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Canadian/U.S.



LOBSTERMEN'S TOWN MEETING

*“The Lobster Fishery: Co-Existing n the
Marine Environment”*

March 23-24, 2012 – Portland, Maine

Hosted by the



LOBSTER INSTITUTE

www.lobsterinstitute.org

Full Transcript

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Moderator

The Reverend Ted Hoskins

The Lobster Institute would also like to acknowledge the hard work of the Planning Committee, comprised of representatives from the Lobster Institute's Board of Advisors:

Planning Committee

Sheila Dassatt – Co-Chair – Maine
Kenny Drake – Co-Chair – New Brunswick
Bill Adler – Massachusetts
Dr. Bob Bayer – Lobster Institute
Dana Rice – Maine
Mike Sirois -- Massachusetts
Bonnie Spinazzola – New Hampshire
Elliot Thomas – Maine

**LOBSTER INSTITUTE
CANADIAN/US LOBSTERMEN'S TOWN MEETING
March 23 – 24, 2012
Portland, Maine**

The Lobster Fishery: Co-Existing in the Marine Environment

Town Meeting Co-Chairs: Sheila Dassatt and Kenny Drake.

Bill Adler, Massachusetts Lobstermen's Association: We have several generous sponsors we need to thank; Downeast Lobstermen's Association, East Coast Seafood & Paturel International, Maine Import/Export Lobster Dealers Association, and Riverdale Mills. We also want to thank the sponsor of this evening's reception, which runs from 5:00 – 7:00 out in the - Foyer/Pre-Function Room. Again, a sponsor who has been with us since the start, please help me thank, Fishery Products International/High Liner Foods. A special thank you to our primary event sponsors. We are extremely pleased to have two this year. One, who has been with us since we started these Town Meetings in 2004 – is Darden Restaurants. Darden Restaurants is the parent company of Red Lobster, Olive Garden, Smokey Bones, Bahama Breeze, and Seasons 52, Capital Grille and Longhorn Steakhouse restaurants.

Darden's typically has somebody here but, unfortunately, they send their regrets. They were unable to come. But nonetheless, for the record, everyone please join me in a round of applause to thank Darden's Restaurant for their sponsorship. Returning this year as a primary event sponsor, our thanks go to Orion Seafood and Charles Anastasia, a round of applause for Orion.

Applause

Bill Adler, Massachusetts Lobstermen's Association: I'm almost done. During this year's Town Meeting, we are asking you to give thought and your comments on how the lobster fishery can continue to coexist in the marine environment as we are faced with changes in environmental growing outside influences. We will explain how we will go about running the Town Meeting in just a bit but, before we do that, I would like to quickly introduce and thank the Lobster Institute staff whose hard work makes this event possible and then I will turn the meeting over to our planning committee co-chairs. Will the staff please stand and hold your applause and we will get them at the end here. Lobster Institute Executive Director, Bob Bayer, who is over there, Assistant Director, Cathy Billings, is not here. She is ill, unfortunately, but we do have Jean Day pinch-hitting for her, and administrative assistant, Deb Seekins, thank you for all your work. Thank you. I'd like to have Bob now come up and join me for a moment as we have a special presentation before we get started. Bob.

Dr. Bob Bayer, Lobster Institute: Thank you, Bill. As you'll see from your agenda, we've got a really very busy time scheduled so we're going to try to stay on time and we scheduled a review of actions that have taken place from previous town meetings.

There's a list in your packet that talks about action item so, since you've got that list, we're going to skip over that and we do have a couple of special announcements to make. As you know, this is the 25th anniversary year of the Lobster Institute and we've taken the opportunity throughout the year for several small celebrations like we'll have at the reception tonight. There will be cake. Plus, we'll be having a more formal event coming this fall so we'll make sure that you all know about this. Meanwhile, we've taken the opportunity to recognize some special folks who have been important to the Lobster Institute throughout the years. For example, at the Massachusetts Lobstermen's Association annual weekend, we honored an industry partner with an Industry Partner Award and that was a long-time supporter, Dr James Knott, Sr. Jim, maybe you can just stand in case, I think everybody knows you but you never know.

Laughter and applause.

Dr. Bob Bayer, Lobster Institute: And we appreciate his help and we also want to recognize the power behind the throne and that is Betty Knott who makes sure that Jim does all that he does and is a very important partner to us. Today, we have another award and I want to make sure that he's here. Yeah, good. Today, we would like to present another Industry Partner Award. This award goes to someone from the lobster industry who has been a consistent partner, volunteer, and supporter of the Lobster Institute over the years. Today's recipient has opened his wharf to us many times for use as a field station to run experiments. He has given of his time, his talent as a research volunteer and as a member of the Board of Advisors. He has been a solid advocate for the Institute as he served as chair of our C.O.R.E. committee. It was his vision really that started the Town Meeting that we are at today and he needs to take credit for that. So, we have an award, let's see, for Dana Rice, if you would please come forward in case you hadn't figured out that we were describing you.

Applause

Dr. Bob Bayer, Lobster Institute: I was going to call Barbara to make sure you showed up but I had a feeling you might show. Let me just read this to you. The Lobster Institute's Industry Partner Award presented to Dana Rice, DB Rice Fisheries, in appreciation for being an outstanding Lobster Institute volunteer and supporter who has greatly contributed to advancing the Institute's mission of protecting, conserving, enhancing the lobster resource and lobstering as an industry and we thank you, Dana.

Dana Rice, DB Rice Fisheries: Thank you, Bob.

Applause

Dana Rice, DB Rice Fisheries: Thank you and thank you all. As most of you know, I don't deserve any awards. It's just a privilege to stand among you and be allowed to ramble on at times. Usually I'm not quite as close to at a loss for words but it's nice to be thought well of by people you respect. Thank you.

Applause

Dr. Bob Bayer, Lobster Institute: Just one final comment before turning this over to Bill. We've had word today that there has been... a couple of years ago we received a very nice gift of land from the Heanssler family, 200 acres on McNutt's Island, and as of today, that land is sold and the proceeds will go into the Heanssler Research Fund at the Lobster Institute, so thank you again, Kathy.

Bill Adler, Massachusetts Lobstermen's Association: Alright. Thank you, Bob. Okay, our planning committee for today's event was co-chaired by one veteran and one new volunteer, both members of the Institute's Boards of Advisors. This year, help me welcome Sheila Dassatt, Executive Director of Downeast Lobstermen's Association and Kenny Drake, fisherman and President of the Prince Edward Island Fishermen's Association. I will turn that over to.... you. Thank you.

Sheila Dassatt, Executive Director of the Downeast Lobstermen's Association: Thank you, Bill. On behalf of myself and my fellow co-chair of the Town Meeting planning committee, Kenny Drake, I will add my thanks to Bill and Bob's and to all of you who made the trip to be part of our Town Meeting today. A special welcome to those of you who are attending your first Town Meeting. We really appreciate your coming and encourage you to get involved in the discussions. Feel free to speak up. We have several fishermen here who have attended all or nearly all of the Town Meetings from the start. They can tell you that it is important that we hear from all of you. If they will let you get a word in edgewise that is. Everybody gets really involved once we get going. As always, a lot of thought and hard work went into planning this day and there are several people I will recognize very quickly. Joining Kenny and me on the planning committee are several members of the Lobster Institute's Board of Advisors. If you're here, please stand when I call your name and let's hold the applause until all are standing. Bill Adler from Massachusetts, Bob Bayer, Executive Director of the Lobster Institute, Dana Rice from Maine, Mike Sirois from New Hampshire, Bonnie Spinazzola from New Hampshire, Elliott Thomas from Maine, and, from the Lobster Institute staff, Cathy in her absence and Deb Seekins and a special thanks for Jean Day for helping out in Cathy's illness. Please help me thank all of these good folks. Now I will turn it over to Kenny.

Kenny Drake, Fisherman, Prince Edward Island Fishermen's Association: Thank you, Sheila. Thank you everyone. I am pleased to serve as co-chair of the Town Meeting planning committee this year and to work with Sheila. As we have often said, we may come from different geographic areas but we all share and rely on the same natural resources. Sustaining a shared resource and a successful industry calls for the constructive sharing of information. That is what we are asking of you today. By this sharing of observations and experiences, we will help build trust and respect within all regions and sectors of the industry. As Bill mentioned, this year we are focusing on coexisting in the marine environment. How can we work together to move forward successfully? Now, to get things started, let's take a quick look at the agenda which is on the blue-colored sheet in your packet. As in the past, we are asking for the help of several presenters to guide the discussions just enough to get the dialogue going. We will

allow plenty of time for folks to share their thoughts and observations about each topic. Tomorrow we will have a special session with time for a dialogue on any topic you might be interested in. Speaking of special sessions, we are straying a bit from the overall focus with the first session but it is a very timely topic that the planning committee thought would be of particular interest; how are different regions handling exiting and entry into the fishery. We will break for lunch at about noon. This year, by request, we are bringing back a special “meet the scientist” opportunity over an extended lunch. We are extending the invitation to scientists from around the region who are working on lobster-related projects to come and be available to share their work with us. They will be introduced just before we break for lunch. We will reconvene at 1:45 to finish our day’s sessions. There is a list of presenters in your packet on the gray sheet. We will introduce each of them when it is their time to present. At the conclusion of today’s portion of the Town Meeting, we will ask you to fill out the evaluation forms for the day, one is in your packets. There’s one in every packet. You must submit an evaluation form to be eligible for the door prizes so I imagine we will get a good turnout for that. We’ll explain that in more detail later on. Right now, we would like to introduce you to our esteemed moderator. Give him a hand.

Applause

Sheila Dassatt, Executive Director of the Downeast Lobstermen's Association: Not yet. The esteemed moderator, indeed! I’m very pleased to introduce to you the Reverend Ted Hoskins. Ted has been with us now for eight years. We could not make this event work without the knowledge, patience, and great listening skills that Ted brings to the task of moderating this very opinionated group. Can you imagine volunteering for this task? Thank you very much, Ted. I’m going to turn the mic over to Ted now and let him get things started.

Applause

Ted Hoskins, Town Meeting Moderator: Thank you, Sheila. Thank you, Kenny. And thank you for letting me be here again with you as we get into this very special meeting. I hope you know how special it is to be able to talk across the border and to be able to talk about the issues that each year are raised. They come out of what has happened before and what the talk is that’s going around. And so, the Lobster Institute with its varied participants finds ways to put this together so that we can collect the information that you have, and the concerns that you have, and the interests; and put it together into something that really can make a difference. As always, I would remind you that we are from two different places, so you will need to look in your packets and you’ll find the fishing districts of Canada and the lobster zones of Maine and the American Lobster Management Areas. Each of these play a significant role and, if you’re in Canada, you know how significant it is to be in one of those districts; and you also know what the zones and the management areas mean when you’re fishing in the United States -- and we need to sense what this means to us and what it means to our neighbors as they enter into these discussions that we’ll be involved in. I need to take just a moment to let you know that this session and all the sessions of this meeting will be audio recorded and that is so

that we can make a good record of it. This record becomes available to you at the conclusion and after the people have had a chance to put it into order so that you can go back and look at what has been said. And you'll be able to identify who has said it because we're going to ask that each of you, when it's time for you to talk, identify who you are and where you fish and then get into whatever it is that you want to say about the subject at hand. So each time you stand up, one of our special people here will bring a mic to you. Wait until you get the mic. Raise your hand ahead of time, they'll get the mic to you, and tell us who you are, where you fish, and then go ahead and we'll make sure that becomes a part of our permanent record. Right now, the recorder is on and we're in business and we can pretty well start from here. Remember that there is not an official break because we started late enough this morning, so that we're not going to have a break this morning before noon. But there is plenty to entice you at the back of the hall and so if you need to visit that or visit some of the other facilities that are a part of any meeting, just get up and go and get there. So that can happen whenever you wish. I want you to take note of the focus of the day and it's also on the yellow sheet that is in your packet and I'll show you what that looks like. You know what the color yellow is. That gives you an idea of where we're going and what we're going to be dealing with and what we want to keep germane for our discussion -- from bait safety, to marine debris, and right whale take-reduction updates, and how we co-exist with aquaculture, offshore energy, and all the other things that are a part of our discussion. And you can keep these in mind and keep them close by as we go through the agenda today.

There are presentations that will be offered to us throughout the day. Again, within your packet, there is a little bio about each of the ones who will be presenting in case you need to identify them although we'll get them identified one by one as we come to them. Remember there are some basic ground rules. One of you speak at a time and the reason for that is that we want to hear what you have to say. If you get two of you talking, we can't figure it out and that means not only on the mic but in your seat—and keep to yourselves, the side conversations. It's important that we listen to each other and that we listen to you when you have something to add to us. The other thing is to be sure to use the microphones which will come to you when you have a chance and everyone gets a chance to speak. In other words, if you've got your hand up, we'll find you and we'll find a place for you to have your say as we go through the morning. Of course, we're known for being constructive in what we have to say and civil in the way we say it; and that makes everything work much more effectively and positively.

Okay, we're ready to get started now and the presenters at this first session are Bill Adler and Bill is going to come up -- and Lawrence Cook, David MacEwen, and Elliott Thomas. They'll each be talking for about 7 minutes and then we'll get to have discussion after they have had the option for speaking. Yes?

(Kenny Drake is pinch hitting for Dave MacEwen.)

Oh, excuse me, Kenney Drake is going to be in place of David MacEwen. Okay, so Kenny, you're coming up. Where are you? Here you are right over here. Okay. We've got one more to go. Okay, well come on up and there's a spot over there. Elliott looks

very lonely over there. He really does, yup. I worry about that. Our subject for this particular session is entry and exit from the fishery as we find it taking place in different regions. We'll hold our discussion after they've each had a chance to speak and so if you would just hold your questions until then, we'll come back to you. Bill, I'll let you get started since you've already got your vocal cords working.

Bill Adler, Massachusetts Lobstermen's Association: Okay. This is basically entry/exit into the fishery and I just want to explain Massachusetts. Can you hear me? Can you hear me now? The Massachusetts lobster fishery limited entry program actually started in the 90s when the Division closed the entire entrance. No one could get in after that time and we were at 1800 licenses at that time. Now, I know for Maine that doesn't sound like much but these were coastal permits and, after a while, it was determined that we needed a way to let the people who wanted to get out, out, and the new people who wanted to get in, in. So, in general, we had legislation passed and then worked on regulations to allow the transfer or sale of the permits to new people who wanted to get in. At the same time, since we have mandatory reporting, if you can't at least follow directions every year, that is fill out a form that says either what your catch was or "I did not fish" and send your check in and you would get renewed, if you can't at least do that, after a certain time, the state takes the permit and tears it up and it's gone forever. So there is attrition and there has been attrition to the point where we're now down to about maybe 1300 permits issued coastal, inshore, and there is actually less than 800 that actually fishing but we don't take it away from somebody as long as they follow directions. We do have to indicate that we got 9000 recreational fishermen. That is not limited entry. They are limited to 10 traps or 15 lobsters. It's good for diving as well as for the 10-pot license but that is not a limited entry system. So, basically, the big issue is the coastal permit which, there are no new ones being issued. But people can sell their license and the way it's worded in the law, it says you can transfer your lobster license along with your lobster-related business assets and we have various rules to control it. It's worked very well. You have to have the ...the license has to have been active for four out of five years. You can't just have it hanging up on the wall and then decide you're going to sell it. You have to have... There's a requirement for what "active" means. The person coming in has to have had experience and we have all these different little rules which allow the sale and I've got to say it has not gone out of control price-wise. When you look at what is being sold, the lobster business, the boat, or whatever, the price has not been extraordinary at all. It just never got there. It has always stayed within reason. I did have one ad in our newsletter one time where the guy was selling his boat, his license, his truck, his house, his wife, his land, and, you know, he had a pretty good price on that but other than that, normally it's been very reasonable and it's worked. There's been control and so we do have ... the big thing is the coastal inshore. We do have an offshore landing permit which is another story. You can get it and you have the student licenses which are limited to commercial fishing June 15 to Sept 15 and you can sell your catch. You're limited to 50 traps and stuff so we have those various things but the big one is the coastal inshore permit which we have a way in and we have a way out.

Moderator: Thank you very much, Bill. I at first was going to go United States and Canada and back and forth but I think it would be good to get the contrast between

Massachusetts and Maine, and so I'm going to turn it now to Elliott Thomas and ask if you would give us another picture of entry and exit of the industry.

Elliott Thomas, Maine Lobstermen's Association: Maine's... Can anyone hear me? Maine's system is quite a bit different. First of all, we don't own our licenses and we can't transfer them. Since 1998, commercial lobster licenses have only been available to those who had them the year before or those who enter through the apprentice or student systems. In order to obtain a commercial lobster license, you have to go through one of these two systems. The apprentice program consists of documenting 200 fishing days with a minimum of 1000 hours over a period of at least 24 months, designating up to from one to three sponsors, and providing documentation of successful completion of a U.S. Coast Guard-approved fishing vessel drill conductor course. Apprentices and students must log their information and gear time on a log sheet which is signed by a local marine patrol officer, and sponsors must initial the apprentice or student log sheets daily to certify that the apprentice or student license has gained experience. Apprentices may document up to 200 hours of their time as gear time but this does not include boat repair. The difference between a student's and an apprentice license is that a student can fish on their own. They must be a full-time student at least 8 years old and under 23. Individuals 18 and over must provide DMR, which is our Department of Marine Resources, with verification of full-time high school or college enrollment. Students are limited to the number of traps they are able to fish; 8 to 10 years old, they can fish up to 10; 11 to 13, up to 50 traps; and 13 to 22, up to 150 traps. And students can document time on their own while they're fishing. Apprentices cannot fish on their own time and they cannot purchase trap tags. To enter in a one, one of our Lobster Management Zones, you have to declare while you're a student or an apprentice... pardon me, you have to have a student license or apprentice in the one in which you want to fish. Students, if they complete their apprenticeship program by the time they're 18, can automatically qualify for a license. Apprentice program: they must fill out a one when they're finished with their program, they have to fill out a one declaration form to declare the one in which they're going to fish the majority of their traps, which is 51%. If it's a limited entry one, they get placed on the waiting list and, if it's an open zone, they're immediately eligible to purchase a commercial license. Currently, only one of the zones in the state, Zone C, is an open zone. To get into a limited entry zone, you have to hold a class I, II, or III license the previous year, be eligible by completing the apprenticeship program, and be over 18 or under 70, be authorized by the commissioner as a new zone entrant off a waiting list. Now, how are the number of entrants, new entrants into a zone, calculated? It's by the number of tags that went out, were retired, the year before. In the beginning, it was based on the number of licenses but then it got changed to the number of tags. In Zone A, you get a new entrant for every 2400 tags not renewed. In the rest of the zones (with the exception of C which is open) for every 4000 tags not renewed. And basically, that's it except that new entrants are allowed to buy 300 tags the first year and increase it to the zone maximum of 800 or 600 -- in Zone E, 100 a year. That's pretty much it. We do have some fairly substantial waiting lists in some of the zones and currently the State Department of Marine Resources is looking at the entry system.

Moderator: Thank you very much, Elliot. Did you want to comment on transferability at all in regard to that?

Elliot Thomas, Maine Lobstermen's Association: There is zero transferability.

Moderator: Okay. Alright.

Elliot Thomas, Maine Lobstermen's Association: These are Maine inside-3-mile licenses.

Moderator: Thank you. Okay. Lawrence, let's take a look across the border a little bit.

Lawrence Cook, Grand Manan Fishermen's Association, Canada: On the Canadian side, in regard to transferability, licenses in Canada are considered property. A bank quite recently in Nova Scotia successfully seized a lobster license from a fisherman and gave it a set value. So, contrasting what Elliott said, licenses in Canada are property. Now the entrance requirement before you're allowed to get a license is that you must be a full-time fisher and to become a full-time fisher, you have to be a part-time fisher for at least two years and fish six months of each of those two years consecutively and make your income from the fishery. So there is a bit of an apprenticeship program. It doesn't seem to be quite as detailed as it is down here. The big problem with transferability now is that, since the licenses are property, is the price. The cost of buying a lobster license in Canada has changed dramatically. For example, when I started out in the fishery I bought a lobster boat and 375 traps (which is all you're allowed), a hand-line license, and a lobster license for \$36,000 and everybody said I paid too much. The licenses have transferred in the past for as high as \$650,000 in the district I'm in and \$1,000,000 in LFA 34 in Nova Scotia... for the piece of paper alone without the equipment and without the boat. Prices have settled back on our area to about \$300,000 for the piece of paper. The problem we're having with entry into the fishery now, of course, is sourcing finances after the big financial crash, which I'm sure everybody here is quite well aware of. It's nearly impossible for a young person to walk into a bank and secure the financing to buy a lobster boat. If you take \$300,000 for the license and then you have to come up with the boat and traps, you know, you're talking about a half a million dollars in debt before the guy sets foot on the water... with very little experience. So we're running into problems with senior fishermen retiring and being able to find a fair price for the vessels. As a result, the DFO has slacked up regulations surrounding PIIFCAF which was designed to make sure that all of the Canadian lobster licenses were owner-operated. In other words, there were no corporate licenses. I could have a company but I still had to be there to run the boat. And that's the way it's been for a long time. We've been limited entry in the number of licenses for 50 years. My district, LFA 38, has 136 licenses. Recently, the government purchased back 20 of those to give to the Natives after the Marshall Decision in Canada. And this year, we have seen licenses transfer to a district to be held by a person not from within our district and that was also a company. This is a great concern to us because it increases the price of the license, which is good for the guy selling out but is very, very bad for young people trying to get in to the fishery. The things facing us in the future are corporate ownership, sourcing of financing

for young fishermen getting into the fishery, and the retirement benefits being reaped by our senior fishermen as they retire. To meet the transferability rules under what is called the core packaging... All of our licenses now are grouped in blocks and a fisherman who has a block of licenses is considered a core fisherman. I can sell any one of my licenses to another core fisherman but I can't sell one of my licenses without selling the entire package to somebody who has never been in the fishery before. The affect of that program has been that there have been a lower number of fishermen holding a greater number of licenses which was the plan in the beginning. Now, those are the highlights I guess of the transferability rules and problems that we are facing. The other big issue that people wanted me to mention here about transferability and cost of licenses since they are considered property in Canada, is that the financing is directly tied to the low price of lobsters. Things look very different when you walk into a bank on a \$6 lobster average price for the year, which we had seven or eight years ago, and you want to borrow half a million dollars. They can look at the numbers and it all makes sense. Now that we've seen the lobster price drop into the \$3.50 to \$4 range, those numbers don't work for the banker anymore. So I think one of the things we need in Canada to reinforce... perhaps that isn't a good word... to make sense of our lobster prices, our transferability, and new entrants into the fishery is a reasonable, predictable, price for lobsters. This will impact transfers in Canada severely whereas young people will not be able to source financing at all to buy a license and we will be forced to allow corporations to take over what has been a privately-held fishery for years. And that's something that our district is very opposed to. You'll notice the hat I'm wearing looks kind of goofy. We've got a problem here and that's the transferability of licenses between districts, which is what I mentioned earlier. That just happened last year, where we lost a license outside of our district. We're water-locked. In this really little picture, LFA 38 is up there very near Maine. We have the Gray Zone actually shared with Maine, but we are a water-locked district. There is no other point of land. It's a circle around an island. And one of those licenses just left for Nova Scotia. They can only fish inside of our area but they can hold the license while they're not in our area. With the number of licenses we have left after the Native buyout, each license represents about 1% of Grand Manan's economic engine. Every license that leaves is a shot, a hard shot, at our community – making it very much more difficult for every business on the island because we are the driving mechanism and the economic engine on Grand Manan, the lobster fishery is. So while we want our system open and as free as possible for new entrants, we also want to keep the revenue that comes out of the ocean adjacent to our land on our land. So, that's what the hat's all about is the situation we have there. Because as each license goes, there is that much less income for the entire island and it's a grave concern of ours, something we want more attention brought to. We've asked the Department of Fisheries and Oceans to correct and, so far, they certainly have not been willing to do that. When you tie that in with the economic things I just mentioned, it's going to be very, very difficult for new entrants in our fishery to get in, even though the law isn't stopping them from getting in. The economics will stop them from getting in. Thank you.

Moderator: Thank you very much. I'm particularly appreciative of your mentioning of the community and the interrelationship between this whole issue and the health and

viability and strength of the communities in which we live as we continue to work with this subject. Let's move along and Kenny Drake, it's all yours.

Kenny Drake, Fisherman, Prince Edward Island Fishermen's Association: Thank you. I'm going to speak specifically about Prince Edward Island where I come from. A lot of our issues are similar to Lawrence's. We have a fixed license on Prince Edward Island. One license going out means one license, the same license, coming back in another person's name. There is no increase in the number of licenses. There hasn't been for several years. The province is divided into three LFAs, Lobster Fishing Areas, and they're dissimilar in certain ways but they have the same carapace size of lobster and they have maybe some differences in the number of traps but, other than that, very little difference. You're required to have two years experience as a helper or a co-fisher before you can purchase a license. It basically follows a lot of the same as Lawrence's. What has been different on Prince Edward Island is our provincial government has decided a few years ago that they would look at some incentive for younger people to get into the fishing industry because we're an aging population. I think the majority of fishers on Prince Edward Island age from 55 to 65. That is the high number in that age range. The future of the fishery is going to depend a lot on the incentive for someone to get into that industry to replace someone who is retiring. I will start off with the program that is through our provincial government and give you some idea how it works. It's called the Future Fisher Program. The purpose of this program is to provide mentoring and financial support to new entrants in the Prince Edward Island lobster fishery to become knowledgeable on various aspects of the fishery and better positioned for success. The program will assist the fishing industry to develop a solid foundation with a new generation of fishers on Prince Edward Island. The criteria for the new fishers program is basically to acquire a Class A lobster license, and this started in 2009 so it started January 1, 2009. You have to be a resident of Prince Edward Island and 18 years of age, never held a lobster license before in order to fit into this program. This is not the requirement if you're not in this program. You could have held one before but not be in this program. There is a rebate based on loans at recognized financial institutions. In other words, this Future Fisher Program gives a certain portion of rebate provided through your loans recognized through certain financial institutions. The components of the Future Fisher Program are the facilitation assistance by a program manager. (And I believe Dave MacEwen who was supposed to give it today is that program manager.) It's a training program involving aspects of the lobster industry, interest assistance which requires active participation in the coaching and training components. The components of the Future Fisher Program are several courses. For example, MEDA1, which is basically a safety course on life jackets and flares and that type of thing. It's a course that everyone is required to take if they're going to be aboard the boat, whether a helper or an operator. There's a first aid course. The first aid course, basically what it boils down to is when you take control of a fishing vessel at home, what you're supposed to do if someone comes out on that vessel with you, you're supposed to be able to exercise to them sort of a breakdown of where you're life jackets are in the boat; where you're fire extinguishers are in the boat; where the first aid kit is in the boat, and that you have the ability to use that first aid kit so that everybody in the boat is aware of that. It's required that at least one person in every boat has that ability and, of course, it should start basically with the

captain. You have to attend industry meetings. Our Prince Edward Island Fishermen's Association, you're required to attend their annual conventions. You have to be involved in the Lobster Advisory System that we have. We have lobster advisory boards that represent all the different areas and you're to get involved and to attend some of these advisory meetings from your local area. And workshops. There are a certain amount of workshops. It's a requirement to do these things and to attend these workshops as to be part of the program. I'm not going to get into the, I have one section here that's very fine print and goes into a lot of detail. I'm not going to go into that today. The assistance in the Future Fisher Program, the interest rate of 2% up to \$150,000, on other words, there's a 2% rebate. It requires you to have a grade 12 or GED and it's for three years. You get up to an additional \$1000 toward training expenses. So, if you haven't had any of these courses and you have to attend these courses, there is a program to help assist you in attending these courses or paying for the cost of these courses. The total funding is \$10,000 over a period of three years. Fishers submit the application to be reviewed based on criteria. A new entrant gives his educational level and fishing loan. If approved, a project offer agreement is made between the fisher and our Provincial Department of Fisheries and Agriculture. A minimum of 3 credits have to be acquired to be eligible for a rebate so you have to follow the guidelines and at least qualify for at least 3 of these credits before you can receive any of this rebate. I have an update on the current status of this. It says three cohorts with 55 fishers participating and, I believe, now it's four with 60 participating is the latest number. We already have several who have completed the program and government has committed an additional four years of the program. It's a good program. I've talked to some of the young fishers who are a part of it and what it has done is it has given them a good perspective of how the industry works. And they're not just stepping in green. They're stepping in with a promotion of joining in with the rest of the industry and making yourself aware such as meetings like this so that you're up to date on not just the fishing part of the industry. I think that maybe when I go back I'll suggest that maybe they should come to a Town Hall Meeting, that it could be part of the criteria would be a good idea. Anyway, thank you very much.

Moderator: Thank you, Kenny. I hope you sensed, as I have, that all of the groups in all of the different areas are struggling with how do we best be a part of what's going on. And different programs are worked out and supported and dealt with and it's good for us to hear each other. Elliott. You wanted to comment on something.

Elliott Thomas, Maine Fishermen's Association: Yeah, I just wanted to follow up. I talked about a limited entry system but basically as you can see from the way we're reducing the number of tags, the number of fishermen is going to decrease over time. When this system was put into effect or into regulation I should say, there was at that time kind of like a target of reaching 70% of the number of licenses that were sold in 1997. So that just needed to be mentioned.

OPEN DISCUSSION

Moderator: Thank you, Elliott. We're getting to the point now where you can get in on the discussion. I hope you've been taking note of you're concerns and queries and we

have two over here. If you'll come pick up these mics here and make sure the clicker is on and when you raise your hand, they will come and give you a mic and remember to give us your name and where you fish and if you have a questions that addresses a specific person, let us know. Otherwise, we'll give it to the panel. Yes, Lawrence.

Lawrence Cook, Grand Manan Fishermen's Association, Canada: I was just wondered of one of the American guys could speak on the difference between the state and federal permits because I know in the State of Maine, that outside three miles there is a federal license and inside it's a state permit. I was wondering of the transferability of the federal was the same as the state.

Moderator: Okay, Elliott, do you want to speak to that? Did you all get the question? Okay? Okay, relating between state and federal permits. Okay, go ahead.

Elliott Thomas, Maine Lobstermen's Association: Federal permits are transferable.

Lawrence Cook, Grand Manan Fishermen's Association, Canada: They are.

Elliott Thomas, Maine Lobstermen's Association: Yeah.

Moderator: Yes.

Bill Adler, Massachusetts Fishermen's Association: Yes, a federal permit issued by the federal government, they issue a permit to the boat whereas, like in Massachusetts, the license is issued to the person. And you can transfer the federal permit. It normally would go with the boat unless the buyer and the seller agree that the license stays with the original owner and the boat by itself goes to the new guy. This might be, you know, if a guy wants to sell his boat but he wants to buy a new one. He wants to keep his license. So, that's the federal government's way of doing it and it is transferable in that respect. We have areas specific on our trap permits just like in the state we have area-specific. The non-trap license which the federal people issue does not have areas on it and that's problematic.

Moderator: Elliott, did you want to comment at all on that from Maine?

Elliott Thomas, Maine Lobstermen's Association: Yeah. Federal permits are transferred without the boats being transferred too. It's possible. What you need to do is transfer the boat with the permit and then have an agreement that you buy the boat back again.

Moderator: Okay, let's get some questions. Steve? Right down here please. And give us your name and where you fish, etcetera.

Steve Train, Fisherman, Casco Bay: Yeah, my name is Steve Train. I fish right here in Casco Bay and I actually had a question for Lawrence. He was speaking about how the expense of the permits was such that it was cost prohibitive sometimes for younger guys

but, because the older guys wanted to get a return, the government interfered and released the regulations a little bit to allow the prices to get higher so people could retire. I'm trying to see if the government didn't get involved, would the price pretty much be what the market would bear? Is that a false price now that's being placed?

Moderator: Lawrence?

Lawrence Cook, Grand Manan Fishermen's Association: Maybe I was unclear about that and I apologize about it if I was. What happened was the outcry from people trying to sell licenses and corporations trying to buy licenses got together, so that corporations can buy licenses and, of course, since they don't have to source finances (larger corporations I'm talking about) don't have to source finances from the banks, they can outcompete the price younger people are able to pay because they are not able to go to the bank and get it. So, it's skewed the transfers toward the companies and away from it. But it was the government that released, that allowed the companies to hold the licenses. That's what affected that. It wasn't, you know, a retiring person. You can't really fault them for wanting to get the most money they can for their license but when the government allowed them to transfer to corporations outside of the district, it jumped the prices because those corporations can get the money, have the money, have the resources, to buy that for whatever they want to buy it for. Whereas the individual kids trying to get into the fishery can't go to the bank to get money enough to compete with those corporations. So we're seeing the licenses, because of the relaxing of the regulations, go from individual operators (you know where I'd sell mine to a kid in the community) where it's now that the licenses are being sold and going to larger corporations. Does that answer your question?

Moderator: Get the mic down here, Steve wants to get back on that. Your name again, Steve.

Steve Train, Fisherman, Casco Bay: I'm sorry, Lawrence, I got things confused earlier. So, if the government and the businesses didn't get involved, even the price of those licenses would pretty much be what the market could bear and the kids could pay back.

Lawrence Cook, Grand Manan Fishermen's Association, Canada: Exactly. If the government hadn't allowed the transfer to corporations and outside the district, then if you wanted to sell the license, you'd eventually have to drop your price to the point where someone locally could afford to buy it.

Moderator: Thank you. Another question? Yes, Elliott.

Elliott Thomas, Maine Lobstermen's Association: Recently, I've been reading something about the Canadian fisheries looking toward license stacking?

