

## FLUCTUATIONS IN MAINE SHRIMP LANDINGS

By Robert L. Dow\*

Off the New England coast, catches of the northern shrimp (*Pandulus borealis*) are made during the winter on spawning areas within a 50-mile radius of Boothbay Harbor, Maine, by small draggers operating from nearby ports. Landings have fluctuated widely from year to year and appear to be related to abundance. No shrimp were caught from 1954 through 1957. During the peak season of 1944/1945 more than one-half million pounds were landed.

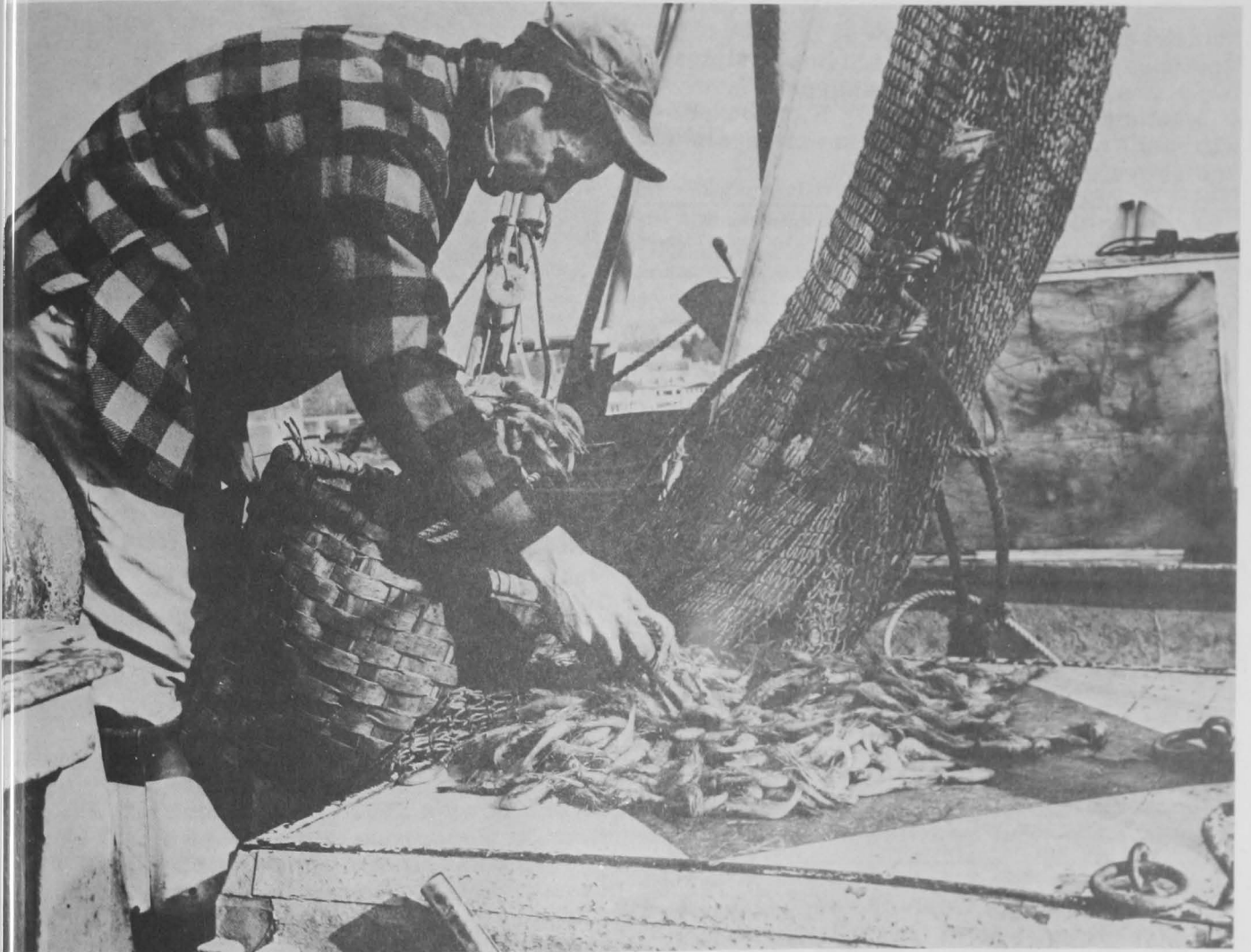


Fig. 1 - Sorting out northern shrimp caught off the Maine coast.

Abundance, in turn, appears to be related to seawater temperature, especially during the peak of spawning when shrimp are sufficiently concentrated to be of commercial interest. Analyses of temperature and catch data support this assumption.

March is the principal fishing month and accounts for nearly 65 percent of the landings during the 23 seasons of record.

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Rasmussen (1953) found that mature females of this species from the Oslo Fjord ranged from 24 to 28 months of age when they were about 4 inches in length. Maine fishermen generally keep only mature females averaging 4 inches or more in length.

Since both Maine and southern Norway are near the southern limit of the range, it is assumed that the shrimp taken in the Maine fishery are approximately two years of age.

The table shows the relation between March seawater temperature as measured at Boothbay Harbor and Maine shrimp landings two years later. These data suggest a favorable temperature range of 34° F. to 36° F. with declines in landings when temperatures are above or below that range.

Relation Between March Seawater Temperature at Boothbay Harbor and Maine Shrimp Landings Two Years Later		
Mean March Seawater Temperature at Boothbay Harbor °F.	Average Shrimp Landings Two Years Later 1,000 Lbs.	Number of Years
32	45	3
34.5	235	5
36	275	3
37	50	3
38	45	3
39.5	10	4
41	0	2

If the assumption that a causal relationship exists between seawater temperature and shrimp abundance is valid, Maine landings should continue at a relatively high level through the 1964 fishing season. In March 1961 the seawater temperature was 36.5° F. In March 1962 the seawater temperature was 35.2° F.



Fig. 2 - A basketful of northern shrimp. This is a winter fishery.

#### LITERATURE CITED

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