The Lobster Conservancy

Sustaining a thriving lobster fishery through science and community

Winter 2008

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.

Juvenile Lobster Monitoring Program

The Lobster Conservancy's premier program that takes a monthly census of juvenile lobsters throughout each year met with great success in 2008. Volunteers sampled lobsters from April through November. An additional two sites were monitored by staff from January through December 2008. It was a challenging year due to frequent storms bringing low pressure systems that kept tides higher than predicted when we needed them to be super low. In spite of unwelcome weather, a few volunteer sites set records this year. Some others reported lobster densities lower than record highs but higher than record lows. All in all, lobster settlement and juvenile abundance remains relatively high and bodes well for future landings.

Downeast Maine

In 2008, we were pleased to train new volunteers at Dobbins Island in Jonesport, Maine (see http://lobsters.org/news/n0809/sept09newsletter.pdf for details). Lynn Alley's students did a stellar job at our site furthest northeast this year. Winter Harbor, Islesford and Vinalhaven also found numbers of lobsters similar to what they have reported in the last two or three years (Figure 1).

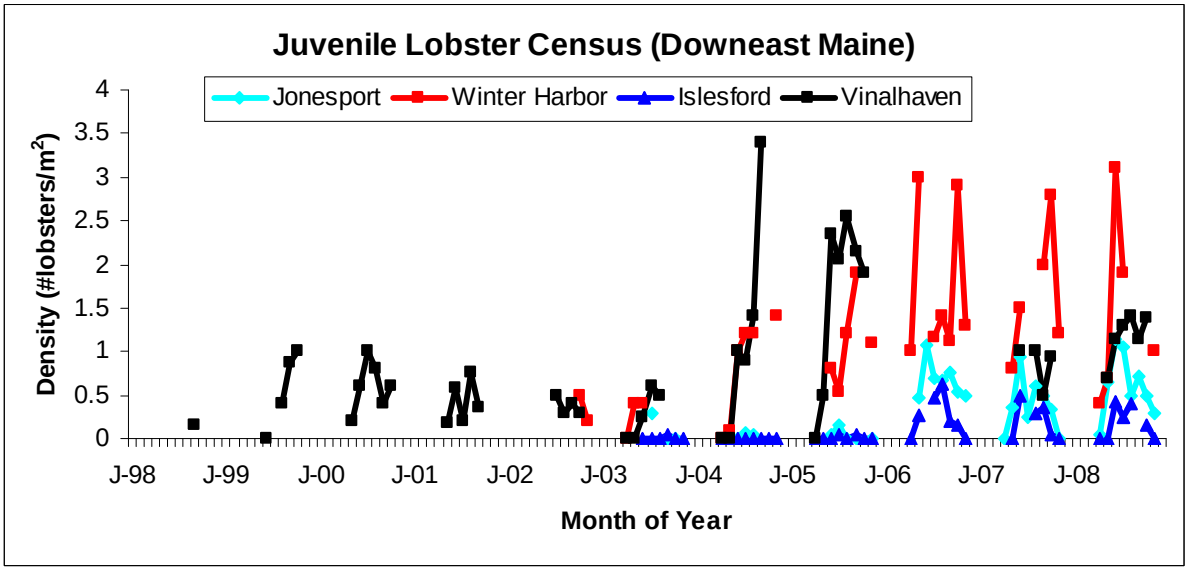

Figure 1. Time series record of lobsters found at Jonesport, Winter Harbor, Islesford and Vinalhaven Maine. Each data point plots one month's average number of lobsters found per square meter. Blank space means that no samples were taken. J-98…J-08 stands for January 1998 to January 2008. Each tick mark signifies one month.

Midcoast Maine

At a glance, there seems to be a downward turn in numbers of juvenile lobsters in Midcoast Maine (Figure 2). Pratt Island counts were back down from peaks in 2006 and 2007 to 2003-2005 levels. However, Drift Inn Beach in Port Clyde and Waterman Point in South Thomaston reported record highs (Drift Inn for the first time recording the highest Midcoast densities except for Friendship Long Island, see below). Lobster counts at Allen Island also remained strong. Drift Inn Beach is an interesting story being the only site that did not show the rise in densities in the early 2000's. We think this was due to silting over of habitat. It looks like the site has recovered and all is well now. For the first time since the census began, all volunteers sites reported peak densities greater than one lobster per square meter – the level at which the Maine Department of Marine Resources designates important lobster habitat. Congratulations for joining the ranks, Drift Inn Beach!

