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**Synopsis of the 1996 Fishery for Iceland Scallops in
NAFO Div. 4R (Strait of Belle Isle)**

by

K. S. Naidu, F. M. Cahill, P. J. Veitch, and E. M. Seward
Science Branch
Department of Fisheries and Oceans
P. O. Box 5667
St. John's NF A1C 5X1

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¹ La présente série documente les bases scientifiques des évaluations des ressources halieutiques du Canada. Elle traite des problèmes courants selon les échéanciers dictés. Les documents qu'elle contient ne doivent pas être considérés comme des énoncés définitifs sur les sujets traités, mais plutôt comme des rapports d'étape sur les études en cours.

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Abstract

There were no research surveys for scallops in this area in 1996. In the absence of new research information, it was possible to examine fishery performance data only.

In spite of evidence of appreciable recruitment (1995) research vessel survey, catch rates have been maintained over the last few years, likely as a result of exploiting new aggregations of scallops. The fishery continues to operate over areas that are also nursery grounds for scallops, possibly impairing recruitment. It is recommended that the TAC in 1997 not exceed the 1996 level of 1200 t round.

Résumé

Aucune recherche sur les pétoncles n'a eu lieu dans la région en 1996. Faute de nouvelles données de recherche, on a seulement examiné les données sur le rendement de la pêche.

Même si un relevé effectué à partir d'un navire de recherche a indiqué un taux de recrutement appréciable (1995), les taux de capture se sont maintenus au cours des dernières années, probablement à cause de l'exploitation de nouveaux gisements de pétoncles. La pêche se poursuit dans des zones qui sont aussi des nourrisseries de pétoncles, ce qui réduit vraisemblablement le recrutement. Il est recommandé que le TAC (total admissible des captures) en 1997 ne dépasse pas le TAC de 1996, à savoir 1 200 tonnes (poids entier).

The Fishery

From its inception nominal effort in the day-fishery in the Strait of Belle Isle was based on price and availability of scallops relative to other species. Four strong peaks in landings are evident: 1972-73, 1980-81, 1984-86, and 1992-94 (Fig. 1). In the past, each peak was followed by several consecutive years of poor catches. The sharp increase in landings in 1972 and 1973 was concomitant with a changeover to 2.5" rings from 3.0" rings in scallop rakes. The widespread use of the more efficient "Labrador rake" beginning in the mid-1980's also contributed to the higher landings thereafter as did record prices and exploitation of new grounds.

Beginning in 1991, the bulk of the fishery returned south of $51^{\circ}25'N$ to beds once considered most prolific. Scallop aggregations here apparently had recovered following an extended fallow period.

Nominal fishing effort increased dramatically between 1990 (11 vessels) and 1994 (80 vessels) but declined in 1995 (43 vessels) (Table 1). Overall catch rates in 1994 dropped by 30% from 1993. As well, within season catch rates in the core area south of $51^{\circ}25'N$ had declined 17% from 89 lb/tow to 74 lb/tow.

Catch rates in this area experienced a further decline of 32% in 1995 from the 30% reduction already noted between 1993 and 1994. Catch rates for the total fishery show similar declines (Table 2). Also, fishing effort had become increasingly dispersed. The pattern of decline shown by the CPUE data had been corroborated by a number of stakeholders directly involved in the fishery.

1996 Fishery

The fishing zone in Div. 4R was simplified in 1996 to include all areas north of Ferrole Point (14A). The fishery commenced June 3, with much of the removals occurring in the July-August period (Table 3). As previously reported (Naidu et al. 1966) vessels under 35 ft LOA continue to outperform larger vessels in the 35-44 ft and 45-54 ft categories with vessels ≥ 55 ft realizing the best CPUEs (Table 4). The TAC of 1,200 t round was taken by mid-September. An exploratory area to the south of $51^{\circ}25'$ with a pre-emptive TAC of 200 t had also been proposed. However, there was little interest in this area.

