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Update of Redfish Status for 1975 in ICNAF Subarea 5

by

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This paper presents updated information through 1975 for redfish in ICNAF Subarea 5 (Mayo, 1975).

Commercial Fishery

Redfish landings of 10,674 MT from Subarea 5 in 1975 were approximately equal to the 1974 level (Table 1). As in previous years, most of this catch was taken from Division 5Y. The catch per unit of effort index based on U.S. vessels landings 50% or greater redfish declined once again in 1975, continuing a trend evident since 1968 (Table 3). This drop in catch per unit of effort coupled with a stabilized total catch resulted in an increase in the calculated total effort in Subarea 5.

A plot of the 1974 and 1975 catch and effort levels on the yield curve used in Res. Doc. 75/59 to determine the TAC is presented in Figure 1. Using the Method of Walter (1975), the estimated TAC's desired to rebuild the stock fall between 9,000 and 13,000 metric tons. Commercial length frequencies show a continued rise in mean length of both males and females indicating little or no recruitment to the exploitable population in 1975 (Table 4, Figure 2).

Research Vessel Surveys

Data from autumn research cruises of ALBATROSS IV from 1963 to 1975 are presented in Table 5. Catch per tow indices show a sharp increase in abundance in the offshore strata and a slight increase in abundance in the inshore strata in 1975. Length frequencies (Figure 3) indicate that this increase in the offshore strata may be attributed primarily to increases in fish in the 30-40 cm size group.

This increase in the survey catch per tow index, however, was not reflected in the commercial catch per unit of effort index which dropped from 5.0 to 4.0 metric tons per day between 1974 and 1975.

Improved recruitment in the upcoming years is indicated by the survey length frequency data (Figure 3).

Since 1971, a mode of pre-recruit fish has been increasing in size to between 16 and 22 cm in 1975. Redfish in this length mode were also beginning to appear in the commercial length sample data in 1974 and 1975. The recruitment of these fish to the commercial fishery should continue for the next few years.

#### References

- Mayo, R. K. 1975. A preliminary assessment of the redfish fishery in ICNAF Subarea 5. Int. Comm. Northw. Atl. Fish. Res. Doc. 75/59.
- Walter, G. G. 1975. Nonequilibrium regulation of fisheries. Int. Comm. Northw. Atl. Fish. Res. Doc. 75/X/131.

Table 1. Total landings of redfish by country from ICNAF Subarea 5 (metric tons, live).

Year	Canada	USSR	Poland	Other Non-US	Total Non-US	USA	Subarea 5 Total
1934						519	519
1935						7549	7549
1936						23162	23162
1937						14823	14823
1938						20638	20638
1939						25401	25401
1940						26762	26762
1941						59783	59783
1942						55892	55892
1943						48348	48348
1944						50439	50439
1945						37912	37912
1946						42423	42423
1947						40613	40613
1948						43631	43631
1949						30743	30743
1950						34307	34307
1951						30077	30077
1952						21377	21377
1953						16791	16791
1954						12988	12988
1955						13914	13914
1956						14388	14388
1957						18490	18490
1958	4				4	16043	16047
1959						15521	15521
1960	2				2	11373	11375
1961	25	11			36	14040	14076
1962	3	1590			1593	12541	14134
1963	89	1086			1175	8871	10046
1964	56	445			501	7812	8313
1965	68	968	25	10	1071	6986	8057
1966	420	999	6		1365	7204	8569
1967	194		215	13	422	10442	10864
1968	197			2	199	6578	6777
1969	260	15	56	82	413	12041	12454
1970	338		30	839	1207	15534	16741
1971	269	3394	84	20	3767	16267	20034
1972	124	5639	1	174	5938	13157	19095
1973	68	5240	28	70	5406	11954	17360
1974	59	1705	2	28	1794	8692	10486
1975	168	1407	1	23	1599 <sup>1</sup>	9075	10674

<sup>1</sup>1975 total non-US catch preliminary.

Table 2. Total catch of redfish from ICNAF divisions 5Y and 5Z (metric tons, live).

