

**Canadian/U.S. Lobstermen's Town Meeting**  
**April 23, 2004 – Portland, Maine**

**Summary Report**

At the suggestion of its Board of Advisors, the Lobster Institute planned and hosted an industry-wide gathering of lobstermen and other interested parties to discuss the status of the lobster resource, from the lobstermen's perspective. The meeting took place in Portland, Maine on April 23, 2004.

Goals of the event:

- Provide fishermen with an opportunity to share with one another what they are observing in their day-to-day operations, what their concerns might be, and what positive things they are seeing -- and how management might use the information they can provide
- Allow fishermen to get a more complete picture of the entire resource, including commonalities, differences and potential future impacts.
- Help set the agenda for research for the lobster fishery on an industry-wide basis, geared toward the responsible use of the resource while maintaining the vitality of the industry.
- Foster collaboration and communication between all geographic areas of the fishery, reinforcing the fact that all share and rely on a common resource that must be protected.

The morning session took the form of a town meeting, with all lobsterman invited to draw from their experiences while fishing and share their thoughts, observations, concerns, theories and questions about the status of the lobster resource and its habitat. During this part of the day's activities, only lobstermen were invited to give testimony. The scientists, resource managers and other interested parties in attendance were asked to participate as listeners only. The session was run by a trained moderator, Ron Beard, a member of the Marine Extension Team from the University of Maine/Maine Sea Grant.

The Town Meeting was audio-taped and unabridged transcriptions of these tapes are available. Major topic areas discussed and questions raised included:

- The availability of adequate food sources for the lobsters – Is the increase in catch due to a larger stock or a hungry stock drawn to the traps.
- Is there a lobster population that does not trap, and if so, does this mean that scientific research is flawed if we are basing research only on what is seen in traps?
- A baseline is needed for what constitutes a "healthy" lobster.
- International gauge size – may seriously impact the economics of some lobstering communities, yet will it have a conservation benefit?
- Molting habits seem to be changing.
  - Some fishermen are seeing late molts (Nova Scotia)

- Others are seeing pre-mature molts, particularly in egg-bearing lobsters (Rhode Island, Long Island Sound).
  - More research into molting habits is needed.
- More information is needed on the inter-relationship of various species.
  - How will the disruption of one affect the other?
  - For example, how will the revitalization of ground fish affect the lobster stock?
  - Is there a danger of conservation in one area being detrimental to another
- More value-added product development is needed in order to take full advantage of the resource and increase the profitability of the fishery.
- Increased use of pesticides and herbicides and their affects on lobsters and other marine species was a concern expressed by many fishermen. Widespread spraying for the control of mosquitoes/West Nile virus as well as use by coastal homeowners are both of concern.
- Water quality was broadly discussed.
  - The use of chlorine was a concern. “Clean” water is not necessarily healthy water for marine species.
  - How aquaculture relates to water quality was a point of interest.
  - Sewer outfalls were areas of concern, and the increase in human population causing an increase in effluent of all types
    - Medical waste
    - Household cleaners
    - Human waste
- Some Canadian lobstermen are now seeing shedders where they had never seen them before. They expressed the need for more information on how to deal with shedders in their industry.
- The availability of bait was noted as a potential problem that may be quickly approaching.
- How can lobstermen use scientific information to advocate for the betterment of the fishery? There was a feeling expressed that lobstermen are reluctant to share information related to fishery science for fear the response will automatically be to set more regulations.

Concurrent roundtable sessions were organized in the afternoon to allow more in-depth discussion of key areas identified as a result of the Town Meeting testimony. All in attendance were invited to participate in this exercise. Five topics were identified and each session was repeated to provide an opportunity for the lobstermen to participate in discussions of at least two areas of concern. Key researchers were assigned to each session to provide input and share the current status of studies being done in highlighted areas. A member of the Maine Marine

Extension Team was designated to moderate each discussion group. The objective of these discussions was to come up with key questions to help frame future research efforts. The five topics, in alphabetical order, were:

- Behavior and Life Cycle
- Gauge Size as a Conservation Measure
- Lobster Health
- Nutrition and the Food Chain
- Water Quality