Lawrence Cook, Grand Manan Fishermen's Association, Canada: License stacking. In Canada, we've always been able to stack licenses but you had to have two people

qualified to hold a license on board the vessel to do it... such as I would have two licenses on my boat but the other license would actually be held by the stern man, and he would have to be qualified under the regulations to hold a license to do that. When the economic crash of a few years ago, Department of Fisheries and Oceans released some of the restrictions on that so that if my brother had a lobster license and I have a lobster license and we both can't make it go, he can let me have his license and I could hold two licenses myself on one vessel. But, when we have two licenses on one vessel, whether it's held by one person or it's held by two people, you get one-and-a-half times the tags. In our area, we're allowed 375. If you have two licenses, you're allowed 563. So, Department of Fisheries and Oceans did that because each time a license stacks, it actually takes traps out of the water and lowers the pressure. So that is the stackability that they're talking about and they really relaxed that regulation a little bit. We could always stack as I said, but now one person can actually hold two lobster licenses.

Moderator: Thank you. Carl?

Carl Wilson, Maine Department of Marine Resources: I've got a pretty good reason in my head for why Maine went to limited entry in the entry/exit scheme that they've got. I'm curious from Canada and Massachusetts why.

Moderator: Who wants to respond to that? Yes, Bill.

Bill Adler, Massachusetts Fishermen's Association: Carl, I think you mentioned Massachusetts, why we went to limited entry? The numbers of licenses that were growing up in the 80s, as I said, reached 1800 licenses. Not all of them are active all the time but that's always stayed the same and the biologists at that time indicated that they thought the number of fishermen in the coastal waters should be a lot lower. I believe since way back, I believe that the number was 1300 at the time if I remember correctly and that might have come from somebody like Bruce Estrella back then. But the director, Phil Coates, at the time, closed the entire fishery to new licenses and kept it closed until we could figure out what to do about it. They closed it because they thought there were too many active fishermen for the resource in our state. That was basically what happened and it was in the 80s.

Moderator: Thank you, Bill.

Lawrence Cook, Grand Manan Fishermen's Association, Canada: Lawrence Cook answering your question. I have no idea. It happened in the 50s, before my time. All Canadian Fisheries are limited entry. There are a set number of licenses done and they're all set by the federal government in Ottawa. It's not a provincial thing in Canada. All fisheries are regulated by the Department of Fisheries and Oceans in Ottawa. I have no idea but it's been limited entry for more than my lifetime in lobster in all the districts.

Moderator: Thank you. Another question? Yes, right down in, come my way and you'll get a microphone, there we go.

Charlie McGeoghegan, Fisherman, Prince Edward Island and Provincial MLA:

Charlie McGeoghegan, fisherman from Prince Edward Island and also provincial MLA politician there. I just wanted to thank Kenny for his presentation. He did a good job of laying that out. That's a program we came up with back in '09 to try to help some of the younger guys to get into the industry and it has worked out quite well. I've know quite a few of the 60 that are involved in it and we also have a low-interest loan program for those guys. Once they do finish their three years they can apply for a 4% interest on the remainder of their loans, usually for 5-year terms; and even if you're a guy that's not a new entrant you can convert your loan into that low-interest program. We have about \$39 million out loaned at that rate right now. Three or four years ago, it was a huge savings to the fisherman because the interest rates were 7% to 7.5%, so you were saving 3.5% on an average loan of \$200,000 -- it was \$8,000 a year or so. Anyway, the interest rates are lower now but it's still a cost savings. One question I had for Elliott was that you mentioned that they wanted to reduce the number of licenses from what the number was in 1997 by 70%. I just wondered if you could tell us what that number was and kind of where you are now, just roughly.

Elliott Thomas, Maine Lobstermen's Association: That's a tough one. Fortunately, there are people in the audience who are probably better equipped to handle that than I am.

Moderator: Okay.

Elliott Thomas, Maine Lobstermen's Association: I hate to push it off but those numbers don't quickly come to mind.

Moderator: Okay.

Charlie McGeoghegan, Fisherman, Prince Edward Island and Provincial MLA:

What about the students? How many students? Do you know that number is?

Elliott Thomas, Maine Lobstermen's Association: Pardon?

Charlie McGeoghegan, Fisherman, Prince Edward Island and Provincial MLA: Do you know how many students, roughly, are fishing in Maine now, roughly?

Elliott Thomas, Maine Lobstermen's Association: I'm sorry, I really don't remember.

Moderator: Okay, anyone want to speak to that? Yes, Mike, right up front here.

Mike Dassatt, Fisherman, Penobscot Bay: Yeah, Mike Dassatt. I fish in Penobscot Bay here on the US side. There are a couple of things that I was going to bring up. One was the age factor. We're all, as far as in the State of Maine, we're in the same level of the retirement group is coming up pretty quick. I know on the student fishery that we have, there is no waiting list or anything for the students so one of the issues that has been a problem with our apprentice and entry and exit ratio is that chances are that a

student will go through his whole career coming into the fishery while there will still be people on the waiting list. I remember when all of this talk came out in the mid-90s. Like Elliott said, I'm not sure the exact numbers but I vaguely remember before the moratorium on the licenses was put in we had somewhere right around 4000 licenses. When they announced the moratorium, we had a spike increase up close to 7000 or 8000 so the balance of the numbers that the goal was set for is somewhere in between. But my question really is coming to the Canadian side here. One, on the age factor but what is the required? I know Kenny was saying that their fishermen are required to be involved. I wonder if you guys could give a little more description on, you know, the private associations in the different districts and stuff like that. On this side of the border, there are no requirements to be in an association so there is a stark contrast I think between what information gets out and how much involvement there is with the fishery and the fishermen.

Ted Hoskins, Town Meeting Moderator and Minister of Coastal Communities and Fisheries with Maine Seacoast Mission: Thank you, Mike. Kenny, do you want to speak to that?

Kenny Drake, Fisherman, Prince Edward Island Fishermen's Association: Basically, you're not forced to be in an association but what it boils down to is you have to participate in meetings and things like that and that's for the Future Fishers Program. On Prince Edward Island right at the time, there is no mandatory involvement in associations or anything like that. Basically what we have is we have several associations divided up into the different districts on Prince Edward Island and then they form one association called the Prince Edward Island Fishermen's Association and it's not mandatory to be a member of that. There are certain things that happen within that association, draws and things like that for crab permits and things like that where people will join so that they can become part of that draw for example. But the local associations basically try to get as many fishers involved as possible. In the future, my understanding is that there will soon be a requirement with the government that we have today on Prince Edward Island, the provincial government, they are going to back our association on mandatory dues so that basically you'll have to become a member of some organization eventually very shortly. You'll still be allowed to participate in your fishery but there will be certain things, like for example we have a gas tax card through our provincial government and, if they stop issuing those to you, if you're not a member of an authorized organization for example, it would be incentive. We only charge \$105 to be a member for the year. I'll just give you an example. My stepdaughter and her husband basically pay \$4400 a year in dues. He's a carpenter and she works for the social part of the government and they're dues just automatically come off their paycheck every week. And to be a member of a fishing organization for a whole year for \$105, we don't even consider that to be a dues. It's just basically, you know, it's not much. So, I think with the new Future Fishers Program that we have now for the young people coming into the industry, and that is promoting participating in meetings and getting involved, I think that is a step in the right direction. And for fishers of the past, we can't change that but I think the fishing of the future is going to look different. Our fishers are going to be more informed and up-to-date on what is taking place.

Moderator: Thank you, Kenny.

Lawrence Cook, Grand Manan Fishermen's Association, Canada: I'd like to comment on that if I could, Please. Mike, there are no transfer requirements around membership at all. He's talking about the Future Fishers Program on Prince Edward Island which is a provincial program to help with financing. All licenses in Canada are federal and they are all issued from the federal government. There is no requirement from the federal government that you belong to any association or that you have any requisite safety training, which is MED, before you start work. And, in Canada, you have to have a Class 4 fishing license which involves some chart work and whatnot to prove that you can safely operate a vessel. That's it. There are no association requirements. That's something Prince Edward Island is doing provincially but as far as the license transfer federally goes, if you're not asking for help from a provincial government then you don't have to meet any of those requirements at all. You can just, as long as you've got your two years out aft, six months in each two years out aft, and you've got the bucks, you're in. Okay.

Kenny Drake, Fisherman, Prince Edward Island Fishermen's Association: I just want to add to that that Lawrence is exactly right. It's the same way on Prince Edward Island. It's a federal license so they don't require any of those things to get the license. The issue of joining associations and everything like that is all provincial. The licenses that you purchase from the federal government have a certain portion of the restrictions as he was saying. Like, you're still required to have the experience and things like that before you can actually transfer. Anyway, I just wanted to thank you.

Moderator: Thank you, Kenny. Yes, I noticed you still had the mic and I was thinking you would probably come back with something. Charlie, introduce yourself, please.

Charlie McGeoghegan, Fisherman, Prince Edward Island and Provincial MLA: Charlie McGeoghegan, Prince Edward Island. I would be curious to find out what that number is in Maine, the number of licenses and how it's been reduced over that taking out, letting a new entrant in for every 2400 to 4000 traps or tags that are reduced. I'm just wondering how that's worked since 97. So maybe we could find that out later on. One other question I had though that kind of pertains to that is the federal licenses, and you can correct this if it's wrong, it's outside of three miles or five miles and the state licenses are inside of that? And how are those ...like you can transfer, as was said, the federal license, you can sell that from fisherman to fisherman but the state one you can't? Or how does that work?

Moderator: Elliott?

Elliott Thomas, Maine Lobstermen's Association: Okay, the federal one: the federal permit is allowed to be transferred from fisherman to fisherman or boat to boat and state licenses belong to the state. They're good from inside three miles and they are nontransferable. I checked on some numbers. In 1997, there were 2.1 million tags about

and, since that time, because everybody could increase up to 800 tags at 100 a year regardless what they had at that time, the number has gone up to about 3.1 million. Probably a better word than goal is floor. The idea is to go down to the floor which would be basically 70% of the number of tags or licenses that there available or held on December 31, 1997. So, the floor would be about 1.8 million tags. And, once that floor is reached, every license that goes out is then able to be replaced by a license so there will be a 1:1 exit/entry ratio at that time.

Charlie McGeoghegan, Fisherman, Prince Edward Island and Provincial MLA: Once you get to that floor. Okay. So, out of those, you're counting both the federal and the state licenses though, right? For that 1.8 or that's just the federal?

Elliott Thomas, Maine Lobstermen's Association: That's the state.

Charlie McGeoghegan, Fisherman, Prince Edward Island and Provincial MLA: That's just the state?

Elliott Thomas, Maine Lobstermen's Association: That's just the state. The number of federal permits is now frozen and you get federal permits for various federal lobster management areas. One issue with that is that different federal areas have different size limits for the lobster maximum and/or minimum. And the licenses and permits are issued... the Maine licenses says that you have to fish by the most restrictive so you might have a permit for like Area 3, which is offshore, and they have a larger maximum and a larger minimum size than we have in here. If you have that permit and are fishing it, you have to go with the maximum size of the state but then the minimum size of that federal permit and also trap limits.

Charlie McGeoghegan, Fisherman, Prince Edward Island and Provincial MLA: Okay.

Moderator: We may have some other statistics. Do you want to come in on this? This is from Department of Marine Resources. If you would please introduce yourself.

Deirdre Gilbert, Department of Marine Resources: Sure, I'm Deirdre Gilbert with Department of Marine Resources and, actually, this is Sarah Cotnoir's computer and I was just asking her for her password so I could get into the numbers but one thing that I just wanted to clarify also from what Elliott was explaining is that, when that floor was set in terms of a 30% decrease from the 1997 levels, I think he mentioned that it was initially with regard to licenses. Then, when our entry system switched to tags, the regulation was changed also to tags at that time. The licenses were approaching that level at least in the western part of the state in Zone F. That's part of the reason actually for changing to tags. But Zone F was getting very, very close to that 30% reduction from 1997 levels with regard to licenses and probably would have gone to 1:1 the following year if the system hadn't changed to tags and the regulation also changed to tags. I think we're quite a way away from it with regard to tags as Elliott was explaining.

Moderator: Are you all clear on what's being talked about here? About the difference between the tags and licenses? Because the system changed a few years ago and so it makes it a little bit confusing looking in from the outside. Did you want to speak to that, Carl? Thank you, Deirdre.

Carl Wilson, Maine Department of Marine Resources: Carl Wilson, again. Deirdre touched on it and I think it is an important point. The number, we went from like 2.1 million tags up to 3.1 a little bit shy of 3.1 million tags. Most of that increase in the last 15 years has come from one-half of the state, the eastern half of Maine. That really kind of changes the whole dynamic of how you discuss about tags in and tags out -- where Western Maine had largely seen their influx of fishermen and traps earlier as the resource was increasing earlier in Western Maine, where Eastern Maine has kind of been in the middle of the boom over the last 15 years. I should just mention that.

Moderator: Thank you, Carl. Charlie, your next.

Charlie McGeoghegan, Fisherman, Prince Edward Island and Provincial MLA: Yeah, just a further comment. I thought that was pretty interesting. It almost seems a little unfair to the other half of the district that was reducing. I'm just wondering how are the fishing groups trying to negotiate that if it went to tags for the whole state and they were almost ready to go 1:1 for a license in and a license out? You would think that the young guys trying to get in would be up in arms over that because their area did their part to reduce and another area didn't. And now it's kind of unfair to them, right?

Moderator: This is a good question because it lifts up what happens with our different zones and their ability to affect the in/out ratio, etc, but it's a good question and Steve Train I think will give us an answer to that.

Steve Train, Fisherman, Casco Bay: Once again, Steve Train. I fish down on Long Island here in Casco Bay. To be fair to the eastern half of the state, we reduced paper effort. We didn't reduce real effort. Tags don't really represent traps all the time and a lot of us in Casco Bay reduced half or more of our traps to go to the 800-trap limit. And there are more actual traps in the water in Casco Bay now than there was 20 years ago. We don't have mandatory reporting or mandatory logbooks so it's not necessarily represented but, if you go fish and you were fishing 20 years ago, you can't go places where there aren't traps and you could then.

Moderator: Yes. Up here. Mike. You're name please.

Mike Dassatt, Fisherman, Penobscot Bay: Mike Dassatt, Belfast, Maine. The basic, in a nutshell, with the tag theory was the tags program was to just to get an idea of what was being purchased. When the tags went in, we didn't have a trap limit. The misconception in the state is that 25% of the fishery catches 80% of the lobsters. So, what ended up happening to guys who were fishing say 2500 traps, they scaled back to the 1200 when the cap hit. And then, when they had the decrease -- 100 traps the next four years -- everybody kind of forgot about the guy that has 200 or 300 traps that would be building

up. I used the word earlier with a fella... we ended up with an effort redistribution. You just ended up letting other guys build up while you handicapped the guys that were going full tilt. Herein lies the problem: because when we bring up the topic of trap limits in the state again, you have guys saying, "Well, wait a second. I've already cut back and I've cut and you've let somebody else catch up to me." The fairness scale is getting tipped and that is an issue that obviously has to be addressed. How do you compensate for one end coming down and letting another end build up because you're rewarding one while you're penalizing the other. One of the biggest things I don't think is explained enough, or people don't realize, is that we always talk about the younger generation. The majority of the younger generation is not coming from the apprentice list. They're coming in raising in the families and growing up and coming right into the fishery. They are not handicapped. Everything is wide open for them to actually come into the fishery. If they're on the boat working, they can start out with their own gear. That end of the scale, the younger guys were coming in. When they get their license, they're at the 300 and when they go full-time and, in five years, they're at 800 traps. That's where, you know, you're getting the tag numbers are increasing on one end but not on the other. The other result is when fellas start to slow down their fishery, a lot of them are holding onto the tags. And then when they hit a certain age, they start cutting their tags back so when they finally surrender a license... my father-in-law is a good point...when he passed away he had 100 tags. Now that 100 tags is a big difference than having a license representation to the entry and exit ratio. When the tag theory got put in place, yes, we're trying to reduce licenses but yet we reduce licenses from the apprentice list but yet we might have 5 or 6 kids going into the fishery. You know, it becomes that big tug. It's a hard thing to even try to explain or understand and that's why I think it's become a flawed system and is being looked at again.

Moderator: Wait till you get a mic, please, so we can get this on the transcript. Here comes one. Charlie.

Charlie McGeoghegan, Fisherman, Prince Edward Island and Provincial MLA: Just seeing how we're on this specific thing before I lose my train of thought...

Moderator: You're name again, please.

Charlie McGeoghegan, Fisherman, Prince Edward Island and Provincial MLA: Charlie McGeoghegan, Prince Edward Island. So, if an older fisherman is reducing the number of tags, do they.../ is it a cost per tag when they go to federal fisheries? Do they have to pay a certain amount per tag up to the 800? Or if they want to only fish 400 traps they only pay for 400 tags? Or is there one set price and you can go in and get a bag of 800 tags for \$800 or is it... How does that work? Because, on Prince Edward Island, and to do a little history on kind of what Lawrence was saying, back in the 70s or late 60s, up until that point it was unlimited on Prince Edward Island; and there were guys with 1200 or 1500 traps, the guys who really pushed hard. Then they came in, and Kenny would know the date on this better than I would but I think it was 72 or 73, they came in and said it's going to be 400 tags your allowed and that's it and that's the maximum. But there were guys on Prince Edward Island who were fishing 200 traps and then everybody

went to 400 so there was a little bit of the same kind of a scenario but everybody was at 400. And then probably 5 years or so later they went to 300 and it's been at 300 for 30 some years. And we just did a license buyback program with the help of the federal government on the south side of Prince Edward Island, where, after the Confederation Bridge went in, there was a huge downturn in the catches which we, as fishermen think was cause and effect ... in looking at landings, it was because it went from the highest recorded landings on the island to the lowest right after the bridge was built. Since then, it has started to rebuild some but that area still was hit harder than anyplace else. So, there were licenses bought back from that area and the federal government put in in that area, about 5 million dollars last year. But the existing fishermen, there were 410 fishermen, they took out 25, so the existing fishermen had to reduce by 20 traps each to equal the amount of licenses that the federal government had bought back. So just for math, it was 25 licenses at \$200,000 each. So, if you take the 25 licenses at 300 traps equals whatever the amount of traps was. Anyway, the existing fishermen took off 20 so it equaled that same amount. So, in essence, you took out 50 licenses if you did it bases on you scenario with the tags, right? It would be equal to taking out 50 licenses and that worked well. So the south side of Prince Edward Island now is at 280 traps. The fall season on the southwestern part of the island is at 250 and has been for 25+ years. The north side of Prince Edward Island where Kenny fishes is still at 300 and their stocks have been quite steady and high for the last 25 to 30 years. So that's kind of the way it is. We just pay a set fee and you get your maximum number of tags. And, if you want to set 100 traps, you can; but there's nobody doing that because on Prince Edward Island it is a business and we do it as such so everybody is fishing the maximum. It's either 250, 280, or 300 depending on where you're fishing. So, to get back to my question which is, does everybody pay a set fee to get your 800 and then you just set as many as you want or do you have to pay for each and every one that you get? And then how does that affect when you go to retire and they're saying the 2400 to 4000 tags out for every each new person in? If they're only fishing 200 traps, then it would take a lot of those out before you would add up for a new guy. Maybe if you could clarify that, it would be great. Thanks.

Moderator: See if you can make that fairly short, please, and then I want to get the mic, turn the mic back behind you, Charlie, and then come in after this.

Mike Dassatt, Fisherman, Penobscot Bay: Mike Dassatt, again, from Belfast. To put it in a nutshell, you purchase whatever tags you want. A lot of guys, of course, when everything got washed in, they went to 800. If you have 800 tags and the next year, you buy 600 and then you decide the next year you want to go back to 800, you can't. You've got to go to 700. So, the tag-buying thing in some ways became a revenue source. In a nutshell, you do not have to fish all the tags. We have probably, I'm not sure how many but there are a bunch of licenses that are latent licenses. These are licenses that people have the license, they're buying 800 tags, but they're not fishing anything. The federal waters State of Maine tags if you're going out into area waters, they're using that same tag limit or trap limit based on the zones. Zone E is 600 traps. If you want to fish in Zone E and you're from Zone D or Zone F, you have to be at 600 tags if you want to cross the border. So, therefore, a lot of guys aren't crossing into Zone E

because they don't want to give up their tags. Just because there's 3.1 million tags sold, there definitely is not 3.1 million traps in the water. But going back to the old theory, there are lot more traps in the water, like Steve Train was saying, than there used to be because we reduced a bunch of guys. But, you know, in a sense we helped another bunch of guys to build up so it kind of equaled out.

Moderator: Thank you very much. Now, let's go back here and then I'll have one more comment from Bill and then we're going to need to move on. Yes. Introduce yourself, please.

Jim Dow, Fisherman, Bass Harbor: Jim Dow and I lobster fish out of Bass Harbor. Just a couple comments that I wanted to make to clear things up that I think are confused for Charlie. The federal permits that you purchase, you're required to have a state license to fish that federal permit. So they're not separate licenses. It's, you know, they're not separate fisheries. You have to be a state fisherman in order to fish the federal waters and so your state tags are designated with an EEZ designation on the tags to say that you also hold a federal permit and are allowed to fish federal waters. So yeah, same guys. And also, another comment on the question that you had is the effort reduction in the western part of the state versus the eastern part of the state. We have seven zones and these zones all set their own exit ratios and when the zone itself gets down to the 30% reduction, that zone opens up a 1:1. So if Western Maine Zone F has reduced their numbers but Zone A and B and C have increased their numbers, Zone F, when they get to a 30% reduction will go 1:1 and they will open up for the young guys. So, it is a fair system across the state that way.

Moderator: Thank you very much, Jim. Sorry, I didn't mean to cut you off.

Jim Dow, Fisherman, Bass Harbor: No. That was it.

Moderator: Okay, now Bill Adler.

Bill Adler, Massachusetts Lobstermen's Association: Two things. First of all, in Massachusetts, if you have a federal permit, you cannot land in Massachusetts unless you have either a coastal lobster permit which is basically so you have both permits and that's your landing permit or you have to buy an offshore, what they call a landing permit on its own so you can come and bring you lobsters caught in federal waters with the federal permit in to a Massachusetts port. Massachusetts no longer issues those permits to trap fishermen and the reason for that was we had to stop what they called an issue where you have two licenses, one boat, the guy sells the federal license with the boat to a person and then since he still has his state license, he goes and buys another boat. It's called the pregnant boat syndrome and so what we did was the state stopped issuing landing permits. Just briefly on tags, remember that Massachusetts is at the junction of four different management areas. The biggest one, of course, area 1, Gulf of Maine, 800 trap limit. You can buy 800 tags, 880 actually, and you don't have to and most people don't, have I think that 500 was the average fished in the state. Area 2, Southern New England, has a history-based trap limit which was part of their plan and they get tags. You can buy

up to 800. You can't go over it but you have to buy it from somebody else that wants to sell. So if you wanted to sort of close down a little or slow down, you could sell some of your trap tags to another fisherman in that area. There is not moving in areas by the way. There is a trap tax where, if you want to buy 100 traps, you get 90 from this other guy and he goes down 100, you go up 90 but it keeps it under control. That trap limit thing is also in our Outer Cape management area which is an area unto itself and there is, in area 3, the offshore. They have that type of a transfer trap history-based. The ironic part is, while the states can put this in and did, a lot of it has to refer to the federal plan which follows the state plan and, in typical federal fashion, they are about three years behind in trying to put the rule in. So, while the rule is there and the ASMFC's lobster plan with the states can control because you have to come home sometime, the point is that until the federal put all the transferability in place for their waters, it is sort of a mishmash. But the idea is there and we do have the history-based in all the areas except area 1.

Moderator: Thank you very much, Bill. I want to thank not only Bill but also Kenny and Elliott and Lawrence for this time. We will not let them escape so you can ask them further questions but not at this particular moment. Thank you.

Applause

Moderator: Now, bait safety and that's going to be interesting and we'll see where we go with that. We have three presenters coming to us. Jennie Bichrest and Ian Bricknell, and Carl Wilson. We'll invite them us at this time. It looks like Ian has a presentation to make. Good, good, good. I see Carl, Ian, Jennie. Oh there we go. I was looking right at you! Good. Do one of you want to... Do you want to choose who wants to go first? Okay, Ian.

Carl Wilson, Maine Department of Marine Resources: Ian's the only one with a presentation, so....

Moderator: Okay. Yes. Oh, yeah, if you want to do it from here, sure. Very good. Go for it.

Dr. Ian Bricknell, UMaine School of Marine Sciences: Well, good morning, everybody. I would just like to say thank you very much for inviting me to the Town Hall Meeting. I'm always delighted to speak at these kinds of events. I'm a disease biologist. I've worked in aquaculture for about 20 years or so now, probably 25 years. As you can probably tell by my accent, I'm from away and I have a lot of experience in Europe in the interaction of diseases with certain fisheries and diseases in aquaculture and we were asked by Department of Marine Resources a few years ago to look at the possible risks of introducing diseases in exotic baits because of the crisis in the herring fishery which had reduced the availability of the traditional herring bait from New England. So this led to this project which was the risk of disease introduction from lobster baits that was carried out by Debbie Bouchard who is in the audience today and me at the University of Maine. Excuse the flash things. They do fizzle out. So the background for this, as I said, we wanted to establish the risk of exotic diseases into

Maine on bait fish and we felt this was essential to try and establish this. There is one disease in particular that affects fish called viral hemorrhagic septicemia virus. It's found in the Great Lakes. It's found across the world and this is a virus that belongs to the rhabdovirus group of viruses and, at the end stage of the disease, it tends to affect nervous tissue, in particular the brain, and very high levels of virus will appear in the brain of infected fish and, of course, there is a lot of interest in using things like fish racks and carp heads as alternative bait sources. So, based on that, we chose to establish the next three things. The first one was "What's the risk of introducing endemic disease into Maine by using a fish that is coming from another region where some of these exotic diseases may exist?" "Could the diseases utilize lobsters as a vector? Could they multiply inside the lobsters and go on to infect the lobster population and cause mortalities in their own right?" And we also had an interest in "Is there a risk of introducing diseases with farm salmon racks?" Well, of course, Alta region salmon farm racks especially from the Atlantic run the risk of a very serious disease called infectious hematopoietic necrosis virus and the risk from that is quite high. But we're going to concentrate on a disease called viral hemorrhagic septicemia virus which is a freshwater and marine disease and that was our model organism for our trials. So our experimental design here, we took some carp heads and this obviously is a carp head and what we wanted to do was we wanted to look at the storage conditions of these baits and how that would affect the virus survival over time. So what we did was we took a carp head and then we injected down the spinal column into the brain about 1000 viruses into the tissue of the brain and then we stored them at three regimes. At 5 degrees centigrade, that's around 40 degrees Fahrenheit, that's the temperature of a refrigerator and -20 degrees centigrade, that's around nil degrees Fahrenheit, that's the temperature of a freezer, and then, of course, they were salted and brined and kept at room temperature because we know that this is a very popular way of storing bait. Now, this is cutting a very long experiment very short but the results were quite interesting. Now, as you can see here, when we started off, we put in around 1000 viruses per gram of tissue into the brain of these fish, or these dead fish anyway, and what we found at 5 degrees centigrade, we detected viruses for the first three days but, by day 30, we didn't detect any virus at all. But, of course, as you know, if you store fish in the fridge at around 40 degrees Fahrenheit, at the end of about a month or so, you don't really have a fish anymore. You've got a stinking mess that people really hate you for having in the lab and we couldn't get the virus out of that stinking mess but that is probably because there is so much bacterial activity going on, those bacteria have destroyed the virus. Now, at freezer temperatures, -20 degrees centigrade, you can see here that we got slightly less than the number of viruses we put in and that dropped by about 90% over the course of a month. We put in around 10^4 viruses. That's 1000 viruses and we got around $10^{2.35}$ viruses back after about a month. So, I've highlighted these in red. Storing at -20 is very good way to preserve viruses. Although it drops by about 90% of the viruses in there, you still have around 10% left and I'm going to talk about the importance of that in another slide later on. With salted, for the first two days, we got quite good numbers of viruses back. At day 3, we didn't detect any virus and at day 30 it wasn't applicable because, again, these animals... these heads had degraded so much. But salting was very encouraging, that after three days of salt treatments, there was no viable virus found. So, salting bait seemed to be a very good way to inactivate viral hemorrhagic septicemia virus which, as

I say, is a very serious exotic disease to Maine. Now, I want to talk about freezing in the loss of pathogens because this is an important point. If you freeze a virus or bacteria, you drop the number of pathogens by about 90%. This is well-known in science and it sounds like a huge amount but if you go to any lab, you'll find a system like this. This is a liquid nitrogen system and you have a researcher here and these are the bacteria and viruses stored in that liquid nitrogen at -80 or -20 for many, many years but you will find that you put in say 10,000 viruses and you get 1,000 viruses back per mil. You lose about 90% of them and this sounds like this is a huge, huge amount of mortality when you freeze something. But it's relative. It's not uncommon for tissues of an infected animal to have what we call 10^9 which is a billion viruses or bacteria per gram of tissue. So if you killed 90% of them, that still leaves 100 million. So it's a huge amount even though you've killed quite a lot of these viruses. No, there is some work circulating on the internet and in the grey literature that suggest freezing is actually a good way to reduce the bacterial load of lobster baits. If you look at it by saying it reduces it by 90%, people think well, that's great because it really is a good way to reduce it but when you actually look at the numbers, the risk is still quite substantial and, if you read those kind of literature or look at that kind of literature, although the basic concept is correct, I'd say they're actually being economical with the actuality. They are not actually telling the full story because freezing, as I say, is the standard way of preserving microbes in laboratory situations. They will last for 30 or 20 years because once you've lost that initial 90%, those 10% are stable. You know, so this is very concerning to think that freezing of baits is a good way to reduce the pathogen load significantly.

Now, I want to talk about, very briefly, exotic pathogens that may impact the lobster fishery. There are two that I'm very interested in. One is viral hemorrhagic septicemia virus. This is a disease that is exotic to Maine and the risk there is coming in on bait fish. I also want to talk about this virus here which is white spot virus of shrimp. Now, this disease is endemic in Asia and it causes white lesions in the hard carapace of crustaceans. Although it's called white spot virus of shrimps, it actually affects a lot of crabs and lobsters and shrimps worldwide. It affects freshwater and marine crustaceans so freshwater shrimps and marine crustaceans are all affected by this disease so the risk there is if you're using a freshwater fish as bait, you're not reducing the risk. There are shrimp hosts that live in the same water systems as potential bait species from Asia. Lobsters and crabs are known to be infected with this virus but the adult animals usually get the virus, they're unwell for a few weeks, and then they recover. The big problem is, larval lobsters and crabs have a high mortality, over 90%. So although this virus will not kill or is very unlikely to kill adult lobsters, it may have a very, very adverse affect on larval recruitments because the lobsters would spawn normally, they would pick up this virus in the ocean, and here would be a mass mortality of larvae. This is very concerning thing and this has been seen with the green crab in France. The green crab over here is a nuisance. It was an introduced species. It's everywhere we don't want it. The green crab in France is a native species. It does very well but they got white spot virus of shrimp that occurred in the Bay of Biscay and it had a very adverse affect on the green crab because it kills the larval stages, not the adults. So this animal has now become quite rare compared to its abundance where every time you turn a stone over in the Bay of Biscay there would be ten. Now you turn over ten stones just to find one. So we have

to be aware that this is a very serious disease and if it got in on bait fish that hadn't been properly treated security-wise, then this is a serious risk to the natural lobsters. So just for my conclusions, accidental introductions of viral hemorrhagic septicemia virus or white spot virus of shrimp through a failure of security would be difficult for the lobster industry. The viral hemorrhagic septicemia virus component would affect our wild and farmed fisheries and there would almost certainly be limitations on export of live animals out of the state because the risk of carrying the virus in the water or the packing materials to another state or to a viral hemorrhagic septicemia virus-free country like the UK, those importing countries would almost certainly ban the movements of live lobsters because of the risk of this disease. Salting, as you saw from my experiment in that very quick overview provides the best way we found of reducing this risk because, after 48 hours, we could not detect viral hemorrhagic septicemia virus. Chilling or freezing does not reduce the risk significantly. So that was my little talk and I'm going to join the panel now and we'll open up to questions, I guess. Thank you.

Applause

Moderator: Thank you very much, Ian. You remembered all those phrases and words, I'm sure.

Dr. Ian Bricknell, UMaine School of Marine Sciences: Well, I'm here to answer anything that you didn't understand.

Moderator: I kept thinking what we really need is to tell the federal government to move the TSA from the airports to our bait sheds and dress us down. Okay, now let's turn to Jennie Bichrest and you're next unless you prefer to go the other direction. Okay, Carl. Carl Wilson.

Carl Wilson, Department of Marine Resources: Is this on? Okay, so I'm Carl Wilson. I'm the lead lobster biologist for the Maine Department of Marine Resources. I just want to back up about 10 years ago. At this time, it wasn't so much the lack of herring that was causing the kind of widespread use of exotic baits. Ten years ago, people were starting to use mostly hide baits as a way to kind of extend the fishing power of their traps on long sets especially in the fall and winter months and we slowly started to get reports of consumers coming back and they'd sit down to their \$40 lobster in New York City or whatever and would open up their lobster and find a ball of hair that the lobster had consumed off the hides and it doesn't take many calls to start to think that maybe there's a problem with lobsters consuming cow hide and so back in 2003 or 2004, I'm not exactly sure what year it was, there was a law that was passed that essentially limited the use of offal, any animal rendering parts, in lobster bait or in lobster traps as bait. The one exception was hairless hide so if you took the time to take the hair off the hides, you could still use hides. For the most part, we've seen a really dramatic decline in the amount of hides that have been used in the bait within the lobster fishery. It now seems and Jennie can speak a little bit to the supply of herring, certainly much more so than I can, it now seems that because herring is no longer the almost exclusive use of bait in the Maine fishery where I think 5 or 6 years ago it was 96% of all the trap hauls or the actual

bushels of bait that were used was herring. Now it's down to around 70% to 75%. The herring is being replaced with more exotic baits. It started, say, with rock fish from the West Coast, a couple of truck loads coming here or there. Now some areas, you know, are exclusively using bait that is not originating from the Gulf of Maine and that, as Ian said, kind of brings up some of the biosecurity issues and I think that is a lot of our conversation. It's not necessarily a lobster health conversation although the white spot will kind of make any crustacean biologist scared but it comes into more of what are the potential unintentional impacts of the lobster fishery to the greater Gulf of Maine ecosystem. Most recently, in that 2004 law that passed, there was one sentence that kind of was overlooked that said that the use of non-marine bait was prohibited, meaning freshwater bait was prohibited and that is a common practice on the coast. At different times of the year, they'll use suckers from rivers in the spring as a bait, as a viable bait, and, when the law was passed, it wasn't necessarily intentional that that kind of traditional practice was prohibited but, to the letter of the law, it is. A new law has been passed this year that provides the department and the commissioner a little bit more authority in regulating what bait is used in Maine. It allows two different things. One, it allows freshwater bait that is approved by the commissioner to be used in the fishery where it was prohibited and it now prohibits bait to be used in the fishery that the commissioner or the department deems to be inappropriate for whatever reason. That's kind of where we're at right now.

