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The Lobster Bulletin

News, research updates and information on lobsters and the lobster industry

2013 Lobster Landings in Maine Remain High

A preliminary report from Maine's Department of Marine Resources indicates 2013 lobster landings in Maine will be the second highest on record at 125,953,876 pounds. The value of these landings is calculated at approximately \$364 million, which is a \$22 million increase over 2012 and \$30 million over 2011.

There were 4,239 active harvesters in the commercial lobster fishery last year. The 2013 average boat price per pound increased by 20 cents over 2012 – from \$2.69 to \$2.89. "While an increase in price per pound is a good sign, it is still the second lowest since 1995, which underscores the importance of the efforts of the Maine Lobster Marketing Collaborative," said Patrick Keliher, the commissioner of the Maine Department of Marine Resources. ❧

Mouth of the Penobscot River Closed to Lobster Fishing— Though Lobsters Still Safe to Eat

On February 22, 2014 a small area at the mouth of Maine's Penobscot River was closed to lobster and crab harvesting for a minimum of two years. "This closure is being taken as a precautionary measure in response to information the Department of Marine Resources (DMR) recently received about mercury contamination in muscle tissue from lobsters found in this area," said Department of Marine Resources Commissioner Patrick Keliher.

The closed area extends from Wilson Point across to Fort Point, and north into the Penobscot River, and covers an area of only 7 square miles out of the more than 14,000 square miles in the Gulf of Maine where lobsters are harvested.

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Pending Canada/E.U. Trade Agreement May Provide Boost to Lobster Exports

According to an article by Paul McLeod in the Chronicle Herald, nearly 95% of European seafood tariffs will be eliminated from Canadian imports. This will greatly benefit the lobster processing industry as the approximately 18% tariff on lobster meat will be phased out over five years. The Canadian live lobster exporters will also benefit from the elimination of an 8% tariff on their product.

Europe has been a relatively small percentage of the market for Canadian lobster in the past few years, and seafood exports in general have been declining in the past 5 years. The United States has always been the greatest importer, with gains seen in the past few years in the Asia-Pacific markets of China, Japan and Hong Kong. McLeod quotes Fisheries Council of Canada president Pat McGuinness as saying he believes the trade deal with the European Union will reverse the trend of falling Canadian seafood exports to Europe. "With the elimination of the EU tariffs, I can see a lot of...shipments being re-diverted to the EU," McGuinness said. "Russia and China are very lucrative markets but they're high-risk markets."

McLeod reported that the value of Canada's seafood exports to Europe dropped 40% from 2007 to 2012 – from \$576 million to \$343 million. However, he quotes Lobster Council of Canada Executive Director Geoff Irvine as saying, "In lobster, it's been fairly consistent for the southern part of Europe." Yet, Irvine anticipates the trade deal will benefit the entire seafood industry.

We hope you enjoy the refreshed look of *The Lobster Bulletin*. Remember, you can also receive the *Bulletin* by email. Contact us at lobsterinstitute@maine.edu if you'd like to receive the *Bulletin* electronically.



The Lobster Institute

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RESEARCH REPORT

DMR's Status of the Lobster Fishery as reported at the Maine Fishermen's Forum:

Carl Wilson, a lobster biologist with the Maine Department of Marine Resources, updated attendees at the Maine Fishermen's Forum on the status of the lobster resource as depicted by surveys and studies conducted in 2013. The following are notes from that session :

Landings – Preliminary data shows 2013 landings remain near record highs at 125,953,876 pounds.

Settlement – A yearly settlement index has shown a decline in settlement in the past two-three years in most lobster zones in Maine. Settlement data is used as a possible indicator of landings five to seven years out from the date of collection. This trend indicates a potential decline in landings through 2018, particularly in zones A-D.

V-Notch – During sea sampling, the percentage of egg-bearing lobsters brought up in traps that have a v-notch has decreased from 82% in 2008 to 61% in 2013. According to Wilson, "This is not what we want to see," for modeling and assessment purposes.

Shell Disease – The percent incidence of shell disease in lobsters has seen a slight increase in western areas, with just over 4% reported in Zone G; 3% in Zone F; and approximately 1/75% in Zone E. All other zones remain below 1%. Comparatively, Rhode Island typically sees a 30-40% incidence rate. Wilson indicated that shell disease is seen more frequently in older, larger lobsters. This includes the older v-notched lobsters, which are "just the population we are trying to protect." He noted that some lobstermen dispose of shell diseased lobsters they catch, but he discouraged that practice.

