



Ask the lobster doc

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This column provides lobster health and handling information.

If you have questions or concerns, contact Cowan at (207) 832-8224 or e-mail <dcowan@lobsters.org>.

Can we expect an early lobster molt?

Many lobstermen are wondering whether they can expect an early run of lobsters this year due to a warm winter that may lead to an early molt.

I think the juvenile lobsters that are way too small for trapping are likely to molt early this year, but that doesn't mean there will be an early harvest. In some years, unfished juvenile lobsters have one strong molt peak in either spring, summer, or fall, while in other years there are two or more strong peaks usually with one in spring and the other in fall.

But things are more complex for fished lobsters that experience the same environmental conditions as unfished juveniles but have the added impact of being fished.

Lobsters generally molt when the water is warming up and days are getting longer in the spring and/or when the water is cooling off and the days are getting shorter in the fall. Water temperature and day length together trigger the timing of lobster molting.

Temperature can also affect lobster molting in other ways. To understand how, it is helpful to think about what it takes for a lobster to prepare for and recover from shedding.

It is useful to think about lobster molting as a continuous process such that a lobster spends its life:

- Preparing for shedding by breaking down and storing parts of its old shell internally while building the soft new shell underneath the old shell;
- Escaping from its old shell; and
- Hardening the new shell and filling the empty space within the new shell with meat.

The only break in this continuity is when female lobsters take 9 to 13 months off from the molt cycle to brood embryos.

Keeping the entire molting process in mind, it makes sense that lobsters

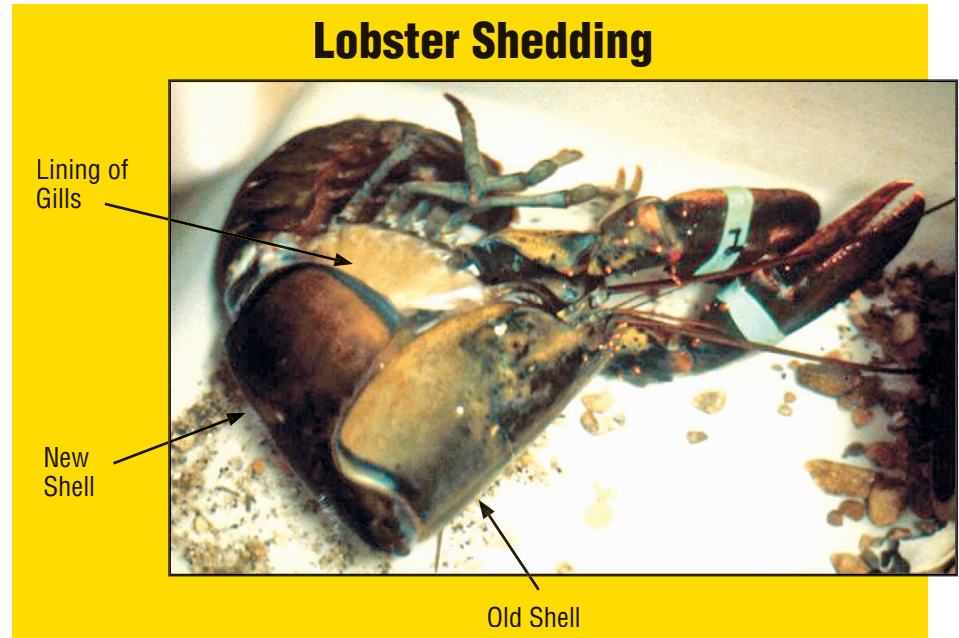


Photo courtesy of Diane Cowan

that didn't molt late last year will shed as soon as possible in spring. This is based partly on preparation because over the warm winter the lobsters would be able to continue growing into new shells, regenerating lost appendages, and preparing for shedding.

However, until the water actually warms up, the lobsters probably won't molt. So the spring warming still leaves us guessing. It is cold right now. If the spring stays cold the molt probably won't be early.

The precise temperature at which shedding starts is not what's important and it varies from place to place throughout the lobster's range. Furthermore, it isn't absolute temperature that triggers the shed, but instead the rate of change in temperature – rising in spring to trigger early shedding and falling in fall to trigger late shedding. Day length – the

lengthening and shortening of daylight hours also plays a role.

For the fished population, I think the apparent "late" molt is getting later and later not only because more small lobsters can molt more than once a year in warm waters, but also because we're waiting for a more and more restricted size range of lobsters to shed into the minimum legal size.

It may be that "pre-recruits" – those lobsters within one molt of being big enough to harvest – are molting in the fall and then the following spring the lobsters at least two molts smaller than the minimum legal size shed twice in one year to be harvested in fall. This scenario is much more likely in warm than in cold years. If we had a few cold years maybe there would be some pre-recruits left over to molt the following spring and that would produce a spring run of lobsters. ■