YAKOUN RIVER STEELHEAD

SOME ASPECTS OF THEIR LIFE HISTORY,

POPULATION SIZE AND SPORT FISHERY.

1982 – 83

by

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ABSTRACT

de Leeuw, A.D. 1986. Yakoun River steelhead, some aspects of their life history, population size and sport fishery, 1982—83.

During the 1982-83 winter season, a steelhead tagging study was undertaken on the Yakoun River, Queen Charlotte Islands. Three hundred and forty—nine steelhead were angled by study participants from October 1982 to April 1983. Of these, 17 were killed, 29 were released untagged and 303 were successfully tagged and released. Of the latter, 32 were recaptured once, and 5 were recaptured twice. The greatest portion of the catch was taken in the upper river approximately 20 to 40 km. upstream of tidal water during November, December and January. The average number of days between date of original and recapture was 27.9 and ranged from 1 to 122 days. The average distance migrated was 4.3 km. and ranged from 0 to 40.8 km. The two age classes that dominated were 3.3 (38.1%) and 4.3 (33.1%) followed by 2.3 (7.8%), 4.2 (5.7%), 4.1S1 (4.6%) and 3.1S1 (2.8%). The remaining 7 age classes accounted for 8%. Repeat spawners comprised 12.1% of the total sample. Female steelhead were slightly more abundant (62%) than males, the former averaged 76.8 cm fork length (range 58.6 — 91) while the latter averaged 78.8 cm (range 59
- 96.5). The steelhead population was calculated using multiple sample techniques and estimates were 1487, 1532, and 1637 fish. Wide confidence limits (1091 to 2368) were the result of low repeat capture rate. The sports fishery and results are discussed relative to a similar study undertaken the previous season.

INTRODUCTION

Of all the steelhead streams on the Queen Charlotte Islands, undoubtedly the most popular and intensely fished is the Yakoun River on Graham Island. In order to gain a better understanding of steelhead in this river, the Fish and Wildlife Branch sponsored a steelhead tagging study by the Port Clements Rod and Gun Club during the winter of 1981-82. The study was repeated the following winter season.

The program objectives during both study years were:

1. To describe steelhead run timing and movement;

2. To describe life history characteristics;

3. To estimate population size.

DESCRIPTION OF THE STUDY AREA AND FISHERY

With a drainage area of approximately 477 km^2 the Yakoun is the largest stream on the Queen Charlotte Islands. The river flows north out of Yakoun Lake for approximately 60 km into Masset Inlet near Port Clements (Fig. 1). As is typical of many northern Queen Charlotte Island drainages, run—off tends to be coloured or "tea—stained" as a result of rain—saturated bogs and spruce—cedar—hemlock forests. Since the elevation of Yakoun Lake is only 100 m, the river's low gradient is characterized by shallow riffles interspersed with long runs and slow pools.

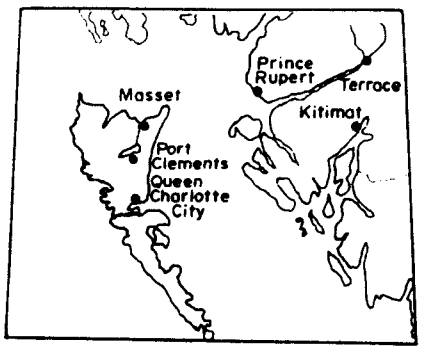
Like most coastal streams, the Yakoun River is subject to extremes in discharge, with low flows occurring during the July-September period and peaks in discharge generally taking place in the late fall and winter. Some extreme low flows can also occur in the winter, generally associated with freezing temperatures. Recorded maximum and minimum instantaneous discharges were 378.7 m^3/s and .47 m^3/s respectively while the average is 34.7 m^3/s (Water Survey of Canada, 1977). Temperatures range from 22.2°C in summer to near zero during the winter with a yearly average of 8.04°C (Environment Canada, 1985). Specific conductivity has ranged from 33 to 50 umho/cm while pH was generally between 6.4 and 7.0.

The Yakoun has numerous tributaries, some of which are important contributors to salmon and trout production. Approximately 30% of the drainage has been logged , and forest roads are the principal access routes to the numerous angling spots along the river.

The Yakoun is accessible to anadromous salmonids throughout its length. In addition to steelhead (Salmo gairdneri), the following species are also present: sockeye salmon (Oncorhynchus nerka), coho salmon (O. kisutch), chum salmon (O. keta), pink salmon (O. gorbuscha), chinook salmon (O. tshawytscha), Dolly Varden char (Salvelinus malma), cutthroat trout (Salmo clarki), prickly sculpin (Cottus asper), three-spine stickleback (Gasterosteus aculeatus) and lamprey (Lampetra sp). Estimated annual salmon escapements are recorded in Brown, et al. 1979.

The winter steelhead fishery on the Yakoun takes place primarily in the middle reaches and lasts from October to late April. The upper 13 km are closed to all angling from October 1 to April 30 to protect spawning steelhead. Questionnaire—estimated angling effort, although variable, has averaged 1,636 angler days per year, with a low of 997 in the 1979-71 season, to a high of 2,907 angler days in the 1983—84 season (Table 1). This recent increase in angler activity is perhaps associated with the tagging study. The estimated number of anglers actually fishing during the period of record has remained fairly stable averaging 302 anglers, while the number of steelhead released has

increased (Table 1). Success rate is about .86 fish per angler day, only slightly better than the Charlottes as a whole.



MASSET INLET

PORT CLEMENTS

Zone 1

Zone 2

Zone 3

Zone 4

Zone 5

Zone 6 (Closed to Public Angling October 1 to April 30)

Florence Cr.

Yakoun

Canoe

Marie L.

Ghost Cr.

Yakoun Lake

SCALE ÷ 1 : 250 000

Fig. 1 Yakoun River Study Area and Zone Location

Table 1. Yakoun River steelhead harvest analysis[1], 1970–71 to 1985–86

Season	Days Fished	No. of Anglers	Kept	Released	Kept/ Day	Catch/ Day	Charlottes/ Catch/Day
1970–71	997	238	523	482	.52	1.01	.36
1971–72	1431	293	888	616	.62	1.05	.52
1972–73	2122	324	884	929	.42	.85	.31
1973–74	1664	307	633	398	.38	.62	.33
1974–75	1624	269	553	316	.34	.54	.27
1975–76	1997	351	666	341	.33	.50	.47
1976–77	1528	307	287	229	.19	.34	.37
1977–78	1519	246	356	304	.23	.43	.48
1978–79	1477	314	400	254	.27	.44	.41
1979–80	1603	344	422	526	.26	.50	.48
1980–81	1346	317	369	569	.27	.70	.79
1981–82	1902	332	384	1279	.21	.99	.93
1982–83	2330	341	480	2567	.21	1.31	1.23
1983–84	2907	367	576	1901	.20	.87	.57
1984–85	2902	458	630	3637	.22	1.45	1.32
1985–86	2167	300	431	3936	.20	1.99	1.65
Mean	1636	302	531	1143	.32	.86	.66

[1]Steelhead Harvest Analysis, B.C. Fish and Wildlife Branch annual reports

METHODS

Like the previous study (de Leeuw and Whately, 1983), the river was again partitioned into six zones, as follows: (Fig. 1).

