STATUS
OF
FUR HARVESTING
IN THE
SKAGIT RIVER WATERSHED,
1970 - 1986

BY

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FOR

MINISTRY OF ENVIRONMENT

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1.0 INTRODUCTION

In January, 1986 the Fish & Wildlife Branch submitted a report to the Skagit Environmental Endowment Commission concerning the existing status of wildlife data in the Skagit River watershed (Barnard, 1986). Included in that report were proposals to obtain identified data deficiences and a request for funding to undertake such studies. Among these was a proposal to document fur harvesting activities for the period 1970 through 1986. Subsequent approval of funding by the Commission enabled this study of fur harvesting to proceed.

The study will address a variety of aspects related to fur harvesting for each trapline in the Skagit watershed including: 1) geographical location and description 2) tenure and operation 3) annual harvest and economic worth 4) accuracy of Ministry of Environment harvest records and 5) trapper observations concerning wild fur management pertinent to their area. Documentation of these data should provide an adequate basis for future management decisions concerning wild fur harvesting in the watershed.

However, to properly evaluate fur harvesting activities in the Skagit watershed it is first necessary to understand the concept of registered traplines and to be aware of the administrative frameworks in force during the 1970-86 period. The registered trapline system, which originated in British Columbia in 1925, bestowed exclusive trapping rights to a given area of Crown land. This eliminated competition among trappers on Crown land and encouraged them to harvest their lines responsibly through self-interest, if not through a commitment to wildlife conservation (Warden, 1985). Prior to the 1982-83 trapping season a given line had to be annually renewed by the registered trapper who was also required to report his/her annual harvest by species once a year. These data, in conjunction with compulsory annual reports supplied by licensed fur traders, formed the basis for compilation of the provincial furbearer harvest by species.

In an attempt to obtain more area-specific data a new system was instituted in the early 1980's. Known as the B.C. Wild Fur Data System it related furbearer harvests to specific traplines, to wildlife management areas and to regions. It removed the need for trappers to annually report their harvest by securing this data solely from the records kept by fur traders. As with many new systems some start-up problems were encountered. For the 1982-83 and 1983-84 seasons trappers were told not to report their annual take; unfortunately, as the new system was not yet

fully operational, harvest data for these two years was not obtained for many lines. By the 1984-85 season the system was in place, but poor record-keeping by some fur traders resulted in an incomplete harvest record. At time of writing it is anticipated that the 1985-86 season will be the first to be fully reported under the new system.

2.0 STUDY AREA DESCRIPTION

The Canadian portion of the Skagit River watershed encompasses an area of approximately 1036 km in southwestern British Columbia (Whately, 1979); (Fig. 1). Six biogeoclimatic zones occur within the watershed including: 1) Alpine Tundra and Mountain Hemlock 2) Alpine Tundra and Englemann Spruce-Subalpine Fir 3) Mountain Hemlock 4) Englemann Spruce-Subalpine Fir 5) Coastal Western Hemlock and 6) Interior Douglas Fir (Barnard, 1986). These zones provide habitats suitable for a variety of furbearers ranging from those species frequenting mountainous forested habitats to those favouring valley-bottom aquatic environments.

Historically, land use in the watershed consisted primarily of mining, ranching and logging (Perry, 1981). In the late 1930's and early 1940's construction and subsequent modification of the Ross Dam, approximately 48 km below the International Boundary, resulted in the creation of Ross Lake Reservoir. At full pool the reservoir innundates approximately 200 ha of the lower Skagit Valley (Slaney, 1973). Between 1946 and 1954 most of the Lower Skagit Valley floor was clear-cut or selectively logged and has been followed by a climate-induced period of relatively slow regeneration. Today, forest harvesting activities are the predominant form of land use, primarily in the Maselpanik, Klesilkwa, Cantelon-Yola and Sumallo drainages. However, there is an increasing recreational presence in the southeast portion of the watershed. This is centered in Manning Provincial Park and the Skagit Valley Recreational Area (S.V.R.A.). Created by the Provincial Government in 1973 this latter area of some 32781 ha is administered by the Parks Branch. However, it is not classed as a park and, therefore, no special permits are required for fur harvesting activities.

Administratively, the study area is located in Resource Management Region 2. Within that region the watershed occupies approximately the southern half of management unit (MU) 2-2. This MU is included in Zone 1 of the five fur trapping zones established within the province (Fig. 2).