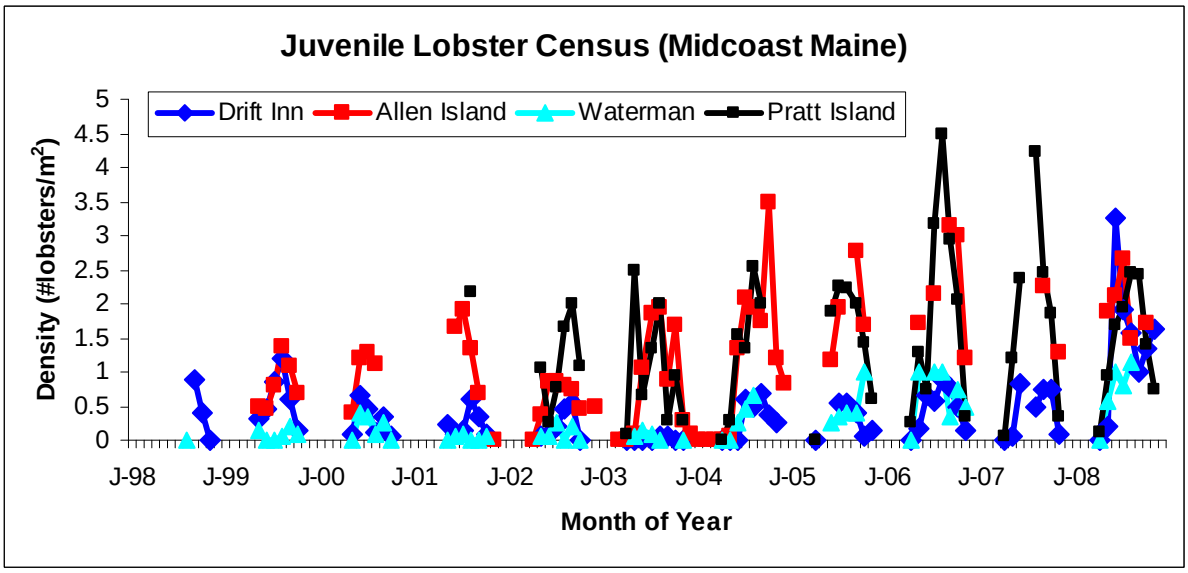

Figure 2. Time series record of lobsters found at Drift Inn Beach, Allen Island, Waterman Point and Pratt Island in Midcoast Maine. Each data point plots one month's average number of lobsters found per square meter. Blank space means that no samples were taken. J-98…J-08 stands for January 1998 to January 2008. Each tick mark signifies one month.

Casco Bay, Maine

The Lobster Conservancy maintained its stronghold in terms of numbers of lobsters, volunteers and sampling locations in Casco Bay in 2008 (Figure 3). Spar Cove on Peaks Island showed the greatest increase in lobster abundance, while other sites recorded lobster densities similar to those reported over the past four years.