Overall fishery performance for the entire Strait was up slightly (13%) from the previous year (71 versus 63 lb/tow). As in 1995, effort had also been directed into coastal aggregations just south of Quebec, an area that had not been included in the 1995 research survey (Fig. 2). At that time we had estimated Iceland scallop biomass at 10,000-14,000 t ($\bar{x} = 12,000$ t round). A 10% exploitation rate is considered appropriate for this slow growing species. We had suggested a catch in 1996 in the range of 1,000-1,400 t.

An industry/DFO advisory meeting was held in April. When asked for their view on the level of catch for 1996, the fishers proposed a catch of 1,200 t for the total area north of Ferrole Point. They realized the current state of stock but at the same time recognize there are no alternative species for them.

Research

Nil. Port sample data were assembled by a designated port sampler at site. This was restricted to the determination of shell heights only (N = 1192).

Outlook

The residual biomass continues to be made up of old scallops (Fig. 3). Moreover, there appears to be a shift in 1996 towards smaller-sized scallops (Fig. 4). With low recruitment throughout (1994) there is little potential for growth in the standing stock. Also rebuilding of the stock may be hampered by the fact that the fishery continues to operate over areas that are also nursery grounds for recently settled scallops. Spat (seed scallops) are particularly vulnerable to intense fishing activity. In 1996 the fishing fleet completed 35,634 tows (half to one-mile tows) traversing some 18,000-35,000 linear miles!

References

Naidu, K. S., F. M. Cahill, and E. M. Seward. 1996. Abundance of Iceland scallops in NAFO Div. 4R (Strait of Belle Isle) declines further in 1995.

Table 1. Iceland scallop landings and effort statistics¹ from the northern Gulf of St. Lawrence/Strait of Belle Isle. A species-specific conversion factor of 9.2 is used throughout.

Year	Landings (t, round)	No. of active licences	Effort (boat days)	Catch per unit effort (unadjusted)	
				kg (round) /boat/day	t (round) /boat/year
1969	248	-	-	-	-
1970	192	-	-	-	-
1971	167	-	-	-	-
1972	2596	-	-	-	-
1973	2189	-	-	-	-
1974	244	24	269	907	10.7
1975	-	-	-	-	-
1976	-	-	-	-	-
1977	-	-	-	-	-
1978	-	-	-	-	-
1979	450	16	459	981	28.1
1980	1133	14	774	1463	80.9
1981	1530	24	1262	1212	63.3
1982	349	24	413	845	14.5
1983	371	23	485	765	16.1
1984	1523	46	1272	1197	33.1
1985	2546	107	2887	882	23.8
1986	1942	88	2270	856	22.1
1987	1141	57	n/a	-	20.0
1988	447	30	n/a	-	14.9
1989	155	14	n/a	-	11.1
1990	88	11	n/a	-	8.0
1991	457	24	n/a	-	19.0
1992	1296	72	n/a	-	18.0
1993	2122	71	n/a	-	29.9
1994	2294	80	2769	828	28.7
1995	1497	43	2113	708	34.8
1996	1204	46	1385	869	26.2

n/a = not available

¹ Sources of landing and effort statistics:
 1969-81: CAFSAC Res. Doc. 82/02
 1982-83: CAFSAC Res. Doc. 86/77
 1984-90: Can. MS Rept. 2154
 1990-92: Science Branch, Gulf Region
 1993: Statistics Branch, Newfoundland Region
 1994-96: Science Branch, Newfoundland Region

Table 2. CPUE estimates for the Iceland scallop fishery in the northern Gulf of St. Lawrence, 1994-96.

