HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

Standing Committee on Fisheries and Oceans

FOPO • NUMBER 140 • 1st SESSION • 42nd PARLIAMENT

EVIDENCE

Wednesday, April 10, 2019

Chair

Mr. Ken McDonald

Standing Committee on Fisheries and Oceans

Wednesday, April 10, 2019

● (1530)

[*English*]

The Chair (Mr. Ken McDonald (Avalon, Lib.)): Before we get into the agenda items, I want to get one piece of business out of the way. Everybody has the budget for Bill S-203. Can we get approval to adopt that budget?

It is moved by Mr. Finnigan.

(Motion agreed to [*See Minutes of Proceedings*])

The Chair: Pursuant to Standing Order 108(2), we continue our study of the migration of lobster and snow crab in Atlantic Canada and the impact of changes to lobster carapace size.

We have a good many witnesses today, some by teleconference, some by video conference and one in person, with a lot of names up next to him but they're all either on the screen or on the phone.

Mr. Fitzpatrick, welcome. As you're an independent owner-operator fish harvester, you have lots of company, but they're just not here with you.

From the Coldwater Lobster Association we have Bernie Berry, President; and Heather Mulock, Manager. They're on teleconference.

From the Prince Edward Island Fishermen's Association, we have Bobby Jenkins, President; Pat O'Neill, Interim Executive Director; Melanie Giffin, Marine Biologist and Program Planner; and Laura Ramsay, Research and Liaison Officer.

From the Gulf of Maine Research Institute, we have Andrew Pershing, Chief Scientific Officer, by video conference.

From the Fisheries and Marine Institute of Memorial University of Newfoundland, by video conference, we have Arnault Le Bris. I believe he was here the other day. We got interrupted so often that we never actually had a meeting.

Welcome back again sir, even by video conference.

We'll start off with statements. We'll do the one by teleconference first.

I believe, Mr. Berry, you're going to do the statement. You have seven minutes or less.

Mr. Bernie Berry (President, Coldwater Lobster Association): Good afternoon and thank you for the opportunity to address the Standing Committee on Fisheries and Oceans on the subject of lobster movement.

As mentioned, my name Bernie Berry and I am President of the Coldwater Lobster Association.

I represent approximately 200 lobster harvesters throughout lobster fishing area 34, off southwest Nova Scotia. LFA 34 is the most lucrative lobster fishing area in Canada, with landings in the last five years averaging 55 million pounds per season. LFA 34 accounts for 40% of the maritime region landings and 25% of Canadian landings.

The Coldwater Lobster Association was established in 2014 to address some of the impending issues facing our industry in an effort to protect our fishery and our coastal communities for generations to come. One of our primary mandates is to oversee and conduct industry-supported scientific research initiatives. Much of our scientific work, including our lobster tagging program, which I'm about to discuss, is focused on collecting baseline datasets that could provide valuable insight into emerging trends that could impact our industry.

The inshore lobster fishery in Canada is regulated by effort controls, such as limited licence entry, pot limits, pot size, defined seasons, boat size, minimum carapace sizes, no berried female retention and window gauges in some LFAs. There's also an offshore lobster fishery that is managed by a quota system in which one company owns the entire quota.

Lobster movement has a significant importance to the lobster industry in understanding how environmental changes, such as rising water temperature, salinity levels, acidity, etc., can and have had an impact on the movement of a species. It is imperative that the movement of all sizes of lobsters be examined while our stock is healthy.

There must also be a focus on the movement and settlement of lobster larvae in different stages, and when and where they settle.

The shift in where lobsters are harvested in LFA 34 over the past 30 years is dramatic. In the 1970s and 1980s, 90% to 95% of lobsters caught were in 50 fathom and shoaler. In today's catch, 50% to 60% is harvested in 50 fathom and deeper. This is an important trend that is worth noting.

The Coldwater Lobster Association has initiated a lobster tagging program within lobster fishing areas 33 and 34 off southwest Nova Scotia for the past two years. The sample size of the program is 2,000 lobsters, both legal- and sublegal-sized lobsters. The recapture reporting for the tagged lobsters over the past two years has been approximately 18%, which is notable, as most tagging programs typically have an average recapture reporting of 10%. Coldwater Lobster is currently in the preliminary stages of reviewing the raw recapture data in an effort to determine broad outcomes and trends.

Coldwater Lobster also is a partner in a tagging program that will tag 12,000 sublegal-sized lobsters each year for the next three years. The lobsters are tagged using the standard T-bar streamer tag that is situated underneath the carapace into the meat. That will remain affixed to the animal for multiple moults.

Until recently, the last time a significant lobster tagging program was conducted in LFA 33 and 34 was in the late 1980s and early 1990s. The interest in lobster movement and growth has increased in recent years, which can be seen with other tagging programs that are currently under way. One tagging program in the Bay of Fundy is being conducted by a first nation from New Brunswick. Most recently, a tagging program is under way in U.S. waters by the Atlantic Offshore Lobstermen's Association.

Recent studies have shown that there's evidence that the centre of the biomass of most stocks in the Gulf of Maine has moved north and east by 70 miles in the last 10 to 15 years. One example is Maine lobster landings. A decade ago, the southern half of Maine landed the bulk of the catch. Now the majority of the catch is landed in northern Maine. Another example of this could be the southern portion of LFA 33 in Canadian waters, which has experienced a major jump in catches, particularly in deeper waters. This is in conjunction with the trend of warming water and the biomass of lobster looking for optimum water temperatures. There is also the example of the massive increase in catches in LFA 35 over the last 25 years.

While all of this is positive, there is some evidence that the warming water has had a detrimental effect on the southern extremities of the lobster stock.

● (1535)

Tracking lobster movement is critical in determining the change in lobster behaviour, primarily because of the warming water trend that we are seeing. The Gulf of Maine is the second-fastest warming body of water on earth. Determining where lobsters are moving, especially female lobsters, is critical. If female egg-bearing lobsters are going into deep water to release their eggs because the traditional areas, shoal water, have become too warm, then it is critical to track where the eggs and larvae are going. The direction of current and the strength of current in these new areas are different from those in the inshore grounds and could lead to a different dispersal range from what used to exist.

There are many questions that remain to be answered. Are lobsters moving in a different direction because of food or lack of food in certain areas or because of water temperature? Could lobsters be going to unfamiliar territory because of overcrowding in areas brought on by favourable environmental conditions that have led to 100% of lobster larvae surviving, which has led to the abundance of lobsters that we've seen over the last 20 years?

Browns Bank, LFA 40, has been closed to all lobster fishing for approximately 40 years because it was believed to be an offshore nursery for lobster. If lobster movement is tracked, we might be able to identify other areas that could be classified as potential lobster nurseries and treat them as safe havens, or closed areas, to help the biomass in future years if the stock comes under pressure from environmental changes.

Tracking lobster movement could lead to a more cost-efficient harvest of the species and also lead to a harvest of premium lobsters based on location and time of year harvested. As Coldwater Lobster data is developed, it could provide us a snapshot comparison with data collected approximately 25 years ago. Over time, it will show the difference in movements, such as how fast, how far and what direction the species is moving in.

Coldwater Lobster's an in-house biologist, along with one of our member fishermen who also has a long-standing career as a geologist, are currently working on interpreting the raw data collected and applying it to a GIS mapping platform for further analysis and interpretation.

This is a very important time for the industry and DFO to collaborate on science. Changes in the environment are happening at an unprecedented pace, and collectively, we must act now to better understand the changes that have happened and will continue to happen, for the health of the stock and the economic viability of the fishery and the communities it supports.

Again, thank you very much.

● (1540)

The Chair: Thank you, Mr. Berry.

We will now go to the Prince Edward Island Fishermen's Association, for seven minutes or less, please.

Mr. Pat O'Neill (Interim Executive Director, Prince Edward Island Fishermen's Association): Thank you, once again, to the Standing Committee on Fisheries and Oceans for the opportunity for the Prince Edward Island Fishermen's Association to present on the important topic of migration of lobster and snow crab in Atlantic Canada and the impact of changes to lobster carapace size.

