2022 Lobster Monitoring Update

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GENERAL SEA SAMPLING RESULTS

In 2022, the Sea Sampling Program completed its 38th season. The at-Sea Sampling program completed 163 trips on 140 boats from 56 different ports. We measured 191,793 lobsters from 38,022 commercial lobster traps. These data provide biological information that inform management models for the ASMFC Lobster Stock Assessment.

The Sea Sampling Program is designed to cover 3 trips in each lobster management zone each month from May-November. During the winter months, we complete at least one trip per statistical area every month but finding winter trips is challenging due to weather as well as vessel and personnel availability.

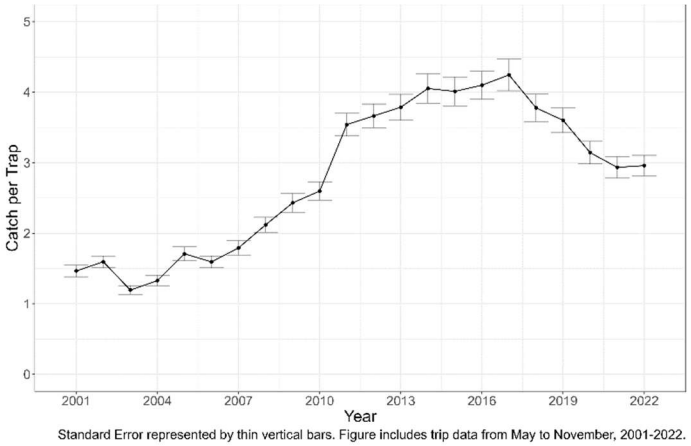


Figure 1 (above). Sea Sampling sublegal (<83mm CL) catch per trap (total # lobsters/total traps measured by trip) for all zones combined (2001-2022).

- In 2022, sublegal lobsters continued to maintain the same observed catch per trap as 2021. Which is still below the observed peak in 2017. However, sublegal catch per trap remains above pre-2011 levels.

SHELL DISEASE

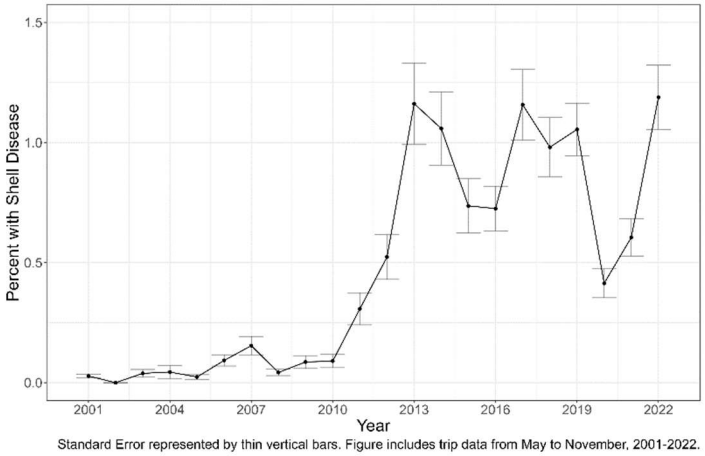
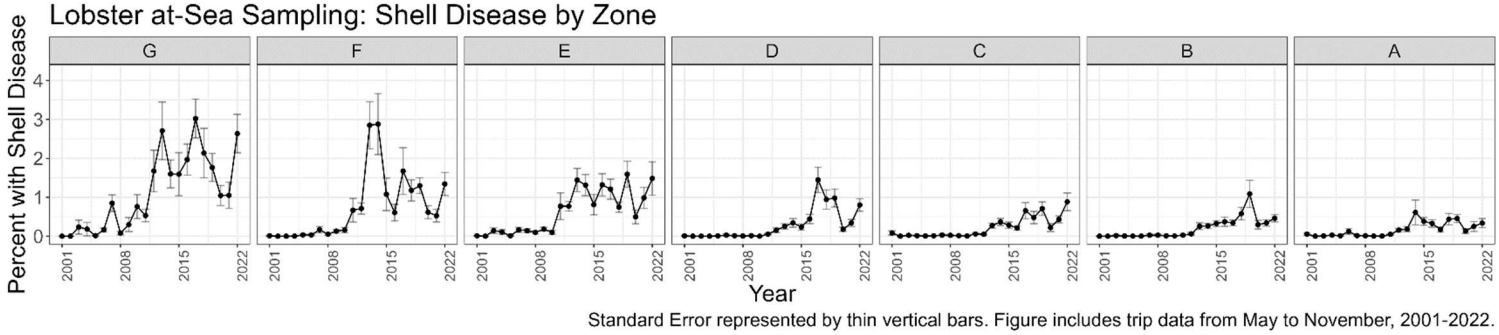


Figure 2. Shell disease prevalence (% of all lobsters measured) for all zones combined (2001-2022).