Year	Month	Removals (t, round)	Fishing days	CPUE (lb/tow)
1994	May	1.6	3	47
	June	822.9	936	83
	July	1,004.5	1,192	78
	August	252.1	369	63
	September	211.9	266	65
	October	1.1	3	64
	TOTALS		2,294.2	2,769
1995	June	259.9	352	62
	July	506.7	697	63
	August	477.5	627	66
	September	234.5	391	57
	October	18.6	46	50
	TOTALS		1,497.1	2,113
	% change 1994-95	-35%	-24%	-17%
1996	June	374.8	460	64
	July	476.1	532	71
	August	331.9	363	81
	September	20.4	29	73
	October	0.8	1	74
	TOTALS		1,204.1	1,385
	% Change 1995-96	-20%	-34%	+13%

Table 3. Iceland scallop catch rates (non-standardized) for in the northern Gulf of St. Lawrence, 1996.

Work	Dates	Removals (t, round)	Fishing days	CPUE (lb/tow)
1	June 3-9	81.9	117	58.6
2	June 10-16	99.0	119	64.7
3	June 17-23	91.5	112	66.3
4	June 24-30	102.4	112	67.0
5	July 1-7	91.5	109	68.2
6	July 8-14	123.3	118	76.3
7	July 15-21	104.6	132	66.8
8	July 22-28	117.4	119	72.1
9	July 29-Aug. 4	94.5	114	74.0
10	Aug. 5-11	100.6	118	77.5
11	Aug. 12-18	117.3	121	80.5
12	Aug. 19-25	53.5	61	82.9
13	Aug. 26-Sept. 1	5.3	3	193.1
14	Sept. 2-8	10.6	13	96.2
15	Sept. 9-15	9.7	15	61.3
16	Sept. 16-22	0.1	1	6.1
17	Sept. 23-29	-	0	-
18	Sept. 30-Oct. 6	-	0	-
19	Oct. 7-13	0.8	1	73.6
	1996 Overall	1,204	1,385	70.7

Table 4. Estimates of CPUE's (lbs/tow) by vessel size class (LOA) for the Iceland scallop fishery in the northern Gulf of St. Lawrence, 1996.

Week	Dates	<35'	35-44'	45-54'	55-64'	Combined
1	June 3-9	80.4	55.9	49.3	-	58.6
2	June 10-16	79.6	65.7	52.0	-	64.2
3	June 17-23	100.5	65.2	50.7	-	66.3
4	June 24-30	101.2	61.8	52.2	-	67.0
5	July 1-7	98.2	59.7	61.1	-	68.2
6	July 8-14	117.5	66.2	58.8	-	76.3
7	July 15-21	98.1	62.7	55.4	-	66.8
8	July 22-28	95.6	69.2	63.6	82.9	72.1
9	July 29-Aug. 4	105.1	67.0	63.8	102.8	74.0
10	Aug. 5-11	122.8	61.6	65.6	145.6	77.5
11	Aug. 12-18	111.5	73.4	69.1	76.7	80.5
12	Aug. 19-25	108.2	76.9	73.8	-	82.9
13	Aug. 26-Sept. 1	-	193.1	-	-	193.1
14	Sept. 2-8	82.3	129.3	-	-	96.2
15	Sept. 9-15	66.7	53.6	-	-	61.3
16	Sept. 16-22	-	6.1	-	-	6.1
17	Sept. 23-29	-	-	-	-	-
18	Sept. 30-Oct. 6	-	-	-	-	-
19	Oct. 7-13	73.6	-	-	-	73.6
	1996 Overall	99.8	65.5	58.3	119.9	70.7
	1995 Overall	60	58	52	60	57
	No. of vessels	12	18	14	2	46
	% of weight removed	30%	44%	26%	1%	100%

