico of Canadian Outfitters. They provided helpful comment on certain portions of this report.

Despite the contribution of many people in the preparation of this report, any errors and omissions remain exclusively mine.

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August, 1976

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INTRODUCTION

In recent years, industrialization and population growth have put enormous pressure on our natural resources. Canada's natural resources face on one hand the requirements of an industrialized society demanding ever increasing quantities of manufactured goods and services, and on the other, the requirements of a large and growing population seeking scenic and outdoor recreational amenities. The pressures facing northwestern British Columbia are not unlike those of the rest of Canada. The process of industrialization and urbanization has left very few areas in a natural state. Until very recently, the Stewart-Cassiar area was an exception to this.[1]

In the past, the Stewart-Cassiar area was relatively inaccessible. Most locations in the area could be reached by float plane and Stewart could be reached by boat. However, road access was extremely limited and rail access was non-existent. This has changed dramatically in recent years. The newly completed highway joining Stewart with Cassiar, together with improvements in the road joining Stewart with Terrace, have formed a highway through the heart of the area. In addition, the British Columbia Railroad is presently constructing a line which will join Dease Lake with Prince George and the Canadian National Railroad is planning to construct a route north from Terrace.

The recent transportation improvements should make feasible the exploitation of many previously untouched resources. These include forest and mineral resources of considerable commercial value. They also

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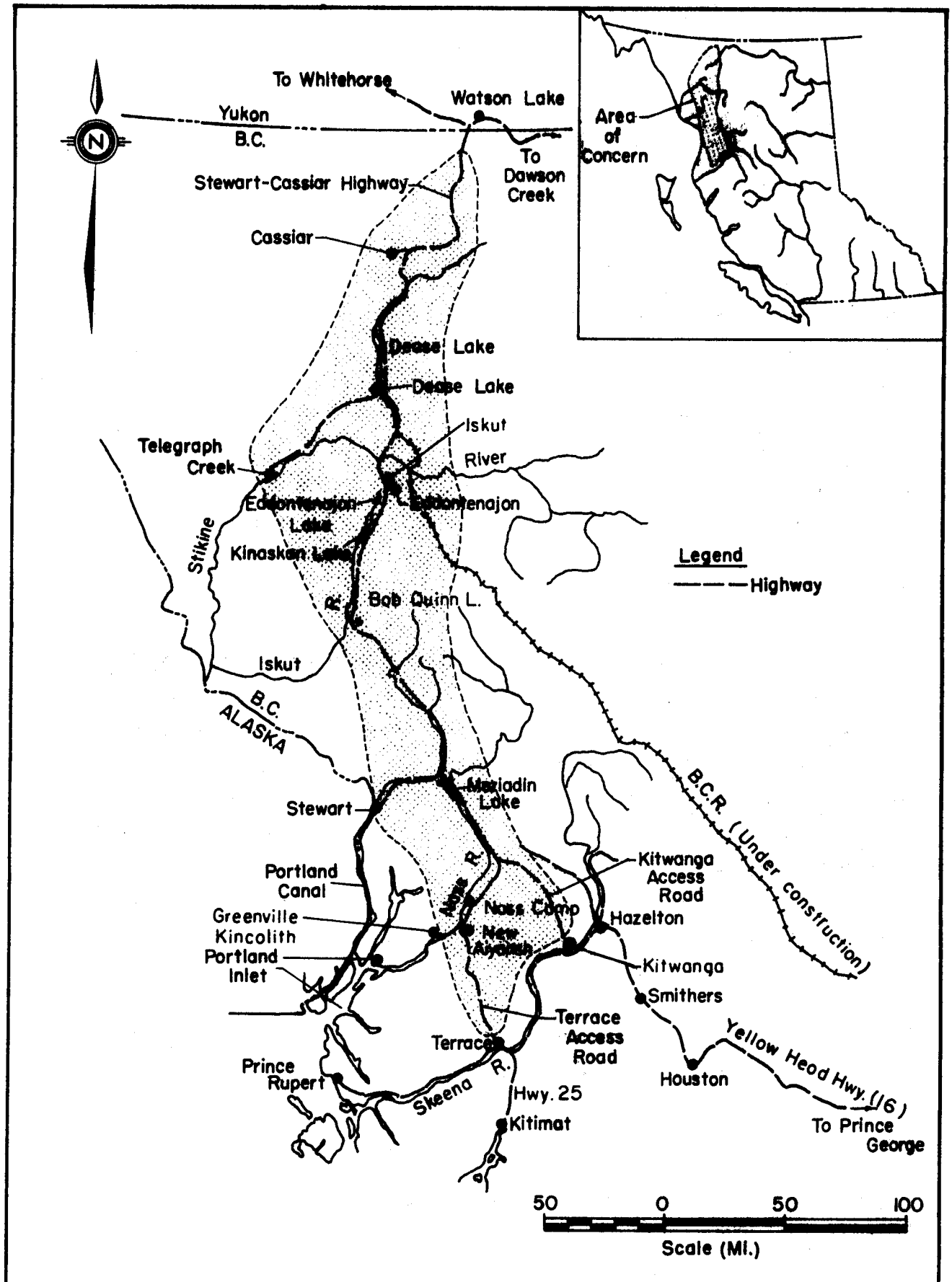
1 The Stewart-Cassiar area for the purpose of this report, is the area adjacent to the Stewart-Cassiar Highway (Highway 37). See Map 1. It does not include Kitwanga, Watson Lake or any of the communities along the Yellowhead Highway.



MAP I - Stewart-Cassiar: Area of Concern.

include outdoor recreational amenities such as magnificent mountainous scenery, wilderness waterways and excellent hunting and fishing. Development of forestry and mining potential in the area will contribute a great deal to the well-being of those who live in northwestern British Columbia. Despite these obvious benefits, however, northwestern British Columbians should be aware of the social and economic cost of developments which occur at the expense of recreational amenities.

This report focuses on one of the area's important recreational resources. The report is intended to provide an understanding of the economic and social value of the area's sport fisheries. Since sport fishing is difficult to analyze outside the context of the total recreational package available in the area, the report also contains a considerable amount of information on the attitudes, opinions, and activity patterns of general outdoor recreationists. It is hoped that this understanding of recreational values in the Stewart-Cassiar area will lead to a careful weighing of development decisions against detrimental effects they might have on recreational amenities.

Because of the regional focus of this analysis and the need to express recreational activity in precise units, it is necessary to define residence categories and other terms used throughout this report. The term Stewart-Cassiar residents will be used to refer to people identified as living in the Stewart-Cassiar area during 1974 and 1975. A Stewart-Cassiar resident might live in Stewart, Cassiar, Dease Lake, Telegraph Creek, one of the communities in the lower Nass Valley or any of the permanent camps sprinkled throughout the area. Yellowhead residents are defined as anyone living in the general area near Highway 16 West. Major centres in the region include Terrace, Kitimat, Prince Rupert, Kitwanga, Hazelton, Smithers, Houston, Burns Lake, Vanderhoof and Prince George. The term northwestern British Columbian will be used to refer to anyone living in either the Stewart-Cassiar area or the Yellowhead region. B. C. non-northwest refers to people who live in British Columbia but outside the Stewart-Cassiar and Yellowhead regions. Non-

B. C. Canadians live in Canada but not in British Columbia and non-Canadians live outside Canada. The term non-resident is a collective term used to describe all those who are not Stewart-Cassiar residents. A non-resident could be a Yellowhead resident, a B. C. non-northwest, a non-B. C. Canadian or a non-Canadian. A recreational party is defined as a group of persons travelling in one vehicle for the purposes of outdoor recreation. A fishing party is a recreational party containing at least one sport fisherman and the terms sport fisherman and angler are used interchangeably to refer to a person who had fished or planned to fish at least one day during his visit to the Stewart-Cassiar area. An angler day is defined as a day on which a sport fisherman or angler had participated in sport fishing for any reasonable length of time.

Chapter One is used to identify the primary users of outdoor recreational resources in the Stewart-Cassiar area. Chapter Two examines the activity patterns of outdoor recreationists in the Stewart-Cassiar area in order to gain an understanding of the relative importance of the various outdoor recreational amenities offered. In particular, Chapter Two gives an understanding of the relative importance of sport fishing. The final chapter is used to present the economic value of Stewart-Cassiar sport fisheries to the people of northwestern British Columbia.

There are three appendices which summarize the research methods used to prepare this report. Appendix I describes the sources of data. Appendix II discusses the various calculations carried out in the report's preparation. Finally, Appendix III is a statistical appendix which contains a summary of traffic count data gathered in the Stewart-Cassiar area during 1974 and 1975.

CHAPTER ONE

THE PRIMARY USERS OF OUTDOOR RECREATIONAL RESOURCES IN THE STEWART-CASSIAR AREA

This chapter is used to identify two major groups who make use of recreational resources in the Stewart-Cassiar area - residents and non-residents. The first section examines the economic and social environment of the Stewart-Cassiar area in order to gain an understanding of the role of outdoor recreation in the lives of Stewart-Cassiar residents. The second section is used to examine non-resident participation. Information is presented on the origins and socio-economic backgrounds of visitors to the area.

Stewart-Cassiar Outdoor Recreational Opportunities and the People Who Live in the Area

The Stewart-Cassiar area has a population of approximately 5,000. The largest centres in the area are Stewart and Cassiar. Stewart has a population of 1,357 and Cassiar contains a population of 1,073.[1] Smaller centres in the region include the communities of Aiyansh, Cranberry, Telegraph Creek, Eddontenajon, and Dease Lake. With the exception of a few logging camps, guide camps and small service centres, the remainder of the area is undeveloped.

The industrial base of the area is extremely narrow. Industrial activity is confined almost exclusively to mining. There is potential for development of a forest industry but at present, activity is confined to the southern portion of the area. Extension of logging activity further north will depend on cheaper transportation and more favourable markets for forest products.

Table 1:1 is used to provide a breakdown of the area's labour

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1 Population figures for Stewart, Cassiar and the Stewart-Cassiar area are from Statistics Canada, 1971 Census.

TABLE 1:1

DISTRIBUTION OF STEWART-CASSIAR AREA LABOUR FORCE
ACCORDING TO INDUSTRY DIVISION - 1971

	Total	
	#	%
Agriculture	10	0.6
Forestry	90	5.3
Fishing and Trapping	-	-
Mines, Quarries and Oil Wells	945	55.3
Manufacturing	20	1.2
Construction	60	3.5
Transportation, Communication and Utilities	140	8.2
Wholesale and Retail Trade	95	5.6
Finance, Insurance and Real Estate	15	0.9
Community, Business and Personal Service	185	10.8
Public Administration and Defence	35	2.0
Industry Unspecified or Undefined	115	6.7
TOTAL	1,705[1]	100.0

1 Data subject to rounding error.

Source: Statistics Canada, 1971 Census.

force according to industry division. The importance of mining to the industrial base of the area is obvious from the information presented in this table. Over 55 percent of the area's labour force is employed in this industry. Forestry employs 5.3 percent of the area's labour force.

Evidence indicates that the Stewart-Cassiar area, like most frontier areas that depend heavily on one or two extractive industries, does not provide a balanced life-style for those who live there. The area provides a level of economic well-being comparable with other areas, but it does not supply the social amenities and services that many feel would make it an attractive place to live and raise a family. This results in a very transient and unstable population. This instability is aggravated by the fact that the area's economy is at the mercy of seasonal and cyclical fluctuations in the major industries.[2]

The lack of permanence and stability in the Stewart-Cassiar area is revealed partially in the age distribution of its population. Table 1:2 shows an age distribution comparison between the non-reserve population of the Stewart-Cassiar area, and the population of British Columbia. Almost 10 percent of the British Columbia population is over 65 while only 2.8 percent of the Stewart-Cassiar area non-reserve population is over that age. This suggests that people stay in the area only during their working lives. Once retired and free from work, they tend to leave.

Another indicator of stability in an area is its labour force participation rate. Table 1:3 shows the male and female labour force participation rates in the Stewart-Cassiar non-reserve area and in British Columbia as a whole. The information in this table shows that the Stewart-Cassiar area's male participation rate is higher than that of

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2 Because of poor copper markets, the Granduc Operating Company has recently decided to cut production by 25 percent at its mine near Stewart. This will result in the lay-off of 80 workers. See "Granduc Cuts 80 Jobs", Vancouver Sun, March 23, 1976, page 27.

TABLE 1:2

DISTRIBUTION OF STEWART-CASSIAR AREA NON-RESERVE POPULATION AND THE POPULATION OF ALL OF BRITISH COLUMBIA ACCORDING TO AGE CATEGORY - 1971

	Stewart-Cassiar Area		Total B. C. Population	
	#	%	#	%
0 - 9	965	24.3	387,670	17.7
10 - 19	685	17.3	423,430	19.4
20 - 34	1,285	32.4	478,220	21.9
35 - 44	495	12.5	255,780	11.7
45 - 64	430	10.8	434,520	19.9
65 - 69	55	1.4	68,235	3.1
70 and Over	55	1.4	136,765	6.3
TOTAL	3,970	100.0	2,184,620	100.0

Source: Statistics Canada, 1971 Census.

TABLE 1:3

MALE AND FEMALE LABOUR FORCE PARTICIPATION RATE IN THE STEWART-CASSIAR NON-RESERVE AREA AND IN BRITISH COLUMBIA - 1971

	Stewart-Cassiar Area			British Columbia		
	Male	Female	Total	Male	Female	Total
Population 15 Years of Age and Over	1,570	1,005	2,550	790,055	785,010	1,575,065
Experienced Labour Force	1,360	335	1,690	561,635	284,740	846,375
Participation Rate	86.6%	33.5%	66.3%	71.1%	36.2%	53.7%

Source: Statistics Canada, 1971 Census.

British Columbia. This difference in participation rates could be due to a number of factors. However, it should not be interpreted to mean that the males of the Stewart-Cassiar area are harder working or more industrious than those living elsewhere in British Columbia. It is more likely to be another indication that people leave the Stewart-Cassiar area when they become unemployed. Table 1:3 also shows that the female participation rate in the labour force is slightly lower than that of British Columbia. This is probably due to the fact that employment opportunities for women are lower in the Stewart-Cassiar area than in the rest of British Columbia.

Table 1:4 shows the cumulative distribution of Stewart-Cassiar households according to their length of residence in the area. Comparative data on other areas are difficult to find but a study in Kitimat reported that 42.1 percent of Kitimat households have lived in Kitimat for 10 or more years.[3] Table 1:4 shows that only 13.0 percent of Stewart-Cassiar households have lived in the Stewart-Cassiar area for that length of time. This suggests that movement into and out of the Stewart-Cassiar area occurs at a much greater rate than Kitimat and probably greater than in most other areas in British Columbia.

A great deal of understanding about the attitude people hold towards the area in which they live can be gained from an examination of the reasons why they moved to the area and the amenities which they consider lacking. Table 1:5 shows the distribution of Stewart-Cassiar households according to their reason for moving into the area. According to this table, the largest proportion of the households moved into the area for a job. Only 8.7 percent came because they liked the country and the same proportion came to get away from the city. This information is further evidence that the area is attractive primarily for

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3 William F. Sinclair, The Kitimat River: Its Use and Its Importance to Residents of the Kitimat District, Department of the Environment, Fisheries and Marine Service, Northern Operations Branch, Pacific Region, July, 1975, PAC/T-75-20, NOB/ECON 9-75, pp. 22-23.

TABLE 1:4

CUMULATIVE DISTRIBUTION OF RESIDENT HOUSEHOLDS ACCORDING TO THEIR LENGTH OF RESIDENCE IN THE STEWART-CASSIAR AREA

Length of Residence	Percentage
Less Than 1 Year	21.7
Less Than 2 Years	26.1
Less Than 3 Years	50.0
Less Than 4 Years	54.3
Less Than 5 Years	63.0
Less Than 6 Years	69.6
Less Than 7 Years	78.3
Less Than 8 Years	82.6
Less Than 9 Years	84.8
Less Than 10 Years	87.0
10 Years or More	13.0

Source: Stewart-Cassiar Recreational Survey - 1975.

TABLE 1:5

DISTRIBUTION OF RESIDENT HOUSEHOLDS ACCORDING TO THE REASON THAT THEY MOVED TO THE STEWART-CASSIAR AREA

Reason for Moving to Area	Percentage
Work, Money	71.7
Like the Country	8.7
Climate	2.2
To Get Away from the City	8.7
Other	4.3
No Response	4.3
TOTAL	100.0

Source: Stewart-Cassiar Recreational Survey - 1975.

its income and employment opportunities.