Moderator: Thank you, Carl. Now Jennie Bechrist of Purse Line Bait. Lets here the news.

Jennie Bechrist, Purse Line Bait, Maine: I may be the wrong person here. I do sell a fair amount of frozen bait. I guess I just want to sort of go where Carl left off that I think I may have been on the advisory counsel when we passed that original law and, unfortunately, people started using these baits and, as Carl said, the intention was not to limit the use of alewives or whatever but also it was really put to me anyway as I remember that it was also attacking the salmon problem that we had at the time. When, for instance, carp came on the market, I, myself, knew that technically, by the law, we should not be using that. I did not feel as a bait dealer that I should be the one to kind of call Department of Marine Resources and turn another fellow bait dealer in. It's really not good business or I don't like doing that because it appears that I don't want competition so this carp has become very popular with the fishermen and I think that's really where I'm looking to this new law to help us be responsible bait dealers because it's really you guys who, you know, are fishermen and who are asking for this product. A lot of it fishes really well and as a bait dealer, I'm there to provide what you want and someone else might say, Oh, well, you know I really don't give a darn that it could harm, you know, the rest of the marine environment so it puts me in this really precarious position of do I now become unpopular and have my customers go elsewhere because I'm not providing what they want or do I reduce my moral character, I feel, to say, yeah, okay, go ahead and use this stuff that's terrible for the environment. I'm really happy that this law has been put in place to help us be more responsible because I really worry about it. I've not seen Ian's thing before. I've read the paper and it scares me to death because I'm not just involved in the bait fishery. I've got a daughter who is coming up

who is, in every sense of the word, a fisherman, and I think there could be some really devastating consequences to this so I'm really hoping that we all can work together to have baits that we need but do it really responsibly because I think there are some huge dangers and I'm looking to the state to help us because there are a lot more coming on the market and I want their help. I'm not an expert. I just buy stupid bait so I'm really looking to the experts to help us determine what we should be using so that we can just say to you guys, I'm really sorry it works well but redfish and herring and menhaden has always worked, still works, and it's safe for the rest of what's growing out there. I look forward to kind of moving ahead with a little bit of safety concerns. Thank you.

OPEN DISCUSSION

Moderator: Thank you very much, Jennie. We're open now for questions and let me introduce our two microphone holders. Over here in the blue cap is Erick and over here in, and I can't tell whether it's white or yellow, is Simon. They are our microphone deliverers. When you raise your hand, you'll get one or the other of them to come. Here we come right over here with Jim, again. Remember to introduce yourself and where you fish and then ask your question specifically or to the general crew. Jim.

Jim Dow, Fisherman, Bass Harbor: Jim Dow. I lobster fish in Bass Harbor. My question is for the panel. Is there anything that is being developed for the fisherman or the dealers to be able to test the bait as it comes in so we know whether it's affected or no?

Moderator: Dr. Bricknell?

Dr. Ian Bricknell, UMaine School of Marine Sciences: Well, there are tests available for virtually all of these pathogens. One option is for dealers to send a small subsample to a laboratory like Kennebec River Biosciences to do a very quick molecular test or a culture test which would be ready within three to five days and they could identify these pathogens from a subsample quite rapidly and they you could get the batches certified as being tested for those pathogens which is a very good way to reduce the risk. But, of course, there's a cost involved in that. I don't know what that cost would be because I don't work in the commercial world. I don't know if Debbie Bouchard has any idea on costs. She's probably a little bit more closely associated with the commercial world than I am. Sorry, Debbie, I've plopped you in this.

Moderator: Give him the mic but then Debbie is going to answer. Name please.

Debbie Bouchard, Aquaculture Research Institute: Debbie Bouchard, I'm with the Aquaculture Research Institute. I guess testing by batch is really one test but it depends on how that testing is done and, unfortunately, PCR is a little bit expensive, especially in commercial hands and you're probably looking at \$50 or \$60 a sample. Which, of course, if you're testing two tons isn't too much but if you're testing, you know, a smaller portion, it can add up.

Moderator: Thank you. Yes.

Dr Michael Tlusty, Director of Research, New England Aquarium: Good morning. I'm Dr. Michael Tlusty. I don't fish. I'm the Director of Research at the New England Aquarium. We do have a small research hatchery and so we do a lot of work on lobster and so just to lay some fears to rest, we actually looked at white spot virus in 2002 and we actually did some transfers, we attempted to do a transfer study with Don Lightner at the University of Arizona and we couldn't transfer it into juvenile lobsters. The bad news on that study is that the lobsters are actually hit pretty hard by some bacterial issues so they are susceptible to a lot of things we are not actually aware of. I'm not sure how the bacteria from bait transfers over and affects the lobsters but the one thing we need to be aware of and kind of the general operating principle of our lab is that lobsters are really subject to multiple stressors and so sometimes if you hit them with one thing, it doesn't affect them but if they're getting hit by two or three different things, they actually don't fair that well.

Moderator: Thank you.

Dr. Ian Bricknell, UMaine School of Marine Sciences: Yes, Michael. Ian Bricknell, University of Maine. The only paper I could find that referred to the lobster mortality was in European lobsters and that came of work from the IMR, the Institute in Marine Research in Bergen. I couldn't find one that had shown transmission in North American lobsters which is two different species.

Moderator: Thank you. More questions? Yes. Get the mic up here would you please, Simon. Second row.

Guy Torrey, Fisherman, Portland, Maine: Carl, this is a question for you and I don't know if you're the one to answer it but, you know, the state doesn't allow you to bring firewood into the state. Why would they allow indigenous products to be used as bait. I would think they would be the ones to close the door on that and call it good.

Carl Wilson, Department of Marine Resources: I think Jennie could probably speak to the volume. I don't think there's enough fish being landed in Maine to supply the fishery, the lobster fishery today. I think the demand exceeds the supply and that's why you're seeing it. If you can bring a bait from across the country in the Northwest Pacific or from the Northwest and it competes with the local supply of bait for price, then there are some interesting price structuring. It's expensive. Bait's expensive and so I imagine that's a driving factor and I'm going to hand it to you.

Moderator: Simon, you want to take it over to Dana over there, Please? What's your name? We don't know who you are.

Dana Rice, DB Rice Fisheries: Dana Rice. Jennie, did you want to say something before I start?

Jennie Bechrist, Purse Line Bait, Maine: No, go ahead.

Dana Rice, DB Rice Fisheries: First of all, thank you all for participating in this and the interesting point, I guess, to bring out is Maine is watching this way ahead of time. Just to put some kind of a number on this, Carl, you and Jennie maybe can help me out but I think traditionally, the State of Maine used 60,000 metric ton of bait for the lobster industry. That's a rough number and maybe Carl or Jennie can help on that. What we're doing is putting an awful lot of product back in the ocean from Eastport to Kittery. 60,000 metric tons, Carl, is how many pounds? I'll let you work on that one. The point is, if you've got something coming in, we're down to now 25% of 60,000 metric ton of something that we're not traditionally using and we're not sure of, I think we're doing a very good job of monitoring this and doing the best we can to see that we don't do anything to harm this industry and the greater environment with this whole thing. Thank you. And, Carl, can you give me that number?

Carl Wilson, Department of Marine Resources: It would be like 120 million pounds I guess. Somewhere around there.

Moderator: Okay, there we go. Okay now, Steve, I'm going to get right to you in a second. I just want to invite some comment if you wish from the Canadian side regarding your situation and what you hear here and if there's any interrelationship at all. Steve, now we'll turn to you. You have the mic?

Steve Train, Fisherman, Casco Bay: Steve Train. I want to kind of repeat the question that was heard earlier though. Carl, I don't mean to put you on the spot but to say that we allow the bait in even though it might not be safe because we need it, I don't know if that answers the question. I mean, if we think it might not be safe, shouldn't we prove it's safe before we use it?

Moderator: Carl?

Carl Wilson, Department of Marine Resources: It's certainly not a question to me because I have an opinion on that but I think the reality, Steve, just to try to express the reality rather than my opinion, I think the reality is that the industry has too much of a desire for bait. I think when it really comes push to shove, they want to have their traps filled with the bait and, if it's an exotic bait, great, and if it's a locally supplied bait, great. But I think there is a desire and there's a need and maybe somebody else can speak to this but I think that's... I don't think we have the evidence. The science isn't there to say we should block this bait versus that bait. Today, it's viral hemorrhagic septicemia virus as a pathogen that we're concerned about. Tomorrow it might be something else and we're always going to be kind of playing catch up so it just makes it difficult. I think the new law that has been passed provides some of that authority which is getting at your question.

Moderator: Thank you, Carl. Pat? Introduce yourself, please.

Pat Kelleher, Commissioner, Department of Marine Resources: Thanks, Ted. My name's Pat Kelleher. I'm the Commissioner at the Department of Marine Resources. The issue regarding this law and the safety of bait really spins back to how much risk the state is willing to take dealing with exotic baits and this law allows the state, through the power of the Commissioner's office, to use the Maine Fish Health Technical Committee and, furthermore, the New England Fish Health Technical Committee to identify baits within the US and actually around the world, to identify areas where these pathogens do exist and then we can ban the use of baits from those particular areas. As we move forward to develop rules associated with this law, the other thing that we can look at and will be looking at is understanding what the sources are and how do you track those sources so if there's an area in the country where carp have a disease, we know where that is. Can we then make sure we can trace that bait to ensure that it doesn't come from that area and is coming from areas where carp do not have those particular diseases. There's a lot in play here. We've got some more work to do with the law to institute some regulations along with it but that is, in fact, in process now. Thank you.

Moderator: Thank you. Yes.

Jennie Bechrist, Purse Line Bait, Maine: Jennie Bechrist again. I guess, as Pat said, the law, they're still working on it and I think as we move forward that number one, everybody please watch the newspapers and come to the meetings and voice your opinions and concerns as we go into rulemaking with it. The other thing that has kind of struck me as we move forward is that we are right on the verge of creating a redfish fishery again in the state which we have not had in a while. This is a really good thing, number one that we won't have to maybe take so much out of Canada or that Canada will maybe continue to supply although so far this year it's been a little scarce. But maybe, perhaps the redfish can again start supplying more of the needs where it has failed in the last probably eight years and maybe even the price can come down a little bit because we'll be getting it closer to home. The other thing is today I've talked to some people in the pet food industry. The rockfish from what I have heard today is becoming a much more needed item in the pet food world so now we're going to start competing with prices that it's going to end up being whoever is willing to pay the highest price. As far as I'm concerned, the fishermen are paying too much now. It's very costly and once the pet food industry gets hold of it, there has already been a protein shortage for many years. That's so much of why the price is as high as it is now. But the demand just continues to grow and I've heard that they're starting to want the rockfish as badly as we do and there are a lot of those companies on the West coast so they are all starting to kind of go, "Why are we sending this to the East coast when we can sell it right here and get it out of our face, not have to probably pay so much attention to packaging, etc, etc, so we may even start to see some of those things fall through. I don't know because I've not been involved in the rockfish thing, you know, O'Hara's sell a huge amount of it and I don't know what kind of contracts they have so I really can't totally speak to that but I just know that there are a lot of other people who want this product so it's going to end up really going to the highest bidder and, with fuel prices going the direction we have, that's the one thing that I think people really fail to acknowledge. Even if people say, "Oh well, Jennie, Jesus, you can get redfish now in New Bedford." Well, I still gotta send a truck

down there and if somebody is only producing 20,000 pounds a day and I'm putting \$4.50 diesel in my truck or anybody's truck and then you have to pay a driver, you're still talking a fair amount of money to drive to New Bedford to get 20 lousy thousand pounds. You know, 20,000 pounds is not a whole lot to send a truck down for. It's going to get even worse if the fuel prices stay where they're at. The other thing is on this frozen stuff. Again, moving forward with this law, the bait is just coming from so many different places that you can go to like say the Boston seafood show. I had a lot of calls after from fishermen who were saying, "Oh look, this guy's got this product and that product and why aren't you bringing it in?" Well, what they fail to recognize is that you can walk up and talk to somebody and this guy thinks 20,000 pounds is a lot because, you as a fisherman 20,000 pounds might go you for several days. That's not a lot in our world and so when somebody says, "Well, jeez, I've got all the product you need" he's talking in your little world. He's not talking in my world so when you make those connections, when you really get down to the nitty gritty, this guy is producing 20,000 pounds maybe twice a week and you're driving to Florida to pick it up. It doesn't work because most of the places don't have a place where they can keep it, number one, and, number two, it's too far to go to get this stuff up here and make it reasonable for you. Then when you're talking fish that is caught on the West coast, what I have found with a lot of it is that it's being caught on the West coast but then it's being sent to China or Vietnam to be processed and that's where some of these pathogens and diseases and everything happen that, okay, now it's being processed in Vietnam where no one knows what the plant is like. Is it clean? How do we nail that down and make sure that that tuna head is not coming back with, you know, a lot of problems.

Moderator: Thank you, Jennie. I'm going to go back to Dana in just a second here but I wanted to recognize that earlier when there was a comment about the amount of bait that fishermen use and how that has increased, I saw a number of heads nodding, you know, that we're using a lot more bait than we used to use and I'm not saying you should get into that but there are a lot of issues that surround this whole safety issue. Go ahead, Dana.

Dana Morse, Maine Sea Grant University of Maine Cooperative Extension: Dana Morse, Maine Sea Grant University of Maine Cooperative Extension. We have a practical suggestion here to the industry about salting. I'm just curious as to what's been the level of communication about that thing out to industry to date.

Moderator: Do you want to articulate what that solution is?

Dana Morse, Maine Sea Grant University of Maine Cooperative Extension: Have there been articles, pamphlets. You know, we're talking about it here. Have there been newsletters? What that level is because that would make a nice thing to be continuing to reach out to the industry about.

Moderator: Thank you, Dana.

Carl Wilson, Department of Marine Resources: Dana, I would completely agree with you.

Moderator: What's your name, Carl?

Carl Wilson, Department of Marine Resources: Carl.

Laughter

Moderator: Good try.

Carl Wilson, Department of Marine Resources: I completely agree with you. That's a good outreach component. I think, again, the practical nature of how these baits are coming in is frozen in 40-pound packs or whatever and those boxes are getting unloaded right onto the boats and out they go and they're kind of thawing out on the boat and adding the salt when you're on the boat ready to spear it on isn't necessarily the right time to be adding salt so you'd have to kind of change the structure and maybe Jennie could speak to if you could then thaw out her trailer truck loads and then add salt or add salt back on the West coast. I don't know how that would work.

Moderator: Simon, you want to get a mic over to Bob and then back to Elliot?

Dr. Bob Bayer, Lobster Institute: Bob Bayer from the Lobster Institute. Dana, to respond to your question, in an attempt to get the word out, we have presented Ian's data not just here but at the Maine Fishermen's Forum, at the Massachusetts Lobstermen's Association Annual Weekend, and at the Atlantic Lobster Sustainability Foundation meeting last summer so, although there's nothing on our website yet or in writing, the attempt is being made to get the word out that this is something we need to be worried about.

Moderator: Elliot and then back over here.

Elliott Thomas, Maine Lobstermen's Association: Elliott Thomas. I have a question about the salting. How long does it need to be salted and, if it's cold, does that affect that length of time that it needs to be salted?

Dr. Ian Bricknell, UMaine School of Marine Sciences: In our experiments, we found that we couldn't recover the virus after 48 hours, 2 days. Temperature probably would have an affect on it but it only... These type of reactions have what we call a Q10 value which means if you double the temperature, you double the rate of the inactivation or the process going on. So if you did it warmer at say 10 degrees centigrade, closer to 50 Fahrenheit, it would probably take half the length of time if it follows one of these typical Q10 equations. If you halve it, it would double the length of time. So, we haven't done those experiments but that is what model would predict. At the sort of temperatures we ran it at which was at room temperature wasn't it, Debbie, so at around 70 Fahrenheit, we couldn't detect any virus after 48 hours.

Moderator: Over here. I've been holding off for a while and then we'll go over to the other side of the room.

Lawrence Cook, Grand Manan Fishermen's Association, Canada: Lawrence Cook, Grand Manan Fishermen's Association. The topic of bait is interesting to us. In Canada, we have lots of it. Our problem now is price, trying to compete with the demand in Maine where you don't seem to have enough anymore. I wonder, in your use of foreign baits, Carl said the pressure is there to always have bait in the traps and I get that. I'm a fisherman. I know what that's like. But I don't know any fishermen that I can think of that would put something in their trap that they thought was actually dangerous. I think one of the best informational things you could do just as a comment is let us know what baits are safe from where and where it's coming from. Because, honestly, if I buy bait from this lady up front who is just selling what the fishermen want, I'm not sure that's really a valid argument either. If I'm a drug dealer, I'm just selling people what they want.

Laughter

Lawrence Cook, Grand Manan Fishermen's Association, Canada: But I think we need to know where things are coming from and what is most likely to be dangerous because I think you'll be surprised how many fishermen will make the choice not to use something dangerous if they have the information. I've been the chair of this group for a long time. I didn't know about the things that were presented here today. I'm very interested to hear Ian speaking and I think information is the key here and, if fishermen know, they'll make the smarter choice themselves.

Moderator: Thank you, Lawrence. Good comment. Now over here, way over here. Have you got a mic? There you go, Simon.

Joe Kunkel, Fisherman, Amherst, Massachusetts: Joe Kunkel, from University of Massachusetts, Amherst. I work on the cuticle and I'm thinking that we really need to know more about this salt effect and temperature effect. It's important to find out because I can't believe that salt is going to inactivate the virus. It's probably the enzymes or bacteria that are inactivating the virus and the salt is just keeping the fish together so it doesn't, so it gets cured.

Moderator: Ian and then Jennie. Thank you.

Dr. Ian Bricknell, UMaine School of Marine Sciences: Ian Bricknell. When you salt viruses, you are quite right. There are several things that will be going on. One, there will be enzymes being released as the animal breaks down and changes its composition after it dies. It is known from viral hemorrhagic septicemia virus that without salting, they remain infectious, the tissues remain infectious, again, depending on temperature at around 12 degrees centigrade, mid 50s Fahrenheit, for about a week in fish tissues. So you're accelerating that process by salting them. There are two things you could be

doing. One, it could be changing the enzyme composition and speeding up that process but more likely you're drawing the water out of the tissues very rapidly and when you take the water out of the tissues and increase the salt around the protein, it unravels and viruses are little sacks of proteins. Once you unravel it, you have a genetic material covered in protein like a little golf ball and once that genetic material is exposed, that breaks down quite rapidly. So if you can unravel those proteins, which is what the salt is doing, that is probably why it's happening more quickly. From the research point of view, our project was limited to the funding we had so we didn't get the opportunity to go further and my partner in crime is about to say something. Go on, Debbie.

Debbie Bouchard, Aquaculture Research Institute: Just for the record, the reason why we used salting.

Moderator: What's your name, Debbie?

Debbie Bouchard, Aquaculture Research Institute: Debbie Bouchard of the Aquaculture Research Institute. The reason why we did salting and used it at room temperature is that is actually a standard way of preserving bait. So whether or not we do it at cold temperature, whether or not its bacteria or enzymes breaking it down, we were looking at a method that is used to preserve bait and found that it was also an affective means of also reducing the viral load.

Moderator: Thank you. Jennie, you had a comment?

Jennie Bechrist, Purse Line Bait, Maine: I'm Jennie Bechrist. I don't know where the fellow went but I really appreciate his comments and I guess I have to say that sometimes I do feel like the drug pusher. I really have prided myself for many years on being involved in the industry, going to these types of meetings, and there have been many of the people who are pushing the drugs that, in my recollection, have actually pretty much refused to come to these meetings and share their opinions and their knowledge of the baits that they're pushing or drugs as you said. But you're right. I mean, I think that's why I have a lot of gray hair because there really is a lot of stuff that goes on and you feel like... I've tried to tell fishermen before, "Guys, this isn't good" or when it's come to illegal fish of other kinds and maybe you Canadian fishermen have a lot more trust in your bait dealers than some of ours seem to have in us. I have been nothing but honest with my guys but my feeling has been is that when you say, "I don't want to sell that product." They don't hear you. They say, "Oh, she doesn't want to service our needs and she can't get it. She's not good enough" or whatever. I'm probably wrong in saying well touch crap, okay. But all I can say is that I try to stay involved and learn the issues and we're looking for the experts to help us do that because for me to say, "Alright, I think carp is not a good thing." I've got no proof until now that it was bad. Everybody looks at you like, "Well what the heck? Are you supposed to be a scientist or what to say oh you can't put that in the water?" So, the other thing I wanted to touch on was the salting. This actually is the first time even though I've browsed that paper that I'm really bummed that I finally have seen part of this presentation. I actually asked Deb and Ian to come to a bait seminar that we had at the Fisherman's Forum at the beginning of the

month and, unfortunately, they couldn't come and I totally understood they have very busy schedules and they did let us know in time but we had very few people even come to that bait session. It was really sort of a joke. It was maybe the day we had it or whatever but no one came and we put out, you know, I was clear to say what we were going to discuss and there were doodily there for guys who were interested to hear it. You can put the information out but it's kind of like saying, "Okay, you can lead a horse to water but you can't make him drink." So, it's really a lot up to them. The salting thing when we talk about froze baits, it's really difficult. This bait is going to have to be salted where it happens and, again, when you're talking about something that's being processed in Vietnam, the chances of being able to salt that product in Vietnam and then ship it in a container is probably not going to happen and I'm even wondering whether it could happen on the West coast. I have enquired about that myself when I went to the West coast. Again, it's mostly getting the product here. Even on a train from what I understand that many times it takes over a week to get it here. So whether the salting would work or not on that end but to salt it on this end after is, I think, pretty impossible. We've all, as bait dealers, been faced with having to thaw product out and I don't think any of us have the room. I know I don't have the room. You can't spread it out in our parking lot and then leave it because either somebody is going to steal it or the gulls are going to go absolutely insane. I've seen it happen in Portland and to spread 40,000 pounds of fish out in 45-pound boxes would probably take about 3 acres of property. I don't think any of us have that ability and then again, you're talking about just juices coming out and going other places and that was something else that struck me is if we're concerned with some of these products, I am praying that fishermen that take these boxes out onto the water are bringing those boxes back. I know I freak out when somebody throws a gum wrapper over but I also know fishermen that I used to fish beside that would throw everything, everything right over the side and to me those boxes are probably holding a lot of that disease right in that nicely-soaked, bloody box so hopefully they're bringing it back to shore and disposing of it properly.

Moderator: We're getting dangerously close to feeding this crowd but we have a few speakers yet. Ian and then a speaker over here and then back here so lets move through these three and then I'm going to introduce Bob and Bob's going to tell us about some access we have to scientists and then we'll have lunch.

Dr. Ian Bricknell, UMaine School of Marine Sciences: Ian Bricknell with the University of Maine. I just wanted to sit here and really emphasize the point that necessity is the mother of invention and that a lot of this work we're doing is new. This research has been driven by the economic needs of the industry. The science has been done at the request of Department of Marine Resources and the bait dealers because they're aware that there are risks here. And, of course, there will be solutions along the line. We have some already that we could pretest. There are other treatments that we haven't considered like irradiation of the baits. This is done in certain aspects of the aquaculture industry. Heat treatments as well. I mean, they're all going to add cost and they may not be practical but they're areas we haven't looked at so although we're identifying risks now, it's a great thing to do that because we can modify our behavior in the future and have a more sustainable industry. An interesting little anecdote that Deb

brought up, there was an outbreak of viral hemorrhagic septicemia virus in the UK in 2007 and that was traced back to a smokehouse that imported fish from Denmark where the disease is endemic and the washings from those fish when they wiped the mucus off them and descaled them, they flushed straight out down the drain, through the sewage plant, into the river, and they infected the wild fish. So that is a risk and that is one of the mechanisms that these diseases can spread into the wild.

Moderator: Thank you. Yes, introduce yourself, please.

Dr Michael Tlusty, Director of Research, New England Aquarium: Michael Tlusty, New England Aquarium. The one thing we need to be careful with bait is that we don't run away from one problem and actually run head first into another problem. The Atlantic Veterinary College did a study I think in like 2001 where they were looking at the quality of lobsters going into processing as they were landed on different baits and, if I recall properly, thawed mackerel had significant downgrading at the plant and so there is something when you thaw mackerel, you're getting some chemical reactions that the lobsters don't respond to well. So, it's one of these things that there will be no easy solution and really we need to work with the scientists and we'll help you test whatever solutions because we just want to avoid running into other problems.

Moderator: Thank you, Michael. Yes.

John Nicolai, Lulu, Inc, Bar Harbor: The drug analogy was good but it gets complicated. In my view, the only entity that can level the playing field, whether it's for bait purveyors or people having the assurance that when they do buy bait, it's safe, is the Department of Marine Resources. That's what it boils down to and it may be simplistic to say but, why not just go with what we know is good and interdict what we're not sure of in that way until we're sure that the bait is safe, introduce it into the market, and I guess those new laws will help do that. But in the immediate time, if we release a pathogen into the water, it's like a Pandora's box. How do you put that problem back into the box? It's practically impossible. I would go with the safe way. Interdict what we're not sure of and the Department of Marine Resources would be the entity that would, again, level the playing field for bait purveyors. It would take all doubt that the guy next to you isn't selling a bait that's not safe and competing with you that are trying to do the right thing. I don't know. That would just seem to be the simplistic way of doing it.

Moderator: That's a good note on which to end this particular moment and move on. Dr. Bob Bayer is going to tell us about meeting the scientists and also how to get that lunch I referred to. Bob?

Dr. Bob Bayer, Lobster Institute: Excellent. Thank you, Ted. Really interesting morning and Mike's comment reminds me of something that I had heard from a number of fishermen for years about mackerel and I think the quote is, "You don't use mackerel for bait because it physics them." So, it's interesting. It was good to have it confirmed. Our Meet the Scientist session today has been brought back really by request. I have

invited a number of scientists to be with us and many of them came to share the information that they have and the stuff that they're working on right at the moment that is related to lobsters and the lobster industry. There are tables set up out here in the foyer and we call this a learning lunch. I hope that doesn't mean indigestion. There won't be a test. What we're going to do next is we've extended the lunch hour so, grab some lunch and the lunch hour is going to go to 1:45 and the idea is that we've got all these scientists with information for you and you can confront them. If you have disagreements, this is your chance. If you have information to add, this is a chance to talk with people who are working on some of the issues that are timely for the lobster fishery and let me do at least a partial introduction so you know who is here. We've got Debbie Bouchard and Dave Basti from the UMaine Cooperative Extension, the Veterinary Diagnostic Lab, and the Department of Veterinary Sciences at the University of Maine. Brian Beal who has not shown up yet but says he is going to come. He usually does. Michael Tlusty from the New England Aquarium who you've met and asked a number of questions. Laura Ludwig formerly with the Gulf of Maine Lobster Foundation who is presently a consultant. She will be here. And then from the Gulf of Maine Research Institute which is right here in Portland, Kate Burns, Alexa Dayton, Jenny Sun, Andrew Pershing, and Sigrid Lehuta all from GMRI. Hans Laufer from the University of Connecticut who is with the Department of Molecular and Cell Biology and Joe Kunkel from the University of Massachusetts. And there you have it. It's lunchtime so get a bite to eat, chat with the scientists. Lunch is right next door. Go out the door and make a left and then, in the foyer, that's where the Meet the Scientists takes place.

LUNCH BREAK

TOWN MEETING RESUMES

Moderator: This afternoon, we're going to be dealing with bait safety and that's.... excuse me... That's the trouble with reading rather than thinking.

Laughter

Moderator: We're going to get started with marine debris. We already dealt with that safety business and that was a good session. I think you noticed that the questions got stronger and stronger as we got toward the end where we had to cut you off so get right in there to begin with with your questions and we'll try to get the discussion going back and forth between you and, once again, we'll have our good young gentlemen getting the mics to you on time so we can do our work. This afternoon our presenters are Laura Ludwig who is with the derelict trap study and that's had a little bit of press here in Maine lately and she is also with the Gulf of Maine Lobster Foundation. Ashley David who is with Clean Oceans Canada and Theresa Torrent-Ellis with the Maine Coastal Program. Those are our three presenters and I don't know whether you have a specific order in which you'd like to go? You're going to start. All right. Okay, very good. And

the mic's right there and you may introduce yourselves and get started whenever you are ready.

Ashley David, Clean Nova Scotia: Hi, I'm actually from Clean Nova Scotia is what it's called. I have a presentation so I'm just going to get that up for you guys. Okay, just in case you didn't hear that when I was over there, my name is Ashley David and I'm from Clean Nova Scotia which is a nonprofit organization that does environmental education in the Province of Nova Scotia. The program that I work on is called Ship-to-Shore and I'm going to give you a little bit of background about the program, sort of what prompted the program to start and I'm going to try to do that with some pictures. First, I started working, just to give you background about myself, I started working on this about a year and a half ago but, say about five years ago, there were a lot of folks both industry, fishermen, people that worked in the bait industry, as well as folks from Fisheries and Oceans and other regional waste educators that had an interest in fisheries waste management. So, I'll give you a little depiction of sort of what were those problems that were coming up and then I'll give you a little bit of an overview of some of the projects that we're trying to do to improve that. This is a depiction of how waste is managed at some harbors in Nova Scotia and a lot of you, I can hear you laughing a little bit and I want to assure that not all harbors have dumpsters that look like this. There are some that are really, really good and I also want to say that a lot of the harbor managers do a really good job and do their very best to manage the waste. However, often this is what happens with the garbage and I'm seeing a lot of things happening here. When I look at this picture, I see a lot. For one thing, I see some good stuff. Fishermen are bringing their garbage home. There used to be a lot of issues with garbage going overboard and obviously here a lot of the fishermen are bringing their garbage back. The problem is the dumpster is just overflowing so you've got debris all over the ground. You know, some of that is probably blowing back into the water so there might be a disincentive almost for some of the fishermen to bring their garbage back because they are probably seeing it washing into the water. What we wanted to do is, okay, how can we help harbors manage this garbage a little bit better so that we're not seeing these issues. I'll show you a couple of other pictures and if you have any questions throughout my presentation, I don't mind. I don't know if that's against the rules, but feel free. This is another dumpster sort of. It's a fish box that they're using for storing waste and the picture on the top left is some of the boxes that are getting blown out and just landing on the shore and probably washing up into the water, unfortunately. This is another picture of a dumpster. As you can see in the back and I've heard from other folks in this area that there is a lot of illegal dumping that happens so you can see obviously that the computer monitor didn't come from a boat and the propane tanks. There are a lot of issues with illegal dumping at harbors so how can we curb that. These were the things we were trying to figure out with this project. How can we help fishing harbors keep from having illegal dumping? That's a little bit of a close up. So there's a fridge there or a freezers or something. And then some other issues that kept popping up was shoreline litter and this is a beach in the Fundy Bay area in Nova Scotia and a lot of litter on the high tide line there. Folks were doing beach cleanups and they'd find a lot of fishing-related waste. This specific cleanup was done really close to Yarmouth and they found, they said, about 95% of the garbage was fishing related. So we kind of wanted to figure out why is there

so much fishing waste coming up on shores and is this accidental. Is this intentional? Also, a big issue was bait boxes and we were talking about this right before lunch. It was even mentioned that the fact that some of these might be thrown overboard. Well, we know that they're being thrown overboard in Nova Scotia because we did some surveys and asked fishermen whether they bring them home, whether they throw them overboard, and what we found was about 600,000 of these boxes are thrown overboard every year in the Maritimes region by lobster fishermen. A lot of fishermen have concerns with that. Another thing that I didn't pick up on when I was talking about the earlier slides is that, in Nova Scotia, it's mandatory to recycle and, as you can see by those dumpsters, there's probably not much recycling happening so we're talking about having a separate bin for cardboard and other materials that don't go to a landfill. They are recycled and reused. So we wanted to get all these boxes that were just being land-filled to be put for cardboard recycling and we found something out when we started looking at the boxes which I have a couple props here. This is a typical bait box and it looks like a cardboard box and on the inside, there is usually a plastic bag of some sort. What we found was a lot of the boxes are actually, this is a box that washed up on a shore and you can see that... I don't know if you can tell but, as the cardboard starts to break down, the box is actually lined in plastic so it's coated in plastic. Not only is it bad to throw these boxes overboard anyway but they're actually throwing a couple of plastic bag's worth of plastic as well at the same time. This is kind of a prop that I bring to presentations to show fishermen because almost every fisherman I speak to know that plastic overboard is not a good thing. Hopefully, if they were throwing boxes overboard, this would change that. What we did was, for the program we chose 21 fishing harbors all across Nova Scotia to work with on waste management. We also had fishermen sign pledges committing to return their waste to shore. Just a little sheet that says, "I'm committed to bring my garbage home." At a lot of these harbors, we tried to implement some recycling at the harbor. This is Lunenburg Harbour. When we first started working with them, they just had all just garbage. A lot of the fishermen were bringing their garbage back home which is great but they weren't recycling anything and we found that at least 50% of their garbage could be recycled which saved the harbor a lot of money because it is expensive to send your garbage to a landfill. I want to tell you about one harbor. I'll give you a sort of an overview about a harbor and some start-to-finish, where they started and where we got with them with the program. It's in Battery Point which is Victoria Beach which, you can see on the map is on the Fundy coast of Nova Scotia. Some of the issues that they were having were that the fishermen weren't necessarily bringing their garbage home. If they were bringing it back, they were burning it on the shore which is illegal in Nova Scotia and they also had a dumpster at the harbor but a lot of folks were bringing their fridges and stuff and throwing them in there. So it was costing the harbor a lot of money to get rid of this garbage. They didn't know quite what to do and they started coming to their local officials, their MLAs, asking, what are we supposed to do? How do we deal with this? We worked with them. That's just an overview there. What they did was they purchased a little, this is a fish shed, and they purchased one of the sheds to store their garbage. So it was sort of out of sight and they were able to put their garbage in this shed and sort out the garbage within the shed. On one side, the left picture, is all the cardboard that they put aside for recycling, and then on the other side there is also plastic. We used clear bags in this part of the province for garbage so some of that is garbage. It was also

great for their oil filters and oil debris so they were able to house that inside and keep it out of the weather. This is actually oil filters that they put upside down. They're actually draining them so that they're not leaking oil. In the end, the fishermen are bringing their garbage back now. That was about five years ago when we started working with them. The recycling, I guess they're paying about 1/10 of what they were paying before for garbage disposal. So it's very promising. I have a little film clip that we've been working on and I'll show you. It's two minutes long. It's just an outreach film.