FIG.1. LANDINGS FOR NORTHERN GULF OF ST. LAWRENCE/STRAIT OF BELLE ISLE - 1969-1996

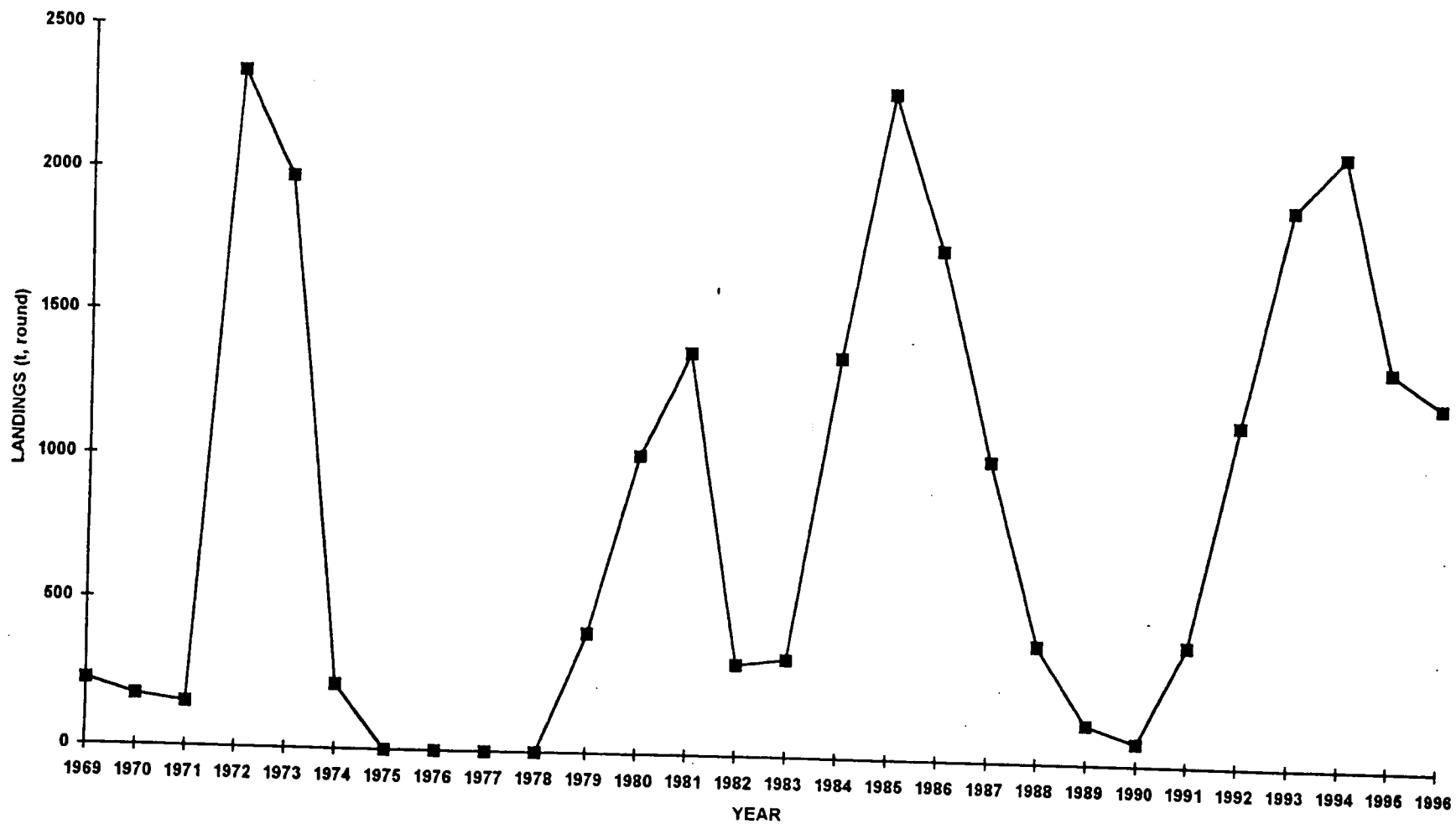


Fig. 2. Survey coverage in 1995 (open circles) relative to distribution of fishing effort in 1995 and 1996.