Zone 1 (8.5 km) - mouth of Yakoun River to Canoe Creek

Zone 2 (11.4 km) - Canoe Creek to Log Creek

Zone 3 (10.1 km) - Log Creek to Branch 40 and Branch 40A Junction

Zone 4 (6.4 km) - Branch 40 Junction to Gold Creek

Zone 5 (8.4 km) - Gold Creek to Ghost Creek

Zone 6 (13.3 km) - Ghost Creek to Yakoun Lake

Adult steelhead were angled and tagged with orange, numbered anchor (spaghetti) tags. Weights were generally estimated while fork lengths were measured. Sex, date of capture, tag number and colour as well as zone of capture were noted. After the removal of a few scales, fish were released at the capture site.

Scales were viewed using a dissecting microscope, and the best two cleaned and mounted on gummed cards. Impressions of the scales were made on acetate cards by applying heat (110 to 120°C) and pressure (300 lbs/in^2) for 3.5 minutes. A Leitz Prado projector was then used to examine each scale for freshwater and ocean age determination (Narver and Withler, 1974).

Population size was determined using the Schnabel, Schumacher and Schnabel-Chapman adjusted multiple census techniques (Ricker, 1970). The formulae were:

$$\text{Schnabel: } N = \frac{\sum Ct\ Mt}{R}$$

$$\text{Schumacher: } \frac{1}{N} = \frac{\sum (Mt\ Rt)}{\sum (Ct\ M^2 t)}$$

$$\text{Schnabel, Chapman revised: } N = \frac{\sum (Ct\ Mt)}{R - 1}$$

Where:
- t = 5-day time period
- Ct = total catch during time t
- Mt = total fish tagged and released during time t
- M = sum of Mt
- Rt = total recapture during time t
- R = sum of Rt

RESULTS

Three hundred and forty—nine steelhead were angled in the Yakoun River by study participants from October, 1982 to April, 1983. Of these, 17 were killed (one a tagged fish), 29 were released untagged, and the remaining 303 were successfully tagged and released (Appendix I). Of the latter, 32 (10.6%) were recaptured once, and 5 (1.7%) were captured a second time. One fish recaptured in this study period was originally tagged the previous season (Appendix II).

SPATIAL AND TEMPORAL DISTRIBUTION OF STEELHEAD CATCH

Over half of the steelhead were taken in Zone 5 (Table 2), with the majority of the total catch occurring during the months of November, December and January (Table 3). Sex ratio favoured females (215) over males (134) or 1.6 to 1. Females in fact dominated the catch in every 10—day catch period (Table 3).

Of the 32 fish recaptured once, 26 (81%) were caught in the zone of original capture. Two had migrated downstream from Zone 5 to the inter tidal area or Zone 1, while 3 had migrated upstream (Table 4). Zone of recapture was not recorded for 1 fish. The distance migrated between captures ranged from 0 (26) fish to 40.8 km (2 fish). The number of days between original and first recapture ranged from 1 to 122 days, and averaged 27.9 days (Table 4).

Only 5 fish were recaptured twice, their estimated migration distance between first and third capture was 13 km and included one fish which had migrated 40.8 km downstream after spawning, and one fish which had migrated upstream 11 km. Two other fish did not migrate out of the zone of original capture, while the recapture location was not recorded for 1 fish.

The maximum number of days between captures within this winter season was a fish originally tagged on November 27, 1982 and recaptured a second time 40.8 km downstream 169 days later. One fish was tagged on January 30, 1982 and recaptured March 3, 1983.

Table 2. Yakoun River steelhead catch during the 1982-83 season by zone

Zone	Zone Length	Catch
1	8.5 (tidal)	0
2	11.4	7
3	10.1	34
4	6.4	37
5	8.8	183
Not recorded	-	23
Total	58.5	349

Table 3. Number of steelhead captured per 10–day interval during the 1982–83 tagging study on the Yakoun River.

Date	Males	Females	Total
10/1–10	0	0	0
10/11–20	0	0	0
10/21–30	4	7	11
11/1–10	8	8	16
11/11–20	10	29	48
11/21–30	9	21	30
12/1–10	20	28	48
12/11–20	13	22	35
12/21–30	7	8	15
01/1–10	5	13	18
01/11–20	15	20	35
01/21–30	15	22	38
02/1–10	1	7	8
02/11–20	4	4	8
02/21–30	0	7	7
03/1–10	13	19	32
03/11–20	0	0	0
03/21–30	0	0	0
04/1–10	1	0	1
Total	134	215	349

Table 4. Movement and residency of recaptured steelhead in the Yakoun River, 1982—83.

	Original Capture		First Recapture				Second Recapture			
Tag #	Date	Zone	Date	Zone	km Trav	Days	Date	Zone	km Trav	Days (Total)
06457	11/07/82	5	11/10/82	5	0	3				
06250	11/18/82	5	11/19/82	5	0	1	1/22/83	5	0	64 (65)
06475	12/29/82	5	12/30/82	5	0	1				
06486	12/21/82	5	1/03/83	5	0	13				
28096	--	-	2/04/83	5	-	-				
03066	1/03/83	5	1/04/83	5	0	1				
06496	11/27/82	5	12/20/82	5	0	23				
06259	11/19/82	5	12/20/82	5	0	31				
06498	11/27/82	5	12/15/82	5	0	18	5/15/83*	1	—40.8	151(169)
03036	12/21/82	5	1/13/83	5	0	23				
06224	1/17/83	5	1/17/83	5	0	0	1/18/83*	-	-	— —
06564	12/20/82	5	1/18/83*	5	0	29				
06571	12/20/82	5	1/21/83	5	0	31				
03142	1/18/83	5	1/18/83	5	0	0	1/22/83	5	0	4 (4)
06260	11/19/82	5	11/20/82	5	0	1				
06497	11/27/82	5	11/27/82	5	0	0				
06310	12/04/82	3	1/24/83	5	+19.5	51				
06566	12/20/82	5	1/24/83	5	0	35				
03082	1/22/83	5	1/24/83	5	0	2				
06201	11/19/82	5	1/27/83	5	0	69				
03159	1/27/83	5	1/31/83	5	0	4				
03166	1/31/83	5	1/31/83	5	0	0				
06567	12/20/82	5	12/21/82	5	0	1				
06573	12/20/82	5	12/21/82	5	0	1	3/01/83	6	11	70 (71)
06458	11/07/82	5	12/28/82	5	0	51				
03083	1/22/83	5	5/15/83*	1	-40.8	113				
06221	1/13/83	5	5/15/83*	1	-40.8	122				
06290	12/10/82	5	3/01/83	6	0	82				
03056	1/04/83	5	3/01/83	6	+15.4	56				
06568	12/20/82	5	3/01/83	6	+15.4	71				
00717	1/30/82	6	3/01/83	6	0	**				
03220	3/04/83	6	3/04/83	6	0	0				
	TOTAL FISH = 32		X= 4.3		27.9		TOTAL FISH = 5		$\bar{X}$= 13.0	72.3 (77.3)

* Fish killed

** This fish captured 1 year after first capture, not included in average

AGE AND SIZE

Scales were interpreted for 323 steelhead (Table 5). In 42 of these, the fresh water zone was resorbed. Among the 13 age groups identified, the two most common were three years of fresh water followed by three years of ocean growth (3.3) and 4.3 which accounted for 38.1% and 33.1% respectively. The next most common ages were 3.2, 4.2 and 4.1S1, at 7.8%, 5.7%, and 4.6% respectively. The remaining 8 age groups accounted for less than 3% each (Table 5).