Moderator: Bring it back. Bring it back. Okay, who's going to come next? Okay, mic right there. Introduce yourself and it's yours.

Theresa Torrent-Ellis, Maine Coastal Program: Thank you. My name is Theresa Torrent-Ellis. I work for the Maine Coastal Program which is based at the State planning office. If you're not familiar with the role of the coastal programs, it's under the Coastal Zone Management Act of 1972. States receive funding, federal funding, through NOAA for the purpose of resource conservation as well as sustaining coastal communities. My role is a lot of outreach, education, and communication work. One of the first projects that I engaged in was the international coastal cleanup which I think some of you might be familiar with. We host here in Maine every year a week called Coast Week and predominantly the effort is to engage folks in getting out and collecting debris from our coastlines and waterways. This information is actually recorded and becomes part of, the information being exactly what is collected, becomes part of a database that is managed by Ocean Conservancy and it's an international clean-up, hence the name, International Coastal Clean-up. In Maine, our focus is really awareness. You, what is the sourcing of debris. One thing that we're finding consistently with the clean-up is that a lot of this is single-use plastics and we're learning more and more that this is becoming a pretty serious issue, the presence of plastics at so many different levels in the marine environment right now. Everywhere from the bits to the larger pieces and we've known over time that there have been impacts to animal safety or just the esthetic component but now we're finding that there might be large impacts that we didn't know about before. A lot of the focus of what I do at this point is to encourage other behaviors and one of my biggest learning moments around this effort was I kept showing up at the Fishermen's Forum with my table covered in papers and newsletters and all kinds of stuff and there wasn't really much action at the Maine Coastal Program table. One day, I had a family of fishermen walk up to the table and say, "Are you the cleanup person?" I was like, "Yeah, that's me." He said, "I really need your help. I'm really, really tired of going out every day and following my buddy's Styrofoam cups out to the fishing grounds. Is there something you could do to help?" That was such a light bulb for me there. You know, there are a lot of ways, of course, we could help. The next year, I arrived to the Forum and some of you, I think, are owners of the reusable coffee mugs and cold cups that we bring each year to encourage the use of reusable items that can help us keep plastic out of the marine environment. The program is obviously larger than that but that is a big focus of where I am with it right now. Also, Laura reminded me that one thing I have been doing in the past few years is surveys at the Forum and this year my survey was basically asking, as we as managers, coastal managers, are grappling with what are the important emerging issues around the coastal and marine environment, I wanted to find out what

the fishermen were thinking. They're out on the water. They're seeing what's going on. That's a really important community for us to get some information from. It was really, really insightful that, in this survey, it was basically asking out of eight items that we have identified as emerging issues which ones they felt were most important for us to be focusing and providing information on. The marine debris really came out on top. I think everybody is seeing it out there, everybody is wondering what are the impacts. What can we do about this? That really said to me that it's really important that the coastal program remain a strong partner in reducing marine debris. I'm going to stop there. I think it will be easier for me to respond to questions. Laura, your turn.

Laura Ludwig, Consultant: My name is Laura Ludwig and I worked for the Gulf of Maine Lobster Foundation for six years and, during that time, we basically collected a lot of rope from fishermen when we did the rope buyback program, over 2 million pounds of rope, and that was a direct result of the whale regulations when the American fishermen were mandated to not use floating ground lines between their traps and switch over to sinking ground lines. As a result of that, I started to pay attention to the amount of gear that was newly being lost, newly created lost gear as a result of using sinking ground lines and I just wanted to see what that might actually look like in reality and so we put together this little project, a two-year project, working up and down the Maine coast and that's what the chart on the screen here is. We wound up working with fishermen and so we worked with about ten boats in seven different harbors, a total of around 71 vessels over the two years and left it up to them where they wanted to search for lost traps and everybody knew exactly where they wanted to go to find them. There are a few folks in the room that have done this program. Let's see, Bruce is here, anybody else? David's here. Did you do it, Steve? Did you do it, Jim? I can't remember who did it anymore. Anyway, there were about 70 different captains and vessels that went out. The funding was secured through a grant from the National Fish and Wildlife Foundation. It was not federal funds. In fact, it was a fine that they had received from a shipping company so it was a disbursement of penalties that were paid to the federal government for deliberate dumping in the Gulf of Maine. It was sort of a privately-funded program. We also received funding for this program from the yacht clubs, interestingly. They came to the industry and said, "What can we do to help mitigate the problem that we create by cutting your buoys off and making you lose your traps?" So they kind of pooled together and gave us some funds to pay the fishermen to get out there and grapple these traps back. A couple of the statistics that came out of this program over the two years, the total number of traps was around 3300 traps and they were in varying condition. The bulk of them were scrapped. As you can imagine, they were a lot of junk traps. Actually it was almost half and half, traps that were deemed "fishable" versus junk so we recycled all of the metal traps and actually the money that we got back because steel is at such a premium right now, it actually paid for the recovery, not the recovery cost but the disposal costs which normally there's a tipping fee involved etc and you have to truck the stuff somewhere so that was a wash in the budget. The traps that were actually, well it was sort of subjective whether they were fishable or not but you never know. Some fishermen like to fish traps that have barnacles all over them and others don't but we did get around 1300 or 1400 that were fairly square shall we say. Of those, 788 of them were actually reclaimed by their owners. We would call the guys because they all have tags on

them. We would call them up, they'd come down and pick them up and that was that. So of the ones that were not reclaimed either because the guy came down and decided he didn't actually want to claim them because they weren't very good or because they were unreachable or for whatever reason they were unclaimed even after our efforts to contact folks, those still remained available for collection by the owner but they were housed at the Marine Patrol watercraft facility after which point the statutes on the book say that the salvaged equipment can be auctioned off. All of those traps were auctioned off to other lobstermen after a holding period of several months, up to six months. I'll mention regulations because when handling lobster gear, in the United States at any rate, it is illegal to handle another lobsterman's gear without his express permission so, for the purposes of this project, my program receives a special state permit which every vessel was listed on a special license to handle the gear of other fishermen during that time frame. And that is one of the hurdles that any good samaritan might encounter when he is walking along the beach and wants to clean up a lobster trap. There are ways around that but it is fairly complicated and it's not straightforward. You can't just take it off the beach. You need to connect with people in order to clean that off. I just wanted to bring up the one sort of scientific aspect of the program that we tried to look at. It was not a science program at all. It was basically a gear recovery program but we did grab some data from it. We documented everything that came out of the traps and also the functionality of the escape panel, whether it had released or not and also the age of the trap and a correlating event. Of the 3300 traps observed, almost half of them, the biopanelled traps functioned and I do have other numbers that talk about the lobsters in those traps because there were pretty much lobsters in all the traps in many cases. That is documented as well. We didn't make any correlation with why the lobster was there. It was just there and we counted it. A third of the traps or so had vents that didn't function and that was very interesting because some of the older traps actually had vents that were still closed or they were fouled so badly by natural processes, whether it was other shellfish colonies or flora, seaweed and algae and such, that they weren't able to actually open. Some of them were freighted with mussels like you wouldn't believe. I think it's a really great habitat for mussels in some areas. Then a lot of them were just beyond repair and not documentable that way. Back to this slide, I bring this slide up because we have in our midst here a guru of grappling. Tor Vincent has spent a lot of time in Long Island Sound grappling back gear for a different program but he came to Maine and did some work with us and I won't point you out Tor, but if you want to introduce yourself, go ahead and stand up. So anyway, I wanted to show the picture in the middle and on the right on the top up here. A lot of the concern about using the whale rope in rocky bottoms is because it chafes and it parts and the traps are lost and many times they are irretrievable because it's difficult to put a grapple down and that's what those photos represent. The grapple in the center is a massive \$250 grapple. I think it's about 110 pounds. The tine was bent back. I don't know if this has a pointer or not, yea, you can see that they were all rated this way initially and this was out of Bucks Harbor that this damage happened and this guy was a scallop dragger and he rigged his bail with four grapplings and the first day he was out, he got into the very edge of the bottom and basically decimated three of his things. He had to go back and re-weld them. The point is that it's sometimes difficult to get this gear back out of bottom that is that rocky and I mentioned Tor because the rig that he has designed is actually rigged in a way that it is

sensitive to the hard bottom and actually he can still retrieve his grapple and often times actually gets a lot of traps back. For comparison purposes, most of our vessels were coming back in on a daily basis with between 25 and 50 traps aboard and he went out in about 5-1/2 hours and got 96 traps in the same area that other folks were also working. So the gear needs to really tend the bottom to actually get into the traps. Those are just some of the features of the program that we did over the past two years. It is actually going on right now as well. I'm just going to grab my notes so I don't forget what I'm talking about. The reason that I'm here, I don't do the project anymore but the people who do are out doing it so they can't be here today and that's Lynda Doughty and Erin Pelletier at the Gulf of Maine Lobster Foundation. There are some other issues that I wanted to bring to the Town Meeting in particular because they go beyond just recovering gear. Regardless of what the impacts of the gear are on the ocean floor, what your beliefs are on that, whether it's creating habitat for lobsters or shellfish or other creatures even fin fish, whether the trap is becoming part of the habitat or whether you view it as marine debris, there are some issues that I wanted to kind of discuss with a group of people that might have different ideas like yourselves. I get feedback from a lot of different parts of the Maine coast in particular and a lot of people have been talking about following the trails of the bait boxes. As you mentioned, the Styrofoam cups, particularly I've gotten this from two separate people on Vinalhaven so I don't know what's going on out there but apparently these plasticized cardboard bait boxes are finding their way into the ocean in a deliberate manner. Other feedback I get is that disposal costs for fishing gear are prohibitively high if you go to a dump and you have to pay by weight and so disposal is an issue of gear that you no longer want and the ocean is out of sight, out of mind and, therefore, it is anecdotally reported that there is deliberate dumping of gear that is unwanted and, in fact, in Casco Bay last year when we did the gear recovery program, we actually dragged back a lot of cable that had been strung out over several miles off a drum that no longer wanted that cable. There is concern and actual documentation to a certain degree about the number of traps that are lost as a result of using the sinking ground line and I'd be very curious to have a conversation about your experience with that for those of you who are using that in terms of the numbers that you used to lose lets say versus what you've had to do to not lose them these years. In the process of doing these gear recovery programs we have, it's pretty clear that there's a degree of interest and a degree of responsibility that the industry is wanting to take on this so, is that how you feel about it? The regulations that prohibit the handling of other people's gear, often times that is something that is very workable in the industry itself by a simple phone call to the guy whose gear it is or to the Marine Patrol and that is a very manageable way of, like if you're in the course of harvesting and you recover other people's gear, that is sort of a pro formal way of doing it. I had some thoughts on the funding of this type of project. Nobody really wants to take a day off of fishing. It's a cost to whoever does it. There's fuel involved. There's time. Often there is equipment that gets lost as a result of doing this. We were fortunate to have some dollars to throw at the project so that we could pay people at least to offset their fuel costs and their time costs and there are other examples around the country at least in the United States. I'm curious about whether this might be something that the Canadian folks are familiar with. In one state, Florida, spiny lobster industry charges a \$25 fee for every license and that allows you to lose five free traps. Any traps beyond that that you lose, you pay for. It

goes back to the state. In Louisiana, the blue crab fishery charges a \$10 surcharge on a ticket, \$5 of which goes to marketing and \$5 goes to gear recovery. They have closed seasons. They have deliberately designed these seasons to be rolling closures to recover gear off the shorelines and the shallow waters where they fish. So those are some examples. Another example in the other direction is Oregon tried to have a voluntary payment program for gear that was recovered, you know, sort of incidentally. That did not work. Nobody would be willing to pay for the gear that somebody else brought back for them. So, it's just a question I wanted to know. Whether there would be some sort of discussion maybe possibly later about the idea of it being part of a license fee to help with the recovery of it and then how to do that. There has a question been raised, "What is the real lose to the fishery?" A trap costs x amount of dollars. You might get it back, that's a recovery of that cost but, if you don't get it back, you have to replace it. What is the number of lobsters that you've lost as a result of not being able to fish that trap and you haven't replaced it. So those are some dollars and cents questions that I'm curious about. And I'm done. There you go. Actually, one more thing, Ted. In terms of disposal, there is a program called the Fishing For Energy program. Dumpsters are placed at various harbors. There are 16 of them in Massachusetts and there is one in Maine. These are no-cost disposal options but I'd like to get more of that happening here in Maine and wanted to get your input on that as well. And I'm available for questions. Thanks.

OPEN DISCUSSION

Moderator: Thank you very much, Laura. We have just a few minutes to respond to these presentations and remember that Erick and Simon will have microphones available to us and remember to introduce yourself when you have a question and we can begin now. As I say, we have a relatively short time but... Yes. Up here with the mic. Right up front. There you go.

Jim Knott, Lobster Fisherman, Gloucester, Massachusetts: Hi, my name is Jim Knott. I'm a lobster fisherman. I started fishing in 1942 and I still fish.

Moderator: Are you able to hear back there? Okay.

Jim Knott, Lobster Fisherman, Gloucester, Massachusetts: So anyway, as I said, I'm a lobster fisherman. I started in 1942 and I still fish. Now, I've been concerned about this derelict trap issue. The basis of the concern is that it has been proven with thousands of hours of video that lobster go into traps, they feed, and they leave and that is a reason why the lobster population has exploded. There are more lobsters on the ocean floor today than ever before in history because what we are doing is not fishing, we are farming. We are feeding these lobsters and the population has exploded. It has been proven that 100 lobsters go into a trap and 94 of them leave. The six that happen to be there when the trap gets hauled is just musical chairs. So, why is a lobster in a derelict trap? He's in the trap because that's where he wants to be. Why does he want to be there? Because he's protected from predators. So, in my opinion, it would be wrong to

remove those protective structures from the bottom of the ocean because the lobsters are making good use of them. Don't you agree, Laura?

Laura Ludwig, Consultant: You know I don't.

Laughter

Moderator: Okay, alright. Comments now. We've got a few points of view and Laura also gave us some challenges. Mic right over there, please.

Richard Nelson, Fisherman, Friendship, Maine: Hi, Richard Nelson, a fisherman from Friendship. Even if we did leave these traps there, I've had many discussions with people over the plastic that's in these traps. I mean, we've got all these vents. We've got the tags. We've got nametags. We're in an industry that's almost 100% plastic nowadays. It seems to me, if we want to take care of that aspect of it, which I might refer as the non-choice aspect. We certainly have a choice of whether to bring the bait boxes back. We have a choice whether to bring the trash back. But we're still going to have to use these traps. We're still going to have to use the plastic buoys, the plastic rope, and all this other stuff. It seems to me we ought to, maybe these ladies have an idea of how to get together with science and the Department of Marine Resources and government and figure out what our alternatives are to this 100% plastic business we're in. What can we do for a different vent? What can we do for a different trap tag?

Laura Ludwig, Consultant: Here's a vent right here. It's made out of a plant-based product. It biodegrades and it is developed for the Chesapeake Bay crab fishery. They have also developed a rectangular vent that might replace if people were interested. It's not even on the market I don't think but there are things that people are talking about and I appreciate you saying that. You know, plastic is unavoidable but there are some options. I would be happy to have you start a program of hemp fishing.

Hans Laufer: My name is Hans Laufer and I wanted to comment about what Ashley and Theresa talked about, the bits of plastics and large pieces of plastics. I wanted to point out that we have a poster that talks about the breakdown products of plastics and these are known as alkylphenols and the most well-recognized one is bisphenol A. These come from plastic breakdown and these have hormone effects on lobsters and other marine organisms and they are dangerous. I could point out that the Europeans have stopped, are cutting down on plastics by substituting glass bottles for soda bottles and I think we should be thinking very hard about eliminating plastics because even the plastics that are put into landfills will break down and the chemicals that come out of them are harmful and they end up in the ocean.

Moderator: Thank you very much. Next thing you know, somebody will come up with the idea of a wooden lobster trap. Imagine that!

Laughter

Bruce Fernald, Fisherman, Cranberry Island: You just stole my thunder. I was going to say, wooden traps, wooden buoys, sisal rope.

Laughter

Bruce Fernald, Fisherman, Cranberry Island: But also I did the derelict trap recovery for two years and I've been fishing for 37 years. I try to bring every trap in that I can. And I think there's a happy medium. I agree with Jim and I agree with Laura. Some can stay on the bottom and be fine but everything that we can bring in, we bring in. There's always a happy centerline there. And as far as the fish boxes, a friend of mine in Canada has a design for a plastic, reusable bait box, so that it folds.

Ashley David, Clean Nova Scotia: Is that Henry Surette?

Bruce Fernald, Fisherman, Cranberry Island: That is Henry Surette. He's been talking with me about it for quite a while and for people who use a lot of frozen bait, it makes sense. I don't know how expensive it would be but I hate seeing that stuff on the water.

Ashley David, Clean Nova Scotia: I can kind of respond a little bit. Ashley from Clean Nova Scotia. We've been talking back and forth with Henry Surette and I actually have a student here today, Robin McCullough, who is in the crowd and she did a cost comparison of how much it would cost to produce a plastic, reusable bait box and compared that to a one-time-use box that is used commonly like the one I had. I think it was around \$1.22 for one of those boxes and, for a reusable box, it was about \$6 but, of course, you get more than one use out of it and what we're trying to do is to help Henry get some funding to do a little bit of pilot with a reusable box because they already have a prototype that they'd like to try out and see how it works so that's a really good point.

Moderator: Thank you. Yes, okay, over here. Lawrence. Introduce yourself, please.

Lawrence Cook, Grand Manan Fishermen's Association, Canada: Lawrence Cook, Grand Manan Fisherman's Association. I'm not sure why anyone wants to take boxes aboard the boat. When we get frozen bait delivered in boxes, we put it in tote boxes to let it start slacking up and the cardboard never goes aboard the boat nor does the plastic and I'm not sure where the habit came from of putting boxes aboard the boat so you have to deal with the box later. We don't want the mess aboard the boat to start with so we don't take it and I would suggest that it's a pretty simple solution. Don't take them with you in the first place and then you don't have to dispose of them later. You know, we dump that before we leave. The other thing I'd like to talk about the ghost fishing and the ghost panel that you had up there. One thing we can't lose sight of in this industry is what it costs us to do business because right now the margin's fairly narrow, the volume of lobsters coming ashore is the only thing sustaining the industry in that the price isn't high enough to give a wide margin. You have a plant-based escape panel. I can put escape panels in my traps for about 93 cents if I buy in bulk. What do yours cost?

Laura Ludwig, Consultant: Actually, they're comparable. They're actually less expensive than the plastic ones.

Lawrence Cook, Grand Manan Fishermen's Association, Canada: Where do we get them.

Laura Ludwig, Consultant: But the thing is. Obviously, it would never be a mandated. I'm not suggesting that this get mandated. I'm just suggesting that there might be alternatives for people who want to use them. There are variable ways of attaching your biovents at this point. It's very subjective. You could use, lathe or however you want to do it so this would just be another tool in the tool box.

Lawrence Cook, Grand Manan Fishermen's Association, Canada: Actually, we can't. We're mandated to how we have to do it in Canada but, if there was a viable alternative and I had some information on it, it's possible that we could use it. In Canada, we're ordered to use a biodegradable hog ring of a certain diameter and we can't use all the variety of things that you can use but I would appreciate some information on that if you had it.

Moderator: Alright. And, of course, that's one of the advantages of what we're doing right now is listening to each other and getting creative in our thinking about what can happen and what might exist and what we might do and so that's a very important part of our being together as Canadians and Americans.

Jim Knott, Lobster Fisherman, Gloucester, Massachusetts: Jim Knott, a lobster fisherman from Gloucester, Massachusetts. I just have one suggestion for Laura and that is that she gets it mandated that all traps be made out of Chinese wire.

Laughter

Laura Ludwig, Consultant: I haven't bought anything made in China in three years.

Moderator: We have about two more minutes. One more questions. Alright, it looks to me as if we're going to move right into the next section of our session this afternoon and that is going to deal with something that we all wake up, brighten our eyes and get ready to see what's going to happen. Whale-take reduction. Okay. Our presenters for this section are Bill Adler, Patrice McCarron, and Jim Tripp and we're going to be hearing their presentations and then giving you each a chance to get into the discussion that will follow. Now, before we talk about this creature up here on the screen in front of us, let me remind you that this is the 25th anniversary of the Lobster Institute and there are going to be some special happenings that go on in the course of our time here so be prepared for that and, in the meantime, give your attention to Patrice McCarron of the Maine Lobstermen's Association and it's all yours.

Patrice McCarron, Maine Lobstermen's Association: Looks like the room cleared out because people are really sick of hearing about this and I don't blame you. I thought it

would be useful before we talk about what we're doing to just sort of give a little bit of an update on the status of right whales and a little bit about the management framework that we're under and I think for the first time in a really long time there is actually good news about the right whale population. We're up to 490 right whales which is the best estimate. Those are whales that they see, count, and catalog so it is the bare minimum that we have. We had 22 calves born last year and five first-time mothers so those are all really positive signs that we're seeing but we're still struggling with the fishery entanglement issue and, for the last year, we did see five right whales die, three from entanglement deaths, 39 entanglement sightings. Of those, 14 were brand new entanglements and three of those ended up dead. One was confirmed in lobster gear. It was in a floating ground line. Four of those animals are still entangled. Six were either disentangled or became gear-free on their own. There is also a whole ship-strike plan in the US as well and we have seen some new propeller wounds so definitely an ongoing issue. I felt it was important to just talk a little bit about the legal framework since this is a US-Canada meeting and I noticed there are only US people up here. We have a pretty strict legal mandate here in this country which is a little bit different from the Species at Risk Act that we have in Canada. We have both the Endangered Species Act and there is whole history behind that and the Marine Mammal Protection Act. For the Endangered Species Act, we're not really managed under this but there is a whole consultation process under ESA where the government, so in our case, the Sustainable Fisheries Division of the National Marine Fisheries Service has to ask the Protected Resources Division, "Is the commercial fishery likely to jeopardize the continued existence of the species?" And, if the answer to that is yes, there is a possibility that our fisheries will not be allowed to be executed. If we are found to jeopardize the marine mammals under ESA, we may be out of business to begin with. This is a very big deal. Through this consultation, they do biological opinions, the most recent of which was in Oct of 2010 and, lucky for us, NMFS found that four commercial fisheries, one of which was lobster, are not likely to jeopardize the continuation of the species and they said that we're not going to jeopardize it because we put a sinking line rule on the books and we're coming forward with vertical line rules in 2014 but the conservation groups disagreed with that. So a year later, they sued the National Marine Fisheries Service saying that they felt that biological opinion was false and so there is always this tension of, are we doing enough, because, if we're not, is our fishery going to be allowed to actually continue. So this is still pending in court and, of course, when you argue the law black and white you just say, well we think you should shut it down until all of these interactions cease which is certainly not what we want for commercial fisheries. Where we're actually managed is under the Marine Mammal Protection Act. The big amendments came through in 1994 and there are a series of goals which are pretty unachievable. The short-term goal is that we have to reduce our serious injuries or mortalities to below a number called PBR which is the potential biological removal and that is the maximum number of animals that can be removed while allowing the stock to reach its optimal sustainable population. I got this from NMFS. That doesn't count natural mortality. We're supposed to have achieved that within six months of the implementation of the plan. We're like 15 years in. The long-term goal is something called ZMRG, which is Zero Mortality Rate Goal, and that's 10% of PBR so you multiply that by 0.1 and you have an even lower number and then we do this through this crazy process called the Take-Reduction Team where everybody and

their brother sits down at a table and tries to reach consensus and it's been a very challenging process. For the US fishery, and by US fishery, it's fixed-gear fisheries for the entire Atlantic coast, it's Maine to Florida, so there are a lot of us so there has been a whole bunch of stuff that is done and I think it's important to know that this fishery had done a lot at huge economic cost, at some safety cost, at operational cost. The most recent was our broad-based gear modification resulting in sinking line and you can see some things up there where it says "considered RPA". Those are Reasonable and Prudent Alternatives and those are points along the timeline where our fishery was found to jeopardize the existence of marine whales and so we had to do something really quick as a reasonable and prudent alternative so we don't want to be in that situation again. So that brings us to what we're doing now and the federal government has basically tried to model the risk of our fixed-gear fisheries with whales and this is a co-occurrence chart. It's a co-occurrence model. What is the probability of a whale and a piece of fishing gear, a vertical line in this case, being at the same place at the same time and this is for right and humpback whales which are the two species driving the management process. So if you're in a bright, bright pink box, not good. At the Take-Reduction Team which we had at the end of last year, the National Marine Fisheries Service came forward with proposals that were Atlantic-coast-wide and, for our region up here in the Gulf of Maine, they basically came forward with proposals to trawl-up gear so a minimum number of traps on a line and, in Maine, we are managed in 0 to 3 so outside our exemption line in regulated waters and then from 3 to 12 miles and 12+. You can see varying trawl configurations. In this sort of circle for us in Maine, were issues that the industry contacted us and said, these things are just not doable for us. Pairs and triples inside our state waters line is not doable, going to five-trap trawls at the three-mile line would not be doable. And that was deemed to remove 43% of the vertical line based on that model. So the State of Maine with some outreach to the industry came up with an alternative and so we tried to ramp down the baseline trawl configurations closer to shore and get more aggressive away from the coast, so further out to sea, so you can see we actually added a line to the ocean which is always fun, at six miles were people felt that they could actually trawl up a little bit more and then do the biggest reductions out past 12 miles and this has a 25% estimated reduction based on Department of Marine Resources version of the model. So that is a picture of our proposed six-mile line so we tried to sort of get roughly three miles beyond the three-mile line and keep it straight so we didn't create any pocket waters so that has been submitted in the proposal. That's just what really NMFS and the State of Maine is talking about in the Northeast but there is a whole lot more that will be proposed in the plan such as gear marking. They want more gear marking and more often so, for the State of Maine, where we have a portion of our waters exempted, they want us marking gear in that area and so our advice is, please keep it simple. There will be increased requirements for reporting. We don't know if they will be mandatory or voluntary. And then there are a whole host of proposals from the environmental and science community where they actually want to close the fishery down and so these are the proposals for the Northeast that were submitted so we've got a seasonal closure in Jordan Basin, a seasonal closure in Jeffreys Ledge, and a whole host of stuff that Bill can talk about down in Massachusetts Bay and the Great South Channel and around the back side of the Cape which is just crazy. And so our timeline for that is the federal government basically went out and said, what do you guys think you can do? We told

them. They are analyzing that. We will get the initial analysis in mid April and then they will go and do all of the NEPA requirements and we'll hear from them in about a year although the last time it took three years. They really have to implement in 2014 because, as I said before, they've been sued by the environmental community over the biological opinion under ESA so not reaching jeopardy status is really dependent upon them getting vertical line reduction rules in place by 2014. Then real brief, I wanted to mention that the Maine Lobstermen's Association has sort of being working on its own modeling project with a research team. For the sinking line rules, we just sort of felt like everybody thought that they got screwed so we wanted to do something more and we knew NMFS would be doing a model but they're doing a model for all whale species Atlantic-coast-wide so we really wanted to focus on right whales in Maine and be able to drill down a little bit deeper. So our concept of risk is that we're going to look at the expected number of whale and gear encounters so not just the fact that they're occurring in the same place and the same time but an actually probability that a whale will bump into a rope. So we collected additional fishing data. We went out and held harbor meetings and sat down with NOAA charts and had people actually draw their fishing territories and give us their baseline configuration, so how is the gear configured. And they also gave us fishing intensity, if the area is heavily fished or sometimes fished or not fished at all and we got that on a monthly basis. That data was all scaled up using state data from the Department of Marine Resources dealer reporting as well as the vertical line data and then we had to sort of allocate all of that effort back out to the fishery. The complementary piece to that was to do additional work on the whale data so, in addition to whale sightings, there was a whole probability analysis done on what is the probability of whales being everywhere and, in the federal process, we suffer that they don't actually look for whales at the coast so they want to sort of make up a number and pretend that the whales are there so this is a full probability analysis based on environmental conditions and forage and behavior so that we do account for whale presence everywhere in the Gulf of Maine and then you put it all together and our baseline becomes the expected number of encounters. This model includes both vertical line and ground line because we do have a portion of the Coast of Maine which is still allowed to fish floating line and so our baseline is that there would be less than 4000 encounters between whales and fishing gear. At this point, we're sort of filling in the rest of the fishing effort data and we're going to be meeting with various stakeholder groups but, for a model like this, we've got sort of better advice from the scientists to say that, if you want to make a difference, you have to reduce risk by at least 20%. The federal process, they're saying we have no benchmark. We have no goal post. So, we'll be moving forward with this which gives us sort of a parallel alternative to measure whether or not what we do is actually going to help whales. And that's all I've got.

Moderator: That's a lot, Patrice. That's a lot of data that's been put together and we're thankful for the work that goes into that. Jim, do you want to come next?

Jim Tripp, Fisherman, Spruce Head, Maine: I'm Jimmy Tripp from Spruce Head, Maine. I'm a fisherman. Patrice got me on the Take-Reduction Team because I fish offshore and it's quite an eye opener with 60 people around the table, scientists, lawyers. It didn't take me long to figure out I was the stupidest one there but there is something I

knew that they didn't know. I know where the whales are and I fish with them and I know what's out there for gear and how it's configured. I wish I wasn't the only offshore guy on there because there's a huge area of the Coast of Maine and I hate to put my neck on the line and recommend something that's going to affect so many fishermen and I wish there were more guys on it. It's scary where I see it going. I had a good feeling after a while. We got to meet the enemy and, you know, they're human beings but they just, they're passionate. They're passionate about what they do and like we are about what we do. When you see pictures of whales with gill nets wrapped around their mouths and ropes, you know, it bothers me. I can't imagine someone that doesn't live on the ocean and sees this stuff, how they must feel. I don't see it going away. I had a good feeling. I thought we made a lot of progress. I thought we were giving a little bit, they were giving a little bit, and I know it's getting changed a little bit now. The guys inshore want to push everything offshore which I can understand because that's where the whales are, unfortunately. The whales are out where we fish when the lobsters are there. In the summertime, we could give up a lot of bottom out there but there are no lobsters there and there are no whales there so that's the bad news. I really believe they want closed areas and I'm torn about it. I think that the Jordan Basin one would help Maine. It would give them a big bang for their buck and maybe we could get float rope back. I worry about the precedents that we'd set. If they do that, then they'll want another one and another one. I feel bad for Massachusetts, you know, Cape Cod Bay, what it would do to them. I guess I just don't see anything good coming out of it. They're not going to go away. There are more whales now so more are going to get entangled. I've seen some of the stuff that's come off whales. Some of it looks like Canadian gear. I'm not big on keeping data and recording stuff and fishermen had to do that and some of them lied thinking if they said there were more lines than there were, that we could get rid of some and we wouldn't have to give up much but I believe now that, to be honest and say what's really in the water because these people want data. They want numbers. It's the only way we're going to come out on an even keel. I'm grateful that we've got some women in Maine that are working on this that are just as passionate as those environmentalists are and they've done a great job and they aren't quitting. They're going at it. I did a small part, just how gear was fished and what we could live with outside and I don't know what else we can do. We're trawling up. I don't know if that's going to be enough. I'm glad we got some good people in the State of Maine and we looked real good down there compared to some of the other states, I thought. We were real prepared and those people want numbers. They want data. That's about all I have. Thanks.

Moderator: Thank you, Jim. I hope you know how much we appreciate the fact that you're there and that you're a part of the process and that you're articulate about your concerns and our concerns as fishermen. The third person on the panel is Bill Adler.

Bill Adler, Massachusetts Lobstermen's Association: I'm going to stay right here. First of all, the problem is the ESA and MMPA. That's basically the problem. It's unforgiving. It doesn't allow any leeway either for the National Marine Fishery Service or the fishermen with the way it's worded. That having been said, I was on the first Take-Reduction Team meeting. I think it was 1622, I think that's when I...