Table 1:6 shows the distribution of Stewart-Cassiar resident households according to the amenities considered least available in the area. According to this table, only 14.3 percent of the area's households find that there are no amenities lacking. Swimming facilities are insufficient according to 28.6 percent of the residents and 17.9 percent feel there should be bowling, poolroom and sport facilities provided. Almost 11 percent of the residents are dissatisfied with the roads.[4]

Much of the information presented to this point suggests that most people are not attracted to the Stewart-Cassiar area by the lifestyle that they can expect to lead, but for job and income opportunities. They find the area lacking in many of the services and amenities they consider to be important and stay only while working. However, there are amenities available in the area that they do find attractive. Table 1:7 shows the distribution of residents according to the amenities considered first, second and third most important in the area. According to this table, the amenities considered most important by 89.1 percent of the residents are outdoor related recreational amenities. Further, fishing appears to be the most important single amenity available to Stewart-Cassiar residents.

Table 1:8 shows the indicated importance of outdoor recreation relative to other recreational amenities available to Stewart-Cassiar residents. Over 52 percent of the area's residents consider outdoor recreation to be extremely important. None consider it to be of no importance.

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4 This dissatisfaction with the roads in the area was expressed very dramatically by Stewart residents during the summer of 1975. In order to pressure the provincial government into improving the road from Stewart to Terrace - the only link to adequate services and shopping facilities - Stewart residents banded together and repaired sections of the road themselves. See "Do-It-Yourself Roadbuilders Gnash 'n Carry", Vancouver Sun, August 25, 1975, page 1 and "Lea Sending Crews to Work On Stewart-Terrace Road", Vancouver Sun, August 30, 1975, page 16.

TABLE 1:6

DISTRIBUTION OF RESIDENT HOUSEHOLDS ACCORDING TO AMENITIES THAT THEY FEEL ARE LEAST AVAILABLE IN THE STEWART-CASSIAR AREA

Amenities	Percentage
Swimming	28.6
Ski Lodge/Winter Resort	3.6
Bowling, Poolroom and Sport Facilities	17.9
Camping Facilities	7.1
Good Roads	10.7
Boat Launching	3.6
Cultural Amenities	3.6
Television Reception	1.8
Restaurants, Cabarets and Social Activities	7.1
Other	1.8
No Amenities Lacking	14.3
TOTAL	100.0

Source: Stewart-Cassiar Recreational Survey - 1975.

TABLE 1:7

DISTRIBUTION OF STEWART-CASSIAR AREA RESIDENTS ACCORDING TO RECREATIONAL AMENITIES CONSIDERED FIRST, SECOND, AND THIRD MOST IMPORTANT IN THE STEWART-CASSIAR AREA

Recreational Amenities	Considered Most Important	Considered Second Most Important	Considered Third Most Important
	%	%	%
Fishing	39.1	28.3	15.0
Camping	4.3	15.2	5.0
Boating and Canoeing	2.2	8.7	5.0
Hunting	15.2	17.4	20.0
Hiking and Mountain Climbing	2.2	4.3	5.0
Swimming	2.2	-	5.0
Snowshoeing and Skiing	-	4.3	7.5
Snowmobiling	2.2	4.3	10.0
Prospecting	2.2	-	-
General Outdoors	19.6	2.2	12.5
Hockey, Baseball, Tennis, Skating, Curling, etc.[1]	6.5	8.7	12.5
Gardening[1]	2.2	-	2.5
Pubs and Bars	2.2	6.5	-
	100.0	100.0	100.0

1 Although many of these activities take place out of doors, the term Outdoor recreation is used throughout this report to refer to rural outdoor recreation. Therefore organized sports and gardening are considered non-outdoor related recreational activities.

Source: Stewart-Cassiar Recreational Survey - 1975.

TABLE 1:8

INDICATED IMPORTANCE OF OUTDOOR RECREATION RELATIVE TO OTHER RECREATIONAL AMENITIES AVAILABLE TO RESIDENTS OF THE STEWART-CASSIAR AREA

Importance of Outdoor Recreation	Percentage
Extremely Important	52.2
Very Important	30.4
Important	4.3
Moderately Important	13.0
Of No Importance	-
TOTAL	100.0

Source: Stewart-Cassiar Recreational Survey - 1975.

Tables 1:9 and 1:10 present comparative distributions of Stewart-Cassiar resident recreationists and the Stewart-Cassiar non-reserve population by age and occupation, respectively. According to Table 1:9, younger members of the population tend to participate in outdoor recreation slightly more than older members. The table shows that 40 percent of the general population is under 19 years of age, while almost 48 percent of the area's resident recreationists are in that age category. Further, a disproportionately large number of persons in the 30 to 39 year age category participate in outdoor recreation when compared with the general population. Despite the slight tendency of recreationists to come from younger age categories, the distribution of resident recreationists and the general population by age are roughly comparable.

Table 1:10 shows comparative distributions of employed resident recreationists and the area's total labour force by occupation. According to this table, a disproportionately large number of Stewart-Cassiar resident recreationists are employed in primary occupations when compared with the total labour force.[5] However, despite the disproportionately large representation of recreationists employed in the primary occupations, outdoor recreation attracts participants from members of all occupational groups in the area.

Visitors to the Area - Who They Are and Where They Come From

The availability of outdoor recreational amenities affects the lives of Stewart-Cassiar residents in ways other than those discussed above. Quality outdoor recreational amenities attract visitors to the area thus increasing and diversifying employment and income opportunities. More important, in the context of the preceding analysis, service and shopping facilities made available in response to the de-

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5 In the case of the Stewart-Cassiar area, the majority of those employed in the primary occupation category would be mine workers.

TABLE 1:9

COMPARATIVE DISTRIBUTIONS OF RESIDENT RECREATIONISTS AND THE NON-RESERVE STEWART-CASSIAR AREA POPULATION ACCORDING TO AGE CATEGORIES

Age	Stewart-Cassiar Area Non-Reserve Population[1] %	Stewart-Cassiar Resident Recreationists[2] %
0 - 9	24.9	26.7
10 - 19	15.1	21.0
20 - 29	23.9	18.2
30 - 39	16.7	20.5
40 - 49	9.6	9.7
50 - 59	5.6	1.7
60 - 69	2.8	1.1
70 or More	1.4	1.1
TOTAL	100.0	100.0

1 Source: Statistics Canada, 1971 Census.

2 Source: Stewart-Cassiar Recreational Survey - 1975.

TABLE 1:10

COMPARATIVE DISTRIBUTIONS OF EMPLOYED RESIDENT RECREATIONISTS AND THE STEWART-CASSIAR AREA NON-RESERVE LABOUR FORCE ACCORDING TO OCCUPATION

Occupations	Stewart-Cassiar Non-Reserve Labour Force[1] %	Employed Stewart-Cassiar Resident Recreationists[2] %
Managerial, Administrative and Related	4.4	3.2
Teaching and Related	2.1	4.8
Medicine and Health	1.5	3.2
Technological, Social, Religious, Artistic and Related	5.6	6.3
Clerical and Related	7.6	4.8
Sales Occupations	3.8	1.6
Service Occupations	10.0	3.2
Farming, Horticultural and Animal Husbandry	0.9	1.6
Other Primary Occupations	14.1	36.5
Processing Occupations	2.9	4.8
Machining, Product Fabrication, Assembly and Repair	10.9	6.3
Construction Trades	9.1	9.5
Transport Equipment Operators	5.3	9.5
Other Occupations	7.0	4.8
Occupations Not Stated	15.0	-
TOTAL	100.0	100.0

1 Statistics Canada, 1971 Census.

2 Stewart-Cassiar Recreational Survey - 1975.

mands of these visitors, increase the range of such facilities available to residents.

The extent of non-resident recreational activity in the area is shown in Tables 1:11 and 1:12. Table 1:11 shows the total party visits and party days per year spent by non-resident recreational parties in the Stewart-Cassiar area averaged over 1974 and 1975 according to residence category. According to this table, non-residents made an average of 5,940 party visits per year to the area during 1974 and 1975. They spent an average of 22,400 party days per year in the area during this period. The table also shows that Yellowhead residents accounted for the largest proportion of non-resident recreational activity in the area during these two years. Yellowhead residents accounted for almost 70 percent of the non-resident recreational party visits and about 64 percent of the non-resident recreational party days.

Table 1:12 shows the total expenditures per year of non-resident recreational parties who visited the Stewart-Cassiar area during 1974 and 1975 as well as their average expenditure per party day. According to this table, non-residents who visited the area during 1974 and 1975 spent $538,400 per year in the area. Table 1:12 also shows that non-Canadian parties spent considerably more per day in the area than their Canadian counterparts. Non-Canadian parties spent an average of about $29 per party day while Canadian parties spent between $23 and $25 per party day.

Tables 1:13 and 1:14 provide information on the composition of non-resident recreational parties visiting the Stewart-Cassiar area. Table 1:13 shows the average party size of non-resident recreational parties, averaged over the two years 1974 and 1975. According to this table, Yellowhead residents travelled in the largest party groups while non-Canadians travelled in the smallest. The average Yellowhead resident party over the 1974-75 period was comprised of 3.47 party members whereas non-Canadian parties contained an average of 2.58 party members.

TABLE 1:11

TOTAL PARTY VISITS AND PARTY DAYS BY NON-RESIDENT PARTIES IN THE STEWART-CASSIAR AREA ACCORDING TO RESIDENCE CATEGORY - AVERAGE 1974-75[1]

	Party Visits		Party Days	
Yellowhead Residents	4,150	69.9	14,300	63.9
B. C. Non-Northwest	880	14.9	4,600	20.4
Non-B. C. Canadians	330	5.5	1,500	6.5
Non-Canadians	570	9.6	2,100	9.2
TOTAL	5,940	100.0	22,400	100.0

1 See Appendix II for a detailed discussion of the calculation of party visits and party days spent in the Stewart-Cassiar area by residence category.

TABLE 1:12

TOTAL AND AVERAGE DAILY EXPENDITURES OF NON-RESIDENT RECREATIONAL PARTIES VISITING THE STEWART-CASSIAR AREA ACCORDING TO RESIDENCE CATEGORY - AVERAGE 1974-75

Residence Category	Average Expenditures per Party Day[1] $	Total Recreational Expenditures by Non-Residents $
Yellowhead Residents	23.17	330,900
B. C. Non-Northwest	24.87	113,700
Non-B. C. Canadians	23.21	33,700
Non-Canadians	29.15	60,200
AGGREGATE	24.07	538,400

1 Source: Stewart-Cassiar Recreational Survey - 1974-75.

TABLE 1:13

AVERAGE PARTY SIZE OF NON-RESIDENT RECREATIONAL PARTIES VISITING THE STEWART-CASSIAR AREA - AVERAGE 1974-75

Residence Category	Average Party Size
Yellowhead Residents	3.47
B. C. Non-Northwest	3.03
Non-B. C. Canadians	2.67
Non-Canadians	2.58
AGGREGATE	3.27

Source: Stewart-Cassiar Recreational Survey - 1974-75.

TABLE 1:14

MALE TO FEMALE RATIO OF NON-RESIDENT RECREATIONISTS IN THE STEWART-CASSIAR AREA ACCORDING TO RESIDENCE CATEGORY - AVERAGE 1974-75

Residence Category	Ratio: Male to Female
Yellowhead Residents	1.35:1
B. C. Non-Northwest	1.26:1
Non-B. C. Canadians	1.27:1
Non-Canadians	1.13:1
AGGREGATE	1.37:1

Source: Stewart-Cassiar Recreational Survey - 1974-75.

Table 1:14 shows the male to female ratio of non-resident recreationists who visited the area over the two years 1974 and 1975. According to this table, males outnumbered females by approximately 37 percent among non-resident recreational parties. However, males outnumbered females in non-Canadian parties by only 13 percent.

Table 1:15 shows the distribution of non-resident recreationists in the Stewart-Cassiar area according to age and residence category averaged over 1974 and 1975. According to this table, almost 21 percent of the Yellowhead resident recreationists were less than nine years old and almost 36 percent were under 19 years of age. This contrasts sharply with the breakdown of non-Canadian recreationists, 10.5 percent of whom were under nine years old and 23 percent were under 19. In fact, a disproportionately low number of non-Canadians were under 19 when compared with the breakdown of recreationists from any of the Canadian residence categories. The distribution of non-Canadian recreationists shows a disproportionately high number of recreationists in the 50 to 59 and 60 to 69 age categories. Over 33 percent of all non-Canadian recreationists were in the 50 to 59 and 60 to 69 age categories. This information together with Tables 1:13 and 1:14 is consistent with previous research in the area which found that Canadian and particularly Yellowhead residents travelled predominately in family groups or all male groups while non-Canadians travelled predominately in parties made up of adult couples with no children.[6]

Information on the socio-economic backgrounds of non-resident recreationists visiting the Stewart-Cassiar area is presented in Tables 1:16 and 1:17. Table 1:16 shows the distribution of the household heads of non-resident recreational parties visiting the Stewart-Cassiar area in 1975 according to occupation and residence category. According to

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6 William D. Masse, A Preliminary Overview on the Impact of Outdoor Recreational Activity in Northwestern British Columbia: The Stewart-Cassiar Area, Department of the Environment, Fisheries and Marine Service, Northern Operations Branch, Pacific Region, October, 1975, PAC/T-75-12, NOB/ECON 8-75, pp. 26-31.

TABLE 1:15

DISTRIBUTION OF NON-RESIDENT RECREATIONISTS IN THE STEWART-CASSIAR AREA ACCORDING TO AGE AND RESIDENCE CATEGORY - AVERAGE 1974-75

Age Category	Yellowhead Residents %	B. C. Non-Northwest %	Non-B. C. Canadian %	Non-Canadian %	Aggregate %
0 - 9	20.7	11.1	18.5	10.5	18.5
10 - 19	15.1	19.2	13.8	12.5	15.4
20 - 29	20.7	15.1	19.5	15.1	19.5
30 - 39	21.9	18.3	21.0	14.8	20.8
40 - 49	13.0	13.3	11.8	12.3	13.0
50 - 59	5.6	14.0	8.2	16.8	7.7
60 - 69	2.3	7.6	6.2	16.5	4.3
70 and Over	0.6	1.3	1.0	1.4	0.8
TOTAL	100.0	100.0	100.0	100.0	100.0

Source: Stewart-Cassiar Recreational Survey - 1974-75.

TABLE 1:16

DISTRIBUTION OF HOUSEHOLD HEADS OF NON-RESIDENT RECREATIONAL PARTIES VISITING THE STEWART-CASSIAR AREA ACCORDING TO OCCUPATION AND RESIDENCE CATEGORY - SUMMER 1975

	Yellowhead Residents %	B. C. Non-Northwest %	Non-B. C. Canadian %	Non-Canadian %	Aggregate %
Managerial and Administrative	6.6	4.7	5.6	5.7	6.3
Natural Services	4.4	8.1	5.6	3.1	4.7
Social Services	2.2	2.0	4.2	3.1	2.3
Teaching and Related Occupations	9.3	12.1	12.5	17.6	10.4
Medicine and Health	5.5	4.7	1.4	2.5	5.0
Clerical and Related Occupations	4.4	4.7	5.6	1.9	4.3
Sales Occupations	4.4	1.3	2.8	1.3	3.7
Service Occupations	4.9	5.4	-	5.7	4.8
Farming	2.2	6.7	6.9	1.9	2.9
Other Primary Occupations	11.5	4.7	2.8	0.6	9.4
Processing Occupations	7.7	3.4	2.8	3.8	6.7
Machining, Product Fabrication, Assembly and Repair	13.1	6.0	18.1	5.0	11.9
Construction Trades	12.6	11.4	4.2	8.2	11.7
Transport Equipment Operator	6.0	2.7	8.3	2.5	5.5
Retired	3.8	20.1	13.9	35.2	8.7
Other Occupations	1.6	2.1	5.6	1.9	1.9
TOTAL	100.0	100.0	100.0	100.0	100.0

Source: Stewart-Cassiar Recreational Survey - 1975.