My name is Pat O'Neill and I'm the Interim Executive Director of the PEIFA. Today I'm joined by our marine biologist and program planner, Melanie Giffin; our research and liaison officer, Laura Ramsay; and the president of the P.E.I. Fishermen's Association, Bobby Jenkins, who has more than 40 years of experience in the fishery.

The lobster industry is the most important fishery on P.E.I., and each of these witnesses plays a key role in the management, coordination and science of the species within the surrounding lobster fishing areas. The P.E.I. lobster fishery contributes to over 30% of the total Canadian lobster harvest and is one of the main economic drivers on P.E.I., with over 9,000 industry-related jobs and a direct landed value of $250 million annually.

Landings in 2018 increased in each lobster fishing area, with 19.3 million pounds in LFA 24, 11 million pounds in LFA 26A and 8.3 million pounds in LFA 25, equalling a 2%, a 12% and a 10% increase in landings respectively.

Fish harvesters on P.E.I. participate in a variety of other fisheries, including crab, tuna, small pelagics estuarial fish, shellfish and groundfish. On P.E.I., snow crab is second to lobster in landed value, with over $37 million in landings.

The P.E.I. Fishermen's Association is a multi-species fishing organization, representing approximately 1,300 independent core fishers. The association was created for numerous purposes, including but not limited to the following: to undertake the necessary action to manage the allocation of fish species harvested by fish harvesters on P.E.I.; to undertake, in concert with other fisheries interests in Atlantic Canada, methods to ensure the conservation of endangered species and the survival of the fishing industry; and to study, investigate and disseminate information concerning the fishing industry.

Today we will give an overview of the PEIFA's perspective on the topic, including specific concerns.

Climate change and the increase in water temperatures over time in the Gulf of St. Lawrence have been red-flagged at snow crab stock assessments, due to what is known on the impact on molting, movement and reproductive behaviour in snow crab. The trawl survey, which includes bottom temperature readings at each location, has become an important and consistent monitoring tool for this species in a variety of ways.

The fishery on P.E.I. is mainly dependent on lobster. It is vital that we have a good monitoring program in place to understand how climate change is affecting their habitat, biomass and molting. Currently, there is no permanent funding in place to monitor this.

The Department of Fisheries and Oceans is mandated to study lobster stock biomass, but nothing beyond that. Fishers on P.E.I. are concerned with other aspects of the lobster population, including the species' carrying capacity—namely, food and habitat limitations.

Understanding that better would include a project to gain knowledge on the rock crab population, which are a main component of the lobster diet. DFO submitted a proposal on this in collaboration with the P.E.I. Fishermen's Association, but the project was rejected for funding.

Lobster and other mobile species will naturally avoid unsuitable habitat, less than ideal temperature, dissolved oxygen, pH, salinity and other water chemistry levels. These can shift with climate change, but also with industrial runoff such as Northern Pulp's proposed effluent treatment pipe into the Northumberland Strait. There is no monitoring being done by DFO to track these changes and monitor the movement of lobster from the area.

With respect to carapace length, P.E.I. is exceeding what is required according to DFO science and we are consistently reviewing and re-evaluating management measures to improve the way we harvest lobster. The last two carapace increases in lobster fishing areas 24 and 26A were requested by the fishers, who voluntarily agreed to move up in minimum carapace size. The lobster advisory committees on P.E.I. continue to work with the fishers to ensure progress in the right direction.

● (1545)

The P.E.I. Fishermen's Association conducts its own science projects to gain knowledge. We work with other organizations such as the Lobster Node Incorporated, a collective group of lobster fishing industry associations, to expand knowledge for all the Atlantic provinces. We develop new technology to improve data collection, and we work closely with DFO management and science to ensure we are doing everything we can to better understand the lobster population and changes taking place.

We work closely with the provincial lobster biologist and principal biologist Robert MacMillan on the lobster resource monitoring program. We also work extremely hard to keep all harvesters included in the information-sharing through lobster quality and handling workshops, advisory committee meetings and presentations from the biologists, etc. Knowledge-sharing is both top down and bottom up.

P.E.I. is also leading the way on lobster marketing with the development of the Lobster Fishers of P.E.I Marketing Board, which is funded by a levy. This type of funding initiative is only being done in Prince Edward Island, and the marketing board is run completely separately from the P.E.I. Fishermen's Association.

We are pleased to answer any questions you may have.

The Chair: Thank you, Mr. O'Neill.

We'll now go to the Gulf of Maine Research Institute with Mr. Pershing for seven minutes or less, please.

Dr. Andrew Pershing (Chief Scientific Officer, Gulf of Maine Research Institute): Thank you.

My name is Andrew Pershing and I'm the chief scientific officer at the Gulf of Maine Research Institute in Portland, Maine, U.S.A. I've been studying the oceanography and ecology of the Gulf of Maine for more than 25 years.

As you know, the Gulf of Maine is bordered by the provinces of Nova Scotia and New Brunswick as well as the states of Maine, New Hampshire and Massachusetts. The United States and Canada have a shared interest in the well-being of the Gulf of Maine. I'm honoured to be invited to share my perspective on how climate change has impacted and will impact ecosystems in the northwest Atlantic, especially the region's valuable lobster fisheries.

The earth's oceans have absorbed more than 90% of the excess heat trapped on the planet due to the burning of coal and oil. At the ocean's surface, temperatures have increased at an average rate of 0.01° Celsius per year since 1982. However, the warming of the ocean is not uniform. Over the last 30 years, the waters from Cape Hatteras to Newfoundland have warmed at nearly four times the global average rate. This makes this region one of the fastest-warming ocean regions on the planet.

The area of rapid warming encompasses the natural range of the American lobster. Over this period, the distribution of lobsters has shifted poleward by a rate of 11 kilometres per year. This shift has coincided with the dramatic increase in landings in Maine, New Brunswick and Nova Scotia, but a severe decline in catches in Rhode Island and New York.

There are two main processes that lead to range shifts in animal populations. First, individual animals can actively move to follow the environmental conditions that they prefer. This active movement is most common in large, mobile animals. A good example of a movement-driven range shift is the recent shift in the distribution of right whales from their summer feeding areas in the Bay of Fundy now to the Gulf of St. Lawrence. For less mobile species like lobsters, shifts in their distributions come from differences in reproduction and survival. Lobsters have not crawled from Rhode Island to Maine. Instead, lobsters in Rhode Island now produce fewer babies, and fewer of these survive, while Maine and Canada have seen a lobster baby boom.

The northward shift in lobsters has been driven by increased reproduction and survival in the north and decreased reproduction and survival in the south. Warming is an important part of this story. When lobsters are raised in warm water they grow fast and reach maturity in only a few years. But smaller lobsters produce fewer eggs and juvenile lobsters must run a gauntlet of predators. In colder water, lobsters grow more slowly and mature at a larger size.

When Dr. Arnault Le Bris and I compared lobster populations in the Gulf of Maine with those in southern New England, we were able to identify an optimal summer temperature for lobster recruitment near 16° Celsius. As waters have warmed, these optimal conditions have shifted from Massachusetts in the 1990s, to Maine and Nova Scotia in the early 2000s, to eastern Maine and New Brunswick in the last decade.

However, because we're talking about a shift due to differences in survival, we'd also need to account for fishing. In our modelling study, Dr. Le Bris and I contrasted the management strategies used in southern New England with those in the Gulf of Maine. Until recently, the lobster fishery in southern New England only had a minimum legal size, while Maine has long had both minimum and maximum legal sizes. This strategy, along with the practice of marking egg-bearing females with a v-notch, has been championed by generations of Maine lobstermen under the hypothesis that protecting larger lobsters would ensure a large brood stock and support high recruitment.

Our calculations support this hypothesis. We found that the lack of an upper size limit amplified the effect of warming in the south, turning a moderate downturn into a collapse. Similarly, protecting larger lobsters amplified the benefit to Maine from the recent warming.

But what about the future? Climate projections suggest that the northwest Atlantic will continue to warm at an above-average rate. By 2050, our region will likely be 1.5° Celsius warmer. At these temperatures, the western Gulf of Maine, the Scotian shelf and the southern Gulf of St. Lawrence will become less favourable for lobsters. When we put this rate of warming into our model, the number of lobsters in the Gulf of Maine decline to levels we experienced around the year 2000. Removing the protection on larger lobsters would result in a steeper decline. One of the most important messages of our recent paper is that protecting older, larger lobsters helps build resilience in this population.