Lobster Grip Study: As reported in the Summer 2013 *Lobster Bulletin*, students at the University of Maine have been working with the Lobster Institute to develop a novel method for measuring lobster viability for shipping. The greater the serum protein value the longer the distance the lobster can be shipped. Currently, a blood sample is drawn and a serum protein measurement is made with a refractometer (Leavitt and Bayer, 1977) to help determine viability. For the new method, the assumption is that muscle mass, as indicated by claw closing strength, would correlate to serum protein. A load cell was constructed by a student Tom McKay and UMaine Professor of Mechanical Engineering Michael Peterson to measure the closing force of lobster claws. The technique showed high correlation to serum protein in tests conducted by UMaine Animal Veterinary Sciences students, Zoe Kreitzer and Matt Hodgkin. Trials in the fall of 2013 indicated that

Two Methods for Determining the Fertility Status of Early-Stage American Lobster Eggs:

(Excerpts from the 2011 abstract by Kirby Johnson, J. Goldstein and W. Watson.) One key piece of information provided in various biological monitoring programs and surveys that guide the development of management plans is the number of females that are carrying eggs. "A major assumption is that all eggs carried by ovigerous females are fertilized and will thus result in viable recruits. However, because some lobsters extrude, and briefly carry, unfertilized eggs, this assumption needs to be re-evaluated. In particular it is important to determine the approximate proportion of newly extruded eggs that are either fertilized or not." This study was aimed at developing reliable methods for determining if early-stage lobster eggs (live and preserved) were in fact fertilized. "One method involved using a nucleic acid stain to visualize egg DNA, after pretreatment with a proteolytic and collagenolytic enzyme solution... With this method multi-nucleated (fertilized) eggs could be clearly distinguished from unfertilized eggs. A total of 20 egg clutches were tested. Of these 16 (80%) were fertilized while 4 (20%) were not. Of the 16 clutches with fertilized eggs, 2 had a mix of both fertilized and unfertilized eggs. A second method, using fluorometry to obtain measurements of total egg DNA, was also developed. There was a significant difference between the total DNA concentration in unfertilized control oocytes and early-stage fertilized eggs ($P < 0.001$) and the total amount of DNA gradually increased as eggs developed ($r = 0.961$, $P < 0.0001$). Both of these methods will make a more accurate assessment of the proportion of female lobsters that will actually contribute new recruits to the fishery." (Full article in the *Journal of Crustacean Biology*, 31(4): 693-700, 2011)



Measuring lobster grip strength using a prototype load cell.

Penobscot River Lobsters

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The DMR indicates that, “lobsters from within the closed area are still safe to eat, but the State Toxicologist advises that sensitive populations limit their consumption of lobsters from this area.”

Information on the DMR’s website indicates the standard used when deciding to issue the advisory is as follows, “The level of mercury in fin fish that warrants consideration of a consumption advisory by the Maine Center for Disease Control for the most sensitive population is 200 nanograms (a billionth of a gram) of methylated mercury per gram of tissue. At that level, no more than one 8 ounce meal per week for pregnant and nursing women, and children under age 8 is recommended. Two average size whole lobsters would yield approximately 8 ounces of meat. There is currently no lobster-specific action level and therefore the State Toxicologist and DMR used the fin fish action levels in making a determination for this action.” DMR added that, “Further monitoring will be conducted to gain additional information both inside and outside of the closure area. The goal will be to better understand mercury in impacted species. DMR, DEP and CDC will be working together to conduct seasonal monitoring on mercury levels in lobsters and crabs. The study will aim to determine, after two years, whether any further

management action is warranted at that time, including whether the closed area can be re-opened or should remain closed.”

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CANADIAN/U.S. LOBSTERMEN’S TOWN MEETING

We are all in this together!

Hosted by the



The Lobster Institute was joined by the Atlantic Lobster Sustainability Foundation in hosting the 11th annual Canadian/U.S. Lobstermen’s Town Meeting in Portland, Maine on March 21 and 22. Topics discussed included:

- ❖ Aiming for a consistent catch
- ❖ Marketing
- ❖ Sustainability & meeting global demand
- ❖ Handling for quality & dockside grading
- ❖ Plus lots of time for open discussion

A full transcript of the Town Meeting will be posted on the Lobster Institute’s Web site www.lobsterinstitute.org and a report will appear in the next *Lobster Bulletin*.



The Lobster Bulletin
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**Protecting and conserving the lobster resource,
and enhancing lobstering as an industry and a way of life.**

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