Figure 1

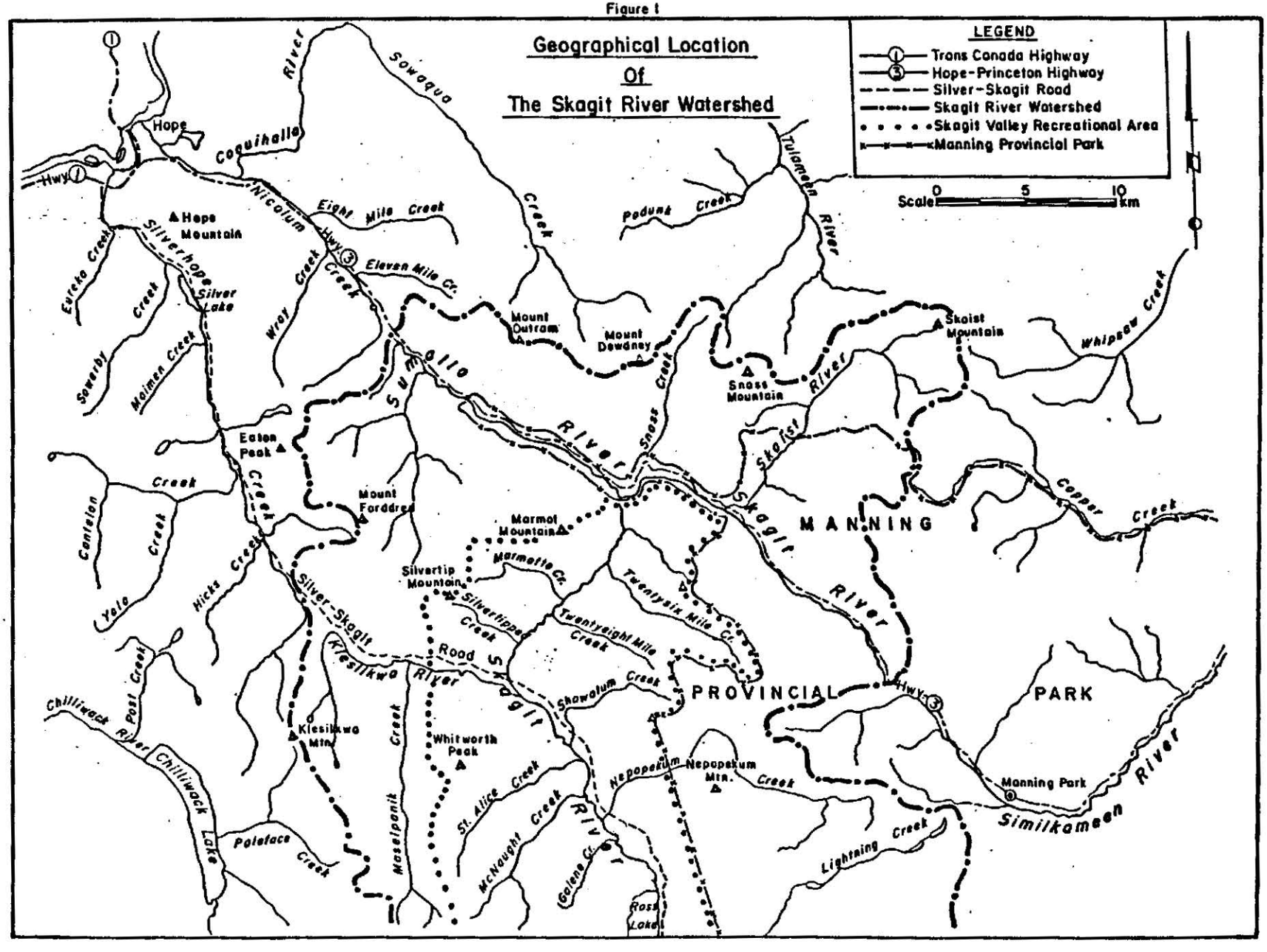
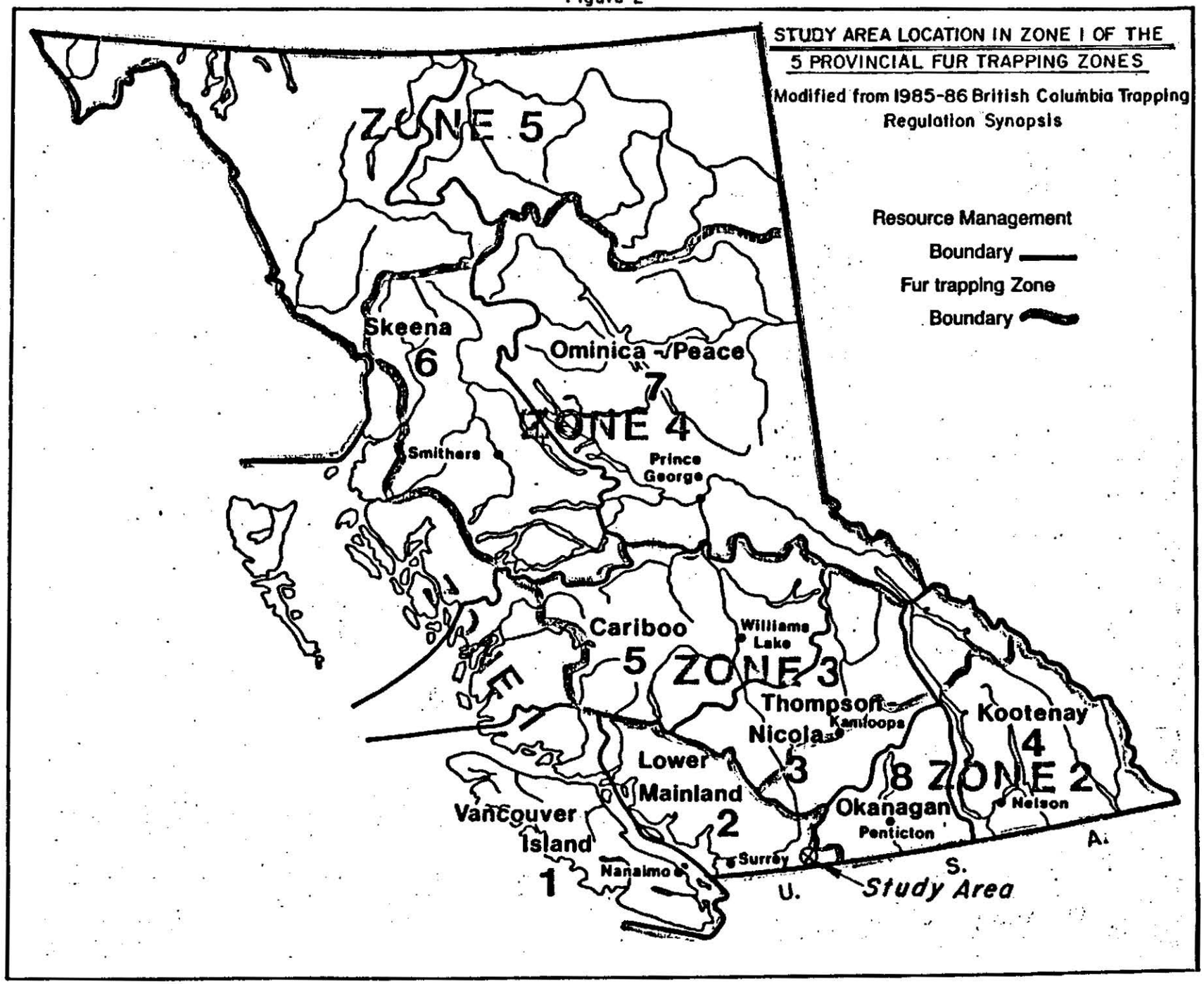

