DECREASED ABUNDANCE OF LONG-FINNED SQUID (LOLIGO PEALEI) OFF THE NORTHEASTERN USA

by

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The stratified mean catch per tow of long-finned squid (Loligo pealei), during the 1978 autumn bottom trawl survey of the Northeast Fisheries Center, was significantly lower than during recent years for the area off the Northeastern USA (Cape Hatteras to Nova Scotia). Summary results for long-finned squid for each autumn survey since 1968 are given in Table 1. The decrease in abundance was most severe for the Mid-Atlantic and Southern New England area, although a declining trend since the mid 1970's is evident for all areas. The abundance in 1975-1976 was the highest observed during the brief time series of data. Although survey indices are not available for the pre-1968 period, as squid were only generally noted in survey catches rather than sorted to species and counted, these were at lower levels than observed in the period of peak catches. Thus the 1978 level of abundance is more representative of the abundance during the late 1960's and early 1970's. Only in the Gulf of Maine is the 1978 level of abundance lower than all other previous observations. For all areas combined, the 1978 value is the second lowest of the 11 observations. However, given the qualitative information available prior to 1968 the proper interpretation may be that it is a return to more usual abundance levels.

Most long-finned squid taken in the autumn survey are small (averaging about 13.5 g) individuals which have not yet been recruited to the fishery. These will generally make up the bulk of the foreign offshore fishery during

winter, and the domestic inshore fishery during the following spring and summer. However, even with the relatively high abundances in the autumn of 1976 and 1977, availability to the commercial fishery and the research surveys in the spring of 1977 and 1978, were lower than during the early and mid 1970's. Apparently, the overwintering survival of long-finned squid has been poor in recent years. The factors responsible for the decline in abundance (and overwintering survival) during recent years or responsible for the increase in the early and mid 1970's are unknown.

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Stratified mean number per tow of Loligo pealei in USA autumn bottom trawl surveys, by area and all areas combined, 1968-1978.

	Stratified mean numbers per tow			
	So. New England	Georges Bank	Gulf of Maine	All Areas Combined
1968	267.6	10.7	.1	124.8
1969	347.5	36.7	.4	167.9
1970	105.4	49.4	1.5	60.9
1971	234.2	34.1	.6	115.6
1972	398.9	39.3	.2	191.9
1973	542.9	60.9	.9	263.3
1974	355.9	62.1	.8	178.2
1975	895.5	102.6	.8	434.6
1976	579.8	103.5	12.7	294.2
1977	577.9	43.8	.8	274.9
1978	185.2	45.4	.04	95.9