In our study, we ran our model out to the year 2050. Beyond 2050, the fate of lobster will depend on global carbon emissions. If carbon emissions are reduced as envisioned in the Paris Agreement, then Maine and Atlantic Canada will likely hold on to valuable lobster fisheries. However, under business-as-usual emissions, these fisheries will be much smaller.

● (1550)

Our results for lobster underscore a major theme that emerged in the “Fourth National Climate Assessment” published last fall. In the “Oceans and Marine Resources” chapter, my colleagues and I highlighted how sound fishery management can help fisheries build resilience to climate change. We also identified clear economic benefits to fisheries from reducing carbon emissions, a theme that cut across all of the chapters in the recent U.S. “National Climate Assessment”.

As you consider policies for the future of Canada's lobster and snow crab fisheries, I would encourage you to learn from the experiences in the United States fisheries and to consider how your policies will fare in a warmer ocean.

Thank you.

The Chair: We'll go now to Mr. Le Bris, from the Fisheries and Marine Institute of Memorial University of Newfoundland, for seven minutes or less, please.

Dr. Arnault Le Bris (Research Scientist, Centre for Fisheries Ecosystems, Fisheries and Marine Institute of Memorial University of Newfoundland): Mr. Chairman and committee members, thank you for inviting me to speak with you today about lobster and snow crab ecology and fisheries.

My name is Arnault Le Bris, and I am a research scientist at the Fisheries and Marine Institute of Memorial University of Newfoundland. I define myself as a fisheries ecologist, addressing issues relevant to the fishing industry and to the sustainable management of marine resources.

As part of my current research on a variety of marine species, including lobster, I'm working with fishing associations from four provinces in Atlantic Canada and Quebec, with members from both the inshore and offshore fishing industries and with federal scientists from three regional centres of Fisheries and Oceans Canada.

● (1555)

[*Translation*]

My presentation will focus on three issues. The first is the concept of movement in lobster and snow crab. The second is the problem of carapace size in the lobster fishery. The third, and most important, in my view, is the need to anticipate the future.

[*English*]

Issue number one is the movement in snow crab and lobster.

There are two types of adult movement: seasonal movements and alongshore movements. Seasonal migration from shallower water to deeper waters has been well documented in both lobster and snow crab. While this type of movement affects where the resource is distributed across seasons, it does not really affect whether a lobster or a snow crab moves from one fishing area to another.

The second type of adult movement is alongshore movement. This has the potential to cause movement across fishing areas. However, all tagging work conducted to date suggests that there's very little movement across lobster or snow crab fishing areas. Indeed, lobster and snow crab move alongshore in the order of tens of kilometres, which is enough to connect some fishing ports, but rarely enough to connect fishing areas, as demonstrated by the recent studies from the Lobster Node project.

Issue number two is minimum and maximum landing carapace sizes in the lobster fishery.

Throughout Atlantic Canada, minimum landing sizes are imposed in lobster fisheries. The rationale is to help lobster reproduce at least once before they are caught in the fishery. However, most of the minimum landing sizes are currently situated below the length at 50% maturity. This means that only a minority of lobster reproduce before they become vulnerable to the fishery. Increasing the minimum size, as was recently done in P.E.I., improves the chances that lobsters will reproduce. This increases the egg production in the population and consequently the resilience of the fishery to future changes in the ecosystem.

Another solution to increasing the egg production is to protect larger lobsters and especially larger females. Fecundity increases exponentially with size. For instance, a female lobster with an 85-millimetre carapace length produces about 10,000 eggs, while a female with a 110-millimetre carapace length produces about 50,000 eggs, which is about five times more. Another advantage of preserving larger females is that they reproduce more often. Preserving large reproductive females can be achieved through various conservation measures, including maximum size limit, throwing the egg-bearing female back in the water, v-notching and fishing gear selectivity.

As stated by my colleague Dr. Andrew Pershing, our work has demonstrated that the use of various conservation measures in Maine amplified the temperature-driven recent boom observed in the fishery.

In Canada, maximum size limits are not imposed. However, the combination of fishing season, the practice of v-notching in some areas and the general low selectivity of traps for larger individuals ensures that some large females remain in the water. How many large females are in the water is, however, unclear. Naturally, there are a lot of economic consequences of imposing minimum and maximum size limits, and especially market consequences, but I'm not an expert in that domain.

Issue number three is on anticipating the future.

I had a slide to show to you, and I don't know if it's on your screen right now. I wanted to show you a figure that summarizes the landings in fishing area 34 in southwest Nova Scotia from 1892 to 2016. The figure for landings in that area, which is very representative of the overall lobster landings for Maine and Atlantic Canada, shows that despite some ups and downs, landings were relatively stable for about 100 years, until the last 20 years. Quite suddenly over the last 20 years, we've experienced a massive boom in lobster landings.

This raises two very important questions: first, what has driven this rapid boom; and second, what will happen in the future? Responding to the first question helps to inform the second one.

In our previous work, we demonstrated that large-scale ocean warming has been favouring recruitment in northern regions like Maine, the Maritimes and possibly Quebec and Newfoundland, as some signs indicate nowadays. However, we don't fully understand the mechanism by which temperature affects recruitment. Is it through changes in the food availability for larvae lobster or through direct effects on growth and survival of food chains in the community of predators present in the system?

We need to better understand how climate change and ecosystems drive the recruitment process and also how predation affects the mortality of juvenile and adult lobsters. I think this is true for lobster but also for snow crab and, I will add, for shrimp.

Fisheries and Oceans Canada does a very good job of assessing the status of the resources. The next and most difficult step is to better understand the climate and ecosystem mechanisms that are driving the productivity of fish stock. Some work is being done on that, but we need to increase our science capacity around those questions, especially if we hope one day to predict future fisheries' productivity.

This brings me to the last point. Looking again at the figure that I was supposed to show you, I hope that everybody realizes that we are in a situation never experienced before. This is not the norm. The current landing of lobster in Canada is not the norm, and we need to keep that in mind.

Thanks to favourable ecosystem conditions and the hard work of the industry as a whole, the catches are at record highs, and the prices have been really good. This is fantastic, and I truly hope it lasts as long as possible. However, what will happen if the catches start to decline by 20% or 30%? What will happen to the thousands of harvesters and plant workers and to the hundreds of fishing communities that rely almost exclusively on these unique resources? This is a conversation that needs to happen sooner rather than later.

● (1600)

The Chair: Thank you, Mr. Le Bris.

Now we'll go to Mr. Fitzpatrick, for seven minutes or less.

Mr. Alfred Fitzpatrick (Independent Owner-Operator Fish Harvester, As an Individual): I don't have a prepared statement as such.

My name is Alfred Fitzpatrick. I'm a small boat independent harvester from the south coast of Newfoundland in Burin Peninsula. I come from an area where the lobster fishery is the vast majority of our income. For me personally, it's at least 80%. For some people in my area, it's 100%.

Areas 11 to 14 along Newfoundland's south coast and up the west coast have seen some very dramatic increases in lobster landings even though I believe we still make up less than 10% of the Canadian landings. Over the last few years we have seen big increases, and that's why I was eager to get the chance to come and sit in on this proceeding.

That being said, on the other side of the Burin Peninsula, which we call area 10, the lobster landings have plummeted to near zero. In the early 1990s, we were on par with Fortune Bay—area 11—and Placentia Bay. I don't know if it had something to do with industry, climate change or a change in water temperatures or currents, but all of a sudden, Placentia Bay plummeted to near zero. Fortune Bay increased along with the rest of the southwest coast.,

One thing I will say is that we're seeing a lot of very small lobsters being egg-bearing. A lot of the older fishermen in the area where I fish now say they've never seen it to the magnitude that it is now. I'm wondering if other LFAs around Atlantic Canada are seeing the same thing.

Is it normal? Does it bode well? With other stocks, they say that when smaller individuals start spawning and producing eggs, such as cod, it's a sign of a species under stress. I guess I'm here today with more questions than I have information to offer, which is probably normal for me.