Geographical Location
Of
The Skagit River Watershed
LEGEND
Trans Canada Highway
Hope-Princeton Highway
Silver-Skagit Road
Skagit River Watershed
Skagit Valley Recreational Area
Manning Provincial Park
Scale 0 5 10 km
N
Hope
Coquihalla River
Sowaqua Creek
Tulameen River
Nicolum River
Eight Mile Creek
Podunk Creek
Hope Mountain
Silverhope Creek
Silver Lake
Eureka Creek
Sowerby Creek
Maimen Creek
Wray Creek
Eleven Mile Cr.
Mount Outram
Mount Dewdney
Snass Creek
Snass Mountain
Skaist River
Skaist Mountain
Whipsaw Creek
Sumallo River
Eaton Peak
Eaton Creek
Mount Forddree
Marmot Mountain
Marmette Cr.
Silvertip Mountain
Silvertip Creek
Twentysix Mile Cr.
Twentyeight Mile Creek
Skagit River
Copper Creek
MANNING
PROVINCIAL
PARK
Hwy 3
Shawatum Creek
Silver-Skagit Road
Klesilkwa River
Klesilkwa Mtn.
Whitworth Peak
Hicks Creek
Yale Creek
Canelon Creek
Post Creek
Chilliwack River
Chilliwack Lake
Poleface Creek
Maselponik Creek
St. Alice Creek
McNaught Creek
Galena Cr.
Ross Lake
Nepopekum Mtn.
Nepopekum Creek
Lightning Creek
Manning Park
Similkameen River

Figure 2


STUDY AREA LOCATION IN ZONE 1 OF THE
5 PROVINCIAL FUR TRAPPING ZONES
Modified from 1985-86 British Columbia Trapping Regulation Synopsis
Resource Management Boundary
Fur trapping Zone Boundary
ZONE 5
Skeena 6
Ominica 7
Peace
ZONE 4
Smithers
Prince George
Cariboo 5
ZONE 3
Williams Lake
Thompson
Kamloops
Nicola 3
Kootenay 4
ZONE 2
Nelson
Lower Mainland 2
Okanagan
Penticton
Vancouver Island 1
Nanaimo
Surrey
Study Area

3.0 METHODS

A description and location for each trapline was obtained from Ministry of Environment files located at the Surrey Regional Office. A history of line tenure and fur harvest for the period 1970 through 1986 was initially obtained from the same source. This was subsequently verified and/or updated via interviews with regional wildlife management staff, Conservation Officer Service personnel and/or area trappers (Appendix 1). The annual economic worth of each line was determined by applying the average B.C. pelt price by species to the annual line harvest. Average pelt prices were obtained from the Fish and Wildlife Branch fur specialist in Victoria (Table 1). Finally, interviews were conducted with as many individuals who have, or are, operating lines in the watershed as could be located (Appendix 2). In addition to harvest information, each individual was also asked to comment on trapping effort and both administrative and habitat management considerations as they would apply to wild fur management for a given line.