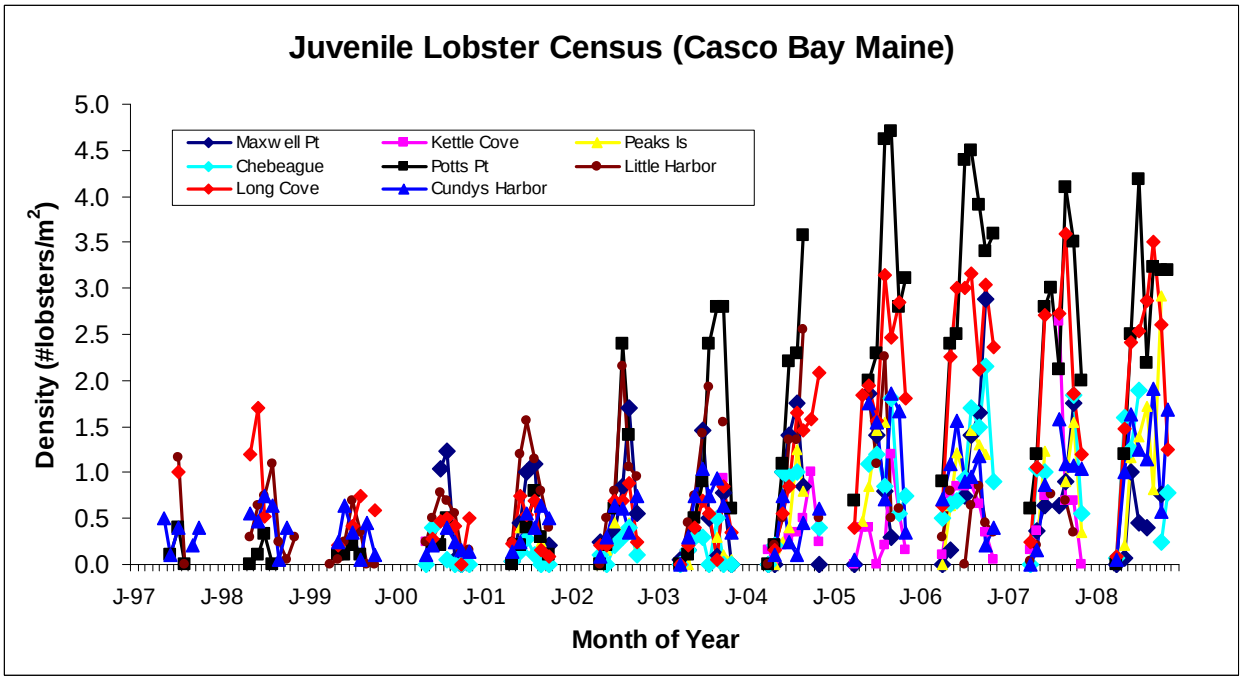

Figure 3. Time series record of lobsters found at eight sites in Casco Bay, Maine. Each data point plots one month's average number of lobsters found per square meter. Blank space means that no samples were taken. J-97…J-08 stands for January 1997 to January 2008. Each tick mark signifies one month.

New Hampshire and Southern Maine

Juvenile lobster abundance in New Hampshire and Southern Maine remained similar to recent years with Fort Stark, New Hampshire and Goose Rocks Beach in Biddeford, Maine reporting their highest densities to date. Interestingly, the Goose Rocks team recorded their greatest numbers in