Below is a summary of the research questions produced as a result of each roundtable discussions:

### **Behavior and Life Cycle**

- 1) How does water temperature affect lobsters?
  - a. Affect on shell disease
  - b. Affects on growth and weight gain?
  - c. Are harvesting practices and water temperature related to mortality? Cold surface water seems toxic to deep water catches in mid-winter.
  - d. Affects on reproduction (mating, gamete development)
  - e. Affects on feeding...can it be too warm or too cold?
- 2) Is shell disease causing double molts? What is the affect on lobsters normal movement as a result?
- 3) What are the nutritional needs of wild and pounded lobsters?
- 4) Baseline data is needed for
  - a. bottom temperatures
  - b. time of molting
- 5) How do lobsters behave around the traps (U.N.H. researchers working on this)
- 6) Are lobsters populations being affected by low food supplies?
- 7) What affects the lobsters' appetite?
- 8) What geographic areas do lobsters need to complete their life cycles? (possible international issues?)
- 9) How can scientific information be better translated to fishermen? (Extension needed, Web-based, science translators needed, a scientific clearinghouse)
- 10) How can we better link U.S. and Canadian research projects?

## Maximum Gauge Size as a Conservation Measure

- 1) What other ways might be used to keep the biomass up besides a maximum gauge? What other conservation tools are available?
- 2) What size lobster produces the “best” eggs?
- 3) Egg Production
  - a. What is most effective way to increase egg production?
  - b. What is the most cost cost effective way to increase brood stock/egg production?
  - c. How will fishermen make more money while improving the lobster stock?
  - d. What percent of total egg production is contributed to large lobsters and is productivity related to the percent of large lobsters?
  - e. Is egg production related to gauge size? (It was noted that in Long Island Sound they never had big lobsters yet the egg production, when the population was healthy, was better than in most areas.)
- 4) Is there a stock of “untrappable” lobsters regardless of size?
- 5) Is there a relationship between conservation and hoop size? Vent size?
- 6) What would be the effect of prohibiting the taking of lobsters over 5-6” on the overall resource? Do models predict long-term effects?
- 7) Would a significant population of large lobsters have an effect on overall population and biomass?
- 8) Would it be a threat to the inshore population if big lobsters left in the water ... would productivity go down?
- 9) Is a larger population the most productive population?
- 10) Can larger lobsters defend themselves better against predator, i.e. when cod stocks come back will we need these larger lobsters to keep stocks up?

## Observations/Opinions

- 1) Gauge decisions should be local.
- 2) From a Stonington, Maine lobsterman : Keep gauge size as it is until it is proven not to be effective.

- 3) A dealer from St. Johns NB. --- 3 ¼ measure is a good thing – an increased measure would increase numbers, especially in deep water. Leaving big lobsters on bottom would be detrimental to our area because the population is so dense already.
- 4) PEI area – Maximum size is causing big lobsters to overpopulate the area.
- 5) The gauge will hinge on whether there is a sense there is a reproduction crisis. Many don't believe we have a serious crisis at this time. We have oceanographic conditions that cause populations to increase or decrease in different areas. If the condition becomes such that there is not a lot of babies, there is a worry and a need for buffer. A maximum size is useful because lobsters have a very long reproductive life and will keep populations going, particularly in areas that have low babies. Grand Manan is the only area with a great density of big lobsters.
- 6) There is a theory that old lobsters are more susceptible to disease since they molt less frequently.
- 7) From Beals Island, Maine: Proponent of maximum gauge. A lot of large females are put back in this area.
- 8) Fisherman from Gulf of Maine Area 3 : 80% of lobster over 5" are females that are not v-notched. Sees no need to send those to market, they are good brood stock. More egg-ed-out undersize lobsters have been seen in the last 6-8 years...this is a change.
- 9) The fishery is healthier in Maine than in other areas in the US. A maximum gauge would discourage offshore dragging.
- 10) From an offshore fisherman : The key is for each area to have its choice.
- 11) A safety net of oversized lobsters is needed. We can't put all our eggs in one basket with the minimum gauge.
- 12) Should we just fish less, and keep what we catch? If we fish more we throw back more. Answer might be in limiting catch not size.
- 13) Orrs Island, Maine fisherman: Doesn't want to see the minimum gauge go up because lobsters would be less marketable. There must be ways to work with the Canadian lobstermen.
- 14) Grand Manan, New Brunswick – There is a massive density of large lobsters in this area. 1/3 of the fleet lands 45% of catch and it's nothing but large lobsters. It would be a problem to eliminate 45% of the fishery. Also have highest density per trap caught. If it is shut it down, how much more density can this area handle. In each of the last five years the density was the highest recorded. The v-notch is used in this area. The same minimum gauge in all areas makes sense for marketing so there is no problem of undersized not being marketable in the US.