4.0 RESULTS AND DISCUSSION

4.1 Geographical Location and Description

The detailed geographical location of each trapline is outlined in Appendix 1. Descriptively, line No. 0202T001 is located on the south-western side of the Skagit watershed (Fig. 3). Approximately 40 percent of the trapline area, comprised mainly of the Klesilkwa River and Maselpanik Creek drainages, is located within the watershed. The balance, consisting primarly of the drainages of Cantelon, Yola and Hicks Creeks and a portion of upper Silverhope Creek, are located outside the Skagit watershed. As with all the lines, the area encompasses a mosaic of habitats ranging from high altitude forests to valley-bottom watercourses. As such, it provides the opportunity to harvest a variety of fur-bearing mammals. Access into much of the area is hampered in some years by the depth and/or condition of snow that makes snowmobile operation impractical (Koop; Gustafson - personal communication).

As indicated on Figure 3 line No. 0202T002 occupies approximately the lower two-thirds of the S.V.R.A. and, as such, is located entirely within the watershed. It encompasses the drainages of St. Alice, McNaught and Galene Creeks to the west and those portions of the Shawatum and Nepopekum Creek drainages outside the Manning Provincial Park boundary. The International Boundary forms the southern border, whereas the northern limits approximate a line running east-west just north of the 26 Mile

TABLE 1. ANNUAL AVERAGE PRICE PER PELT FOR SELECTED FURBEARERS - BRITISH COLUMBIA, 1970-1985.

Species	TRAPPING SEASON															
	70-71	71-72	72-73	73-74	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82	82-83	83-84	84-85	85-86
Beaver	12.91	16.10	18.11	16.83	13.53	19.45	22.95	18.48	36.24	39.17	31.27	19.11	17.00	19.45	25.24	25.24**
Muskrat	1.41	1.76	2.38	2.72	2.53	4.43	4.25	4.74	5.89	6.30	6.20	3.10	2.78	4.01	2.91	2.91**
Raccoon	4.37	7.65	11.06	15.05	7.24	18.88	19.66	22.95	41.62	29.72	41.20	25.13	15.35	18.23	15.80	15.80**
Bobcat	56.63*	56.63*	56.63*	66.95	46.31	137.13	124.25	168.46	292.81	207.01	210.84	149.20	200.00	153.54	200.30	200.30**
Coyote	12.93	14.92	29.49	31.39	19.22	41.84	46.55	41.89	85.08	60.83	58.07	59.97	49.59	41.62	44.39	44.39**
Fisher	-	-	-	-	-	-	-	-	-	-	-	-	-	-	166.33	166.33**
Lynx	112.35*	112.35*	112.35*	93.92	130.77	259.30	224.27	315.26	382.27	214.29	297.16	276.93	305.14	354.91	672.18	672.18**
Marten	8.18	9.09	15.07	16.31	12.56	19.18	22.24	21.19	33.82	31.96	32.08	34.28	39.43	55.06	61.37	61.37**
Mink	6.52	6.58	12.01	12.96	9.13	16.20	15.55	15.69	27.85	34.49	37.12	33.83	30.74	27.94	32.11	32.11**
Otter	40.47*	40.47*	40.47*	42.03	38.90	65.27	68.92	59.90	100.10	61.33	54.49	39.93	39.63	44.05	41.87	41.87**
Squirrel	.35	.57	.93	.87	.80	.72	.75	1.57	2.56	1.47	1.57	1.45	1.27	1.01	.86	.86**
Weasel/ Ermine	1.10	.34	.72	.40	.36	.96	.78	1.53	2.29	1.98	1.27	1.31	2.79	2.19	2.39	2.39**

* average price based on 1973-74 and 1974-75 prices.

** 1985-86 average prices not available therefore used 1984-85 prices.

Figure 3


Geographical Location Of Registered Traplines
In The Skagit River Watershed – 1986
Scale 1:250000
Skagit River Watershed
Skagit Valley Recreational Area
0202T004
0202T003
0202T001
0202T002
SKAGIT
PROVINCIAL
FOREST
HOZAMEEN
MANNING
PARK
PROVINCIAL
RANGE
MOUNTAIN
CANADA
UNITED STATES
OF AMERICA

bridge on the Silver-Skagit Road. The entire trapline area is bisected in a north-west--south-east direction by the Skagit River.