TABLE 1:17

DISTRIBUTION OF NON-RESIDENT RECREATIONAL PARTIES VISITING THE STEWART-CASSIAR AREA ACCORDING TO GROSS TOTAL HOUSEHOLD INCOME AND RESIDENCE CATEGORY

Income Category $	Yellowhead Residents %	B. C. Non-Northwest %	Non-B. C. Canadian %	Non-Canadian %	Aggregate %
0 - 4,999	2.7	3.0	2.2	3.2	2.7
5,000 - 9,999	6.3	14.0	13.0	21.5	8.7
10,000 - 14,999	25.0	26.0	30.4	17.2	24.8
15,000 - 19,999	33.9	26.0	21.7	12.9	30.7
20,000 - 24,999	13.4	20.0	13.0	18.3	14.5
25,000 - 29,999	9.8	3.0	6.5	8.6	8.8
30,000 - 34,999	2.7	6.0	4.3	9.7	3.7
35,000 and Over	6.3	2.0	8.7	8.6	6.1
TOTAL	100.0	100.0	100.0	100.0	100.0

Source: Stewart-Cassiar Recreational Survey - 1975.

this table, a large proportion (35.2 percent) of the non-Canadian household heads were retired persons. The largest proportion of Yellowhead resident household heads were employed either in the primary occupations other than farming (11.5 percent), machining, product fabrication, assembly and repair occupations (13.1 percent) and the construction trades (12.6 percent).

Table 1:17 shows the distribution of non-resident recreational parties in the Stewart-Cassiar area during 1975 according to gross total household income and residence category. This table shows that a substantially high proportion of non-Canadians fall into the 5,000 to 9,999 dollar income category. This is probably due to the large proportion of retired people among the non-Canadians. This table also shows that the greatest proportion of the Canadian parties fall into the middle household income groups between 10,000 and 24,999 dollars per year.

Summary

Information presented in this chapter indicates that the Stewart-Cassiar area lacks many of the services and amenities that most people consider important to a suitable way of life. People are attracted to the area by income and employment opportunities and they tend to leave the area if they become unemployed or retired. This results in a highly transient population. Evidence presented in this chapter indicates that people migrate into and out of the area at a very high rate.

Evidence also suggests that of the services and amenities which are available in the area, outdoor recreational amenities appear to be particularly important. Further, a broad cross section of the area's population participates in outdoor recreation. The availability of quality outdoor recreational amenities for residents of the Stewart-Cassiar area may contribute more to the area's stability than any other

single factor. The maintenance of these amenities will assuredly enhance the area's potential for future growth.

It was also shown in this chapter that non-resident parties made an average of 5,937 party visits per year and spent an average of 22,369 party days in the Stewart-Cassiar area during 1974 and 1975. During this period, they spent about $540,000 per year while visiting the area. This non-resident participation in Stewart-Cassiar outdoor recreation provides employment and income opportunities in the area and increases the services and amenities available to residents. Canadian parties were larger than non-Canadian parties and contained more children. A large proportion of non-Canadian recreationists visiting the area were retired persons.

The most significant information contained in the section on visitors to the area is the disproportionately high amount of recreational activity accounted for by Yellowhead residents. Northwestern British Columbia and particularly the Yellowhead region has been considered for many different types of development projects in recent years. Growth in northwestern British Columbia is met with mixed feelings by those who live there. It will enhance their material welfare, provide a wider service base and introduce a range of urban amenities presently unavailable. But, growth also threatens to impinge upon the natural and scenic amenities that many consider to be important. Research in the Yellowhead region has found that many of the natural and scenic endowments of the region already suffer severe pressure from over-exploitation by recreationists, increasing population and expanding industrial activity.[7] The high level of Yellowhead recreational activity

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7 William F. Sinclair, The Socio-Economic Importance of Maintaining the Quality of Recreational Resources in Northern British Columbia: The Case of Lakelse Lake, Department of the Environment, Fisheries and Marine Service, Northern Operations Branch, Pacific Region, June, 1974, PAC/T-74-10, NOB/ECON 5-74; The Kitimat River: Its Use and Its Importance to Residents of the Kitimat District, Department of the Environment, Fisheries and Marine Service, Northern Operations Branch, Pacific Region, July, 1975, PAC/T-75-20, NOB/ECON 9-75.

in the Stewart-Cassiar area indicates that Yellowhead residents would be very concerned about the effect of future development on Stewart-Cassiar recreational resources.

CHAPTER TWO

ACTIVITY PATTERNS OF RESIDENT AND NON-RESIDENT RECREATIONISTS IN THE STEWART-CASSIAR AREA AND THE IMPORTANCE OF SPORT FISHING

In Chapter One, the primary users of outdoor recreation in the Stewart-Cassiar area were identified. Information presented in Chapter One indicated that a broad cross section of the area's resident population participated in outdoor recreation and considered it to be an important part of their way of life in the area. It was also found that scenic and outdoor recreational resources provided enjoyment for many non-residents, particularly Yellowhead residents. This chapter will be used to examine the importance of sport fishing opportunities relative to other outdoor recreational amenities available in the area. This is accomplished by examining the attitudes, opinions and participation patterns of resident and non-resident recreationists.

Patterns of Participation in Outdoor Recreational Activities

The Stewart-Cassiar area offers features attractive to many types of outdoor enthusiasts. It is endowed with many rivers and lakes, magnificent mountainous scenery and interesting and unique features such as the lava beds and Bear Glacier. The relative importance of each of the many outdoor amenities available in the area is difficult to determine conclusively. However, the importance of each of them ultimately depends on the attitudes and opinions of the users. Table 1:7 on page 15 gave an indication of the relative importance that Stewart-Cassiar residents place on each of the recreational amenities available in the area. According to Table 1:7, fishing is considered the most important amenity by the largest proportion (39.1 percent) of the area's residents. General outdoors is considered the most important amenity by almost 20 percent and hunting by just over 15 percent. Only 11 percent mentioned non-outdoor related amenities such as sports (hock-

ey, baseball, tennis, skating, curling, etc.), gardening and pubs and bars as the most important amenities available in the area.

Table 2:1 provides similar information on non-residents visiting the area. Table 2:1 shows the distribution of non-resident recreational parties according to the features and amenities that they find most enjoyable in the area and residence category. According to this table, the scenery and unspoiled environment is the single most enjoyable feature to non-residents. It is considered to be the most enjoyable feature of the area by the largest proportion (61.6 percent) of the area's visitors. The information in this table also indicates that fishing is an important feature to non-residents. Next to the scenery and unspoiled environment, fishing was the amenity mentioned most enjoyable by the largest proportion (12.6 percent) of the respondents. It appears particularly important to Yellowhead and B.C. non-northwest residents.

The importance of each of the area's recreational amenities is also revealed by the activities in which recreationists participate on trips in the area. Residents can be divided into two groups for the purpose of examining their activity patterns. Residents make both day and overnight trips for recreational purposes. Non-residents, on the other hand, with the exception of some of the Yellowhead resident parties, stayed in the area at least two days per trip. Table 2:2 shows the distribution of resident trips during the summer of 1975 according to whether they were day trips or overnight trips. This table also shows the average length of resident day trips in hours and the average number of days spent on resident overnight trips. According to the information in this table, almost 61 percent of resident recreational trips are day trips and 39.2 percent are overnight trips. The table also shows that the average resident day trip is 7.18 hours in length and the average overnight trip consists of 2.85 days.

Table 2:3 shows the activities participated in by resident

TABLE 2:1

DISTRIBUTION OF NON-RESIDENT RECREATIONAL PARTIES ACCORDING TO THE FEATURES AND AMENITIES THAT THEY FOUND MOST ENJOYABLE AND RESIDENCE CATEGORY - AVERAGE 1974-75

Features and Amenities	Yellowhead Residents	B. C. Non-Northwest	Non-B. C. Canadian	Non-Canadian	Aggregate
Scenery and Unspoiled Natural Environment	56.9	60.4	80.0	86.5	61.6
Fishing	12.7	20.7	5.0	3.8	12.6
Bear Glacier	10.5	8.6	10.0	5.8	9.7
Lava Beds	1.7	1.7	-	-	1.4
Camping Facilities	5.6	3.4	5.0	-	4.7
Swimming	1.1	-	-	-	0.7
Hunting	3.0	1.7	-	-	2.4
Other	2.1	-	-	3.8	1.9
No Response	6.4	3.4	-	-	5.0
TOTAL	100.0	100.0	100.0	100.0	100.0

Source: Stewart-Cassiar Recreational Survey - 1974-75.

TABLE 2:2

DISTRIBUTION OF RESIDENT TRIPS ACCORDING TO WHETHER THEY WERE DAY TRIPS OR OVERNIGHT TRIPS AND AVERAGE LENGTH OF RESIDENT DAY AND OVERNIGHT TRIPS

Types of Trips	Percentage
Day Trips	60.8
Overnight Trips	39.2
TOTAL	100.0

Average length of resident day trips: 7.18 hours.

Average length of resident overnight trips: 2.85 days.

Source: Stewart-Cassiar Recreational Survey - 1975.

TABLE 2:3

OUTDOOR RECREATIONAL ACTIVITIES PARTICIPATED IN AND PERCENTAGE OF PARTY TIME DEVOTED TO EACH ACTIVITY BY RESIDENT PARTIES ON DAY AND OVERNIGHT TRIPS IN THE STEWART-CASSIAR AREA

Activities	Overnight Trips %	Day Trips %
Fishing	14.8	15.1
Swimming	0.2	-
Hunting	0.4	-
Boating	4.5	4.5
Canoeing	0.4	-
Photography	0.2	-
Nature Study	1.3	-
Outdoor Games	1.6	-
Walking	1.1	4.2
Hiking (with pack)	0.2	-
Sightseeing	3.7	20.1
Picnicking and Activities at Picnic Site (cooking, etc.)	-	26.3
Activities around Camp (cooking, etc.)	24.6	-
Subtotal: Percentage of Time Devoted to Recreational Activities	53.0	70.3
Sleeping	33.3	-
Driving	13.7	29.7
TOTAL	100.0	100.0

Source: Stewart-Cassiar Recreational Survey - 1975.

recreationists on day and overnight trips in the area and percentage of time spent in each of these activities. According to this table, residents on the average day trip spend 29.7 percent of their time driving. This leaves 70.3 percent of their time, or about 5 hours,[1] that is devoted to recreational activities. Residents on day trips devoted 26.3 percent of their time to picnicking, just over 20 percent to sightseeing and just over 15 percent to fishing. This information suggests that resident day trips are made primarily to enjoy the scenery, to have a picnic and to fish.

The information in the same table on resident overnight trips reveals similar activity patterns. According to this table, residents spend 47.0 percent of their time (about 11 hours per day) on the non-recreational activities of driving and sleeping. Residents on overnight trips devote 24.6 percent of their time to activities around their campsite and 14.8 percent to fishing. The information on resident overnight trips presented in Table 2:3 suggests that on overnight trips residents participate in a greater range of activities than on day trips. However, it also shows that overnight trips are made primarily for camping and fishing.

Tables 2:4 through 2:7 provide information on the activity patterns of non-residents. Table 2:4 shows the average length of stay per non-resident trip in the area according to residence category. This table shows that Yellowhead residents on average spend the shortest length of time in the area per trip. This probably reflects the fact that much of the area defined as the Stewart-Cassiar area is easily accessible to communities such as Terrace, Kitimat, Hazelton and Smithers in the Yellowhead region. This accessibility allows short weekend trips and even day trips in and out of the area. Table 2:4 also shows that non-Canadians spend considerably less time per visit

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1 Based on 7.18 hours in the average day trip. See Table 2:2 on page 35.

TABLE 2:4

AVERAGE LENGTH OF STAY OF NON-RESIDENT RECREATIONAL PARTIES IN THE STEWART-CASSIAR AREA ACCORDING TO RESIDENCE CATEGORY - AVERAGE 1974-75

Residence Category	Average Number of Days Spent in the Area
Yellowhead Residents	3.44
B. C. Non-Northwest	5.17
Non-B. C. Canadians	4.41
Non-Canadians	3.61
AGGREGATE	3.77

Source: Stewart-Cassiar Recreational Survey - 1974-75.

TABLE 2:5

DISTRIBUTION OF NON-RESIDENT RECREATIONAL PARTIES IN THE STEWART-CASSIAR AREA ACCORDING TO THE DESTINATION OF THEIR TRIP IN THE AREA AND RESIDENCE CATEGORY

Destination	Yellowhead Residents %	B. C. Non-Northwest %	Non-B. C. Canadian %	Non-Canadian %	Aggregate %
Passing through to/from the Alaska Highway	4.0	59.6	74.3	76.1	22.5
Cassiar, Dease Lake, Eddontenajon Lake, Bell-Irving River and Area	16.3	4.5	5.7	1.3	12.6
Stewart-Hyder	6.8	17.8	11.3	14.6	9.5
Meziadin Lake and River	21.9	8.9	-	2.7	17.1
Nass River Valley	12.0	2.3	-	-	8.8
Cranberry and Tseax Rivers	13.1	2.3	8.7	2.7	10.2
Lava Beds, Lava Lake, Red Sand Lake and Kalum Lake	19.9	-	-	1.3	14.2
Other	6.0	4.7	-	1.3	5.1
TOTAL	100.0	100.0	100.0	100.0	100.0

Source: Stewart-Cassiar Recreational Survey - 1975.

TABLE 2:6

DISTRIBUTION OF NON-RESIDENT RECREATIONAL PARTIES IN THE STEWART-CASSIAR AREA ACCORDING TO THE MAIN REASON FOR MAKING THE TRIP AND RESIDENCE CATEGORY - AVERAGE 1974-75

Main Reasons	Yellowhead Residents %	B. C. Non-Northwest %	Non-B. C. Canadian %	Non-Canadian %	Aggregate %
Vacation	24.3	26.5	16.4	22.0	23.9
Passing Through	4.7	4.5	16.1	31.1	7.9
Sightseeing	12.9	22.2	15.5	14.1	14.6
Scenic Beauty	18.5	12.4	21.5	15.2	17.5
Fishing	30.4	14.0	19.4	14.1	25.7
Business	3.2	6.4	9.4	-	3.7
Visit Friends and/or Relatives	1.1	7.9	0.9	0.9	2.1
Camping	0.7	2.0	-	-	0.8
Hunting	1.1	1.5	-	-	1.0
Other	3.0	2.6	0.9	2.6	2.9
TOTAL	100.0	100.0	100.0	100.0	100.0

Source: Stewart-Cassiar Recreational Survey - 1974-75.

TABLE 2:7

RECREATIONAL ACTIVITIES PARTICIPATED IN AND TOTAL VISITOR HOURS[1] DEVOTED TO EACH ACTIVITY BY NON-RESIDENT RECREATIONISTS IN THE STEWART-CASSIAR AREA ACCORDING TO RESIDENCE CATEGORY - AVERAGE 1974-75

Activities	Yellowhead Residents		B. C. Non-Northwest		Non-B. C. Canadian		Non-Canadian		Aggregate	
	Hours	Percent	Hours	Percent	Hours	Percent	Hours	Percent	Hours	Percent
Fishing	133,250	11.3	55,571	9.8	14,590	9.5	10,019	5.6	213,430	10.3
Swimming	2,358	0.2	1,134	0.2	307	0.2	179	0.1	3,978	0.2
Hunting	15,330	1.3	3,402	0.6	-	-	-	-	18,732	0.9
Boating	9,434	0.8	3,402	0.6	461	0.3	179	0.1	13,476	0.6
Canoeing	11,792	1.0	7,372	1.3	614	0.4	1,073	0.6	20,851	1.0
Photography	11,792	1.0	8,506	1.5	3,532	2.3	6,799	3.8	30,629	1.5
Nature Study	3,538	0.3	3,969	0.7	921	0.6	2,863	1.6	11,291	0.5
Picnicking	2,358	0.2	-	-	154	0.1	537	0.3	3,049	0.1
Outdoor Games	4,717	0.4	-	-	-	-	-	-	4,717	0.2
Walking	17,688	1.5	8,506	1.5	768	0.5	2,863	1.6	29,825	1.4
Hiking (with pack)	10,613	0.9	6,805	1.2	614	0.4	1,789	1.0	19,821	1.0
Sightseeing	96,695	8.2	61,240	10.8	18,582	12.1	22,185	12.4	198,702	9.6
Other Activities around Campsite	198,106	16.8	73,716	13.0	22,115	14.4	20,217	11.3	314,154	15.1
Subtotal: Visitor Hours Devoted to Recreational Activities	525,106	44.6	234,190	41.3	62,658	40.8	69,776	39.0	891,730[2]	42.9
Sleeping	369,091	31.3	190,527	33.6	51,447	33.5	58,683	32.8	669,748	32.2
Driving	285,367	24.2	142,329	25.1	39,622	25.8	50,632	28.3	517,950	24.9
TOTAL VISITOR HOURS	1,179,204	100.0	567,046	100.0	153,574	100.0	178,912	100.0	2,078,736	100.0

1 Total Visitor Hours = Total Party Days x Average Party Size x 24 hours.

2 Data subject to rounding error.

Source: Stewart-Cassiar Recreational Survey - 1974-75.

to the area than non-B. C. Canadians or B. C. non-northwest parties. This probably reflects the tendency of non-Canadians to be just passing through the area on the way to and from the Yukon and Alaska.