- 15) From a Maine scientist: Reproduction is linked to temperature. The warmer the water the earlier in life (smaller size) a lobster will bear eggs. Are more undersized lobsters egging out in Long Island Sound and southern New England areas?
- 16) There are anecdotal accounts of more and more undersized lobsters egging out in Maine, but no solid data. There also is a theory that there is such an increase in landings that you think you are seeing more lobsters, but proportionally the population is not that different.
- 17) Rhode Island/Long Island Sound : Currently using a 3 ¼ minimum gauge size. This causes a conflict with Area 2 that has a larger minimum. Data shows a genetic difference in lobsters from these areas....also a West to East migration. Smaller lobsters egg out here – so a lower minimum won't impact conservation. Don't want to go up on the minimum gauge size while the fishermen are trying to get re-established in the business. A smaller size lobster keeps the price more reasonable and the lobsters more marketable.
- 18) Rhode Island : When the minimum gauge was increased, the lobster catch was shown to increase. Rhode Island doesn't have that many larger lobsters.
- 19) Bigger lobsters don't mingle with smaller lobsters. The bigger lobsters migrate more, and are not caught more than once in the same area.
- 20) Economics will determine the size fishermen target – it hinges on what is marketable. The market is not there for bigger lobsters.
- 21) With water quality issues, it is better to get the lobsters harvested as a resource before they die in the water.
- 22) Casco Bay, Maine: Lots of undersized females are egging out. This has been seen only in the last 20 years. 90% of lobsters that I notch do not pass the Maine law but do pass the Federal law. In some areas offshore all that is caught are v-notched lobsters.

### **Lobster Health**

- 1) Can we establish a baseline for what a healthy lobster is and what a healthy habitat is? Is it different in different regions?
- 2) What are the long-term affects of various chemicals ...especially on reproduction?
- 3) We must better understand the endocrine system of lobsters – then how it is impacted by various chemicals.
- 4) Are there regional genetic differences in lobsters?
- 5) What percent of lobsters migrate? Are we forcing migration, thus causing adaptability problems?

- 6) Can pigmentation be used as an indicator for health? Does food supply affect pigmentation?
- 7) Are changes in the ecosystem forcing changes in the lobsters' diet? (look at stomach contents)
- 8) Can dramatic weather affect lobster health?
- 9) Are there toxins in lobster baits? (Possibly linked to fly control or other treatments?)
- 10) What is the sustainable biomass limit?
- 11) We need to better understand relationships of compounding factors (i.e. environment, pollutants, etc.)
- 12) How can we ensure full reporting of incidents of shell disease to track changes in its severity and prevalence? Fishermen may be leary of reporting the disease for fear it will negatively impact the market....How can we protect against this economic impact to encourage accurate reporting?
- 13) What stressors compound disease?
- 14) What are the specific causes of shell disease
  - a. Amoeba relationships
  - b. Bacterial strains
  - c. Molecular changes in carapace
- 15) What is the relationship of water quality to disease?
- 16) Are there secondary infections killing lobsters that have shell disease?
- 17) Can we use and track meat yield as a health indicator?

### **Nutrition and Food Chain**

- 1) Is bait as good for lobsters as natural food?
- 2) What percent of diet is bait?
- 3) Does feeding herring weaken lobsters?
- 4) Is there a connection between nutrition and shell disease?
- 5) Is the food supply decreasing?

