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Thursday, September 29, 2005

Chair

Mr. Tom Wappel

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● (1430)

[*English*]

The Chair (Mr. Tom Wappel (Scarborough Southwest, Lib.)): I call the meeting to order.

Just for the record, the order of reference is pursuant to Standing Order 108(2). We're continuing our study on the northern cod, including the events leading to the collapse of the fishery and the failure of the stock to re-establish itself since the moratorium.

We have with us Glenn Blackwood, executive director and CEO, Fisheries and Marine Institute, Memorial University of Newfoundland.

Welcome, sir. Just so you have an idea of how this proceeds, we give you an opportunity to make an opening statement of up to 15 minutes. Then we'll take questions from the members who are on the panel. We appreciate your coming and we look forward to hearing what you have to say. So without further ado, please go right ahead.

Mr. Glenn Blackwood (Executive Director and CEO, Fisheries and Marine Institute, Memorial University of Newfoundland, As an Individual): Thank you, sir.

I presented on May 7, 2003, to the standing committee as well. I don't have much different to say, and would like to repeat some of it. I had some positive feedback on that presentation. It was at the invitation of the committee that I am attending today, and certain members encouraged me, so I would like to thank you for the invitation to appear before you.

At that time I explained my background, but I won't with 15 minutes—we'll go over that in the questioning—except to say I was a marine biologist with the Newfoundland government for a number of years in the 1980s. I attended a lot of federal-provincial committee meetings. I was a member of the northern cod science panel and attended NAFO meetings. I was asked to leave one of the NAFO meetings on northern cod at one point before it started. I was a member of the Fisheries Resource Conservation Council of Canada for four years in the mid-1990s. I've been around northern cod—my family history goes back to the 1800s on this particular species and stock.

In the couple of years since my last presentation not a lot has changed. As I said at that time, I don't think there's a lot to be gained from finger-pointing. My grandfather used to say that when you point your finger three more point back at you. I do think there's a need for an inquiry into what caused the collapse, and the roots of the collapse. I believe we have a system failure, and that stock was sort of the poster boy or girl of fisheries management in Canada. Northern cod is just the very tip of a lot of the problems we had during the 1980s and 1990s in fisheries management.

I have also taught in the master's program. My master's thesis was on past and future goals and objectives in the allocation of northern cod. During the 1980s, the Atlantic Groundfish Advisory Committee, the province, and the federal government spent very little time discussing the status of the stock. If a scientist came in and said the stock was in good shape we said, “Great, he's a good scientist”. When scientists came in and said stocks weren't in such great shape, within DFO or outside, they weren't treated with the same respect. Most of the emphasis in those meetings that took place throughout the 1980s wasn't on how to restore the stock, or what shape the stock was in, but very much on how to get a bigger share. How does Newfoundland outwit Nova Scotia, or Quebec gain access, or inshore versus offshore...? I think it was detrimental to the overall management.

As I've said, I have had a long involvement in this, so I take some of the blame and none of the credit for where we are today. In the way the Atlantic fishery is evolving, there are lessons to be learned from northern cod, and I welcome the opportunity to give my point of view.

A couple of years ago I covered four different areas: the reasons for the collapse; the allocation policy—I won't dwell on the allocation policy, I'll just express my frustration with that; foreign overfishing, which is a huge issue for the Government of Canada and the Government of Newfoundland; and the conservation, preservation, and exploitation views we have, how they're perceived in the media, and how they're managed by government.

I believe northern cod was our reason to be, and I entitled that presentation “The Destruction of Cod and Culture” because a lot of what we've done historically has been tied up in cod. Even today, with a different fishery, a shellfish industry worth nearly $1 billion, we still aren't fishing. A lot of the communities that historically depended on cod are searching for a way to carry on. Some of them have been fortunate enough to have access to shellfish, and some fishermen have made the transformation to a shellfish industry and have done quite well.

But cod was very much like peanut butter. It spread itself from the tip of Labrador all the way down around the south coast of the province. It went into every nook and cranny and affected more people.... At the time of the closure, it was the largest layoff in Canadian history.

● (1435)

How do you replace cod? You don't. And you don't replace it in terms of culture. You may replace it economically in some communities, but without cod there is a very different future for a lot of places.

Coming back to what happened, I think we had three phases. I see this in other fisheries as well, and it's something I think the Department of Fisheries and Oceans should be very aware of. I think we had a euphoria phase, and the euphoria phase came in 1977. I had just enrolled in Memorial's new marine biology. In the euphoria phase we had gained a 200-mile limit. A have-not would be no more. The future was in fish. We had a huge investment in this province and other places in harvesting and processing technology.

The optimistic resource projections at that point in time were that northern cod would grow to 400,000 metric tonnes. There were lots of workshops and conferences to share up that incredible wealth that we were going to receive. There was a phase-out of foreign fleets, and there were statements of priority allocation to the inshore sector. I think the province's position was that 85% should go to the inshore. There was also at that time a collapse of redfish stocks in the gulf. At the time, the Minister of Fisheries and Oceans, Roméo LeBlanc, advised that the offshore should leave the gulf and that there were opportunities in growing resource areas off the coast of Labrador.

Unfortunately, that euphoria phase lasted four to five years. By the early 1980s we were embroiled in inshore cod failures, an offshore restructuring, and the Kirby task force. At that point in time, in the offshore crisis and the restructuring that took place, the inshore fishery couldn't catch its 115,000 metric tonnes. If you look back on it, you would think a red flag would have gone up at that point.

As well, the scientific advice became less optimistic. There was no longer talk about 400,000 metric tonnes. We were starting to see thumbs up, thumbs down types of signals from the offshore, from the inshore failures. We had the Alverson task force review of the inshore fishery. Traditionally, the inshore fishery, which harvested about 200,000 metric tonnes a year with new haulers, new gillnets, new technologies, and Japanese cod traps, was able to catch 70,000 to 80,000 tonnes a year. We spent a lot of time explaining away why the fish weren't coming inshore in abundance. There were cold-water years and there was a declining effort in some areas, but the reality, as we now know, is that the stock wasn't as large as we thought it was.

I can explain away the uncertainty phase from 1982 to 1988. I lived through that, and I think a part of that was that we didn't know; we thought the stock was larger than it was, and we didn't know the difference.

The crisis phase, from 1989 to 1992, I have a more difficult time dealing with in terms of how governments and individuals and everybody else made decisions. In that period of three years, we had scientific advice in 1989 of an abrupt decline to 125,000 metric tonnes. That was down from a TAC of 266,000 tonnes the year previous. We had a very difficult time, as a province, adjusting to that flip-flop, but there were lots of warning signs up to 1989. I think by the time that advice came and we struck the Harris panel, I really believe we had an opportunity to protect the stock and not to keep fishing. The stock was at low levels, and we saw low levels of recruitment. The spawning biomass was at some of the lowest levels ever observed. After 15 years of management, Canadian management, in 1992, when we closed the stock, the Harris panel did confirm the low level of spawning biomass and recommended dramatic cuts.

People look at July 2, 1992, which is over 13 years ago now, as a TSN turning point, if you will, for stock. I really believe—and I've studied this, studied it biologically and academically—that this stock declined steadily from the mid-1980s. There was no abrupt decline in 1992.

● (1440)

Dr. Harris talked about dipping a cup in a barrel and getting a cupful, until you hit the bottom of the barrel. I believe the catch rates we're using, and even catch rates that weren't statistically valid in the DFO offshore surveys, tell me that basically we were getting close to the bottom of the barrel.

So as explanations for an abrupt decline, seals in cold water, I really believe, have prevented the stock from bouncing back. I think our seal populations are extremely large and are having a significant effect on our ecosystem.

But I don't blame seals in cold water for the decline; I consider them a major factor. If the water had been warm and our seal populations had been lower, we might have gotten one more year of fishing. From the time we knew this stock was declining until we actually closed it, we killed 700,000 metric tonnes of fish. The Canadian Saltfish Corporation went bankrupt, basically, processing what we would call leggies or rounders, depending on what area of the province you come from. These are fish that are too small to split, basically. At the same time, some of our offshore plants reported from 20 fish in 100 pounds to 70. We had mackerel machines brought in to some of the inshore areas to fillet cod that were too small to fillet by hand.

Then, for us to be surprised on July 2, 1992...? I saw that decline on a personal level in Bonavista Bay in the late 1980s and I saw it scientifically in spades in the 1989-92 period with the Harris panel and the review that was done. So I wasn't surprised.

The fact that it hasn't recovered is both disappointing and surprising. If you look at ecosystems—Georges Bank, the southern Grand Banks, and Hamilton Bank—and think of a punching bag, we knocked this stock down significantly. The resilience in the ecosystem.... If this were Georges Bank, where it takes two to three years to get a spawning fish, or even the southern Grand Banks, it could have bounced back like a punching bag; however, it takes seven to eight years to get a spawning fish off the coast of Labrador. When you knock it down so its spawning biomass is at the lowest level ever observed and your recruitment fails, then you're into a long-term rebuilding process. That has been complicated by the size of the seal herds and our unforgiving harsh environment, which we have grown to love.

So I believe we are fully responsible for the collapse of northern cod. There are a lot of lessons to be learned. If we can't wave a magic wand and make it recover, at least we should learn something from what was done.

I'll skip the allocation policy and talk a little bit about foreign overfishing. I talk about it in the context of selling conservation in rural Newfoundland, where we ask people to conserve resources—not to fish, but to shut down all their fisheries because of bycatch—though not so much in the case of northern cod, because on the north cape of the Grand Bank, where that's mostly a problem, the problem shifted to turbot in the late 1980s. There were was a significant amount of cod caught, I believe, and not reported. Dr. George Rose could talk to you about that.

I believe examples like American plaice, which many countries keep fishing after we've essentially shut down communities to conserve the stocks.... I really believe that given the resilience—I mentioned the punching bag scenario—of stocks on the southern Grand Banks, the future of the south coast of Newfoundland, of communities such as Harbour Breton, Trepassey, and the historic offshore communities.... They benefited from northern cod in the 1980s, but their history is not really northern cod. I really believe their history was the southern Grand Banks—that's why we have communities named Grand Bank—and the history of the vessels that fished out of there for years was driven by cod, flounder, and redfish stocks on the Grand Banks, not on Hamilton Bank.

With the collapse of those stocks, largely due to foreign overfishing, we gradually shifted to an industry that had one pillar—one leg under our chair—which was northern cod. When that collapsed, we blamed the entire collapse of the offshore and inshore fisheries on one stock without acknowledging 3N-0 cod, American plaice, and yellowtail, which were the basis of the south coast.

Rebuilding the southern Grand Banks—the nose and tail area—is critical to the future of the south coast of Newfoundland, and it's not tied to northern cod.

● (1445)

If we're going to wait to rebuild the Gaultois and Burgeos and Rameas because we're going to rebuild northern cod, those communities have very little hope of ever seeing fish from the north again. However, as a biologist, as a person who has studied this for 20 or 25 years—and these are personal comments, by the way, not those of the Marine Institute—I really believe that rebuilding the southern Grand Banks is the biggest resource opportunity in Canada at this point in time.

Whatever we've done for the past number of years—and you've all had presentations and studies calling for the disbanding or reforming of NAFO or for doing custodial management—protect the fish first, and fight over the fish second. I really think that in a two- to three-year period, you could have a significant increase in marine biomass on the southern Grand Banks for the benefit of everyone involved in those fisheries. I don't see that taking place in this environment. What I see is that whatever pops up is mowed down. We saw some of the biggest year classes of turbot ever seen, which are now gone. We saw recruitment in several fisheries, like yellowtail and American plaice. Yellowtail is holding its own, but the American plaice never get to be spawners.

I really believe there is a solution to this that benefits Canada, and Newfoundland in particular, because of our history, and also benefits people in Nova Scotia who have traditionally fished these grounds. It also benefits people from Spain and Portugal, who have historic shares through NAFO. But right now it's gone to hell in a handbasket, and basically nobody is benefiting and we're scraping the bottom of the barrel.