Year	5Y			5Z			Subarea 5 Total
	U.S.	Other	Total	U.S.	Other	Total	
1954	11561	-	11561	1427	-	1427	12988
1955	11132	-	11132	2782	-	2782	13914
1956	10678	-	10678	3710	-	3710	14388
1957	14471	-	14471	4019	-	4019	18490
1958	13900	4	13904	2143	-	2143	16047
1959	12438	-	12438	3083	-	3083	15521
1960	9321	2	9323	2052	-	2052	11375
1961	12457	-	12457	1583	36	1619	14076
1962	10196	-	10196	2345	1593	3938	14134
1963	6785	44	6829	2086	1131	3217	10046
1964	6137	2	6139	1675	499	2174	8313
1965	5045	51	5096	1941	1020	2961	8057
1966	4719	292	5011	2485	1073	3558	8569
1967	6746	75	6821	3696	340	4036	10857
1968	4062	22	4084	2516	177	2693	6777
1969	9640	25	9665	2401	314	2715	12380
1970	13551	159	13710	1983	1048	3031	16741
1971	12541	121	12662	3726	3466	7192	20034 (1)
1972	7150	94	7244	6007	5844	11851	19905
1973	7001	11	7012	4953	5395	10348	17360
1974	5457	43	5500	3220	1751	4971	10471
1975(2)	5961	50	6011	3114	1549	4663	10674

(1) Includes unallocated subarea 5NK catches  
(2) 1975 Data preliminary

Table 3. Catch and Catch/Effort statistics (Metric Tons, live) and Effort (days fished) for Subarea 5 redfish.

Year	U. S. Catch	Calculated U. S. Effort	U. S. C/E	Non-US Catch	Total Catch	Calculated Total Effort
1942	55892	8100	6.9		55892	8100
1943	48348	7216	6.7		48348	7216
1944	50439	9341	5.4		50439	9341
1945	37912	8425	4.5		37912	8425
1946	42423	9026	4.7		42423	9026
1947	40613	8288	4.9		40613	8288
1948	43631	8080	5.4		43631	8080
1949	30743	9316	3.3		30743	9316
1950	34307	8368	4.1		34307	8368
1951	30077	7336	4.1		30077	7336
1952	21377	6108	3.5		21377	6108
1953	16791	4419	3.8		16791	4419
1954	12988	3820	3.4		12988	3820
1955	13914	3092	4.5		13914	3092
1956	14388	3270	4.4		14388	3270
1957	18490	4300	4.3		18490	4300
1958	16043	3646	4.4	4	16047	3647
1959	15521	3610	4.3		15521	3610
1960	11373	2984	3.8	2	11375	2993
1961	14040	3057	4.6	36	14076	3060
1962	12541	2322	5.4	1593	14134	2617
1963	8871	2164	4.1	1175	10046	2450
1964	7812	1817	4.3	501	8313	1933
1965	6986	998	7.0	1071	8057	1151
1966	7204	616	11.7	1365	8569	732
1967	10442	842	12.4	422	10864	876
1968	6578	447	14.7	199	6777	461
1969	12041	1056	11.4	413	12454	1086
1970	15534	1726	9.0	1207	16741	1773
1971	16267	2324	7.0	3767	20034	2862
1972	13157	2308	5.7	5938	19095	3350
1973	11954	2256	5.3	5406	17360	3275
1974	8677	1735	5.0	1794	10486	2097
1975	9075	2269	4.0	1599 <sup>1</sup>	10674	2668

<sup>1</sup>1975 non-US catch preliminary.

Table 4. Subarea 5 redfish landings by weight (Metric tons, live) and estimated numbers landed (1000's of fish) by sex.

Year	MALES				FEMALES				Sex Ratio <sup>1/</sup> Male/Female
	Est. Landings Metric tons	Est. Landings Number Landed (1000's)	Mean Length (cm)	Mean Weight (lbs)	Est. Landings Metric tons	Est. Landings Number Landed (1000's)	Mean Length (cm)	Mean Weight (lbs)	
1965	3124	17,409	24.3	0.40	3852	13,199	28.4	0.64	1.319
1966	2941	13,339	25.0	0.49	4134	13,126	29.1	0.69	1.016
1967	4074	17,685	26.4	0.51	6273	18,877	29.6	0.73	0.937
1968	2681	11,197	26.7	0.53	3892	11,374	30.0	0.75	0.984
1969	4456	17,827	27.1	0.55	7533	20,156	30.8	0.82	0.884
1970	5745	25,053	26.3	0.51	9786	29,584	29.6	0.73	0.847
1971	5470	18,019	28.8	0.67	10768	24,511	32.4	0.97	0.735
1972	4580	14,950	28.9	0.68	8550	18,223	33.1	1.03	0.820
1973	4193	15,543	27.7	0.59	7711	16,806	32.8	1.01	0.925
1974	2999	10,113	28.6	0.65	5673	11,295	33.8	1.11	0.895
1975	3169	10,011	29.2	0.70	5897	10,864	34.7	1.20	0.921