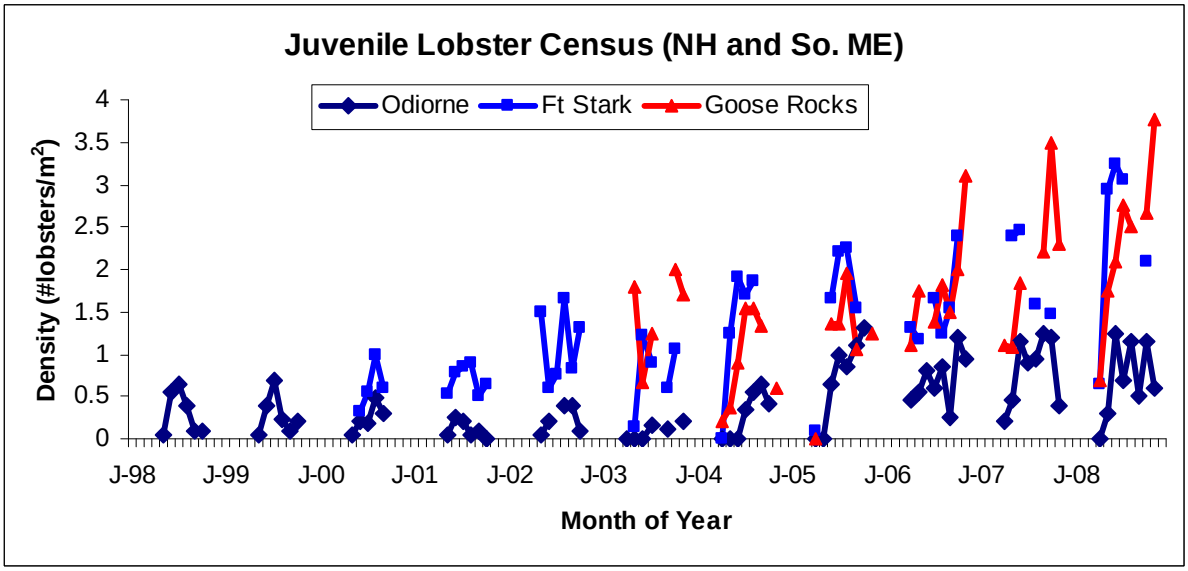

Figure 4. Time series record of lobsters found Odiorne and Fort Stark, New Hampshire and Goose Rocks Beach in Biddeford, Maine. Each data point plots one month's average number of lobsters found per square meter. Blank space means that no samples were taken. J-98…J-08 stands for January 1998 to January 2008. Each tick mark signifies one month.

November. In the beginning, we required volunteers to census lobsters from May through October, but with increased sea water temperatures, we noticed at the year-round sites that things – like larger juveniles migrating back from overwintering grounds in the spring, and settlement occurring later in the fall – were changing, so we added April and November. We're glad we did.

Massachusetts

Compared to last year, Gerry Island at Marblehead was up a bit, Plum Cove in Gloucester was down a bit and Blue Fish Cove in Green Harbor looked about the same.

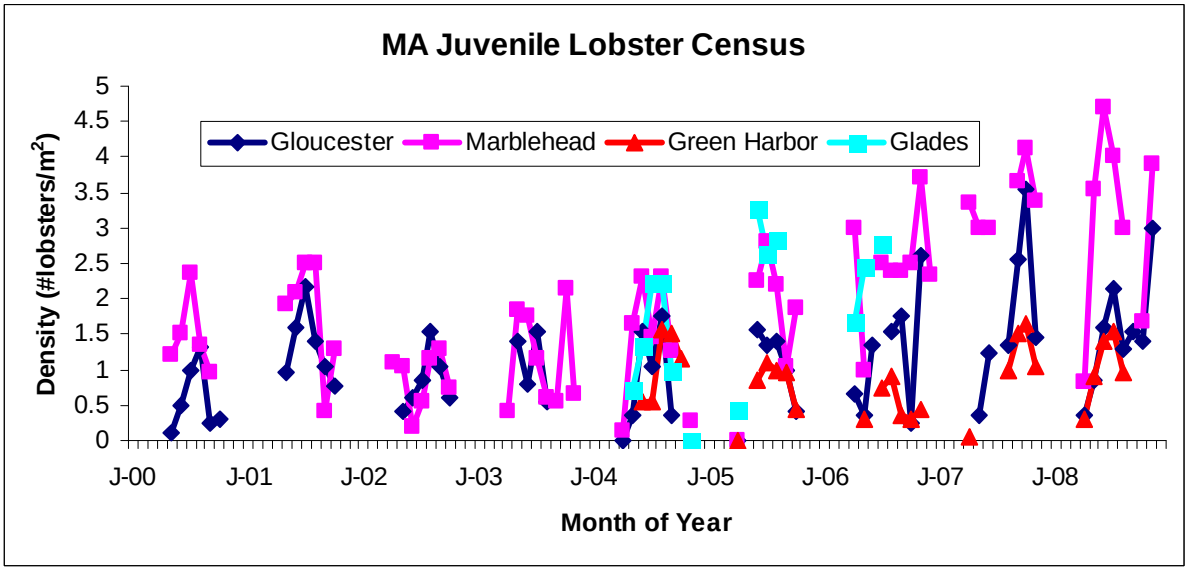

Figure 5. Time series record of lobsters found Gloucester, Marblehead, Green Harbor and Scituate, Massachusetts. Each data point plots one month's average number of lobsters found per square meter. Blank space means that no samples were taken. J-00…J-08 stands for January 2000 to January 2008. Each tick mark signifies one month.