Three and four years of fresh water growth accounted for 53.4% and 45.9% respectively of the total number of readable scales (Table 6).

The majority (80.6%) of Yakoun River steelhead had spent 3 years in the ocean prior to first spawning (Table 7). Of these 156 were females and 73 were males (2.13:1). This ratio was reversed in the other 2 ocean ages .2 and .4. Although these latter ages accounted for only 14.8% and 4.6%, males dominated in both groups, 1.47:1 and 3.33:1 respectively (Table 7).

Repeat spawners represented 12.1% of the total, the majority of which (84.6%) were second spawners. The remaining 15.4% were on their third spawning migration. Sixty-six percent of the multiple spawners were females. Twenty—seven (69.2%) of the repeat spawners had spent only 1 year at sea prior to their first spawning. First ocean year fish were absent from all maiden spawners in this study period.

Table 5. Steelhead trout age groups from the Yakoun River, 1982-1983.

Age Group	Males	Females	Total	% of Total
2.2	1	0	1	.4
2.3	0	1	1	.4
3.2	15	7	22	7.8
3.3	32	75	107	38.1
3.4	4	2	6	2.1
4.2	8	8	16	5.7
4.3	31	62	93	33.1
4.4	5	1	6	2.1
3.1S1	1	7	8	2.8
3.2S1	3	3	6	2.1
3.1SS1	1	0	1	.4
4.1S1	4	9	13	4.6
4.2S1	0	1	1	.4
Total	105	176	281	100.0
* R.2	1	2	3	
R.3	10	18	28	
R.4	1	0	1	
R.1S1	0	1	1	
R.2S1	3	1	4	
R.1SS1	1	3	4	
R.2SS1	0	1	1	
Total	16	26	42	

* R = Central area (fresh water growth) is resorbed and therefore not readable.

Table 6. Number and percentage of male and female Yakoun River steelhead of different fresh water ages, 1982-83.

Fresh Water Age	Males	Females	Total	% of Total
2	1	1	2	.7
3	56	94	150	53.4
4	48	81	129	45.9

Total	105	176	281	100.0

Table 7. Number, percent and sex ratio of male and female Yakoun River steelhead of different ocean ages, 1982–83 (repeat spawners excluded; includes R. scales).

Ocean Age	Males (%)	Females (%)	Ratio M/F	M & F	% of Total
.2	25 (8.8)	17 (6.0)	1.47:1	42	14.8
.3	73 (25.7)	156 (54.9)	.47:1	229	80.6
.4	10 (3.5)	3 (1.1)	3.33:1	13	4.6
Total	108 (38)	17 (62)	.61:2	284	100.0

Table 8. Numbers and percent of repeat spawning Yakoun River steelhead of different ocean age groups. N = 39 or 12.1%.

Ocean Age	Males (%)	Females (%)	M & F	% of Total
.1S1	5 (12.8)	17 (43.6)	22	56.4
.2S1	6 (15.4)	5 (12.8)	11	28.2
.1SS1	2 (5.1)	3 (7.7)	5	12.8
.2SS1	0 (0.0)	1 (2.6)	1	2.6
Total	13 (33)	26 (67)	39	100.0

The average fork length of all steelhead where both length and age were recorded was 76.8 cm, and ranged from 58.4 to 96.5 cm (Table 9). Some increase in size was noted relative to ocean residency. The average length of both male and female adult steelhead of 2-, 3- and 4- year ocean residency was 65.9, 78.3 and 91.2 cm respectively. Males were larger than females and averaged 78.8 cm, while the latter averaged 75.6 cm.

Table 9. Mean fork lengths (cm) of male and female Yakoun River steelhead of different ocean ages, 1982–83 (repeat spawners excluded).

Ocean Age	Males			Females			Males & Females		
	N	$\bar{X}$	Range	N	$\bar{X}$	Range	N	$\bar{X}$	Range
.2	26	66.1	59.0–76.0	14	65.5	58.4–76.2	40	65.9	58.4–76.2
.3	62	82.1	63.5–96.5	137	76.6	62.0–91.0	199	78.3	62.0–96.5
.4	9	92.6	86.0–96.5	1	78.7	——	10	91.2	78.6–96.5

Total	97	78.8	59.0–96.5	152	75.6	58.4–91.0	249	76.8	58.4–96.5

POPULATION ESTIMATION

The Schnabel, Chapman and Schumacher population estimates (Ricker, 1970) were 1533, 1487 and 1637 steelhead respectively (Table 10). These estimates did not include fish removed by the sports fishery (Table 1). The confidence limits are wide and result from the low recapture rate.

Table 10. Yakoun River steelhead population estimates during the 1982—83 winter steelheading season.

Method	Estimate	95% Confidence Limits	
		Poisson distribution	Normal distribution
Schnabel	1532	1091 — 2153	1133 — 2368
Chapman	1487	1064 — 2080	1112 — 2244
Schumacher	1637	1355 — 2069	
$\bar{X}$	1552		

DISCUSSION

Considerably more steelhead were taken by study participants in the Yakoun River during the 1982-83 season (349) than in the previous year (224). Since effort was about the same during both catch periods, the increased catch in the 1982—83 steelhead run was estimated to be 1500 fish with a range of 1000 to 2400 fish, while the previous winter run was calculated to be only about 850 fish. Data were obtained similarly in both study periods. Although to a lesser degree, the sports harvest questionnaire analysis showed a similar trend, with an estimated over-all catch of 1.31 fish/day during the 82—83 season, and a .99 fish/day during the 81-82 season. The large number of steelhead taken during the study period as estimated by the steelhead harvest analysis relative to the total population was probably the result of inflated questionnaire results (Billings, 1982), and/or a conservative population estimate.

Although the multiple census population estimate requires a constant population, with no recruitment and no mortality during the experiment, the method is still useful even if these conditions are only approximately satisfied (Ricker, 1970). The majority of fish sampled and tagged were taken from areas readily accessible to anglers during the early part of the season. Consequently the distribution of tagged fish may not have reflected actual distribution of all steelhead. Overall abundance estimated in this study therefore likely

represented only the angled portion of the steelhead population rather than the entire Yakoun run.

