

The Lobster Conservancy

Sustaining a thriving lobster fishery through science and community

December 2011

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 newsletter aims to keep members and volunteers informed of our activities. This edition reflects on notable events and achievements during the past year.

Notable Events

University of Maine graduate student, Marissa McMahan successfully defended her Masters of Science thesis on November 29, 2011. Congratulations Marissa! Marissa first came to The Lobster Conservancy as a volunteer in 2007. She learned the ropes faster than most and became expert at measuring and tagging lobsters. Her first work as a graduate student was to test the efficacy of the tagging method we've been using since 1993. The results confirming that the method works well will appear in a science journal soon (see publications below). Her other thesis chapters are even more interesting – Marissa analyzed 18 years of growth data collected by The Lobster Conservancy and did some interesting experiments focusing on the predator/prey relationships between lobster and cod with her advisors from the Gulf of Maine Research Institute. We'll keep you posted as Marissa continues to publish her results.



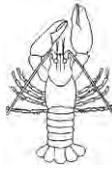
Marissa McMahan (left), Carol Cardon (middle) and Marissa's best research assistant (and Dad!) Jim McMahan on a cloudy day on Muscongus Bay.

On Friendship Day, The Lobster Conservancy hosted a touch tank at the Lobster House. Highlights from this year's touch tank featured lobsters, horseshoe crabs, fish and many others. Special thanks to Mark Havener for providing the critters and to all those who visited – especially the children!



The Lobster Conservancy's touch tank made a splash on Friendship Day. For more photos and video clips from this event visit The Lobster Conservancy on Facebook.

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Intern Leslie Wallace picked up the Lobster Pound History Project where Maira Seeley left off last year. Diane also presented a brief history of lobster pounds at the Maine Fishermen's Forum in Rockport in March.



Friendship native, Leslie Wallace presenting *A Century of Pounding Lobsters in Friendship, Maine* at the Town Office, Friendship, Maine.

Diane attended the 10-year anniversary get-together of those involved with the Environmental Monitors on Lobster Traps (dMOLT) project where she entertained the crowd with stories about how lobster behavior relates to temperature throughout the seasons. Diane's talk stimulated a lively discussion and prompted the lobstermen to ask fascinating questions revealing how much more there is for us to learn together. Congratulations to Jim Manning for his decade of leadership for the eMOLT project.

Juvenile Lobster Census

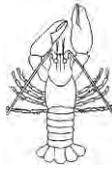
For a glimpse at The Lobster Conservancy's Juvenile Lobster Census in action watch the video made by volunteers in Harpswell, Maine. <http://www.youtube.com/watch?v=ZOLsVIMj3Og> You can also find this link on our Facebook page.

Highlights from this year's juvenile lobster census on Allen Island in Cushing, Maine included adding photographs of lobster quadrats to our protocol and training new volunteer Lauren Stockwell to assist veterans Meredith Fossil, Joanne Sharpe and Cathy Sherrill.



The Lobster Conservancy volunteer census takers sample juvenile lobsters on Allen Island in Cushing, Maine. Lauren Stockwell (left) measures a young-of-the-year lobster while Joanne Sharpe (right) records data.

Our volunteers in Marblehead, MA led by Denise Fiore and Mitch Wondolowski worked all summer collecting pledges from local citizens in support of the Juvenile Lobster Census on Gerry Island. Their resounding fundraising success culminated in a thank you party held at the home of long-term volunteer and supporter, Jack Arnold. The proceeds will go toward continued monitoring of the Gerry Island site in 2012.



Gerry Island volunteers Jack Arnold, Denise Fiore and Rod Thibodeau enjoy the fruits of their labors at The Lobster Conservancy's volunteer appreciation day!



Sleepless over lobsters: Can our luck hold?

By Diane Cowan, executive director of the Lobster Conservancy
Posted Dec. 01, 2011, at 5:32 p.m. **Bangor Daily News**

The largest lobster recorded in the scientific literature was caught off Cape Cod in 1974 and weighed 42.5 pounds. This behemoth was a male who was probably 100 years old.

Large lobsters are essential to the health of the fishery, but we haven't managed them that way. Current rules almost guarantee that we will never again see such a giant lobster. After decades of trust that the fishery was well managed and lobster landings could remain high despite heavy fishing, I'm worried.

A population can take only so many violations of nature's rules for its survival, and nature's rules for lobsters operate over a time scale of decades. Females lobster take about a decade to reach sexual maturity, just like human females (age at first menses for half of human girls worldwide is 10. That's not when most or all are mature, just the earliest half.) Lobsters can then reproduce for many more decades and, unlike humans, can theoretically grow and reproduce indefinitely.