- Overall, proportion of shell disease remains low (<1.5%) compared with Southern New England rates (20-30%).
- Shell disease continues to be observed primarily on eggbearing females of all sizes and oversized lobsters. This pattern is consistent with the general observation that most diseased lobsters have older shells.
- Historically, the months of May and June observe some of the highest rate of shell disease in Maine. The data presented for year 2020 are not comparable to data from other years, as sampling during this time was limited due to the global COVID-19 pandemic.

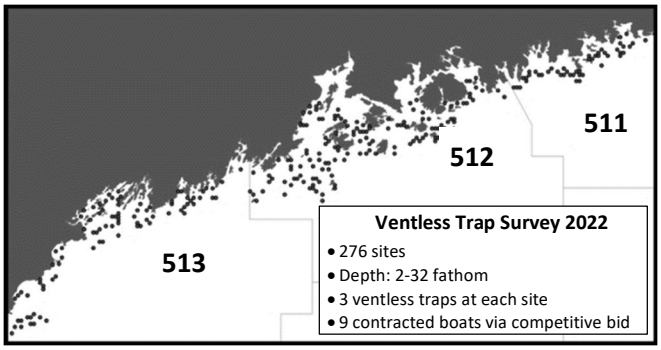
Figure 3 (below). Shell disease prevalence (% of all lobsters measured) by lobster management fishing zone (2001-2022).

- Shell disease continues to be more common in western zones (E-G), whereas prevalence remained low in eastern ME (zones A-C).



For more information, please visit us at www.maine.gov/dmr/science-research/species/lobster/
For questions related to survey participation and results, contact Kathleen Reardon at Kathleen.Reardon@Maine.gov

VENTLESS TRAP SURVEY



The Ventless Trap Survey deploys traps with 1" mesh and no vents in order to monitor sublegal lobsters as an indicator of the future abundance of legal lobsters. Sites are randomly selected and stratified by depth and statistical area.

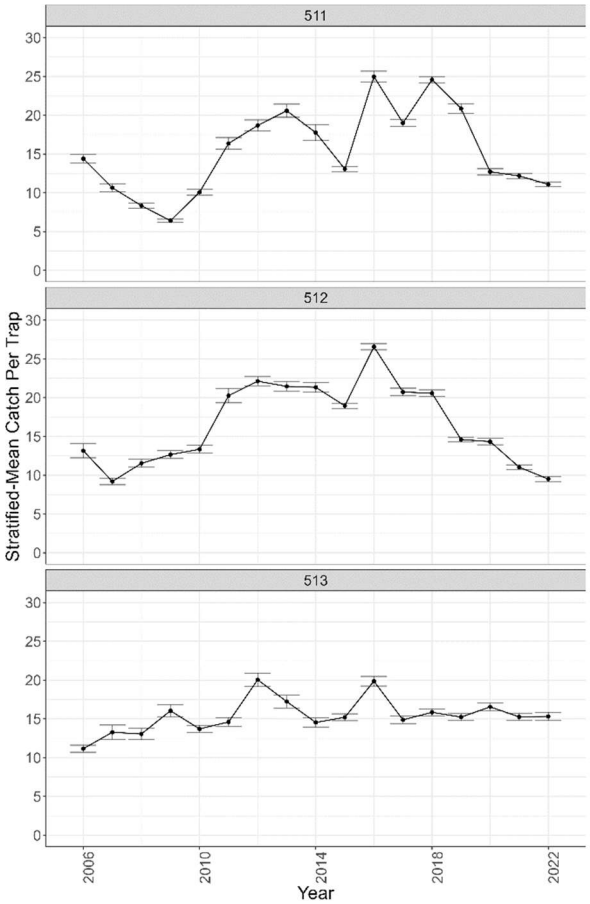


Figure 4. Ventless Trap Survey mean sublegal (<83mm CL) catch per trap stratified by depth by statistical area for 2006-2022.