That's about it. If you ask me a question and I have knowledge or anything to add to it, I'll certainly do so. If I don't, I'll defer to someone with a bit more experience than me.

The Chair: Thank you, Mr. Fitzpatrick. Let's hope you get some answers from some of the people here regarding the questions you're wondering about and the situation you're describing.

We'll now go to the question round. On the government side we have Mr. Fraser, for seven minutes or less, please.

Mr. Colin Fraser (West Nova, Lib.): Thank you very much, Mr. Chair, and thanks, everybody, for joining us today on this important study.

I'd like to ask Bernie Berry a question. I represent West Nova and know Bernie very well, and I know what good work the Coldwater Lobster Association does. Obviously this is a tremendously important industry for all of Atlantic Canada, and in particular southwestern Nova Scotia, where it is the backbone of our economy.

I'm glad for the work that you and your association do, Bernie. The changes to and the impact on the lobster population in the waters off our coast are extremely important, and it's extremely important that we understand what actually is happening in the waters. I was interested to hear more about the lobster movements based on temperature, rising waters and the salinity rate.

You made specific reference to some of the data you have, but I just need to be clear on it. You said, I think, that 90% to 95% of the landings in the seventies were from shallower waters and that now they're in deeper waters. I assume that's because the lobsters are moving around to find colder waters, and that's the difference in where the lobsters are found now. Is that accurate, Bernie?

● (1605)

Mr. Bernie Berry: That's some of it. The other part of it is that the biomass is so much larger, so the lobsters are going to different areas to find food and stuff like that. As I pointed out, LFA 34, like most LFAs in the seventies and eighties, was a traditional inshore fishery. That 50 fathom shoal, that's where all the lobsters were. It was a hard, rocky bottom.

Now, like I pointed out earlier, 50% to 60% of our harvest comes from deeper water with a muddy bottom. There is a food source there, and I think the lobsters simply needed to disperse somewhat. There were so many lobsters that they had to go to different areas, which is all good. It spread out the fleet. The fleet now encompasses.... I'm not sure how many square kilometres LFA 34 is, but it is the largest in Atlantic Canada. I think it might be 70,000 or 80,000 square kilometres. Certainly, with the increase in the size of the boats now, this has been very beneficial, basically because the fleet is spread out now.

The movement of lobsters is to deeper water, whether it be for food and/or coupled with the size of the biomass and the water temperature and stuff like that, Mr. Fraser, as you pointed out, but as for the bulk of them in the fall for us, when our season is open, the bulk of the lobsters are in the deeper water now.

Mr. Colin Fraser: Yes. You mentioned as well the lobster nursery in Browns Bank as representing LFA 40, which is closed because it's seen as a breeding ground for lobsters. In your comments, you talked about the fact that it's possible that there may be other areas or places that we need to look at for lobster nurseries that could be even more beneficial to ensure the long-term sustainability of the stocks.

Do you have any further thoughts on that? Is there any data to support looking at other areas at this point?

Mr. Bernie Berry: No, and I think that's the thing we're going to try to do, and actually look at it as we do a tagging program and track lobsters. Maybe there are other areas. We simply don't know.

Like I said, when they closed Browns Bank, that was kind of the low-hanging fruit. The information was available at the time and made it easy to close that area, but even that has changed over time. I think there was some tagging done in the Browns Bank area back in the eighties. Even the lobsters coming off Browns Bank now have changed their patterns, I suspect.

Again, we simply have to have a continuity to this type of work. You can't take 20-year breaks, which unfortunately did happen, at least in LFA 34. Over time, I think the key is that if we need it, it would be good to identify it if there is another area that we could fall back on, like LFA 40.

Mr. Colin Fraser: I know that the Atlantic fisheries fund has promoted some organizations working in partnership between industry and government in order to get better data and better scientific research, and I know that you've been involved in some of that work.

Are there any other recommendations you can make to the committee about how government can better support industry actually doing some of this work themselves?

Mr. Bernie Berry: What it really comes down to is that we have to have collaboration between the two. Everybody can't work in their silos like in the past. There really was not a whole lot of of collaboration, at least in our area. We have to really focus on temperature monitoring, larvae settlement and things like that, and possibly on the extension of the Lobster Node, which is a very good vehicle for Southwest Nova. Southwest Nova is not at this present time involved in the Lobster Node.

One of the other organizations you mentioned—the Southwest Lobster Science Society—is doing a data collection program. They have just under 1,000 members. They're mainly focused on bycatch. It is the organization that I mentioned earlier. We're part of the science society, and we're going to do the tagging of 12,000 sublegal lobsters. It has started already. We'll hopefully get to 12,000 in the water for this year and also for two more years to come.

● (1610)

Mr. Colin Fraser: Okay.

Mr. Pershing, I will turn to you for a moment. I thought your comments were very helpful. I note you made reference to a lobster baby boom that's occurred. Obviously, the lobsters are being dispersed in different ways, but northward I suppose to the northern parts of the Gulf of Maine or nearby southwestern Nova Scotia.

You talked in particular about learning some lessons from what had happened perhaps off Rhode Island and New York and seeing the lobsters being dispersed more northward.

You talked about carbon emissions being responsible for the warming temperatures of the waters and about the importance of meeting the Paris Agreement targets.

Would you say those elements are directly related to the long-term sustainability of the lobster stocks that we currently see dispersed throughout the Gulf of Maine?

Dr. Andrew Pershing: Yes. I think that's a very clear story that's coming out when we look at lobsters. There are similar kinds of stories if we look at cod. There are stories on the west coast as well. I think fisheries are becoming a really interesting way to think about the challenges of climate change.

One of the messages we were really trying to put out a little bit in the testimony here but also in some other work we've done is that there really are these two time scales that you have to think about. There is what's going to go on in the next 30 years, in which we're dealing with warming that's essentially already in the pipeline. The term that climate scientists use is the “commitment” we've already made to a warmer future. Then there's the question of what's going to happen after mid-century, so after 2050. That's where the decisions around carbon emissions really come into play.

In fishery management, with many of the things we're discussing today, with the adaptations going on in the industry and in fishery management, they can do a lot to prepare for warming waters to hold on to the harvest they have, but beyond a certain point it becomes beyond their control. That's really where the national governments are going to have to step in.

The Chair: Thank you, Mr. Fraser. Your time is up.

Now we go to the Conservative side with Mr. Arnold for seven minutes or less.

Go ahead, please.

Mr. Mel Arnold (North Okanagan—Shuswap, CPC): Thank you, Mr. Chair.

I'm going to twist things up a little bit here. Typically when I talk about species that migrate, it would be a seasonal migration, or an age-related migration. I believe it was Mr. Fraser who put the idea forward that the study be on the migration of lobster and snow crab.

I'm curious to know if he could add some clarity as to whether what we're talking about here is migration or relocation or redistribution or the range shift of lobster or seasonal migration or a different type of movement, so we can all be clear on what this study really is.

Mr. Colin Fraser: The idea was to track or determine the dispersion of lobsters and whether they are migrating from one area to another, or whether the movements of lobsters themselves or larvae or whatever is having an impact on where we're finding lobsters, because we know that they have been seen tracking northward for the last number of years.

I don't think there's one element in particular, whether they are moving from one LFA to another or whether we're seeing movements between colder waters and warmer waters, as Mr. Berry said, or whether we are finding that they are going to deeper waters. Those things are all part and parcel, in my view, of the same idea.

Mr. Mel Arnold: If I may, then it's really not the migration, because with migration we're talking about something like an Atlantic salmon moving out to sea and then migrating back or a snow goose migrating back and forth from the north to the south each year. We're talking more about the range shift, or a spatial relocation of lobster than about migration, the term that's used in the study.

● (1615)

Mr. Colin Fraser: In setting the terms of this study, we had a discussion. I made it pretty clear, I think, before we determined that this was something we were going to do, what parameters I had in mind.

In a short title it may not be easy to capture all of that, so if the word “migration” wasn't broad enough to capture what I have articulated already, then, hopefully, what I meant is now understood.

