

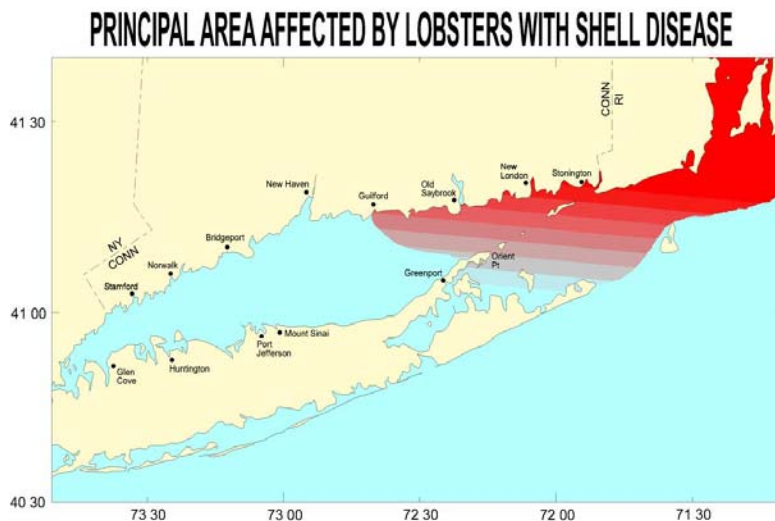
American Lobster Shell Disease

The CT DEP has been collecting shell disease data for American lobster (*Homarus americanus*) in Long Island Sound (LIS) since 1992. These data are collected during routine commercial sea-sampling trips aboard the vessels of cooperating commercial lobstermen and during research trawls conducted by the research vessel John Dempsey.

In 2000, a workshop was held where lobster biologists and researchers from Maine to New York developed a uniform protocol for assessing the severity and proportion of lobsters affected with shell disease syndrome. The protocol established a coast-wide index whereby it was possible to make relative comparisons of lobster health among several jurisdictions which allows for a more complete coastal picture of the prevalence, severity and progression of shell disease along the range of the lobster resource.



It is important to note that a lobster afflicted with shell disease does not pose any risk for human consumption. The pitting in the shell is caused by a bacterial infection of the shell only and these organisms are destroyed in the cooking process.



Up until 1998, most shell disease occurrences were small lesions, or necrotic spots, sometimes noted as “burn-spots” on the carapace or tail. These occurrences typically had a low prevalence rate in the observed commercial catch. However, observations after 1998 from commercial sea-sampling indicated that perhaps a different type of shell disease, characterized by an extensive deterioration, erosion, or

pitting of the exoskeleton, was present in the LIS lobster population. This higher prevalence of shell disease in Connecticut waters started in near-shore Rhode Island and Block Island Sound waters and progressed into Fishers Island Sound in the late fall of 1998 and winter of 1999.

The incidence of shell disease decreases after the summer molt, when the lobster casts off its old shell and replaces it with a new larger one. The second molting (growth) period occurs in the fall, usually in October and November. Monthly occurrence of shell disease has followed a predictable pattern around these two molt periods. Disease levels peak between May and August and again during October and November prior to the molt and decline following these months as animals successfully shed their old shells.

The eastern basin of Long Island Sound has had the highest percentage of animals afflicted with shell disease. In 2007, approximately 30% of the lobsters observed in this area from July through October showed signs of shell disease. Consistent with previous years, egg-bearing females showed the highest levels in occurrence and severity of disease in the eastern basin with 68% of all egg-bearing females observed having signs of the disease. Females do not molt while carrying their eggs on the underside of their shell. This extended period of time in which she retains her shell consequently makes her more likely to get the disease and have it progress.

Shell disease has occurred less frequently west of the Connecticut River. Peak levels of the disease were observed in 2003 in the central basin, with 7% of the observed animals having shell disease. Levels in this area fell to less than 1-2% in 2005-2007. The highest occurrence of the disease in the western basin (2%) occurred in 2001, but no occurrences of the disease were observed in this in 2005-2007.

RELATED LINKS:

For past and present research initiatives on American Lobster please visit the following links:

<http://www.seagrant.sunysb.edu/lobster/default.asp>

http://seagrant.gso.uri.edu/fisheries/lobster_initiative/