Laughter

Bill Adler, Massachusetts Lobstermen's Association: I've been here since the beginning and I remember when we first met, very friendly, we want to know how you fish. Oh, okay. And we recognize that if the fishermen do not help, these whales are doomed. That was the quote. Then they proceeded to move in the direction that you've all been seeing to the point where I know my fishermen are sick and tired of it. They've done everything they can and we're at a state now where there is discussion of delisting the humpback because there are so many of them. The National Marine Fishery Service finally fixed their calculators and figured out how many right whales there were because it kept at 300 even though they would announce how many new whales were born and then we'd ask, did you add that? We don't add it yet. We have to wait a while. Okay. And over these many years, they finally fixed whatever they were using for adding up and it started to climb up as you can see. Now, okay, the other problems that I ran into was that they said so many died and they weren't entangled, they just disappeared and we'd go, well how do you know that? Well, if we don't see it in six years, we call it dead. Okay, so you've been out looking 360 days of the year to see if you can find Henrietta and Sarah, they've all got names, and if you can't see it, it's dead. Right? Then a few years ago, a mother showed up with her calf, I think it was Henrietta, and lo and behold, that was one of the dead whales, showed up with a baby. Well good for you. And then one of the whales showed up in the fjords of Norway and I suggested that maybe there might be a few swimming around out there in the ocean that you didn't count. That having been said, this has been going on. We talk about trawls versus singles. The question is, well they said trawls will eliminate buoy lines. However, if a whale goes and gets caught in a trawl, it's anchored. If it gets caught in a single, it can at least move so which is the worst? Also, if you have singles and you lose them, you have marine debris. If you've got more whales, as Patrice said, they don't have a percentage that they want reduced. Okay, so if you cut half the buoys out and the increasing number of whales gets one of the remaining buoys, we're back at the table again because you took a whale. It's almost like an unending thing. And back when we first started to do this, you remember getting rid of the floating line, it was true that when we did see some whales with some rope... what caused the floating rope discussion was that a lot of the rope that they did see on some of these whales happened to be floating rope. And I was on Massachusetts' Cape Cod Bay, which is, as you can see up there, Whale City, USA. Oh, lucky me! They're all over the place there, and we were trying to figure out what to do and that's where the breakaway buoy came from. Because I was sitting there with Stormy Mayo, who is one of the great whale savers actually, he actually goes out and disentangles them. The two of us were talking about how did a whale get entangled in the first place? So we were talking about it and he said, well, they're skimming along the top of the surface and, if they get the buoy in their mouth. And I said, can they break that? He said they can break 5000 pounds. But to do it, they panic. We don't want them to panic. So that's where the idea of a breakaway buoy that he could break it but he wouldn't have to roll and that is where that buoy breakaway idea started to come. As far as removing floating rope (which we bit the bullet and did because most of the rope in the ocean is ground lines when you consider the trawls) and so we figured we could reduce

the risk a lot by getting rid of the floating rope because we also saw these whales with floating rope on them (and, in most cases, I've got to admit the rope was thicker than what inshore fishermen use but it was floating rope which means they went to the bottom) so that's where that idea came from. I've explained to the people all along about the risk factor here. Now, once again, as I said, the MMPA is unforgiving. You can't do anything. A take is a bump. Getting too close to, that's a take. I've said for all these years these whales have moved from Florida to Newfoundland and back and Scotia and back all these years through many more buoy lines than are out there now because, remember we also used to fish all singles. And I asked how many got entangled or that type of problem? And they give a number and I go, okay, and in how long? Oh, well the last 20 years. So I go well that, you mean, they've gone up and back? They've done pretty well getting through all this gear. They've done pretty well and you don't close the main turnpike when you've got a fender bender. And we have some of these situations. I frequently refer to this as the Theatre of the Absurd because we've done a lot. No one wants to hurt a whale. Back when they said you've got to help, it was call us in if you see an entanglement and we can go save them. Great idea except then they put all these rules in to the point where the fishermen go, don't tell them nuthin'! And it's backfired. Unfortunately, they've lost, at least down our way, they've lost the help of our fishermen and nobody wants to hurt a whale but, at the same time, we're not about to fall on our swords over the whale, unfortunately. Our fight will go on and, as I said, what's your idea. I mean, we've got all these plans and ideas of how to reduce things which we don't know how far to reduce. And I said, I'll tell you what we'll do, we'll put a breakaway buoy on our topside and we'll do away with all the floating rope and we'll even go so far as to put a red mark around the middle and that's our plan. And when you come back and you go, well that's what you're doing? And I'll go, that's right. Thank you.

OPEN DISCUSSION

Moderator: Thank you, Bill. Time for us to have some discussion now. We have some new mic passer-outers. Jean Day and Suzanne will get to you with a mic if you have a comment or a question and let the floodgates open and say your piece. Thundering silence. There we go, Steve's going to speak up. Remember to give your name and where you fish.

Steve Train, Fisherman, Casco Bay: Steve Train. I fish Casco Bay. I don't know who to address this to but maybe Patrice can help. To tie in with our last session on ghost gear, we removed our float rope to be whale-safe and if we could get it back at least between the first and second trap on trawls, because most of the people know, when you get a storm, that end trap will dance around and then that parts off especially on the hard bottom. The rest of the trawl stays still. If we could get that much floating rope back, we would remove a lot of ghost gear and I don't believe it would make one iota of difference to the whales.

Moderator: Patrice?

Patrice McCarron, Maine Lobstermen's Association: Maine Lobstermen's Association with Gulf of Maine Foundation held a session at the Maine Fisherman's Forum last year to talk about some of the challenges with sinking rope and we had Area 1 guys, we had some Area 3 guys, and that was the single theme that everybody, regardless of how they were rigging, had the same issue with that chaffing off the lead trap. So we will be getting a camera down in April to start to video tape that. And I know Department of Marine Resources has begun to talk to National Marine Fisheries Service about the idea of a permit to start looking at that. One of the great things about the model that we're developing is that we can actually model the risk of swapping out that piece of sinking line with a piece of floating line and actually talk to the service about what the expected increase is. So I think a lot of people have heard that message. I think we're seeing action collectively. How tolerant or open the system will be to actually, you know, seeing a change that is very, very logical and I think would solve a lot of problems... I mean, most guys have said, if we could get even a portion of that line, better case the whole line, that the sinking rope would just be so much more livable for everybody. We certainly committed to following up with that. We're partnering with the New England Aquarium on that camera work so we have buy-in from that science team there and we'll see where that takes us.

Moderator: Thank you, Patrice. Lawrence?

Lawrence Cook, Grand Manan Fishermen's Association, Canada: Lawrence Cook, Grand Manan Fisherman's Association. There was a study done in Canada, and I'm wondering if you're aware of it, on the difference in the height that ground line lifted off the bottom between floating and sinking rope. In shallow water, when they did the work, some of the work was done in St. Andrew's Bay, they found a massive difference which is what you found when you did the work in the United States. But in the deep water where the trawls are actually fished and the high tides in the Bay of Fundy, they found that there was almost no difference at all. It's also the deep water where the whales are likely to be entangled. I wondered if you could explain to me what the logic was in trying to put something into place in an area where there are no whales which is where the sinking ground line would make a big difference, as opposed to doing it where the whales are where it makes absolutely no difference at all. Because in Canada, they found, due to the tides and the way the trawls are set with the tide, the anchor becomes tight and the next trap becomes tight before it hits bottom. So, the line is pulled tight so it doesn't go anywhere anyway whether it's sinking or floating rope. And I actually felt quite bad for the guys in Maine when they had to throw away all their floating rope and go to sinking ground line because on the grounds where there's whales, in the deep water where there's lots of tides, it doesn't make any difference. I'm wondering how much of this was well-thought-out and how much was a knee jerk reaction to a court decision.

Moderator: Patrice?

Patrice McCarron, Maine Lobstermen's Association: We have a real gem in the country called the "precautionary principal" and when you don't know, you do what you think is best regardless of how many people you hammer. So the concept of the sinking

line rule was really born in Cape Cod Bay where they observe whales. They know what the rope is doing there. It's a sandy bottom and it make a lot of sense in an area like that where you have a critical habitat to remove that rope from the water column, particularly inshore where you know it is occupying. By the time we got to this sort of broad-based system, we were needing a reasonable and prudent alternative because our fishery had been found to jeopardize. And so our alternative is that they will shut us down. So they went with this broad-brush approach. And I think the reason is that we didn't have the sort of data that we will have available for the vertical line rules -- so they just uniformly applied them to everybody. We complained like hell but they went in. We did get an exemption line in Maine so part of that got through, but that is as far as we got.

Moderator: Klaus? We haven't heard from you yet today.

Klaus Sonnenberg, Great Manan Fishermen's Association: Klaus Sonnenberg, Grand Manan. I just wanted to have Jean come up and say hi. This is a topic that is really frightening for our fishermen. I just want to commend all of the people with the Take-Reduction Team that worked on this, including Bill, because I think we've done a tremendous job. And I think we have to stop sometimes and just consider how far we've come. You know, I know we moved that line there, that vessel ship line that you see up to the East of Grand Manan. I didn't think it would ever happen but we did. We moved it and that's for all the ships in North America now to abide by. Wow. And for those of you who don't know, it just takes the ships out to the edge of where the right whales are known to congregate. We've created an awareness amongst fishermen as to how important this issue is. I think there are still some fishermen where they don't have an interaction with right whales that are probably not as aware of what the real situation is. But anybody in Cape Cod Bay and, I mean, I'm not familiar with that there but certainly on Grand Manan, anybody that fishes in our area knows how important this issue is. But you know, one of the things we have to remember is let's sit back and try to get some common sense in there before we take the precautionary approach. I spend my time generally at about 10,000. I'm not a fisherman. I'm a pilot. I'm probably not going to interact with a right whale, but I don't want to see something imposed that obviously is not going to have any beneficial effect. That might be a bit of an exaggeration but when you talk about the kind of things that you might want to do to our fishermen because, someone I think mentioned it, it might be Canadian gear, well, it might be but I don't know who's fishing it. Because in May or June when our fishery closes, we don't have right whales in our areas. In December and in January, we don't have right whales. In November, you know, there might be one or two. We've got to keep a reasonable and informed approach to this. Yeah, maybe in some areas where there's no tide, maybe sinking ropes might work better; but there's a lot of the Maine coast, especially offshore, that has a heck of a lot of tide and, if you want to come fly with me, you can see it. Just watch the buoy lines. We have balloons that are as big as, what are, are they 2-1/2 feet? And they run under. You know, they're almost invisible because of the strain on those buoys out there on those trawls. To suggest that they're a hazard compared to sinking rope is totally nonsense. So all we're asking for is to keep the cooperation of the fishermen as we go forward. You've heard Bill. It's easy to have fishermen lose their confidence and lose the willingness to support this initiative. And then we're really

going to be sunk. Then we're going to be sunk. No matter what happens we're going to be sunk. We need to keep fishermen actively interested in supporting this initiative to reduce the take of right whales, and that means it has to be real and it has to be reasonable. I'll give you another example. We know that ships are the primary cause of right whale take along our coastline. We know that when we had a huge influx of right whales into the Grand Manan area, we know that we weren't fishing. It wasn't a problem. But the large ships going through our area, they were ferries, weren't slowing down, day or night. And we know, in fact, I saw right whales come up in the wake of these ships and be totally confused, like what's going on? Luckily, we didn't get a take but by God, it was some close. We're part of a problem and we can be a hell of a lot of the solution. That's all I have to say.

Moderator: Thank you very much, Klaus. I think those are very significant words and I know we all take them to heart. Lawrence, did you have a hand up back here? Oh, okay, I thought I saw it earlier.

Lawrence Cook, Grand Manan Fishermen's Association: What I was trying to say when I questioned the use of the sinking ground line in Maine: when we do something reactionary to stave off something inevitable, if it isn't real we haven't actually done anything. How that looks to the outsider is, well, they made these changes but that didn't help at all. Well the change never should have been made in the first place. I would like to see, as Klaus said, if we're going to do something, let's do something that's real, that's actually going to make a difference. Because it's not just fishermen that lose when they do something like the sinking ground line; it's also the right whale that loses, because people think they've done something to help when they actually didn't. So, you know, to make sure that we're doing something that actually has a positive impact -- then you're going to get the support of the fishing community. If you're doing something reactionary just to get the government off your back, you're going to lose support of the fishing community.

Moderator: Thank you, Lawrence. A comment from Patrice and then Mike.

Patrice McCarron, Maine Lobstermen's Association: I just wanted to respond real quick -- and I wholeheartedly agree with you and the board of directors I work for wholeheartedly agree with you -- which is why they sent me on the road to put together a research team. And we have a modeler from Woods Hole; and we collected fishery information and dug deeper into the whale information because we wanted to have some accountability back to the fishery that if we put new management measures in place they are going to be there for a reason and not this sort of general feeling that we're just spending tens of thousands of dollars with a big looming question mark and wondering what good we're doing. We've lived it and it's a lot of work to do stuff like that.

Mike Dassatt, Fisherman, Penobscot Bay: Mike Dassatt, Belfast, Maine. It will be a year ago last December, I went out on one of the whale watch crews. First of all, we have to separate the scientists from the conservationists or the environmentalist. The scientists have been working very hard and they more appreciate the help from the

fishermen. The problem we run into are, shall we say, the tree huggers. They're the ones that have the financial backing. I can remember going down to the Massachusetts show in 1991 and I'm sure Bill remembers this one. There was this lunatic out in front of the Terra Hyannis with a crown on his head saying, "Save the Whales." We all have a real good idea who that was. Basically, this whole thing, I mean, it obviously for the US side wasn't something that was, you know, suddenly crammed down our throat. We've been fighting with this issue for way too long. The whole thing of the last resort in the path down to getting rid of our ground lines and changing over to the sink -- where I fish, we can't fish without floating rope. I mean, it's just impossible. Never mind the fact of going offshore. So we didn't just do a knee jerk reaction. We have tried everything in our power to deal with the whims of, shall we say, of people that have bottomless pockets. I mean, you watch the TV shows and Whale Wars. That TV show was funded by Bob Barker. That man dumps millions and millions and millions of dollars to save the whales. We, the fishing community, don't have that kind of backing to fight these people; and therein lies all the problems. When you go somewhere and you hear some 14-year-old child saying that fishermen kill whales without even understanding the concepts, it's a propaganda issue. Maine heard about it in the 90s. We started trying to brace for it. Massachusetts got run over with it. They had no choice in the matter. As far as it creeping up the coast -- and now it's coming into the Grand Manan area, and it's just going to keep going. I mean that's how this whole thing works. It's a ripple effect. Maine did not go on knee jerk reaction. We fought it as long as we could and it was just basically crammed down our throat.

Moderator: Alright. Another comment? Well, again, just remember what Klaus has said so well and our appreciation to those who are presenting to us as this just continues. It's a continuing reality in our lives and so we need to choose how we relate to that. So, let's give a hand of thanks to our participants.

Applause

Moderator: Next coexisting with aquaculture. Let me will remind you that we don't have a break scheduled this afternoon so, if you want to go back and get a cup of coffee or something, please just go ahead and do that as we move along. This afternoon at this time, again we get to get Dr. Ian Bricknell and Dana Morse and Shawn Robinson who will be talking with us about the interrelationships of lobstering and aquaculture. Remember that we're going to have time later on, not today necessarily, to answer your questions in any direction. And not just questions: comments, concerns, input. So the ideas and thoughts that you have, don't lose them. Write them down on a pad and keep them because they're all important to us as we think about how we can work together as lobstermen and learn together as lobstermen.

Dr. Ian Bricknell, UMaine School of Marine Sciences: Well, good afternoon everybody. I'm going to shock you because I'm going to confess that lobsters aren't my favorite crustacean. This animal here, the salmon louse, *Lepeophtheirus salmonis*, is a parasite that I've worked with for four decades and, I know it's hard to believe but I'm over 28. So, this is the underside of the parasite and this is a big problem in salmon

farming. You can see these vicious hooks that it hangs onto the fish with. Its gills are here. Here are its mouth parts and this animal crawls across the surface of the fish and it shovels fish tissue into its mouth and causes nasty lesions. The only real comparison I know about this chap and a lobster are they both go pink if you put them into boiling water. But this tastes terrible. Trust me, I know. I really want to talk about how the control of this very serious parasite of aquaculture was carried out in the past and some of the science that you may not know about -- about how the research environment, the researchers like myself, and the industry are trying to move away from these older traditional, older styles of treatments to these new treatments -- these more integrated pest management systems where we look at controlling the parasite across the whole of its lifecycle. So we look for biological controls. We look for therapeutic controls. We look for husbandry controls, and we're even looking at vaccines to help control this very serious problem. Now for those of you who have been in lobstering and aquaculture for a long time, the first treatments that we used were very indiscriminant and these were often organophosphates. Organophosphates inhibit an enzyme called acetyl cholinesterase and acetyl cholinesterase is vital in neurotransmission. So this drug poisons the nerves and it causes the animals to go into a sort of spastic convulsion. The problem is that it has a very long biological half-life. This molecule here, this is a fairly typical organophosphate. This will hang around for three or four weeks in the environment and still be active and able to kill invertebrates and, worse than that, it actually can kill mammals. And there have been several cases of people being exposed to this by falling while holding a bottle of the concentrate and dousing themselves with it and being very, very ill if not killing themselves. But this is widely used, not just in salmon farming. It was widely used in agriculture for things like fly strike in sheep, so when sheep go through sheep dips they would get an organophosphate. So they were very common drugs in the 70s and 80s. And, of course, when they were treated in agriculture and aquaculture, they were often just released into the environments in wastewater or into the ocean where they could go on to have a detrimental effect on many, many organisms -- not just lobster larvae and adult lobsters. Now, we've moved on over the years and one of the things we look at now is chemical containments. So there is still a requirement to treat Atlantic salmon with chemotherapeutants to rid them of sea lice. There are other treatments around. There's been a switch to short-lived biologically-active treatments like hydrogen peroxide. The sort of traditional pesticide-type of chemotherapeutants is much more restricted both by legislation and many fish farms have produced working practice, best management practices; and area management agreements that work with stakeholders in that environment in that fishery to work out regimens where they will do strategic treatments when there aren't lobster larvae. For example, in the ocean and this timing and these strategic timing events mean that you can treat for sea lice when there is little risk of impacting, say, the larval lobster. And, of course, there is also this tendency now to use well boats for chemical treatments. This is a well boat in Norway and these are very specialized boats and they have a huge tank in the center that is full of seawater. Now, well boats are specialized boats that have this large reservoir here. They have life support for the animals. And what happens is these specialists fish, the fish are pumped from the pens into these reservoirs. The life support for these fish is maintained in there. The water is contained within the ship and the fish are treated within this closed system. And then, when the treatment is complete, they're pumped back into the sea pens and

they continue to grow. And the water that is inside these ships can then be taken away and treated appropriately before disposal, filtered by carbon, for example, to remove the drug before the water is discharged into the ocean. There are, of course, many new treatments that are coming out of the research environment. And, you know, we're still looking at treatments that are more environmentally friendly. Calicide, for example, is a new drug made by EWOS in Norway and it's a molting hormone disrupter. It goes in the feed, the fish eat it, and the parasite, when it lands on the fish, eats this drug and it stops them from molting from the juvenile stages into the adult stages. And if they can't complete these molts, they will die. So this is a very useful drug. It isn't licensed in the US yet but it is there and it's an upcoming treatment that we'll find available hopefully in the not-too-distant future. One of the advantages that these in-feed treatments have is that there is very little, compared to a traditional pour-on medication, escaping into the environment. There is, of course, biological control. And, in Europe, fish belonging to the wrasse family have been successfully used to remove sea lice from Atlantic salmon in cages. There are three species that are used widely in Europe which are: the Goldsinny wrasse, the Ballen wrasse, and the Cuckoo wrasse. And they will all predate on sea lice at certain stages in their lifecycle. The Goldsinny wrasse does it throughout its lifecycle but, unfortunately, is a very small animal and, as the Atlantic salmon grow, they tend to predate it; while the Ballen wrasse and the Cuckoo wrasse are much larger and they are more suited to the larger size of salmon. Now these are known collectively as the "cleaner wrasse" (and you may see this referred to in scientific papers and the literature) and some of these individual wrasse will eat 300 sea lice per day. Unfortunately, none of these species occur naturally in the Gulf of Maine. But we do have a species of wrasse that may very well be a cleaner when it's a juvenile animal and this is the Cunner. This is being investigated with at least two projects that I know of, one in Maine and one in New Brunswick, where people are looking to see whether the juvenile stages of the Cunner will go on to predate sea lice on Atlantic salmon. There are, of course, area management agreements. These agree to times when an aquaculture system is fallowed to make sure that sea lice aren't allowed to build up on the farm populations. Strategic treatments regimens can be introduced into these area management agreements to treat prior to the appearance of lobster larvae with certain drugs that are there to reduce the infectious burden on the wild and farm fish; and, of course, reduce the impacts on other crustaceans in their habitat. And there is a very interesting thing emerging now which is the coexist movement. It's just started to appear in the USA. And this is a forum where stakeholders get together and discuss the requirements of their fisheries and aquaculture requirements in the body of water. And, if you're interested, I strongly recommend that you go to Aquahub and look at the site "The Coexist Project". If you just go to the Aquahub website and put in coexist you'll find this page very easily. It's a very interesting groundswell that has been successful in other countries that have integrated management agreements in Europe and Australia and, to a certain extent, in Brazil. But we do find that these kinds of things are starting to appear as potential policies through such things as the coexist movement. So what about the future of sea lice treatments? We've spoken very briefly about what goes on now and the changes that have happened over the last, well, four decades that I've been involved in it. Well, the first thing to think of is vaccines against sea lice. Vaccines would be great if we had one. Unfortunately, they're a long way off. There is only one successful vaccine against an ectoparasite,

that's a parasite that lives on the surface of an animal like sea lice, and that is for cattle ticks. However, there are active research programs in the USA and Europe. I couldn't find one in Canada but I'm sure Shawn will correct me here if he knows about it. But there are many projects looking at the potential of vaccines in the US and in Europe. The next one is biological control of sea lice with specific pathogens. A very interesting idea. We looked at pathogens that only kill sea lice and there have been some viral candidates and some fungal candidates in the past. And this has been a very interesting research program by Professor Christina Sommerville back at the University of Stirling. And she continues, at the moment, this research on a very small scale. But this idea of biological control by introducing a sea lice-specific pathogen has a lot of mileage. We all know about using nematodes to control garden snails for example in gardens and in commercial greenhouses and that would be the same kind of thing. At the moment, it's at the early stages but it's certainly something that is being looked at by the research community. I'm not going to speak about this very much because there's someone who knows far more about integrated multi-trophic aquaculture sitting over there but there is the opportunity to control sea lice by biological means in integrated multi-trophic aquaculture systems. And this, again, would be by introducing predators that may filter feed sea lice out of the water. It is certainly being researched by my group here in Maine and Shawn's group over there in Canada and we're both here on this panel so you're very welcome to ask us questions about this if you've got any queries. There are new environmentally-friendly chemotherapeutics being researched that shouldn't have an effect on lobster larvae. They're very, very host-specific. And, again, both Europe, USA, and Canada are carrying out research in that field. And, of course, there are sea lice-specific traps and these take on all sorts of different versions. They look for light attractants, they look for wave patterns. And then there are specific ways of capturing the sea lice compared to not capturing fish larvae and lobster larvae and, again, this is another area that has a lot of momentum behind it at the moment and that currently has research projects in Europe, USA, and Canada. So, we do have a lot of branches of research going on in trying to remove or reduce the impact that sea lice treatments have on other commercially important crustaceans in an aquaculture area. So, my conclusion is that the next generation of control measures for sea lice will have much reduced environmental impacts and that's very important for me as a researcher and to the aquaculture industry. And, of course, they are critically aware of their impact on the environment. Some of these will be ready within the next few years. I wouldn't be surprised if we start seeing some pilot-type of traps appearing from the Canadian research in the next few years that are looking at removing just sea lice from fish farms. Others, such as vaccines, may be a long way away because there has been very little success in vaccinating any animal against an ectoparasite. We should be aware that there is a lot of research money being directed into these more environmentally-friendly versions of sea lice control. Perhaps the ultimate friendly sea lice control is the dolphin because there's the sea lice and none of them are going to survive going through the dolphin. It's bad for the salmon though. Anyway, that's all I have to say. Do you want to deal with the first question or do you want to wait till the end?

Moderator: I think we'll wait. We know you're number one and we'll get back to you. Thank you very much. Okay, Shawn, do you have a slide show?

Dr. Shawn Robinson, Department of Fisheries and Oceans: Anyway, great. So this afternoon, I'm going to talk to you about some ideas about how the industries can coexist. I work on a lot of things and Ian mentioned a couple of them and we can certainly get into some of that conversation during the discussion. What I was asked to kind of talk about is existence and the theme, of course, of this meeting is the coexistence within the marine environment. So, anyway, I'm very pleased to be here. Thank you much for the invitation and really what I want to talk to you about is that I'm a government scientist. I work for the Canada Department of Fisheries and Oceans. I work at the St. Andrews Biological Station, here. We just had a major new renovation so we're new and more modern now. I've worked in this area for about 24 years and I've spent a lot of them underwater. I believe I have to sort of see what I'm working on and so I want to just talk to you about the lay of the land and how the two industries right now are existing together. The aquaculture industry is new whereas the fishery is quite old. I mean the aquaculture industry is about the same age as the Lobster Institute here. They're both about 25 years old. So the challenges that we have right now with the two industries going are certainly over space. There is a lot of conflict over aquaculture sites moving into areas that were once traditional fishery bottoms maybe. There are a lot of challenges or conflicts over operating practices, not only on the aquaculture side with some of their site operating practices but also with the fishing industry and how they deal with biosecurity. There is also a certain amount of challenge in the old versus new, I mean, earning the right to be there. I mean, if you've fished there for the last hundred years and you have a history of working the area, I mean, does that give you some sort of right? If you were a musician and you, I mean, I wouldn't have the right to go play with BB King, I mean, just sit in on a session with him because, I mean, I haven't got the chops to do that, right? And so there is a certain amount of that in the industry. We've been here for awhile, we've set up our traditions. There is certainly the hunting versus farming lifestyle and these are the things that tend to separate the two industries. But there is a lot of common ground and I would like to try to bring some of those together as well. First of all, you're both food producers out there in the whole every-growing urban population demand for this stuff, right? I mean, seafood is becoming more and more a part of not only just the regional food consumption but on an international market as well. And your competition isn't really between the two industries, it's really between the US and the Canadian Maritimes and China or wherever it might be coming from. There is also, whether you realize it or not, seafood is really part of the National Healthcare system. Something I love is throwing numbers around and doing back-of-the-envelope calculations. Right now, I figure that just some of the shellfish industry in Canada might be worth more to the healthcare system than it is to the entire landed value for fisheries and aquaculture in general. Just because of the implications it has to healthcare. And, when we start doing the extrapolations on the demographics of the number of old people we're going to have that are fairly wealthy who are looking to increase their life spans. They're looking at food as one of the ways of doing it. Both groups are certainly interested in maintaining the coastal regional economy. I mean, they like where they live and they need to generate the revenues to do that. They also need good career opportunities for families and, of course, they do that through local and productive ecosystems. So there are a lot of commonalities between these two groups and there are

some reasons why they should probably think about getting together. And, of course, if you've got good career opportunities, you've got stable families, and you also have healthy and productive ecosystems, then you can maintain, you know, overall the local culture and traditions that come up around. So, I want to throw a couple observations at you before I jump into a couple of new ideas. In my diving over the last 25 years, this is where you'd find most of the lobsters, you know, say 25 years ago. They were all in shelters and under rocks. If you went, there would be dens. There would be certain burrows that would be preferable to others but, for the most part, you had to look to find lobsters. Then gradually you started to see lobsters out more and more in the open and now when you're diving, you see lobsters everywhere. Right? They're on bottom. This one was taken off Campobello last summer. I mean, this is a long, huge, sand flat area. You can see a sand dollar down here but they're wandering all over the place during the day. Usually they're out at night, you'll see a lot more lobsters at night than you will during the day, and they're all aggressive as hell. Right? They all have an attitude. They're all after you. You can't be on the bottom without a lobster coming up to visit you. Right? I mean you didn't see that so much 25 years ago. We also see lobsters, I mean, this is a lobster under an aquaculture site -- not a really good-performing one because it's in a depositional area but -- you can find lobsters burrowed into the mud right in there and the mud is soft. You can take your hand in order to capture, well, I wouldn't have been this guy but you can just take your hand and shove it through the mud behind them and grab them by the carapace and pull them out. So the point is that they're really flexible in the habitat they have and their ranges seem to be increasing at least in the types of habitats that they're sitting on. Okay, so I'm making a bridge now. Here's lobster fishing in the Bay of Fundy and a colleague of mine, Julien Gaudette, sent me this information a couple of days ago. This is what the landings look like in the Bay of Fundy over the last 50 years or so, 50 or 60 years. I mean, I wish all of our stock portfolios looked like this for our retirement funds. But you can see a huge increase. I mean, we go for 50 years at almost a stable, 40 to 50 years, of relatively stable landings and then we have this huge increase that goes on, right? If we look at the same time, I mean, I should say that I came in to the Department of Fisheries and Oceans right about here so I'm not sure I can claim credit for all of that but, if I did, I'd also probably have to take credit for the drop in the groundfish landings on the same area, in the general area. So whether this is correlation, I mean both lines seem to be going in different directions. But I guess the point is that a lot of my job is looking at trends. I look at numbers and I look at comparisons between things. This is another comparison. This is, I look at different patterns and processes. Here's a stock that sort of ticked along and then all of a sudden it got this huge increase. Well, it's got a huge increase. Let me just add a couple more years to it. Right? This happens to be the Blackberry stock of RIM. Right? And the point is that a lot of things happened where there wasn't much competition and all of a sudden they had this huge growth. There was a demand for it. There was opportunity there and then all of a sudden they ran into problems and down it came. Most stocks do this if you look at a lot of things. I mean, you get this big increase. I guess the reason I'm pointing this out is that, if we go back to this, right, a lot of the economics, a lot of the things that we're doing right now are premised on a huge stock of lobsters. And my experience has been, in the short experience of 25 years, is that it doesn't always last and that you have to be looking for what's going to happen after the crash. So this is where

we come. So maybe this is part of the common ground. This guy's name is Brian Beal if you haven't met him. I'm sure most of you've probably met him. I've known Brian for quite a while now and he did some work in Ireland about 10 years ago now, 10 years almost exactly, where he looked at the whole idea of looking at nursery areas for juvenile lobsters. And the European lobster has a lot lower populations than we have here and they've gone into stock assessment. What they found is that basically hatchery production of juveniles, of lobster, the European lobster, are too expensive. Because these things live so long, it takes a long time to get to a juvenile lobster. So Brian, in typical Brian fashion, Brian Beal tried to look at some nursery areas using just some offshore cage or sea cages basically to grow lobsters at and he's still working at some of this stuff. I think that this has some real possibilities. And that takes us into what Ian was just talking about, this thing called integrated multi-trophic aquaculture which is sort of a \$10 word for mixed farming in the ocean. This is what it sort of looks like. It's based around this premise and I use this slide. It's basically, if you feed something food, it retains relatively small amounts of it. So, in this case, if we just look at nitrogen, we feed it, so they're going to lose some food so let's say 95% makes it to the fish, it's going to retain about 25% of that nitrogen maybe. A lot of that is going to go off as ammonia and a certain amount is going to come off as feces so that's nitrogen and that means we're talking proteins. If we talk carbohydrates, the ratios shift. The basic point I want you to take home here is that animals are lousy at converting food. We're lousy at converting food, even worse than fish, a lot worse than fish. The point is that a lot of the stuff that goes in is lost. Therefore, if you're feeding something in a culture operation, you're only getting pennies back on your investment dollar. So the idea of multi-trophic aquaculture is to target some of these excreted products, recycle them, put them through another trophic level trying to recapture some of the energy initially put in. As a schematic, this is what it looks like. So this is an aquaculture site but it's like any ecosystem, right? The food's going to go in here and then it's going to get shifted around. So if we start it, we'd put food into the system, it's consumed by the fish, it produces small particles. Maybe those get taken up by shellfish. The ammonia the fish produces go away. We'll suck that up with plants and, of course, some of the nitrogen from these and then, of course, the fecal matter and big waste food will drop to the bottom and then there's a benthic component here. That's the guts of IMTA. The species don't matter. It's really just the roles that each of the things are playing. Now, there is a lot to talk about on this and I'm not going to but this issue that I want to bring to into place is that this is where the stuff that Brian was talking about would fit. Right? If we used some of that excess energy that's coming out because this isn't waste, this isn't toxic waste, this is high-quality protein and carbohydrates, the things that run biological systems. So, to jump on, this is just some work we did a year or two ago and it's basically looking at how are we going to deal with this area underneath the cages or around the cages. We're going to need surface area because that's how we're going to grow the animals. So we start looking at the whole idea of artificial reefs. If we look at the bottom, let's say we just drop a square on the bottom. Let's say it's 4 inches by about 3 feet. This is a meter but basically that's how many we have. If we make that into a cube, we get ten times the amount of space over the same area of bottom, and if we put two cubes on, we get about twenty times the amount of space. The point is that three-dimensional structures are the way to grow more animals, to have more biomass there.

That's the way the Great Barrier Reef works. Right? There's a lot of surface area on that and that's how you get this energy re-circulating around. This fits really well into Brian's concept of growing juvenile lobsters out in the field. We did some work in 2008 where we made one of these reefs and we used some of Jim's wire to put some wire cages in them to put various species in. Here are some shots. You can see the thing being constructed, launching, dropped around into the water, dropped down underneath. Now this is just a scientist designing this so keep that in mind and it's sort of like the Mark I model. It goes down. We put sea cucumbers in it. We had sea urchins in it. We put some sea scallops in it. This was over a really soft depositional bottom where you wouldn't have found really many of these species anyway. The point is that when we started looking at these, they all did extremely well. So the nutrients that are there are not toxic to them at all, they can handle them. The scallops grew as fast as any I have ever seen in the area. I'd put them up against anything in Duck Island Sound. The sea cucumbers did well although they tended to get out and wander all over the reef. Sea urchins grew quite well as well. So the point is that we have systems there. There was no excess nutrient. We didn't feed them. There was no care and attention paid to them. These are just sort of fire and forget and this whole idea might fit very well into something like a juvenile nursery maybe. Right now, there are hatcheries in Maine at Beals Island although it's now called the Downeast Center, I think it is now. And in Canada we have the Shippagen Aquarium and Marine which are both producing lobster juveniles that may be put out. And, if it's possible to raise these to a size where the survival rate increases dramatically, this might be one of the ways of bridging the two industries together to put them out and, for the aquaculture industry, they're interested and thinking about it. I've talked to managers in Canada and they can't think of too many reasons why we shouldn't at least try it or at least think about it. And, of course, obviously it has to link into the fishery as well. So, I'm going to leave it there. That's just one of the ideas. If you want to talk more about the IMTA and how that can fit into some of the site management practices and whatnot but I'll probably leave it there. This is a shot around, this is in Crow Island which is just at the mouth of Passamaquoddy Bay. There is lobster fishing that occurs around some of the salmon sites. Now the habitat has to be there, obviously, but the point is that these two industries can exist together. It just needs to be organized a little bit more. I'll leave it there and we can go to Dana.