<sup>1/</sup> Calculated from Est. Number Landed.

Table 5. Stratified mean number per tow indices for Subarea 5 redfish from fall survey cruises of *Albatross IV*.

Year	Inshore <sup>1</sup> strata		Offshore <sup>2</sup> strata		Total <sup>3</sup> Subarea 5	
	No./tow	Wt./tow	No./tow	Wt./tow	No./tow	Wt./tow
1963	86.3	16.8	87.5	59.5	89.9	53.1
1964	81.4	29.7	122.4	136.3	116.3	120.5
1965	189.5	49.1	33.9	25.2	57.0	28.8
1966	172.8	37.5	77.8	68.8	91.9	64.1
1967	63.0	11.8	107.1	60.9	100.5	53.6
1968	41.1	10.3	161.3	102.8	143.4	89.1
1969	105.9	35.3	65.2	54.7	71.2	51.8
1970	18.2	6.2	107.2	84.2	94.0	72.6
1971	20.7	10.5	52.8	58.8	48.0	51.6
1972	36.4	14.6	58.9	61.2	55.6	54.3
1973	26.2	4.6	41.4	43.3	39.2	37.6
1974	44.2	10.4	49.0	60.8	48.3	53.3
1975	45.7	13.2	79.9	101.1	74.8	88.1