The large catch in Zone 5 was assumed to be a reflection of better angler access to this area rather than a behavioural pattern of Yakoun River steelhead. In terms of physiography the Yakoun is fairly homogenous from lake to tidal influence, and on a strictly habitat availability basis any area is as likely to hold steelhead as any other. Perhaps a better estimate of steelhead spatial distribution could have been obtained by comparing success rates (i.e. catch/day) between zones. Since effort was not accurately recorded, such a comparison was not possible.

Steelhead can be found in the Yakoun from early October through to May. The catch in this study however occurred primarily during November, December and January. The Yakoun is the only readily available steelhead stream with an early winter run and therefore receives a disproportionate amount of effort during the early part of the season. Study participants exercised their option to angle other streams once these became productive. A similar catch trend was observed during the 1981-82 winter season.

Migration behaviour between initial capture and recapture was almost identical in both study years. During the winter of 1981—82, 64% of all recaptures were taken in the area of original capture compared to 81% in the present study. The number of days between original and first recapture ranged from 0 to 122 (X = 27.9) days in the present study, while the year previous the range was 0 to 155 days with an average of 31 days. The average distance travelled between recaptures for the two seasons were 4.3 km (1982-83) and 2.5 km (1981-82). Repeat captures from both studies confirmed that once having migrated into an area of the river Yakoun steelhead remained relatively stationary for an extended period.

Three years of ocean growth dominated both study years (80%, 1982—83; 73%, 1981—82) while fresh water residence varied markedly between years. During the 1981—82 season, 93% of all fish aged had spent 3 years in fresh water prior to ocean migration. The following year, only 53% were of this age group, while 46% were 4 year stream residents. Variations in repeat spawninq frequency were also noted with 12.0% multiple spawners in 1982-83 but only 4.4% in the previous year. Factors contributing to the observed variations in smolt age and/or repeat spawning frequency probably included overwinter survival of juveniles and relative brood year and ocean year class strength.

Overall sex ratio favoured females considerably in both study periods. Females were slightly smaller than males, and the average length of all fish sampled regardless of sex was larger in the 1981—82 study. The largest fish sampled throughout both study seasons (N = 229 + 349 = 573) was 96.5 cm.

SUMMARY

1. Three hundred and forty-nine steelhead were angled in the Yakoun River by study participants from October, 1982 to April, 1983. Of these, 17 were killed (one a tagged fish), 29 were released untagged, while the remaining 303 were successfully tagged and released. Of the latter, 32 were recaptured once, and 5 were recaptured twice.

2. The greatest number of steelhead were taken in Zones 4, 5, and 6 or the middle to upper reaches of the river during November, December and January.

3. The average number of days between original and repeat capture was 27.9 and ranged from 0 to 122 days, while the average distance migrated during this time was 4.3 km and ranged from 0 to 40.8 km.

4. The dominant age classes were 3.3 (38.1%) and 4.3 (33.1%), followed by 2.3 (7.8%), 4.2 (5.7%), 4.1S1 (4.6%), and 3.1S1 (2.8%). Repeat spawners comprised 12.1% of total sampled.

5. Average length of Yakoun River steelhead during the 1982—83 study was 76.8 cm. Males were slightly larger than females, the former averaged 78.8 cm (range 59 - 96.5) whereas the latter averaged 76.8 cm (range 58.4 - 91). Sixty—two percent of all fish sampled were females.

6. Using three different multiple sample techniques, steelhead population estimates were 1532, 1487, and 1637 fish. Wide confidence limits ranging from 1091 to 2368 fish were the result of few repeat captures.

ACKNOWLEDGEMENTS

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APPENDICES

I. Yakoun River 1982-83 winter steelhead original captures.

II. Yakoun River 1982-83 winter steelhead repeat captures.

Appendix I. Yakoun River 1982-83 winter steelhead original captures.
* = killed

Fish Number	Date	Tag and	colour number	Sex	Length cm	Weight kg	Zone	Age	Maturity
1	Oct 30/82	Or	06321	F	—-	5.0	3	3.4	Fresh
2	Oct 30/82	Or	06323	F	--	4.1	3	3.3	Fresh
3	Oct 31/82	Or	06324	F	--	4.5	5	4.3	Fresh
4	Nov 1/82	Or	06325	M	81.3	5.4	3	4.1S1	Fresh
5	Nov 1/82	Or	06466	F	76.2	4.5	3	3.3	Fresh
6*	Oct 31/82		--	M	--	6.8	3	R.3	Fresh
7	Nov 5/82	Or	06452	M	91.4	6.4	3	3.2S1	Dark
8	Nov 5/82	Or	06453	M	--	4.1	5	R.1SS1	Fresh
9	Nov 6/82	Or	06454	M	--	5.0	4	4.3	Fresh
10	Nov 7/82	Or	06457	F	-—	4.5	5	3.3	Fresh
11	Nov 7/82	Or	06458	F	--	5.4	5	3.3	Fresh
12	Nov 7/82	Or	06459	M	—-	7.5	5	R.2S1	Fresh
13	Nov 7/82	Or	06460	F	--	3.6	4	3.3	Fresh
14	Nov 11/82	Or	06468	F	66.0	3.6	4	3.1S1	Fresh
15	Nov 11/82	Or	06470	F	--	4.5	4	3.3	Fresh
16	Nov 11/82	Or	06467	M	68.6	4.5	4	no scales	Dark
17	Nov 11/82	Or	06461	M	--	2.7	4	4.2	Fresh
18	Nov 13/82	Or	06463	F	-—	5.0	5	3.3	Fresh
19	Nov 14/82	Or	06464	F	--	4.5	5	4.3	Fresh
20	Nov 17/82	Or	06246	M	81.3	5.9	3	R.3	Fresh
21*	Nov 1/82		--	M	94.0	9.7	-	4.2S1	Fresh
22	Nov 18/82	Or	06253	F	73.7	4.1	4	4.1S1	Fresh
23	Nov 18/82	Or	06252	F	73.7	3.6	4	3.3	Fresh
24	Nov 18/82	Or	06251	F	73.7	4.1	4	4.3	Fresh
25	Nov 18/82	Or	06250	F	76.2	4.1	4	3.2	Fresh
26	Nov 18/82	Or	06249	F	76.2	4.5	4	4.3	Fresh
27	Nov 18/82	Or	06248	F	71.1	3.6	4	4.3	Fresh
28	Nov 18/82	Or	06247	M	76.2	4.5	4	R.3	Fresh
29	Nov 19/82	Or	*06254*	M	91.4	6.8	5	4.3	Fresh
30	Nov 19/82	Or	06256	M	*81.3*	5.0	5	3.3	Fresh
31	Nov 19/82	Or	06257	F	73.7	3.6	5	3.2	Fresh
32	Nov 19/82	Or	06258	F	76.2	4.5	5	3.3	Fresh
33	Nov 19/82	Or	06259	F	76.2	4.5	5	4.3	Fresh
34	Nov 19/82	Or	06260	M	81.3	4.7	5	3.3	Fresh
35	Nov 19/82	Or	06076	F	76.2	4.1	5	*3.3*	Fresh
36	Nov 19/82	Or	06077	M	81.3	5.9	5	4.3	Fresh
37	Nov 19/82	Or	06078	F	76.2	4.5	5	4.3	Fresh
38	Nov 19/82	Or	06079	F	71.1	3.6	5	3.3	Fresh
39	Nov 19/82	Or	06080	M	83.8	5.9	5	4.3	Fresh
40*	Nov 19/82		--	M	86.4	5.4	5	R.3	-—
41	Nov 20/82	Or	06081	F	--	7.0	5	R.1SS1	Fresh
42	Nov 20/82	Or	06082	F	73.7	5.0	5	R.3	Fresh
43	Nov 20/82	Or	06083	F	78.7	5.4	5	3.3	Fresh
44	Nov 20/82	Or	06085	M	83.8	6.4	5	4.3	Fresh