The tendency of non-Canadians, more than other non-residents, to be passing through to and from the Yukon and Alaska is revealed in Tables 2:5 and 2:6. Table 2:5 shows the distribution of non-resident recreational parties in the Stewart-Cassiar area according to trip destination and residence category. Over 76 percent of the non-Canadian parties were passing through to or from the Alaska Highway. Yellowhead resident parties were the most likely to have a destination within the Stewart-Cassiar area.

Table 2:6 shows the distribution of non-resident recreational parties in the area according to the main reason for their trip and residence category. According to this table, over 31 percent of the non-Canadian parties were just passing through. This compares with just over 16 percent of the non-B. C. Canadians, 4.5 percent of the B. C. non-northwest parties and 4.7 percent of the Yellowhead parties. The information in Tables 2:5 and 2:6 suggests that many non-Canadians were passing through and had no other reasons for entering the area. According to Table 2:5, a large proportion of B. C. non-northwest and non-B. C. Canadians were also passing through to or from the Alaska Highway, but Table 2:6 shows that they were more likely to have other reasons for entering the area than non-Canadians.

Table 2:6 also provides further information on the importance to non-residents of different recreational amenities available in the area. According to this table, almost 15 percent of all non-residents mentioned sightseeing as the main reason for their visit to the area and 17.5 percent mentioned scenic beauty. However, the most important single reason for non-resident trips into the area appears to be sport fishing. According to Table 2:6, almost 26 percent of all non-residents mentioned sport fishing as the main reason for their visit.

Table 2:7 shows the activities participated in and the number and percent of visitor hours devoted to each activity by non-residents visiting the Stewart-Cassiar area during 1974 and 1975. According to this table, visitors devote approximately 60 percent of their time or about 14 hours per day to the non-recreational activities of driving and sleeping. Non-Canadians spend a larger proportion of their time driving than visitors from other residence categories. This is consistent with information presented earlier which showed that a large proportion of non-Canadians were passing through and had no other reason for entering the area.

Table 2:7 also shows that aside from the time that visitors spend in activities around their campsite, the largest proportion of their recreational time is spent fishing. Non-residents on average devote 10.3 percent of their total time in the area, or about 2.5 hours per day, to fishing. Yellowhead residents in particular, spend 11.3 percent of their time, or almost 3 hours per day, fishing.

The Importance of Sport Fishing in the Stewart-Cassiar Area

The Stewart-Cassiar area offers a variety of outdoor amenities that are attractive to many types of outdoor recreationists. In the section above, information was presented on the activities in which resident and non-resident recreationists participate. Recreationists enjoy activities ranging from photography and nature study to boating and swimming. However, certain amenities and activities available in the area appear particularly important.

Residents rank general outdoors and hunting high as recreational pastimes but fishing appears to be the single most important recreational amenity available to them in the area. It was shown above that almost 20 percent of the area's residents consider general outdoors to be the most important recreational amenity of the area and just over 15 percent feel this about hunting. However, 39.1 percent feel that fish-

ing is the most important recreational pastime available in the area.

Non-residents, on the other hand, rank the scenery and unspoiled environment high as an attractive feature. Almost 62 percent feel that it is the most enjoyable feature of the area. However, next to the scenery and unspoiled environment, sport fishing is considered the most enjoyable feature or amenity. Moreover, other information presented above suggests that non-residents place an importance on sport fishing in the area that cannot be ignored. It was mentioned more often as the main reason for the visit to the area than any other reason. Further, next to time spent in activities around the campsite (such as cooking), non-residents spend more trip time fishing than in any other recreational activity.

The importance of sport fishing as a recreational pastime is further borne out by the information presented in Table 2:8. Table 2:8 shows the distribution of resident and non-resident recreational parties in 1974 and 1975 according to whether they were fishing parties or non-fishing parties. According to this table, almost 95 percent of all resident outdoor recreational trips during the period were fishing party trips. Further, almost 82 percent of all recreational trips in the area, including both resident and non-resident party trips, were fishing party trips.

Table 2:9 shows the influence that fishing opportunities in the area have on attracting visitors. According to the information in this table, 23.2 percent of all non-resident trips into the area would not have been made during 1974 and 1975 if sport fishing opportunities were not available. In particular, over 28 percent of the Yellowhead resident trips would not have been made in the absence of sport fishing.

Sport Fishing Activity Patterns

The Stewart-Cassiar area contains many rivers and lakes that

TABLE 2:8

PERCENTAGE DISTRIBUTION OF RESIDENT AND NON-RESIDENT RECREATIONAL PARTIES ACCORDING TO WHETHER THEY WERE FISHING PARTIES OR NON-FISHING PARTIES - 1974-75

	Residents	Yellowhead Residents	B. C. Non-Northwest	Non-B. C. Canadians	Non-Canadians	Aggregate
Fishing Parties	94.5	87.8	94.2	89.4	79.6	81.9
Non-Fishing Parties	5.5	12.2	5.8	10.6	20.4	18.1
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Source: Stewart-Cassiar Recreational Survey - 1974-75.

TABLE 2:9

INFLUENCE OF FISHING ON THE DECISION TO MAKE THE TRIP INTO THE AREA OF NON-RESIDENT RECREATIONAL PARTIES - 1974-75

	Yellowhead Residents	B. C. Non-Northwest	Non-B. C. Canadians	Non-Canadians	Aggregate
Would still make trip if no fishing was available in the area	70.5	71.6	77.3	84.7	75.3
Would not have made trip if no fishing was available in the area	28.2	25.8	22.7	14.6	23.2
No Response	1.3	2.6	-	0.7	1.4
TOTAL	100.0	100.0	100.0	100.0	100.0

Source: Stewart-Cassiar Recreational Survey - 1974-75.

offer excellent sport fishing opportunities (see Map 2). It straddles four major river systems (the Skeena, the Nass, the Stikine and the Liard-Mackenzie). The Kitsumkalum and Kitwanga rivers in the southern portion of the area are part of the Skeena system; the Nass and Stikine systems are almost entirely within the area; in the northern portion of the area, the Dease River is part of the Liard-Mackenzie system which flows into the Arctic Ocean.

Table 2:10 shows the average annual escapement of salmon by species in some of the major rivers in the area. From a sport fish point of view, the only important salmon species are spring and coho. According to Table 2:10, many of the rivers support sizeable stocks of spring and coho salmon. In addition to fish stocks detailed in this table, some of the rivers support steelhead trout and the rivers and lakes of the area support stocks of Dolly Varden, cutthroat trout and rainbow trout which are important to sport fishermen. The Dease River in the north offers some of the northern species such as Arctic grayling.[2]

Patterns of sport fishing activity follow, to some extent, the timing of fish runs. An angler with particular preferences in fishing will be attracted to a given area and to a given fishing location when the timing of fish runs corresponds with his particular preferences. For this reason it is useful to have an understanding of the time of year when each of the species occur in the area. Fisheries Service records show that spring salmon runs occur in most rivers in July and August. Coho runs begin in early September, peak in late September or early October and extend into November. Provincial Fish and Wildlife biologists report that steelhead runs in most rivers in the area start in the first two weeks of September and last until December. There are exceptions to this such as the Tseax River which hosts a spring run of steelhead from March until June. Trout, Dolly Varden and grayling are

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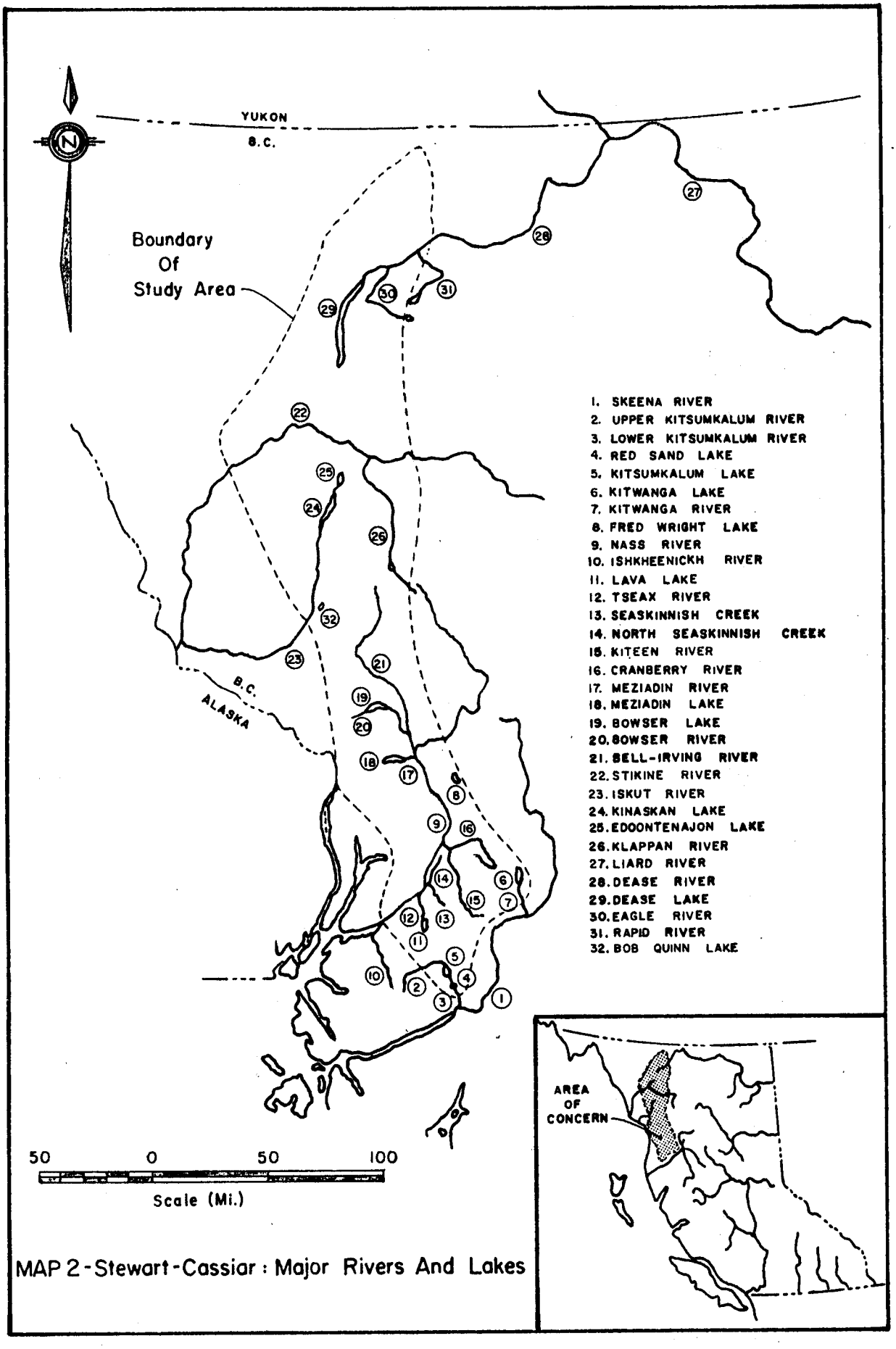
2 Estimates of Dolly Varden, cutthroat trout, rainbow trout, steelhead and grayling stocks are unavailable for the rivers and lakes in the area.



MAP 2 - Stewart - Cassiar : Major Rivers And Lakes

TABLE 2:10

AVERAGE ANNUAL[1] SALMON ESCAPEMENT BY SPECIES IN THE MAJOR RIVERS OF THE STEWART-CASSIAR AREA

	Sockeye	Spring	Coho	Pink	Chum
Upper Kitsumkalum (Beaver River)	3,300	1,200	3,800	-	-
Lower Kitsumkalum River	-	4,900	500	100	600
Kitwanga River	-	100	400	144,300	-
Cranberry River	-	2,300	3,000	200	-
Kiteen River	-	700	1,800	-	-
Tseax River	1,200	2,800	6,400	1,600	1,100
Seaskinnish River	100	900	1,600	300	-
Meziadin River and Lake	154,700	1,000	3,500	-	-
Bear River	2,000	-	4,200	3,700	4,500
Bowser River and Lake	16,100	-	-	-	-

1 Averaged over the ten year period 1965 through 1974.

resident species which are available through most of the spring, summer, and fall months.

The total yearly angling effort supported by the rivers and lakes of the Stewart-Cassiar area is shown in Table 2:11. According to this table, the Stewart-Cassiar area supported an average of 58,800 angler days per year during 1974 and 1975. Table 2:11 also shows that a large proportion of those angler days were accounted for by Yellowhead residents. Yellowhead residents accounted for 45.5 percent of the total Stewart-Cassiar area angler days during the period. Residents of the Stewart-Cassiar area also accounted for a sizeable portion (28 percent) of total sport fishing effort.

Information on the species of fish that resident and non-resident anglers prefer to catch in the Stewart-Cassiar area is presented in Table 2:12. According to this table, the trout species appear important to anglers from all residence categories. Preference for trout ranges from a low of 46.5 percent of non-B. C. Canadians, to a high of 65.5 percent of B. C. non-northwest anglers. The salmon species are also important especially to non-B. C. Canadians, residents and Yellowhead residents.

In Tables 2:13 and 2:14, information is presented which gives an indication of the distribution of resident and non-resident sport fish activity among the many lakes and rivers of the area. Table 2:13 presents information on the favourite fishing locations of Stewart-Cassiar resident anglers. According to this table, Meziadin Lake is considered the favourite fishing location by the largest proportion (25.6 percent) of resident anglers and 18.6 percent prefer saltwater fishing in Portland Canal. Hanna and Tintina Creeks are also important fishing locations and are mentioned as the favourite fishing location of 11.6 percent of the resident anglers.

Table 2:14 presents information on the locations at which

TABLE 2:11

TOTAL ANGLER DAYS PER YEAR IN THE STEWART-CASSIAR AREA ACCORDING TO RESIDENCE CATEGORY - AVERAGE 1974-75

	Angler Days[1]	
	#	%
Residents	16,500	28.1
Yellowhead Residents	26,700	45.4
B. C. Non-Northwest	10,500	17.9
Non-B. C. Canadian	2,400	4.1
Non-Canadian	2,700	4.6
AGGREGATE	58,800	100.0

1 Appendix II contains a discussion on the calculation of total angler days in the area by residence category.

TABLE 2:12

DISTRIBUTION OF SPORT FISH PARTIES IN THE STEWART-CASSIAR AREA ACCORDING TO THE FISH SPECIES THEY MOST PREFER TO CATCH IN THE AREA AND RESIDENCE CATEGORY - 1974-75

Species	Residents %	Yellowhead Residents %	B. C. Non-Northwest %	Non-B. C. Canadian %	Non-Canadian %
Salmon	20.6	17.9	14.0	31.1	14.3
Trout	53.3	60.3	65.5	46.5	60.2
Char (Dolly Varden)	16.8	16.3	7.6	7.0	9.0
Steelhead	3.7	2.2	3.5	-	2.3
Grayling	0.9	2.2	4.7	1.4	9.8
Other	-	-	-	1.4	1.5
No Preference	4.7	1.1	4.7	12.7	3.0
TOTAL	100.0	100.0	100.0	100.0	100.0

Source: Stewart-Cassiar Recreational Survey - 1974-75.

TABLE 2:13

DISTRIBUTION OF RESIDENT SPORT FISHERMEN ACCORDING TO THEIR FAVOURITE FISHING LOCATIONS

Location	Percent
Meziadin Lake	25.6
Portland Canal (Salt Water)	18.6
Hanna and Tintina Creeks	11.6
Dease River and Lake	9.3
Bear River	7.0
Fish Creek	4.7
Eddontenajon Lake	4.7
Other Rivers and Lakes	18.5
TOTAL	100.0

Source: Stewart-Cassiar Recreational Survey - 1975.

