The Lobster Conservancy

Sustaining a thriving lobster fishery through science and community

Spring 2010

Dear Volunteers and Friends of The Lobster Conservancy,

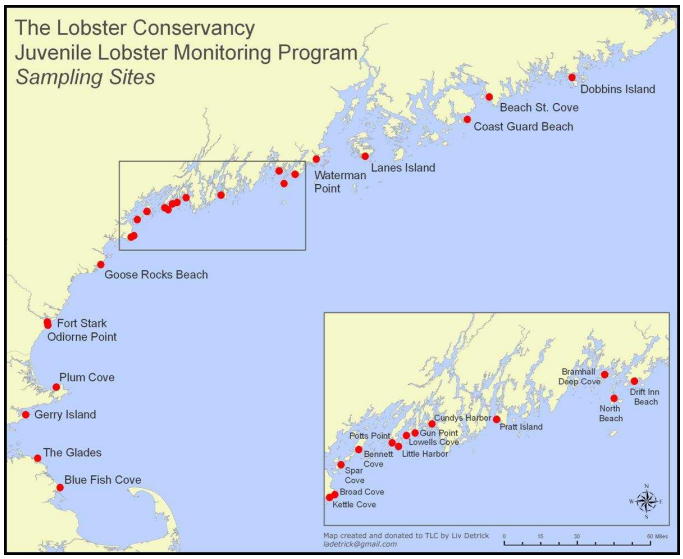
The Lobster Conservancy's mission is to strive to sustain a thriving lobster fishery through science and community. Our quarterly newsletter keeps members and volunteers informed of recent research, education and outreach activities.

News from the Board of Directors
Updated Contact Information
The Lobster Conservancy has a new phone number at the Lobster House (mainland office): 207-542-9789. Please update your contact list!

Research
1993-2009 Results Compiled

Juvenile Lobster Census: The First 17 Years

For 17 years, The Lobster Conservancy has been taking a monthly census that measures the abundance and distribution of post-larval and young juvenile American lobsters along the Gulf of Maine coastline. The census began in Casco Bay in 1993 and represents the only uninterrupted year-round time series of post-larval settlement and juvenile lobster abundance. From 1996 through 2003, we recruited volunteers to expand the census from Beals, Maine through Green Harbor, Massachusetts. Currently, 120 volunteers monitor 22 sites. A rigorous training program and high numbers of veteran volunteers keep our data consistent and reliable.



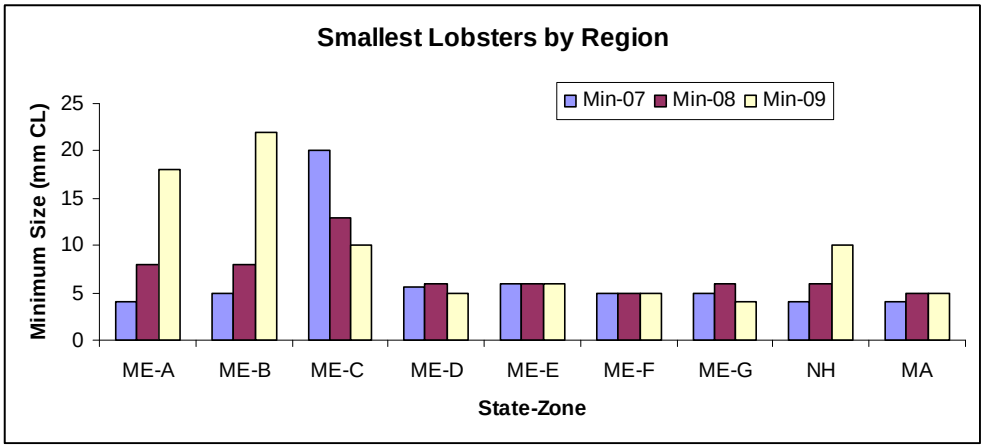
Locations of The Lobster Conservancy's field sites (red dots) censused in 2009. Abundance of lobsters has been high at most sites in recent years.

The Lobster Conservancy samples lobster densities on a monthly basis during the spring low tides by overturning rocks in square meter quadrats placed along fixed transects running parallel to the water's edge 0.3 m below mean low water. Data recorded from each lobster includes size (carapace

and total length), sex, molt stage, handedness and missing appendages or shell damage. Environmental data including temperature, salinity and weather conditions are gathered at the time of sampling. Hourly temperatures are recorded remotely using data loggers.

In general, juvenile lobster abundance has increased in recent years and there is a consistent seasonal cycle in abundance that correlates with mean monthly sea surface temperature such that numbers are generally higher in the summer than in the winter months. However, abundance in recent winters rivals what it was in the first several summers of the census. Smaller lobster sizes and settlement are found more reliably west of Penobscot Bay than within or east of the bay. Highest densities are found along the mid-coast of Maine.