<sup>1</sup>Strata 26, 27, 39, 40

<sup>2</sup>Strata 24, 28-30, 36-38

<sup>3</sup>Strata 24, 26-30, 36-40

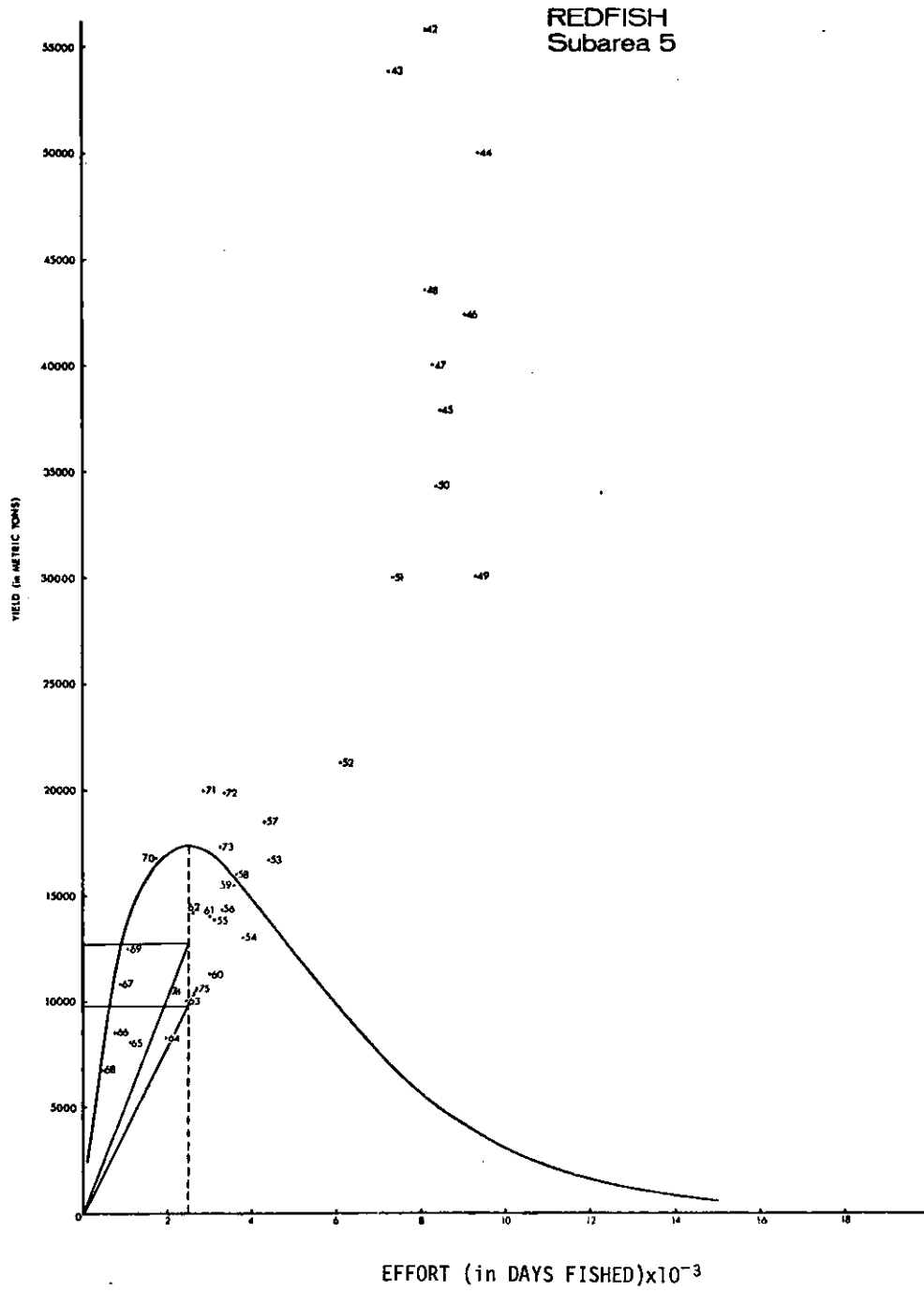


Fig. 1. Gompertz yield curve for Subarea 5 redfish.

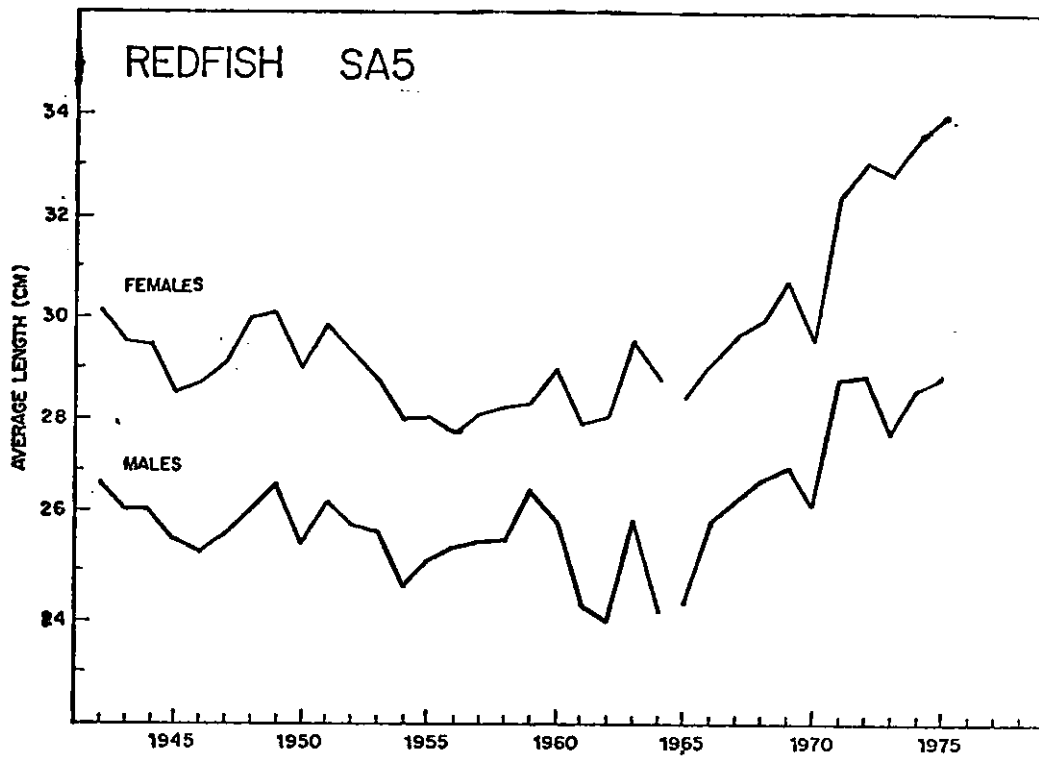


Figure 2. Mean length of male and female redfish from the U.S. Subarea 5 commercial fishery.