I'll clue up by saying that I believe that the current efforts at conservation in Canada—and I was on the FRCC for a number of years—aren't going to work. It's going to be difficult to sell them to fishermen and it's going to be difficult to sell them in government departments, unless the resource users have more of a say in how they are implemented. I think the FRCC is a start in that process, but I've been offered by fishermen a meal of government fish like salmon or cod. The Department of Fisheries and Oceans, unfortunately, is seen as the Sheriff of Nottingham, and people who are fishing, either illegally or under the cover of darkness, are seen as Robin Hood. It's a mug's game where nobody wins. It's very frustrating to see that people really can't buy into the stewardship that we talk about and that we, I wouldn't say propose, but put out as a concept, when they see, I think, 25,000 days fished by factory freezer trawlers on the Grand Banks, and the closing of a blackback fishery in St. Mary's Bay or on the southern shore because they have caught ten codfish. It's not that catching the ten codfish is right, but it's the consistency of approach.

I did mention consistency to Dr. Paul LeBlanc when I was on the FRCC, and he said that consistency is the hobgoblin of small minds. Ralph Waldo Emerson once said that, I believe. We can't be absolutely consistent, but we have the opportunity, I believe, to have a fresh approach. Conservation is not where you pour your efforts into a barrel that somebody else then dips out. I really believe that solving the problems on the southern Grand Banks is a key part of conservation in rural Newfoundland and in having our industry and the Canadian industry buy into a new approach.

● (1450)

The Chair: Mr. Blackwood, could you wrap it up there? Then we'll go to the questions.

Mr. Don Blackwood: That's it.

The Chair: Thank you.

We'll start with Mr. Keddy, for ten minutes.

Mr. Gerald Keddy (South Shore—St. Margaret's, CPC): Thank you, Mr.Chairman.

Thank you, Mr. Blackwood, for appearing. Your discussion has been intelligent, informative, straightforward, uncomplicated, and excellent. Very good. I certainly learned a lot from it, and you've touched on a few issues that this committee really hasn't touched on but that have been kind of lurking around the recesses of my mind, I guess.

We've seen similar problems in the southwestern part of Nova Scotia that I represent; that is, the amount of effort on other species and the decimation of those species. I think, from the cod collapse in 1989 to 1992, the moratorium in 1992-93 and onward, we've seen that straight across the eastern part of Canada, and I don't know if anyone has ever put that into words yet, so I very much appreciate this insight—and especially on turbot. We've had a lot of enterprises targeting it who never fished turbot in past years and had to buy quota because they had no history in turbot.

I apologize for this, and I apologize to my colleagues as well, but I have to make a comment not on Mr. Blackwood's testimony but on the previous testimony of Mr. Hutchings—and I think it's important that it be on the record for this committee. I asked him privately—and I want to ask our witness the same question—about his discussion that we should use SARA to control outside the 200-mile limit in the foreign fleet.

I wasn't aware of the fact, so I asked him the question of whether he was a member of COSEWIC. He is a committee member, and therefore he is appointed by the minister and answerable to him. I just think that needs to be on the record and in our considerations as a committee.

Mr. Blackwood, you're familiar with COSEWIC and the rules under SARA, the endangered species act. In your opinion, if—as I think the minister wants, but I'm not sure the committee is going to agree with him yet—we were to look at listing cod as an endangered species, which I have my own private thoughts on, what do you think this would do to enable the Canadian government to regulate outside of the 200-mile limit, or do you think it would do anything?

Mr. Glenn Blackwood: I am familiar with COSEWIC. I attended one meeting a long time ago. I'm not sure I agree that cod is an endangered species.

Mr. Gerald Keddy: I'm not saying I agree, I'm just asking.

Mr. Glenn Blackwood: I do think there's a lot of frustration in the people involved, frustration with the lack of recovery. You try to do through the back door what you can't do through the front door.

I think of an endangered species as something I don't see on a regular basis. It's something I see very rarely, not something that, if I went to Trinity Bay or a given area, I may see a lot of. I know the conditions of COSEWIC, or the criteria for ranking whether something's threatened or endangered. I think there are a lot of the terrestrial applications of that, and I know there've been some improvements made on the fish stocks.

After 20 or 25 years of this, I'm not quite sure where the science on fish is. I don't think we're doing enough of it. I do know that when people put out a net for blackback and catch 2,000 pounds, it doesn't seem to me to be endangered. At the same time, the survey says there's no fish in a given area. We're really struggling with where cod is, particularly where northern cod is.

In the meantime, I'm not saying, by any means, that I believe it to be abundant. I really believe the stock is at one of the lowest levels seen, and any recovery has probably been minimal. I don't think it's back to the 1.2 million metric tonnes that some people have advised it should be at.

Should that be a tool to use outside of 200 miles, or would that solve a problem? It may. I think the industry is grappling now in its dealings with species at risk legislation, and it will learn—as we do with all species—to deal with those bycatches and others, wolffish being one.

● (1455)

Mr. Gerald Keddy: My concern with COSEWIC and the species at risk legislation—and I made the comment to Mr. Hutchings—is the fact that there's no division of territory. We have a division now, a number of them, different zones for fishing. I didn't see any willingness for discussion from him.

I'm not trying to put your testimony against him. It's not quite—

Mr. Glenn Blackwood: I didn't hear his testimony.

Mr. Gerald Keddy: This is not quite fair. But it would seem to me that we've heard witnesses, certainly from the Trinity Bay and Bonavista Bay area, tell us that they're seeing cod where they never saw cod before. They're seeing cod at different times of year. The capelin runs have returned. There's cod off the wharf. There are multi-year classes. There are certainly spawning cod. They're a healthy resource, if you will. I see no reason it couldn't be possible in specific areas, and I think you related to that in your opening statement.

I would see a danger. If we try to make one simple classification here, I think we're running the risk, and a serious risk, of hurting the entire resource. That kind of goes with that domino effect you related to, where we concentrated on cod, there were no more cod, and we still had effort out there. We just simply switched to other species and we had gone down the entire list to where it's going to be a hell of a job now to rebuild any of the resource.

Mr. Glenn Blackwood: I think that's the unfortunate part. A colleague of mine once called it “serial overfishing”. We keep shifting.

You mentioned turbot. We started fishing turbot in Trinity Bay in the late 1960s with gillnets. That shifted to The Funks in the 1970s. It shifted to the Round Hills off Labrador in the 1980s and has now shifted to the Davis Strait. We've never seen a return of turbot in any significant amount to Trinity Bay, but if you look at the overall landings for the 1970s and 1980s, they were fairly stable as we fished out one area and moved to the next.

For the northern cod, the Harris panel tried to spread effort from Hamilton Bank to Funk Island Bank to the northern Grand Bank. So I think in future we should be not only looking at what the quotas are. Aldo Leopold said we admire the pump, the technology—we count what comes ashore—but we don't look in the well.

If I have a recommendation to you, it's that I believe we're doing a lot less science and a lot less knowledge gathering in this area than we were doing in the 1970s and 1980s. I left fisheries in 1997, so I haven't been close to the details of COSEWIC and the recovery action committees for cod. My presentation was very much to tell you what caused the collapse.

On where it is now, I'm not an expert. On where it's likely to recover, I don't consider myself an expert. I think, though, if we don't give it some break....

I'm not just talking about northern cod. The southern Grand Bank, I believe, could rebound quickly, and it may lead to recolonization, like we're hoping Smith Sound will, in the entire stock area, but I'm willing to bet we could take a fishing vessel and load her to the gunwales today in certain areas, in certain bays in Newfoundland. I don't think anybody is proposing that we go fish those concentrations that we do know exist, but is it endangered? Maybe by those criteria, but by my personal assessment of endangered, I really don't believe it is.

Mr. Gerald Keddy: I don't disagree with that, but I thank you for that statement.

On this kind of crisis management that we've applied in the fishery—and I know you mentioned earlier that you were part of the system and will accept your share of the blame—there's blame to be laid, but the entire process failed. What I see as our responsibility as a committee is to try to make some recommendations on what we can do about the recovery part of this process.

We're coming in at the tail end. The mistakes have already been made. But to a degree I continue to see those same mistakes being made over and over again.

I have one issue that has puzzled me, and I'd just like your opinion on it, from someone who's worked in the science part of it. I've said it to a number of our witnesses. There's this real, almost antagonistic approach between fishermen and science, and it puzzles me to no end, because there should be a close, cooperative approach between fishermen and science.

I know budgets have been cut and I know scientists can't work with fishermen the way they would probably need to in order to build up that trust and rapport, but to a degree, I think governments feed that. Governments could look and say, “The cod collapsed because we had poor science. We had quotas out there and we didn't get good science.” The fishermen can say, “Yes, there was bad science there.” But it would seem to me that science has been the whipping boy for both industry and politics. It's been harmful to the process, and I think it's really hurt the ability for scientists to have the trust and the reputation they need to have for fishermen to really trust what they're saying.

● (1500)

Mr. Glenn Blackwood: I totally agree with you. It's probably the biggest problem for the Department of Fisheries and Oceans and for the people who work there, the scientists and the managers, and also for the industry.

I asked for more science, more input. I didn't say that it would be exactly the same as it was in the past. I think the sentinel program and the inclusion of that into science, and I think the sentinel surveys and industry surveys.... To look back on it, it's pretty easy to point fingers and lay blame.

One of the biggest problems I saw was that guys who said the stock was increasing were great scientists, and guys who raised red flags weren't. That's like going to the doctor and if he tells you that you're in great physical condition, you don't go for a second opinion, but if he tells you that you unfortunately have a limited time to live, the first thing you do is go to see a specialist. That was what we spent the 1980s and early 1990s at, from the Alverson task force to the Keats, Don Steele, and John Green report, which in retrospect we should have looked at more.

In 1986 there were catch-size documents questioning whether the stock was healthy. But at the same time, how do you implement the largest layoff in Canadian history? I think as a society we're really good at responding after the fact.

Mr. Gerald Keddy: Guaranteed.

Mr. Glenn Blackwood: After the *Ocean Ranger* we had safety training.

Mr. Gerald Keddy: Yes, I remember.

The Chair: Thank you, Mr. Blackwood.

Before I call on Mr. Blais.... When I was in law school, in tort class we were taught about the man on the Clapham omnibus. The Clapham omnibus is just a bus line in London. The point of the Clapham omnibus is the ordinary person. And the judgment in tort law is based on how the ordinary person would act.

If the ordinary person were asked if a species that has been decimated by 99% is endangered, would you say that the ordinary person would say yes?

Mr. Glenn Blackwood: I would think that yes, they would, if they believed the number that the 99% was derived from and they believed the number that was used to calculate the percentage.

The Chair: Is it your statement that neither of those are in fact accurate?

Mr. Glenn Blackwood: I don't think the average fisherman in Trinity Bay believes that number. A lot of the fishermen in Bonavista Bay, where I grew up, don't believe those numbers. And that's where the problem is.

Yes, it can be shown scientifically that we have dropped 99%. There's nobody in the province who doesn't recognize that the northern cod collapse is a problem and that the stock is at a low level. There's nobody talking about building fifty vessels in Marystown to go fishing it. And there's nobody talking about getting the cod traps that have been sitting idle for thirteen years in storage.

I know exactly your point. I think most people, if they could look into a crystal ball, would say yes, there are a number of cod out there but it's a fraction of what it was. Maybe it's 1%, maybe it's 2%, or maybe it's 3%. But people have lost faith in the system that leads to the calculation of those numbers. And they lost that faith in the late 1980s.

● (1505)

The Chair: Thank you.

Monsieur Blais.

[*Translation*]

Mr. Raynald Blais (Gaspésie—Îles-de-la-Madeleine, BQ): Thank you, Mr. Wappell.

Good afternoon, Mr. Blackwood.

I would like you to comment the impact of the seal population on the decline of the codfish stock. What do you think about that? How much did this factor contribute to the decline of this resource, if it did at all? Also, how would you describe the situation in the last few years concerning codfish versus seals?

[*English*]

Mr. Glenn Blackwood: Thank you.

I recently spoke in New Zealand at a conference on seabed impacts. When I finished speaking about some gear technology work that we were doing and some demonstrations, I asked if there were any questions. Out of 200 or 300 people one person stood up and said, "You're from Newfoundland." I said, "Yes." He said, "You slaughter seals." So seals is an enormous issue for Newfoundland and for Canada.