- In recent years, catch-per-trap of sublegals has been on a declining trend in eastern and midcoast Maine, whereas western Maine appears more stable.
- 2022 Sublegal catch observed a continued decline in central and eastern Maine; however, levels in western Maine observed similar catch to that of 2021.

SETTLEMENT SURVEY

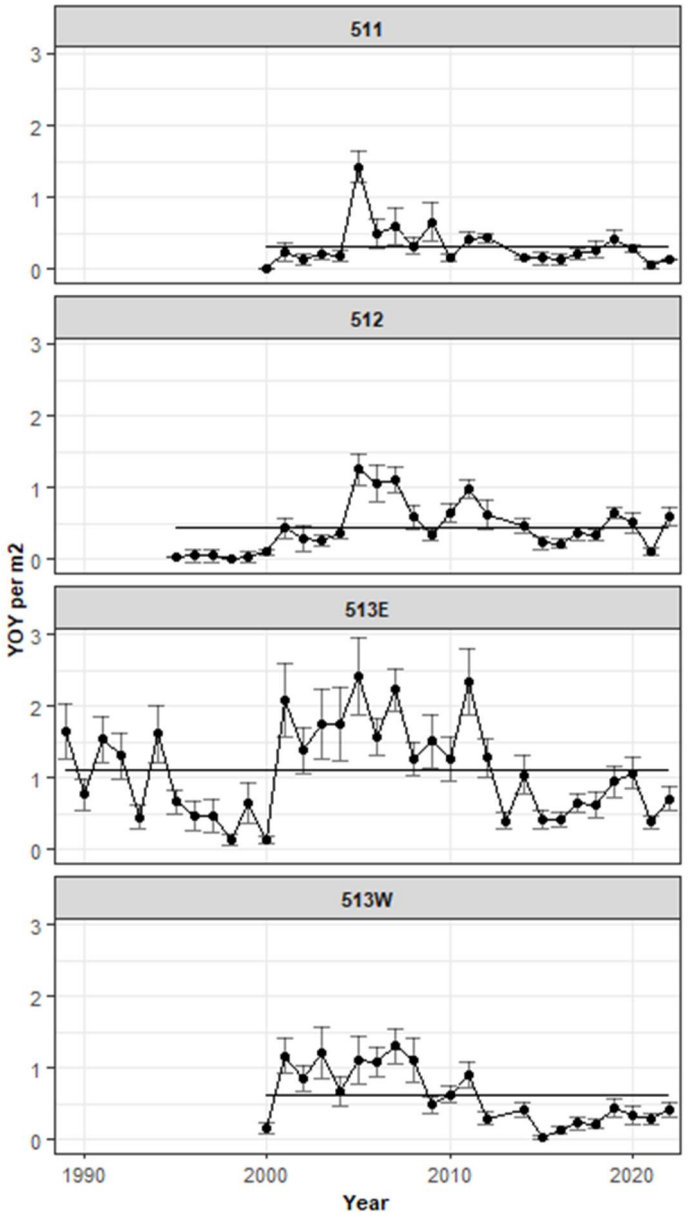


Figure 5. Settlement Survey Indices by statistical area (1989-2022) with time series median.

- The settlement index is derived from a SCUBA diving survey which uses suction sampling methods to collect newly settled young-of-year (YOY) lobsters (average # YOY/m^2) in cobble habitat < 5 fathom depth.
- All regions observed increase in YOY lobsters from 2021 numbers, but numbers have had sustained low numbers since 2012.
- The Settlement Survey does not account for changes in suitable habitat for lobster settlement, which could be occurring in deeper water.