Lowells Cove and Friendship Long Island

Juvenile lobster densities at both Lowells Cove on Orrs Island in Harpswell, Maine and Bramhall Deep Cove on Friendship Long Island in Friendship, Maine fell from record highs. However, lobster abundance at these locations remains higher than at any other sites sampled throughout the Gulf of Maine. It is interesting how well the two locations track in terms of peaks and troughs – in spite of different environmental conditions. For example, Lowells Cove in Casco Bay is much warmer than Deep Cove in Muscongus Bay. This year, thanks to the recruitment and training of Marissa McMahan at Lowells Cove, the two sites were often sampled simultaneously. Exchanging stories led to repeated, "I saw that, too" – right down to the juvenile flounders that frequented both sites. There were differences in species composition as well. For example, juvenile hake showed up at Bramhall Deep Cove in September while none were seen at Lowells Cove and Asian Shore Crabs returned to Lowells Cove but were not found in Friendship.

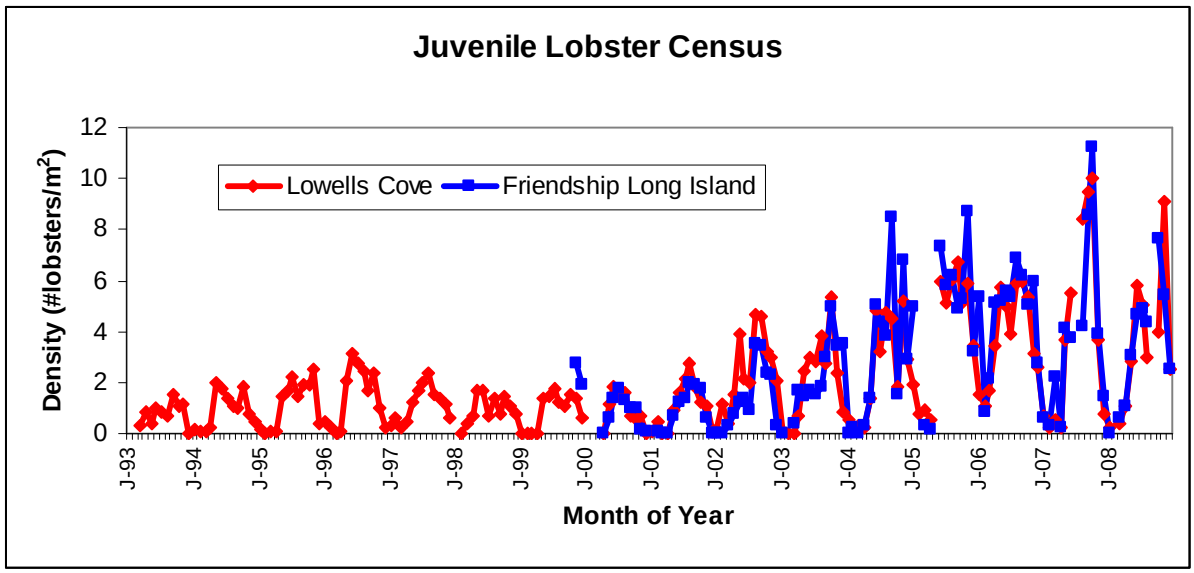

Figure 6. Time series record of lobsters found at Lowells Cove and Friendship Long Island, Maine. Each data point plots one month's average number of lobsters found per square meter. Blank space means that no samples were taken. J-93…J-08 stands for January 1993 to January 2008. Each tick mark signifies one month.

Postlarval Settlement

Postlarval settlement – as indicated by lobsters measuring less than 6.5 mm in carapace length (that translates to about ¾ of an inch in total length) occurred at 11 sites from Midcoast Maine to Massachusetts (Table 1). First-year lobsters measuring less than 17.5 mm in carapace length (approximately two inches in total length) were found at all sites except for Coast Guard Beach on Islesford. It is likely that settlement occurred at all 19 sites where lobsters measuring 10 mm CL (approximately 1.25 inches) were found. Lobsters measuring greater than the minimum legal size for capture (82.5 mm CL) were found at three locations: Waterman Point, Gloucester and Green Harbor (Table 1).