Do I believe seals are a problem in the recovery of the stock? I think there's scientific evidence that seals consume up to a billion codfish. If you're talking about the inclusive—the foreign overfishing issue and selling conservation—when people look out and see seals feeding on cod, and we've documented evidence of belly feeding and underwater video of that, they see a system whereby seal populations have increased significantly. I flew the seal herds off Labrador with Captain Morissey Johnson many years ago and Ernie Cowllins from DFO as part of their survey and there's some good work being done on seals, seal stomachs and assessment. I personally believe, yes, seals are preventing the recovery, and I think a population of five million plus animals in the marine environment has an impact.

Can I quantify the size of the impact? I can't. I don't see seals as a scapegoat. I don't advocate a cull, but I do see them as a natural resource that we've been a little bit hesitant to harvest. I have a seal skin wallet that was presented to me by some sealers a long time ago. I see seals as any other resource. I believe maybe our position should be that we maintain the seal herd as one of the largest in the world—probably the largest harp seal herd in the North Atlantic. But right now it's two and three times that size. It's a question of balance. If we don't want to harvest seals and seals are going to live in the same ecosystem, there's only so much energy in that system. I think the impact they've had and the impact that they're having is cause for scientific study. It's also a very emotional debate. It's again one of those things we have very few solutions for. We do have the opportunity, I believe, in this province to continue with seal harvest and to try to find some balance.

[*Translation*]

Mr. Raynald Blais: Concerning the stock structure, in other terms the areas where the cod stocks are, what is your assessment of the situation? Some say there is much more that there used to be in the coastal areas, but that there is a steep decline offshore. What do you think? Do you have an opinion on this?

[*English*]

Mr. Glenn Blackwood: I do. The inshore cod that we have left is stuff that's very close to shore. I really believe they are the remnants of the stock. Unfortunately, you can't play these things as experiments. Scientists study a piece of the system and then they try to extrapolate from that what's happening with the entire part. Dr. George Rose spent a lot of time monitoring these cod stocks and tracking them and looking at migration patterns and looking at the fish offshore that come inshore. There are lots of good tagging studies done right back to Dr. Templeman's day that indicate there's a migration from the inshore to the offshore.

Lots of species migrate—the caribou herds in Labrador. The George River herd migrates from Labrador into Quebec and back on a seasonal and feeding migration pattern. I believe cod are very much the same. But when you get populations at very low levels, when there are only a relatively few—I won't say 1%, sir—when there's a smaller level, maybe they can find enough to eat and enough warm water in places like Smith Sound to overwinter. There's evidence that they always did. Are they the remnants that will rebuild the offshore? I believe they are. We haven't seen the abundance offshore that we've seen near shore. But we haven't spent as much time offshore either. If we shut down our offshore fisheries, so we go out and fish crab in pots, which don't catch cod, and we fish turbot in deep water beyond the depth where cod is located, and we have things like Nordmore grates in our shrimp fishery that prevent cod bycatch, and we don't have enough sea days....The last time that the Government of Canada did a survey beyond Hamilton Bank to the north—I'm not saying there's cod there, but from what's there scientifically—it was 1979.

● (1510)

[*Translation*]

Mr. Raynald Blais: Mr. Blackwood, what do you think of the state of our knowledge on the inshore cod? Do you think we know enough about it? There is always room for improvement, you could say, but do we have enough information right now to make a decision on the reopening of inshore cod fishing?

[*English*]

Mr. Glenn Blackwood: No, I don't. Obviously I think that's the reason for your committee hearings. If we did have that knowledge, we'd be making management decisions. We don't have the knowledge. My problem is that in the absence of the knowledge, what are we doing to collect it? I don't think we've done enough in that area. I really don't believe we have a good understanding of what's going on.

We can take a certain point in time and look at a collapse. I did an analysis on the collapse of northern cod for the FRCC and presented it to them. I looked at the catch rates in the survey vessels. I did it for northern cod; at about the same time I was doing it, there was one tow in 3Ps that led to a biomass estimate of about 70,000 tonnes of fish, if I recall, or one strata. It was based on a big tow. If you had occasion to be in St. John's during the regatta and dropped a one-square-mile grid around the beer tent at Quidi Vidi Lake, you'd estimate the population of St. John's to be enormous; if you dropped it on the Southside Hills, a very close proximity, you wouldn't estimate there are very many people—unless you have somebody berry-picking—in Newfoundland and Labrador.

More sampling is necessary to take out that variability, not less. We need to spend more time at sea and we need to engage the industry on how those surveys are conducted. We have a longstanding series of research-vessel surveys of the Grand Banks and Hamilton Bank and Funk Island Bank; it's critical that we at least maintain them, if not increase them. I have a feeling some days that we know less about the system now than we did a hundred years ago, when Close's Atlastalked about the ocean currents on the Grand Banks and what the bottom types were, and when the fish migrated in and what was in their stomachs.

We shifted to a quantitative revolution. Somebody told me, and I could be wrong, 85% of the science branch budget in the Department of Fisheries and Oceans goes into quantifying a number to give a TAC that somebody at AGAC could fight about.

Basic life history, science, study, feeding, understanding the system are where we really should refocus, but don't throw out the stock assessments, the longstanding surveys, because those are basically the only things we have to go on. We're basically managing in the dark a little bit. I really think that trying to estimate the population biomass without understanding where the fish migrate.... You've got to ask some of those basic questions about those fish in the bays. How much have we spent on understanding those fish? Have we increased our budget on understanding the impact of seals? Those are very tough questions to ask me when I have a zero science budget, and not a lot of money has been spent.

I think those questions, and the ones you don't get answered during your review, should be the basis of an investment into increasing our understanding. That investment should be in the Department of Fisheries and Oceans and in academic institutions—not because I work for one, as I'm not in that area of research—and it should also be in an industry program to allow us to make better decisions.

● (1515)

The Chair: Merci, Monsieur Blais.

Next is Mr. Stoffer.

Mr. Peter Stoffer (Sackville—Eastern Shore, NDP): Thank you, Mr. Blackwood, for your presentation.

You said earlier in your testimony that you didn't think the process for going ahead should be done under this environment. What did you mean by that?

Mr. Glenn Blackwood: You'll have to refresh my memory.

Mr. Peter Stoffer: You were talking about how we move forward, but you had some concerns about the present environment. Are you talking about the department, or are you talking about a combination of things from the province, to fishermen, to scientists, to politicians, to the whole bit?

Mr. Glenn Blackwood: I would think that maybe the royal "we" is what I would use.

It's everybody involved. It's died down a little bit. This fishing industry in Atlantic Canada right now, and particularly in Newfoundland, is very volatile. A lot of people are very stressed. Their way of life has ended and they've reinvested in other fisheries, and now they're seeing warning signs for some of these fisheries. We're seeing lots of rules and regulations in the fishing industry. Captain Highliner is no longer the guy who kills the most fish; it's probably the guy who spends the most time in meetings.

I really think that we need an approach that.... I don't know what the solution is. You're gathering all the wisdom, but I really believe the approach, the entire environment, is wrong. I don't think there's respect for the system. I think you mentioned, sir, a systems failure, and I think we definitely have a systems failure in northern cod management and in our management of the southern Grand Banks through NAFO. I also think we have systems failure in other areas, like vessel design and safety at sea.

Mr. Peter Stoffer: In the late 1980s, what was your position and role?

Mr. Glenn Blackwood: I was the marine biologist representing the department for the Government of Newfoundland and Labrador on a large number of advisory committees, basically all advisory committees. I was the only one.

Mr. Peter Stoffer: On a provincial level.

Mr. Glenn Blackwood: On the provincial level as the provincial representative on probably fifty or more advisory committees, from tuna to cod to turbot to crab.

Mr. Peter Stoffer: You indicated in your testimony that there were a lot of red flags coming up, a lot of indications in the 1980s that something was wrong. You would have received that information. What did you do with that information yourself?

Mr. Glenn Blackwood: I printed graphs of northern cod spawning biomass. I met with provincial politicians. I presented arguments that were sometimes seen as self-serving because Newfoundland was saying the stock wasn't increasing and at the time Nova Nord from Quebec was looking for access. It was a difficult time.

I became the director of resources analysis about the time of the collapse. I had done lots of internal projections in provincial fisheries about the collapse and presented to the harvest panel and have been engaged in those processes.

Mr. Peter Stoffer: Did you pass this information on to the federal officials as well?

Mr. Glenn Blackwood: Through those meetings, yes.

Mr. Peter Stoffer: Did you get responses back from them indicating that you were taken seriously, or was it...?

The problem we have is that if a lot of folks at your level were passing information on to DFO.... We've heard before that science may have been manipulated for political reasons. What I'm trying to get at is if you think in any way the information that you passed on that was quoting those red flags may have been misinterpreted, through lack of resources, lack of intelligence, or was it deliberate?

Mr. Glenn Blackwood: I'll simply say that I lost respect for the process in the late 1980s. The turning point for me was June 1, 1992, when I attended a NAFO scientific council meeting, a special session on northern cod that I was invited to. Upon arriving I entered a room like this, sat down, met the people I had met the previous year, and was then asked by the official in charge to leave the meeting. When I asked why, he said it was for scientists. I said I was a scientist from the Newfoundland government. After a couple of hours of refusing to leave the meeting, I had a call from my minister who had talked to the premier who talked to the federal minister, advising I should leave.

That was the northern cod science report of NAFO that said northern cod had declined largely due to seals and cold water. I wasn't in the room, but having been in the room in the past, I would anticipate that it was the position of Spain, Portugal, and other attendees from the European Community that it was Canadian mismanagement, seals, and cold water. And I would think that the Government of Canada would have blamed it on foreign overfishing, seals, and cold water. I would think they could agree on seals and cold water.

Mr. Peter Stoffer: You mentioned that you think seals are hampering in the recovery efforts. If indeed that is the case, and I asked some fishermen in Bonavista only the other day, why would the inshore stocks be at levels that some of them said they'd never seen before? You would assume with that many fish, the seals would come inshore and start eating away at the abundance of an open grocery store, more or less. If the inshore stocks are rebounding with that many seals out there, I guess through my ignorance I'm wondering why the seals wouldn't have any effect on the inshore stock.

● (1520)

Mr. Glenn Blackwood: They do have an affect. The come into Bonavista Bay. They feed. We've done some underwater video. I'm not sure if they avoid the inshore, but their normal migration pattern is not to come close to land. Over the past 300 to 500 years the ones that come close to land have probably been selected against. They've been harvested in the most part.

I think the seal population is having an impact on cod. Why the cod are found inshore and not offshore may be due to seals. It may be the remnants of what was left. It may be that cod are comfortable in that environment; there is food and there is no need to migrate. But again, there are a lot of “maybes”.

During the late 1980s I wasn't a member of CAFSAC. I was a marine biologist. I graduated from the same university as many of the people who were, but CAFSAC, at that point in time, was an inclusive process. I remember being asked to leave the meeting at NAFO and being a little bit upset. I was told I wasn't allowed to be there because I wasn't a scientist, so I produced those credentials. Then I was told I wasn't allowed to be there because I had not been there the previous year. Then I showed them the back of the previous year's document and I was sitting next to the person in the group photo who was asking me to leave.

That's not a conspiracy theory. At that point in time they were struggling with damage control. I really don't believe there is any scientist who shaves in the morning—of those who shave—who is thinking while shaving, who can I do in today, or how can I misinterpret the information? I really believe that people are credible and they have a job to do, and they do it well. But in 1989 the advice came in to shift to 125,000 tonnes. That year we caught 250,000 tonnes or 270,000 tonnes of cod, and most of it was half the size of what we would call codfish. That continued for three years. That's the critical point. It's like any emergency, whether you're in New Orleans or elsewhere: you make decisions at certain points in time.

Our failure was probably not to react in 1986, but then the survey showed an increase again. Probably in 1989, when the Harris panel was struck, we should have shut down the fishery while we awaited the results. I was on the FRCC when we closed down the fishery in 3Ps and I was told by somebody at the time that we were overreacting. If we overreacted we did it on a cautious basis. We could have probably continued fishing for a couple more years, in the way we were doing it.