45	Nov	21/82	Or	06086	M	71.1	3.2	5	3.2

46	Nov	21/82	Or	06087	F	86.4	6.4	5	3.2S1	
47	Nov	21/82	Or	06088	F	76.2	3.6	5	R.3	
48	Nov	21/82	Or	06089	F	73.7	3.2	5	R.3	
49	Nov	21/82	Or	06096	F	81.3	5.4	5	3.2S1	
50	Nov	21/82	Or	06098	F	76.2	4.1	5	3.3	
51	Nov	21/82	Or	06099	F	76.2	4.1	5	4.3	
52	Nov	21/82	Or	06100	F	76.2	4.1	5	3.3	
53	Nov	21/82	Or	06551	F	76.2	3.6	5	3.1S1	
54	Nov	21/82	Or	06552	F	76.2	4.1	5	4.3	
55	Nov	21/82	Or	06554	F	78.7	4.5	5	4.3	
56	Nov	21/82	Or	06084	F	76.2	4.5	5	P.3	
57*	Nov	22/82		—-	M	82.6	5.6	5	4.3	
58	Nov	22/82	Or	06556	F	76.2	4.1	5	R.3	
59	Nov	22/82	Or	06560	F	78.7	5.0	5	R.1S1	
60	Nov	22/82	Or	06559	M	81.3	5.4	5	R.3	
61	Nov	22/82	Or	06558	F	78.7	5.0	5	3.3	
62	Nov	22/82	Or	06557	F	73.7	3.6	5	3.1S1	
63	Nov	19/82	Or	06201	F	75.0	5.0	5	4.1S1	Fresh
64	Nov	19/82	Or	06202	M	95.3	7.7	5	3.3	Fresh
65	Dec	4/82	Or	06203	M	66.0	3.6	4	3.2	Dark
6C	Nov	14/82	Or	06204	M	--	6.4	3	3.3	Fresh
67	Dec	4/82	Or	06205	M	81.3	5.4	4	3.3	Dark
68	Dcc	10/82	Or	06206	F	62.3	3.8	5	4.2	Dark
69	Dec	10/82	Or	06207	F	82.6	5.0	5	3.3	Fresh
70	Dec	10/82	Or	06208	F	87.7	5.4	5	3.3	Fresh
71	Dec	10/82	Or	06209	M	94.0	7.7	5	4.4	Fresh
72*	Nov	19/82		--	F	75.0	5.0	4	4.3	Fresh
73*	Nov	19/82		--	F	77.5	4.1	4	3.3	Fresh
74	Dec	4/82	Or	06313	F	81.3	5.9	3	3.3	Fresh
75	Dec	4/82	Or	06309	F	94.0	8.2	3	3.2S1	Fresh
76	Dec	4/82	Or	06310	F	82.0	6.4	3	3.1S1	Fresh
77	Dec	9/82	Or	06315	F	62.3	2.7	2	3.2	Fresh
78*	Dec	9/82	Or	06314	M	99.1	10.1	2	3.2S1	Fresh
79	Dec	9/82	Or	06317	F	72.4	4.1	2	3.3	Fresh
80	Dec	9/82	Or	06316	F	76.1	4.7	3	3.3	Fresh
81	Dec	10/82	Or	06306	M	83.8	5.9	3	4.1S1	Dark
82	Dec	10/82	Or	06319	F	76.2	4.3	3	3.3	Fresh
83	Dec	10/82	Or	06318	F	78.7	4.5	3	3.3	Fresh
84	Dec	11/82	Or	06308	F	71.7	5.0	3	4.1S1	Fresh
85	Dec	11/82	Or	06307	F	77.5	5.9	3	4.3	Fresh
86	Dec	16/82	Or	06217	F	80.0	5.4	4	4.1S1	Fresh
87	Dec	16/82	Or	06561	M	66.0	2.5	3	4.2	Fresh
88	Dec	16/82	Or	06562	M	61.0	2.3	5	3.2	Fresh
89	Nov	26/82	Or	06292	F	74.0		6	3.1S1	
90	Nov	20/82	Or	06291	M	85.0		6	3.1S1	
91	Dec	2/82	Or	06305	F	76.0		6	3.1S1	
92	Dec	2/82	Or	06304	M	82.0		6	4.3	