Location	**Minimum**	**Maximum**	**Average**
Downeast Maine	(mm CL)	(mm CL)	(mm CL)
Jonesport	8	75	29.8
Winter Harbor	8	53	30.3
Islesford	20	46	35.2
Vinalhaven	13	68	34.6
Midcoast Maine			
Drift Inn Beach, Port Clyde	15	53	33.1
Waterman Point, South Thomaston	10	86	39.1
Allen Island	9	75	35.5
Friendship Long Island	6	53	21.8
Pratt Island, Southport	6	70	27.1
Casco Bay Maine			
Cundys Harbor	5	65	22.7
Long Cove, Harpswell	5	68	27.6
Lowells Cove, Orrs Island	5	60	22.3
Potts Point, Harpswell	7	66	23.3
Bennett Cove, Chebeague Island	10	62	29.5
Spar Cove, Peaks Island	6	52	29.6
Maxwell Point, Cape Elizabeth	8	70	39.9

New Hampshire & Southern Maine			
Goose Rocks Beach, Biddeford	6	69	26.7
Odiorne, New Hampshire	11	43	27.5
Fort Stark, New Hampshire	6	72	30.2
Massachusetts			
Gerry Island, Marblehead	7	59	26.4
Plum Cove, Gloucester	5	90	26.6
Blue Fish Cove, Green Harbor	5	85	33.4

Table 1. Minimum, maximum and mean carapace length (measured from the rear of the eye socket to the end of the body segment) of lobsters measured at each site).

New Addition to The Lobster Conservancy

Marissa McMahan has been a volunteer at the Lobster Conservancy since November of 2007 doing both field work and data analysis. She recently was hired at the Gulf of Maine Research Institute where she has been funded to begin working on her master's in marine biology through the University of Maine Orono. Her master's thesis project will involve the analysis of data collected by The Lobster Conservancy (mainly Diane Cowan) since 1993, specifically focusing on the growth and survival of juvenile lobsters in this time frame. Over the next several years Marissa will be working closely with The Lobster Conservancy, The Gulf of Maine Research Institute, and the University of Maine's School of Marine Sciences to complete her thesis project and the additional course work required to fulfill a master's degree. In the meantime she will continue with monthly sampling for the Lobster Conservancy at her field site in Harpswell.

Marissa was born and raised on the Maine coast in a small fishing community called Five Islands. She comes from many generations of fishermen and has extensive experience with lobstering, both on her own hauling traps from a small skiff, and as a sternman on larger boats. Her interest in marine biology is a direct result of having spent her entire life connected to the ocean.

Year-end Summary

The past twelve months have been extremely productive for The Lobster Conservancy. We have continued to conduct top notch scientific research on lobster behavior and ecology and have expanded our education and outreach programs to reach a wide variety of schools, communities, fishing industry members, and the general public.

The Lobster Conservancy fills a niche that is not covered by traditional academic or research institutions by directly involving community and industry members in all of our research and education projects. We have sustained and expanded this community-based approach to marine science and education for more than a decade. In fact, none of our work would be possible without the help and commitment of dedicated stewards of the "Lobster Coast". The Lobster Conservancy also enjoys the support and commitment of partners at governmental, academic, and fellow non-profit organizations. Over the years, we have been funded by a wide variety of sources including community foundations, private foundations, state and federal government agencies, as well as individuals and businesses. This year, we have had to focus more on membership donations due to waning availability of government and foundation sources.

We are proud of the accomplishments of The Lobster Conservancy, and look forward to continuing and building upon our long term research for decades to come.

Memberships
Many thanks to all of you who have sent in your membership dues! The response to this year's appeal has been strong. If you have not yet mailed your annual membership contribution, please send your check to PO Box 235, Friendship, Maine 04547 today!

Best wishes for a healthy and joyous 2009!

Yours in TLC,

Diane F. Cowan, Ph.D., Executive Director
Jane Roundy, Volunteer Coordinator
Marissa McMahan, Graduate Student