- 6) Pigmentation seems to be changing – is this due to diet changes?

### Observations:

- 1) On Long Island lots of worms are eaten by lobsters
- 2) One third of a lobster's diet may be bait

### Water Quality

Key questions identified:

- 1) Trace organic compounds (i.e. consumer products such as Drano, pesticides, etc.)
  - a. What are the sources – where do they come from?
  - b. Where do they go once in the water...how do they travel?
- 2) Role of agriculture and aquaculture in water quality
- 3) How do toxins react to temperature?
- 4) Assembling existing data and determining a long-term baseline is needed for
  - a. Temperature
  - b. Salinity
  - c. Organics
  - d. d.o.
- 5) Sewage treatment sources must be looked at to see how they affect water quality

The questions above were gleaned from the following questions and observations

- 1) Water quality is #1 issue.
- 2) How can we define what “clean” water is? What is needed in the water to support the ecosystem?
- 3) What are the new compounds we have added to the ecosystem that do not occur there naturally? What was the baseline before human manufacturing?
- 4) What is being introduced to the water from ballast discharge and what problems might this be creating?
- 5) What airborne pollutants are finding their way into the water and what problems might they be creating?

- 6) More testing is needed on pesticides and their affects on lobsters (life stages, food sources, temperature, nitrates, phosphates)
- 7) How do pesticides get into the water (stormwater runoff, airborne, sinks, etc.)?
- 8) Consistent monitoring and a compilation of existing data is needed.
- 9) There is concern about the number of homes being built and the septic systems they are adding, as well as failing septic systems from older homes.
- 10) Are there alternatives to current chemicals used to treat water for human consumption?
- 11) Temperature monitoring is needed.
- 12) The ocean is seen as a “big toilet” – we are all responsible and education is the key
- 13) There is concern about the use of copper pipes in sewer lines and household plumbing.
- 14) Should we be concerned about lost and disposed of traps with vinyl coating...is this a problem?
- 15) Lawn treatments are a concern as more houses along the shoreline are using herbicides and pesticides.
- 16) Drano and other chemicals in sewer systems should be banned.
- 17) Why are mooring chains deteriorating faster? (Top chain)
- 18) D.O levels – lowering standards. Is shell disease linked to the lower immunity due to decreased environmental standards and an increase in pesticide use?
- 19) There should be aquaculture monitoring in Seal Cove to see if it is related to shell disease.
- 20) Is dumping of birth control and other prescription medications into the ocean causing problems, and if so how do we deal with that?
- 21) How can we collaborate with environmental groups and the ocean commission on controlling ocean pollution?
- 22) How are contaminants dispersed....through currents, etc.?
- 23) There should be consistent, sustained, long-term monitoring of water quality.
- 24) How are aquacultural feed and the antibiotics and pesticides used in aquaculture to control sea lice affecting the lobster – particularly molting.

- a. Are they endocrine disruptors?
  - b. Does the feed attract lobsters and when they eat them are they impacted by antibiotics/pesticides?
  - c. Will this affect marketing if lobsters are “tainted”?
- 25) Does a sensitivity to pesticides drive lobsters away from certain areas yet not necessarily kill them? (such as Peaks Island and Long Island in Maine in the spring) At what levels?
- 26) A long-term record of effluent, contaminants, and runoff discharged into the water is needed.
- a. What should be measured?
  - b. At what levels of detection are they detrimental?
  - c. How long must the conditions persist...is there a bioaccumulation affect?

### **General Concerns That Carried Through All Discussions.**

- 1) More consistent, long-term monitoring is needed.
- 2) More funds are needed for research
- 3) More coordinated research efforts are needed, including between the U.S. and Canada
- 4) Existing data should be gathered in centralized fashion. There is a need a common database for incidence of diseases and indicators. (Perhaps use of GIS would be effective.)
- 5) What happens to data that is collected....how does it get used and how is it communicated?
- 6) How do you create accountability?
- 7) How do you create a concern for lobster health in both the public and political arenas?
- 8) It should be emphasized the lobsters are linked to the economy as well as the environment.