Mr. Mel Arnold: Okay. That's why I was asking the question. One of the few meetings I missed with this committee was the one at which this motion was brought forward. I just wanted to make sure that I was clear and that other members of the committee were clear. It looks like we're actually studying more the relocation or redistribution and not necessarily the migration patterns of lobster and snow crab.

I guess the next question would go to any of the witnesses who are here today. What would happen if the lobster distribution went back to what I heard were recent and kind of normal location patterns? What would happen if we went back to what it was a few years back?

Mr. Bernie Berry: I think, if we went back to that—I'm assuming you're saying there would also be a reduction in the number of lobsters on the bottom—it just wouldn't be good for the local economy or the fishermen or whatever. If we returned to LFA 34, which is all I want to speak to, and to where and how much we landed in, say, the 1970s and early 1980s, unless we changed our whole method of marketing lobsters, it would be pretty detrimental.

Right now, I think our average catch per licence-holder in LFA 34 is somewhere around 50,000 to 53,000 pounds per licence-holder. That's on average. If you go back 20 years, it was probably in the low 30,000s. So it wouldn't bode well if you had such a dramatic drop, if I'm understanding you right, unless you did some kind of enhancement on the marketing where you achieved a much higher price for quality and stuff like that. That could somewhat offset the downturn in catches, certainly, but it would be very concerning if over a certain number of years the lobsters returned just to where they used to be, in 50 fathom and shoaler. That would simply be an indication that something was awry.

Mr. Mel Arnold: Okay. In other words, we've heard a lot of speculation that this change in their distribution patterns could be related to climate change or ocean temperature warming. Some of that isn't necessarily a bad thing for your industry, I take it.

Mr. Bernie Berry: No. So far we've been on the beneficial side of the environmental changes—for now. Moving forward from here, we could see some effects that might not be as beneficial, but so far we're reaping the benefits of warmer water. It's led to a larger percentage of lobster larvae surviving, and more favourable conditions. So far it's been okay; it's where we go from here.

Mr. Mel Arnold: Thank you.

I'll pass the rest of my time to Mr. Calkins.

Mr. Blaine Calkins (Red Deer—Lacombe, CPC): Thank you, Mel.

Is there anybody here who can speak to the growth rates or maturity rates of lobster in regard to water temperatures?

Dr. Arnault Le Bris: I can take that.

We did a study three years ago on the effect of temperature and potentially fishing on the change in size and maturity. What we think is that when it's warmer, lobsters grow a bit faster. Then they tend to mature at a smaller size and have smaller eggs. This is as a consequence of temperature. It can also be as a consequence of fishing pressure. If you get very high fishing pressure, you tend to remove larger individuals in your population. Then you get only smaller individuals with faster growth rates and smaller size and maturity. Temperature and fishing can lead to smaller size and maturity, which ultimately leads to lower egg production in your population.

Mr. Blaine Calkins: Potentially: yes, that makes sense.

● (1620)

The Chair: Thank you.

We go now to the NDP.

Mr. Johns, you have seven minutes or less, please.

Mr. Gord Johns (Courtenay—Alberni, NDP): Thank you, Mr. Chair.

I'll start with you, Mr. Pershing. Can you speak a little bit about how and why Canada should work with the U.S. on the migration of lobster and snow crab?

Dr. Andrew Pershing: There are a couple of ways to think about that. One is that I don't feel we have a great understanding, probably, of the stock structure of lobster. Right now, some of the eggs that get released from lobsters in Canada will drift into the U.S. The U.S. probably has an interest in making sure that the stocks of lobsters in Canada are healthy, because that will potentially fuel some of the recruitment in our region. There's some oceanographic modelling that backs that up.

On the other side, as we're talking about these species shifting northward as waters warm up, the genes that are necessary for a lobster to survive in warmer water are right now in the lobsters that are living in U.S. waters. So Canada, I think, has an interest in making sure that the U.S. lobster stocks are healthy, because those will be some of the genes that your lobsters will rely on in the future.

Mr. Gord Johns: Do you think there's enough being done there?

Dr. Andrew Pershing: That's a great question.

I'm not an expert on the policy discussions that are ongoing right now. I do know that lobster is a unique fishery in this region and it does seem to be very well managed.

You can pick up a lobster, measure it, and throw it over the side, and you know it's going to survive in a way that cod that comes up in a net is not going to. There is more you can do around managing lobsters.

I was really heartened to hear the folks from P.E.I. talking about how they're thinking about changing the size limits, with the idea of trying to take a proactive step to making sure they're building some resiliency in that population.

Mr. Gord Johns: Mr. Le Bris, what are your top recommendations for ensuring that the Canadian lobster and snow crab fishery survives and thrives into the future?

Dr. Arnault Le Bris: I think Fisheries and Oceans Canada, more and more in collaboration with industry—which is a very good thing—is doing a good job at estimating how many lobsters or snow crabs are in the water.

I think, in terms of a science gap, that we don't really fully understand the impact on the ecosystem. For example, on snow crab, we don't know the impacts of cod and other predatory species. It's the same for lobster. I don't think we have a good sense of the impact of predation on baby lobsters. Think of the striped bass coming from the Miramichi River and its impact on baby lobster.

I think we have to try to understand a bit more how the species is affected by the ecosystem—the number of predators, the variety of predators and the food. We think temperature is a big driver for lobster and the baby boom, but what if it's a change in the plankton, in the lower food chain, that actually explains why there is better survival? We are starting to understand that a bit, but we really aren't doing enough to try to understand the ecosystem and the interaction between the environment and the species.

Mr. Gord Johns: A lack of whole-of-ecosystem approach is what you're talking about.

Dr. Arnault Le Bris: That's what I'm talking about, potentially.

Mr. Gord Johns: Mr. O'Neill, could you tell me what your top recommendations for the study would be? What would you would like to see as the top priorities and as an outcome?

Mr. Pat O'Neill: Thank you for asking, but I think I'll defer to Melanie Giffin and Laura Ramsay, because they're the scientific people we have. Also, Mr. Jenkins has 40 years of experience fishing on the water. I think they'd be better.

Ms. Melanie Giffin (Marine Biologist and Program Planner, Prince Edward Island Fishermen's Association): I do agree with Arnault's comment on understanding the ecosystem better.

I know in one of your previous sessions there were discussions with Matthew Hardy regarding the lobster collector project.

To the gentleman from Maine with regard to the conversation about collaboration, I would mention that this Friday we have a collaborative meeting, between Canada and the States, about those larvae collectors, the number of babies we're seeing, and possibly some of those ecosystem changes that Arnault has brought up and why we might be seeing differences in different areas. I think we do a great job in collaborating on that aspect.

In terms of monitoring, I do support looking at things from an ecosystem perspective. I think we need to understand what's happening with our larval lobster and whether it is a change in the phytoplankton. We have the shift now, with the north Atlantic right whales being here. There is some evidence to support that those larval lobsters are feeding on some of the same types of copepods that the north Atlantic right whales are. That kind of goes to show why we might have a boom happening in our larval lobster in P.E.I., where we've seen some of the highest numbers in terms of baby lobster out of any area that's done it. That may be closely related to the fact that those north Atlantic right whales are here feeding on the same type of thing.

I think understanding the ecosystem as a whole and monitoring the temperature...although we can't do anything to prevent the changing temperature. We need to have the knowledge and be aware of what's changing and how those changes could drive a shift in our fisheries.

From my perspective, those are two of the main components. I don't know if Laura has anything to add to that.

● (1625)

Mr. Gord Johns: I'm going to ask a quick question.

Mr. Fitzpatrick, how will fishing in deeper water impact the fishing and costs of the fishing?

Mr. Alfred Fitzpatrick: For the area that I fish, there isn't really a big issue. We're fishing from small boats relatively close to land. If you are in a bigger operation in different parts around Atlantic Canada and you have to fish in deeper water, then presumably you're going to need a bigger vessel, have more fuel costs and need a bigger crew. It would hurt your bottom line.

There's not much else I could say to it.

Mr. Gord Johns: Is there anything you want to add in terms of what you'd like to see as the top recommendation?

Mr. Alfred Fitzpatrick: When we talk about an ecosystem approach, we talk about the same thing with a lot of species in Newfoundland, such as crab and cod. Whatever fish we're involved in, we have to start looking at the bigger picture.