Immediately north of line No. 0202T002 is the area comprising line No. 0202T003 (Fig. 3). It also lies wholly within the watershed and is the smallest of the four lines. It too is bisected by the Skagit River in essentially a north-south direction at a point starting just below that river's confluence with the Sumallo River. The northwest boundary is the height of land running through Silvertip and Marmot Mountains and encompasses the drainages of Marmotte and Silvertipped Creeks. The southwest boundary runs along the height of land between the Skagit River and Silverdaisy Creek and from that point south is formed by the west boundary of Manning Park.

The fourth trapline (No. 0202T004) is also partly outside the Skagit watershed (Fig. 3). However, that portion, which comprises the drainages of Ferguson and Eleven Mile Creeks, is relatively small in area. The balance of the line area consists of the Sumallo River drainage south of Highway 3 and those drainages north of the highway from the watershed boundary on the west to the height of land between 20 Mile and Snass Creeks to the east.

4.2 Tenure and Line Operation

In addition to reviewing wildlife branch files a total of eight (8) trappers who had owned or operated the four lines were interviewed to determine tenure and extent of line operation (Table 2). Despite these efforts data for some years was not available due to missing files and non-availability of former owner/operators due to death or relocation. The extent of both line tenure and operation is best discussed in the context of trap-years. If the latter is defined as the existence of a registered trapline for one trapping season then the four (4) lines in the Skagit watershed for the 16 year period represents a total of 64 trap years. However, operational and harvest data for 1975-76 could not be located. Therefore, the actual number of trap-years is reduced to 60. This total must then be adjusted by a further two trap-years to account for years when trapping occurred solely on that portion of a line outside of the Skagit watershed. Therefore, the adjusted total for the four (4) lines is 58 trap-years. For 12 of these 58 trap-years, or 20.7 percent, lines were vacant, ie. not registered to anyone. Of the remaining 46 trap-years the registered owners did not operate their lines for a total of 31 trap-years, or 67.4 percent of the time. Of these 31 trap-years the lines were

TABLE 2. TENURE AND OPERATIONAL HISTORY OF REGISTERED TRAPLINES- SKAGIT WATERSHED, 1970-1986

	REGISTERED TRAPLINE							
	0202T001		0202T002		0202T003		0202T004	
Year	Registered Owner	Operator	Registered Owner	Operator	Registered Owner	Operator	Registered Owner	Operator
1970-71	line vacant	-	Fred Bowden	same	Charles Collins	not operated	Rudy MacDonald	not available
1971-72	" "	-	" "	"	" "	" "	" "	same
1972-73	" "	-	" "	"	" "	" "	" "	not available
1973-74	Ian Stewart	not operated	" "	"	Les Oliver	not operated	line vacant	-
1974-75	" "	" "	" "	"	" "	" "	" "	-
1975-76	" "	data missing	" "	data missing	" "	data missing	" "	-
1976-77	" "	not operated	" "	same	" "	not operated	" "	-
1977-78	" "	" "	" "	not operated	" "	" "	" "	-
1978-79	" "	" "	" "	" "	" "	" "	" "	-
1979-80	" "	not available	" "	same	Dan Chervenka	same	" "	-
1980-81	" "	not operated	" "	"	" "	not operated	Jamie Cochrane	not operated
1981-82	" "	unknown	" "	"	" "	" "	D. Campbell	" "
1982-83	" "	John Gustafson	line vacant	-	" "	" "	Heinz Schiefermeir	same
1983-84	" "	" "	" "	-	" "	" "	" "	Kay Keding
1984-85	" "	Alan Koop	Jack DeLair	same	" "	Harold Trottier	" "	not operated
1985-86	Alan Koop	same	" "	"	" "	not operated	" "	" "

operated for five trap-years by other trappers with the registered owner's permission. The remaining 26 trap-years, or 56.5 percent, the lines were not operated at all. If these 26 non-operating trap-years are combined with the 12 trap-years the lines were vacant then no legal operation of the lines has occurred for 38 of 58 trap-years, or 65.5 percent of the available trapping time.

The extent of line operation is one of a number of factors that can impact on the fur harvest from a given line. Seven (7) of the eight (8) trappers interviewed were queried as to the level of intensity with which they trapped the lines. All responded that the relatively small size of the lines and/or the current level of fur prices negated the opportunity to make a livelihood from trapping. It was the consensus that their activities were essentially recreational in nature and this reflected the intensity with which the lines were trapped. No estimate of man-days of effort per line was obtainable; however, both the fur harvest records and comments elicited during interviews would seem to indicate a considerable variability in effort does occur among the various trappers.

4.3 Fur Harvest and Economic Worth

A total of 11 species of fur-bearing mammals have been reported as harvested within the watershed (Tables 3 through 6). Of these, beaver (Castor canadensis), marten (Martes americana), bobcat (Lynx rufus) and mink (Mustela vison) appear to occur in the harvest most frequently (Fig. 4). In addition to the aforementioned species, both wolf (Canis lupus) and fisher (Martes pennanti) have been sighted within the watershed recently and, therefore, could appear in the harvest in future years.