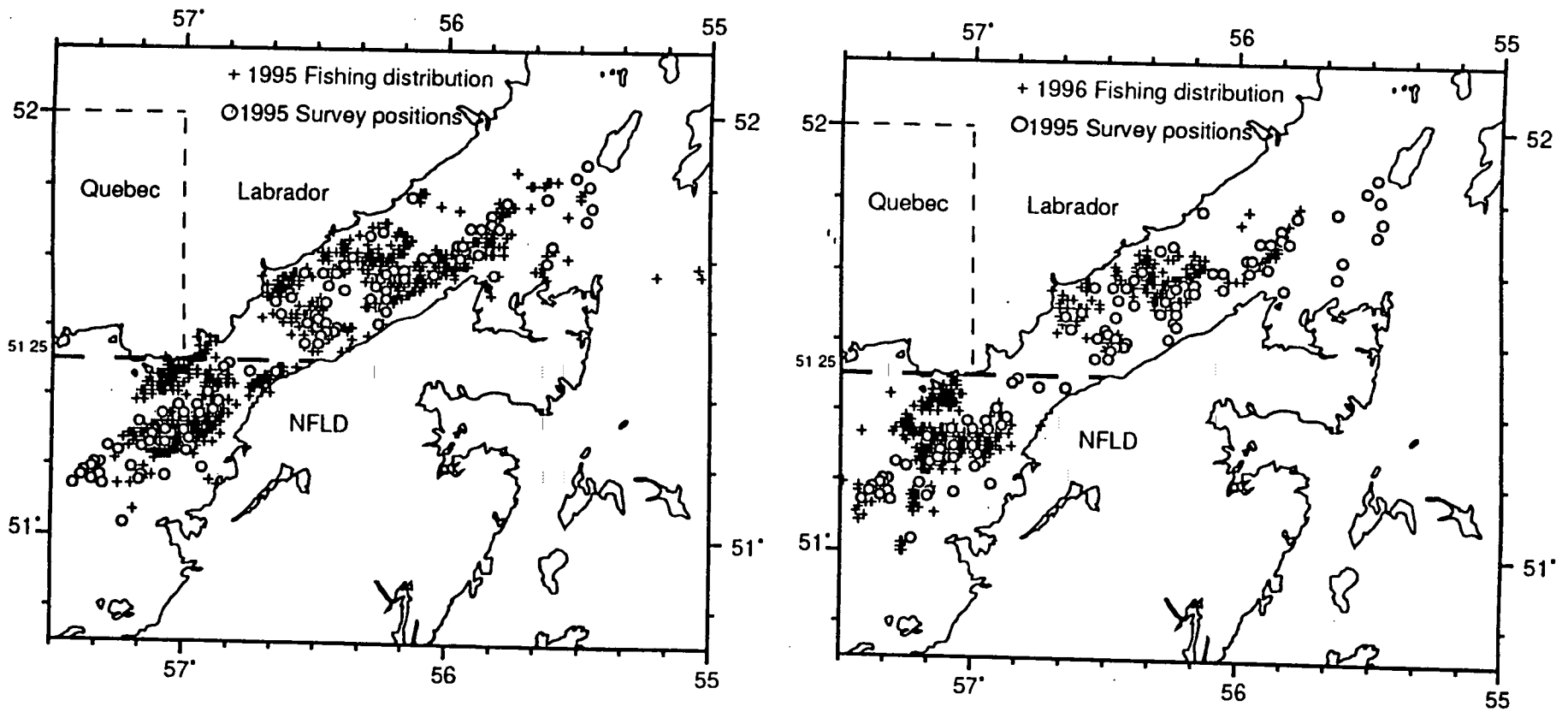


Fig. 3. Research and commercial shell-height frequencies in the Iceland scallop, Northern Gulf of St. Lawrence, 1995