I'm probably going to say an unpopular word here. If we're not going to look at the whole ecosystem, which includes our impacts on it, such as seismic activity on the offshore.... We are noticing a big decline in the phytoplankton and zooplankton, and that affects the capelin, which affects the food chain as a whole. Also, seals are the bogeymen in the room. Nobody wants to talk about that, but from my perspective as a person who's on the water, seals are having a big impact on the ecosystem as a whole, lobsters included. Seals like shellfish just as much as we do.

That's it.

The Chair: Thank you, Mr. Johns. Your time is up.

We'll now go back to the government side to Mr. Morrissey, but before that, Mr. Johns, I have to ask you to take the chair, which I have to vacate.

The Vice-Chair (Mr. Gord Johns (Courtenay—Alberni, NDP)): Mr. Morrissey, you have seven minutes.

Mr. Robert Morrissey (Egmont, Lib.): Thank you.

My question is possibly for you, Ms. Giffin. Expert testimony has been given earlier in today's meeting, primarily from Mr. Le Bris, about protecting larger females. They're five times more productive than smaller ones. As a biologist, do you agree with that?

Ms. Melanie Giffin: As a biologist, I agree with the protection of larger females, and we have protections in P.E.I. to protect larger females with our windows. We have a mechanism in place there to protect those larger females.

Mr. Robert Morrissey: Does anybody else want to respond as well?

You would also acknowledge, then, that to grow the resource, one of the key areas is to leave more large females in the water?

Ms. Melanie Giffin: Based on the science and the numbers, what we've been told in terms of that window-size lobster and having a maximum size and anything over that is that it doesn't seem to make a significant difference. In terms of actual numbers, if we look at 2017, say, at 25 trips, we returned 48 females within that window size back to the water. If we were looking at the maximum size, there would have only been six more lobsters in those 25 trips that would have been returned to the water. It's a difference of six lobsters over 25 trips, so—

● (1630)

Mr. Robert Morrissey: You would go on record as saying there's no value in leaving those in the water for the growth of the industry, as a biologist?

Ms. Melanie Giffin: I wouldn't say that there's no value. I think the question comes down to the significance of the value.

Mr. Robert Morrissey: Okay. Thanks.

My other question, which again goes to Ms. Giffin, is on the movement of lobster. Again, there was expert testimony given to this committee a number of times that there's little movement of lobster in general. Does the PEIFA have any documentation to contradict this or to verify it?

Often, in discussion within the different LFAs, the fishermen will say that the lobsters they throw over are swimming to some other district. For instance, in the southern part, between Cape Breton and Prince Edward Island, you look at LFAs 26B and 24. LFA 26B would have a significantly large carapace size and LFA 26A would not.

Do you have any scientific data that would contradict what earlier testimony gave us?

Ms. Melanie Giffin: No, none at all. The scientific data that we follow are the publications that we've seen through DFO, for the most part. In discussions with Amélie Rondeau at DFO in Moncton, she'll talk about the normal travelling distance of a lobster being approximately 10 to 20 kilometres. The distance may be a little bit more within the gulf region because it's flatter, but we're talking about imaginary lines, and it's not a situation where they normally travel a long distance over 10 kilometres.

Mr. Robert Morrissey: Would you concur that basically lobsters stay within their general area and movements and carapace size really would have little impact on the resource in one area over another?

Ms. Melanie Giffin: Yes.

Mr. Robert Morrissey: Okay.

There was an issue that nobody addressed. I would ask, if you do not have it here, if you could produce to the committee. Would a continued rise in carapace size have any negative impact on the marketplace?

Mr. O'Neill, you did not address that in your opening comments; nobody did. Does the PEIFA have any documentation or evidence that would show what impact a continued rise in carapace size would have on the marketplace, negative or positive?

Could one of you speak to that?

Mr. Bobby Jenkins (President, Prince Edward Island Fishermen's Association): At this time, we don't have the data.

Mr. Pat O'Neill: I'm not aware of any information that would answer that question one way or the other, either positively or negatively. Managing the resource has been the main concern of the PEIFA. It's been a big commitment in recent years with encouraging the adoption of the larger carapace sizes, and so far there's been no discernible impact on the market that wouldn't be explained, I think, by general economic forces in the world.

That's as far as I can go about that.

Mr. Robert Morrissey: I'll ask Mr. Fitzpatrick to answer this, and then probably Mr. Jenkins as the president. Again, you heard expert testimony given earlier that the current lobster landings are not the norm in Atlantic Canada. Would you agree? Obviously, the data shows that. What should this committee emphasize or concern itself with going forward to ensure that what is not the norm becomes the norm?

Mr. Alfred Fitzpatrick: For Newfoundland, in my opinion, we're benefiting, as one of the gentlemen said earlier, from this shift or this perceived northern migration. Our landings have increased year over year in most areas. I don't know if it's due to climate change or if it's food distribution or water temperature or just a natural thing that's going to happen anyway. I wouldn't know how you would ensure it.

Mr. Robert Morrissey: Mr. Jenkins, what key recommendation would you give to this committee to ensure that what is not the norm becomes the norm?

● (1635)

Mr. Bobby Jenkins: Obviously, we don't want to slip back into where I was in the 1970s, when I started fishing. That being said, in the 1990s, when we were doing phenomenally well, it slipped again, and we're back up there again. I think we have to continue to monitor what we're doing now. One thing that's really big is the food source. I think temperature and food are the main drivers behind this animal that we fish.

Keep going, I would say, with the conservation efforts we have in place, keep adjusting accordingly, and watch out for any telltale signs that things are going wrong. I did the precautionary approach a few years back in Moncton. They told us then that the central straits were done. In central Northumberland Strait, the landings were really, really bad, and we've seen that place take off for the last three years. It's probably one of the better-producing places in the strait.

I don't have all the answers, Mr. Morrissey, but we have to monitor this thing. We have to monitor on a yearly basis, stick with our conservation plans and listen to the fishermen.

The Vice-Chair (Mr. Gord Johns): Thank you very much.

Mr. Calkins, you have five minutes.

Mr. Blaine Calkins: Thank you.

I'd like to follow up on the last question I asked, which dealt with the maturity rate in warm water. Could an adjustment of the carapace size and the capture size address the concerns, if the lobster maturity factor is indeed a question? If they're maturing faster in warmer water, could we simply make them a little bit bigger before they're allowed to be harvested? Would that solve the fecundity issue going forward?

Mr. Le Bris.

Dr. Arnault Le Bris: I think that's a good suggestion.

There is lobster management. There is different management. One of the main measures is on what the minimum size should be. I think it's a very powerful tool. I think the larger the gap in size between when lobsters start reproducing and when they get caught in the fishery is going to give you quite a bit of resilience in your fisheries. The bigger the gap between the minimum size and the size at maturity, the better for the industry in terms of population productivity.

Mr. Blaine Calkins: Thank you very much.

I'm going to ask this of some of the fishermen at the table. Is there any talk in the community about the exposure that the market to China currently has on the products that are harvested on the east coast of Canada?

Mr. Alfred Fitzpatrick: Do you mean economically?

Mr. Blaine Calkins: Right now in western Canada we have about 40% exposure of our canola marketplace to China, which appears to be a political issue. I'm wondering if anybody has shown any concern or if anybody has heard anything about that becoming an issue for other sectors of the Canadian economy.

Mr. Alfred Fitzpatrick: We're scheduled to start fishing on the 20th of this month.

There is a fear out there that the day before we start, or within that initial period, we're going to get the same kind of news that the canola farmers got. And if we were to run into that, it would be detrimental.

Mr. Blaine Calkins: What is the trade exposure to China? Do you know? How much of the product that you harvest ends up in the Chinese marketplace?

Mr. Alfred Fitzpatrick: I've been hearing 40%. As much as 40% is being shipped overseas.

I guess the guys out in Nova Scotia would know a bit more, because our lobsters actually travel to Nova Scotia and are shipped out from up there. But if that were to happen, I think we'd see a big reduction in the price. It would be bad.

Mr. Blaine Calkins: Does anybody else want to comment on that?