Although the fur value for the entire area encompassed by the traplines for the sixteen year period was $10,170.55, only $5,739.98 of this amount was harvested within the Skagit watershed (Table 7). Based on trapper interviews, the difference appears largely attributable to trapper effort being concentrated in the more accessible portion of line No. 0202T001 which is located outside the watershed boundary. Comparison of the economic worth of each line indicates that although line No.'s 0202T001 and 0202T002 are similar in total value of fur taken, the former has a substantially higher average annual take for the years that trapping occurred. This may be attributable, at least in part, to the preponderance of the harvest on line No. 0202T001 occurring during a period of higher average fur prices. However, the sporadic nature of fur harvest and the variability in trapping effort makes a meaningful comparison of economic worth between the four lines doubtful.

TABLE 3. FUR HARVEST RECORD FOR REGISTERED TRAPLINE 0202T001- SKAGIT WATERSHED, 1970-86

Species	TRAPPING SEASON 70-71	71-72	72-73	73-74	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82	82-83	83-84	84-85	85-86
Beaver	LINE VACANT	LINE VACANT	LINE VACANT	LINE NOT OPERATED	LINE NOT OPERATED	DATA MISSING	LINE NOT OPERATED	LINE NOT OPERATED	LINE NOT OPERATED	DATA NOT AVAILABLE	LINE NOT OPERATED	3*	10(15)	-	-(1)	1(17)
Muskrat												-	-	-	-(1)	-(1)
Raccoon												-	-	-(4)	-(3)	-
Bobcat												1*	3(4)	-(2)	-(2)	-(2)
Coyote												-	-	-(1)	-	-
Fisher												-	-	-	-	-
Lynx												-	-	-	-	-
Marten												18*	6(16)	-(12)	-(13)	-(3)
Mink												5*	4(10)	-	-(1)	-
Otter												-	-(4)	-	-	-
Squirrel												-	-	-	-(2)	-(2)
Weasel/ Ermine												-	-	-	-(3)	-(7)

( ) take for entire line including portion outside of Skagit watershed.

* portion of fur harvest outside of Skagit watershed not known; entire harvest assumed to be from within watershed.

TABLE 4. FUR HARVEST RECORD FOR REGISTERED TRAPLINE 0202T002 - SKAGIT WATERSHED, 1970-86

Species	TRAPPING SEASON															
	70-71	71-72	72-73	73-74	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82	82-83	83-84	84-85	85-86
Beaver	40	2	3	2	4	DATA MISSING	-	LINE NOT OPERATED	LINE NOT OPERATED	-	-	TRAPPED UNSUCCESSFULLY	LINE VACANT	LINE VACANT	1	-
Muskrat	2	-	-	-	-		-			-	-				-	-
Raccoon	-	-	-	3	-		-			1	-				-	-
Bobcat	5	-	-	-	-		1			1	1				-	1
Coyote	2	-	-	-	-		-			-	-				2	-
Fisher	-	-	-	-	-		-			-	-				-	-
Lynx	-	-	-	-	-		-			-	-				-	-
Marten	1	-	-	-	-		-			-	-				4	2
Mink	6	-	-	-	1		-			-	-				-	-
Otter	5	-	-	3	1		-			-	-				-	-
Squirrel	-	-	-	1	-		-			-	-				-	-
Weasel/ Ermine	-	-	-	-	-		-			-	-				-	-

TABLE 5. FUR HARVEST RECORD FOR REGISTERED TRAPLINE 0202T003 - SKAGIT WATERSHED, 1970-86

Species	TRAPPING SEASON															
	70-71	71-72	72-73	73-74	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82	82-83	83-84	84-85	85-86
Beaver	LINE NOT OPERATED	LINE NOT OPERATED	LINE NOT OPERATED	LINE NOT OPERATED	LINE NOT OPERATED	DATA MISSING	LINE NOT OPERATED	LINE NOT OPERATED	LINE NOT OPERATED	-	LINE NOT OPERATED	LINE NOT OPERATED	LINE NOT OPERATED	LINE NOT OPERATED	-	LINE NOT OPERATED
Muskrat										-					-	
Raccoon										-					1	
Bobcat										-					-	
Coyote										-					-	
Fisher										-					-	
Lynx										-					-	
Marten										6					6	
Mink										-					-	
Otter										-					-	
Squirrel										-					6	
Weasel/ Ermine										-					-	

TABLE 6. FUR HARVEST RECORD* FOR REGISTERED TRAPLINE 0202T004 - SKAGIT WATERSHED, 1970-86

Species	TRAPPING SEASON															
	70-71	71-72	72-73	73-74	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82	82-83	83-84	84-85	85-86
Beaver	DATA NOT AVAILABLE	3	DATA NOT AVAILABLE	LINE VACANT	LINE VACANT	DATA MISSING	LINE VACANT	LINE VACANT	LINE VACANT	LINE VACANT	LINE NOT OPERATED	LINE NOT OPERATED	-	-	LINE NOT OPERATED	LINE NOT OPERATED
Muskrat		-											-	-		
Raccoon		-											-	-		
Bobcat		-											-	-		
Coyote		-											1	-		
Fisher		-											-	-		
Lynx		2											-	-		
Marten		1											-	1		
Mink		1											-	-		
Otter		-											-	-		
Squirrel		13											-	1		
Weasel/ Ermine		9											-	2		

* portion of fur harvest outside of Skagit watershed unknown; entire harvest assumed to be from within watershed.