The problem with this is it's a huge trial and error learning process. Some people describe it as a process of muddling through. The problem is if you do it right, you didn't do it right, because people will criticize you, and if you do it wrong, a lot of people lose their livelihoods and there has to be a huge investment and a huge response by government on the social side to deal with it. So you always have to do it right. You can be absolutely precautionary and you can do nothing, which is equally worrisome that you've become so nervous. If you touch the stove you don't pull away slowly like this; you jump back. With northern cod we touched the stove and we became very precautionary for a while.

I really believe that without the information to manage, it's almost impossible to make the right decisions, and I don't see more information. I see less.

● (1525)

The Chair: I'll stop you there, Mr. Blackwood.

We'll go to Mr. Matthews, followed by Mr. Murphy.

Mr. Bill Matthews (Random—Burin—St. George's, Lib.): Thank you very much, Mr. Chairman.

Thank you very much, Mr. Blackwood, for coming. I enjoyed your presentation and listened intently to your answers to the questions you've been asked, so I just have a couple of quick questions.

You made a comment and I didn't fully get all of it. There was some reference I thought you made to the northern Hamilton Bank since 1979. It was something like that you referenced. Would you mind repeating that for me and the committee? Did you say there was science or research not done, or there hasn't been a visit? I'd like to hear it again.

Mr. Glenn Blackwood: Historically, we used to fish 2GH, 2J, 3K, and 3L. In 1977, when the 200-mile limit was declared, we started surveying 2J3KL, in the southern Grand Banks, and 2GH. I don't know why, but since 1979, I don't think a survey has been done north of Hamilton Bank, or, if it was done, it was done for one year.

As we shifted from a groundfish industry to a shellfish industry, all of a sudden we're managing shrimp and turbot resources in Nunavut waters and in the Davis Strait, but we haven't done a survey in these waters. A Canadian research vessel has never done a survey. We have the *Paamiut*, from Greenland, doing turbot and shrimp surveys in the Davis Strait under charter to DFO and the Government of Nunavut. We have an absence of any research information once you go north of Hamilton Bank, which is about half the Labrador coast.

We talk about territorial seas, our oceans, and our future. We're not doing enough on the Grand Banks, but we're not doing anything in Canada's north, particularly in northern Labrador.

As the south collapsed, we all looked to the north for other opportunities. We have vessels from Newfoundland, elsewhere in Atlantic Canada, and Nunavut fishing northern waters. If I said Hamilton Bank was brittle and took a long time to respond, those waters are very similar. I've been to Pangnirtung, Iqaluit, and communities on Baffin Island. They're looking to the fishery as the future, but the last time some of those sounds were charted was during Captain Cook's time.

There's a lot to be done, and the fact that we're not doing it north of Hamilton Bank is a problem for us. The fact that we're not doing enough of it closer to home is a problem for us as well.

Mr. Bill Matthews: Thank you very much for your answers. That's why I asked the question. I wanted you to repeat that, and I wanted to understand it.

You're obviously very familiar with the Iceland model and what they went through.

Mr. Glenn Blackwood: I'm a little familiar with it.

Mr. Bill Matthews: Okay. Could you give us your thoughts on why they've been so successful in bringing their fishery back around? What are some measures that they've taken to get back to being successful that we haven't taken?

I don't know if you want to comment. I thought you'd be very familiar with it. That's why I asked the question.

Mr. Glenn Blackwood: I've spent a limited amount of time in Iceland. I read some of their scientific advice, and I talked to some people there.

The comparisons between Iceland and Newfoundland are that both are islands and both are in the northwest Atlantic. We're surrounded by water at minus one degree for a large portion of the year, with the Labrador current coming down. Iceland is bathed in water at four degrees to six degrees for most of the year, with the Gulf Stream wrapping up the coast of Norway and coming back south. The Icelandic environment is oceanographically warmer than the Labrador coast and the northeast coast of Newfoundland. It is a little more forgiving.

On fishery science, I remember Jake Jacobsen. I won't try to pronounce the name of the place. We called it the Icelandic Marine Research Institute. I spent a little time there observing in the late 1980s. Their fishery science was well funded. They had good relationships with industry. They had instant feedback. At one point in time, I remember that he was taking on the Prime Minister of Iceland over some decision on capelin quotas, which I found to be unusual.

I think the real challenge we have is that Iceland is a fishery society that knows it's a fishery society. Going back to 1972, I believe, the fishery was their future and they went for it. I think that we're a society that on a local, reasonable, and very much Atlantic Canada basis is still very dependent on the fishery. On the national agenda, unfortunately, the fishery hasn't received the attention it deserves.

Even at a local level of the fishery, we need to keep reminding ourselves why we settled here. We're the future for many of our coastal communities. I think Iceland has always known that. If you only have one major source of revenue, I really believe you're less likely to mess with it.

● (1530)

Mr. Bill Matthews: Thank you very much.

Did you say that you were employed with the federal government at one time?

Mr. Glenn Blackwood: No, other than back in the late 1970s, for a short period of time.

I worked with the province of Newfoundland until 1997. I ran the Canadian Centre for Fisheries Innovation for five years. I joined Memorial University at that point, and became a part of the Centre for Sustainable Aquatic Resources. As of four weeks ago, I became the head of the institute.

Mr. Bill Matthews: Congratulations. It would cost us a lot to get you to go to Kent Street, would it?

Mr. Glenn Blackwood: I really appreciate the people who work on Kent Street and in the White Hills. I have no axe to grind with those people. I know a lot of them personally. As I said, it's not the thing to blame; if I was on Kent Street, I'd probably have made worse decisions than were made. I just think decision-making on a local basis is always better.

I've been on Kent Street many times, and I wish them the very best in their future decisions, but I think it's we versus they in terms of DFO and Kent Street versus White Hills, and it's we versus they versus the industry versus the scientists. Collectively, unless somebody gets control of that, we're going nowhere. Actually, we're going backwards.

Mr. Bill Matthews: Okay. Thank you very much.

The Chair: Mr. Murphy.

Hon. Shawn Murphy (Charlottetown, Lib.): I'd like to follow up on that very point, Mr. Blackwood. And I want to thank you for your presentation. You've obviously been on the outside looking in, you've been on the inside looking out, and you're a former member of FRCC. But on the management regime that Mr. Matthews talked about, we spend our whole lives in the fisheries fighting about allocations. Provinces are at each other's throats, they're against the federal government, the inshore versus the offshore, the major players against the smaller players. Fishermen burn wharfs, turn the trucks over, and occupy offices. They were doing it all summer. In the last three or four years it's mainly been about crab. When you get a group of fishermen together, their main thing is to get more crab, and get it for their own allocations.

So we spend all the time in the allocation...and you've made some very good points here. But with that management regime...and you talked about Iceland. I don't know the management regime they have in Iceland.

Again, I would just point out that we spent the last two days of this hearing in Bonavista, Terra Nova, and the fishermen there basically said that the cod have never been so plentiful. They want a not insignificant commercial fishery, and most, if not all, want a full recreational fishery. Basically the scientists, certainly Dr. Hutchings, wouldn't support that level, but probably the politicians, both provincial and federal of both political stripes, would support that—or maybe not, I don't know. But it goes right back to the management regime.

When you look internationally at other countries, other successful countries, do you have any thoughts on the very complicated management regime that we've developed here in Canada?

Mr. Glenn Blackwood: I do. I think we've developed a regime that's not grassroots. When I was on the FRCC, I thought we should have a representative from Bonavista Bay and a representative from Placentia Bay, or maybe that Bonavista Bay should have a conservation council where the chairman is part of the northeast coast conservation council and the chair of that council is automatically a member of the FRCC. That way you build those concerns up.

To have a situation like the one you have now, where the fishermen in Bonavista—and I respect their views—are saying that the bay is full of fish and they can't put out a net for blackback without catching 2,000 pounds of cod, and kids are catching them off the wharf, does that mean 2J and 3KL are restocked? I don't think so. But at the same time, you can appreciate their views, then, when some scientist.... They don't have a lot of respect for scientists. If you go into the bar in Bonavista or Port au Choix, don't say you're a fisheries scientist.

I think there's a disconnect between people who come on fisheries broadcasts and say that the bay is full of fish and the people who want to do their job. They go out and do a survey that's done within 25 miles of the land—and they're surveying a totally different area, the south side hills versus the beer tent at the regatta—and they come on and say there's no fish. People just dismiss it because it's so out of whack with what they're seeing, and the scientists dismiss the views of the fishermen because it's at odds with what they're seeing.

Somehow we've got to find a way to put that together. It's a geographic problem, really, in terms of the distribution of the species at this point in time.

● (1535)

Hon. Shawn Murphy: But with our politically charged allocation system.... What does Iceland use? Do they have a similar system? Is it ITQ, or is it a competitive fishery?

Mr. Glenn Blackwood: Crab don't have tails, they don't swim, and even within crab we have huge debates. I remember at the time I left government it was just after another crab riot, and you've had them in New Brunswick, and lobster is a huge issue in P.E.I., and Fishermen's Bank. Wherever you go, there's a specific issue. I believe that with crab, we had two debates: it was the crab and the crab-not. We had a situation where we had the largest layoff in Canadian history. In retrospect, we went from 71 crab fishermen in the late 1970s to 3,727, I believe it is, today. That distributed the wealth. You couldn't leave a half-billion-dollar industry in the hands of 71 fishermen. Guys like Lester Petten, who recently passed away, was one of the original crab fishermen, and he didn't expect that. So it was the distribution of wealth.

We also redistributed the effort. We freed up the inshore bays and we allowed the inshore fishermen access to the inshore crab stocks. We moved the midshore fleet out to 50 or 100 miles, and then we put 65-footers, or vessels that weren't even 65 feet, 220 to 230 miles out. Then we had a large increase in the number of coast guard search and rescues, and our research vessels, like the *Templeman*, spend more time doing search and rescue than doing surveys.

What we did was we took a groundfish industry—plants and boats—and we transformed it into a shellfish industry. I was a part of that. I lobbied for the shrimp quotas when I was with the provincial government. I lobbied for access to the crab for inshore fishermen and we issued more crab processing licences, maybe too many. But it was against the backdrop of the largest layoff in Canadian history and the ending of the government assistance programs. So if there are any lessons we've learned, it's that we're in a boat together and we keep shifting. We run to one side and she starts to tip, then we run back to the other. We may have too much capacity in the industry, but at the same time I don't see taking capacity out of the Newfoundland industry and allowing 25,000 days of fishing by foreign vessels on the Grand Banks with no recovery plan for groundfish.

The Chair: I have to stop you there, Mr. Murphy; we're beyond the time.

Well, a very interesting presentation, Mr. Blackwood. Thank you very much. Obviously, more questions could have been asked, but we have a backup on our witnesses. I want to thank you very much for coming and giving us your views.

Did you want to make a closing 30 seconds? You seem like you're anxious to say something.

Mr. Glenn Blackwood: Yes. I'd like to thank you as well, and I apologize. My presentation is not.... I could give you a short overview of what happened to the spawning biomass or some analysis, but this was sort of from 35,000 feet over 25 years in 15 minutes. So I appreciate the opportunity.

I think the problem you have is that this issue is, as a friend of mine once said, deeper than dollars. This issue goes right to the roots of the inshore communities in the province, and those communities aren't doing very well. There's frustration you probably sensed in Bonavista, and it's not fair to let the scientists in the White Hills deal with that frustration. I think we need a mechanism for them to work with the fishermen and to have the fishermen engaged in the process. We're getting there, but we're a long ways from there in terms of northern cod. The decisions we're going to have to make on crab and shrimp, and herring in New Brunswick, and haddock, which is blossoming now in southwest Nova Scotia—every one of those decisions is going to have repercussions.

I feel that for years we've been robbing Peter to pay Paul, and a lot of times we've made decisions that in retrospect were bad decisions. So I wish you the very best in making the future decisions. We all know what's wrong.

A lot of people come into my office now, and there are two groups. One group wants something changed and the other doesn't want to change it. That's where you are.

The Chair: Yes.

Mr. Glenn Blackwood: So God bless you in your decisions.

● (1540)

The Chair: Thank you very much. I appreciate your evidence.

We'll take a ten-minute recess, and ask Professor Ransom Myers to come up.

● (1540)

(Pause)

● (1551)

The Chair: Order, please. Thank you.

Dr. Myers, welcome again to the fisheries and oceans committee. You're no stranger to us. I want to thank you very much for the fact that you've provided us with a written presentation and that you've provided it to us in both official languages. It's very much appreciated. It allows us to distribute it, and so it has been.

