2017 Lobster Monitoring Update

Kathleen Reardon: Lead Lobster Biologist
**Katherine Thompson: Sea Sampling & Ventless Trap Survey**
Robert Russell: Settlement Survey

GENERAL SEA SAMPLING RESULTS

In 2017, the Sea Sampling Program completed its 33rd season. We completed 162 trips on 151 boats from 59 different ports. We measured 229,864 lobsters from 35,981 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 per 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. We were unable to complete 3 trips in April 2017.
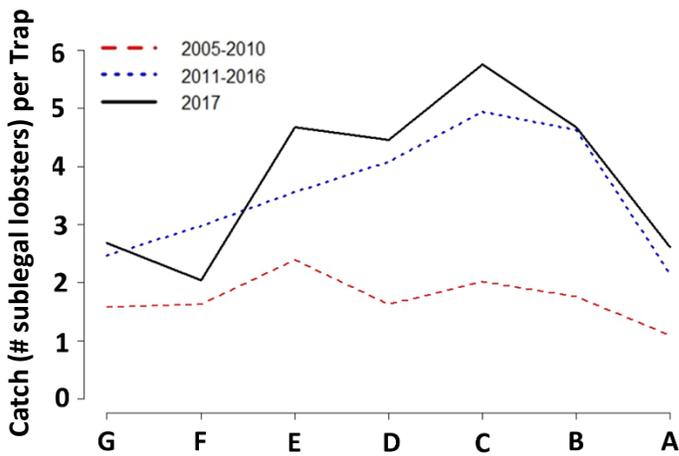
Figure 1. Sublegal catch per trap (total # lobsters/total traps measured) for 2005-2017.

- The number of short lobsters per trap have been increasing for the past decade
- In 2017, more sublegals were observed in all zones compared to 2011-2016 except for zone F.
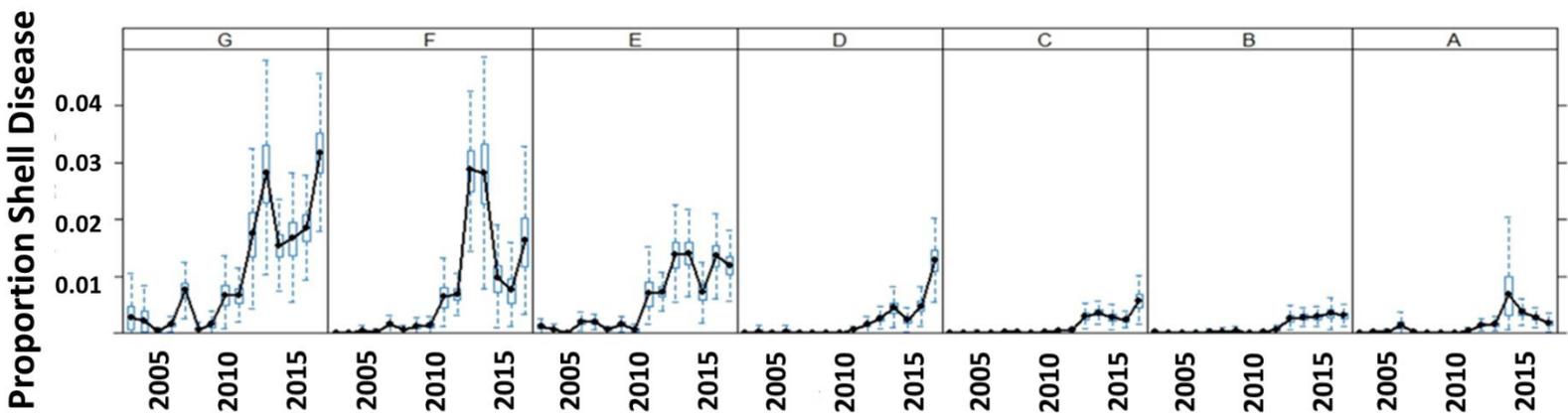
SHELL DISEASE
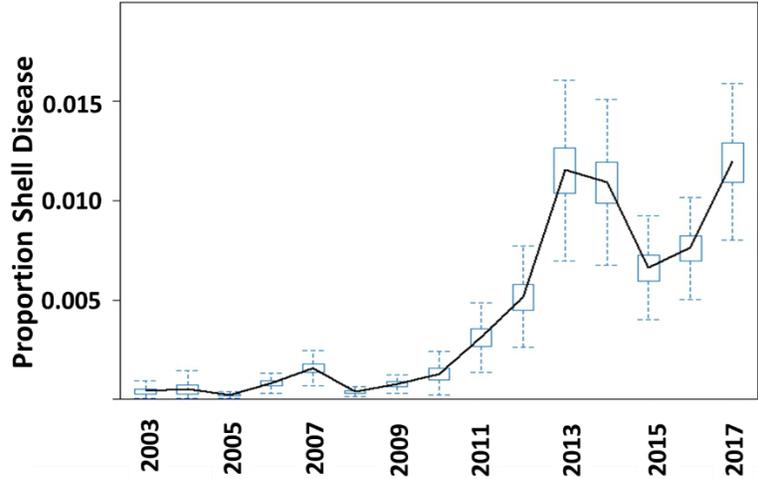
Figure 2. Shell disease prevalence (% of all lobsters measured per trip) by year (May-November, 2003-2017) for all zones combined.