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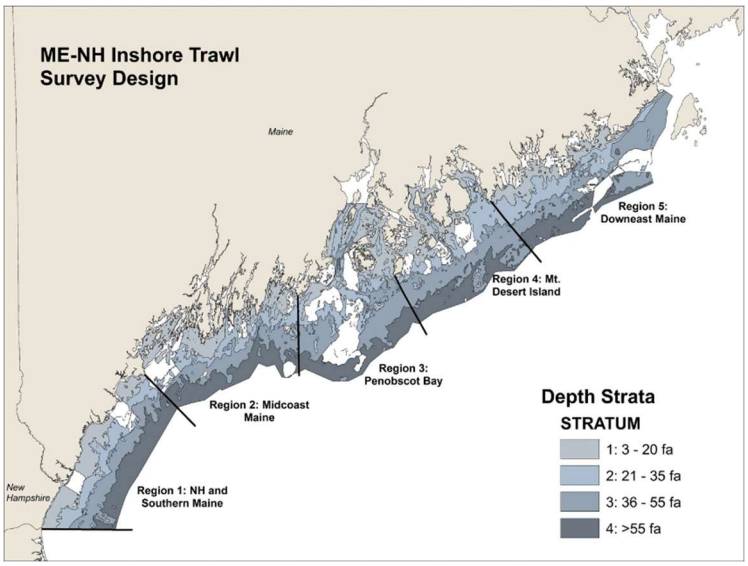
MENH Inshore Trawl Survey



The Maine-New Hampshire Inshore Trawl Survey is a resource assessment survey performed along the coastal waters of Maine and New Hampshire. Bi-annual surveys, spring and fall, have been conducted since the fall of 2000. This survey is a collaborative research project using a commercial fishing vessel as the platform.

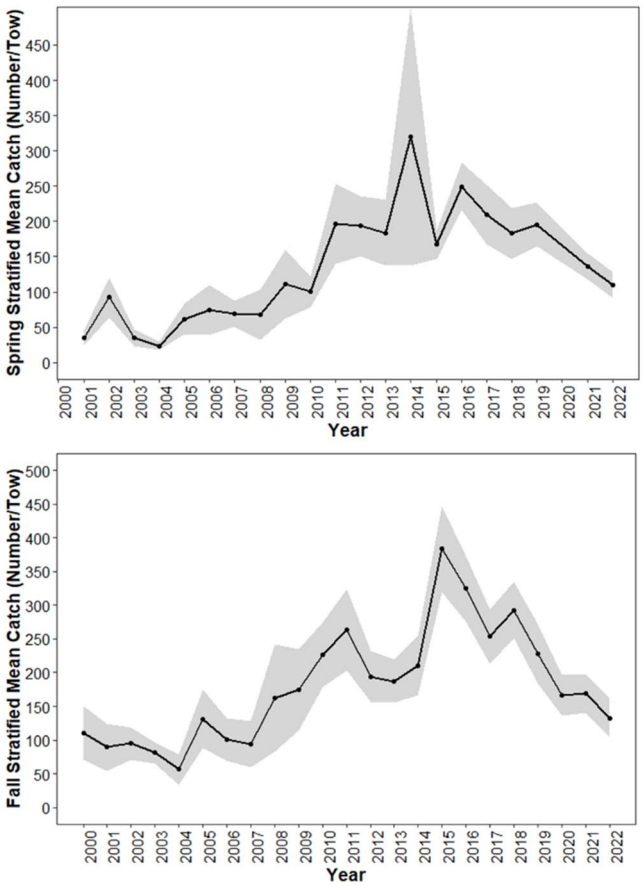


Figure 6 Spring (top) and Fall (bottom) Inshore Trawl Survey stratified mean catch of lobsters per tow.

- The spring and fall surveys continues to show a general declining trend following 2016.

2022 SURVEYS SUMMARY

- The Commercial Sea Sampling Program, Ventless Trap Survey, Lobster Settlement Survey, and both the spring and fall MENH Inshore Trawl Surveys were completed in full in 2022.
- Observed trends in numbers of sublegal lobsters have been declining in eastern regions while western areas have been more stable. There is agreement in all three surveys that track sublegal trends including Sea Sampling, Ventless Trap Survey, and Inshore Trawl Survey
- The Settlement Survey saw an overall increase from 2021, but settlement levels have been at sustained low numbers since 2012.
- From 2022 survey results, lobster abundance appears to be continuing a slow decline across the state. Field work in the coming year will help to form a more complete analysis of the trends observed here.
- Some of these surveys do not currently account for changes in suitable habitat for lobster settlement, which could be occurring in deeper water. Future expansion of these surveys may provide insights into potential shifting habitat use by lobsters.