You know the drill. We'll give you up to 15 minutes to give your remarks and then, as you can see, there's no lack of questions from members. We'll be happy to have your responses to those questions. So by all means, go right ahead, sir.

Dr. Ransom Myers (Professor of Biology, Dalhousie University, As an Individual): Thank you for inviting me.

Before I begin, I would like you to look out and notice what you don't see out there. You don't see a plant processing haddock. I think this is fundamental to the mandate of what we're asking here. We know the cod collapsed. What is just as important is that 45 years ago the haddock collapsed, the halibut collapsed, as well as redfish and many other species. In fact, the first large fish plant in St. John's was to process haddock on the southern Grand Banks. There were very, very good research surveys. There was over a million tonnes of haddock, which could have easily produced 150,000 haddock a year forever, and that was obliterated.

During the 1980s there was phenomenal recruitment, and there was a decision by bureaucrats—not really politicians in Ottawa—to eliminate it because it would interfere with the cod fishery. It was a mixed fishery and it was decided it would be inconvenient, in spite of detailed analyses by scientists at DFO working at White Hills that this was a really bad idea.

So when we talk about the collapse of northern cod, we have to look at this as a long series of disasters in which often, in my opinion, politicians did not get the chance to make the wrong decision. You didn't even get the chance. Information was censored before the hard decision had to be made. Haddock is one of those examples. This is a disaster, and you really can't understand the collapse of the cod without realizing the same top-level Ottawa bureaucrats, basically, decided that it was inconvenient to have haddock around, even though kilogram per kilogram it was more valuable than cod. It was a decision to obliterate it. Just as, in my opinion, it was a decision to keep critical information from politicians during the collapse of the cod stocks.

I used to be a scientist 20 years ago—20 years, I looked up my records—and I was working on convincing the European Union that hooded seals and harp seals should not be put on the endangered species list. That's what I was doing 20 years ago. I designed surveys and carried out analyses on those very issues. About the same time, I began looking at the cod stocks, and the evidence was overwhelming to independent minds that the stock was not booming, and at every point, only the most optimistic projections were transmitted up. Information was systematically censored from Ottawa bureaucrats to politicians.

I resigned a position after a paper of mine was censored. I resigned two seconds after it occurred and took up a university position. I was helped to resign by the fact that I had already had offers from the most prestigious university position in Canada, but it was hard leaving my children in Newfoundland.

● (1555)

The Chair: Before you begin your presentation, tell us how you really feel about the Ottawa bureaucrats.

Dr. Ransom Myers: I really can't do that in polite society.

But look out and see: there should be a plant processing haddock there. We've forgotten about haddock. We've forgotten about an enormous resource that could have produced at least 200,000 metric tonnes of the species on the southern and St. Pierre banks that we don't even think about.

Why isn't this commission about haddock? It was obliterated in the 1950s and 1960s, but it was recovering in the 1980s, and there was a decision to not take care of the resource. There was a decision at every point to ignore critical information that the cod stocks were much more complicated in these big blobs 2J, 3K-L that you hear about—these funny letters and numbers. Long-term tagging information and now genetic information from fisheries clearly show the cod stocks have enormously variable genetic structure, and the way the fishing occurred, we systematically eliminated those substocks, those subpopulations.

First, the Russians eliminated the cod stocks in northern Labrador. That was in the fifties and sixties. Those never recovered. And we sequentially reduced and eliminated different subpopulations until in 1992 none were left. Recovery will require the regeneration of that genetic variability, which will take a long time.

However, there are critical things we can do. We can reduce fishing mortality to an absolute minimum. That is hard; it's a hard decision. People won't like it. But we do know that if you quit killing the fish, they quit dying so fast—that we do know—and there'll always be concentrations of fish that you can exploit. At the very end of the fishery, there were people claiming there's no concern about cod, because in fact the trawlers could go out there and find really big concentrations of cod. That was true: they could, until there was none left.

If you're reopening a fishery, you have to realize that humans are hunters, and we are enormously good at eliminating fish. Humans are hunters. Most of us aren't real hunters, but some of the fishermen I work with in Nova Scotia, where I live now, are enormously effective hunters. They can kill animals; they know how to do this. Actually, we're finding leatherback turtles for conservation. They can find these animals that I can't. We're very good at finding, so any reopening has to be done very thoughtfully.

Just before I came, I did some detailed scientific research on illegal fishing—I called up a few friends living around the bays—and illegal fishing is going on in a big way around the province. I don't have numbers, but illegal fishing is an important factor. That will in fact slow the recovery of cod stocks.

However, I would like to recommend two things we can do that will increase the recovery of cod in Canada in general and southern Grand Banks and northern cod in particular, and that will not only have positive results but are politically very possible and that all parties should support.

Number one is that Canada should support a UN General Assembly resolution calling for a moratorium on high seas bottom-trawling—“high seas” meaning beyond the 200-mile limit. Canada has not supported this. Why? The only people in the world who don't like this idea are a few people who own trawlers in Spain, as far as I could see. This is a good idea. It would protect the southern Grand Banks, for example.

● (1600)

So let me repeat: Canada should go to the UN and put its full support behind the idea that there should be no bottom-trawling beyond the 200-mile limit—that is, high seas bottom-trawling. This will not only protect the southern Grand Banks and the nose of the banks if it's generally accepted, it will also.... I work mainly in international affairs now. Seamounts around the world are being destroyed in an incredible way by criminals from Spain, China, Taiwan, and Japan. It's just criminal activity. You have seamounts with incredible biodiversity being destroyed around the world. Canada should protect this for the sake of the world but also for its own sake.

My guess is that 99.9% of Canadians want to see an end to foreign overfishing beyond the 200-mile limit, and Canada has not supported this resolution. It boggles my mind why that hasn't been done. My guess is there is reluctance to act by the same top-level Ottawa bureaucrats who are cautious about doing anything that's eminently sensible.

The second action is that Canada has jurisdiction over sedentary species beyond the 200-mile limit. Right now, over all this we'd like to extend jurisdiction to the 200-mile limit. Canada has jurisdiction over sedentary species—clams, sea sponges, crab, species like this. Canada has jurisdiction.

Many of these are critical habitat for survival of juvenile fish. Canada can immediately take control over large sections of the southern Grand Banks, the nose of the banks, by simply saying that these areas are sensitive habitat, we control the sedentary species, these areas are off limits. At the same time, Canada would also have to control fishing inside the 200-mile limit.

So all it does is take one day, get a few people together, draw some lines on the map indicating these are where we know deep-sea sponges and corals are, and ban trawling from those limited areas outside and inside the 200-mile limit. It would immediately be a good thing, and politically completely feasible.

These two actions would have immediate results in improving the situation. For Canada, it would show that Canada is a leader in conservation and management, as opposed to being viewed in a not very positive light worldwide. I think both actions would be immensely useful for conservation and both are politically very reasonable.

In fact, 70% of Atlantic Canadians, when surveyed, thought that there should be some restrictions on trawling, not elimination, so it's a widely held, reasonable view that this should be done. And there are even 19% who would want a complete ban on trawling, which I don't support. So this idea has wide support.

Let me go over the loss of populations. We have to remember when we're talking about recovery of cod that we've eliminated this genetic variability. It will take time to recover. And the very process of fishing that occurred—which was concentrating on small fish—was clearly detrimental. So with any fishery we have to understand that we just can't have an uncontrolled, unregulated fishery, which was more or less like it was at the end of the fishery.

I have two last points on successes. My family and I spent a month out in Alaska, and in Alaska there is an abundance of fish. You can go out and catch big chinook salmon. There is just a phenomenal variety of fish and a wealth generated from the system. That's simply because they decided to manage the fishery.

What they did was decide to protect the long-list species, not the short-list species. So they're protecting the halibut and making sure there is no bycatch by closing large areas for trawling—not all areas—and by concentrating on less destructive gear. They actually now have an enormous fishery.

Things like Pacific cod are viewed as a really low-value, almost nuisance fish you would use for bait for others. So Pacific cod, almost all that are caught, are used for bait to catch crab now out in Alaska. It's a very different situation.

In Iceland, they still have a fishery because they took their science seriously. In fact there is a guy at the Icelandic bank, which is a big building by the marine institute, who redoes all the cod assessments independently and provides independent advice to the bank, which is an important issue. So independent science is critical if we're going to have a recovery.

Thank you very much.

● (1605)

The Chair: Thank you, Professor. You're under your 15 minutes, so thank you very much.

Dr. Ransom Myers: I know—13:37.

The Chair: We're not complaining about that.

We'll go with Mr. Hearn, and I believe he'll be splitting with Mr. Kamp.

Mr. Loyola Hearn (St. John's South—Mount Pearl, CPC): I'm just going to ask one short question, Mr. Chair, and then go to Mr. Kamp.

I've just inserted myself here because of the two points you raised, with which I totally agree. I would think everybody would agree that if you could get the world to agree to end bottom trawling on the high seas, you would certainly cure a lot of our ills.

Certainly, on the part you raised about the nose and tail and the sedentary species in particular, it is ours. The land itself and anything attached to it is ours now, apparently. I have raised that before, and I was cautioned not to make a big issue of it because.... We could probably win on that. If the land is ours, it's like owning the garden out there: why do you let your next-door neighbour come through it with his truck on the way to work and tear it up? That's what's happening to our habitat. We could win at that internationally.

But if we eliminate the bottom trawling on the nose and tail, we're being told the environmentalists would immediately say that if it's detrimental on the nose and tail, it's detrimental inside; therefore, there goes your fishery, or a large part of it, and there goes your shrimp fishery on which we depend so much.

Now, how would you rationalize that kind of an approach to the realistic approach of dealing with harmful technology and the preservation of our stocks in the long run?

Dr. Ransom Myers: By international law, you can't force foreigners to do something you can't do. So what I'm proposing is that areas that are sensitive to trawling, which include habitats like those of deep-sea corals and sponges, be off limits—

Mr. Loyola Hearn: Be it in—

Dr. Ransom Myers: —both in and outside. We have to do it systematically and we have to do it fairly. That's the only way to do it. But that would not eliminate the shrimp trawling because it's usually mud bottom. There are people here who know a lot more about shrimp trawling than I do, but it's mud bottom.

I'm not talking about eliminating trawling on mud bottom. I'm talking about eliminating trawling where there is structure and habitat and sedentary that we have control over. So as long as we do it sedentary, we have to do it inside and outside—not everywhere. I'm not saying we should ban trawling. This wouldn't solve everything, but it would eliminate some of the trawling on the southern Grand Banks.

But right now, according to analyses carried out at White Hills and reported in the recent WWF report, around 80% of the cod on the southern Grand Banks is caught as bycatch. We'll never have a recovery, you know, if that's the average figure for bycatch. We will never have any recovery.

These are two actions we can take. We may not get enough nations to support this international ban—my first suggestion—but quite a number of nations are in support of it already, according to my international lawyer friends. If Canada pushed it, it might work, because then you'd have to have the European nations saying that they were for the destruction of the seamounts we've never surveyed. You know, if Canada stands up, it will allow us to show how many of the European Union's policies are really criminal when it comes to fisheries policy.

● (1610)

The Chair: Mr. Kamp.

Mr. Randy Kamp (Pitt Meadows—Maple Ridge—Mission, CPC): Thank you, Mr. Chair.

Thank you, Dr. Myers.

I have just a few questions. I've seen different figures in the documents. I'm wondering if you have an estimate on the current northern cod biomass.

Dr. Ransom Myers: The analysis that we most recently published, which I couldn't give you because it wasn't translated—I can secretly give you copies afterwards.

The Chair: You can give it to us; we just can't distribute it.

Dr. Ransom Myers: Okay.

Over the years I've done this a number of different ways, estimating what is the present biomass compared to the virgin biomass.

In a paper published earlier this year in the *Philosophical Transactions of the Royal Society of London*—where this guy called Newton published all his stuff—we published an analysis trying to look at that very question. We estimated it's close to a thousandth of the virgin biomass—not a hundredth, but a thousandth. I think that's probably more reasonable. How we did that was to take all the historical data in a systematic way and look at what the carrying capacity of the northern cod area would be all the way up from the 2J3KL. We looked at how much was cod and what the old surveys were.

