

# The Lobster Conservancy

*Sustaining a thriving lobster fishery through science and community*

June 2007

Dear Volunteers and Friends of The Lobster Conservancy,

The Lobster Conservancy's (TLC's) mission is to sustain a thriving lobster fishery through science and community. This newsletter keeps our friends and volunteer research team informed of our activities. Here's what we've been up to over the past few months.

## **New Research Project**

### ***Following Lobsters from Nursery Habitat to Plate***

The Lobster Conservancy (TLC) is launching a new project to extend our Juvenile Lobster Monitoring Program to the next life-history stage and beyond. Since the Juvenile Lobster Census began in 1992, we have surgically implanted coded-wire tags into approximately 15,000 lobsters. The benefit of the small, internal tags is that small lobsters retain the tags throughout the molt cycle. Unfortunately, a special detector is needed so that only TLC scientists have been able to recognize and follow the progress of tagged lobsters and once they leave the nursery habitats they are not recognized again.

A grant from the Maine Community Foundation and generous donations of labor and materials by Riverdale Mills, Friendship Trap Company, Lash Lobster Wharf and Stephen and Isaac Lash now make it possible for us to follow our lobsters for an extended period of time by adding an external tag to larger juveniles. Imagine the following scenario:

1. TLC scientist tags 12 mm carapace length (1.5 inch total length) juvenile with a coded wire tag
2. TLC scientist recaptures same lobster 1 month, 1 year, 2 years,... etc. later (steps one and two are already happening)
3. By the third year the lobster is big enough to handle surgical implantation of an externally visible tag!
4. TLC scientist tags 40 mm carapace length (4.5 inch total length) lobster with a streamer tag (see figure)
5. Lobster harvester catches juvenile days, months later and shares information regarding size and condition of the lobster as well as where it was captured
6. Lobster harvester catches tagged individual a few years later and sells it to the dealer as part of his catch! Dealer or lobsterman contacts TLC with information
7. TLC scientist learns:
  - ✓ how long it takes lobsters to grow from recently settled to marketable size
  - ✓ where juvenile lobsters go when they leave their nursery habitats
  - ✓ how far juvenile lobsters travel in given amounts of time

- ✓ direction of juvenile lobster travel
- ✓ whether juvenile lobsters migrate
- ✓ relative survival rates in different years

This study will take place in and around Bramhall Deep Cove on Friendship Long Island where we have been tagging juveniles since 1999. To increase our chances of recovering previously tagged larger juvenile lobsters for the new external tag, the project involves using modified lobster traps with a small mesh and no escape vents. If successful, this project will yield the first field-based, empirical data on lobster growth and maturation as well as useful data on survivability and the range of young lobsters.

Project Leader, Sarah Lash is very excited to get started and has her fingers crossed for lots of recaptures!



**Figure 1.** Lobster modeling the tag we will be attaching to previously tagged juvenile lobsters. The tag includes an individual identification number and TLC phone number.

## **Juvenile Lobster Monitoring Program (JLMP)**

### ***Details***

The volunteer-based Juvenile Lobster Monitoring Program is now in its fifteenth season. We had another strong turnout for our two preseason Kick-Off Meetings. On March 24<sup>th</sup> Joe DeStefano of Watermans Pt in South Thomaston; Beth Howe and Mac Passano of Bennett Cove, Chebeague Island; Helen Muther, Sarah Maciejewski, and Tim Brosnihan of Broad Cove, Cape Elizabeth; David Vaughan, Joseph Nowak, and Alex Brett of Kettle Cove, Cape Elizabeth; Dan Doolittle and Rick Lombardi of Goose Rocks Beach, Biddeford; Carolyn & John Payzant and Ashley Abcunas of Fort Stark, New Castle; Sara Ellis of Odiorne Point, Rye; Glenn Roundy of Plum Cove, Gloucester; and Mitch and Nick Wondolowski of Gerry Island, Marblehead all gathered at the Seacoast Science Center in Rye, NH for a brief review of sampling protocol,

online data entry, tide schedule, and plans for the 2007 season by Jane Roundy. Diane Cowan presented a summary of 2006 results in the context of our 14-year time series and distributed the results of Mapping Lobster Nursery Habitat in the Gulf of Maine. Each lobster census team received a map identifying all 138 sites surveyed and a regional map focusing on their site along with an accompanying report and aerial photos depicting the precise location of their lobster nursery. We have asked our volunteers to present the maps and information to their towns in the interest of protecting lobster nurseries from any projects that may alter the site or introduce environmental risk.