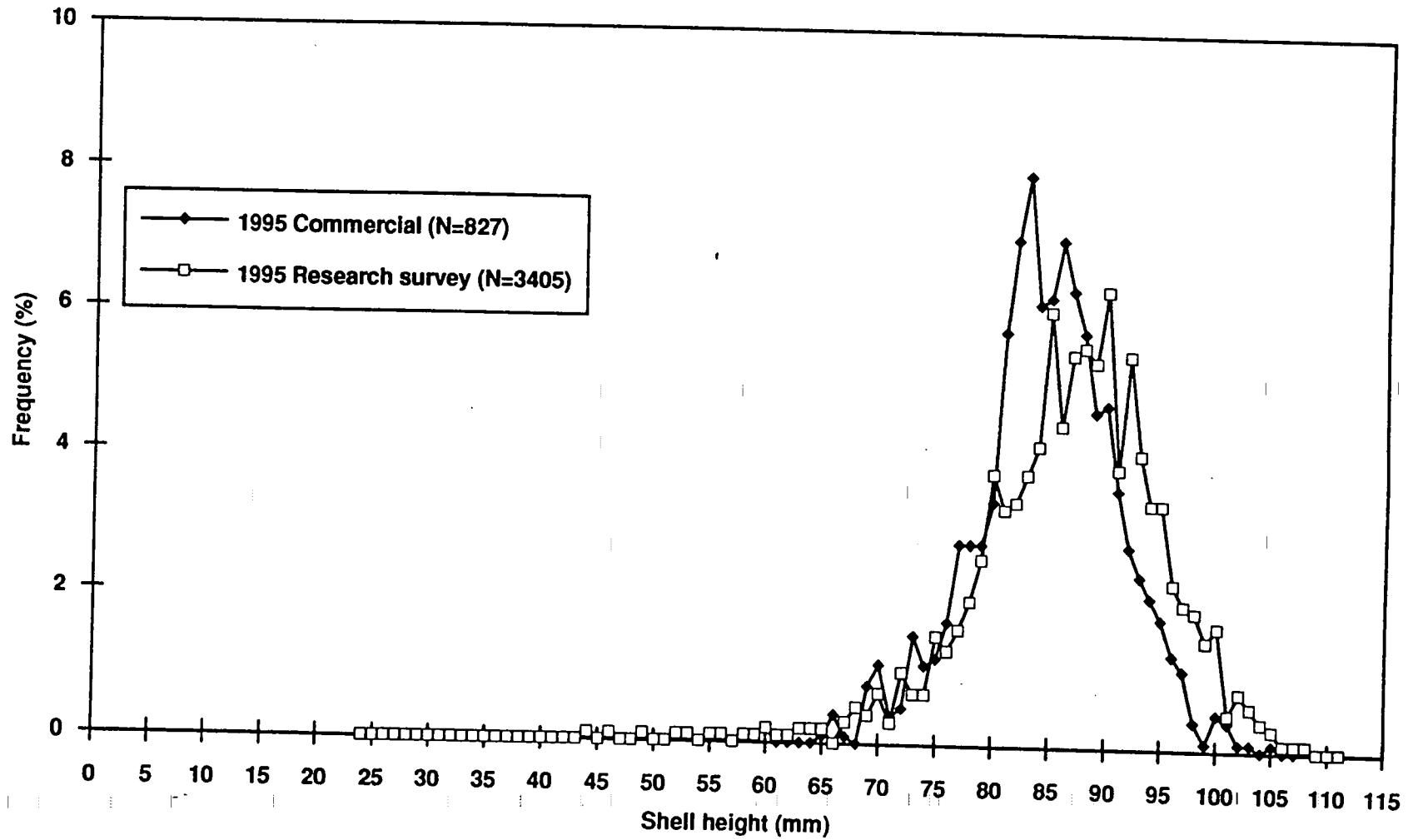


Fig. 4. Commercial shell height frequencies in the Iceland scallop, Northern Gulf of St. Lawrence, 1995 - 1996