We have incredibly good Russian surveys from the 1960s that show you how much cod was actually there back then. You can compare those. It's a very, very small fraction; whether it's a thousandth or a hundredth, it's much, much lower.

Mr. Randy Kamp: Is there a number in metric tonnes that is accepted?

Dr. Ransom Myers: I estimated roughly a thousandth of the virgin biomass. I can give you a number that we calculated, but the number I was more interested in was what was the virgin level, as opposed to the present level, how much had it declined.

Mr. Randy Kamp: I would be interested in what that number is, seeing that other numbers have been reported, like 46,000 metric tonnes in one document that I read, based on an inshore survey, I think, because I think it's important.

Certainly many fishermen, as you know, are suggesting that there's lots of fish out there and want access to them.

Going in a different direction, how big a factor do you think, in terms of the lack of recovery, is illegal fishing?

Dr. Ransom Myers: I know it's a factor. I haven't seen any really reliable numbers on, it but certainly it must be inhibiting the recovery, given, by word, the extent of it. But by nature it's illegal and therefore not reported, so it would certainly have an effect. But I haven't done any quantitative estimate. It's possible to do, but it certainly will be having an effect, given that the stock is so low.

Mr. Randy Kamp: I think you said we should reduce fishing mortality to a minimum. Would you not be in favour of any fishing, either a limited commercial fishery or a food fishery?

Dr. Ransom Myers: Biologically and for the long-term economics, certainly no fishing at all would be the best policy. That may not be a politically possible policy, but for the long term I think that is definitely the best policy. If you're going to have any kind of limited fishery, it would have to be in a controlled way and you would have to eliminate the illegal fishing that's going on now. So if you do it, you might be able to get along with a system like Jeff Hutchings suggested, having tags and limited numbers, a semi-recreational fishery. That might be feasible, but certainly that's the second choice.

If you look at areas where you have had success, the U.S. has had enormously better success than Canada in recovering its stocks and they did it by having strict rules for rebuilding. We want to do that. We don't want to rebuild in a hundred years; we want to try to be rebuilt in ten years. You can't do that for cod, but by having strict limits and goals for doing things, you generally do better.

Mr. Randy Kamp: In the very first line of your written document you say that overfishing caused the collapse of the cod stocks, and I think that sort of answers the very first question we've been asking. I guess I would be interested in what you think caused the overfishing. What do you think happened?

● (1615)

Dr. Ransom Myers: There were several things. The kind of critical end of the overfishing was in the fact that there were lots of little cod. During the late 1980s, it was boom years for little cod. In fact, one of these DFO scientists, who is now in Ottawa but used to be here, was on television and said “bonanza year class”. This is 1988-89. He got on television and said “bonanza year classes are coming”, and there were. There were lots of little cod coming through, and everyone geared up with the suggestion of the DFO guy, the bonanza year classes, and the small cod were caught as bycatch when you were trying to fish. Jeff Hutchings and I have written a series of papers on this, and it's consistent with what sociologists have shown in terms of simply talking to fishermen—“What were you doing?” So I really believe that the final collapse had to do with not controlling the fishing mortality on the juveniles.

That's what I fear about an opening fishery. The fish that may be left will be the small ones; you don't allow them to grow and then it's bad news. And this was compounded by the scientists working on the cod really not understanding what was going on in the fishery. I didn't understand. I wasn't working directly on cod at the time, because the fishermen changed their behaviour. They were targeting the small fish. The Marine Institute was training people to process small fish, so this concentration, discarding, allowed this very rapid loss of fish that was actually in the bank.

The Chair: Thank you, Mr. Kamp.

Monsieur Blais.

[*Translation*]

Mr. Raynald Blais: Thank you, Mr. Speaker.

Good afternoon, Mr. Myers.

Do you think the information we have now is sufficient to make a good decision on the potential reopening of cod fishing?

[*English*]

Dr. Ransom Myers: There are some things we know. We have a lot of historical information about cod movement. It's very clear that there are local cod stocks and cod stocks that move in from offshore. Any fishing on those local inshore stocks will inhibit the recovery of those offshore cod stocks, even if it is possible to have a small fishery on these inshore stocks.

So I would say yes, we have enough information, and we know it's not a good idea, because there will be inevitable catches, as bycatch, of these small fish. It's the same reason why we don't have the haddock fishery: it's because we were unwilling at the time to control the cod fishery to allow the recovery of the haddock fishery. Because there were cod, we didn't want to cut back. We have to cut back, as they did in Alaska, to preserve the genetic structure of the stocks and allow them to recover before fishing begins.

[*Translation*]

Mr. Raynald Blais: Do youth think we have enough flexibility to allow an inshore fishing of about 500 metric tons, for example? Is that possible? Would this not allow a follow-up and give us an indication on what is going on?

[*English*]

Dr. Ransom Myers: There would be some information gained from a fishery, but I think it would be minimal. I think that if there is a small fishery, we should be honest: it's not to gain information; we can do that from other sources. It's because it's politically difficult to control a fishery with very low take. We're not controlling the illegal fishery now, and maybe we're better off having a small legal fishery than a larger illegal fishery. That's a political judgment and a social judgment I'm not qualified to make. But that would be the only honest reason to allow any fishery at this time. It may be reasonable, but we won't learn that much by having a fishery.

● (1620)

[*Translation*]

Mr. Raynald Blais: Let us switch to what is going on internationally. Do you feel it would be unwelcome for Canada to reopen marginally the fishery, since it is asking other countries to refrain from fishing?

[*English*]

Dr. Ransom Myers: Of the two proposals I'm making, one is an international proposal to quit all high seas trawling everywhere, on the edge, nose, and tail of the bank, but on the seamounts, in the middle of the Pacific Ocean, off Argentina, which is being raped and pillaged by evil European trawlers that are also coming here. For that, the only enemies you're going to make are a few owners of trawlers in Spain and other countries. I think this is a good idea and universally acceptable—except to a few people who have vested interests.

My second proposal, which is to establish throughout Atlantic Canada areas of no trawling in and out of the zone, is a method of control, an honest effort that will affect us as well as foreigners. But Canadians would benefit much more than anyone else.

That second part we have to do completely honestly and fairly, but we can do it in a day. We can set limits. We know there are deep sea corals in some areas of the southern Grand Banks that Canada by international treaty is supposed to protect, and we're not doing it. We know where they are—or were. We can protect those areas; we can do it now. It will be of benefit to the Canadian trawling industry in the end, and not a detriment. It will be inconvenient in the short term, perhaps, but we can do it.

[*Translation*]

Mr. Raynald Blais: One last question. Do you still trust the Department of Fisheries and Oceans?

[*English*]

The Chair: What do you mean “still”?

Voices: Oh, oh!

Dr. Ransom Myers: No, no, I was proud to work for DFO. I was proud to be a civil servant. I viewed it as a very honourable occupation. I was always supported by local directors at DFO. There are certain people who had made mistakes in the past—and I still am not very favourable in Ottawa—who I think are against proposals like this.

I get grants from DFO, and I work with DFO very closely. So I do not hate DFO. I certainly don't hate most of the scientists.

[*Translation*]

Mr. Raynald Blais: What do you think of the relations between fishermen and scientists?

[*English*]

Dr. Ransom Myers: Sometimes it's like the relationship between criminals and policemen. We cannot expect a relationship—

[*Translation*]

Mr. Raynald Blais: Who are the criminals?

[*English*]

Dr. Ransom Myers: Oh, sometimes both are.

In a sense, when scientists say that you have to do something that you know may be good in the long term, there will be friction, but as long as it's being done honestly, I think you can get along. Scientists and harvesters are not at odds in the long term, but if you're a harvester and you have to pay off the mortgage on your boat, so there are immediate financial pressures, you're not going to like any cutback.

And that's true; the only way they had cutbacks in the U.S. was by legal action. When Norway faced a similar problem with cod, when there were only small fish left and the fishermen wanted to take them, the prime minister sent the navy out to block the boats. They took action. That wasn't very popular, but now Norway has fish and Canada doesn't.

[*Translation*]

Mr. Raynald Blais: Thank you.

[*English*]

The Chair: Mr. Stoffer.

Mr. Peter Stoffer: Thank you very much, Mr. Chairman.

Thanks, Dr. Myers, for your presentation. I have a couple of things.

Some fishermen have indicated to us over the years that they simply don't like DFO. It always reminds me of *Alice's Restaurant*, a song by Arlo Guthrie: have they done rehabilitated themselves after what they've done?

So do you think that DFO is the tool with which to manage the fisheries in the future?

Secondly, I'd like your viewpoints on NAFO. Is NAFO still possible, a working collaboration of countries, or should it be taken out and put out to pasture?

As well, have you had a chance to read the World Wildlife Fund report? What would you take from that in terms of recommendations you can offer us?

The last question I asked Dr. Hutchings was with regard to seismic testing. Have you read or understood any reports on seismic testing in terms of what effect it may have on juvenile fish, crab larvae, etc.?

● (1625)

Dr. Ransom Myers: The first question was....

Mr. Peter Stoffer: Should DFO manage the fisheries in the future?

Dr. Ransom Myers: DFO should provide independent scientific advice that is as accurate as possible, and politicians are off to make the final answer. So DFO shouldn't manage the fishery, but they should provide independent advice. I think DFO has made progress along those lines in the last 10 or 15 years. Things are more open, but independence is key. So we need a scientific body like DFO. They've certainly made efforts, but I think they're still in shock from misplacing all those cod. So it may take a while.

Two, is NAFO an effective organization? NAFO clearly has limits. For example, on the issue of trawling on seamounts, NAFO's solution was that when your commercial fishermen go out and trawl, they should report what they catch. But these are very delicate ecosystems. It's like trawling a coral reef; once you trawl it, it's kind of gone. So this is not very effective management. Whether you can do it better than NAFO, other than the suggestions I made, is outside my area of expertise.

I have read the World Wildlife Fund report, which is based primarily on good research carried out by DFO. The figures of between 70% and 90% of young fish on the southern Grand Banks....cod being caught as bycatch, is horrifying. That means that we will never get cod back and we'll never get haddock back. Canada will lose a great resource. So immediate action is needed. The two things that I suggested are ways ahead that are politically possible within international law at the moment.

I'm not an expert on seismic testing, so I'm not going to say anything about it.

Mr. Peter Stoffer: I have one final question for you.

Is there irrefutable proof about these inshore stocks? We hear from the boys in Bonavista about fish they'd never seen before in lump nets and lobster pots. Is it possible that fish in record numbers that these people have never seen before could have come from the offshore, and stayed in the inshore, and decided not to go back? Is that possible?

Dr. Ransom Myers: It's certainly possible. I would think it's unlikely, if you compare what we know about the biology of other fish. It's not impossible, but it's not consistent with lots of other data on fish behaviour. From historical evidence we know there are fish that remain inshore, but historically the larger fish spawned offshore and came inshore. When you're fishing them, you're going to mix up the two.

Until we get a larger offshore population.... That was the vast bulk of the fishery, remember; there were always inshore fisheries. One interesting thing is that historically—we have very good data on catch rates in the 1700s, 1800s, and even the late 1600s—there were ups and downs. Those fisheries operated really close to inshore. It may be that the increase we see in recent years is a rebound inshore of things we haven't seen for 100 years. Remember, in the older fishery, it used to be that.... I've done historical analyses of data, good data on spreadsheets kept by the British Colonial Office, going back 300 years. There were big inshore stocks. The elimination of the fishery in general allowed these inshore stocks to rebound to levels they'd perhaps never seen. That's very interesting. That doesn't mean we should fish them right now, until we have a recovery over a wider area.

● (1630)

The Chair: Thank you.

Next is Mr. Simms.

Mr. Scott Simms (Bonavista—Gander—Grand Falls—Windsor, Lib.): Sorry, what was that last comment—recovery of...?

The Chair: In a wider area.

Mr. Scott Simms: Oh, in a wider area.

All right. Thank you.

Dr. Ransom Myers: In a wider area. Historically, along Nova Scotia, where I know the data quite well as well, there were inshore stocks that stayed really close in. Those were fished historically, and those inshore stocks were completely eliminated over fifty years ago. Perhaps in Newfoundland, for environmental reasons we don't understand, those inshore stocks that have long been eliminated are coming back in ways we haven't seen.