Moderator: Thank you very much, Shawn. Dana, are you going to come over here or are you gonna...

Dana Morse, Darling Marine Center, Walpole, Maine: Can I just sit? Is that alright? Thanks. I'm going to try to address the coexistence question from a little bit different angle. I do extension work and mostly my remarks are aimed at those sorts of things that I know, which is mostly bivalve shellfish -- so oysters and mussels and scallops and those kinds of things. But also to seaweeds a little bit as well since we've started to investigate with those. My sort of half-way flip answer about how the industries can coexist is kind of serious too is that the fishing industry ought to be the aquaculture industry. I am fairly optimistic that there are some good chances for these two industries to really come together. And, in fact, we're already seeing that certainly in Maine and elsewhere. And one of the things that kind of sticks in my mind is a story back from, I guess it was 1999,

when I took part in a delegation to go to Aomori Prefecture in Japan and we were kind of taking a look at their scallop industry. And so, North of Tokyo is Mutsu Bay and we met with some of the fishermen's cooperatives up there. And someone from our group said, "So, how do the fishermen and the aquaculturists get along?" And there were about 16 or 17 Japanese fishermen sitting down with us and they kind of looked funny and they scratched their heads and they didn't know what we were talking about. Well, the short answer was, they're the same person over there. The person who is a fisherman is also an aquaculturist. They just consider themselves to be seafood producers; that's what they do. So, I have a couple of brief reasons for some things, I think, to caution against or to be thinking about so that we have some wise progression in this area; and then maybe a couple of things to offer by way of things to think about. Starting with reasons for, I think there are a lot. I'll try to be brief but I guess the first area I'd start with is some of the commonly tossed-about statistics about seafood mostly in the United States. I'll stick to which is... in the United States, 84% of our seafood is imported so that's kind of a food and economic security issue right there. And then globally, the other kind of commonly-cited statistic is that now more than 50% of our seafood that is consumed is grown, not caught and that percentage is projected to grow because global fisheries production has topped out at somewhere between 99 and 100 million metric tonnes. Those are FAO kind of trend statistics right there. So you figure in global population increase and the demand on seafood and so kind of the general consensus is that seafood is going to come about because it's grown rather than caught. So, those are sort of economic and global driver reasons. Sort of locally and culturally, we're talking about people, members of the fishing industry who obviously have a lot of expertise, a lot of knowledge about the area. They have the infrastructure, the knowledge about how to operate these things, boats and equipment and those kinds of things. And there is also, maybe less now than there used to be, that pride in being a seafood producer. Certainly in Maine in the last 20 or 30 years or so, people are stuffed into the lobster box now but it used to be you lobstered a little bit, you scalloped a little bit, you dug some clams, you went shrimping, all that kind of stuff. And so aquaculture can provide one possible opportunity to diversify again and kind of round out a year's pay if you will. One of the big things that I think about by way of things to be cautious about is allocation of rights and space. Because for lots of reasons you do need rights to an area in which to farm and those rights can perpetuate and those are serious things to be thinking about. Fortunately, I think there are some mechanisms within the existing fishing industry that make that also possibly an asset. And so, by way of sort of potential things to think about in terms of going forward, I have a few suggestions. And I guess the thing that comes into my mind right now is that about 50% of our shellfish growers in the State of Maine right now are either still fishing actively or they came from the fishing industry. And that is a change from what it used to be. The former model was you go to college, you learned about aquaculture, you find that you like to work outside, you want to be an independent business person, and you start an oyster farm or a mussel farm. Well, that's a great model and that's really how the shellfish aquaculture industry in Maine started but, in my 14 years now or so, we definitely have been noticing a change in Maine about people from different segments of the fishing industry kind of scratching their heads and saying there's an opportunity here and then getting involved in the industry. My suggestions about how these industries can kind of grow together a little bit more I guess are kind of

summarized like this -- and I'll probably miss something but these might be the high points: First of all, I kind of advocate a small-steps kind of approach. There are lots of ways, again, particularly in the shellfish and seaweed production ends of things where an interested fisherman or a group of fishermen can invest relatively small amounts of money and do the pilot-scale level work necessary to understand what larger production is going to bring in terms of revenue, in terms of costs, in terms of getting your product to market, all those sorts of things. So it's pretty easy to start small. I'm not much for booms in growth because humans have a difficulty with change generally and so a lot of times slow change is more effective over the long run. I think that the cooperative structure that is certainly present in many parts of the lobster industry and other parts of the fishing industry is a real strength, because given the economic forces that act in agriculture there is always that reward for larger business entities -- the economies of scale and that sort of thing. Well, cooperatives, whether they're existing lobstermen's cooperatives who decide to get into aquaculture, or groups of fishermen who decide to design a new cooperative, those groups can still serve their member -- be kind of owner-operator if you will, and still act like a bigger business entity. And there is a lot of effectiveness, I think, in that approach. I guess the other thing that I would say the more I think about it the more I like the word integration, both in terms of the multi-trophic aquaculture approach but integrating aquaculture production into the fishing industry. And I kind of segregate these into three general areas. If you integrate spatially, that means that you can either set out your areas (and, again, I'm talking of fishermen or groups of fishermen making these decisions) where you can either segment your areas where: here's where the farms are going to be and here's where the fishing is going to be. And nobody knows those areas better than people in the fishing industry. You could segregate things or you could choose to mix and match. So, for example, if you're running a mussel long-line farm, it's perfectly easy to set things up so that you can set gear in between the long lines. Which leads me to the second area of integration, which is ecological integration. In the case of the long lines, the mussel long lines and traps and that kind of thing, there is probably going to be some positive environmental interactions with your cultured species and your caught species. And so ecological impacts, particularly in shellfish aquaculture is a growing area of science, and there are some pretty significant benefits to be realized there. If you think about a mussel farm, there are going to be drop-offs, lobsters and crabs are going to be eating those mussels that fall to the bottom. If you're smart about it, you can still set as much gear and sort of capture the waste of the mussels and maybe increase your catch-per-unit effort because there's an attraction to the feed source on the bottom. So that's an integration on an ecologic sense. Then lastly, I guess the last point I'll make is getting back to one of the things I said initially, which is that integration in a cultural sense. And this is both, I think, the major positive but also the most tough thing to get past -- which is the fishing industry considering itself, again, to be a seafood producer on an individual basis. I don't catch seafood. I'm not a farmer. I use both techniques, and I produce quality seafood for the market. That's a benefit because you get to do more. You have more options. But farming is definitely different from fishing. It has a slower rate of return. It is risky. I don't want to sugarcoat it and say "you set some oyster cages, you're gonna become a millionaire next week" because farming is farming everywhere. But when you start to think about being a seafood producer and not just a fisherman or even yet a scallop

fisherman or a shrimp fisherman, if you think about it those kinds of terms, I'm a fisherman and that means I produce seafood any way I can. I think that mindset will help these two industries grow together. And, again, I know that there are going to be bumps in the road but I see this trend beginning already and I'm fairly optimistic that there are some good opportunities there. Thanks.

OPEN DISCUSSION

Moderator: Thank you very much, Dana. That's a good way to wrap this up. I know we have one question over here and then we'll open the floor to any others. Okay Klaus, just a second.

Brian Guptill, President of Grand Manan Fishermen's Association: I'm Brian Guptill, President of the Grand Manan Fishermen's Association. I'm going to start out with the, I love hearing this, "The salmon industry is new." Infancy is another great word they use for it. If they take the diaper off that puppy, the shit's going to hit the floor. Alright, the well boat treatments, the hydrogen peroxide, that's just a good way to knock the fish off that cage and it goes over and goes on that cage. They don't do a thing. If you're going to get better about it, you use cypermethrin which is legal down here which kills lobsters to 3 parts per billion. It has a 50-day half-life in seawater. Think about that. It's just a big cloud that drifts around and kills stuff. The cunner fish they're telling about, they're alright if you've got the right amount of cunner fish in the cage. If not, when they run out of sea lice to eat, they eat the eyeballs out of the salmon. And, let's see. The cypermethrin, we've dealt with that in Seal Cove Sound. We're not going to comment too much. The case is still in court. There are what, 19 charges on 3 different guys. They got their own struggles. The inter-trophic and growing mussels. Do you realize how many mussels you'd have to put in the Bay of Fundy to eat the shit that comes out of the salmon cage? You wouldn't be able to sail around in it. Thank you.

Moderator: Okay. Thank you. Klaus, I think you're next.

Klaus Sonnenberg, Great Manan Fishermen's Association: I thought Lawrence was first. I think this is a good topic for this discussion and a lot of times when we have discussions in this forum, you know, I feel like a little off to one side. In this case, man, we're right in the middle of the shit. We've been there and we're well immersed. We've heard all about the space, you know, and how we should give up space. Well, yeah, we've given up the space but, if you have 100 square miles of ocean and you're a lobster fisherman, how many square miles can you fish lobster in? Well, it depends where it is and, in this room here, lobsters might only be in that corner. Well there might be some in that corner. But guess what? When you come in the room, there are three people in that corner and there are probably three in that one too. So, when you decide that you're going to put a salmon farm in that corner, you're going to displace those three people. They're not going to be able to go into that corner. That's already fully subscribed. There are a lot of, you know, falsehoods that people imply by not fully understanding what the fishery is all about. We gave up on Grand Manan tremendous amounts of inshore bottom for the salmon fishery because we wanted to have a salmon fishery. You

know why? It's like I think this gentleman said, because it was the fishermen wanting to be aquaculturists and expand their income and they wanted their own little company. And, guess what? They did it. They had a company here. Gentlemen that are here today had companies here. Pretty soon, they were owned by one company. I think almost one now. Maybe there's two. But, in reality, it's one large one in all of New Brunswick, in Southern New Brunswick anyway. We're not too interested in \$9 jobs. We're interested in family companies that support the local areas, that make business decisions, and that have the opportunity to farm if you like. I think somebody said it here, produce on a small scale. But that's not what the Province saw for us and it wasn't done openly at all. The Province saw for us something totally different to the point now where there is no opportunity for a small producer. Nevertheless, we continue to support the aquaculture industry. We build new wharves. We've invested tremendous amounts of money in new infrastructure because of increased activity, and we fish side by side. But make no mistake; there was a comment here on the slide board that said a healthy ecosystem. A healthy ecosystem is vital. And it's vital to both industries. It's just that the lobster industry is probably more susceptible to a broken ecosystem than is the aquaculture system. Because I think, too, it will suffer if the system isn't green in the future. And I know they're trying hard. Look, I give you full marks for trying to come up with a better system. But in the meantime, why are we expanding what we've got. We just saw an expansion on Grand Manan, a huge expansion. Area where we have bearing females that are so vital to our industry. Areas where lobsters go out and collectively in the summertime come together so they can egg out, you know, in the warmer waters or whatever reason. I'm not sure what the reason is. But, you know, what's broken is the government. The government in Ottawa has their eyes set on making sure we increase salmon aquaculture in our waters and today one of the reasons my wife is not here, because she would love to be here with you today, is because in St John today and Halifax yesterday, there was a public consultation about new drugs that we can introduce. I think more specific drugs, right? And guess what? They're going to kill arthropods. They're going to kill the very thing that we call a lobster. And they don't see that. They don't understand that. What we need to do is to step back and say let's let the research catch up instead of let's see it expand and create more problems. I don't want to hog any more time.

Moderator: Okay, than you, Klaus. Lawrence.

Lawrence Cook, Grand Manan Fishermen's Association: One of the things that strikes me.

Moderator: Who are you, please?

Lawrence Cook, Grand Manan Fishermen's Association: Oh, I'm sorry. Lawrence Cook, Grand Manan Fishermen's Association. Everybody's tired of hearing it. One of the things that causes the basic problems between aquaculture and the fishing industry isn't so much the bottom we give up that we can fish, it's those secluded bays that everybody wants for aquaculture because there's no storm damage, there's less tide, there's less of all the problems that they have in the Bay of Fundy in those secluded

areas. Those also happen to be where lobsters go to egg out and where they go to shed, which is also when they have sex. So you put that site in a bay with less circulation because in our area (you want less because we've got too much tide) on top of breeding lobsters and lobsters that are eggng out. Along comes sea lice. Now you have to kill a small crustacean in water full of small crustaceans that we don't want you to kill. Okay, and the problem becomes acute really quickly. How do you kill one small crustacean without killing another small crustacean. So far, the aquaculture industry has got some cute little ideas and I applaud them for working on it. I really do. But the fact is today they don't have a mechanism to control sea lice that's as effective or as cheap, and let's remember aquaculture is a business, as cheap as the chemicals. So, in 2009 we saw a situation in Seal Cove Sound where sites were covered in sea lice. The fish were going to die. There were too many. What did they do? They got some Ripcord and threw it in the site and killed the sea lice. And they killed every lobster in Seal Cove Sound too. Every one. It was just after we'd set traps in the fall and the traps were going 8 pounds to the trap lobsters one day and the next day zero. But it killed the sea lice. These are the problems that we've had on Grand Manan and you're going to continue to have; because not only while aquaculture occupies a small percentage of the actual bottom in the Bay of Fundy, it occupies a crucial piece of bottom in the Bay of Fundy. And the idea that you can treat through any kind of chemical means fish in that site to kill sea lice, to kill those little crustaceans without killing the rest of the little crustaceans around it is insane. Thank you.

Moderator: Thank you, Lawrence. Some more comments. Okay, Dana.

Dana Rice, DB Rice Fisheries: Dana Rice. I've been listening to this conversation for, I didn't realize, like Lawrence said, that aquaculture was this new because I've been listening to this conversation for a long, long time, and on both sides of the border. It's kind of an interesting thing. Fishermen aren't against, in the State of Maine and New England, fishermen aren't against aquaculture. We accepted it the same way the Canadians did. I want to point just a couple of observations without getting on my bully pulpit, which I can do. We started out this morning talking about, one of the topics, was about lobster bait and how important it was that what we put in the ocean out here in the Gulf of Maine to catch our lobsters; and make sure that there were no bugs of any kind in there that was going to do a lot of damage to this important resource. Now we're having a conversation about raising something, salmon specifically. We had salmon on the coast of Maine and it didn't work out very well. Lawrence and all those guys got them up in the Bay of Fundy now. But it sounds sort of strange to me when this is a Lobstermen's Town Meeting and we were very concerned this morning about something that might happen, now we're talking this afternoon and some people, to your credit, the aquaculture people, I don't like to beat up on people, to you're credit, you're trying to do the best you can -- but why wouldn't we be just as concerned about all of these medicines and remedies that this gentleman named out there chemo-something-or-other was one of them and that scares the hell out of me. Why in the hell would we even be thinking about putting anything like that in the ocean when we're worried about importing the sick fish from the West coast?

Applause

Dana Rice, DB Rice Fisheries: I am all for... and I could run on a long time. I've heard this conversation. I'm all for fishermen being in all of the fishing businesses. Mussels in a small way is something that is native to the bays of Maine and they can grow there. And, as far as I know, they don't get any bugs and we don't have to spray them with something toxic whatever or something that we don't know what the outcome is going to be. You know, one of the things that struck me as a just common, uneducated person -- if you sailed across the Canadian border and you sailed into these bays, I don't care what you've got in these pens, if you've got Holy water in them. There's just too damned much of it in one place to be good for anything. There are bays down there, the last time I went into Black Harbor, there's a bay down there that's almost as big as the City of Portland; and there's nothing in it but salmon pens. That's just too much of any one thing. A balancing, what Dana is talking about, a balancing of things that are safe is great. But I just am really worried about putting some kind of a medicine, you can call it medicine if you want to, some of it is nothing but damned poison into the ocean that we depend on. Thank you.

Moderator: Thank you, Dana.

Applause

Moderator: There seems to be some agreement with what you're saying. Other comments. Yes, Klaus.

Klaus Sonnenberg, Great Manan Fishermen's Association: Yes, Klaus Sonnenberg, Grand Manan. The message, the only message I really want to bring forward is that in my mind, keep track of what the government is doing; because in our view or in my personal view, we would have had a much better integration of the aquaculture industry in Grand Manan if we'd had a more forthright and open approach from the government of New Brunswick. The government of New Brunswick has no responsibility for a lobster, herring, for any of our fishery. So they took the point of view that that's a federal responsibility. Our responsibility is to create aquaculture. As a result, there was a total disconnect between worrying about what was happening to the lobster industry because our interest is only aquaculture salmon at that time. Now, of course, that's changed. The federal government has come in as well. But the federal government in Ottawa that really controls people, even in Halifax, in terms of what happening; those people haven't been on the water. They're looking at a piece of paper somewhere. What we need is more open dialogue in my opinion, more open dialogue and more informed decisions -- more, somebody said earlier in the whale thing, a more cautious approach to the way that we work within the environment. I just want one message and that is, let us remember that I think the fishermen and the aquaculturists can probably get along fairly well. It's some of these other agencies that I think have hurt us the most.

Moderator: Thank you very much. Any other comments? Maybe you'd allow your moderator just to make a comment here. About a year ago, I guess, I read a book by a

New York Times writer of some kind. It was entitled, Four Fish, and it took four major fish species and just talked about them generally. What it said, what its message seemed to be, if I remember correctly (and I can't even remember what the name of the guy is who wrote it) was that the wild-caught fish, which are the prime fish that we love and like and not... (Just fin fish. He was just talking about fin fish. He wasn't talking about lobster.) But there are not enough of them in the world to feed the growing population and the demand of the world for the protein that fish and ocean products can bring. And so it was saying we need to find some balance. We need to find some way to allow cultured fish to exist in order to maintain the reality of wild-caught fish. Because otherwise, we'll catch them all up and then we're really in trouble because we know how to do that. We know how to catch up all the fish. We're doing a pretty good job of it right now. Now, I'm saying all this because listening to you, it seems to beg the time to step back and think this through. How do we do it? How do we get there? How do we provide for a healthy, ecologically healthy ocean that your lobsters can grow and continue to thrive in and also provide some of the world's need for fish protein? So, I'm not saying I have any idea what the answers are but I think you guys who work in the ocean and whose livelihood depends on it, need to be in that discussion. And this, in essence, is what Klaus was saying too. We need to be involved in protecting what we have and seeing how it can fit in a world with its increasing demands. They talk about, what is it, 9 billion people it will have in a little while? And how do we begin to deal with this world, this new world, that's happening around us and yet maintain the real values and the real opportunities that we have? Yes, Dana.

Dana Morse, Darling Marine Center, Walpole, Maine: I was kind of following along in your comments and Klaus' as well. One assumption that I make but I didn't mention was partly growing out of that seafood deficit kind of a thing. I assume that along the coast of Maine and certainly other states and probably Canada as well, that somebody somewhere is going to be starting a new company someplace to start a new aquaculture operation. I assume that that trend is going to happen. So the question is, well, who should that be? Who could that be? And so when I think about groups of fishermen in particular, in a cooperative situation for example, I see that as one way to have a little bit, for the industry, to have a little bit of control. How much? Where? What species? What gear? ...all that kind of stuff. And in some sense, it's like, well, we don't want any, you know. There may be people who say, we don't want any aquaculture, and that's fine. But then I kind of defer back to that assumption that I think probably, you know, some level is going to increase. I don't know how big the aquaculture industry will eventually be but I assume that there will be some growth. And so the next question is who is it going to be and that's kind of where I see the opportunity for the fishing industry to exert some kind of influence over their own destinies kind of thing, some kind of control.

Moderator: Some more comments. Yes, go ahead.

Charlie McGeoghegan, Fisherman, Prince Edward Island and Provincial MLA: Charlie McGeoghegan, Prince Edward Island. It was informative listening to your presentations and I think there are kind of common goals in some of the things that you've said. And I spoke with Dana earlier there and, on the Prince Edward Island aspect

of aquaculture and mostly on Prince Edward Island, it's with the mussel industry; and about 99% of that is inside the bays and rivers. The only major conflict that I've seen is when they've tried to come outside the headlands and then the lobster guys go absolutely ballistic, and that's created some tension. But as long as they're staying inside the headlands it seems to be not that big of a problem. Although a number of years ago, they were using lime on the lines to try to deal with starfish and some of the other things that were attacking the mussel lines. And that had some concern because, in some areas -- like over near Georgetown and that, where the lobster guys came pretty close to the mussel lines -- when the lime was spread, the lobsters disappeared and nobody could seem to answer to us. And I was representing the 410 fishermen on the lobster advisory board at that time and we questioned science and we questioned the mussel industry on, "is that something that would be harmful to the lobsters if they breathed that in through their gills or are they just smelling that and taking off, or is it killing them?" And nobody could seem to answer that. So that was one problem that I've seen over the years that was a conflict. Since then and since the tunicate hit really heavily into the mussel industry they've had to diversify on invasive species, not invasive species, that's how they got there in the first place but the predators of the mussels. They've had to come up with new ways on dealing with it and right now they're using high-pressure water to blow the tunicates off the mussel lines. While it seems to be working, and it's not a chemical so that seems to be doing its job. But there is concern over that spreading on the bottom and things like that because it is just dropping that off and it's landing on the bottom now. They've been at it four or five years now and I'm not sure what the overall affect is but I think the concern in the room is valid in a way too that too much of one thing is sometimes not good. And the salmon, I don't know much about the salmon industry because we don't have that on Prince Edward Island. There's a little bit of like, indoor salmon hatcheries and things like that but nothing offshore. One thing though that I'd like to mention that is somewhat off-topic but it has to do with lobster larvae and, Shawn, you might know this gentleman but he's a biologist in Moncton and his name escapes me. When I was with the lobster advisory board, I had questioned about mosquito sprays and their effects on lobster larvae and couldn't seem to get any answers at the time. And, while everybody hates mosquitoes, nobody seemed to be asking the question, "where does that fog go?" And, when you're on an island there's obviously going to be some overspray, and how is that affecting lobster larvae? Nobody seemed to want to go there. Then we wanted to know about the potato sprays because there's about 85,000 acres of potatoes on Prince Edward Island and they're sprayed for potato bugs. And the biology of a potato bug and a mosquito is the same biology as far as how they grow. They molt in order to grow just the same as a lobster and the sprays are specifically designed to stop the molt and that's what kills them. And you guys would know more about that than I would. One thing that I never drew the link to and nobody else that I've run across has -- but this biologist from Moncton wrote a paper on it last year -- is the mosquitoes, because the mosquito spray was basically done away with because of environmental concerns but the mosquitoes are actually getting some of the potato spray then they are heading out to water to try to, because it dries them out inside or something is part of what it does. So they were flying out to water to try to get moisture and they end up dying and falling into the water. What we never drew the link to was that the lobster larvae at the time of year that they're falling is the same time of

year that the larvae are in their five-week cycle of the top two to three feet of the water column and the lobster larvae are eating these mosquitoes and that's killing the lobster larvae. So, I think it might be a topic for maybe next year to have that gentleman up here to go over that and his findings and how serious that is. I'm not sure, do you know the gentleman, Shawn?

Dr. Shawn Robinson, Department of Fisheries and Oceans: Luc Comeau? Would that be him?

Charlie McGeoghegan, Fisherman, Prince Edward Island and Provincial MLA: No, I know him. There's another gentleman though. I just can't think of it right now. But I found it pretty interesting and it just kind of shows how seriously that other things can affect and something that you wouldn't even really think about, right? So, anyway. That's a topic for another day.

Moderator: Yeah. Well, it's good to have that and it's particularly good to have you think of what we might be dealing with in another year. The things that are of interest to you and how we can take advantage of being from both sides of the border and having the same resource that we're really concerned with.

Dr. Shawn Robinson, Department of Fisheries and Oceans: Shawn Robinson from the St. Andrews Biological Station. The discussions that we've been having this afternoon are not new. The concerns that we're hearing are pretty common not only just about the aquaculture industry but also the agriculture industry. I mean, what we're talking about here really is industrial food production at large scales. I mean, if we took salmon out of the equation, we would have far less issues to be dealing with but we would still have some of those issues if we talked about the mussel industry. For example, on Prince Edward Island or in New Zealand or in China -- although we don't really hear much about the things in China -- but, I mean, the issues that we're talking about are really: how do we grow large amounts of food for the demand that's out there from the urban environment? I mean, we talk about it but, I mean, basically, it's the rural areas like Grand Manan, like the coast of Maine, that support the huge demands that are coming from Boston, New York, Tokyo, Toronto, you name it. I mean, that's where the demands for all this food is. 80% of the people in Canada and the same with the US, live in cities, right? So only 20% are living in the rural areas and they're supporting all of that. And so that's why people are concerned about keeping the rural areas fairly intact. And Klaus brought up the point I put in the slide that, you know, we're looking for productive and clean ecosystems. You know, the issues of salmon are known with regard to the waste. There's truths that are coming out; there are half-truths that are there. I mean, the fact is, industrial production of food is a reality in the world right now and really the question we should be asking is how are we going to do it and how are we going to do it better. We've seen lots of examples. I mean, you can look at the cattle feed lot industry or the way we produce chickens that you can buy at Shaw's or whatever, or if you want to go to Whole Foods, look at the organic chicken side of things. I mean those are all part of our production system and ultimately they need to be made better. But the point is we still need that food. It's being driven by people other than, you know,

us that live in the rural areas. And so, if it's going to be grown in our areas than I think it's paramount that we do a better job of doing that. And, if fishing is not going to supply all of it in a sustainable way, then where is it going to come from? I think if it's going to happen, it's likely going to happen in the rural areas. You're not going to be growing fish likely in Boston Harbor or in Halifax Harbor or something like this. It's going to be grown in Machias. It's going to be grown in Passamaquoddy Bay or in Grand Manan. And so I think it's probably worth the effort to get involved, to design a better type of food production system. If salmon isn't the species that needs to be grown there, then maybe it's something else. But the point is food does need to be grown and it's going to have to be grown somewhere. And I think it needs to be done as well as we can and, you know, how it links into the lobster fishery is really up to the lobster fishery or the lobster industry as to where it goes, whether it's pounds that are involved in doing something more unique, if it's an enhancement fishery. It's not either aquaculture or a fishery. I mean, as soon as you take that first step toward enhancement, you're taking one step toward aquaculture. As soon as aquaculture starts collecting wild seed from somewhere like the mussel industry does, that's taking sort of one step along this continuum toward a fishery and so where that ultimately winds up is really up to the communities and what they see their need is for regional economic development.

Moderator: Thank you. Dana? And then a comment over here and then we're...

Dana Rice, DB Rice Fisheries: I'll be brief, Ted. And I really appreciate this gentleman's remarks. One more thing I've got to say in relation to this whole aquaculture or different approach to fishing versus the wild fishery. One of the things that I've been more and more aware of in the last few years is that everybody wants to talk about an equitable and fair deal. Most of these things, when they got started up or whatever, have been unable to fly economically on a regular basis; and they are subsidized by taxpayer's dollars. Not all but quite frankly that's beginning to bother me at my age quite a lot, when I see somebody set up a business that is in competition with me or mine or the lifestyle that I hold and appreciate and it's subsidized by government taxpayer's dollars. That really isn't a level playing field and I think I just need to point that out. There's a lot of that around. If some of the conversations that we're having now, if it hadn't been for millions and millions of taxpayer's dollar thrown at it, we wouldn't be having the conversation. They'd have been broke and gone away long years ago.

Moderator: Okay, thank you, Dana. Now, there's one more comment over here.

Jim Knott, Lobster Fisherman, Gloucester, Massachusetts: Concerning both issues, aquaculture and fishery, are we looking at adequate water purity? I mentioned the contamination of most of the waters with alkyl phenols of which I have a poster out there. There are other compounds that are in the water system because the sewage treatment plants are not adequate. We hear about caffeine and estrogens in the water being spilled out from water treatment plants. Another source of contaminants is, in order to treat diseases like the West Nile disease, we mentioned mosquitoes just a few minutes ago, in order to treat West Nile disease, the local governments were spraying with methoprene.

Now methoprene happens to be an insecticide but it's the same compound that will affect lobsters and keep lobster larvae from metamorphosing. But the people who use the compounds didn't know that that's what they were doing but they were spraying huge amounts. And so I think the whole system needs to be looked at in greater detail.

Moderator: There's a lot for us to do, isn't there. Okay, one more comment. Right behind you and then we're going to move on into the evening.

Dana Staples, East Coast Seafood: Dana Staples just to add another Dana to the conversation. To go back to what this gentleman is saying about East or West Nile virus, I'm not sure which one it actually is, and the spraying that took place down in Long Island Sound, which anecdotally, is charged as being one of the reasons that the Long Island Sound lobster fishery has absolutely trashed itself and become virtually a nonentity in the past few years. We are getting into the situation now, and I think given the fact that you're looking at the weather we've got outside here, there is going to be potentially this year, crops of mosquitoes and, in years to come, potentially crops of mosquitoes that people are going to be looking at and saying there are way too many mosquitoes around. We're going to have to spray and, given the fact that mosquitoes and lobsters are second cousins, first cousins -- and that if you are spraying for the mosquito or spraying for something that is in a food industry whether it's potatoes or blueberry or whatever other crop you're growing -- it is something that is going to leach into the ecosystem and there is going to be an issue someplace down the road.

Moderator: And there's work for us to do and I guess the thing is that we need to keep engaged in this and protect the lobster industry and recognize that we're part of a larger ecological situation. I'm going to bring this part of our meeting to a close now with thanks to our panelists and ask Sheila Dassatt if she will come up and let us know what's ahead for us. Sheila? And thank you gentlemen.

Applause

Sheila Dassatt, Executive Director of the Downeast Lobstermen's Association: As always, these Town Meetings provide some lively and very informative discussions and today it was no exception. It's so important for all of us to get together and hear everybody and hear both sides of the border. Being here today, I think it went very well. Ted asked me to throw something in of my own and I know we're all tired and probably need to get going but it's been a very good day, I think. Let's all thank Ted for the great job he's doing as our Town Meeting moderator.

Applause

Sheila Dassatt, Executive Director of the Downeast Lobstermen's Association: Thank you, Ted. You've done wonderfully. Now please take a minute to pull out the colored evaluation sheet in your packet if you haven't already done so. We'd like to have your input on today's activities before you leave. In fact, we'll reward you for filling out the evaluation forms by making anyone who hands in the form eligible for the door prizes

we'll be giving out in just a few minutes. We're reserving some door prizes for tomorrow for those who stay with us both days. Again, it is the green form in your packet with the door prize ticket attached to it. The Lobster Institute staff will come around and collect them from you right now if you're ready. I've been told if you're not ready, it's not a big thing. We'll give you a couple minutes but Deb will come around and collect them and collect your ticket. Once again, a special thanks to our primary sponsors, Darden Restaurants and Orion Seafood International as well as all our other sponsors whose names are noted in your packet. Please join me in recognizing all of these generous folks. Now, remember, the Town Meeting will reconvene right here tomorrow morning at 8:30. There will be a continental breakfast available at 8 o'clock. Once we finish up this afternoon, you're all invited to a reception sponsored by Fishery Products International and High Liner Foods. The reception will run from 5 o'clock to 7 o'clock in the foyer just outside. And now I'd like to call on Jean Day to explain how you can get reports on today's meeting. On behalf of the Lobster Institute and myself, thanks to all of you for your very valuable participation in today's portion of the Town Meeting. I think all of you deserve a round of applause.

Applause

DAY TWO

Ted Hoskins, Town Meeting Moderator: Good morning. We're beginning with this first session dealing with offshore energy and that's something that is becoming more and more a topic of discussion in a variety of ways. I'd like to introduce our presenters. We have two of them: Amanda LaBelle from the Island Institute in Maine and Damian Brady from the Advances Structures and Composite Center at the University of Maine. There you are and there's your mic and have you decided who wants to go first? There you go. Okay, Amanda, it's all yours. Are you going to have a presentation? Okay, fine. At one of the breaks, I'm going to give an interesting announcement and that is that, in the time when we take the tickets, you know, and have this little auction at the end, everybody is going to be a winner so, wait and see. I'm getting a hairy eye from over here but I'll tell you about that latter. Okay, it's all yours, Amanda.