93	Dec	2/82	Or	06303	F	81.0		6	4.3	
94	Dec	2/82	Or	06296	F	75.0		6	3.3	
95	Dec	2/82	Or	06295	M	82.0		6	3.3	
96	Dec	2/82	Or	06294	M	93.0		6	3.3	
97	Dec	2/82	Or	06293	M	59.0		6	3.2	
98	Dec	3/82	Or	03042	M	89.0		6	3.2S1	
99	Dec	3/82	Or	03041	F	72.0		6	4.3	
100	Dec	3/82	Or	06302	F	82.0		6	4.3	
101	Dec	3/82	Or	06301	F	72.0		6	4.1S1	
102	Dec	3/82	Or	06300	M	62.0		6	3.2	
103	Dec	3/82	Or	06299	F	81.0		6	3.3	
104	Dec	3/82	Or	06298	F	75.0		6	4.1S1	
105	Dec	3/82	Or	06297	M	78.0		6	4.3	
106	Dec	9/82	Or	03050	M	60.0		6	3.2	
107	Dec	9/82	Or	03049	F	83.0		6	3.3	
108	Dec	9/82	Or	03048	F	78.0		6	3.3	
109	Dec	9/82	Or	03047	M	90.0		6	4.3	
110	Dec	9/82	Or	03046	F	79.0		6	3.3	
111	Dec	9/82	Or	03045	F	77.0		6	4.3	
112	Dec	9/82	Or	03044	F	60.0		6	4.2	
113	Dec	9/82	Or	03043	F	74.0		6	3.3	
114	Dec	9/82	Or	06288	M	76.0		6	3.3	
115	Dec	10/82	Or	06290	M	87.0		6	3.3	
116	Dec	10/82	Or	06289	M	69.0		6	3.2	
117	Dec	10/82	Or	06276	F	79.0		6	R.1SS1	
118	Dec	10/82	Or	06277	F	78.0		6	3.3	
119	Dec	10/82	Or	06287	M	76.0		6	4.2	
120	Dec	19/82	Or	06481	F		3.6	4	3.3	Fresh
121	Dec	19/82	Or	06482	F		5.0	4	3.3	Fresh
122	Dec	19/82	Or	06482	F		4.5	5	3.3	
123	Dec	19/82	Or	06485	F		3.6	5	R.3	Fresh
124	Dec	21/82	Or	06486	F		4.5	5	4.1SS1	Dark
125	Dec	20/82	Or	06484	M	81.3	5.4	5	4.3	
126	Dec	20/82	Or	06575	M	94.0	7.7	5	4.4	Dark
127*	Dec	20/82			F	76.2	4.5	5	3.3	
128	Dec	20/82	Or	06563	M	71.1	3.2	5	R.2	
129	Dec	20/82	Or	06564	F	78.7	5.4	5	R.3	
130	Dec	20/82	Or	06565	F	76.2	4.5	5	4.1S1	
131	Dec	20/82	Or	06566	M	81.3	5.4	5	4.3	
132	Dec	20/82	Or	06567	F	81.3	5.4	5	4.3	
133	Dec	20/82	Or	06568	M	94.0	7.9	5	3.4	
134	Dec	20/84	Or	06569	M	78.7	5.4	5	3.3	
135	Dec	20/82	Or	06570	F	71.7	3.2	5	4.2	
136	Dec	20/82	Or	06571	F	76.2	5.4	5	4.3	
137	Dec	20/82	Or	06572	F	76.2	4.5	5	R.3	
138	Dec	20/82	Or	06573	F	76.2	4.5	5	4.3	
139	Dec	20/82	Or	06574	F	76.2	4.5	5	R.3	
140	Dec	21/82	Or	03026	F	90.2	7.3	5	R.2SS1	
141	Dec	21/82	Or	03028	F	79.0	4.5	5	4.3	

142	Dec	21/82	Or	03029	F	78.7	5.4	5	3.3
143	Dec	21/82	Or	03030	M	83.8	6.4	5	3.3
144	Dec	21/82	Or	03031	F	76.0	4.5	5	3.3
145	Dec	21/82	Or	03032	F	76.2	4.5	5	4.3
146	Dec	21/82	Or	03033	M	91.0	6.8	5	4.4
147	Dec	21/82	Or	03034	M	78.7	5.4	5	4.3
148	Dec	21/82	Or	03035	F	78.0	4.5	5	4.3
149	Dec	21/82	Or	03036	F	68.0	3.6	5	R.3
150	Dec	21/82	Or	03037	M	80.0	5.4	5	4.1S1
151	Jan	3/83	Or	03051	F	76.2	4.5	5	3.3
152	Jan	3/83	Or	03052	F	76.2	4.5	5	3.3

153	Jan	3/83	Or	03053	F	81.3	5.9	5	4.3	
154	Jan	3/83	Or	03054	M	76.2	5.4	5	3.3	
155	Jan	3/83	Or	03055	F	73.7	4.1	5	4.3	
156	Jan	3/83	Or	03038	F	71.1	2.7	5	3.3	
157	Jan	3/83	Or	03066	M	88.9	6.4	5	4.3	Dark
158	Jan	3/83	Or	03067	F	83.8	5.9	5		
159	Jan	3/83	Or	03068	M	73.7	4.3	5	4.3	Dark
160	Jan	4/83	Or	03039	F	78.7	4.5	5	3.3	
161	Jan	4/83	Or	03040	F	76.2	4.5	5	4.3	
162	Jan	4/83	Or	03056	F	76.2	4.5	5	R.3	
163	Jan	4/83	Or	03057	F	73.7	4.1	5	4.3	
164	Jan	4/83	Or	03058	F	76.2	4.5	5	4.1S1	
165	Jan	6/83	Or	03059	F	73.7	3.6	5		
166	Jan	13/83	Or	06223	F	76.2	4.5	5	3.3	
167	Jan	13/83	Or	06222	F	67.3	2.7	5	3.2	
168	Jan	13/83	Or	06221	F	78.7	5.0	5	3.4	
169	Jan	13/83	Or	06220	F	73.7	4.1	5	4.3	
170	Jan	13/83	Or	06219	F	78.7	5.0	5	4.3	
171	Jan	13/83	Or	06218	M	72.4	3.6	5	3.3	
172	Jan	13/83	Or	03065	M	73.7	4.1	5	4.3	
173	Jan	13/83	Or	03064	F	76.2	4.5	5	3.3	
174	Jan	13/83	Or	03063	M	86.7	6.4	5	4.3	
175	Jan	13/83	Or	03062	F	73.7	4.1	5	R.3	
176	Jan	13/83	Or	03061	F	76.2	4.5	5	3.3	
177	Jan	13/83	Or	03060	M	78.7	5.0	5	R.3	
178	Jan	17/83	Or	06224	M	83.8	5.9	5	4.3	Dark
179	Jan	17/83	Or	06225	F			5	3.3	
180	Jan	17/83	Or	06226	M	69.9	2.7	5	3.2	
181	Jan	17/83	Or	06227	F	67.3	3.2	5	3.3	
182	Jan	17/83	Or	06228	F	81.3	5.4	5	3.3	
183	Jan	17/83	Or	06229	F			5		
184	Jan	17/83	Or	03070	M	81.3	5.4	5	4.3	
185	Jan	17/83	Or	03071	F	78.7	5.0	5	4.3	
186	Jan	17/83	Or	03072	M	68.6	3.2	5	3.2	
187	Jan	17/83	Or	03073	M	83.8	6.4	5	3.3	
188	Jan	17/83	Or	03074	M	86.7	6.6	5	3.1SS1	
189	Jan	17/83	Or	03075	F	66.0	2.7	5	4.2	Fresh
190	Jan	17/83	Or	03076	F	76.2	4.5	5	4.3	Fresh
191	Jan	17/83	Or	03077	F	81.3	5.4	5	R.2S1	Fresh
192*	Jan	17/83			F	70.0		5	3.3	Dark
193*	Jan	17/83			F	75.0		5	4.3	Fresh
194	Jan	18/83	Or	03078	M	63.5	2.3	5	4.3	
195	Jan	18/83	Or	03079	F	73.7	3.6	5		
196	Jan	18/83	Or	03080	M	81.3	5.4	5	R.3	
197	Jan	18/83	Or	03141	M	96.5	8.2	5	4.3	
198	Jan	18/83	Or	03142	F	76.2	4.5	5	4.3	
199	Jan	21/83	Or	03143	M	88.0	6.8	5	4.3	
200	Jan	21/83	Or	03144	F	80.0	5.0	5	4.3	Fresh