On March 25<sup>th</sup>, Lynn Alley, Blane and Blake Beal, and Alexis Priestley of Dobbins Island, Jonesport; Stefanie and Rick Alley of Coast Guard Beach, Little Cranberry Island; Leslie Fuller and Annette Naegel of Waterman Point, South Thomaston; Joanne Sharpe of North Beach, Allen Island; Enid Johnson, Kit and Leigh Sherrill, and Barbara Lally of Pratt Island, Southport; Amy Watson Saxton and Stacy Welner of Cundys Harbor, Harpswell; Corie Bibber of Little Harbor, Harpswell; Sue Lamdin and Ginny Hopcroft of Gun Point, Harpswell; Meg Warren, Karen Abbey, and Sandy Meyer of Potts Point, Harpswell; Arilda Densch of Goose Rocks Beach, Biddeford; and guest Ken Weed of Lincolnville met in Friendship, ME to obtain the same information. A huge thank you to all who attended. It was great to catch up with our seasoned samplers and meet our new volunteers. Thanks to the Seacoast Science Center and the Hahn Community Center for the use of their facilities.

To date, the Little Cranberry, Harpswell area (Cundys Harbor, Gun Point, Potts Point, Lowell's Cove and Little Harbor), and the Gerry Island, Marblehead teams have presented the maps and reports to their local selectmen. As a result of the mapping project, we have already been approached by a group in Marblehead, MA over use of pesticides in an upland wetland that is adjacent to the Gerry Island lobster nursery; Lincolnville, ME over shoreline construction projects; and Harpswell, ME over the location and profusion of wharves and construction of a replacement cribstone bridge. The other teams will be making their presentations over the next couple of months.

This year, over 100 volunteers will monitor 25 juvenile lobster nursery sites from Dobbins Island in Downeast Maine to Green Harbor, MA. Welcome aboard to new volunteers Joe DeStefano at Waterman Pt, Barbara Lally, Tim Hanley, and Tina Van Sickle at Pratt Island, Sandy Meyer at Potts Point, Greg Howard at Lowell's Cove, Sarah Maciejewski and Tim Brosnihan of Broad Cove, Ashley Allen, Emily Norris, Michael Odakara-Okigbo, and Jeff Burnap at Kettle Cove, Ashley Abcunas at Fort Stark, and David Fanning at Gerry Island. A special thanks and fond farewell to David Vaughan, our Kettle Cove team leader who has accepted a new teaching position in California.

Despite extremely favorable predicted low tides for both April and May, our teams have been challenged by the weather for the first two months of the 2007 sampling season. The Patriots Day storm presented high winds and storm surge that prevented several teams from sampling in April. Most teams found low densities, or no lobsters. Gerry Island was the exception, finding 37 lobsters in 11 quadrats, ranging in size from 11 mm to 64 mm carapace length, despite the incredible pounding that the site received two days earlier depicted below.



*Jack Arnold photo near Gerry Island, Marblehead, MA site.*

Goose Rocks Beach in Biddeford found 20 lobsters in 18 quadrats in April ranging in size from 7 mm to 30 mm carapace length.

In May, we were greeted with rain and wind for the first two sets of low tides, but our volunteers braved the elements and were rewarded with lobsters at most sites. Gerry Island in Marblehead, MA again found the most lobsters in May – 60 in 20 quadrats ranging in size from 9 mm to 52 mm carapace length, followed by Fort Stark in New Castle NH with 31 lobsters in 13 quadrats ranging in size from 4 mm to 54 mm carapace length and Gun Point with 32 lobsters in 21 quadrats from 18 mm to 50 mm carapace length. Other sites with high densities in May were:  
*Maine:* Dobbins Island, Pratt Island in Southport, Potts Point in Harpswell, Bennett Cove on Chebeague Island, and Kettle Cove in Cape Elizabeth  
*New Hampshire:* Odiorne Point in Rye

### ***Summary***

March and April sampling were particularly interesting due to events and observations we had not experienced in the previous 14 years of censusing juvenile lobsters. In March, we recorded extremely high densities at Friendship, but not at Lowell's Cove – the only other year-round site that is censused at that time of year. We have yet to find an explanation for the winter anomaly.

The Patriot's Day Gale that coincided with the April spring tides produced wind gusts up to 85 mph on Friendship Long Island. Surprisingly, the high seas and pounding storm surge did not appear to damage our lobster transects. Perhaps this is because the tides did not recede as low as predicted due to low pressure during the storm – so that any damage was higher in the intertidal zone. The impact on JLMP sampling was not being able to sample during the storm.

It was exciting and unusual to see settlement so early in the year! In April, volunteers at two sites (Gun Point in Harpswell and Kettle Cove at Cape Elizabeth) uncovered the smallest lobsters that settle to the bottom (measuring 5 mm CL or about ¾ inch in total length). Dobbins Island volunteers found the first evidence of settlement to be recorded at our site located furthest Downeast.