Mr. Bobby Jenkins: I'll make one comment on it.

Obviously we don't want to lose anything in the marketplace. China could be a concern. I'm not saying it's a concern now, but it could be.

It's a relatively new market compared with some of the older markets, the traditional markets. We do have people who are involved in processing who don't send any product to China at all. The live shippers have been doing well down there. I agree with Mr. Fitzpatrick that it's something that we don't want to see happen. We'll have to monitor that situation.

I believe that the product is scarce enough that that's not going to happen, and that's what we're going to hope for.

● (1640)

Mr. Blaine Calkins: Given the fact that I'm hearing that the geographic range and the population changes for lobster and crab in Atlantic Canada might be beneficial in the short term or the long term, might require some adjustments in fishing areas or on where larger boats are used, and so on, has anybody actually done an analysis or heard of an analysis of what the implication of a carbon tax would be, notwithstanding the fact that I believe fuel for the fishing fleet is exempt? For all the other items that are delivered, items purchased by a fishing boat, traps and pots; any of the harvest that's shipped away from the dock; the cost of keeping the lobster in a pound, for example, in chilled water, has anybody done a cost analysis on what the actual impact would be for the fishermen and whether there is actually going to be a price reduction to cover those costs?

Mr. Bobby Jenkins: It's a great question, but to my knowledge, there's been no cost analysis done on P.E.I. yet.

Mr. Blaine Calkins: Is it a concern for the fishermen?

Mr. Bobby Jenkins: It could be, yes.

Mr. Blaine Calkins: Do I have any time left, Mr. Chair?

The Vice-Chair (Mr. Gord Johns): You have 10 seconds.

Go ahead.

Mr. Blaine Calkins: I'm going to give it to Mel.

Mr. Mel Arnold: In case I don't get a chance, I want to thank all the witnesses for coming today.

That's my 10 seconds.

The Vice-Chair (Mr. Gord Johns): Thank you, Mr. Arnold.

We'll go to Mr. Rogers for five minutes.

Mr. Churence Rogers (Bonavista—Burin—Trinity, Lib.): Thank you, Mr. Chair.

Welcome to all our guests, and to you, Alfred, in particular, being from my riding in Newfoundland and Labrador.

I want to focus a little on snow crab.

Of course you're well aware of the challenges we face this year with some significant proposed cuts by DFO for the TAC for snow crab. It has created a lot of concern and alarm among the harvesters in the fishing community in most of the province. But in 3Ps, where you fish, you saw a significant increase in quota.

I'd like you to tell this committee why you think that happened and whether you are comfortable with that level of increase.

Mr. Alfred Fitzpatrick: With crab in 3Ps, it all goes back to 2016. We were at a level where I couldn't feasibly fish snow crab. I had to tie my enterprise to the wharf, and I went out west because there just wasn't enough there to make a living. I couldn't do it. In 2017 it seemed like there were indications of crab coming back. We saw a lot of soft-shell. We took our cuts in 3Ps. We took our cuts, 50%, 40%. In our supplementary fleet, we went from 104,000 pounds down to 17,500 pounds based on cuts recommended by DFO. We could see it. We started to build it back up and last year it was getting better, and this year we ended up with a 50% increase, which was good and much needed.

I'm still cautious. We had a lot of effort and 3Ps is not a big area. I have a “further down the road” outlook. I tend to look to the future—perhaps it's my age—and I prefer to be cautious instead of making big, big jumps.

Mr. Churence Rogers: You went through some tough times, and there's some concern around the rate at which the fishery has been opened—it's been cautious. During that period, and even today, are you and other harvesters providing advice to DFO on stock management, and are they listening?

Mr. Alfred Fitzpatrick: There seems to have been a big shift the last few years with the new crop of DFO scientists, we'll call them, and managers. It seemed like there for a while we had a really good relationship with the senior scientists at DFO, and they listened to us, because I think they respected what we saw. I think they trusted us to come in and tell them the truth, for the most part, as much as anybody does. It seems like now with the new scientists doing the job—and I don't mean to condemn anybody—it's their way or the highway. They'll listen, but they're really not listening. It doesn't seem like our opinion carries much weight.

I was told a couple of years ago that it would be 13 years before another snow crab would ever be caught in 3Ps. They told us we were done. They told us the piggy bank was dry and we had nothing left. This year they gave a 50% increase. We told them at the time we knew it was getting bad, but we didn't think it was gone for 13 years. There were people who sold enterprises based on that recommendation—they sold out.

● (1645)

Mr. Churence Rogers: Alfred, knowing what you know now, and based on your experiences for the past number of years, decades, or whatever, what's your opinion on the proposed precautionary approach, PA, to the future fishery? Do you think harvesters can make a good contribution to setting limits and reference points and so on?

Mr. Alfred Fitzpatrick: Yes, about the most important part of it now going forward is getting those reference points right. If this is going to work, the PA, I'll call it, we have to work together. The PA is trying to build the piggy bank back up. That's the analogy I use. We're trying to build a savings account for rough times.

I can see where the PA will be beneficial if it's done right, but we can't set the bar too high, because some areas in Newfoundland will never ever get to that critical zone. There are levels of crab where the crabs are at, and that's all it can sustain. If we get the levels right and work together, which hasn't been happening the last couple of years, we can do this right and hopefully it will be beneficial.

The Vice-Chair (Mr. Gord Johns): Thank you.

We'll go to Mr. Arnold.

Mr. Mel Arnold: I think I'll carry on a little bit with Mr. Rogers' questioning with Mr. Fitzpatrick. You were talking about the precautionary principle. I've seen this in wildlife management in my province where it becomes too precautionary. Rather than looking at the actual science and the numbers, they rely on regional managers or someone's opinion.

If you'd like, I'll give you some of my time to elaborate further.

Mr. Alfred Fitzpatrick: There seems to be a big disconnect between science and managers in DFO. We'll go into a meeting with DFO. The science will be there, but it seems what science recommends and what we agree to are not always followed, even though it makes sense for the stock and for the harvesters.

Mr. Mel Arnold: —even though what the fishermen are seeing and recommending makes sense.

Mr. Alfred Fitzpatrick: Yes. I'm not saying we're 100% right all the time, but when you can get fishermen and science to agree on something, and it doesn't get followed, it makes you wonder what the point was of having the meetings in the first place.

Mr. Mel Arnold: Does anybody else want to chime in with thoughts on this issue of the precautionary principle overriding, when the science doesn't necessarily support it?

Mr. Bernie Berry: I think Mr. Fitzpatrick has it spot-on. The big thing is that science and industry have to be pushing this, and the precautionary approach has to take the lead from industry and science. Industry is the eyes on the water [*Technical difficulty—Editor*].

Mr. Mel Arnold: We may have lost sound there.

I'll move on to my next question. As we're all aware, there were closures last year to protect the right whale migration. These closures were put in place despite the fact that none of the entanglements seemed to involve lobster gear previously. We're all glad to know that there were no known right whale fatalities last year.

What were your experiences as a fisherman, or your stakeholders' experiences, as organizations, in dealing with those closures?

● (1650)

Ms. Melanie Giffin: From the P.E.I. perspective, there wasn't a whole lot of area that overlapped, but we did discuss a lot with the Maritime Fishermen's Union, because they did have areas that overlapped with the closures that were directly to the coastline. We worked really closely with DFO this past year, to have blatant discussions about what worked and what didn't work—things that we could see improve this year. In all honesty, I think a lot of our recommendations came forward, which was great.

We now have the difference with the 20-fathom line and the 10-fathom line, because the majority of our inshore lobster fishers are within that 20-fathom line. Normally, the whales are never within that line, so it keeps a natural separation there.

We have precautions in place, in case the whales do come within that 20-fathom line. That was one of the biggest things we saw, in terms of the changes this year. We're suspecting some changes, and possibly some ships...with the calves that were born this year. We saw no calves in the gulf last year, but it's expectations we're waiting to hear about. We need to learn about the calves' behaviour in the gulf. Our experience is that we didn't have a whole lot of direct overlap. This year, we have avoided any possibility of direct overlap, which is great, from the P.E.I. perspective.

Mr. Mel Arnold: Okay.