201	Jan	21/83	Or	03145	M	83.8	6.4	5	4.3	
202	Dec	11/82	Or	06320	F	68.6	4.5	3	R.3	Fresh
203	Dec	11/82	Or	03001	M	95.3	8.4	2	3.3	Fresh
204	Dec	12/82	Or	03002	F	76.2	5.4	2	3.3	Fresh
205	Dec	13/82	Or	03003	M	86.7	7.3	2	3.3	Fresh
206	Dec	13/82	Or	03005	M	95.3	8.4	3	R.4	Fresh
207	Dec	13/82	Or	03004	F	62.3	2.7	3	3.2	Fresh
208	Dec	13/82	Or	03006	F	58.4	2.3	3	3.2	Fresh
209	Dec	13/82	Or	03007	F	68.5	3.6	3	3.3	Fresh
210	Dec	16/82	Or	03008	M	83.8	5.6	3	3.3	
211	Dec	11/82	Or	03009	F	83.8	5.6	3	4.3	
212	Dec	30/82	Or	03010	M	71.1	3.8	3	4.2	Fresh
213	Jan	2/83	Or	03011	M	61.0	2.7	3	3.2	Fresh
214*	Jan	2/83			M	67.3		5	4.2	Dark
215	Jan	21/83			M	96.5	8.2	3	3.4	Fresh
216	Jan	18/83			M	64.0		5	3.2	Fresh
217	Nov	27/82	Or	06473	F		4.5	5	4.3	Fresh
218	Nov	27/82	Or	06474	F		4.5	5	R.3	Fresh
219	Nov	27/82	Or	06475	F		3.6	5	4.3	Fresh
220	Nov	27/82	Or	06478	M		5.0	5	4.3	Fresh
221	Nov	20/82	Or	06487	F	66.0	3.6	5	3.3	Fresh
222	Nov	20/82	Or	06488	F		5.0	5	3.3	Fresh
223	Nov	20/82	Or	06490	M		5.4	5	4.3	Dark
224	Nov	21/82	Or	06494	M		7.5	4		Dark
225	Nov	21/82	Or	06495	M		5.9	4	4.3	Dark
226	Nov	27/82	Or	06496	M		5.4	5	3.3	Dark
227	Nov	27/82	Or	06497	F		2.3	5	4.2	Fresh
228	Nov	27/82	Or	06498	M		4.1	5	R.3	Dark
229	Nov	27/82	Or	06499	M		5.4	5	R.3	Fresh
230	Nov	27/82	Or	06500	F		5.0	5	4.3	Fresh
231	Jan	24/83	Or	03146	F	73.7	4.1	5	3.3	
232	Jan	24/83	Or	03147	F	77.5	5.0	5	3.3	
233	Jan	24/83	Or	03148	M	66.0	2.5	5		Dark
234	Jan	24/83	Or	03149	M	83.8	5.9	5	3.3	
235	Jan	24/83	Or	03150	F	78.7	5.0	5	R.3	
236	Jan	24/83	Or	03151	F	76.2	4.5	5	3.3	
237	Jan	24/83	Or	03152	F	72.4	3.6	5		Dark
238	Jan	24/83	Or	03153	F	78.7	4.5	5	3.3	Fresh
239	Jan	27/83	Or	03154	F	76.2	4.5	5		
240	Jan	27/83	Or	03155	M	63.5	2.3	5	3.2	
241	Jan	27/83	Or	03156	M	81.3	5.9	5	R.3	Dark
242	Jan	27/83	Or	03157	M	66.0	2.5	5	3.2	
243	Jan	27/83	Or	03158	F	78.7	5.0	5	4.3	
244	Jan	27/83	Or	03159	F	81.3	5.4	5	3.3	
245	Jan	31/83	Or	03160	M	68.6	3.4	5	3.2	
246	Jan	31/83	Or	03161	F	78.7	5.0	5	4.3	
247	Jan	31/83	Or	03162	F	78.7	5.0	5	4.3	
248	Jan	31/83	Or	03163	F	81.3	5.4	5	3.3	
249	Jan	31/83	Or	03164	F	76.2	4.1	5	3.3	

250	Jan	31/83	Or	03165	M	78.7	4.5	5	3.3	Dark
251	Jan	31/83	Or	03166	F	76.2	4.5	5	3.3	
252	Jan	31/83	Or	03167	M	61.0	2.5	5		
253	Nov	17/82	Or	06465	F	76.2	4.5		3.3	Fresh
254	Nov	17/82	Or	06466	F	81.3	5.0		4.3	Fresh
255	Nov	17/82	Or	06472	M	86.7			4.3	Fresh
256	Jan	22/83	Or	03081	M		6.8	5		Fresh
257	Jan	22/83	Or	03082	M			5		Fresh
258	Jan	22/83	Or	03083	F		3.6	5		Fresh
259	Jan	22/83	Or	03084	M		8.2	5		Dark
260	Jan	22/83	Or	03085	M		5.4	5		Fresh
261	Jan	22/83	Or	03086	F		3.2	5		Fresh
262	Jan	22/83	Or	03087	F		5.0	4		Fresh
263	Jan	22/83	Or	03088	F		3.2	4		Fresh
264	Jan	30/83	Or	03089	F		5.4	5		Fresh
265	Jan	30/83	Or	03090	F		4.5	5		Fresh
266	Jan	30/83	Or	03091	F		5.0	4		Fresh
267	Feb	5/83	Or	03092	F		7.7	4	4.4	Fresh
268	Feb	13/83	Or	03093	F		3.2	5		Fresh
269	Feb	19/83	Or	03094	F		4.5	4	3.3	Fresh
270	Feb	19/83	Or	03095	M		7.3	4	3.4	Kelt
271	Feb	19/83	Or	03096	M		5.4	4	4.3	Fresh
272	Dec	28/82	Or	06927	M	73.7	4.5	5		
273	Dec	28/82	Or	06928	M	61.0	3.2	5	3.2	
274*	Jan	3/83			F	75.0		5	3.3	
275	Feb	17/83	Or	09576	F					
276*	Feb	17/83			M			5		
277	Feb	21/83	Or	06283	F	75.0		6	4.3	
278	Feb	21/83	Or	06281	F	71.0		6	4.3	
279	Feb	21/83	Or	06282	F	74.0		6	4.3	Kelt
280	Feb	21/83	Or	06285	F	74.0		6	3.3	Kelt
281	Feb	24/83	Or	03197	F	74.0		6	3.3	
282	Feb	24/83	Or	03198	F	80.0		6	2.3	
283	Feb	1/83			F	73.0		6	4.3	
284	Feb	1/83			F	79.0		6	4.3	
285	Feb	1/83			F	82.0		6	4.2S1	
286	Feb	22/83	Or	06284	F	80.0		6	R.3	
287	Feb	1/83	Or	06286	F	84.0		6	4.3	
288	Feb	18/83	Or	06280	M	90.0		5	4.4	
289	Feb	1/83	Or	06278	F	82.0		6	4.3	
290	Feb	1/83			M	82.0		6	3.3	
291*	Feb	1/83			F	70.0		5	3.3	
292*	Feb	18/83			F	91.0		6	4.3	Fresh
293*	Mar	3/83			F			5	3.3	Fresh
294	Mar	4/83	Or	06953	M	66.0		6	R.2	
295	Mar	1/83	Or	06974	F	76.0		4	3.3	Kelt
296	Mar	1/83	Or	03212	F	78.0		6	4.3	Kelt
297	Mar	1/83	Or	03208	F	62.0		6	3.3	Fresh
298	Mar	1/83	Or	03203	M	75.0		6	3.3	Dark