Amanda LaBelle, Island Institute: Alright. Is that good? Can you hear me? Move it down for the short kid. There we go. Okay. My name is Amanda LaBelle. I work at the Island Institute which is a nonprofit in Rockland, Maine, so just a couple hours up the coast from here. We work in a variety of ways to promote the vitality of community life on islands and in coastal communities. And I work in marine programs so that means I work where any of that intersects with fisheries. We've been working a bit of late with this discussion about offshore wind energy in Maine and what's going on here and so I'm going to talk a little bit about just what's been going on in Maine and how our fishermen have been involved so far. The 'what's been going on in Maine' piece is probably going to be a little more specific to Maine and the States but I think the piece about how fishermen have been involved is broad enough that hopefully that will be of use to everybody. Just to preface this with what we're talking about in Maine or the piece that we've been involved in anyway is floating offshore wind turbines -- so turbines that

would be offshore in deep water on a floating platform. There are kind of two questions to the motivation piece. One is, “why are we doing this in Maine?”; and the other piece is kind of “why this particular technology?” One of the big drivers in Maine is just how heavily fossil fuel-dependent we are. And the offshore piece which is a question that we frequently get, you know, “why wouldn’t you do this on land or on islands or closer to shore?” just has to do with the wind resources and the further offshore and it being stronger and it being steadier. And also with the idea that you’d get away from some of the esthetic and noise concerns that are closer inshore. That still exists with some challenges, which are that this technology of floating offshore wind is in its very early stages. There is only one full-scale prototype which is made by a Norwegian company called Statoil and that is deployed over there, but that’s the only full-scale one. And then just how do you deal with this question of the ocean being a public resource and that there are lots of longstanding traditional use of the ocean; and what does it mean if you’re suddenly having new uses enter in and how do you share that? We’ve been looking a bit into what exists for how you can make sure that benefits also flow to those same communities that are dealing with new uses entering into the same space. And another, I would say maybe even the bigger challenge in all of this, is just what do you, with this kind of new thing? How do you develop kind of the conversation and the relationships between people who haven’t worked together in order to have a really productive conversation about what this would mean for the state and the fisheries? I’m just going to kind of breeze through what’s been going on in the last four years of this and it’s not simple so bear with me. About four years ago under the Baldacci administration, there was an ocean energy task force formed that was supposed to start looking into what are the options. From that, there was a group tasked with selecting R & D sites in State waters -- so within three miles from shore or year-round inhabited islands. And Damian is going to talk a bit about what’s been going on in the site off Monhegan, which was one of the sites selected that’s being currently used by the University of Maine. Then, in the fall of 2010, the Maine Public Utility Commission put out a request for proposals for a pilot park that would be 25 megawatts, which, depending on the technology, is kind of somewhere in the realm of between four to six turbines -- and that had to be 10 miles offshore. That closed last May and then in the fall of last year, the company, Statoil, which is the company that I referenced before that has the one full-scale turbine, submitted an unsolicited lease request to the Bureau of Ocean Energy Management. And so that means that that process is now underway also with them. Some of the ongoing pieces are the R & D at the Monhegan site. There has been a task force set up between federal agencies, state agency staff and elected officials that has met, I think, three times. And kind of the goal there is to try to align the permitting processes and think through how best to move this forward. And then also, in the same way that Statoil put in a lease bid, any interested developer could do that at any time. And then this is also kind of going on in the context of ongoing marine spatial planning and trying to think about how new and existing uses can coexist. So there are lots of moving pieces that are all kind of on different trajectories but all happening at the same time. So this is just a little bit more about the area that Statoil proposed to set up a pilot park in. You can see that green line is 12 miles from shore so basically it sits kind of on that right outside, kind of triangularly between Boothbay and Monhegan Island. Currently, that area is about 22 square miles but with the idea that once it actually has turbines in it, it would only be kind of between

two and four square miles. So, that's Boothbay there. Monhegan, you can barely see but it's right here. And so this is the area that's currently under consideration. So, another piece of the RFP from the Public Utilities Commission was that a company that would be proposing a pilot park also had to show that they have the capacity to expand to a larger commercial-scale development, which would be a 100-megawatt farm. But that's not geographically tied to this area at all so they just have to show that, as a company, they have that capacity but not necessarily stipulate where it would be or anything. So that's another thing in kind of people's minds a little bit, I think, about this. During kind of these last few years, some of the work that we've been doing at the Island Institute is just trying, again, to continue conversations about this and bring the right people together to talk about the kind of questions and concerns that everybody along the coast has about what this would mean for the state. So that started kind of formally through a report that the University of Maine put together on offshore wind energy. We authored a section on stakeholder concerns and questions and priorities. Through that and through just conversations with our constituents, I think we have this kind of working list of what are people's main concerns and interests and questions about this. So we've been using that as kind of a starting place for how we've been working. A big piece of what we've been doing... we've been calling the offshore wind energy information exchange. And you can kind of read through what these pieces are but basically again trying to bring people up to speed on kind of the basics of what's been going on, and also start forming relationships between the different sectors involved in this with people on the ground that work on the water to get them to help just answer questions directly and have a more direct and open line of communication between themselves. The second bullet down there, the fact sheets, is something that we've been working to develop these peer-reviewed materials that we can distribute to people; because there have been a lot of questions that keep coming up. And we just wanted to say, if it's really important to folks to know how these things are going to affect marine species or how the economics of this actually play out, things like that you know, why don't we just put together some answers on that and get them reviewed and have them publically available. Those are actually on the back table by the Lobster Institute's board if you want to pick any of those up. And we've also been doing forums where we've been inviting people in to speak and tours to various facilities. This picture is from a tour that we did with a group to go to the composites lab at the University of Maine to see what they've been working on developing with scale-size turbines there. So then I also wanted to spend some time talking to you guys about a project I've been doing called "mapping working waters", which is a effort to get fishermen on the map so that when these conversations happen, when you're thinking about sighting of things, you have more information than kind of the existing GIS which is largely kind of biological or geological data. So how do you start to get communities and uses out on the water so that those can be part of the conversation also? And kind of some of the main, I guess, takeaways from this work have just been, you know, the complexity of interactions on the water between mobile and fixed gears, between fisheries and how fishermen have for a long time already been navigating that and working around that so when a new use comes in, what does that mean for those relationships. Ties to shore side communities so when you think about an area on the water, all of those areas are very much tied to the economics and the lifestyles of a shore side area. Also, how do you work in such a way that best respects that?

Seasonal changes in use -- whether that means fisheries opening and closing, or just how they move through the water as lobstermen move offshore later in the year and things like that, which is useful information for things like offshore wind. Because, if you're thinking about construction, there could be much better ways to time those processes and things like that. And then also, I think, just the big takeaway is that fishermen want to be part of the conversation in trying to really keep putting that back at the table that. You know, when we started doing this project, there was a lot of skepticism about whether guys would be willing to draw where they fish on maps. And I think people have really, I think for the most part, folks have really understood the value in this and the value of being at the table and explaining to people how they work -- and that it's also been a really good opportunity to exchange information. I've learned a lot about what guys main concerns are on the water and I feel like I've also been able to be a resource and answer some questions that people have about what's been going on. So, with those main takeaways, I just wanted to show some of the maps that have come out of our most recent mapping work. We had funding from the Maine Coastal program to focus on the area kind of 10 to 40 miles offshore. And so you'll see these maps have the... this is the Statoil area on it just so you can kind of reference that on these. These are pretty dynamic. They're not complete as you can see. There are definitely gaps in the data but we continue to add to them and try to work with folks on how best to represent their fishery on these maps. This is where the lobster map currently stands (and you can't really, it's hard to see from where you are I'm sure because it's hard to see from where I am) but all of these little clusters of text are actually names of harbors. So basically when we had folks map, they're not mapping their individual fishing areas but where their harbor generally goes. So then the idea was to list kind of the clusters of shore side communities and where they're active on the coast; so that way, if you're thinking about working in a particular space you understand better how that relates back to the communities on the land. Then this was a really, this actually came out of a pilot project we did. We first were doing this mapping in West Pen Bay and we were trying to think about how to show kind of like density of activity or whatnot, and show that there is very dense activity inshore. And then, as you move offshore, there is a lot more mixing and cross-community -- so to try to tell that story a little bit. That was based on how guys reported the number of active licenses in that area. This is what our shrimp map looked like. This was... so the purple areas are mapping the participants in the projected and then there's also hatching across them that is previously reported data which aligns pretty similarly. That's currently held on the Maine Department of Marine Resources website and it's from a couple of different sources. And then this was a map that we made of ground fish showing gill net and trawl and kind of historical areas. That's what this gray is. So part of the challenge that we face with these maps is also, you know, they're inevitably only going to show -- or maybe that's not true, maybe you can be creative with how they look -- but is the challenge of showing time on them. So what does it mean that fisheries have changed over time and how do you leave people not feeling like they're boxed in the one particular time that they're mapping? So we're toying around a little bit to show different periods of time and where fisheries have been active. And then this was a map of tuna fishing and so this was a different way that this fishery wanted to represent themselves which I think made a lot of sense for them which is where kind of the big yellow area is just generally where they could be. And, as it is darker green,

that's a more important area for them. So that's kind of how they chose to represent themselves as a pretty mobile fishing fleet. So that's it. That's my contact information. Feel free to grab the stuff in the back and I'm happy to answer questions about any of this after Damian. Thanks.

Moderator: Thank you very much, Amanda. We'll move right on now and Damian.

Damian Brady, University of Maine School of Marine Science: Unfortunately, I guess I don't have a lot of pretty pictures to show. My name is Damian Brady. I'm a professor from the School of Marine Science at the University of Maine. Sorry about that. Sorry about that we're not connected to the Internet here. As I was saying, my name is Damian Brady. I'm a professor at the University of Maine School of Marine Science and I'm part of the Deep Sea Wind consortium. And what we're doing is we're putting out... essentially we're the R & D arm, I think to the beginning of this offshore wind development -- which is to say we're putting out a small wind turbine out at the Monhegan Island site. And, toward that end, I've been in charge of, or recently been put in charge of, the environmental effects of offshore wind development. I think it's a topic that's really important to the people in this room and, toward that end, we've been essentially looking at basically every part of the food web that could be affected -- so starting with birds and bats and then to marine mammals and then, of course, to fish, and then benthic invertebrates and benthic fish. And so we've been using what's called a BACI design, a Before and After Control and a control experimental design. And so we've been doing, for instance, drop cameras to look at the benthic density of lobsters, shrimp, redfish, anything out there at that site. We've also been doing active acoustics, which is to say acoustic instruments in the water to measure density of fish schools. And then, of course, a lot of visual observation to see how many birds and, in particular, marine mammals and even tuna that we can view at the site. What I did want to show was some of our preliminary results. We're good at the before because we haven't ever, we haven't put anything into the water yet. The plan is to do that next summer. And in particular what we're finding is a low density of benthic organisms at the Monhegan Island site. Amanda pointed it out. It's about two miles south of Monhegan Island. We're finding a pretty low density of shrimp and lobster in particular. And then we're also finding relatively high densities of herring for instance, as well as other acoustic information. That's what I was going to concentrate on. If I had a picture in front of me, I could have shown you some of the data that we're collecting. Primarily what I'm here today and I was at the Fishermen's Forum a couple of weeks ago in the same capacity, is to try to answer some of the concerns -- because many times I come to places or meetings like this and people are wondering about the noise level inside the water. They're worried about exclusion zones, in particular, from the fisherman's perspective including the transmission cable. So I'm really hoping that, if you have any questions, please feel free to ask them and, if we get the presentation up, that's great, we'll have some pictures to accompany them. But primarily my goal today is to answer any questions that you have to the best of our ability.

OPEN DISCUSSION

Moderator: Thank you very much, Damian. I think we'll move right into the question period. Remember this is an invitation to really get your questions out there and we'll get the answers. Yes?

Laura Ludwig, Consultant: Laura Ludwig. A question for both presenters. We've seen a lot of maps about fishing effort with respect to whales yesterday. Can you comment on where in the process the whale folks get involved with turbines?

Damian Brady, University of Maine School of Marine Science: I'll just mention two things. We have a lot of visual observations or we've done a lot of visual observations for whales and, at least our site, it is certainly less used. On the flip side, I know the Statoil site is in an area of high-density of whale watching boats that go out to that area. And so I think it's a really good question as to when they get involved whether this is a concern in terms of migratory pathways. I think we need a lot more information and, in particular, at the Monhegan Island site, we're putting out acoustic devices that will be able to detect whales. And so hopefully within the year we'll have a years worth of whale information: whether these are highly used as migratory pathways. That having been said, the designs of these wind turbines are designed to have very little on the subsurface, which is to say maybe one to two, mostly three anchor lines coming off these offshore wind platforms. Depending on the size of the platform, obviously, they look a lot like anchoring a sailboat out there. So it really just depends on the density of the wind turbines.

Moderator: Thank you, Damian. Up front here. Mike and then back to Bill.

Mike Dassatt, Fisherman, Penobscot Bay: Yes, Mike Dassatt, Belfast, Maine. The Downeast Lobstermen's Association represents a fair amount of guys that are out in these project sites and a couple of the other ones that have been looked at, especially in the Downeast sector. A question, probably a three-part question, but the first part of the question is the cost of the projects and the return of the project. Is it beneficial to the State of Maine? I know you've probably heard that a lot. How much of this wind source power is going out of state? And then the second part, I'll keep it basically simple. We as fishermen, you know, we chase fish. We can chase lobsters. They might be one place one year and not that place the next year. Especially like with the shrimp, the herring, the tuna. Especially the tuna are a predator fish. They're chasing what they can feed on. So, the big question that comes to us is how can you safely say that these areas aren't really potential fishing areas when we have no control over where they go?

Moderator: Amanda? Do you want to speak to that?

Amanda LaBelle, Island Institute: I'll take a first swing and then Damian can chime in if he has anything else to add. On the economics piece, I would say a good starting point is that there is a fact sheet on economics in the back of the room that lays out some of how that all works which is much more well-versed than I am. I think that similarly to any developing technology, it's going to be very expensive at first and would rely on government support to get off the ground. And then the idea is that, once the technology

is developed, it would be better. In terms of where the power would be flowing, in the RFP from the PUC, it stated that the energy from that pilot farm would have to be connected to the grid in Maine but, beyond that, it's not stipulated. Let's see, what else can I tell you about that? Do you have any other pieces on that that at all?

Damian Brady, University of Maine School of Marine Science: Yes, I was just going to tell them about it.

Amanda LaBelle, Island Institute: And then for the fisheries piece, I absolutely agree that that movement even seasonally or over decades or whatnot where it's important to have access for fishing, changes. And I think that is one of the real challenges of capturing fishermen's interest in this conversation. I think and hope that there could be opportunities for fishermen to be involved as kind of the design of commercial wind farms does or does not move forward -- in terms of how turbines might be, for micro-siting or how just an array of turbines might be laid out. You know, if fishermen are more involved in that conversation, there could be areas left to steam through or things like this. I think there would be more adventitious ways to work with that design. I don't really know what those conversations will look like going forward but I think it's important for folks to stay involved so, if those opportunities come up, then they can take advantage of them.

Damian Brady, University of Maine School of Marine Science: I was just going to add that I think the mobile fishery issue is a big one, particularly the tuna fishery and ground fishery. Fixed-gear fisheries will be able to be closer to these units. Obviously, you won't have to drag a net across the anchors for instance. But in terms of the fixed-gear fishery, one thing that we don't know is whether these turbines will represent fish aggregation devices, whether you'll have more fish milling around these areas. Also whether they'll represent sort of marine protected areas where you'll get production in these areas that go out into other areas. The argument has been made that it's potentially beneficial for fishermen, but I think the key is that the fishermen are at the table -- I think as Amanda said in terms of the spacing of these turbines so that everyone has lanes let's say to trawl between the turbines. Or is it better to be compacted into smaller areas? They're starting to generate more energy per wind turbine so less wind turbines would be out there, which would mean less of an exclusion zone for fisheries. And then there's also designs like tension-leg platforms -- so essentially you can think of a cable that just goes right from the wind turbine right down to the ground instead of spread-out anchors that expand your exclusion zone. Now is the time to probably be at the table to say these are the type of mitigation or lessening of the fisheries impact that would be really helpful and these are the types that we don't think would be as helpful.

Moderator: Thank you, Damian. We've got Bill first and then Bob and then Elliott and then John.

Bill Adler, Massachusetts Lobstermen's Association: First of all, I've been dealing with a proposal for wind farms south of Martha's Vineyard, Nomans. Our discussions were two-fold. First of all, electromagnetic energy which I hope, and that might be

something that you can do with that project you were looking at. The other thing had to do with exclusion zones where the company said, "Oh, no problem. You can go fishing all in and around the 130 windmills we're gonna put up." And the dragger said, "Where are the cables?" "We'll we're gonna bury them." "Yeah, well what happens if we drag around and we get one of your cables?" A problem for, let's say, mobile-gear people but the exclusion zones which they say, "Oh, no, there's not going to be" and we doubt that that would be the case -- if for no other reason than the insurance companies for the wind power and for the boats may not want a bunch of boats fishing under the propellers. We don't know but this is it. North Sea had a problem I believe where they did put an exclusion zone around them. So the industry is very leery of the offer that you can go fish all around these things, no problem. I don't know how many of you have seen these giant windmills up close and personal. We have a couple down in Massachusetts and they're scary. They're scary looking things and we're only looking at a couple right now. I was never able to get an answer from these companies as to if I were to go and try to build a fossil fuel power plant, normal size like we all know and love, and I asked them I said, "How many megawatts does that thing produce on average, coal, gas, oil, whatever, the regular one you see up and down. How many windmills will it take so I don't build that one plant? Now there was a little bit of a hint from Amanda where she said something about 25 megawatts, 4 to 6 windmills. And so one day I want to try to get an answer as to how many megawatts does our normal power plant produce versus how many of these things we'd have to put out to equal one of those. That was just another one of my things. The cable issue, the insurance issue, exclusion zones, those are concerns; and I do agree that, because we've been pushing the same thing down south where there are two things the fishermen would like: be at the table from the beginning, and the right to get mitigation funds if adversely affected. And I think those are the two drums that they've been beating, the fishermen have been beating down South in the South coast of Massachusetts. Thank you.

Moderator: Thank you, Bill. I hope you'll note that and we're going to Bob next but both Damian and Amanda have spoken about fishermen's presence at meetings and I hope that keeps up your sense that we need, as fishermen, to be involved regularly as this process moves along. Bob?

Dr. Bob Bayer, Lobster Institute: Bob Bayer from the Lobster Institute. A couple of comments. One, if you're looking for some background reading information on the potential impacts of this type of energy, have a look at the Lobster Institute website. We've tried to summarize a lot of the primary literature so that you can see what other experiences have happened in Europe and that's where most of this information is coming from and Damian, you may be more familiar with this. You probably are and maybe you could help us update this. The other is a suggestion. We've been working with a small company developing habitat moorings. We've got one in the back of the room, a very nice Styrofoam model. The habitat mooring, if we used them as moorings for these wind farms, could actually generate habitat for lobsters and other critters that happen to be in the vicinity. So I hope that this is something that might be considered. I'd mentioned this to Habib but I'm not sure whether it registered.

Damian Brady, University of Maine School of Marine Science: I don't know about them yet so I'm going to check them out.

Dr. Bob Bayer, Lobster Institute: There's one in the back of the room. Have a look.

Moderator: Thank you, Bob. Elliott?

Elliott Thomas, Maine Lobstermen's Association: Elliott Thomas. Bill Adler kind of brought up a couple of points and I was wondering if, in your studies, you had looked at effects of the cables. When they put a cable anywhere, the cable zone isn't a cable wide, it's pretty wide. And did the fishermen get a chance to look at something like that as well?

Moderator: Thank you, Elliott. Now over to Jon Carter over here.

Damian Brady, University of Maine School of Marine Science: Jon, do mind if I quickly just say something about the cable? Just to go back to Bill's comment and your comment. A couple of things about the cable. As of right now -- and we spoke to Statoil pretty recently and Statoil was represented at the Fishermen's Forum -- the cable will be buried. You'll be able to fish across the cable. I think one of the key points and I think Amanda made this point too that we have to make sure that Statoil and even Deep Sea Wind knows that when you're installing a cable, make it in winter or a season of low fishing, you know, so there will be a briefer exclusion time. We will always, of course, look about the habitat along the transmission cable so making sure there's no essential fish habitat. You also mentioned the electromagnetic field, EMF, those concerns in terms of lobster and fish. We're working with a laboratory on the West coast, PNNL, and they're doing experiments on crustaceans in general at various EMF fields. So, for instance, our Deep Sea Wind turbine is going to be very small, you know, 1 megawatt compared to the 25 megawatts we were talking about for instance. So the wattage coming through that cable is pretty minor. And so there have been no affects at least ever seen in the laboratory, but they're upping that cable to see whether there is effect on invertebrates and crustaceans. And at a 25 megawatt level or even these much larger farms, they haven't found any effects in terms of their ability to navigate for instance or sense and detect. So, in summary, I think transmission cables in general are a concern. I think that they should be built during times of low fishing effort. They should be buried, obviously, and the exclusion zone, of the actual... I don't think anyone's claiming that there will be no exclusion zone around. Any time you have anchorage there are going to be places where you can't trawl or dredge and so I think that the key is to try to minimize those exclusion zones. And the secondary key is to site them effectively, which is to say, "do you want these wind turbines far apart or close to one another?"

Moderator: Thank you, Damian. Jon?

Jon Carter, Lobsterman, Bar Harbor: Jon Carter, Bar Harbor and I apologize. This is the first time I've spoken this weekend. I know it's uncommon.

Laughter

Moderator: Very unusual.

Jon Carter, Lobsterman, Bar Harbor: Everybody has touched on pretty much what I had to say and we have cable areas in my zone. Having been a scallop fisherman for many years, having to deal with them was a huge issue. Scallops love the cable areas and having had cables up that were supposedly buried, are extremely heavy, and yes, I have been guilty of that myself. I know. I made sure there were no wardens in the room when I said that. It is attractive to such things as scallops and the scallops are definitely on a comeback. And you can bury a cable but you can't bury a cable everywhere. There are going to be cable issues. And, when you're running a cable 12 miles plus, that's a huge, huge concern. And you're taking up a lot of habitat, and you're going to be talking cables bigger than the Swans Island cable or the Frenchboro cable or Bruce's cable. That is going to be major for us. Major.

Damian Brady, University of Maine School of Marine Science: And I have to say that I'm not completely as informed as I should be about how often cables come unburied and under what type of habitat they particularly get unburied. Yeah, I would imagine especially with a lot of gravel and rocky shelter habitat that's important for lobster, they're going to have to be very careful where they map these cables out, how they bury them, and what type of substrate they put them in. But I know that they're very cognizant of that. But as you said, there is going to be no perfect system, I think.

Moderator: Thank you. Jon, did you need to get back? Okay, Steve, did you want to speak in a minute? Okay.

Jon Carter, Lobsterman, Bar Harbor: Sorry, Jon Carter again. You just brought something to mind. All the work you have to do to dredge an area, all the studies that have to be done, is that going to have to be done to do a 12-mile-plus long cable? I mean, that's huge.

Damian Brady, University of Maine School of Marine Science: Yeah, you mean in terms of the environmental monitoring and the EA, environmental assessment, before you put in a cable like this?

Jon Carter, Lobsterman, Bar Harbor: Yeah, and you hit on a big thing. When you're digging a hole 12 miles long, what are you disturbing? What is going on? Do you have to go in and try to move lobsters like they do when the dredge harbors? I mean, what are you looking at there?

Damian Brady, University of Maine School of Marine Science: Um, well, I know certainly, and we have a bunch of teams in Deep Sea Wind and I'm part of the environ... I'm in charge, I guess, of environmental effects. But we have a team, a geotechnics team that would... in our case, in the Monhegan Island, it's a pretty short cable but, you know, we would do side-scan sonar along that whole area and characterize the substrate.

And I'm assuming they would want to put it in the muddy, sandy areas and avoid the rocky shelter and gravelly habitats, and obviously avoid anything like eel grass or anything that might be essential fish habitat. So there is a checklist that they'll have to go through before they can bury a cable down there.

Moderator: Dana?

Dana Rice, DB Rice Fisheries: Thank you. Dana Rice. I guess the question I would have for the people you're representing, one of these power companies -- and there are at least two that are looking down the road -- but I don't think as of yet the lobster industry in the State of Maine has been presented with this information. And I know it's out there. I've seen it. The projects that you're talking about are pilot projects from the University of Maine and everybody is involved with it. I think what I would like to see made public is the economics of this thing. When, at what price per gallon of oil or gasoline at the pump, is wind energy going to become an equivalent solution to our energy problems? And how many windmills at that time when it doesn't need to be subsidized and stands alone, how many windmills and where are they going to be placed in the Gulf of Maine to create that amount of energy to make this thing economically viable? I've seen some preliminary charts. The pilot projects don't sound too dangerous. Don't get me wrong. I'm not against alternative energy but I'm all for fishing in the coast of Maine and everywhere else. The amount and the areas that it's going to take I think to produce enough energy from windmills to compete is going to be incredible. This pilot project off Monhegan and one thing or another is kind of a warm and cuddly effect and, I'm sure you know that most of the energy or most of the wind the constant wind that you need is on _____. So we're, I'm a little bit uncomfortable about this whole thing because what's happening here, we're participating in it and I appreciate the opportunity to do that. But this is kind of just bringing us in a little bit at a time and making us feel comfortable with something that the end result is huge. Basically I think, I'll throw a number out there and, I'm not trying to bait you to come back, but this thing isn't even going to be viable until gasoline is \$10 a gallon. And there are going to be several thousand windmills in the Gulf of Maine and that's a huge concern. And I'm quite sure that that information is out there, and if some company wants to put windmills in the Gulf of Maine I think they should share that information with us up front. Thank you.

Moderator: Thank you, Dana. Kenny and then Mike.

Kenny Drake, Fisherman, Prince Edward Island Fishermen's Association: Kenny Drake, Prince Edward Island Fishermen's Association. Where I'm at, there's a lot of windmills inland. But what I wanted to talk about to you was the underground cable. We have an underground cable that runs from New Brunswick to Prince Edward Island underwater and it's electrical cable. And what I just found out lately is the cable has oil around it, sealed to protect the cable from the salty environment, salt water. And they've sprung a leak in that, in the covering. And just lately they've been talking about it and they've said that it was only a minor leak, that they've only leaked out roughly 250 liters of oil so far and they've reduced the pressure on it. One of the concerns I had was that they can't just go and fix it. They don't know where the leak is for starters. They're

going to send a guy walking across the strait on the bottom until he finds it and then when they do find it, it will depend on the extent of the leak. And there is apparently a particular barge that they use that has to be brought from another country to work on this. So they're basically going to have to shut down everything when they do do it and so I have a little bit of concern about something like that, like is that the way your cable would be protected, the same way?

Damian Brady, University of Maine School of Marine Science: Yeah, that's a good question. I don't know. I don't think I could answer that question. I don't know the particulars about the cable. Just to go back to the gentleman's comment from before, I think everyone's asking that question. Where is this headed? I was at the Fishermen's Forum and that was the number one question. There is no problem with putting out a test turbine off Monhegan. There is slightly less problem with Statoil's venture, which would be four full-scale wind turbines off Boothbay that Amanda brought up. But what happens when we start putting out a lot more wind turbines? And I think that the questions are fair. How much exclusion is there going to be at full capacity in the Gulf of Maine and is that going to be economically viable compared to fossil fuels which are also subsidized. So I think the economics are not easy. It's very dependent even on macroeconomic forces that are beyond the control of some of these things. But I do think that continuing to pursue alternative energies like this is probably still the way to go. And I think Ken Fletcher, who was there from the governor's office at the Fishermen's Forum, and he was saying and I agree that we're going to start really small and we're going to start and go really slowly. And I think that's been the case. I mean, we've been working on this for at least four years in terms of Deep Sea Wind. We don't have a wind turbine in the water. Statoil will continue to do an environmental assessment of their site, which is still a pilot project. So I don't see anything full scale in the works so far. So I think now is still a perfect opportunity to come in and voice your concerns and voice the types of mitigation you'd like to see happening.

Moderator: Thank you, Damian. Mike?

Mike Dassatt, Fisherman, Penobscot Bay: Yes, Mike Dassatt from Belfast, Maine. Kenny, you guys could send down Red Green with his duct tape. He could probably fix it.

Laughter

Mike Dassatt, Fisherman, Penobscot Bay: But on a serious note, as a rule, the fishermen have become real skeptical on a lot of things and, let's face it, we have really good reason to. My comment I'm going to make now is also a question. Dana hit on a subject that's... When you're dealing with a commodity that has speculators involved and is a public commodity that can be bought and sold to the highest price, it's very hard for me to believe, you know, even after this project, okay, you say that during the project, I believe Amanda said that that's committed to the State of Maine; but once this gets going full tilt, what's going to happen? I know, one as a Maine fisherman and, two as a Maine taxpayer, I surely ain't going to live long enough to see any benefit from this. But

that doesn't mean I want to deny the next generation. But this is something that is huge, beyond what I can even fathom how big it would have to be and how long it would take. So basically I don't believe there are any guarantees, just like the natural gas pipeline they've talked about building across Maine from Nova Scotia to Quebec. Now they're trying to get the State of Maine to build basically an interstate to go across and they can run the pipeline with the interstate. Where I fish, we are in discussions now with the Town of Searsport bringing in a natural gas ship. So, we are getting hit from every different direction. On one side, we've got people saying we have to save fuel, we'll go to wind. We have the whale issues. To me, it's one of those situations that no matter where you look, everybody wants to do something but nobody wants it in their backyard. So I know it's a tough situation for you guys but it seems like the ocean has become the final frontier. And, for those of us who make a living there, let's face it we've been in on the deals and they say, "oh, it won't happened," and nine times out of ten, we've come up on the losing end.

Moderator: Thank you, Mike. We're going to take this time to take a little break, a ten-minute break. During that time, Damian's slide presentation is going to be shown and so I hope you'll find time to take a look at that, get some of the good things that are out there to refresh you, and we'll come back. And we can come back to this issue again and any other issue that you wish to approach. That's it for right now.

BREAK

TOWN MEETING RESUMES

Moderator: Thank you. Now we're going to get started. This is an open time of discussion and you may approach any subject you wish. We were in the midst of a discussion regarding offshore wind power when we broke and Damian is at the microphone again if you have specific questions to follow up and Amanda is right back there close by if we need to call on the heavy-duty expertise. And the other thing is that we found Damian's presentation on the screen. If he wishes to, he can refer to that in answering any of your questions. But the floor is open and we're ready for any of you to approach. Yes? There's your mic right next to you.

Dennis Warren, Fisherman, Vinalhaven, Maine: I never heard anybody say anything about the ice throw. We've got three on Vinalhaven now and you can't get too close to them. I never heard you mention the ice throw on them.

Damian Brady, University of Maine School of Marine Science: Ice throw from the turbine blade? Oh really? I have not heard about that myself.

Dennis Warren, Fisherman, Vinalhaven, Maine: Yeah, we didn't hear it until they got up. And now they've had to put a barrier around so close so that nobody can get near them. I can't remember but it might be over half a mile.

Damian Brady, University of Maine School of Marine Science: That it could throw? Ice gets on it and then... Interesting.

Dennis Warren, Fisherman, Vinalhaven, Maine: And the cable. We've got a cable that runs from Glen Cove, Rockport out to Northhaven and then over to Vinalhaven. And when it breaks, we're out of power for two to three days. The prop picks it up. It used to cost around \$30,000 dollars to fix it and it's only going seven or eight miles, you're not talking... And you've got to have good weather for them to pick it up. If you don't it might be a week.

Damian Brady, University of Maine School of Marine Science: To be out of power. Yeah, I'm definitely... I'll talk about ice throw. We typically talk about the noise issue and we typically worry about shadow flicker but I hadn't heard about ice throw. And obviously that would be, you know, that could still be an issue at sea depending on how close you get to it. So I'll bring that up to Deep Sea Wind and to Statoil.

Moderator: Thank you, Damian. Thank you. This, again, underlines the need for us to be involved in these discussions and I know you invite this.

Damian Brady, University of Maine School of Marine Science: That's a great point.

Moderator: And to get the presence on the groups that are studying it and working it, the presence of your perspective as fishermen, is exceedingly important. Other questions? And remember you can roam anywhere with your questions. Yes, Sheila.

Sheila Dassatt, Executive Director of the Downeast Lobstermen's Association: Thank you. I'm Sheila Dassatt, Downeast Lobstermen's Association. This subject here, one thing Mike brought up is that we are, in Belfast and Searsport also, being ... the LPG terminal and the LPG tankers. And, if you go through Route 1 in that area now you have a mixture of "thanks but no tank". And we have been involved with the meetings at the terminal and the one thing that I would like to just ask about is, with the LPG tankers and the fisherman, a lot of things that haven't been put out there is that there is a barrier of how close you can get. We're going to have to stop fishing for the day that the tankers come through. We can't get close to them. There is going to be an area of seven miles, is it? A seven-mile area. And we're not against the tankers, we feel we can work with them because we've worked with the terminals now for years, all of my life. My dad was a tugboat captain. But, will this same sort of security come in with the wind turbines once everything is put in place, will there be a security mileage area around them?

Damian Brady, University of Maine School of Marine Science: Yeah, I spoke a little bit before that there definitely will be exclusion zones. They will be nowhere near seven miles though. I think the total area of the exclusion zones are something like 600 meters so 1200 feet from the wind turbine itself, from the anchorage of the wind turbine. So there will be much, much less than the natural gas shipping anyway.

Moderator: But that, of course, is for one. What if you have 100 of them? It would be different. Bill?

Bill Adler, Massachusetts Lobstermen's Association: That was my question. Bill Adler. That was my question about that. And we have one of these big wind turbines they just put up in the Town of Scituate along the coast. And they're huge. And I said, "What is that going to power? The town?" They go, "No the sewer plant and the municipal building." So one of them powered the municipal buildings in one town plus the sewer plant, and that's one turbine. They said at 3.6 and the new ones are like 6 or could be 6 megawatts. So, you know, back down south to the Cape again, I did suggest that if they really wanted to put them, if they like putting cables in water, they could put them on Nomans, which is an uninhabited island south of Martha's Vineyard. And they said they can't put them there. I said, "Well, it wouldn't affect any fishermen except for the cable issue." They said, "No, the birds are there."

Moderator: There you go. Now you know what's important.

Bill Adler, Massachusetts Lobstermen's Association: The birds are there and, of course, it could blow up because it was a bombing site during the war, for their test bombing, and they were afraid to put something up there where there might be a bomb. So this is what we're up against. Thank you.

Moderator: Thank you, Bill. Right back here. I can't see... Oh Laura.

Laura Ludwig, Consultant: It's Laura Ludwig, again. A question for some of the Canadian folks here. I understand there's a tidal turbine in Minas Basin and I wondered if anybody has experienced any impacts from the, it's not a wind power machine, it's a tide machine I believe. Can anyone from Canada comment on the impacts to fisheries? I know they had to do a bunch of economic assessments before putting it in place, including studying the migration habits of lobsters so I'm wondering if anybody's got anything to say from Canada on the Minas Basin rig.