That's very interesting. New biology may be occurring, but it doesn't mean we should fish until they get a wider recovery, or else, when we fish those, we're going to eliminate the ones that migrate in as well.

Mr. Scott Simms: Would you consider these to be two different subpopulations—offshore and inshore?

Dr. Ransom Myers: I think there are many subpopulations. All available evidence for cod suggests there is a much richer subpopulation structure than we ever expected, and that we have to fish the many genetic subpopulations in a way that preserves that genetic variability.

Again, we have very good data from tagging done on the coast of Nova Scotia in the 1920s and 1930s showing there were many cod populations along the coast that stayed very close to one place their entire lives. It's those populations that were eliminated fifty years ago. My guess is those inshore populations here are similar. They've been reduced down to a low level for maybe a hundred years, and that recovery doesn't mean there's a general recovery, but just a small-scale local recovery.

Mr. Scott Simms: So are these what we would traditionally call bay stocks?

Dr. Ransom Myers: Bay stocks—that's right.

Mr. Scott Simms: Let me go over to the international issue once more. You were quite forceful in your comments about international pressures and what not, and I'm very interested in what you had to say about sedentary stocks and the continental shelf. It seems quite plausible, obviously, to me and to anybody else, yet it's not done. So where do you think the disconnect is, and the political will?

I'm asking you for your opinion on this because you're obviously quite familiar with how other nations have managed their fisheries. So why aren't we doing this right now?

Dr. Ransom Myers: It's because it would mean taking action that will impinge on vested interests within Canada as well.

There are two things, I'd suggest. One is, there should be no opposition to demanding an international ban on high-seas bottom trawling. That's a no-brainer that everyone should support.

A more complex issue is the sedentary species, which Canada has a right and a responsibility to protect. That would require making a decision to make large sections of Atlantic Canada's continental shelf off limits to bottom trawling. That would be inconvenient and would be a strong forceful act. I think bureaucrats who do such things often don't keep their heads on. As far as I can see, there's no political reason not to do it other than the interests of a few trawling companies—but I think they would benefit in the end from it.

I'm not saying to ban all areas; we have to have areas that are sensitive. If we can define those quickly and put them off limits, Canada will benefit and the world will benefit. It's an easy thing to do.

Mr. Scott Simms: When I was in Brussels a while back, we were at the EU. It seemed to us from the information we got over there that there were member states of the EU that were quite irate with other member states, and the issue had to do with enforcement. How are we falling down on the job, or how are they falling down on the job, when it comes to enforcement in issues of overfishing?

● (1635)

Dr. Ransom Myers: I think the northern European countries have the same troubles with the Spanish and Portuguese trawlers. Within Canada or the U.S., we have a reporting system. It's very difficult to catch cheaters, but it's possible. But if you're dealing with someone offshore who doesn't have to report, it's very difficult.

The same issues that are of concern in Canada are of concern in northern Europe—and in fact, for example, in Argentina, where the Spanish trawlers are doing similar things to a country that's in poor economic shape. It's just a disgustingly terrible raping and pillaging of the ocean.

Mr. Scott Simms: You mention Norway quite a bit. Obviously you're quite familiar with their situation. When it comes to the situation we have with the offshore and inshore stocks, the inshore stock, from what we've heard in the past couple of days, is at an incredibly higher level than in prior years. Did Norway face the same problems, and what kind of recovery strategy did they have? Did they have a higher amount of bay stock? Did they open up a fishery within the inshore before they tackled the offshore?

Dr. Ransom Myers: Norway does have a series of bay stocks, as we have. An interesting thing is, the main Norway stock comes down from the Barents Sea and spawns, and the main bay stock from the north come down and spawn there. But they know who's who. These cod are smart enough to know. They're both in the same area, but they say: "I'm not going to mate with you because you're a bayman." "And I want to bet you come from offshore! So the cod can tell each other apart. Experimentally we can show this.

The basic rule is, you don't fish so hard or in such a way as to eliminate all the sub-stocks. That's how they've managed—and by protecting the juveniles. Remember, in a similar situation that happened in Norway a few years before the Canada collapse, they sent out the navy to keep the fishing boats from going up. Canada looked at the data and said, "Well, there are lots of little fish; we don't have to worry." There were no big fish, but little fish, and they kept the quotas high, and a lot of these fish were caught and discarded.

Mr. Scott Simms: Let me get to the juvenile fish issue you brought up. You mentioned that we had some really bad practices regarding the harvesting of juvenile fish, and I think you said around the early 1980s.

Dr. Ransom Myers: No, it was the late 1980s and the early 1990s, yes.

Mr. Scott Simms: Can you comment on that a little further and just paint a picture of how it was?

Dr. Ransom Myers: Okay. The analysis that I did with Jeff Hutchings was very indirect. We looked at the abundance of these little fish from research surveys. We'd see these little fish and then they disappeared and they didn't show up as catches. So what happened to them? It was quite clear from analysis and sociologists—

Mr. Scott Simms: Where was your study area in that?

Dr. Ransom Myers: We looked at all the Canadian cod stocks. The same pattern occurred everywhere, and in some areas, like in the northern Gulf of St. Lawrence, even in a stronger way. There were quotas. The quotas were too high. There weren't enough big fish. Fishermen changed their nets and fished in certain ways to maintain what catch they could. They caught these small fish, most of which were not saleable and were discarded, and so went the fish that should have been caught as adults, not as juveniles.

Then there was a process of processing smaller codfish. If you have a quota and there are no big fish to catch, you're going to target the smaller fish. When you target the smaller fish you will get even smaller fish than you want to catch, and if those are discarded, those will be missing from the data and your models will be all messed up because the catch data is wrong. That is a summary of what happened. It's called a cascading disaster, which took place faster than any scientist, including myself or any other scientist, could predict, because we didn't understand what was actually happening in the fishery.

The fishery is the fish, but it's also economics and behaviour and all these other things.

● (1640)

Mr. Scott Simms: One final thing, and I get this quite a bit working in my office in Bonavista. They walk in and say that they believe there are enough fish out there to sustain a limited commercial fishery on the inshore of the northeast coast. What do you think?

Dr. Ransom Myers: They're probably right in terms of there being enough fish to sustain a limited fishery. The question is—

Mr. Scott Simms: Commercial and recreational?

Dr. Ransom Myers: The fish really don't care who takes them.

Mr. Scott Simms: The unfortunate thing is the fish don't vote for me.

Dr. Ransom Myers: Right.

What are the consequences? The consequences will be limited growth in the future. You can sustain.... You can say we can have a fishery now, and we will never let the cod fishery grow; we will keep it down. We can do that and we can have a sustainable minuscule fishery forever. That might be biologically possible. It's not economically and socially desirable in the long term. They are completely right, there are probably enough fish to maintain a small commercial fishery, but in fact we want a big commercial fishery and we want a big recreational fishery. Every fish you take now will limit the recovery later on.

The Chair: Thank you, Mr. Simms.

Professor, you said it's a no-brainer that we should ban bottom trawling on the high seas.

Dr. Ransom Myers: Yes.

The Chair: As far as I know, as of summer, Canada doesn't agree with that statement—

Dr. Ransom Myers: Yet.

The Chair: Do you know why? What's the policy or scientific rationale for why Canada still supports bottom trawling on the high seas?

Dr. Ransom Myers: I can only relay what's been told to me by international lawyers who are familiar with it. There are high-level people in international relations who don't believe Canada should waste one of its favours on supporting this issue. They'd rather do some other issue.

This doesn't make any sense to me, because it's a thing that would make Canada look good. It's incredibly good for Canada to support all banning on the high seas, which means beyond the 200-mile limit. It's a totally great thing for those of us concerned about international conservation, who worry about conservation on seamounts in the Pacific Ocean and the Indian and the Atlantic Ocean. These are unique ecosystems that are being destroyed by the same evil guys who are destroying the cod on the southern Grand Banks for just a minimal amount of money. These seamounts, the first ones, haven't recovered in fifty years.

Some of the cod, some of the orange roughy one of my students found off the coast of Ireland, are 180 years old. These were alive in the time of Napoleon. It boggles my mind. It's an absolute no-brainer for Canada to support a ban on high-seas bottom trawling.

The Chair: Thank you.

We have enough time—to try to be fair—for about two minutes and fifteen seconds for four people.

We'll go with Mr. Keddy first.

Mr. Gerald Keddy: Thank you, Mr. Myers, for appearing here today. It's a very interesting discussion.

I appreciate your breaking your discussion down into two main areas and making two recommendations on things we can do without really affecting anything in Canada, except that they will only improve our situation. To a degree, I think it is a no-brainer, quite frankly.

I want to comment on your comment about man being a very good hunter. I always recall a story an old hunter in my community told me. We were talking about tracking deer. He said he had shot a deer and had decided to see where it had been. He tracked it all the way back to where it had been born. It would have been born in June, and he would have shot it in November.

To a degree, I think we tracked the cod all the way back to their spawning grounds, and then we overharvested them on their spawning grounds. I realize what you're saying about the year-class of cod; we caught too many juveniles, and we did a lot of that by bycatch.

I'd like your comment on the effect on the biomass of dragging on the spawning grounds during the spawning season.

● (1645)

Dr. Ransom Myers: There are some experiments that Jeff Hutchings can speak to better than I can, but that may not be the best idea for cod, because these cod—the baymen that wouldn't mate with the mainlander, the cod from Norway.... They're much more complex animals than we think. On the spawning, it may not be the best idea.

[*Translation*]

The Chair: Mr. Blais.

Mr. Raynald Blais: No question.

[*English*]

The Chair: Mr. Stoffer.

Mr. Peter Stoffer: Mr. Myers, very briefly, where can we go, realistically? You hear about the inshore stock. The other day a fisherman said that he trusts scientists like he does politicians.

You indicated we wouldn't get much information either from a food-recreational fishery or a limited commercial fishery, but other people are saying that if you had that data of the fishermen—where they caught it, the size, the weight, etc.—it would be helpful for scientists in giving information to the minister.

Why would you think information a fishery of any kind would have, with fishermen who have traditional knowledge from more than 20, 30, or 40 years experience on the water, may not be helpful to people such as yourself?

Dr. Ransom Myers: I probably overstated myself there. One of my main reasons for believing in the importance of the substocks comes from fishermen's reports of seeing cod spawning at a particular time at a particular location every year. Actually, I trust that more than all the genetic analysis in the world; it is very reliable information.

While that is reliable information, and it's very important, I think that issue is different from having a fishery for the sole purpose of obtaining information when you know it's in relatively low condition. I wasn't trying to dismiss the information in general, but I think we need the fish more than we need the information at the moment.

The Chair: Next is Mr. Murphy.

Hon. Shawn Murphy: When you talked about the fishing practices, a lot of your comments referred to the offshore, but let's move inshore to some of the scallop dragging that's going on now, and maybe to some of the gillnetting close to the spawning. Do you see any other destructive fish practices closer to the inshore—perhaps the harvesting methods of the shrimp? I refer more towards inshore than what's going on in the offshore.

Dr. Ransom Myers: There's some damage to biology. Trawling in some areas is going to be fine. Scallop dragging is particularly damaging. Optimal scallop dragging means allowing the scallops to get really mature and dragging as little as possible. It requires management to allow them to grow to that size, and we've not had that in Canada. Where it's been tried—for example, in the U.S.—they had much greater scallop yields by simply waiting to harvest. There are simple things like that.

Hon. Shawn Murphy: But is scallop dragging the cause?

Dr. Ransom Myers: Scallop dragging is destructive, and it's probably much better where you can harvest scallops by diving, but there are some areas where that's the only way to do it. It's probably something we have to put up with and try to manage and not allow it to go into new areas—if we want a scallop fishery.

The Chair: Thank you.

Mr. Keddy, go ahead. Mr. Blais had no questions, so you've got his time.

Mr. Gerald Keddy: I'm not being a defender of scallop dragging, but the other issue that you have to understand about scallop dragging is that you don't always drag on the bottom. There are a lot of areas where a scalloper would never put a drag down. I would argue that they've done a fairly good job of maintaining the resource, but unfortunately they've only maintained it for a few companies. It is not a diverse industry that supports a lot of the coastal communities.