TABLE 2:14

FISHING LOCATIONS IN THE STEWART-CASSIAR AREA MENTIONED MOST OFTEN BY NON-RESIDENT SPORT FISHERMEN ACCORDING TO THE PERCENTAGE WHO FISHED AT EACH LOCATION

Fishing Locations	Yellowhead Residents %	B. C. Non-Northwest %	Non-B. C. Canadian %	Non-Canadian %	Aggregate %
Meziadin Lake and River	41.2	35.4	13.3	31.6	38.1
Hanna and Tintina Creeks	12.7	15.2	8.9	7.9	12.7
Cranberry River	12.7	1.0	15.6	6.6	10.3
Dease River and Lake	6.9	11.1	13.3	10.5	8.2
Tseax River	9.8	5.1	4.4	2.6	8.2
Nass River	7.8	-	8.9	1.3	6.0
Dragon Lake	6.9	4.0	4.4	5.3	6.1
Kinaskan Lake	3.9	5.1	6.7	9.2	4.6
Other Rivers and Lakes	37.3	67.7	48.9	48.7	44.2

Source: Stewart-Cassiar Recreational Survey - 1975.

non-resident anglers fished during 1975. As in the case of resident anglers, Meziadin Lake, Hanna Creek and Tintina Creek appear to be particularly important non-resident fishing locations. Over 38.1 percent of all non-resident parties fished at least one day at Meziadin Lake or River and 12.7 percent fished at Hanna and Tintina Creeks. Non-residents, however, do not appear to have the same interest in saltwater fishing as do residents. Non-residents also express more interest in the Cranberry, Tseax and Nass Rivers than do resident anglers.[3]

Summary

This chapter was used to examine the activity patterns of resident and non-resident recreationists in order to gain some understanding of the relative importance of the various outdoor recreational amenities available in the Stewart-Cassiar area. Information presented in this chapter shows that resident and non-resident recreationists participate in a wide range of recreational amenities and enjoy many natural and scenic features in the Stewart-Cassiar area. The information shows, however, that certain outdoor recreational features and amenities in the area are more important than others.

From the information in this chapter, it appears that sport fishing is the single most important recreational amenity to the largest proportion of the resident population. It was also shown that there is some time devoted to fishing on almost 95 percent of all resident recreational trips.

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3 It should be noted that information on the preferred species of anglers and on the distribution of angler effort among fishing locations is affected by the timing of interviews. Because the timing of interviews missed most of the coho and steelhead runs in the area, the preference for salmon and steelhead shown in Table 2:12 may be somewhat understated. Similarly, the distribution of fishing effort which is indicated in Tables 2:13 and 2:14 may understate to some extent the amount of effort directed to river fishing in the area.

The importance of sport fishing is not as evident in the case of non-residents as it is to residents. It takes second place to the scenery and unspoiled environment of the area as the feature or amenity most enjoyed by non-residents. Further, it was shown that many non-residents, especially non-Canadians, are interested only in passing through the area on their way to or from the Alaska Highway. However, sport fishing was mentioned as the main reason for the trip by a larger proportion of non-residents than any other single reason. Next to activities around the campsite, such as cooking, non-residents spend more trip time fishing than in any other recreational pastime. It was shown that a large proportion of recreational parties visiting the area devote some portion of their trip time to sport fishing. This proportion ranges from a low of 79.6 percent among non-Canadians to a high of 94.2 percent among B. C. non-northwest parties. Finally, over 23 percent of all non-resident recreational trips into the area would not be made if there were no fishing available.

This chapter also outlined some of the activity patterns of sport fishermen. It was shown that the Stewart-Cassiar area supported 58,800 angler days of sport fishing effort per year during 1974 and 1975. A large proportion (45.5 percent) of this effort was accounted for by Yellowhead residents. Information was presented on the fish species that anglers prefer to catch in the area and on the distribution of angler activity among the various rivers and lakes of the area. The information on preferred species and on the distribution of activity must be used with caution, however, because it is subject to a certain amount of bias which is inherent in the method used to gather the information. Nonetheless, this information indicates that Meziadin Lake and Hanna and Tintina Creeks are important fishing locations to both resident and non-resident sport fishermen. It also indicates that residents consider Portland Canal very important and non-residents express interest in the Cranberry, Tseax and Nass Rivers.

CHAPTER THREE

THE ECONOMIC VALUE OF THE STEWART-CASSIAR AREA SPORT FISHERY

The ever-changing needs of modern society require continual adjustments in the allocation of resources. Normally the competitive market is well equipped to put resources to the use or combination of uses which yield the largest benefit to society. Consumers signal their preferences via their spending patterns and the market allocates available labour, machines and raw materials to the production of the most beneficial mix of goods and services. However, when a product is not bought and sold in the marketplace, the market mechanism is unable to determine the desirable amount of resources to allocate to its production. In particular, natural environments, outdoor recreation and scenic beauty are not usually packaged and sold in the normal sense but their value is nonetheless real to society. Very often the market will ignore such values with obvious results.

Sport fishing is one such use of resources that does not register in the marketplace but is nonetheless a legitimate competitor for land and water resources. Those responsible for managing resources face problems when comparing sport fishing with other resource uses which register tangible dollar values in the marketplace. In Chapters One and Two of this report, information is presented which indicates that the sport fisheries of the Stewart-Cassiar area are an important use of the area's natural resources. This information, although necessary, provides an insufficient basis for comparing the importance of sport fishing with that of alternative resource uses. The economic value of the sport fishery determined in this chapter, together with the information presented in Chapters One and Two, provide a comprehensive view of the economic and social value of the area's sport fisheries.

The analysis contained in this chapter focuses on those segments of British Columbia's population which have the greatest stake in

the area's future development. It is obvious that those with the largest concern for the future of the area are its immediate residents. It is also evident from information presented earlier that the Stewart-Cassiar area provides important sport fishing opportunities to Yellowhead residents. With this in mind, the benefits of the area's sport fishing are calculated as they accrue to all residents of northwestern British Columbia. This includes both Stewart-Cassiar residents and Yellowhead residents.

Before proceeding, however, it is necessary to note that the analysis makes no attempt to evaluate particular fish species available in the Stewart-Cassiar area. The economic value contained herein takes into account all the fish species that anglers intentionally catch in the area. It should also be emphasized that the analysis evaluates the sport fisheries of the entire area. Information available at present does not allow a precise evaluation of particular fishing locations within the study area.

Primary and Secondary Benefits

Generally, the economic value of an outdoor recreational amenity such as sport fishing is reflected in two types of benefits enjoyed by members of society. The first are called primary benefits and accrue directly to the users of the resource. Primary benefits are a measure of the enjoyment or satisfaction gained by individual anglers who participate in the sport fishery. Individual satisfaction is difficult to measure, but it will be reflected in the amount of money the individual would willingly pay for the opportunity. Even the most ardent sport fisherman will place a limit on the amount of other goods and services he will give up in order to fish. It is this limit for each individual angler that indicates the total satisfaction which he derives from the experience.[1] The total primary benefit derived from a sport fishery is

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1 Another measure of the importance an individual places on his right to fish is the amount that he would have to be compensated to forego willingly that right.

the sum of all the individual willingness to pay of persons who participate in the sport fishery.

The other type of benefits derived from a sport fishery are called secondary benefits and accrue in the form of tourist revenues injected into the local economy. It was pointed out earlier that sport fishing is not marketed in the same sense as other commodities. The resource is rarely owned by any individual or sold in any organized marketplace. However, those who live in the region in which the resource is situated capture revenues attributable to the resource in the form of visitor expenditures on food, lodging, guide services and other related goods and services.

Primary Benefits Derived by Residents of Northwestern British Columbia Who Participate in the Stewart-Cassiar Sport Fishery

Significant headway has been made in recent years in the development of methods for evaluating primary recreational benefits. A number of approaches have been suggested and many have been eliminated as inappropriate. The result of this elimination process is that the choice of methods has been narrowed to two approaches which are generally felt to be acceptable.[2] The first of these is known as the travel cost method. There are many variations to this approach but basically all variations impute willingness to pay using travel cost data as a proxy for price.[3] The other acceptable approach is known as the direct

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2 Jack L. Knetsch and Robert K. Davis, "Comparison of Methods for Recreation Evaluation", Economics of the Environment: Selected Readings, Robert Dorfman and Nancy S. Dorfman, ed., W. W. Norton and Company Inc., New York, 1972; Michael S. Laub, "The Economic Evaluation of Non-Marketed Recreational Resources", Ph.D. Thesis, University of British Columbia, 1971.

3 Marion Clawson and Jack L. Knetsch, Economics of Outdoor Recreation, Resources for the Future Inc., Johns Hopkins Press, Baltimore, 1966; Jack L. Knetsch, "Outdoor Recreation Demands and Benefits", Land Economics, 1963, Vol. 39, pp. 387-396; William G. Brown, Aymer Singh and Emery N. Castle, An Economic Evaluation of the Oregon Salmon and Steelhead Sport Fishery, Agricultural Experiment Station, Oregon State University, Corvallis, 1961.

questioning technique. The essence of this method is that through a properly designed questionnaire and survey procedure, the analyst can ask recreationists directly for information concerning their willingness to pay.[4] The values used in this report are determined using the latter technique. The information was gathered in a mail and telephone survey carried out in northwestern British Columbia during 1975.[5]

The Mail and Telephone Follow-Up Survey was administered to a sample of sport fishermen who live in northwestern British Columbia and was designed to determine their willingness to pay for fishing in the region. Information gathered in this survey revealed that northwestern British Columbians were willing to pay $30 per angler day for their fishing opportunities. On the basis of this figure it was possible to calculate the total yearly primary benefits enjoyed by residents of northwestern British Columbia from the Stewart-Cassiar sport fishery during 1974 and 1975.[6] This information is presented in Table 3:1. According to this table, residents of northwestern British Columbia who fished in the Stewart-Cassiar area enjoyed an average of $1,295,500 per year in primary benefits during 1974 and 1975. About 38 percent of those benefits ($493,800) were captured by Stewart-Cassiar residents and almost 62 percent ($801,700) were captured by Yellowhead residents.

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4 Robert K. Davis, "The Value of Big Game Hunting in a Private Forest", Transactions of the Twenty-Ninth North American Wildlife and Natural Resources Conference, March 9, 10 and 11, 1964, Wildlife Management Institute, Washington, D. C., pp. 393-403; Peter H. Pearse and Michael E. Laub, The Value of the Kootenay Lake Sport Fishing: An Economic Analysis, Department of Recreation and Conservation, Fish and Wildlife Branch, Victoria, B. C., 1969, Study Report No. 3; Pearse Bowden Economic Consultants, The Value of Resident Hunting in British Columbia, Department of Recreation and Conservation, Fish and Wildlife Branch, Victoria, B. C., 1971, Study Report No. 6.

5 See Appendix I for a description of the 1975 Mail and Telephone Follow-Up Survey of Anglers.

6 Appendix II contains a discussion of the calculation of total primary benefits.

TABLE 3:1

PRIMARY BENEFITS ENJOYED ANNUALLY BY RESIDENTS OF NORTHWESTERN BRITISH COLUMBIA AS A RESULT OF THEIR 1974 AND 1975 PARTICIPATION IN THE STEWART-CASSIAR AREA SPORT FISHERIES

	Primary Benefits $
Stewart-Cassiar Residents	493,800
Yellowhead Residents	801,700
All Residents of Northwestern British Columbia	1,295,500

Secondary Benefits Derived by Residents of Northwestern British Columbia from the Expenditures of Visitors Who Participate in the Stewart-Cassiar Sport Fishery

In Table 1:12 on page 22 it was shown that non-resident recreationists spent $538,400 per year in the Stewart-Cassiar area during 1974 and 1975. However, a portion of those expenditures (61 percent) was made by Yellowhead residents. Considering that this analysis focuses on the benefit to northwest residents from Stewart-Cassiar sport fishing it would not be reasonable to include expenditures by Yellowhead residents in the calculation of secondary benefits. The only expenditures important to the analysis are those expenditures that bring new revenues into the economy of northwestern British Columbia. These would include the expenditures of B. C. non-northwest residents, non-B. C. Canadians and non-Canadians.

It is also necessary to separate the expenditures of visitors which are directly attributable to sport fishing from the total amount of recreational expenditures. Table 3:2 is used to show the expenditures of B. C. non-northwest residents, non-B. C. Canadians and non-Canadians which are directly attributable to Stewart-Cassiar area sport fishing.[7] According to this table, visitors spent $207,600 per year in northwestern British Columbia during 1974 and 1975 in order to participate in outdoor recreation in the Stewart-Cassiar area. Almost 30 percent of this amount or $61,300 would not have been spent in northwestern British Columbia if there was no sport fishing available in the Stewart-Cassiar area.

This $61,300 of sport fishing related expenditure represents gross business revenue brought into northwestern British Columbia as a result of Stewart-Cassiar sport fisheries. Since these revenues accrue to the region in return for goods and services provided to sport fisher-

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7 See Appendix II for a detailed description of how expenditures attributable to Stewart-Cassiar sport fishing were separated from expenditures attributable to general outdoor recreation.

TABLE 3:2

TOTAL RECREATIONAL EXPENDITURES AND EXPENDITURES ATTRIBUTABLE TO SPORT FISHING IN THE STEWART-CASSIAR AREA OF B. C. NON-NORTHWEST RESIDENTS, NON-B. C. CANADIANS, AND NON-CANADIANS AVERAGE 1974-75

Expenditures Attributable to:	B. C. Non-Northwest		Non-B. C. Canadian		Non-Canadian		Aggregate	
	$	%	$	%	$	%	$	%
Fishing in the Stewart-Cassiar Area	38,000	33.4	10,200	30.3	13,100	21.8	61,300	29.5
Other Recreational Activities in the Stewart-Cassiar Area	75,700	66.6	23,500	69.7	47,100	78.2	146,300	70.5
Total Recreational Expenditures in the Stewart-Cassiar Area	113,700	100.0	33,700	100.0	60,200	100.0	207,600	100.0

men it is necessary to subtract the cost of providing those goods and services to determine the secondary benefit actually derived. The portion of revenues that should be treated as a cost against gross revenues are the payments to so-called mobile factors of production. These are labour and capital that would be employed in other sectors of the economy if they were no longer employed providing sport fishing related goods and services. Normally labour and capital are assumed to be perfectly mobile. For large regional economies such as that of British Columbia this would be true because it can be assumed that labour and capital are reasonably mobile within the economy. Labour and capital that become unemployed in one sector of the British Columbia economy would find employment in another sector. However, in northwestern British Columbia, labour and capital presently employed providing sport fish related goods and services are more likely to become unemployed or move to other regions rather than to other sectors within the local economy in the absence of sport fishing. For this reason, it is felt that the most reasonable estimate of net secondary benefit from sport fish related expenditure is the total local income generated.

The amount of local income generated by sport fish related revenues is dependent upon the size of the local income component and on the size of the local income multiplier. The local income component is the portion of revenues that remains in the local economy as income. For instance, the local income component from gasoline sales is only that portion of total revenue that accrues to local proprietors of gasoline stations and their attendants. The remainder accrues to shareholders and employees of large oil companies who could live anywhere in Canada or even outside Canada. The income multiplier takes account of the final increase in income resulting from successive spending and respending of the initial injection of income. In this study it was estimated that the local income component of sport fishing related expenditures in northwestern British Columbia is 30 percent of total expenditures. The income multiplier was estimated to be 1.35. Given the income component of 30 percent and the multiplier of 1.35, every $100 of sport

fishing related expenditures results in an increase of local income equal to 40.50.[8]

It is now possible to determine the secondary benefit derived by residents of northwestern British Columbia as a result of B. C. non-northwest, non-B. C. Canadian, and non-Canadian participation in Stewart-Cassiar sport fishing during 1974 and 1975. This information is presented in Table 3:3. According to this table, total income in northwestern British Columbia was increased by $24,830 per year during 1974 and 1975 as a result of the existence of Stewart-Cassiar area sport fisheries.

Present Discounted Value of Future Streams of Benefits Derived by Residents of Northwestern British Columbia Resulting from the Sport Fisheries of the Stewart-Cassiar Area

The two sections immediately above were used to determine the benefits derived each year during 1974 and 1975 from the sport fisheries of the Stewart-Cassiar area. However, residents of northwestern British Columbia will derive benefits from the Stewart-Cassiar sport fisheries for many years in the future. The value of these sport fisheries to northwestern British Columbians is the present value of all future benefits.

The present value of a benefit that occurs at a future date is the magnitude of that benefit discounted by some amount to account for the cost of waiting until the benefit occurs. This cost of waiting is reflected in the discount rate, which is a measure of society's preference between present and future consumption. The higher the discount rate the greater is society's preference for present over future consumption. The discount rate is an extremely important parameter when evaluating public resources or public policy decisions. Its importance has

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8 Appendix II contains a discussion about the local income component and multiplier as well as information about how they were estimated for this study.