Figure 4. Fur Harvest Taken Primarily on Registered Trapline 0202T001--Winter, 1983-84.

--photo credit - J. Gustafson

TABLE 7. ECONOMIC WORTH OF FUR HARVEST FROM REGISTERED TRAPLINES - SKAGIT WATERSHED, 1970-86

Line Number	TRAPPING SEASON																Total	Mean $\bar{X}$
	70-71	71-72	72-73	73-74	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82	82-83	83-84	84-85	85-86		
0202T001	-	-	-	-	-	-	-	-	-	-	-	992.72	(2151.80) 1129.54	(1082.34) -	(1316.06) -	(1035.15) 25.24	(6578.07) 2147.50	1315.61) 715.83
0202T002	1077.80	32.20	54.33	205.77	102.15	-	-	-	-	236.73	210.84	-	-	-	359.50	323.04	2602.36	289.15
0202T003	-	-	-	-	-	-	-	-	-	191.76	-	-	-	-	389.18	-	580.94	290.47
0202T004	-	299.14	-	-	-	-	-	-	-	-	-	-	49.59	60.45	-	-	409.18	136.39
Totals	1077.80	331.34	54.33	205.77	102.15	-	-	-	-	428.49	210.84	992.72	(2201.39) 1179.13	(1142.79) 60.45	(2064.74) 748.68	(1358.19) 348.28	(10170.55) 5739.98	(535.29) 337.65

( ) annual economic worth of fur harvest from entire line including portion outside of Skagit watershed.

4.4 Accuracy of M.O.E. Harvest Records

Prior to the installation of the new B.C. Wild Fur Data System in the early 1980's the regional trapline harvest synopsis for each registered trapline was obtained from the harvest record submitted by the trapper at the time of annual renewal (M. Pimlott - personal communication). A review of the synopsis and Application for Renewal records for the 1970-71 through 1981-82 trapping seasons revealed no variations in reporting. As indicated in Sec.1.0 trappers were not required to submit harvest records for the 1982-83 and 1983-84 trapping seasons. Although these data were subsequently obtained in this study, via trapper interviews, a comparison to totals registered by the new fur data system were not possible as that system was not fully operational until the 1984-85 trapping season. Unfortunately the fur harvest records for the latter period were subsequently found to be incomplete. This resulted when some fur traders neglected to record each trapper's Assigned Trapper Number (A.T.N.), which is the key element in the wild fur data system. As a result, again no comparison could be made with data obtained during this study. The correct recording procedures have since been reviewed with the fur traders and, hopefully, the 1985-86 data will provide an accurate summary of that season's wild fur harvest.

4.5 Wild Fur Management Considerations

During the trapper interviews seven of the eight individuals were asked the following question, "Do you have any comments or suggestions as to how the line you have been trapping can be improved administratively (ie. boundaries, seasons, etc.) and/or through habitat enhancement/protection?". The following are a synopsis of the comments received as they pertain to each of the lines:

4.5.1 Registered Trapline No. 0202T001

Three individuals commented on this line. No suggestions were forthcoming as to how the line could be improved administratively. Two trappers commented on access difficulties to some areas of the line, due to localized snow conditions. This has apparently resulted in a greater trapping effort in that portion of the line outside the Skagit watershed. One individual noted that the portion within the watershed appears just as productive as that which is outside (J. Gustafson - personal communication). It was also mentioned by one trapper that 16 of 17 beaver taken in 1985-86 were adults and two of these were, in his opinion, sick. He stated there were lots of beaver in the area (A. Koop - personal communication).

4.5.2 Registered Trapline No. 0202T002

Administratively, the one individual commenting on this line felt that the Manning Park boundary, which forms the eastern boundary of this line, is difficult to find on the ground (J. DeLair - personal communication). No suggestions were forthcoming on how this problem should be addressed. Habitatwise, a number of comments were received as they pertained to various fur-bearing species. Habitat for beaver, otter (Lutra canadensis) and muskrat (Ondatra zibethica) appeared good to excellent, although there are few of the latter. The beaver population was low with few young present; it was suggested that possibly wolves and/or otters may be responsible. There is now, apparently, a trappable population of the latter species in the trapline area. Bobcat numbers could be increased by manipulating habitat to increase the prey base. This could be accomplished via selective logging; however, to maintain marten and fisher populations the timbered ridges, particularly those with a southern aspect, should not be logged. For the area generally it was suggested that access was poor due to a lack of logging activity.