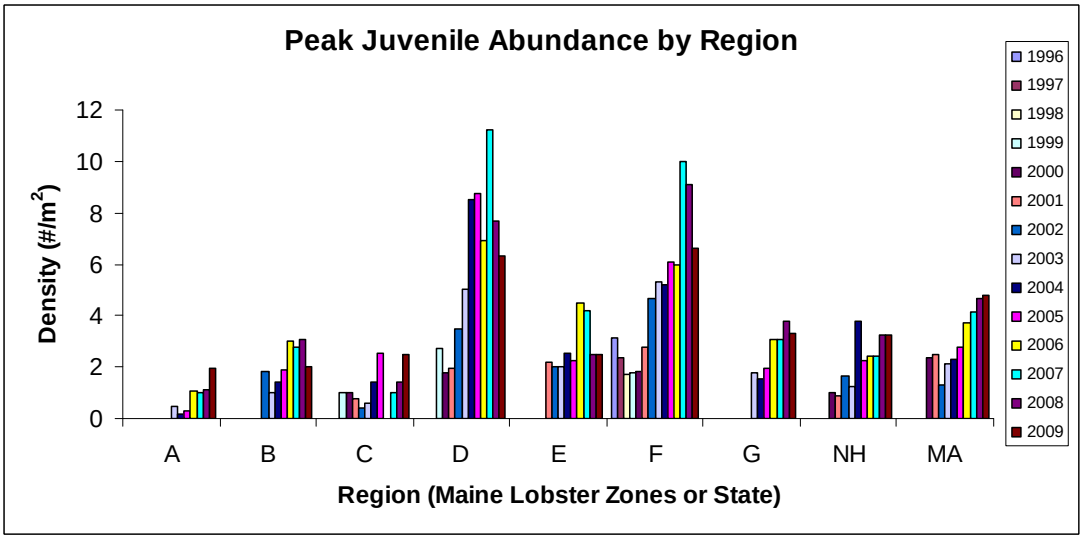
Sizes of lobsters sampled in 2009 ranged from 4 to 80 mm CL (less than an inch long to just under minimum legal size). Numbers of the smallest lobsters for 2009 were low compared to the last couple of years possibly because we were unable to sample at many sites in October and November due to storm surge.



Histogram of minimum size of lobsters found in each region for 2007 (Min-07), 2008 (Min-08) and 2009 (Min-09).

These are what I'm calling small lobsters.

Two results stand out when looking at the peak annual juvenile lobster abundance for each region. Firstly, Maine lobster Zones D and F dwarf other regions by yielding two to three times more lobsters than the other regions. Secondly, the highest densities on record have been recorded for all but one region in the last three years. The exception is New Hampshire where abundance peaked in 2004.



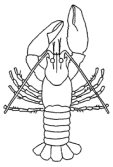
Peak juvenile lobster abundance for each of Maine's seven lobster zones, New Hampshire and Massachusetts from 1996 – 2009. Abundance is reported as density measured as mean number of lobsters per square meter.

Census data gathered by volunteers and scientists at The Lobster Conservancy are valuable as indicators of changes in settlement success and early survival of juvenile lobsters along the Gulf of Maine coast. Time-series data like these can help us understand the ups and downs in the availability of lobsters by contributing baseline records. In the early years, I was impressed with average numbers of one or two lobsters per square meter. Not anymore. With peak densities hitting an order of magnitude higher in recent years, I begin to wonder where the ceiling might be. This puts qualifiers like a high year and a low year in perspective. Ten years ago I had no concept of what "high" could be. It makes me realize that it may be critically important to have many decades of data before we can begin to truly understand what is driving the trends in lobster abundance.

Media, Outreach and Presentations

Maine Fishermen's Forum

Heart felt thanks to George and Barbara Hampson (below) who set up and "manned" the ever popular, much frequented TLC booth at the Maine Fishermen's Forum.

The Lobster  Conservancy

Summary of Recent Activities

- 4-7 March 2010, Maine Fishermen's Forum, "The Lobster Conservancy's Science, Community and Educational Programs" Rockport, Maine
- 25 February 2010, "Lobsters on the Move" Ocean Tracking Network & Fishermen and Scientists Research Society, Truro, Nova Scotia
- 18 February 2010, "Shallow Water Journey" Longfellow Days, Brunswick, ME
- February 2010, Maine Lobstermen's Association Newsletter, "Juvenile lobster census: the first 17 years"
- 6 January 2010, Village Soup Knox, January 6, "Maine Community Foundation supports lobster history project"

Upcoming Events

If you happen to be near Ithaca, NY… Diane will present a seminar talk, "The social life of lobsters: male bonding and other evidence *Homarus americanus* is not a solitary cannibal" at Cornell University on **April 5.**

Join us at the Friendship Town Office on Saturday, **April 17 from 1-3 pm** for a book signing. The Lobster Conservancy will host Nancy Griffin, author of the newly released book Maine 101. Refreshments will be served.

Yours in TLC,

Diane F. Cowan, Ph.D, Executive Director