TABLE 3:3

TOTAL B. C. NON-NORTHWEST, NON-B. C. CANADIAN AND NON-CANADIAN EXPENDITURES ATTRIBUTABLE TO STEWART-CASSIAR SPORT FISHING AND THE SECONDARY BENEFITS DERIVED BY NORTHWESTERN BRITISH COLUMBIANS FROM THOSE EXPENDITURES AVERAGE 1974-75

Residence Category	Expenditures Attributable to Stewart-Cassiar Sport Fishing $	Secondary Benefits Derived from Stewart-Cassiar Sport Fishing $
B. C. Non-Northwest	38,000	15,390
Non-B. C. Canadian	10,200	4,130
Non-Canadian	13,100	5,310
TOTAL	61,300	24,830

led to a great deal of research into devising a systematic approach for determination of an appropriate discount rate for such purposes. Generally, however, it is felt that society's collective discount rate will be reflected in a weighted average rate of return on private investment.[9] This rate reflects the aggregate preference of members of society concerning their decisions to forego present consumption for future gain. It has been established that this rate of return in Canada was approximately 9.5 percent for the years 1965 to 1969.[10] In this report, benefits are discounted at 7, 9 and 11 percent. Three discount rates are used in order to test the sensitivity of the calculations to changes in the discount rate. It is felt that the values calculated using the 9 percent discount rate are the most accurate reflection of the economic value of Stewart-Cassiar area sport fisheries.

The present value of the Stewart-Cassiar sport fisheries to the people of northwestern British Columbia discounted at 7, 9 and 11 percent is presented in Table 3:4. The calculations are based on growth rates estimated from population data and from provincial sport fishing licence sales records. Stewart-Cassiar resident and Yellowhead resident participation is estimated to grow at 5 and 10 percent respectively until 1985 and 5 percent per year from 1986 to 2000.[11] B. C. non-northwest

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9 William J. Baumol, "On the Discount Rate for Public Projects", Public Expenditure and Policy Analysis, Robert H. Haveman and Julius Margolis, ed., Markham Publishing Co., Chicago, 1970, p. 274.

10 This was calculated on the basis of the social opportunity cost of government borrowing over these years. The social opportunity cost of government borrowing reflects the rate of return that money lent to the government could have earned if it had remained in the private sector. See Glenn P. Jenkins, "The Measurement of Rates of Return in Taxation for Private Capital in Canada", Benefit Cost in Policy Analysis, A. C. Harburger and others, ed., Aldeen Publications, Chicago, 1972, p. 226.

11 Census figures from Statistics Canada show that the population of northwestern British Columbia increased 5 percent annually during the period 1961-71. Yellowhead resident growth in participation was adjusted upwards for the first 10 years to account for the fact that since the Stewart-Cassiar is a newly accessible area it will experience an initial growth in visitor activity as people learn about the area and the opportunities it offers.

TABLE 3:4

PRESENT DISCOUNTED VALUE OF THE STEWART-CASSIAR
SPORT FISHERIES TO THE PEOPLE OF NORTHWESTERN BRITISH COLUMBIA

Present Discounted Value of:	Discounted at 7% $	Discounted at 9% $	Discounted at 11% $
Primary Benefits Enjoyed by Stewart-Cassiar Residents	10,431,400	8,580,300	7,201,000
Primary Benefits Enjoyed by Yellowhead Residents	22,137,100	18,145,300	16,513,800
Subtotal (All Primary Benefits)	32,568,500	26,725,600	23,714,800
Secondary Benefits	793,300	637,100	522,400
TOTAL	33,361,800	27,362,700	24,237,200

participation is estimated to grow at 9 percent until 1985 and at 4 percent from 1986 to 2000. Non-B. C. Canadian growth is estimated at 15 percent until 1985 and at 10 percent from 1986 to 2000. Non-Canadian participation should grow at roughly 9 percent until 1985 and 4 percent from 1986 to 2000.[12]

According to the information presented in Table 3:4, the present value of Stewart-Cassiar sport fishing falls between $33,361,800 and $24,237,200 depending on the choice of discount rate. At the most reasonable discount rate of 9 percent, the total present value of future streams of benefits derived by residents of northwestern British Columbia as a result of Stewart-Cassiar sport fisheries was found to be $27,362,700. Of this amount, $8,580,300 are enjoyed in the form of primary benefits to Stewart-Cassiar residents. The present value of future primary benefits enjoyed by Yellowhead residents was found to be $18,145,300. Future streams of secondary benefits enjoyed by all residents of northwestern British Columbia as a result of Stewart-Cassiar sport fisheries have a present discounted value of $637,100.

Other Considerations

This analysis deals almost exclusively with effective demand in the current time period. That is, it deals with actual participation and willingness to pay per unit of participation. For this reason there are certain value considerations that are left out of the analysis. One consideration is the value associated with option demand. Option demand is expressed by those who do not fish or do not fish as much as they anticipate and therefore would be willing to pay in order to maintain the

12 Figures from the provincial Fish and Wildlife Branch, Department of Recreation and Conservation show that licence sales to British Columbians, non-B. C. Canadians and non-Canadians increased annually at an average of 4 percent, 10 percent and 7 percent respectively during the period 1968 to 1973. Growth rates for these residence categories were adjusted upwards for the first 10 years to account for the initial growth in visitor activity that takes place in newly accessible areas.

option. The value associated with option demand will not be reflected in effective demand or willingness to pay per unit of participation because many of those persons who place a value on maintenance of the option do not fish at all.

On most lakes, rivers and streams in the Stewart-Cassiar area, option demand would not be important. Option demand is only considered important for assets which are unique and irreplaceable. The majority of the area's fishing locations can be matched in quality of angling and aesthetic attractiveness by many other fishing locations in northwestern British Columbia. For these locations it can be expected that effective demand is the predominant value component. However, some waterways such as the Stikine River, offer unique aesthetic experiences for which there are no adequate substitutes. For such waterways option demand would have to be considered as an important component of their value.[13] It should be emphasized that the information contained in this report is inappropriate for making decisions which affect unique waterways in the area. Such decisions must be made on the basis of further investigations which perhaps incorporate the Krutilla approach.[14]

Another consideration is the changing attitudes and opinions of northwestern British Columbians over time. In this analysis, growth in value was estimated over time but only on projections of future participation and sport fishing effort. Factors such as increasing urbanization will also affect the attitudes of future generations toward sport fishing. In an area like northwestern British Columbia, where the cultural landscape is constantly changing, and where urbanization

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13 There is no known method for actually measuring option demand but J. V. Krutilla has developed an analytical framework for taking it into account. See J. V. Krutilla, Charles J. Cicchetti, A. Myrick Freeman III, and Clifford S. Russell, "Observations on the Economics of Irreplaceable Assets", Environmental Quality Analysis: Theory and Method in the Social Sciences, Allen V. Kneese and Blair T. Bower, ed., Resources for the Future, Johns Hopkins Press, Baltimore and London, 1972, pp. 69-112.

14 J. V. Krutilla et al, ibid.

and industrialization are rapidly altering the physical environment, this could be an important consideration indeed.

Finally, this analysis has not been able to account for some of the less obvious benefits to industry in northwestern British Columbia. It can be argued that happy workers are more productive workers. It follows that the availability of recreational resources in northwestern British Columbia contributes to the happiness of residents and therefore to the productivity of local workers. Further, in somewhat the same vein, this contribution to the happiness of residents will serve to stabilize the population and labour force to some extent. In a region such as northwestern British Columbia with high labour turnover rates, this could be a very important benefit.

Summary

This chapter was used to determine the economic value of the sport fisheries of the Stewart-Cassiar area. The analysis was carried out with the view in mind that northwestern British Columbians have the largest stake in the future development of the Stewart-Cassiar area. Therefore, the economic value of the area's sport fisheries was determined on the basis of benefits generated from those fisheries for the people of the Yellowhead region and the people of the Stewart-Cassiar area.

This chapter examined two types of benefit generated for northwestern British Columbians from Stewart-Cassiar sport fisheries. These are primary and secondary benefits. Primary benefits are derived directly by those who participate in the sport fishery and are reflected in their willingness to pay for the opportunity. Secondary benefits are derived as a result of tourist revenues brought into the region because of the sport fishery. In this chapter it was found that Stewart-Cassiar residents enjoyed $493,800 per year in primary benefits from participation in the Stewart-Cassiar area sport fisheries during 1974 and 1975.

Yellowhead residents enjoyed $801,700 per year in primary benefits during this period. The total primary benefit enjoyed each year during 1974 and 1975 by residents of northwestern British Columbia was $1,295,500. Expenditures of visitors to northwestern British Columbia which were directly attributable to the sport fisheries of the Stewart-Cassiar area amounted to $61,300 per year during the period. These expenditures resulted in an annual increase in incomes in northwestern British Columbia of $24,830 during 1974 and 1975. The total present value of future benefits from the fishery discounted at 9 percent per year to the year 2000 was found to be $27,362,700. The present value of future primary benefits discounted at 9 percent per annum was found to be $8,580,300 and $18,145,300 for Stewart-Cassiar and Yellowhead residents respectively. The total present value of future secondary benefits to northwestern British Columbians was found to be $637,100 at a 9 percent discount rate.

It should be noted that the analysis contained in this chapter examined the entire range of fishing opportunities in the Stewart-Cassiar area and cannot be used to measure the value of specific waterways within the area or specific fish species offered. Further, certain waterways such as the Stikine should be investigated separately and in such cases, the value associated with option demand should be taken into account. Finally, it is felt that the values developed here are conservative estimates of the actual value of Stewart-Cassiar sport fisheries. Changing attitudes over time have not been taken into account in this analysis nor have some of the less obvious benefits to local industry which result from the sport fishery's contribution to the happiness of local workers and to labour force stability in northwestern British Columbia.

CONCLUSIONS

Improved access into the Stewart-Cassiar area has made many previously untouched natural resources available for exploitation. These include forest and mineral resources of considerable commercial value as well as excellent scenic and outdoor recreational resources. The development of forest and mineral potential in the Stewart-Cassiar area will contribute a great deal to the well-being of people who live in northwestern British Columbia. However, northwestern British Columbians should be aware of the social and economic values at stake when industrial development takes place at the expense of recreational amenities. This report was intended to provide an understanding of recreational values in the Stewart-Cassiar area. It has focused on the social and economic values associated with one of the area's most important recreational resources - its sport fisheries. Sport fishermen, however, rarely think solely in terms of catching fish but rather in terms of a total recreational experience. For this reason it was necessary to present a considerable amount of information on general outdoor recreation in the area.

Chapter One was used to identify the primary users of outdoor recreation in the Stewart-Cassiar area. In Chapter One, information was presented which suggests that this remote area of the province fails to provide a balanced life-style for those who live there. The area offers income and employment opportunities comparable with other areas of the province but it fails to provide many of the social amenities and services that many people look for in the area in which they choose to live and raise their families. Information presented in this chapter shows that most persons are attracted to the area for job and income opportunities and tend to leave if they become unemployed or retired. This is supported by evidence which shows that migration in and

out of the area occurs at a high rate when compared with other areas in the province. Destruction of outdoor recreational amenities in the area will most certainly aggravate these conditions. It was found that outdoor recreational resources are an extremely important source of enjoyment for the area's residents. Over 89 percent of the area's residents consider outdoor related recreational resources to be the most important recreational amenities available to them in the area. It was also shown that outdoor recreation is enjoyed by a broad cross section of the area's population.

Chapter One also presented information on non-resident participation in Stewart-Cassiar outdoor recreation. It was pointed out that non-resident participation in outdoor recreation generates benefits for residents by improving and diversifying employment and income opportunities. It was also pointed out that service and shopping facilities made available in response to the demands of tourists, increase the range of such facilities available to residents. It was found that non-resident parties made an average of 5,940 party visits per year and spent an average of 22,400 party days in the Stewart-Cassiar area during 1974 and 1975.

An important observation drawn from the information contained in Chapter One is the disproportionately high amount of recreational activity accounted for by Yellowhead residents. This would suggest that Yellowhead residents, as well as the area's immediate residents, would be concerned about the future of the Stewart-Cassiar area and its recreational resources. For this reason, the economic analysis contained in Chapter Three focuses on all residents of northwestern British Columbia. In other words, the benefits generated by the sport fisheries of the Stewart-Cassiar area were determined as they accrue to both Stewart-Cassiar residents and to Yellowhead residents.

Chapter Two was used to outline the activity patterns of both resident and non-resident recreationists. This was done in order to

gain an understanding of the relative importance of different outdoor recreational amenities offered in the area. It was shown that the area offers a wide range of recreational amenities and attracts many types of outdoor enthusiasts. However, one amenity that is consistently important to the widest range of outdoor enthusiasts is the area's sport fishing. In particular, sport fishing was the single recreational amenity (including both outdoor and non-outdoor related amenities) found most important by the largest proportion of the area's residents. Further, it was found that some time is devoted to sport fishing on almost 95 percent of all resident outdoor recreational trips. Non-residents on the other hand were particularly impressed by the area's scenery and unspoiled environment. Further, evidence suggested that a large proportion of non-residents, especially non-Canadians, are interested only in passing through the area en route to the Yukon and Alaska. Nonetheless, sport fishing cannot be ignored as an important attraction for non-residents. It was mentioned as the main reason for the trip by a larger proportion of non-residents than any other single reason. It was also shown that non-residents devote more of their time in the area to fishing than to any other activity except activities around the campsite (cooking, washing etc.). Finally, over 23 percent of all non-resident trips into the area during 1974 and 1975 would not have been made if there was no fishing available.

Chapter Two also outlined some of the activity patterns of sport fishermen. It was shown that the Stewart-Cassiar area's lakes, rivers and streams supported 58,800 angler days per year during 1974 and 1975. It was also found that Meziadin Lake and Hanna and Tintina Creeks are popular resident and non-resident sport fishing locations. Further, residents consider Portland Canal (saltwater fishing) very important, and the Cranberry, Tseax, and Nass Rivers are popular non-resident sport fishing locations.

Chapter Three was used to calculate the benefits generated

from Stewart-Cassiar area sport fisheries for the people who live in northwestern British Columbia. The chapter examined two types of benefit generated from Stewart-Cassiar sport fisheries. The first of these are called primary benefits and accrue directly to those residents of northwestern British Columbia who participate in the fisheries. The second type of benefits are called secondary benefits and are derived as a result of revenues brought into northwestern British Columbia by visitors participating in Stewart-Cassiar sport fisheries. It was found that Stewart-Cassiar residents enjoyed $493,800 per year in primary benefits from participation in the Stewart-Cassiar sport fisheries during 1974 and 1975. It was also found that Yellowhead residents enjoyed $801,700 in primary benefits per year during the same period. Visitor spending in northwestern British Columbia directly attributable to Stewart-Cassiar sport fisheries amounted to $61,300 per year during 1974 and 1975. These expenditures resulted in annual income increases of $24,830. The present value of future primary benefits discounted at 9 percent per year was found to be $8,580,300 and $18,145,300 for Stewart-Cassiar and Yellowhead residents respectively. The present value of secondary benefits at the same discount rate was found to be $637,100. The total value of the fishery to the people of northwestern British Columbia including future streams of both primary and secondary benefits was found to be $27,362,700.

The analysis in this report was based on the best information available and on the most reasonable assumptions. However, like most analyses of its type it has been unable to include all of the benefits derived from these sport fisheries. For instance, the analysis has been unable to account for some of the less obvious benefits to local industry. To the extent that the sport fisheries of the area contribute to the happiness of the area's residents they also contribute to the productivity of local workers and to the stability of the local labour force. More important, the analysis has been unable to account for the values associated with option demand. Development decisions affecting unique waterways such as the Stikine River should be subject to

separate investigation taking option demand into consideration. The reader should be cautioned that the information contained in this report is intended to provide a broad view of the values associated with Stewart-Cassiar sport fisheries. Further studies would be required to evaluate specific waterways or fish species within the study area.

The Stewart-Cassiar sport fishery is a valuable public resource. It provides enjoyment for people from all over North America but particularly for the people of northwestern British Columbia. British Columbia's resource agencies should be sensitive to the unique living conditions in northwestern British Columbia and particularly to living conditions in remote areas such as the Stewart-Cassiar. They should be sensitive to the very real contribution that recreational resources make to improving those living conditions. Finally, all future development in the area should proceed in a manner consistent with the needs of northwestern British Columbians.