- Overall prevalence remains low (<2%) compared with Southern New England rates of 20-30%.
- In 2017 shell disease prevalence was comparable to 2013 levels.
- The two years of highest shell disease (2013&2017) have followed the two warmest years in this time period.
- Shell disease continues to be observed primarily on egg-bearing females of all sizes, and oversized lobsters.
- In 2017, shell diesease was more prevalent in western zones with the highest levels in zone G, whereas prevalence remained low in eastern Maine (zones A-D).

**Figure 3** (below). Shell disease prevalence (% of all lobsters measured by trip) by year (May-November, 2003-2017) and zone.

VENTLESS TRAP SURVEY

2017 Ventless Trap Survey
- 276 sites
- Depth: 2-32 fathom
- 3 ventless traps at each site
- 9 contracted boats
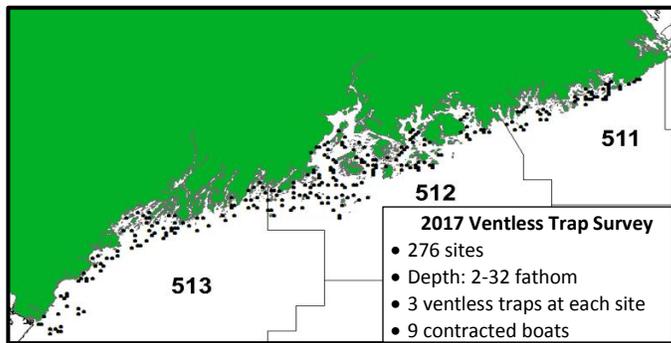
The Ventless Trap Survey deploys traps with 1" mesh and no vents in order to monitor sublegal lobsters as an indicator of the future abundance of legal lobsters.

511: Schoodic Pt-Cutler

512: Friendship-Schoodic

Catch (# sublegal lobsters) per Trap

513: NH-Friendship
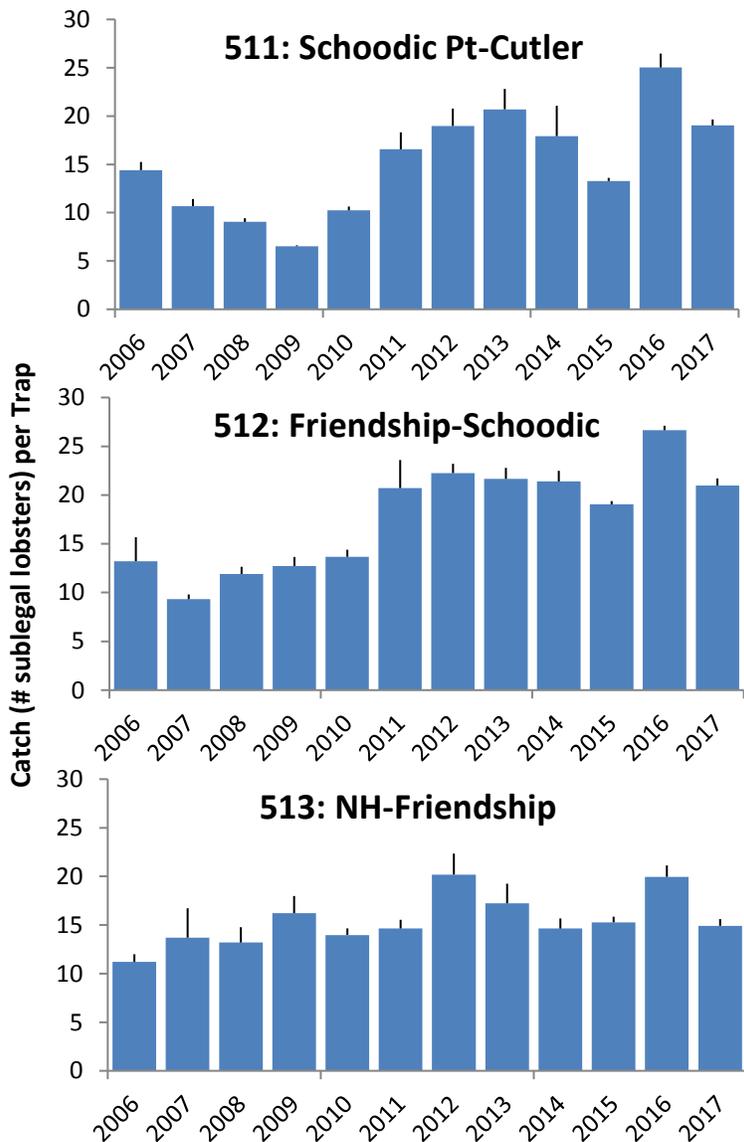
Figure 4. Mean sublegal catch per trap stratified by depth and statistical area for 2006-2017.

