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>.

Epizootic shell disease

Sixty-six scientists, managers, and fishermen gathered at a Shell Disease Workshop at the University of Massachusetts in Boston on March 12-13, sharing research findings and developing priorities that need to be addressed to better understand the presence of the disease in lobsters.

Shell disease is present in waters south of Cape Cod at a rate that may be as high as 30 percent in some places at certain times of the year. According to Massachusetts Division of Marine Fisheries lobster biologist Bob Glenn, the disease started to occur with greater frequency north of Cape Cod in 2002, though the overall incidence of shell disease in the waters of the Gulf of Maine is very very low.

Aquavet Roxanna Smolowitz of the Marine Biological Laboratory in Woods Hole, MA described three kinds of shell disease:

- Impoundment shell disease – Known to lobster pound keepers for over 100 years and first appeared in southwest Nova Scotia.
- Burnt spot or rust spot shell disease – Naturally occurring and appears to be similar to impoundment shell disease. It's been around at low levels for a long time.
- Epizootic shell disease – Characterized by lesions rather than darkened spots. These lesions start on the carapace, progress to the abdomen and claws, and become so severe that the shell feels soft.

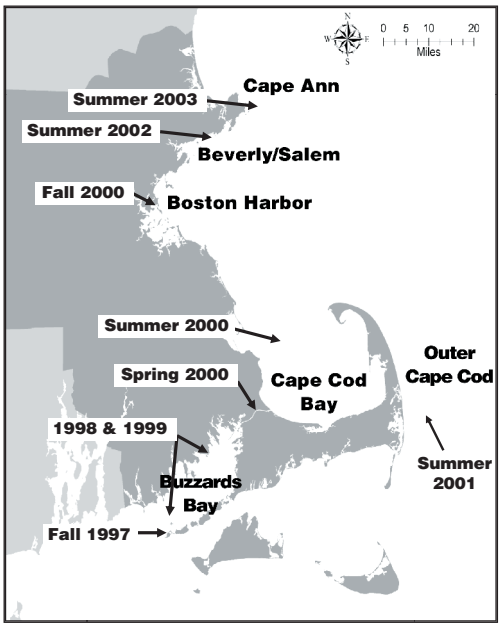
Epizootic shell disease is most common in egg-bearing lobsters. When this form of shell disease shows up in the lobster population, it may develop from a few cases to epidemic proportions suddenly and with seemingly no warning. Although it has not been shown that the disease causes death, lobster landings have declined where outbreaks have occurred.

Shell disease is not necessarily most common in the most polluted waters or in the warmest waters. For example, it is common in Eastern but not Western Long Island Sound; and at the mouth but not up inside Cape Cod Bay. Two things were found to be true for all lobsters sampled:

- Shell disease lesions were riddled with bacteria; and
- Lobsters with shell disease had high concentrations of alkylphenols in their hemolymph (blood). Alkylphenols are chemical compounds used primarily to make alkylphenol ethoxylates, which are cleaning agents or surfactants that are widely used in the manufacture of detergents and other products.

Hans Laufer of the University of Connecticut Storrs showed that when shell diseased lobsters move into waters free of alkylphenols, levels of contaminants in their hemolymph go down and the disease disappears when the lobster molts.

Worldwide, 500,000 tons of alkylphenols are produced annually and 60 percent ends up in the ocean. Reducing production would help. Possible sources of alkylphenols in coastal waters include industrial and household detergents, surfactants, paints, wetting agents, wood pulping, textile manufacture, plastics manufacture, petroleum recovery, and so forth.



Bob Glenn/MA DMF graphic

The graphic shows a time line of the spread of shell disease in Massachusetts. The overall incidence of shell disease in the waters of the Gulf of Maine is very, very low. At present, in waters throughout Maine, shell disease affects less than one-tenth of one percent of animals harvested by lobstermen and by scientists in trawl and trap surveys.

It may seem like a small contribution, but we can all use safe detergents, paints, and recycled paper, and try to become less dependent on plastic. In general, we can reduce waste and unnecessary consumption.

There are still areas within the Gulf of Maine where fishing and tourism are the only industries. A far greater contribution to these locations would be to prevent new industry that pollutes coastal waters from opening operations. ■