APPENDIX I

APPENDIX I

NOTES ON SOURCES OF DATA

Most of the information contained in this report was gathered in surveys of recreationists and counts of recreational traffic conducted in the Stewart-Cassiar area. The report also makes use of data gathered in a number of other surveys carried out by Fisheries and Marine Service personnel throughout northwestern British Columbia. The following is a description of each of the major sources of data used in the preparation of this report.

The Stewart-Cassiar Recreational Survey - 1974-75

The main source of data for this study was the Stewart-Cassiar Recreational Survey - 1974-75. This survey was carried out in July, August and early September during 1974 and 1975. The survey procedure involved personal interviews with recreationists at various recreational sites, fishing locations and roadside rest stops in the Stewart-Cassiar area.[1] Table I.1 is a breakdown of all recreational parties interviewed during the two seasons according to the type of interview location.

Table I.2 shows the average number of interviews per year, and percent sample size of the survey according to residence category. According to the information in this table, the survey captured 4.3 percent of all non-resident parties that visited the area during the two year period.

There are many problems associated with on-site surveys of this type. Data gathered in such a manner are subject to response bias, inconsistent interview procedures among enumerators and partici-

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1 Samples of the questionnaires used in 1974 and 1975 are included in this appendix on pages

TABLE I.1

INTERVIEWS CONDUCTED DURING 1974 AND 1975 IN THE STEWART-CASSIAR RECREATIONAL SURVEY ACCORDING TO TYPE OF INTERVIEW LOCATION

Type of Interview Location	Interviews #	Interviews %
Roadside	176	30.0
Campsite	322	54.9
Rest Area	56	9.5
Shoreline	22	3.7
Not Recorded	11	1.9
TOTAL	587	100.0

TABLE I.2

NUMBER OF PARTIES PER YEAR INTERVIEWED
IN THE STEWART-CASSIAR RECREATIONAL SURVEY
AND PERCENT SAMPLE SIZE
AVERAGE 1974-75

Residence Category	Number Interviewed Avg. 74-75	Number of Party Visits Avg. 74-75	Percent Sample Size Avg. 74-75
Yellowhead Residents	78	4,150	1.9
B. C. Non-Northwest	78	880	8.9
Non-B. C. Canadians	33	330	10.0
Non-Canadians	69	570	12.1
Subtotal: (All Non-Residents)	258	5,940	4.3
Residents	37	Not Available	Not Available
TOTAL	295		

pation bias.[2] In this survey, enumerators were carefully briefed and supervised to enable them to clarify questions without leading respondents and to maintain consistent interview procedures. The participation bias problem was eliminated from all data according to the method outlined by Sinclair and Morley.[3]

Vehicle Traffic Counts in the Stewart-Cassiar Area

Traffic Counts were compiled on random dates and at random times in the Stewart-Cassiar area during 1974 and 1975. These counts consisted both of moving counts and of stationary counts. Moving counts were made as the enumerator travelled various sections of the Stewart-Cassiar, the Stewart-Terrace and the Stewart-Kitwanga highways. Stationary counts were conducted at the junction of the Stewart-Terrace and Stewart-Cassiar highways for one hour periods on random dates and at random times. These counts served as a check on information gathered in other surveys. Appendix III contains a summary of information gathered in Traffic Counts carried out in the area.

Other Sources of Information

Other surveys which provided information contained in this report include: (1) On-Site Surveys of Sport Fishing Parties; (2) Surveys of Campsite Visitors; (3) Telephone Surveys; and (4) The Mail and Telephone Follow-Up Survey of Sport Fishermen. None of these surveys were carried out specifically in the Stewart-Cassiar area.

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2 Participation bias occurs as a result of unequal use levels among recreationists. Those who visit the recreational area most often or stay longest are most likely to be captured in the sample. This results in a disproportionately high representation of high use individuals. An outline of the severity of the participation bias problem and a method for eliminating its effects from on-site survey data is contained in William F. Sinclair and Robert W. Morley, "A Statistical Bias Problem in On-Site Surveys: The Severity of the Problem and its Potential for Solution", Journal of Fisheries Research Board of Canada, Vol. 32, No. 12, 1975, pp. 2520-2524.

3 Ibid.

However, all of them were carried out in northwestern British Columbia and were crucial to the preparation of this report.

The On-Site Surveys of Sport Fishing Parties were carried out during the period 1972 through 1974 at fishing locations in the Yellowhead region. The Surveys of Campsite Visitors were carried out at public and private campsites throughout the Yellowhead region during 1972 through 1975. These two data sources provided information on the proportion of visitors to the Yellowhead region and the proportion of Yellowhead residents who made trips into the Stewart-Cassiar area during 1974 and 1975.

Telephone Surveys were conducted by Fisheries personnel in many communities in northwestern British Columbia. Communities where Telephone Surveys were carried out include Kitimat, Terrace, Prince Rupert, Smithers, Telkwa and Houston. These surveys provided information on the percentage of sport fishermen to total population in northwestern British Columbia.

The final, but probably most important other source of information was The Mail and Telephone Follow-Up Survey of Sport Fishermen who live in northwestern British Columbia. A 12.5 percent sample of all licence holders living in the Yellowhead region was drawn from the files of the Fish and Wildlife Branch of the British Columbia Department of Recreation and Conservation. Those selected in the sample were administered a questionnaire by mail and subsequently telephoned. The telephone follow-up was used to verify the original mail responses and to correct any response biases. This survey was used to determine the benefits enjoyed from fishing in northwestern British Columbia by people who live in the region.

SAMPLE OF THE QUESTIONNAIRE USED IN THE
STEWART-CASSIAR RECREATIONAL SURVEY - 1974

Date _____ Time _____

Roadside _____ Campsite _____ Rest Area _____

Fishing Location _____ Type of Vehicle _____

1. Permanent place of residence? _____
2. No. of persons in party? _____
3. Please indicate ages of the members of your group:

	Male No.	Female No.
1 - 9 years	____	____
10 - 19 years	____	____
20 - 29 years	____	____
30 - 39 years	____	____
40 - 49 years	____	____
50 - 59 years	____	____
60 - 69 years	____	____
70 and Over	____	____

4. How many days will you spend on the Meziadin-Stewart-Cassiar Highway? _____
5. What is your main reason for visiting the area?
   Friends and/or Relatives ____ Scenic Beauty ____ Vacation ____
   Working in the Area _____ Fishing _____ Passing Through _____
   Other _____
6. Would you have made this portion of the trip if no fishing had been available to you? Yes ____ No ____
7. What is your occupation? (Head of Household) Executive _____
   Managerial ____ Retired ____ Professional ____ Labourer _____
   Technical or Tradesman _____ Clerical or Sales _____
   Self-Employed _____ Other _____

8. What activities have members of your party participated in while on this portion of the trip? (and number of participants in each activity)

Camping	___	No. ___	Picnicking (day use only)	___	No. ___
Fishing	___	No. ___	Outdoor games (sports)	___	No. ___
Swimming	___	No. ___	Walking for pleasure	___	No. ___
Hunting	___	No. ___	Hiking (with pack)	___	No. ___
Boating	___	No. ___	Horseback riding	___	No. ___
Canoeing	___	No. ___	Sightseeing	___	No. ___
Photography	___	No. ___	Nature study	___	No. ___
Other	___	No. ___	Other	___	No. ___

9. What species of fish are you most interested in catching here?

_____

10. What are your average expenditures per day? _____

11. How many days have you been north of Prince George? _____

12. As a visitor to the area, what features or amenities in this portion of British Columbia have you particularly enjoyed?

_____

13. What is your gross household income?

Under $5,999	_____
$6,000 - $9,999	_____
$10,000 - $14,999	_____
$15,000 - $19,999	_____
$20,000 - $24,999	_____
$25,000 and Over	_____

SAMPLE OF THE QUESTIONNAIRE USED IN THE
STEWART-CASSIAR RECREATIONAL SURVEY - 1975

Date _____ Time _____ Day of Week _____

Location Type: Roadside ___ Campsite ___ Rest Area ___ Shoreline ___

Location of Interview _____ Type of Vehicle _____

1. Permanent Place of Residence _____

2. Residence Category:

   Resident _____ Yellowhead Resident _____

   Non-Resident Canadian _____ Non-Canadian _____

3. Please indicate the ages of members of your group:

	Male - No.	Female - No.
0 - 9 years		
10 - 19 years		
20 - 29 years		
30 - 39 years		
40 - 49 years		
50 - 59 years		
60 - 69 years		
70 and Over		

4. What are your average daily expenditures on this trip in the area?
   $_____/day.

5. What are the occupations of members of your party?

	Indicate No.
Managerial and Administrative	
Occupation in Natural Sciences	
Occupation in Social Sciences	
Teaching	
Medicine and Health	
Clerical	
Sales	
Service	

Farming _____

Other Primary Occupations _____

Processing Occupations _____

Machining, Prod. Fab. Assembly and Repair _____

Construction Trades _____

Transport Equipment Operator _____

Other (please specify) _____

6. On this trip in the area how many hours each day does your party spend - sleeping _____? driving _____?

7. What other activities do members of your party participate in and what percentage of your non-sleeping and non-driving hours are devoted to these activities?

	No.	Percent of Discretionary Time
Fishing	___	_____
Swimming	___	_____
Hunting	___	_____
Boating	___	_____
Canoeing	___	_____
Photography	___	_____
Nature Study	___	_____
Picnicking (day use only)	___	_____
Outdoor Games (sports)	___	_____
Walking for Pleasure	___	_____
Hiking (with pack)	___	_____
Horseback Riding	___	_____
Sightseeing	___	_____
Other	___	_____

8. What is your gross total yearly household income? $_____/year.

RESIDENTS ONLY

9. How long have you lived in the Stewart-Cassiar area? _____ (Years) _____ (Months)

10. What was your last place of residence? _____

11. What was your main reason for moving to this area?

_____

12. As a resident of the area, how important is outdoor recreation to you, relative to other leisure time activities available in the area?

Extremely Important ____ Very Important ____ Important ___

Moderately Important ____ Of No Importance ____

13. As a resident of the area, what are the three most important recreational amenities available to you?

1. _____ 2. _____ 3. _____

14. What recreational amenities do you personally feel are least available to you as a resident of the area?

_____

15. How many days will you be on this trip from start to finish?

_____

16. How many days do you fish each year? _____

17. What are your three favourite fishing locations in the area and how many days do you fish there each year?

	Location	No. of Days
1.	_____	_____
2.	_____	_____
3.	_____	_____

18. What species of fish do you most prefer to catch in the area?

Salmon ____ Trout ____ Steelhead ____ Other _____

NON-RESIDENTS ONLY

19. What was your main reason for making this trip into the area?

Friends and/or Relatives _____ Scenic Beauty _____

Working in Area _____ Fishing _____

Passing Through _____ Vacation _____

Other (please specify) _____

20. How many days have you been in the Stewart-Cassiar area on this trip? _____

21. How many more days do you plan to be in the area? _____

22. What is your destination on this trip? _____

23. How many days have you fished in this area on this trip? _____

24. How many more days do you plan to fish in this area? _____

25. What species of fish are you most interested in catching in the area?

    Salmon ____ Trout ____ Steelhead ____ Other _____

26. Would you have made this trip into the area if no fishing had been available to you? Yes _____ No _____

27. At what locations have you fished or plan to fish in the area on this trip and how many days have you fished there?

Location	No. of Days Fished	No. of Days Plans to Fish	Catch (No. & Species)
1.			
2.			
3.			
4.			
5.			
6.			

28. How many times each year do you make recreational trips into the Stewart-Cassiar area and what is your destination on these trips? (Yellowhead Residents)

	Trips Per Year	Main Reason
Nass River		
Meziadin Lake		
Eddontenajon Lake		
Stewart		
Kitsumkalum Lake		
Kitsumkalum River		
Other (please specify)		
Other (please specify)		
Other (please specify)		

29. As a visitor to the area, what features and amenities in this portion of British Columbia have you particularly enjoyed?

_____

_____

APPENDIX II

APPENDIX II

SUMMARY OF CALCULATIONS

Total Non-Resident Party Visits and Party Days in the Stewart-Cassiar Area

The estimates of non-resident participation in Stewart-Cassiar outdoor recreation were developed from information gathered in the Yellowhead region. Using campsite attendance records and information gathered in the Surveys of Campsite Visitors and the On-Site Surveys of Sport Fishing Parties it was possible to arrive at reliable estimates of the number of B. C. non-northwest, non-B. C. Canadian and non-Canadian parties who visited northwestern British Columbia during 1974 and 1975. The Surveys of Campsite Visitors provided information on the proportion of those parties who made trips into the Stewart-Cassiar area.

The Surveys of Campsite Visitors also provided information on the proportion of the Yellowhead population who made trips to the area.[1] All estimates of participation were compared with Traffic Count information to ensure their validity.

Calculation of Angler Days by Residence Category

Yellowhead resident, B. C. non-northwest, non-B. C. Canadian and non-Canadian angler days were calculated on the basis of their respective party days in the area, percentage of party days spent fishing and average number of anglers per party. Stewart-

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1 It was recognized that information gathered in the Surveys of Campsite Visitors would not be representative of the total population of the Yellowhead region. Those members of the Yellowhead population who use campsites regularly would be disproportionately represented in the sample of campsite visitors. They would also be more likely to visit the Stewart-Cassiar area. The effects of this participation bias problem were eliminated from the data using the Sinclair Morley technique. See Sinclair and Morley, op. cit.

Cassiar resident angler days were estimated on the basis of the area's total population. Telephone Surveys revealed that approximately 1/3 of those who live in northwestern British Columbia are sport fishermen. This proportion was applied to the Stewart-Cassiar population. Average days fishing per year of Stewart-Cassiar resident sport fishermen was determined from information gathered in the Stewart-Cassiar Recreational Survey.

Calculation of Primary Benefits Enjoyed by Stewart-Cassiar Residents and Yellowhead Residents Who Participate in the Stewart-Cassiar Sport Fishery

Primary benefits from Stewart-Cassiar sport fishing accrue directly to northwestern British Columbians who participate in those fisheries. They are a measure of the satisfaction or enjoyment individual anglers derive from the experience and are reflected in the amount they would be willing to pay for the opportunity.

This study uses information gathered in the Mail and Telephone Follow-Up Survey of Sport Fishermen living in the Yellowhead region of northwestern British Columbia. In this survey, sport fishermen who live in the Yellowhead region were asked how much per angler day they would be willing to pay rather than forego their right to fish at their favourite lake, river, or stream in the region. With this information it was possible to determine the average willingness to pay per angler day at lakes, rivers, and streams in northwestern British Columbia. This figure was found to be $30 per angler day. On the basis of this value, and the number of angler days fished by Stewart-Cassiar and Yellowhead residents, it was possible to calculate the total benefit enjoyed by residents of northwestern British Columbia as a result of their participation in the Stewart-Cassiar sport fisheries.

Since the Mail and Telephone Follow-Up Survey was directed

at Yellowhead residents and dealt with fishing locations in the Yellowhead region, it is necessary to note certain points before applying this information to the sport fisheries of the Stewart-Cassiar area. The first is that it is not always possible to assume that the attitudes and opinions of people living in one region will reflect those of people living in another. The value of $30 per day reflects the attitudes of Yellowhead residents concerning their fishing opportunities and is not concerned specifically with Stewart-Cassiar residents. However, the population of northwestern British Columbia is roughly homogeneous. The Stewart-Cassiar population and the Yellowhead population are roughly similar according to age, income, occupation and industry type. It would seem reasonable to assume that the $30 per angler day expressed by Yellowhead residents would closely reflect the attitudes of Stewart-Cassiar residents toward their fishing opportunities.[2]

The second is that the $30 per angler day is a value developed for the full range of fishing opportunities in the Yellowhead region. Normally it would not be realistic to assume that the range of fishing opportunities offered in one region would have the same value per angler day as that of another region. However, both the Yellowhead and the Stewart-Cassiar are two large regions within northwestern British Columbia. The range of opportunities offered in one region can be roughly matched in the other. Therefore it is assumed that the average value per angler day of $30 closely reflects the value of Stewart-Cassiar sport fisheries. It should be emphasized, however, that this is an average value over all sport fishing locations in the area. This value does not apply to specific locations within the Stewart-Cassiar area just as it does not apply to specific locations within the Yellowhead region.

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2 One factor that may influence the attitudes of Stewart-Cassiar residents is that recreational amenities in the Stewart-Cassiar area are limited relative to the Yellowhead region. Therefore it could be argued that Stewart-Cassiar residents would value their fishing opportunities slightly higher than Yellowhead residents.