- 2017 sublegal lobster catch was similar to 2011-2015.
- There is a subtle trend of more sublegals in deeper water (21-32 fm) compared with earlier in the survey.
- Peaks occurred in warmest years (2012 & 2016).

SETTLEMENT SURVEY

Average # YOY per m^2
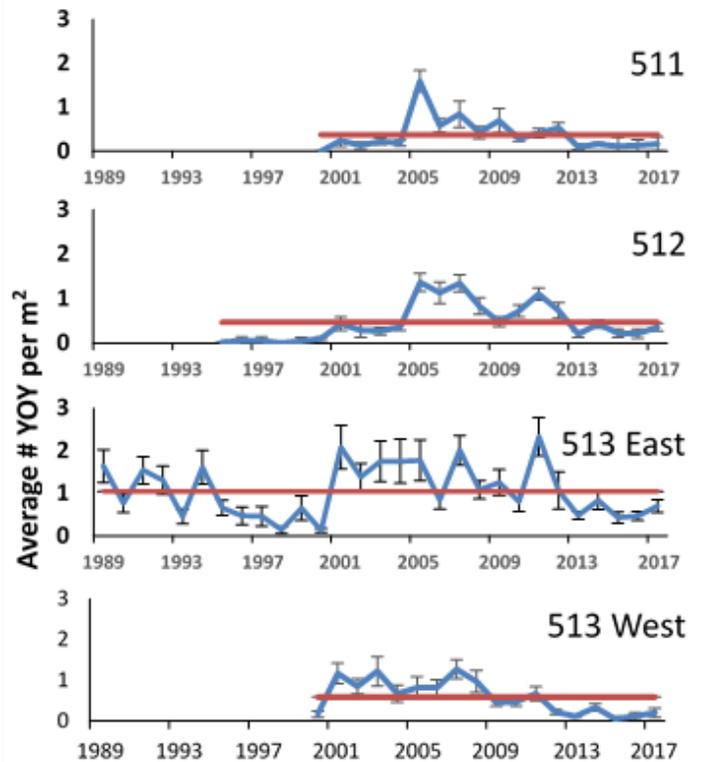
Figure 5. Settlement Survey Indices by statistical area (1989-2017).

- The settlement index is derived from a SCUBA diving survey which uses suction sampling methods to collect newly-settled young of year (YOY) lobsters in cobble habitat < 5 fathom depth.
- Detected settlement has been below the time series median in all areas since 2013.
- The Settlement Survey does not account for changes in suitable habitat for lobster settlement, which could be expanding into deeper water.

2017 SURVEY SUMMARY

➢ Sublegal lobster catch continues to be high.
➢ It was another below average year for settlement.
➢ There is a need to validate decline in settlement with other survey indicators as well as to expand research efforts (example: UMaine settlement collectors) to determine changing settlement dynamics.
➢ Sublegal lobster catch on the Ventless Trap Survey is similar to previous years and is slightly higher in deeper coastal waters in recent years than earlier in the survey.