Moderator: Any comments on that from the Canadian side? Charlie?

Charlie McGeoghegan, Fisherman, Prince Edward Island and Provincial MLA: Being from Prince Edward Island, I don't know a lot about it.

Moderator: What's your name, Charlie?

Charlie McGeoghegan, Fisherman, Prince Edward Island and Provincial MLA: Charlie McGeoghegan, Prince Edward Island. It was in the Bay of Fundy that they tried two of these. Lawrence would probably know more about this but they put them in for a short time and then they had to take them out. The blades were coming apart or something weren't they, Lawrence? Yeah, they had technical difficulties.

Moderator: Lawrence, let's get that on the, what you just said, on the transcript.

Lawrence Cook, Grand Manan Fishermen's Association, Canada: The turbines shattered on the deep water turbine that they tried, but they are trying to advance the technology. I mean, the project isn't necessarily dead just because it fell apart the first time. You know, there's a tremendous potential for power there but they have a lot of trouble trying to harness it.

Moderator: Thank you. Charlie?

Charlie McGeoghegan, Fisherman, Prince Edward Island and Provincial MLA: Yeah, on an unrelated issue, in Prince Edward Island on the South side where the Confederation Bridge was built back, it started in 1994 and finished in 1997, it's a ten-mile bridge. It's the longest bridge in the world over ice-covered waters. And I was pretty young at the time but my father fought that tooth and nail and got sued by the federal government three times and blocked off the ferries and was arrested, you name it. It got done and the ferry workers helped a lot with that but, in the end, regardless of how much -- and I know Gary Parsons here from New Brunswick and his fishing buddies were on the same path to try to stop the building of that bridge due to the impacts on fishing -- in the end, the government did what they were going to do and they built it. And the highest recorded catches of lobster on Prince Edward Island anywhere on Prince Edward Island on both North and South side was right there where the bridge is, 50,000 to 70,000 pounds. And, during construction and after, even until now (and that was finished in 1997 so quite a while, 15 years ago) it went to 2500 pounds for the season and it slowly regained to about 12,000 pounds right now 15 years after the fact. The thing that we probably dropped the ball on was compensation; because at the time, of course, the scientists (and they had lots of them that were behind the building of the bridge) the builders had deep pockets and they could hire scientists that had lots of initials before their name that would tell them anything that they wanted to know or wanted to hear -- and they said it wouldn't affect anything. Of course, being fishermen, we were skeptical and we had our own thoughts after fishing that area our whole lives what the effects might be. It basically turned the whole Northumberland Strait into a mud puddle during the whole four years of construction and then another four or five years after the fact -- and it devastated the fishery. There are a lot of guys who went out of business because of it. The only guys who got compensated were the guys who fished about a mile on either side of the bridge, which there were only about a dozen of them on the Prince Edward Island side and maybe 20 on the New Brunswick side -- and it was like \$10,000 compensation. It was absolutely ridiculous to go from 50,000 to 70,000 pounds of lobster per season in a 2-month season to 2,500 pounds. So, if I have to say anything here on a project like this, and I'm not here to say the project is the same kind of thing because it's not, but make sure you get a good lawyer and make sure that there's compensation there; because, if the government decides to do it, they're going to do it. But make sure that you have all the stop-gaps in place that you're going to keep getting a check at the end of the day if your suspicions are right and if this does happen. Now, if their scientists are right and it's not going to hurt anything, well you've got nothing to lose. But if they happen to be wrong which they were in our case, this way you'll be

compensated. Make sure you do your homework and make sure you've got all your Ts crossed and your Is dotted on that. Thank you.

Moderator: Thank you, Charlie. Further questions, comments? This is wide open. Any direction you wish to go. Yes.

Dr. Shawn Robinson, Department of Fisheries and Oceans: Shawn Robinson from the biological station in St. Andrews. Just following up on that lady's question about the turbine. I don't really have a whole lot of information on it but there is a turbine, a tidal turbine, in the Annapolis Basin. That's in the Bay of Fundy just near Digby. And it's been running for a number of decades now and produces power. They've done some studies although I can't tell you any information from it but I know that they've looked at the passage of fish for example through the turbines and looked to see how changes in pressure and whatnot would affect them and there is information out there. I'm sorry I can't give you any right now but there is information. The stuff that Lawrence was talking about with regard to the turbines, those are new turbines that they're putting out. They're sort of like, there are a number of different forms but they're being used or tested out in some of the high tidal energy areas in the Bay of Fundy up near the Northern end of it and some off St. John. There are different designs like I say, and some have had problems with the blades as Lawrence mentioned.

Moderator: Thank you very much, Shawn. Also, I think there's been some work with that around Eastport and the Cobscook Bay Resource Center. Will Hopkins, might be a source of information on this as well. Yes, Bruce?

Bruce Fernald, Fisherman, Cranberry Island: Bruce Fernald, Cranberry Island. We don't want coal-powered plants. We don't want nuclear plants. We can't dam our rivers. Where are we going to get power from, you know? Everything is getting dirtier and dirtier... and global warming. If something like this comes along so that it can make enough power and they can get the cables properly buried, we can have a marine protected area off the coast, it might take the pressure off us with the whales. I see it as maybe a win-win situation. But things have got to come right and, like Charlie said, we have to have our act together. But it just seems to me that something like this that's clean and we're not going to be polluting the environment, it might just be the thing of the future.

Moderator: Alright. Turn around Jean. Jon?

Jon Carter, Lobsterman, Bar Harbor: Jon Carter. I just liked what they had to say about the tidal and I know you said there was something going on in Eastport but maybe Patrice can speak to this. I thought when we did our rope thing with the sinking ground lines we put these things on our ropes and I believe that they said there was always a current on bottom just about everywhere.

Moderator: Just a second and we'll get a mic to you, Patrice.

Jon Carter, Lobsterman, Bar Harbor: And I just thought that maybe they wouldn't necessarily have to do something like that in just a heavy tidal area, that it actually would be something that could work about anywhere. And it wouldn't be bothersome to people to look at. And, if it would fit in, it seems like a better way than having these turbines sticking up in the air.

Moderator: Laura, did you want to speak to that?

Laura Ludwig, Consultant: To the extent I can. Jon, you might want to be careful what you wish for. I know, I just was thinking about the bottom that we did that investigation on was really prime lobster grounds off Jonesport, about 25 miles offshore. And it showed that there was never any less than a half a knot of current at about 6 feet off bottom. So that was over six weeks or whatever we were measuring. So there is a heck of a lot of current in a lot of the Gulf of Maine particularly Downeast as you approach the Grand Manan Channel, etc, but those turbines have specific requirements which I'm not well-versed on but I think they need upward of 4 knots or something like that.

Moderator: Yes, over here. Yes?

Richard Nelson, Lobsterman, Friendship, Maine: Richard Nelson from Friendship. Maybe Damian knows something about it but I recall reading an article that someone had tried combining floating platform wind with tidal energy. In other words, one unit that is working both above water and below water. That might be something to think about. I don't know if Damian has seen that or read that. I don't know any more than just seeing it in an article.

Moderator: Keep on thinking. Keep on thinking. Yes, over here.

John Nicolai, Lulu, Inc, Bar Harbor: John Nicolai from Bar Harbor. A lot of times at these meetings you see proponents or people that are in favor of wind power that have the technical knowledge, but what we don't see are people that have technical knowledge that are opposing these kinds of projects. And I'm thinking of one person like Professor Dick Hill. He writes for the Ellsworth American, articles on all kinds of alternative power and their virtues or their drawbacks. I think it would be really useful to have people like Professor Hill come to these meetings and he would be able to answer right off the cuff any of the concerns that fishermen may have about power or the economic feasibility of using these alternative power sources. So I think maybe we should reach out to people like Professor Dick Hill and have him present when we have these kinds of discussions.

Moderator: Thank you, John. I think that I must remind you that we're going to be breaking up pretty soon into groups and we're thinking about the future and what we need to do and all of these ideas as to who we might involve and why and what questions we ought to address should be a part of those discussions. Did I see another hand here? Yes, Steve?

Steve Train, Fisherman, Casco Bay: Steve Train, Long Island. With wind power or with anything, we are part of the original industry in both the Maritimes and the Gulf of Maine. I mean, we were the first industry. Commercial fishing is why people came. Anything else that goes on is us sharing the ocean. We don't own it but we were there first and we've shared it with the oil industry, we've shared it with the marinas, we've shared it with sport fishermen, we've shared it with everything. Now we're dealing with marine spatial planning and I think it's being pushed primarily by the wind industry because they want... they're going to take up space. Most everything else travelled through the same way we do. They're going to take up space. I'm not usually a cynic and I'm pro wind as an alternative energy but this scares the hell out of me because I don't know... You know, we're already limited to traps, we're already limited to days, we're already limited to quota; and as you take more away, you know every time we turn around there's a reason why we need another regulation. And, if we lose bottom and it looks like our catch is down, then that might be another regulation. I mean, I'm pro wind but this scares the hell out of me.

Moderator: Pass it right up to Mike, please.

Mike Dassatt, Fisherman, Penobscot Bay: Mike Dassatt, Belfast. Another thing to add to what Steve was just saying. We saw footage yesterday talking about the whale movements and the patterns and closure areas that could come into play as far as Jordon Basin, Jeffreys Ledge, possible off Cashes and other places because of the right whale situation. And just to add to what Steve was saying, the more space that gets either closed or 'reserved for' just takes more space and makes us less apt to be able to move around. And now all of a sudden you're going to start compacting the fishermen into areas where, you know, we have enough problems now in certain areas with overlapping in zones and things like that. So it just compounds our end of it even more. And, of course, I've got to throw this out because I forgot to say it yesterday -- but probably one of the biggest things that makes me kind of chuckle in a sense, but it doesn't but I'm going to say it chuckled me when I heard it, was when you have a research vessel going to a sanctuary and they're doing a job of counting whales and they run into one with a boat and you never hear a word about it but then all of a sudden it was all dismissed. It was a navigational error. A boat that was doing 20 knots in a 12-knot area. If that was a lobsterman, they'd have him hanging from a tree somewhere. So, I'm going to leave it at that. The fairness scale is really getting tipped. We've got to be really careful on that one as well.

Moderator: Thank you, Mike. Next comment. In just a moment, I'm going to ask... Oh, here we go. Go ahead.

Richard Nelson, Fisherman, Friendship, Maine: Richard Nelson again. Just a little note on Steve's comment. I was just in Rhode Island at an NROC meeting, which was meeting toward the marine spatial planning. And I've been giving a lot of thought to these questions of "you don't own the ocean". That's the big question, as Steve just mentioned, to fishermen. We don't own the ocean. But I can't help but think that

wouldn't we own the ocean if we had been given that chance 200 years ago or 300 years ago? If we had this leasing business then that these original families and original people who were fishing and not only fishing but the people who ran the shipping in those days, the big shipping families of Maine, the Sewell's and people like that? They would own the ocean if given the same practical chances of the people who owned the land and worked on the land and whose families owned the land and owned the businesses on land. So, it's kind of unfair to start the game now and say, oh, now we have to start to lease the ocean when people have been working out there for these 400 years without that opportunity of ownership and leasing previously.

Moderator: Klaus?

Klaus Sonnenberg, Great Manan Fishermen's Association: Klaus Sonnenberg, Grand Manan. In my other role in terms of operating aircraft, I notice that we've got huge, huge wind farms in many areas now both in Canada and in the US. And invariably, they're not in the oceans or along the ocean or indeed anywhere where there's land that is inhabited; but in areas that are totally vacated, huge ridges in the middle of the wilderness. And it seems to me that that's the appropriate place for them. Without visiting places like I do, it's pretty hard to understand the massive scale that some of these wind farms are at, and the land mass that they occupy. But as long as they're in these isolated areas, they seem to be quite acceptable. Yes, it's something for some company to say well, I want a piece of the pie, and get some developmental dollars but I can't help thinking that at the end of the day it's going to cost ten times to place a wind farm out on some floating rafts or in this marine environment than what it's costing inland where you can bring a semi truck up to it or you can drive up to it and squeak some oil on a bearing any day you want except maybe in the winter. You might need a snowmobile. Is some of this talk just talk? Because the money is there to explore this kind of energy no matter where even though it's not economically as feasible as it would be somewhere else. And I think that was brought up earlier by Dana. If there's lots of federal or provincial or state funds available, people will explore these avenues. But if it's facing a wind farm out along some lobster fisheries areas which, you know, I'm not an engineer but I would think it would be quite expensive versus placing them on an isolated mountain ridge -- I think hands down the cost is going to be quite different. So I just wonder, is this why this is even being entertained -- because there is money to do it?

Moderator: Thank you, Klaus. Some response or comment?

Damian Brady, University of Maine School of Marine Science: I can't speak for Statoil or some of the other projects going on but I will say Statoil is a private company coming in and they've done their own economic analysis of this type of project. And typically they don't do it unless it will be economically viable. And part of the economics of it is the transmission of the power... that most people live by the coast and so you can transmit the power probably easier than some of the more inaccessible places that you're referencing.

Moderator: Thank you. Jon?

Jon Carter, Lobsterman, Bar Harbor: Jon Carter. I got to interject a little humor into this. I'd like to suggest that you go north of Prince Edward Island and set these up. Because I was just told the other day they can drive out on the ice in the winter and fish their nets -- so, if you've got to maintain these things, you haven't got to go by boat. You can drive out on this ice in a truck in the winter and you can maintain them. So I just think you ought to be looking north of Prince Edward Island somewhere.

Damian Brady, University of Maine School of Marine Science: Yeah, I'll bring that up.

Moderator: It might slow down the global warming so that the ice stays there. Yes, Klaus.

Klaus Sonnenberg, Great Manan Fishermen's Association: Can I just add to that comment because I simply can't agree with you. I mean we have huge transmission lines going between our two countries and to join up to a transmission line in the mountains is probably a hell of a lot cheaper than bringing them ashore. I just don't agree with that comment at all.

Damian Brady, University of Maine School of Marine Science: Yeah, and I don't profess to be an expert in that at all. The only thing I guess, it will be interesting as this thing develops as to how much private capital comes into it versus, as you were saying, how much is state and federally funded.

Moderator: Mike?

Mike Dassatt, Fisherman, Penobscot Bay: Mike Dassatt again from Belfast. One of these things got me thinking when that little conversation just came up is, one of the big pushes that is being said as well is that the local economic impact of providing jobs, you know, which yes, it will, it would interject things into the boat industry for specialized equipment to attend to these things offshore. So I know there has been a lot of economic development studies done into what kind of money comes back into the support factor to all of this. But I still think that like Klaus was just saying, a lot of people, I mean you take the Mars Hill project, the Brown Mountain project and these other ones, you know the cost of... Being in Searsport and a lot of the blades and the motors were coming in through there. We saw them every day, the trucks and the time of the year that they were running them through and a lot of these blades were also headed to other states. I still, I'd rather see more development into building these items here, making the generators, making the blades, and things like that and keeping it on land. For me, I can't understand the concept, like Klaus is saying that, we're going out on the salt water. You're putting them in a corrosive environment, you're going to be burying a cable in a corrosive environment with obvious sea conditions. Personally, we've heard the comments and the people for and against. No matter what comes up, they want the dams closed, they want the coal plants shut down. They don't want you to burn the trash. I mean, there is always somebody who's going to be complaining. The only thing I've learned is that, when it

comes to the environmentalists, you're not going to please them. They all scream for wind power and then when you go to build them on a mountain they say, oh, you're going to upset the deer. I hauled these generators at one time out to Iowa and they were screaming about it was going to upset the cows. And the cows were literally standing under these things so I never saw where that could impact an animal or something. But here again, it's maybe not so much the sea environment that it's going to impact as far as the mammals and stuff like that, but it's going to impact where you put us. And I just can't see how ten times the cost on the water comes down to putting it on a mountainside other than the fact that people just don't want it in their back yard.

Moderator: I'm wondering, Damian, would it be helpful, I've seen your slides, of course, would it be helpful to see those slides. Does that give us information that would be helpful for this conversation or have we pretty well covered it?

Damian Brady, University of Maine School of Marine Science: I think we've pretty well covered it. I think this conversation is great. It's great for me to hear it and just to come back to the point that you just made, and I think if Ken Fletcher was here from the governor's office he would say the same thing. This is why it's the R & D phase of this and these are why these are pilot projects and not full-scale commercial endeavors. I mean, I think that they're going to do the cost-benefit analysis of these initial turbines and that may decide where these types of projects go. It may be unviable economically or environmentally and so, the key is that these are pilot projects and the point of doing the research is to see the viability of what you're saying, what the cost is compared to land-based wind as well.

Moderator: Elliott, did you have something you wanted to say? Okay, in a minute. That's good.

Dana Rice, DB Rice Fisheries: Dana Rice. Just one more thing. I think the gentleman down here is getting the message loud and clear but to follow up on Jon's point of view, maybe to try to inject a little humor in it. I come from down on the Schoodic Peninsula which is just across the bay like five miles across the bay from Acadia National Park. My suggestion is, if you can get the environmental people to support putting one of these windmills on top of Cadillac Mountain, then I'll support one in Frenchmen's Bay. Thank you.

Laughter and applause

Moderator: Alrighty. Yes, another comment down here, Jean. Okay, you're just giving a thumbs up on that. Alright. Very good. Okay, just an interesting comment. I, in the last year or so, have been working with the commercial fishermen of Belize down in Central America and this is the first time they've ever been organized. They've never really gotten together before and one of the things that we've run into as we deal with the issues down there and one of the major issues is the imposition of marine protected areas by NGOs. You know, that's just what happens and they're trying to figure out how they can be more effectively involved. And our new organization has decided that we will

work in ... I don't want to say cooperation... collaboration with the NGOs and with the scientists in the development of these. But the key issue when you get down to it is that there is a committee that is making decisions. Unless you have enough commercial fishermen participating in the voting actions of that committee, it's going to go against you. So a key factor of this is saying, you know, we're glad to participate, we'll come to your meetings, we'll share what information we have, we'll tell you what's good to protect, what not to protect; but, when it comes down to it, we want our vote to count and to make a difference. Now, the invitation is clear that they want the fishermen involved. We want to make sure we're involved enough to make a difference. I think that would be a fair statement. Keep at it and don't let go your interest in these issues. We popped right up yesterday in regard to some of the protected areas and aquaculture, etc. How do we find ourselves effectively involved as fishermen? Yes? Wait a second, we've got a mic coming to you.

John Nicolai, Lulu, Inc, Bar Harbor: John Nicolai from Bar Harbor. This is such a great format. I had a vision of something like this being televised either maybe using Maine Public Broadcasting if they're still in business here. But actually televising this and having a phone bank up and down the coast where fishermen can call in their concerns and it could be on the air and we'd be able to touch a bigger audience and maybe get people more involved. And it would be a great means to be able to advertise meetings like this to people who aren't involved usually and maybe you could raise some interest in being part of the discussion but televising it maybe once or twice a year wouldn't be a bad idea with a phone bank.

Moderator: Don't lose that when we get into our next session. Further comments? Yes? Amanda.

Amanda Labelle, Island Institute: Amanda Labelle from the Island Institute. I just wanted to add on this theme of being not just involved but how to be most effectively involved -- and just kind of encourage a lot of creative thinking and proactive thinking about what would be useful and beneficial to the industry and learning from other examples of folks that have engaged in relationships with developers. I know we've been in touch with folks on Block Island in Rhode Island that have worked closely with an offshore developer there in trying to advocate strongly for their interests in having better environmental understanding of the surroundings around their islands, and how they can play a stronger role in seeking out who the experts would be that would be feeding into environmental studies, and having more publically-available information resulting from those studies. So I would just encourage conversation and a lot of thoughtful thinking to be redundant about what would be in your interest going forward. If there is going to be a lot of investment in looking into these technologies, where can industry draw on that.

Moderator: Thank you, Amanda. Yes, Charlie.

Charlie McGeoghegan, Fisherman, Prince Edward Island and Provincial MLA: Charlie McGeoghegan, Prince Edward Island. Just to kind of further on how to be engaged and effectively engaged. Being a politician, I know how kind of that end of the

thing works. And, if you want to get a politician's attention, if you have 20 phone calls or letters throughout the geographical area that he represents on the same specific issue, it's a huge issue. But if you only get one or two, why that's just a couple of people that are making noise. If you get 20 and it's widespread throughout the district, then he knows it's a problem and he needs to pay attention. And, if you've got the other surrounding politicians, Senators or congressmen, and you do the same thing with them, then they bring that to caucus and, all of a sudden, you have their attention. So that's kind of the inside way to get their attention and that should be pretty easy to do with your fishing organizations. I know the fishermen on Prince Edward Island have that system figured out pretty good so it's not that hard to do.

Damian Brady, University of Maine School of Marine Science: And Charlie, just to follow up, your elected representatives, I know Bruce MacDonald, for instance in Boothbay is on BOEM's ocean energy task force so they can even transmit your concerns to BOEM and on the federal level.

Charlie McGeoghegan, Fisherman, Prince Edward Island and Provincial MLA: That's good, too. Getting back to the technical side of the thing, Prince Edward Island has more wind power than any other province in Canada, and 30% of our energy comes from wind right now. All of it is on land. We have the original wind farms in North Cape up near Tignish. Then we have another wind farm at East Point which is the eastern tip. There are 12 of those Vestas V90 windmills there which are, I think, about 1.5 megawatts each and they're planning on putting a few more up there. There are not that many houses that are close by. North Cape is something the same. There are only a handful of houses in that particular area. West Point there was a private company that put a big wind farm in there, about 55 of those big windmills there about two years ago. I can't remember the name of the company but, anyway, that was in an uninhabited, for the most part, area too. All of these areas, being as Prince Edward Island is an island, they're all pretty close to the water, within a half a mile or so of the water. The big thing on the government side of things was -- being close to houses was a big concern and the electrical field that comes off the power lines and power lines being close to houses. Those are the biggest topics that came up at that time. As far as offshore, we don't have any. And I'm not an engineer either but I don't know if they have the technology worked out and maybe they do on doing them offshore. But, if you look at the Ocean Ranger which was the biggest floating oil rig in the world off Newfoundland -- and they said that it basically couldn't be moved by the weather and it sank and every man on board perished at that time during that big storm. So I think that was about 20 years ago. So if you have that, I don't know how they'd anchor them down or how they'd stay upright or anything like that but I can tell you, in the Atlantic when things get nasty, it can move pretty near anything. But again, maybe they have all the bugs worked out of it. I don't know.

Damian Brady, University of Maine School of Marine Science: Yeah, and I don't think they'll ever have the bugs worked out until they try it and put these out there. And there has only been one, at least, case that I know of, of offshore wind energy being deployed. That was in Norway and that is still ongoing. And, you know, they do a lot of

modeling of test turbines in large wave wind tanks trying to simulate the perfect storm in terms of some of the anchorage. But, as you said, until you're actually putting a unit out there, you're not going to know.

Moderator: Thank you. Let me quickly again run through the various things that we've been dealing with yesterday and today. Starting out with bait safety and then with marine debris, the right whale take-reduction team work, and coexisting with aquaculture and now offshore energy. All of these are valid points for you to raise at this time and as we go into the next session. There was also the recommendation that we should not be less mindful of climate change and water quality and traceability and market challenges and food safety that have been a part of our discussions in the past, and will be in the future. So we're going to take a few more minutes if there is any discussion and then we're going to move right into breaking up into smaller groups. Elliott's going to talk with us for a second here and we'll take it from there. Go ahead, Elliott.

Elliott Thomas, Maine Lobstermen's Association: Yes. Elliott Thomas. I just would like to thank the moderator for bringing up two words that have been said in every single Lobstermen's Town Meeting. Water quality. I'm glad to see they're going to make it into this year's transcript.

Moderator: Thank you. All right. Other comments. Okay. What I'm going to do at this time is to ask us to divide into probably four different groups. And the people that are over here and you three here, you can go over to that group. Then we'll take the center group here and grab the back-of-the-line people there and put you together into one group. You'll meet together here, you'll meet together there. I'm going to take the first two rows here and put you over at the side and then there'll be another group here and you'll meet there. This group will meet over at the far side. We want you to think about action points for the Lobster Institute and for our future meetings and ideas that you feel are important for the lobster industry to attend to. It doesn't need to be something that necessarily comes up at the Town Meetings. It can be something that you really want the Lobster Institute to pay attention to and do some work on and then come back at some point with responses. But this is your opportunity to help set the course for these meetings and for the Lobster Institute so if you can just round up where you are and migrate over there, I've got some paper and pencils. I want each group to choose a transcriber and bring back notes that will then be presented to the group.

DISCUSSION RESUMES

Moderator: Okay let's begin to end our conversations and come back and we'll begin our concluding aspects of this Town Meeting. Come back to where we can focus and collect the various points of action that we've come up with and make good plans for next year. I will be asking the scribe of each group to report what your points of action are. Alright, if we can get our seats, we'll get started and get the reports from all four groups. We'll go from your right to left and start with group number one which was over here and I'm not too sure who your scribe was. Ah, there we go. Sheila Dassatt. Okay. If we can get a mic to you...

Sheila Dassatt, Executive Director of the Downeast Lobstermen's Association: We had some pretty good topics in our discussion group. We wrote down points of discussion for next year's Town Meeting. The first one that came up was high-speed haulers compared with slower-speed haulers, deep-water hauling compared to the shallow, which is worse and which is better for the quality of the lobster. Quality of the lobster versus soft shell and hard shell. We talked about how many feet per minute with a hauler and all of these topics that are tied in with high-speed hauling and the quality and health of the lobster. Some of the sub-subjects were how they're handled on the boat, water circulation versus ice, shore-side handling. If we handle the lobster better and the product is more quality, will we get a better price for our product versus the fella that could be hauling right beside that doesn't do it. Is the bacteria a problem when they're hauled up too fast? These are all sub-topics. We discussed lobster tank aeration and let's see, the evaluation cost, regulations. Well, this comes under the next topic that was written down for next year. The economic effects to the lobster industry for aspects of social-environmental regulations. That means the breakdown of what we have to deal with in the lobster industry: regulations, species issues, operating fees, fixed costs, the entire package of what the lobstermen have to deal with. And it was said not to really push for the carbon footprint but to just go over all of the aspects that we have to deal with and still be at the bottom of the ladder. We are actually the only industry where we are told what we are going to be paid. That was another quote. And the Gulf of Maine did this study so it might be possible to ask them to come again and present this for this topic. The other topic for next year would be pesticides and the effects on lobster. Lawrence has a person that would be a good one maybe that he said he could give us the name for for next year that could give us the answers to those questions; and this would take in the pesticides that people are using for their front lawns, fertilizers, everything that goes into the water. And just exactly what's been going on with the salmon issue, too. That's about it for us.

Moderator: Thank you. Thank you, Sheila. Okay, let's go to group number two and, if you can give us some specifics, that would be very helpful. Who was the scribe on group number two. Right back here. Okay, Klaus.

Klaus Sonnenberg, Great Manan Fishermen's Association: Jean, you took my note pad. It's on the back of my evaluation form. Group number two I think wanted to support the past work of the Institute in terms of its outreach. I think first and foremost, our group was very positive about the work that the Institute has done in terms of outreaching of information. Oh look at this. It's not that complicated is it? In terms of information, getting together this kind of a forum with Canada and the US and, in general, helping different segments of the industry communicate with each other. I think communication was the key there. In addition to that, there were some topics that we wanted to highlight. Some of them being the bait issue, the market issue. I think there was a discussion about the dissemination of information. Some groups like MLA are still putting out hard copies and have an internet system in place and maybe, you know, we'd like to see the Institute talk a little bit more about how that can be made more effective

with individuals. Jean, what did you do with that? Oh, I'm going to give the rest of this to my cohort.

Heidi Tourkistas: Hi, my name is Heidi Tourkistas. Another issue that came up but that was the same here is the quality versus quantity and how harvesters can get at the best quality versus quantity. Also a few years past, Michael brought a presentation that showed the different layers in the industry from harvesting to the end users and maybe the complications and the cost barriers and how that all works to better teach the harvesters of what we face as salespeople of this product so that we can all work together to create some sort of unity through all the layers to do a more effective job for the industry as a whole. That was most of what we talked about and just more effective communications for people who can't attend the meeting. Maybe using some newer electronic means, whether it's cell phones or something for people who can't leave the boat for instance but they want to have something to say effectively but you might have to look into some other options for communication that are more recent modes of communication.

Moderator: Okay, very good. Klaus, did you have another comment?

Klaus Sonnenberg, Great Manan Fishermen's Association: Jean Yeah, I was just going to tag team with Heidi here for a second because I do remember my last item on the sheet now and it had to do with the politics of the fishery, of cooking and eating and so on. I forget who it was that brought it up in our group but mentioned that he would like to see the Institute focus on the cooking and the presentation of lobsters where it's so intricate -- whether lobsters can be boiled or steamed or how they're treated and that he apparently learned a lot about, you know, how in Maine or in Grand Manan, we'll just toss some lobsters into a pot and steam them and I guess some people are more humane and boil them but, you know, I guess in Europe it's illegal to steam lobsters from what I understand. So maybe there can be some interest there in terms of the cooking side.

Moderator: Very good. Okay, group number three. Laura, are you on that?

Laura Ludwig, Consultant: Let's see. The first thing that came to our group was that we wanted to have fewer presentations and more time for discussion. Topic that our group would like in 2013: one priority was that there was such a great discussion today about the wind power. Wind power, that ought to be a conversation that continues and becomes more fleshed out by inviting more experts on both wind and tidal power because there is no denying that it's on the horizon and they want to have more input on that and more discussion. Another priority was bait availability and inviting a herring rep or other people who are associated with the herring fishery, because there's such a dependence on herring. Looking at the use of bait and how much bait it requires to catch a lobster. It would be great to have a rep from the Governor's office and other politicians in attendance so that maybe the priorities of the industry on both sides of the border are heard at that level. Chemicals in the water; was brought up on both sides of the pro and con today or yesterday with aquaculture versus, what was the other thing, oh use of chemicals in bait and pesticides for mosquitoes. So discussion about that would be good

given that we're going to have a lot more bugs in the future. And I think marketing trends over the last two decades ought to be kind of looked at and it kind of ties in with what this woman here was mentioning in terms of a more sophisticated means of looking at things -- using technology to get the word out and to share the information. So that was it. It was basically the wind and the tidal, the bait, marketing trends, and chemicals. We did talk, we talked about the idea of having Annie Tselikis do the presentation that she did at the Forum apparently which was basically on handling and that was something that Sheila's group talked about a lot but it was felt that it would be a great presentation but maybe there wouldn't be, in this format, it wouldn't be great for discussion or debate because it would be very informative but maybe it wouldn't... So anyway, the format was discussed whether that would be useful to have a huge discussion on handling where really it's just an informational piece, I guess. Oh yeah, tying in with the marketing was just a concern that we use a different format than maybe just this being present in the room and use the televising or the radio broadcasting of these kinds of discussions, so outreach to more than the people who are just in the room.

Moderator: Thank you, Laura. Let me suggest that Jean is now picking up all of the tickets and the pink reporting sheets and we're going to have a grand auction here at the end of this but we have one more group to hear from and that's group number four and there you are. Amanda.

Amanda Labelle, Island Institute: Alright. I think we have some repeats but we have some other things also. So we were talking about how to recruit a younger generation of fishermen to come to this meeting. What role this group can play and if it would benefit from more formal involvement of professional advocates or lawyers. Again, the idea of having the Governor or folks from the administration present to hear updates from and also to hear the discussion that's going on here. Again, the issue of looking at pollution levels. Who's responsible? What effect it has on marine species and the environment. Thinking about the cumulative environmental effects. Advocacy for maintenance of public ownership and access. One of the particular kind of maybe research questions that came out of the group was what is the socioeconomic effect of offshore wind energy on the lobster industry. There was some discussion of what we might be able to learn about marine protected areas. A discussion about the gray zone. One action item was to get an average age of lobster license holders across the coast as a point of discussion for each year. There was a question about whether there should be an attorney and/or a representative from the administration on the board of the Lobster Institute. And then a couple of other panel discussion possibilities. One was about processing, like an update. Where is it now? A question about how many lobsters the bottom can support and then, again, the question of pollution and the impacts of chemicals to lobsters.

Moderator: Thank you very much, Amanda. That concludes all four groups and we will turn these over to the Lobster Institute and Bob is right here to accept that. I have one more comment and that is that earlier I said that something special was going to be in place for this auction that's coming up next. Anybody who didn't get a prize that wants one, raise your hand, at last nights. Okay, we have a piece of cake for you back there, birthday cake, and you're a winner.

Laughter

Dr. Bob Bayer, Lobster Institute: Ted, you're not dismissed quite yet. Just a word of thanks for another job well done. A wonderful job of moderating. I don't know how you keep control of us but somehow you manage.

Moderator: They're not really as wild as they look.

Dr. Bob Bayer, Lobster Institute: A little gift for you.

Moderator: Oh! Well, thank you very much! Thank you!

Applause

Moderator: Capturing the Commons, Devising Institutions to Manage the Maine Lobster Industry by Jim Acheson. Thank you very much.

Applause

Dr. Bob Bayer, Lobster Institute: Okay, it's time to give away some stuff...

Kenny Drake, Fisherman, Prince Edward Island Fishermen's Association: I just wanted to say... I have one little word to say. I mentioned to Bob yesterday when I came across the border from Canada, the border guard asked me if I'd be taking anything back and we said no, we wouldn't but I think that's a lie. After being at a meeting like this, you couldn't help but go home with something that you took from this meeting so I don't know if I have to claim that or not.

Laughter.

Kenny Drake, Fisherman, Prince Edward Island Fishermen's Association: So anyway, on behalf of Sheila and I, we'd just like to say, Meeting Adjourned.

Applause

MEETING ADJOURNED

2012 Canadian/U.S. Lobstermen's Town Meeting

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