299	Mar	1/83	Or	03204	F	70.0		6	3.3	Fresh
300	Mar	1/83	Or	03205	F	76.0		6	3.3	Kelt
301	Mar	1/83	Or	03206	F	74.0		6	3.3	Kelt
302	Mar	1/83	Or	03211	M	79.0		6	4.3	Dark
303	Mar	1/83	Or	03199	M	80.0		6	3.3	Dark
304	Mar	1/83	Or	03200	M	61.0	2.5	6	2.2	Dark
305	Mar	4/83	Or	06954	F	62.0		4	3.2	
306	Mar	4/83	Or	06955	M	76.0		4	3.3	Dark
307	Mar	4/83	Or	06952	F	76.0		4	4.3	
308	Mar	4/83	Or	03222	F	76.0		4	3.3	
309	Mar	4/83	Or	03221	M	72.0		4	4.1S1	
310	Mar	4/83	Or	03220	M	69.0		4	R.2	
311	Mar	3/83	Or	03217	F	65.0		5	4.2	Fresh
312	Mar	3/53	Or	03218	F	82.0		5	3.3	Fresh
313	Mar	3/83	Or	03219	F	78.0		5	3.3	Fresh
314	Mar	2/83	Or	06951	F	63.5		6	4.2	
315	Mar	2/83	Or	03215	F	73.0		6	4.3	Kelt
316	Mar	2/83	Or	03216	F			6		Kelt
317	Mar	2/83	Or	03210	F	66.5		6	4.2	Fresh
318	Mar	4/83	Or	03223	M	86.0		4	4.4	
319	Mar	1/83	Or	03201	M	93.0		6	3.4	Dark
320	Mar	2/83	Or	03209	F	76.0		6	3.3	
321	Mar	1/83	Or	03213	M	83.0		6	4.3	Dark
322	Mar	1/83	Or	03214	F	83.0		6	4.3	Fresh
323	Mar	1/83	Or	03207	M	84.0		6	3.3	
324	Mar	1/83	Or	03202	M	84.0		6	3.3	Dark
325	Apr	7/83	Or	06929	M	71.1	5.0	2	R.3	
326	Jan	18/83	Or	03101	M	78.7	5.4	3	3.3	Fresh
327	Dec	18/82			M	69.0			4.2	
328	Oct	22/83			F	76.0			4.3	
329	Nov	19/82			F	78.0			R.3	
330	Nov	19/82			M	82.0			3.3	
331	Nov	19/82			M	78.0			3.3	
332	Nov	19/82			F	76.0			4.3	
333	Dec	9/82			F	78.0			4.3	
334	Dec	9/82			M	84.0			4.3	
335	Dec	9/82			M	62.0			4.2	
336	Oct	22/82			F	77.0		3	4.1S1	
337	Oct	22/82			M	70.0		3	4.2	
338	Oct	22/82			M	79.0		3	3.1S1	
339	Oct	22/82			F	75.0		3	4.3	
340	Oct	21/82			M	97.0	8.6	3	3.3	Dark
341	Oct	27/82			F	80.0			4.3	
342	Nov	4/82			F	70.0			4.3	
343	Nov	4/82			F	80.0			4.3	
344	Nov	4/82			M	65.0			4.3	
345	Nov	5/82			F	83.0			4.3	
346	Nov	5/82			F	76.0			4.3	
347	Nov	18/82			F	77.0			3.3	

348	Nov	18/82		M	82.0		3.3
349	Nov	1/82		M	94.0	9.7	4.2S1

APPENDIX II. Yakoun River 1982-83 winter steelhead repeat captures
* = killed

Fish Number	Tag Colour and Number	Sex	Original Capture Date	Original Capture Zone	Repeat Capture I Date	Repeat Capture I Zone	Repeat Capture II Date	Repeat Capture II Zone	Time Between Captures (days)	Distance km
10	Or 06457	F	Nov 7/82		Nov 10/82	5			3	-.1
25	Or 06250	F	Nov 18/82	5	Nov 19/82	5	Jan 22/83	5		0
126	Or 06475	M	Dec 19/82		Dec 20/82	5			1	
124	Or 06486	F	Dec 21/82		Jan 3/83	5				
--	28096	I	?		Jan 4/83	5				
157	Or 03066	M	Jan 3/83	5	Jan 4/83	5			1	0
226	Or 06496	M	Nov 27/82		Dec 20/82	5				
33	Or 06259	F	Nov 19/82		Dec 20/82	5				-.6
228	Or 06498	M	Nov 27/82		Dec 15/82	5	May 15/83	net fishery		
149	Or 03036	F	Dec 21/82		Jan 13/83	5				
178	Or 06224	M	Jan 17/83	5	Jan 17/83	5	Jan 18/83*			
129	Or 06564	F	Dec 20/82		Jan 18/83*	5				
136	Or 06571	F	Dec 20/82		Jan 21/83	5				
198	Or 03142	F	Jan 18/83	5	Jan 18/83	5	Jan 22/83	5	4	0
34	Or 06260	M	Nov 19/82		Nov 20/82	5				
227	Or 06497	F	Nov 27/82		Nov 27/82	5			0	0
76	Or 06310	F	Dec 4/82		Jan 24/83	5				
131	Or 06566	M	Dec 20/82		Jan 24/83	5				
257	Or 03082	M	Jan 22/83		Jan 24/83	5				
63	Or 06201	F	Nov 19/82		Jan 27/83	5				
244	Or 03159	F	Jan 27/83		Jan 31/83	5				
251	Or 03166	-	Jan 31/83	5	Jan 31/83	5				
132	Or 06567	F	Dec 20/82		Dec 21/82	5			0	0
138	Or 06573	F	Dec 20/83		Dec 21/82	5			1	0
11	Or 06458	F	Nov 7/82		Dec 28/82	5	Mar 1/83	6		
258	Or 03083	F	Jan 22/83		May 15/83	net fishery				
168	Or 06221	F	Jan 13/83		May 15/83	net fishery				
115	Or 06290	M	Dec 10/82		Mar 1/83	6				
162	Or 03056	F	Jan 4/83		Mar 1/83	6				
133	Or 06568	M	Dec 20/82		Mar 1/83	6				
157 (1982)	Or 00717	F	Jan 30/82	6	Mar 3/83	6				

310	Or	03220	M	Mar	4/83	6	Mar	4/83	6		
TOTAL								32 2 (net fishery)		4 1(net fishery)	