Calculation of Expenditures in Northwestern British Columbia Which Are Directly Attributable to Stewart-Cassiar Sport Fishing

Information was gathered on recreational expenditures in the Stewart-Cassiar Recreational Survey. This information was used to estimate the total expenditures of recreational parties who visited the area from outside northwestern British Columbia during 1974 and 1975. However, it would be unrealistic to attribute all of these expenditures to sport fishing in the Stewart-Cassiar area. Only a portion would disappear if these sport fishing opportunities were to disappear. In order to determine the amount of expenditures directly attributable to sport fishing it was necessary to ask recreational parties if they would still come to the area if sport fishing was not available. It was found that 22 percent of all recreational party visits from outside northwestern British Columbia would not have been made in the absence of sport fishing. All the expenditures of such parties were attributed directly to the existence of the fishery.

The expenditures of sport fish parties who would not come in the absence of sport fishing, however, does not include all sport fish related expenditures. Some parties would still visit the area in the absence of sport fishing but would not stay as long or spend as much money. These extra expenditures must also be counted as directly attributable to the existence of the fishery. Information gathered in the On-Site Survey of Sport Fishermen revealed that approximately 20 percent of those visiting northwestern British Columbia would cut their trip short if there was no fishing available. It was also found that they would cut their trip short by an average of about 37 percent.

On the basis of the above information, the party days and expenditures attributable to sport fishing were calculated. This information is presented in Table II.1.

TABLE II.1

TOTAL NON-RESIDENT RECREATIONAL PARTY DAYS, PARTY DAYS ATTRIBUTABLE TO SPORT FISHING AND EXPENDITURES ATTRIBUTABLE TO SPORT FISHING IN THE STEWART-CASSIAR AREA - AVERAGE - 1974-75

Residence Category	Total Party Days	Total Party Days Attributable to Sport Fishing	Average Expenditure Per Party Day	Expenditure Attributable to Sport Fishing
B. C. Non-Northwest	4,570	1,528	$24.87	38,000
Non-B. C. Canadian	1,450	440	$23.21	10,200
Non-Canadian	2,070	448	$29.15	13,100
TOTAL				61,300

The Impact of Expenditures Related to Stewart-Cassiar Sport Fishing on Incomes in Northwestern British Columbia

The ultimate impact of sport fish related expenditures on incomes in northwestern British Columbia is dependent on two factors. The first of these factors is the size of the local income component. The local income component is the proportion of expenditures which remains in the region in the form of local income. For instance, the money that visitors spend in northwestern British Columbia for gasoline, accrues partly to the local proprietors of gasoline stations and their attendants and partly to shareholders and employees of large oil companies. The local income component from gasoline revenues would be that portion which accrues to the local proprietors and their attendants. The share of revenues captured by a regional economy depends on the level of self-sufficiency it has attained. British Columbia as a whole would be able to capture and maintain a much greater share of resource revenues than a small region within its boundaries.

The second factor is the size of the income multiplier. The recipients of the initial injection of income (the local income component) spend a portion of that income locally. Their spending in turn increases local incomes which leads to further spending and further income increases. The amount of spending and income increases diminishes on each successive round of this process. The rate at which they diminish is dependent on the proportion of income that local residents spend locally and on the local income component of their spending. The final result is that total income in the regional economy will be increased by some multiple of the original injection.

In this study, an estimated local income component of 30 percent[3] of gross expenditures is used. The multiplier is estimated to be

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3 Estimates of the local income component are based on information presented in Statistics Canada, 1966 Census Catalogue 97-643 Service Trades, and Catalogue 97-603 Retail Trade. Comparable information is not available from the 1971 Census or any more recent source.

1.35.[4] That is, $100 of sport fish related expenditures will increase incomes in northwestern British Columbia by $40.50.[5]

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4 The multiplier is estimated on the basis of other studies on local economies. See: Charles B. Garrison's "The Impact of New Industry: An Application of the Economic Base Multiplier to Small Rural Areas". Land Economics, 1972, Vol. 48, pp. 329-337. B. H. Archer and C. B. Owen, "Towards a Tourist Regional Multiplier", Regional Studies, 1971, Vol. 5, pp. 289-294. John Boland, The Importance of Fishery Resources in the Bella Coola Valley, Department of the Environment, Fisheries and Marine Service, Vancouver, 1975. John Vanderkamp, The Growth and Impact of the Mining Industry in British Columbia, a study by Price Waterhouse and Co., 1968.

5 The $100 expenditure results in an initial income increase of $30 (100 x .30). Due to the multiplier effect this $30 increase in income will result in an ultimate increase of income equal to $40.50 (30 x 1.35).

APPENDIX III

TABLE III.1

MOVING COUNTS OF RECREATIONAL AND COMMERCIAL VEHICLES ON SECTIONS OF THE STEWART-CASSIAR HIGHWAY AND ACCESS ROADS FOR RANDOM DATES AND TIMES - SUMMER 1974

Date	Direction of Travel	Recreational Vehicles		Commercial Vehicles		Total		Time
		People	Vehicles	People	Vehicles	People	Vehicles	
Saturday, July 6	Terrace to Stewart[1]	not recorded	not recorded	not recorded	not recorded	194	67	not recorded
Monday, July 8	Meziadin Lake to Kitwanga	not recorded	not recorded	not recorded	not recorded	41	17	not recorded
Tuesday, July 23	Kitwanga to Meziadin Lake	234	111	38	33	272	144	12:00 noon to 6:00 PM
Thursday, July 25	Meziadin to Kitwanga	79	45	59	38	138	83	12:00 noon to 6:00 PM
Friday, Aug. 2	Kitwanga to Nass Lake	64	34	30	22	94	56	11:00 AM to 4:30 PM
Saturday, Aug. 3	Nass River to Stewart	149	60	3	2	152	62	9:00 AM to 12:00 noon
Monday, Aug. 5	Meziadin Lake to Kitwanga	96	42	3	3	99	45	12:00 noon to 6:00 PM
Thursday, Aug. 15	Kitwanga to Meziadin	105	47	26	16	131	63	11:00 AM to 5:30 PM
Sunday, Aug. 18	Meziadin to Kitwanga	121	49	10	7	131	56	2:00 PM to 8:00 PM
Friday, Sept. 6	Terrace to Meziadin	192	96	12	11	204	107	12:00 noon to 6:00 PM

1 The direction of travel given is that of the enumerator. The traffic count includes all vehicles travelling in the opposite direction.

TABLE III.2

PLEASURE AND WORK VEHICLES COUNTED IN MOVING TRAFFIC COUNTS IN THE STEWART-CASSIAR AREA - SUMMER 1975

Date	Time	Direction of Travel[1]	Pleasure: No. of Vehicles	Work: No. of Vehicles	Total: No. of Vehicles
Saturday, July 5	11:00 to 18:25	Terrace to Stewart	77	17	94
Sunday, July 6	12:25 to 14:43	Stewart to Meziadin Lake	37	10	47
Monday, July 7	8:50 to 10:31	Meziadin Lake to Cranberry Junction	5	7	12
Monday, July 7	10:30 to 12:45	Cranberry Junction to Kitwanga	8	6	14
Saturday, July 12	10:00 to 11:30	Kalum East Road to Junction with West Road	20	5	25
Saturday, July 12	11:30 to 17:00	Kalum East Junction to Stewart	38	9	47
Sunday, July 13	11:30 to 14:50	Stewart to Cranberry Junction	28	8	36
Sunday, July 13	14:50 to 16:09	Cranberry Junction to Kitwanga	19	2	21
Thursday, July 17	18:30 to 20:00	Terrace to Lava Lake	9	1	10

Table III.2 - continued

Friday, July 18	9:00 to 10:03	Lava Lake to Nass Service	5	5	10
Friday, July 18	11:15 to 20:00	Nass Service to Nass Bridge	18	12	30
Saturday, July 19	10:10 to 10:42	Stewart to Bear Glacier	7	-	7
Saturday, July 19	12:25 to 12:40	Bear Glacier to Meziadin Junction	2	-	2
Saturday, July 19	15:25 to 16:03	Meziadin Junction to Nass Bridge	8	1	9
Saturday, July 19	19:40 to 20:15	Nass Bridge to Meziadin Rec. Site	3	1	4
Sunday, July 20	12:30 to 15:20	Meziadin Rec. Site to Cranberry Junction	23	1	24
Sunday, July 20	17:00 to 18:45	Cranberry Junction to Kitwanga	10	1	11
Wednesday, July 23	8:20 to 16:30	Terrace to Nass Bridge	23	17	40
Wednesday, July 23	9:45 to 14:30	Nass Bridge to Stewart	11	1	12
Thursday, July 24	11:00 to 16:30	Stewart to Cranberry Junction	17	8	25
Thursday, July 24	14:50 to 16:30	Cranberry Junction to Kitwanga	14	4	18

Table III.2 - continued

Thursday, July 24	17:30 to 19:30	Terrace to Lava Lake	11	7	18
Thursday, July 24	20:00 to 20:50	Lava Lake to Nass Service	5	1	6
Thursday, July 24	21:00 to 22:40	Nass Service to Cranberry Junction	1	2	3
Friday, July 25	10:40 to 12:40	Cranberry Junction to Nass Bridge	12	10	22
Friday, July 25	18:00 to 20:30	Nass Bridge to Meziadin Rec. Site	8	2	10
Saturday, July 26	13:00 to 14:00	Meziadin Rec. Site to Meziadin Junction	5	1	6
Saturday, July 26	15:05 to 20:10	Meziadin Junction to Stewart	9	1	10
Monday, July 28	9:00 to 11:55	Stewart to Cranberry Junction	9	1	10
Monday, July 28	12:30 to 14:48	Cranberry Junction to Kitwanga	10	6	16
Tuesday, July 29	8:45 to 15:30	Terrace to Stewart	34	13	47
Thursday, July 31	9:20 to 14:05	Stewart to Cranberry Junction	14	2	16
Thursday, July 31	14:10 to 15:45	Cranberry Junction to Kitwanga	3	1	4

Table III.2 - continued

Thursday, July 31	18:00 to 19:45	Terrace to Lava Lake	10	9	19
Thursday, July 31	20:00 to 21:55	Lava Lake to Cranberry Junction	4	1	5
Friday, August 1	11:15 to 14:31	Cranberry Junction to Nass Bridge	22	1	23
Saturday, August 2	16:00 to 18:35	Nass Bridge to Meziadin Corner	4	1	5
Sunday, August 3	8:00 to 16:45	Meziadin Junction to Nass Bridge	7	-	7
Sunday, August 3	17:00 to 18:00	Nass Bridge to Stewart	15	1	16
Monday, August 4	13:20 to 13:45	Stewart to Meziadin Junction	2	1	3
Monday, August 4	19:25 to 19:40	Meziadin Junction to Meziadin Rec. Site	4	-	4
Tuesday, August 5	14:00 to 18:40	Nass Bridge to Kitwanga	16	8	24
Wednesday, August 6	10:15 to 15:55	Terrace to Nass Bridge	27	10	37
Wednesday, August 13	9:10 to 10:45	Nass Bridge to Cranberry Junction	5	4	9
Wednesday, August 13	11:05 to 14:25	Cranberry Junction to Terrace	25	13	38

Table III.2 - continued

Friday, August 15	20:00 to 21:30	Terrace to Cranberry Junction	15	6	21
Saturday, August 16	11:00 to 14:33	Cranberry Junction to Nass Bridge	24	4	28
Sunday, August 17	14:30 to 16:40	Stewart to Meziadin Rec. Site	33	5	38
Monday, August 18	13:06 to 17:41	Meziadin Junction to Cranberry Junction	14	4	18
Monday, August 18	18:08 to 19:44	Cranberry Junction to Kitwanga	10	4	14
Friday, August 29	12:50 to 18:00	Terrace to Meziadin Corner	50	19	69
Saturday, August 30	13:40 to 15:11	Stewart to Meziadin Junction	15	1	16
Saturday, August 30	16:05 to 16:55	Meziadin Junction to Nass Bridge	5	-	5
Sunday, August 31	11:23 to 11:44	Nass Bridge to Meziadin Junction	6	-	6
Sunday, August 31	14:55 to 16:50	Meziadin Junction to Cranberry Junction	13	2	15
Monday, Sept. 1	12:00 to 15:20	Terrace to Cranberry Junction	66	4	70
Monday, Sept. 1	15:45 to 16:47	Cranberry Junction to Meziadin Junction	23	-	23

Table III.2 - continued

Saturday, Sept. 6	10:27 to 17:09	Terrace to Stewart	56	6	62
Monday, Sept. 8	8:24 to 12:45	Stewart to Eddontenajon	16	14	30
Tuesday, Sept. 9	8:14 to 11:09	Eddontenajon to Alaska Highway	19	1	20
TOTAL			1,009	282	1,291

1 The direction of travel given is that of the enumerator. The traffic count includes all vehicles travelling in the opposite direction.

TABLE III.3

ONE HOUR STATIONARY TRAFFIC COUNTS AT MEZIADIN CORNER
FOR RANDOM DATES AND TIMES - SUMMER 1975

Date	Time	Pleasure		Work		Total	
		Vehicles	People	Vehicles	People	Vehicles	People
Sunday, July 13	11:50/12:50	11	23	10	19	20	42
Saturday, July 19	13:15/14:15	6	12	3	7	8	19
Wednesday, July 23	11:40/12:40	7	15	4	6	11	21
Saturday, July 26	14:05/15:05	12	31	3	5	15	35
Wednesday, July 30	11:00/12:00	18	39	3	5	21	44
Saturday, August 2	18:40/19:40	19	46	3	6	22	52
Monday, August 4	18:20/19:20	14	40	1	1	15	41
Thursday, August 7	10:55/11:55	10	26	2	3	12	29
Friday, August 8	14:05/15:05	14	38	3	6	17	44
Saturday, August 9	13:40/14:40	13	33	-	-	14	33
Sunday, August 10	10:00/11:00	14	36	1	1	15	37
Monday, August 11	12:50/13:50	6	14	5	8	11	22
Monday, August 18	12:05/13:05	16	38	4	7	20	45
Wednesday, September 3	13:30/14:30	5	10	5	10	10	20
Sunday, September 7	12:35/13:35	9	20	4	6	13	26
TOTAL		174	421	51	90	224	510

TABLE III.4

DISTRIBUTION OF PLEASURE AND WORK VEHICLES COUNTED IN BOTH MOVING AND STATIONARY TRAFFIC COUNTS IN THE STEWART-CASSIAR AREA ACCORDING TO VEHICLE TYPE - SUMMER 1975

Vehicle Type	Pleasure		Work		Total	
	#	%	#	%	#	%
Cars and Station Wagons	318	26.9	11	3.2	329	21.7
Pickups, Vans and Panels Uncamperized	522	44.1	182	54.8	704	46.4
Pickups, Vans and Panels Camperized	248	21.0	3	0.9	251	16.6
4-Wheel Drive Vehicles	64	5.4	4	1.2	68	4.5
Other Trucks and Buses	4	0.3	133	39.9	137	9.0
Mobile Homes	22	1.9	-	-	22	1.5
Motorcyeles	5	0.4	-	-	5	0.3
TOTAL	1,183	100.0	333	100.0	1,516	100.0

TABLE III.5

DISTRIBUTION OF PLEASURE VEHICLES WITH BOATS[1] COUNTED IN BOTH MOVING AND STATIONARY TRAFFIC COUNTS IN THE STEWART-CASSIAR AREA ACCORDING TO BOAT TYPE - SUMMER 1975

Boat Types	Number	Percent
Boat and Trailer	12	9.6
Canoe	49	39.2
Car Top	26	20.8
Boat Type Not Specified	38	30.4
TOTAL	125	100.0

1 Approximately 10.6 percent of the pleasure vehicles counted in the Stewart-Cassiar area were travelling with boats.

TABLE III.6

DISTRIBUTION OF PLEASURE VEHICLES PULLING TRAILERS[1]
COUNTED IN BOTH MOVING AND STATIONARY TRAFFIC
COUNTS IN THE STEWART-CASSIAR AREA
ACCORDING TO TRAILER TYPE - SUMMER 1975

Trailer Types	Number	Percent
Boat Trailer	12	14.6
Tent Trailer	12	14.6
Camper Trailer	20	24.4
Utility Trailer	11	13.4
Trailer Type Not Recorded	27	32.9
TOTAL	82	100.0

1 Approximately 7 percent of the pleasure vehicles counted in the area pulled trailers.

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