But fishing pressure is so intense that few lobsters reach maturity. Of the record 94.7 million pounds of lobster Maine landed in 2010, an estimated 95 percent had just molted into the minimum legal size of about a pound and a quarter — less than eight to ten years old.

Imagine a world in which 95 percent of eight-year-old humans are removed every year. It would still be possible to maintain the global population, but if some disaster or epidemic swept the planet, there would be little chance of recovery. That's the situation with lobsters. Most have vanished by age eight. That leaves few to grow old with proven survival genes to pass to the next generation.

Older lobsters have survival know-how. They have evaded predators, including humans; they have survived harsh weather, disease and maybe pesticide floods and thermal stress. Large females are more fecund, carrying more, larger embryos, and they travel greater distances, thereby spreading their genes far and wide, resulting in a higher probability of success.

While a strong population can cope with an onslaught of natural and human-derived threats, a compromised population cannot. The collapse of the lobster fishery in southern New England is a

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warning to Maine and Canada: rising temperatures, pesticides and disease might have been survivable except that they were acting on a weakened population. The result was catastrophic. The same thing could happen here.

In an ideal world, lobstermen would land plenty of lobsters at a good price while leaving sufficient numbers on the bottom to keep the population fit by reproducing for many decades, as nature intended. Unfortunately, at minimum legal size, less than half the females are mature. As a result, few lobsters reproduce even once.

Females carrying embryos on their abdomens are protected, and that's good. But when captured, they are V-notched to mark them as breeders. The mark is an open wound that increases susceptibility to disease and predation, with no evidence that notching helps either them or the fishery.

In my three decades of studying lobsters, I conclude that the biggest fishery management problem is how to keep the population balanced among young and old lobsters. Current management measures don't ensure that future generations of fishermen will benefit from future lobster generations.

My view is that the only way to guard the Gulf of Maine fishery against a disastrous crash such as the one south of Cape Cod is to guarantee that at least a few centurions survive. Instead, Maine has loosened its lobster rules by condoning the harvesting of "oversized" lobsters.

Maine was a leader in lobster conservation, the first to outlaw taking lobsters with carapaces longer than five inches, or about 3.5 to 4 pounds. Although Maine lobstermen still may not harvest them and ground fishermen may not land them here, Maine recently passed a law that allows processors to purchase "oversized" lobsters from Canada and states that allow capture. This creates a market that will be sure to be filled at the expense of the lobster population.

The Gulf of Maine lobster fishery is surviving on luck. Will our luck hold despite this latest assault? I hope so, but the question is keeping me awake at night.

Diane F. Cowan of Friendship is executive director of the Lobster Conservancy.

Recent Publications & Presentations

Solow, AR and DF Cowan (in press) Testing for space limitation in postlarval lobster settlement.
Marine Biology

McMahan, M.D., D.F. Cowan, G.D. Sherwood, J.H. Grabowski, Y.Chen (in press) Evaluation of coded microwire tag retention in juvenile American lobsters, *Homarus americanus*. **Journal of Crustacean Biology**

Cowan, D.F. (2011) Sleepless over lobster: Can our luck hold out? **Bangor Daily News**, Op Ed December 1. <http://bangordailynews.com/2011/12/01/opinion/contributors/sleepless-over-lobsters-can-our-luck-hold/?ref=mostReadBox>

Cowan, D.F., October 15, 2011. "Sustaining a fishery and a way of life" for TEDx Woods Hole http://www.youtube.com/watch?v=L0iBSkkQ7Yw&list=PLA5D2F57B20C04A48&index=4&feature=plpp_video

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Video of protocol for Juvenile Lobster Census <http://www.youtube.com/watch?v=ZOLsVIMj3Og>

A year in the life of a Maine lobster: temperature matters, by Diane Cowan 3 March 2011, 36th Annual Maine Fishermen's Forum, Samoset Resort, Rockport, ME

120 years of lobster pound history, by Diane Cowan 5 March 2011, 36th Annual Maine Fishermen's Forum, Samoset Resort, Rockport, ME

A year in the life of a Maine lobster, by Diane Cowan, Tuesday, July 26 from 7-8 pm at the Friendship Town Office

A century of pounding lobsters in Friendship, Maine, by The Lobster Conservancy intern, Leslie Wallace, Tuesday, August 9 from 7-8 pm at the Friendship Town Office

Many thanks to all of you for your continued support of The Lobster Conservancy's work.

Yours in TLC and Friendship,

Diane F. Cowan, Ph.D.
Executive Director