Someone was speaking earlier about the movement into deeper water, 50-fathom depths, and so on. I don't recall who that was, but how would that impact those fisheries in that deeper water, where you're not exempt from those closures?

Mr. Bernie Berry: Actually, in LFA 34, we were very lucky last year. There were two closures very close to our fishing area. One was in the Roseway Basin. It happened on the last day of our season, but if it had happened two weeks earlier, we would have had a closure in a small section in our southeast corner. The same thing happened on our northern border. Grand Manan had a closure mid-June, which is two weeks after our season closed down. The size of that closure meant it would have come into LFA 34.

It could have had an impact, but we've tested a ropeless gear technology in different designs, and stuff like that. We have hydrophones out now, in specific areas, trying to garner information. The key, from our perspective, is that industry has to be proactive instead of reactive. You have to try to get out ahead of some of this. Sometimes you're caught off guard, but we have been trying to work with DFO.

All of this is new for everybody, I think. We have to do things like this, especially when it comes to the whales, because of the negative impact it could have on markets. Also, there is the MMPA that the Americans are pushing. We have to meet certain requirements there, so we are beholden, as an industry, to be very proactive and, as I just mentioned, to simply get out ahead, work with science *Technical difficulty—Editor* the best we can and make sure our fishermen are not negatively impacted here.

Mr. Mel Arnold: Thank you.

The Vice-Chair (Mr. Gord Johns): Mr. Finnigan, you have five minutes.

[*Translation*]

Mr. Pat Finnigan (Miramichi—Grand Lake, Lib.): Mr. Le Bris, when you were here last week, we discussed an issue that hasn't come up yet today, water acidification. It's not the same phenomenon we saw in the 1970s, with acid rain. From what you've said, I gather that what we're seeing now is the result of climate change. Carbon dioxide combines with the water, acidifying it and creating a less than favourable environment for lobster.

Would you mind elaborating on that a bit further?

Dr. Arnault Le Bris: Not at all. Thank you for the question.

Carbon dioxide has two effects. First, it creates a greenhouse gas effect, which warms the atmosphere and the oceans. As far the second is concerned, it's important to understand that the vast majority of carbon dioxide, 70% to 75%, is absorbed by the oceans. When carbon dioxide mixes with sea water, it creates an ion of acid, or H+, in this case, calcium carbonate, which acidifies the oceans.

In the scientific community, we consider ocean acidification a climate change time bomb for marine ecosystems. We don't yet fully understand the impact of acidification, but we are starting to see a lot more studies emerge. The thinking is that, in 50 or 100 years, acidification could affect all ocean ecosystems everywhere. Some areas are likely to be more affected by acidification, especially those like ours, where it's colder.

Studies are beginning to show the potential impact of decreasing water pH, in other words, increasing acidity, on lobster. It is thought that the impact on adults will be fairly mild and short-lived, but that larvae will be more affected. As of now, we don't have a grasp on what those effects are. We think phytoplankton and zooplankton will be most affected, and because they form the basis of the ocean's food supply, the rest of the food chain could be impacted. This discussion began just 10 or 20 years ago, so we are only beginning to understand the phenomenon. In the long term—over the next 30, 40 or 50 years—though, it will really become a central issue.

● (1655)

Mr. Pat Finnigan: Thank you, Mr. Le Bris.

[*English*]

Mr. Pershing, you've been monitoring the water temperature, and we know that the lobster habitat has shifted for different reasons. Some people would say that this is just a normal cycle over time. Do you have data that would go back and show that this is not a normal cycle? Perhaps it is. Could you comment on that?

Dr. Andrew Pershing: There are natural cycles that have been going on forever in the world. What we're doing now, with our experiment of putting a lot of carbon dioxide in the atmosphere, is introducing trends on top of those cycles. The warming that we've experienced recently in the northwest Atlantic has signals of both. We are seeing both a trend and the apex of a warm cycle on top of that trend. When the two add together, you get really rapid warming, which is what we've experienced.

The challenge going forward is that it's certainly possible that we might cool down a little bit as we go into, perhaps, a cooler phase of one of the major cycles in the North Atlantic, but that cool period will not be as cool as the cool periods in the past. Right now it looks like the climate projections, especially the newer, higher resolution climate projections, are suggesting warming rates very similar to what we've experienced over the last 15 to 30 years, which is that this region will continue to warm at about four times the global average rate.

Mr. Pat Finnigan: Okay, thank you.

The Vice-Chair (Mr. Gord Johns): Does anyone have any objections to my asking questions from the chair? Great.

I'm going to go back to the witnesses in P.E.I., in Charlottetown. I started by asking you about what your top recommendations are for the study. I'm sorry, I interrupted to ask Mr. Fitzpatrick a question, but did you have anything you wanted to add from there?

Ms. Melanie Giffin: I do, actually. We have a lot of concerns on P.E.I. about the carrying capacity of the species. Basically, there's a lot of talk about productivity and where things are right now in terms of our biomass. Right now our biomass is through the roof, which is great; this is not a complaint. The concern that we have is that there's also a commercial fishery for rock crab, and one of the main diets of lobster outside of the fishing season is rock crab. Our question is whether there is enough in terms of habitat and natural diet for the lobsters to sustain the population that we have out there.

It's one of the questions that we've been taking to DFO Moncton. P.E.I is in a bit of a different scenario from, say, Newfoundland and southwest Nova Scotia in the sense that we're more of a self-contained unit within the gulf. Our larvae stay within there; they drift around, of course, with the currents. We have a really close collaboration with DFO. We did put forward—and DFO is on board—this research in trying to understand the carrying capacity and making sure that there are enough resources available for the lobster themselves in our area. Unfortunately, when we requested funding through DFO in collaboration on a rock crab study to make sure there was enough nutrition out there for them, it was denied.

It was really disheartening to P.E.I. to know that something that seems to be so important to us—ensuring that our lobster population is sustainable—was denied funding. That would be another main source of research we would like to do, ensuring there's enough food out there for such a large population.

● (1700)

The Vice-Chair (Mr. Gord Johns): With your concerns around the interdependent species and the whole-of-ecosystem approach, are there other species that are.... Obviously there's the rock crab and then what they're feeding on that also should be looked at. Is there anything that you've identified there, and do you feel that's really where the big gap is, that holistic approach?

Ms. Melanie Giffin: Yes, I feel that looking at the whole ecosystem is definitely a key to understanding everything. We mentioned earlier not just understanding the temperature changes, pH changes, salinity changes and things that are shifting in the actual water chemistry, but how those are shifting as a result of climate change and industrial issues within the Northumberland Strait as well. It is a full ecosystem approach.

When talking about rock crab, it is a question of whether there's enough food for the rock crab and what's happening with those. Within our lobster larval collectors that we do, we collect rock crab as well and DFO analyzes what is going on with the young rock crab and the trends of their population.

We have some information, and it's enough information to be concerned and to want to do some more work.

The Vice-Chair (Mr. Gord Johns): Thank you.

Does anyone have any objections? Mr. Arnold has a quick question.

Go ahead, Mr. Arnold.

Mr. Mel Arnold: One thing that I've been very concerned about across the country is aquatic invasive species. Particularly in your neck of the woods, I think green crab may perhaps be the biggest risk. Does anybody have any experience or information on that and how it's impacting the ecosystem?

Ms. Melanie Giffin: We've had a little bit of information on P.E.I. We see fluctuations in the green crab annually, and it usually comes down to winter temperatures and what we're seeing the following year, based on the temperatures over the winter and if there's a large fluctuation or a small one. In terms of numbers, I'm not sure if Bobby would have a better idea, being on the water and seeing it.

Mr. Bobby Jenkins: We're not seeing as many now as we did in 2013-14, and we think that's on account of the weather in the 2015 winter. It was a really harsh winter, and we figure that some of the stock must have been killed off. It seemed to be a little bit more predominant last year than 2016-17, but we'll have to see what happens.

The Vice-Chair (Mr. Gord Johns): Thank you.

We all want to extend our appreciation for your taking time out of your day to give us your important feedback and testimony. We'll definitely be taking that back as we put forward recommendations to the report.

For those who are in the room, we're going to be going in camera.

[*Proceedings continue in camera*]