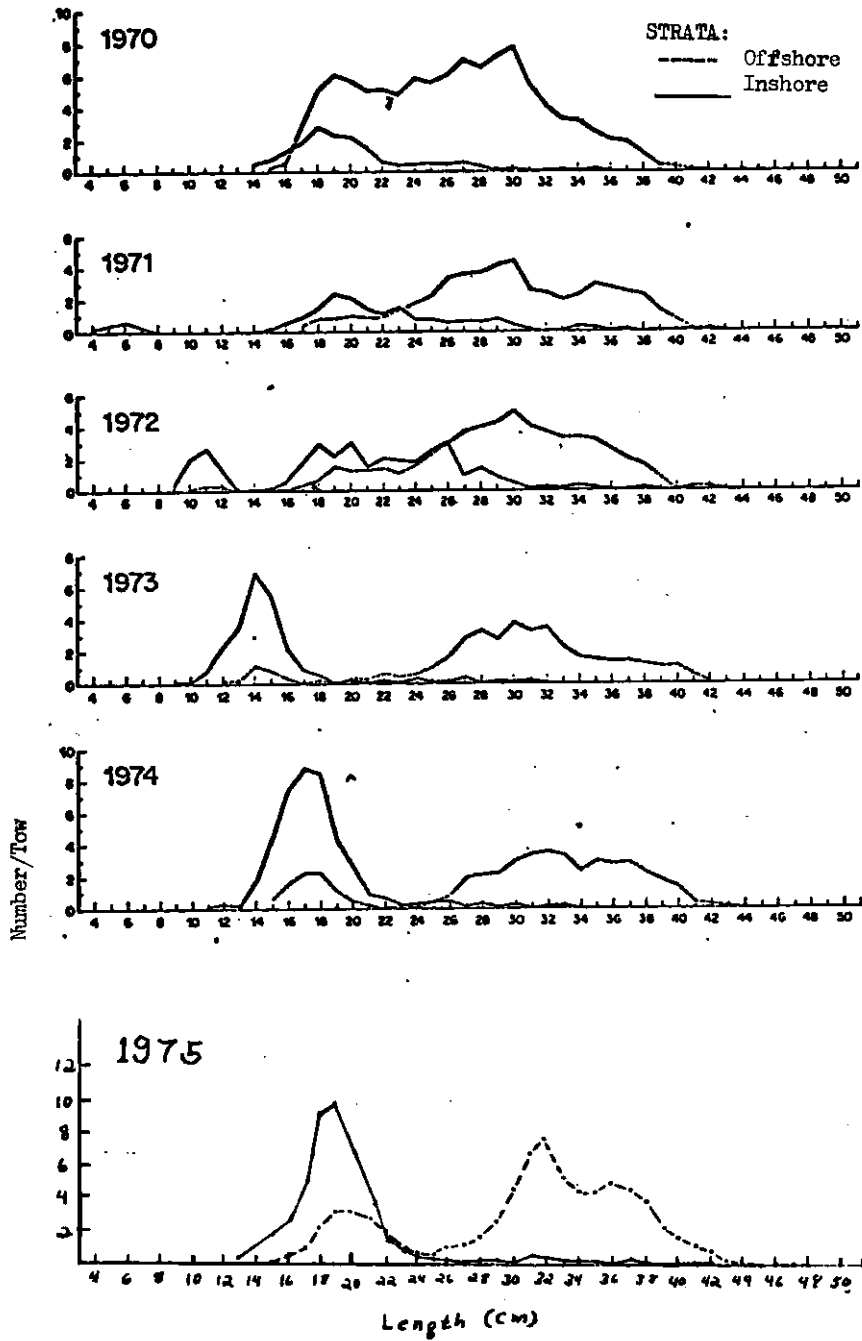


Figure 3. Length frequency of redfish in inshore and offshore strata from fall survey cruises of Albatross IV.