4.5.3 Registered Trapline No. 0202T003

Of the three individuals who commented on this line, one had no views on administrative and/or habitat matters (H. Trottier - personal communication). Administratively, the other two both felt that the line should be amalgamated with 0202T002 due to its small size (J. DeLair; D. Chervenka - personal communication). Given its existing size, one individual felt that some species could be over-harvested, ie. beaver (D. Chervenka - personal communication). He felt the population of the latter was lower than it should be, but did not feel it was a habitat problem. He suggested it may be due to poaching, and stated he had seen signs in the snow to suggest this was the case. He also indicated he had seen sign of a few fisher in the area.

4.5.4 Registered Trapline No. 0202T004

Three individuals commented on this line and all of them felt it had limited potential (J. DeLair; K. Keding and H. Schiefermeir - personal communication). Among the reasons given were 1) heavy logging that has occurred in the Sumallo drainage, 2) lack of access and 3) inclusion of much of the Sumallo River within Manning Park. No specific suggestions for administrative and/or habitat improvements were forthcoming.

In conclusion, it should be noted that for all lines the general theme of the trappers was that the lines as they presently exist are best suited for recreational trapping. Access, line size and current fur prices would, as one individual put it, make trapping for a livelihood "skimpy going".

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APPENDICES

APPENDIX 1. DETAILED GEOGRAPHICAL LOCATION OF REGISTERED TRAPLINES LOCATED WHOLLY OR PARTIALLY IN THE STUDY AREA

- SKAGIT WATERSHED, 1970-86

Line No.	Geographical Location
0202T001	- Commencing on the Klesilkwa River approximately 2.25 miles upstream from its confluence with Skagit R., then south along height of land (H.O.L.) between Maselpanik Cr. and Skagit drainages to U.S. Boundary to H.O.L. between Maselpanik and Chilliwack R. drainages (Custer Ridge) to Klesilkwa Mtn. thence west and north along H.O.L. between Silver Cr. and Chilliwack R. drainages to H.O.L. between Cantelon Cr. and Swanee Cr., thence east along said H.O.L. to junc. of Silver and Cantelon Creeks; thence east along H.O.L. between Silver and Sumallo drainages, thence south to point of commencement.
0202T002	- Commencing at the U.S. border west of the Skagit River at the source of McNaught Creek going north following the height of land (H.O.L.) between the Maselpanik Cr. and Skagit River to the Silver-Skagit Road, then straight east to the Manning Park border, thence south following the border of Manning Park to the U.S.A. border, then west to the point of commencement. Not to include private property and Indian Reserves and Parks and Ecological Reserves.
0202T003	- Commencing at Silvertip Mtn. Peak thence following height of land (H.O.L.) south to a point approximately 1/4 mi. north of Silverhope Road; then due east to Skagit Road and following east along H.O.L. between 20 Mile and Shawatum Cr. to the boundary of Manning Park, then east and north along boundary of said Park to Silver Daisy Mtn. Peak, thence north along H.O.L. between Silver Daisy Cr. and Skagit River to junction of Sumallo and Skagit Rivers, thence north along H.O.L. between LaForge and Marmotte Creeks, thence south along H.O.L. between Silvertip Cr. and Sumallo River to point of commencement. Not to include private property and Indian Reserves and Park land.

0202T004 - Commencing at a point approximately 1 mile N.W. of junction of 11 Mile Creek and Nicolum River, thence east along height of land (H.O.L.) between 8 Mile Creek and 11 Mile Creek to headwaters of 11 Mile Creek, then south to Mt. Outram, thence east to Mt. Dewdney, thence south along H.O.L. between 20 Mile Creek and Snass Creek to junction of the Sumallo River and the Skagit River, thence southwest following H.O.L. between the Skagit River and LaForge Creek to Silvertip Mtn., thence west to Mt. Rideout, thence northwest following the H.O.L. to Mt. Forddred and Eaton Pk. to headwaters of Wray Creek, thence northeast through Mt. Coulter to point of commencement. Excluding ecological reserves, sanctuaries, parks, Indian Reserves and private property.

APPENDIX 2 INDIVIDUALS INTERVIEWED TO OBTAIN REGISTERED TRAPLINE AND FUR HARVEST DATA

- SKAGIT RIVER WATERSHED, 1986

Individuals

J. DeLair - trapper, logger and former Conservation Officer, Floods
Harold Trottier - trapper, Silver Creek
John Gustafson - trapper and logger, Maple Ridge
Dan Chervenka - trapper, Creston
Al Koop - trapper and logger, Hope
Heinz Schiefermeir - trapper, Hope
Kay Keding - Conservation Officer, Chilliwack
Mark Pimlott - trapline technician, Ministry of Environment, Surrey
Ian Stewart - trapper and logger, Hope