



## Ask the lobster doc

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*This column provides lobster health and handling information.*

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### Late molt, insight from JLMP

I have flipped rocks, measured, tagged, and recorded copious amounts of data on recently settled postlarval and juvenile lobsters every month of every year since 1993. Over the years, my rock flipping activity evolved into a volunteer-based initiative called the Juvenile Lobster Monitoring Program (JLMP) that spans the coastline of Maine, New Hampshire and Massachusetts.

Although monitoring young lobster abundance has not panned out as the crystal ball some had hoped for, it offers other insights into how lobsters are faring. This is the first in a series of columns that will explore how.

For example, what can the JLMP tell us about the late molt that lobstermen have been reporting for the last few years? We are recording when molting occurs because JLMP counts take place throughout the year.

Over the program's years, there has been no detectable change in the timing of molting. Therefore, that raises the question of whether or not the late molt observed in the fishery is a consequence of environmental conditions, such as water temperature. Although it is known that temperature can affect the timing of molting, if the lateness were due to temperature alone, one would expect to observe late molts in both fished and non fished populations.

So, why the late molt?

If the juveniles aren't doing it but the adolescents and adults are, then perhaps it has something to do with sex. Consider the following speculation. Adolescent and young adult male lobsters may be delaying the time of their molting to mate with receptive females who are, in turn, delaying their molts due to a shortage of suitable mates.

Female lobsters need to find hard shelled males of similar size to mate with. Female lobsters are more heavily protected from harvest than males, resulting in a surfeit of large, reproductively active females. Without enough large males to choose from perhaps small males are being chosen as mates – even by larger females.

In laboratory studies I found that dominant males delayed molting to mate with as many females as possible while subordinate males molted early to get bigger and become dominant. Perhaps small, would-be subordinate males are delaying molting to take advantage of the opportunity to mate presented by a shortage of large males.

Most new-shelled lobsters landed weigh less than 1.5 pounds – that's pretty small, especially considering that only half the females in the Gulf of Maine are sexually mature when they reach that size. Skewed sex and size ratios have an enormous impact on lobster behavior and could explain the late arrival of soft-shelled lobsters in the catch. ■