



# Ask the lobster doc

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*This column provides lobster health and handling information.*

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## Lobster minimum size

In 1987, a five-year plan to increase the minimum size at which lobsters could be legally harvested was implemented throughout US waters. The gauge increase occurred in 1/32" increments such that in 1987 the minimum legal size was raised to 3-3/16" (about 81 millimeters) carapace length, in 1988 to 3-7/32" (about 82 mm), and in 1989 to 3-1/4" (about 83 mm).

In 1990 the plan was brought to an abrupt halt before two more increases would have brought the minimum size for harvesting lobsters up to 3-5/16" (about 84 mm) in carapace length.

The gauge increases immediately preceded the dramatic increases in Maine landings. Was this merely coincidence or could the management measure have made a difference? And can we possibly know?

Although there was no direct measure of success, an explanation of the biological implications of the rule will allow the reader to decide whether the increase in minimum legal size may have impacted the magnitude of the landings.

The intent of the gauge increase was to allow more lobsters to mature and reproduce before being harvested. This would give more lobsters a chance to replace themselves with offspring and perpetuate lobster stocks.

The size at 50% maturity for female lobsters in the Gulf of Maine is approximately 3-5/9" (about 93 mm), i.e., half of the lobsters that reach this size are sexually mature. The five-year plan would have brought the minimum legal size up to 3-5/16" (about 84 mm) – a size still well below the size at 50% maturity.

So, if most of the female lobsters harvested at the minimum legal sized would still be immature, how would this help?

First, more females are mature at the minimum legal size now than before the gauge increase. But more importantly, because lobsters of these sizes gain approximately 10% in carapace length when they molt, those females at or just below the minimum size who escape the fishery are now given a much higher chance to molt into maturity. This results

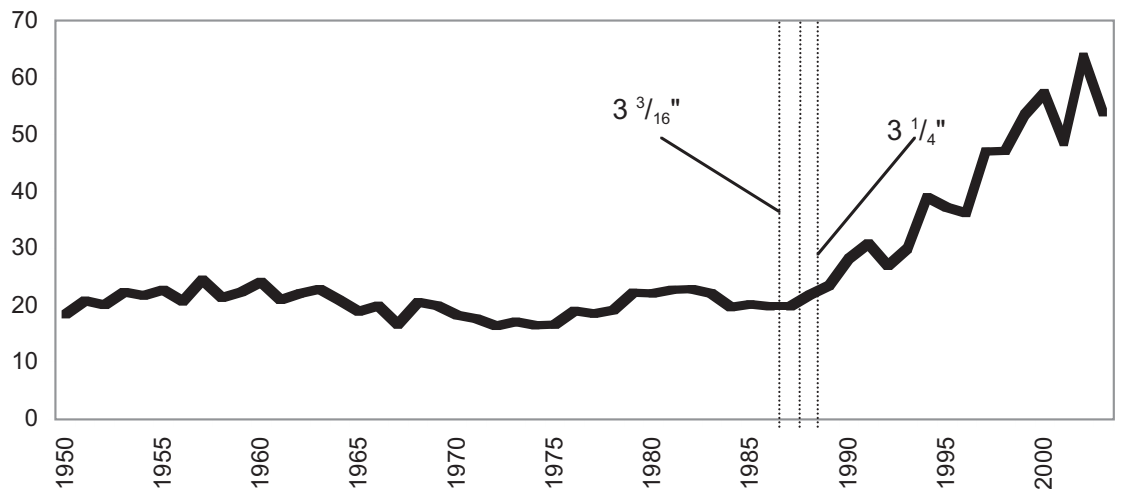
in a greater chance for reproduction before harvest.

Before the gauge increase females that were harvested at minimum legal size were more than one molt below the size at 50% maturity so even if they molted and escaped the fishery for one more year they most likely still did not reproduce.

At the 3-1/4" gauge, far more female lobsters just below the minimum legal size reach the size at maturity when they molt and therefore have a higher probability of reproducing before being harvested.

Of course, there would have to be a greater lag time between the gauge increases and the increase in the landings for this regulatory measure to be the sole explanation for the record high harvests. Still it certainly didn't cause landings to plummet and most likely heightened reproductive output. ■

Maine Lobster Landings



Maine landings with dashed vertical lines showing years during which gauge increases took place. Landings in millions of pounds.