We suspect that the observed changes in timing and location of settlement (April and Downeast) and juvenile abundance (March) are driven by the same sea surface warming trends that correlate strongly with the overall trend of increased lobster abundance. Our ability to detect such changes is based on the quality and quantity of long-term data without which we could not detect the difference between anomalies and trends.

A sincere thanks to all TLC volunteers for their dedication and hard work despite challenging sampling conditions.

### Outreach and Education

Spring tends to be a busy time for Outreach and Education – and this year is no different. Recent events are listed in the table below. Special thanks to JLMP volunteer Mitch Wondolowski for presenting The Lobster Conservancy’s work and his personal experiences with the Juvenile Lobster Census to the Marblehead Charter School!

<b>The Lobster Conservancy</b>				
<b>Mar – May Outreach and Education Activity</b>				
<b>Organization</b>	<b>Location</b>	<b>Date</b>	<b>Title</b>	<b>Presenters</b>
Maine State Legislature	Augusta Civic Center	Mar 5	Public Hearing for LD170: An Act to Permit the Landing of Lobsters Harvested by Methods other than Conventional Traps	Diane Cowan
Maine State Legislature: Marine Resources Committee	House Chambers, Augusta, Maine	Mar 8	Lobster Learn-in	Diane Cowan
The Lobster Conservancy	Sea Coast Science Center, Seacoast, NH	Mar 24	Juvenile Lobster Monitoring Program Season Kick Off	Diane Cowan and Jane Roundy
The Lobster Conservancy	Hahn Community Center, Friendship, ME	Mar 25	Juvenile Lobster Monitoring Program Season Kick Off	Diane Cowan and Jane Roundy
Islesford Select Board	Islesford, ME,	Apr 3	Juvenile Lobster Census	Rick Alley
Marblehead Charter School	Marblehead, MA	Apr 5	Juvenile Lobster Census	Mitch Wondolowski
Chebeague Island Community	Chebeague Island, ME	Apr 14	Lobster Response to Global Warming	Diane Cowan
Harpswell Select Board	Harpswell, ME	Apr 26	Juvenile Lobster Census: 15 Years of Research in Harpswell	Diane Cowan, Amy Watson, Sue Lamdin, Ginny Hopcroft, Stacy Welner, Karen Abbey
Wiscasset Middle School	Wiscasset, ME	May 23	Lobsters from Egg to Plate	Diane Cowan

Harpswell Islands School	Harpswell, ME	May 23	Lobsters from Egg to Plate	Diane Cowan
Marblehead Select Board	Marblehead, MA	May 24	Juvenile Lobster Census	Mitch & Nick Wondolowski
Camden-Rockport Middle School	Camden, ME	Jun 8	Lobsters from Egg to Plate	Diane Cowan, Sarah Lash

<b>The Lobster Conservancy</b>			
<b>Mar - May Media Coverage and Publications</b>			
<b>Publication/Media</b>	<b>Date</b>	<b>Title</b>	<b>Author / Interviewer</b>
Courier Gazette	Mar 1	Happy 200 <sup>th</sup> Birthday Friendship	Amy Lea
Portland Press Herald	Mar 4	Worry about Loss of Broodstock Lobsters	Diane Cowan
Commercial Fisheries News	Mar	Lobster Maps Show Nursery Habitats	Diane Cowan
The Lobster Conservancy Newsletter	Mar	The Lobster Conservancy Launches 2007 Volunteer Program with Presentation of Lobster Nursery Habitat Maps	Diane Cowan/Jane Roundy
Downeast Lobstermen's Association Newsletter	April	LD 170 Fails in State House	Editor
Commercial Fisheries News	April	Density, Temperature Connection?	Diane Cowan
Commercial Fisheries News	May	Warmer Water = Higher Abundance	Diane Cowan
Courier Gazette	May 1	Grant Helps Conservancy Track Life of Lobsters	Sarah Lash
Lincoln County News	May 2	The Lobster Conservancy receives grant from Maine Community Foundation	Sarah Lash
The Mid-Coast Forecaster	May 4	Jane Goodall of Lobsters is Worried	Steve Mistler
Harpswell Public Television	Apr - Jun	Presentation of Lobster Nursery Habitat Maps to Harpswell Select Board	Diane Cowan, Amy Watson, Sue Lamdin, Ginny Hopcroft, Stacy Welner, Karen Abbey

Finally, the National Geographic special "Wild Chronicles" will feature TLC's juvenile lobster monitoring program as filmed by Nick Caloyianis. We'll keep you posted when we hear about date and time.



Nick Caloyianis photo of Linda Archambault sampling a lobster quadrat outside the lobster pound on Friendship Long Island.

Have a wonderful summer!

Yours in TLC,

Diane Cowan, Jane Roundy, and Sarah Lash