Back to cod and the lack of data, I want to pick up on Peter's question about a limited inshore fishery. We've heard a lot of data coming from fishermen and a lot of observations about an overabundance of inshore cod. I don't think there's any way, other than a directed fishery, to actually prove that. I don't know how you can make a scientific judgment of any kind if you don't have proper data. A lot of the problem in the past was that we had proper data and ignored it, but more recently we have had very, very little data and we haven't done anything to gain more.

● (1650)

Dr. Ransom Myers: If it's primarily data we want, we should set up surveys—with the cooperation of the fishermen—that are designed, that are collaborative, and where you do the surveys and you do them correctly. That's where you'll get your best data. Another source of data, which is where they spawn and this kind of traditional information, may best come from a fishery, but only if it's set up to record this information, because we don't. We had an inshore fishery for 500 years, and we never really got that information in a very precise way, except by interviewing fishermen after the fact.

The Chair: That's it, Mr. Keddy. Thank you very much.

Professor, thank you so much for appearing and giving us your interesting perspective on things. You have not disappointed my last memory of you being here. Thank you so much, and we'll look out for those evil people.

Could we have Dr. Brad deYoung, please?

We'll suspend for three minutes.

● (1652)

(Pause)

● (1656)

The Chair: For our final witness of the day, we have Dr. Brad deYoung, professor of physics and physical oceanography right here at Memorial University of Newfoundland.

Welcome, Dr. deYoung, and thank you very much for taking the time to come to see us. We look forward to your evidence.

As is usual, you have up to 15 minutes to make an opening presentation; then we'll take questions. You've seen the drill. I saw you come in earlier, so you saw us with Professor Myers.

Away you go, Doctor. Thank you.

Dr. Brad deYoung (Professor of Physics & Physical Oceanography, Memorial University of Newfoundland, As an Individual): Thank you, Mr. Chair, and thank you for the opportunity.

I should mention that I just flew in from London about three o'clock this afternoon, so if I fall asleep partway through my presentation, you might want to nudge me and wake me up.

As background, I should just clarify my representation here a little bit. I'm a professor in oceanography, a physical oceanographer working on problems of ocean ecology. I've been working around here for about twenty years or so.

I'm also a member of the FRCC, the Fisheries Resource Conservation Council, but I do not represent that group here today. Gabe Gregory, as I understand, will speak tomorrow. So just to be clear in terms of representation, I'm a member of that group but won't speak for it today.

What I will do is talk about general problems and then come a little more to, and weave through, issues to do specifically with northern cod here, talking about oceans, and humans and their impact on oceans, and our scientific understanding of what's going on, focusing fundamentally on some of these broad signs—ocean ecological issues.

The biggest impact we have on the oceans clearly over time has been through fishing, and so that's the most immediate direct impact. By fishing in the oceans, we've clearly changed what happens—how oceans work in complex systems—in ways we don't understand.

It's appropriate to rephrase H. L. Mencken: that when you look at any complicated system, if you have a simple explanation for it, it can be very appealing but it's most likely wrong. Situations like this are so complex that simple solutions are not likely to be possible, and if you do find one it's most likely not to be right.

After fishing impacts, which have changed the way ecosystems run, there are a series of other things that are now compounding it. There is pollution in the ocean. Habitat degradation occurs through.... I heard dragging mentioned, which directly influences benthic habitat. So changes in a benthic ecosystem now are impossible to measure, because we can't go back 500 years, before we were doing all these things, to see what it looked like. Invasive species are added to the list, and climate change, which shifts the natural balance at a very large scale.

Adding up all those indirect effects to the enormous direct impact of fishing makes it very difficult to disentangle how the ocean is working now, or how organisms interact now in this very disrupted system, from how we might expect them to operate in an undisrupted system or looking back at our earlier data. It makes it difficult, then, to look forward or to manage how we might sensibly use information or understand ocean ecology to apply to fisheries problems.

The key issues for fisheries have to do with population dynamics. Basically, you want to extract organisms from the ocean and to understand how many of them there will be, of what size, and how much weight of them there will be.

The processes within population biology that drive those are development, the growth of organisms, mortality, the death of organisms, and reproduction. Most fisheries discussions focus around mortality: fishing mortality, seal mortality, other forms of predation, or death from other environmental causes, or starvation. Significantly less attention in general gets paid to development and growth issues and reproduction.

Clearly, if you don't reproduce, then you're not going to be a successful population. But likewise, if you don't grow adequately or fast enough. If you're a small organism, then you need to grow faster than all the things that are bigger than you, and everybody in the ocean ends up being small at one time. The ocean is one of these areas where you're never big from the beginning; therefore, your growth rate is very crucial at certain stages in your life history.

But there is also a tendency to get caught up in thinking about problems of fisheries, and the northern cod fishery has suffered from this, through looking at it as if the spatial characteristics and spatial dynamics were not important.

● (1700)

There are lots of different aspects to that—bottom characteristics, temperature, water conditions, food supply. We're all generally aware of those, but we're not aware of them in a detailed enough sense looking back in time, so we don't have enough clear, good description of the processes or of their characteristics to fully understand them. We also tend to discount or ignore things or forget about them. For example, when people talk about the snowfall when they were kids, they think the weather has changed or has not changed. They tend to forget and discount certain characteristics.

For northern cod one of the discounted characteristics seems to be the fact that for a long period of time northern cod were a significant resource in Labrador, and they disappeared. Much of this pre-dates the short time scale that we all think about—the last few decades—and goes back much longer in time. There have been shifts in distribution in that long time scale and evidence that through the collapse period and since then, there have been significant shifts as well.

What this begs is questions to do with not just the numbers of fish but how these patterns influence their productivity characteristics and their life history dynamics in ways that we're now trying to retrospectively disentangle by looking back through various kinds of modelling exercises, but we really don't have much real understanding of them. It's easy to focus simply on the trajectories of the numbers, focusing on the mortality issues most clearly, and forget that underlying those are oceanographic processes that are also important.

It is clear that the time trajectories matter, but during the time trajectories, processes weren't steady in the sense that the characteristics in the ocean—the temperature, temperature characteristics, food supply—all change in ways that change the relationship between the organism in the ocean it's in, and change it in ways that aren't simply to do with the adult organism. Cod go through—did once go through—a large annual migration cycle. As an egg, they floated up to the surface, became larvae, then settled down in nursery areas, then gradually as they matured moved in a spatial pattern from locations inshore to gradually offshore, and gradually rejoined as juveniles and growing organisms the adult parents or progenitors in this migration pattern. In the absence of adults to learn from, there are other stocks that seem to have been unable to recover those historical patterns simply because there's no longer that large adult migration they can join in with. So the question in terms of the recovery, if one points to the recovery, is that it may be that even the pessimistic projections for recovery are not adequately pessimistic because they don't reflect the absence of these key characteristics that can spin the population back to what was an historical pattern.

The unknown, of course, underlying that is whether that historical pattern is the only successful way in which cod on this shelf could exist. We don't know that. We've created an experiment to discover whether naturally, if we allowed the population to recover, it would find some other niche in this system, but the time scale on which it would do that remains unclear.

Just to directly address the northern cod story, you can ask the question, would the stock have declined in the absence of fishing in terms of whether there are environmental roles, and the answer is pretty clearly no. The stock only really collapsed because of fishing, but that doesn't necessarily mean that environmental characteristics and other dynamics of this system influenced the trajectory by which that collapse occurred, and they certainly influenced the way in which we perceived the trajectory or our inability to understand that catch per unit effort was maintained at a very high level even while abundance was dropping dramatically.

● (1705)

Alternatively, one can now look at the recovery and ask if the recovery is limited by specific environmental conditions. Is it influenced by fishing? Well, there's not a fishery directed to it at the moment, although there is bycatch in other fisheries. Is predation playing a key role? Obviously seal populations have increased enormously.

There are other things in the system. It's always tempting to look at seals and say that since seals are eating a lot of fish, then if we remove the seals, the fish will come back or the fish will not disappear—but that's back to the too-tempting simple approach. Whenever we've attempted these kinds of directed biological experiments, usually we've been surprised by the outcome. It's certainly not unambiguously clear that such an outcome would be beneficial; at the same time, there is at least a basic potential that things in the system are now acting as roadblocks to the expansion. Those roadblocks may be in other locations; it may be back to the migration-cycle pattern and have nothing to do with the predation—the predation may be just a kind of sideshow.

The overall prognosis on the specific point of cod seems to be that back when the collapse occurred, the most realistic projections were that it would take several population cycles—population cycles being age to maturation, which at the time was six to seven years—so that meant it might be 10-15 years. But it's been that long, and there really isn't any sign of a significant recovery. The inshore stock, as it's now described, is seen as healthy by some, but if you look at the total abundance of fish, it's clearly still a very tiny percentage of that historical abundance. Given the other changes that have occurred in this ecosystem—the enormous increase in crabs and shrimp, the increase in seals, and other fundamental changes—it is hard to be optimistic that even those neutral forecasts of several generation cycles are correct now, particularly when you add in this kind of conceptual gap as to how the population dynamic would restructure itself in the way it once operated prior to the collapse, in terms of this large annual migration from offshore to inshore, following capelin and then spawning offshore.

Fundamentally underlying this is the lack of knowledge. I heard this in the questions asked, and you'll hear it in the answers from all scientists and from all people—that we really know too little of these systems. We know too little partly because we're not all that clever as a discipline. Our understanding of ocean ecology is pretty two-dimensional at best.

It's also, I would argue, poor in Canada in general. I think it's poor in Canada in terms of our ocean science and the decline of our international reputation on ocean sciences in many areas relative to other nations.

I think it's also true in environmental science in general. As environmental scientists, we've tried to make an argument that if Canadians don't do some of this basic and applied science, nobody else is going to do it. The Americans aren't going to come up and study our shelves for us, give us the data, and tell us how to learn from it; they're studying their own systems.

Canada, when it's setting science priorities, seems to forget that environmental science is different from all other kinds of science, in terms of its potential benefit to Canadians in a broad sense. Not only has the Department of Fisheries and Oceans clearly lost an enormous amount of scientific capacity over the last decade, but capacity in the environmental science community hasn't broadly expanded to replace it, nor has it in any way expanded relative to the broad need, given the range of environmental issues—not just oceanic, but terrestrial and other as well.

I think there's enormous potential to generate new knowledge. The difficulty, to conclude, is really that the problem with that knowledge is we still haven't exactly figured out how to apply it. Twenty years ago there clearly were mistakes made by many people. I wouldn't want to point fingers at any individuals, or even groups, but we didn't know well, then, how to integrate scientific understanding to fisheries management.

● (1710)

It's not clear that we're all that good at it today, either. I hear naive enthusiasm at times for using science and expanding science to manage ocean ecosystems. I think that's a ludicrous concept. The idea of managing something so complex when we did so disastrously, and still do fairly poorly, with single species sounds like if two wrongs don't make a right, well, let's try three or four, and maybe we'll get it right.

I think we need to be very careful about how we develop new thinking, but I do think we need it.

Thank you.

The Chair: Thank you very much.

Mr. Keddy, you have ten minutes.

Mr. Gerald Keddy: Thank you, Mr. Chair. I'll certainly split my time with Mr. Hearn or Mr. Kamp if they have questions.

There's been a lot of discussion on predator-prey relationship from a lot of our witnesses, and you referenced it in your comments. Without question a number of our witnesses, especially fishermen and community members making their living from the sea and trying to sustain their community, would like to see a precautionary approach taken to the fishery, but part of that precautionary approach would be a limited fishery.

I'm just trying to weigh out, on that precautionary approach, the pluses and the minuses. Certainly one of the pluses, I believe, would be more information. Science could be involved in that process, asking specific questions on the log books and gathering that information. Hopefully some of the trust needed between the fishers and science would be rebuilt. We politicians, in turn, would get better information, and hopefully be able to put in better regulations to govern the fishery.

At the same time, on the other side of that is the difficulty that possibly this biomass wouldn't sustain a limited fishery, even though there's limited fishery now, even though there's bycatch now. You could actually harm the return of this biomass. Based on the information you have—and I realize you haven't been to all the committee hearings—how do you see that northeast coast? Do you see separate geographical areas—separate zones of the fishery being treated separately, including separate licensing?

● (1715)

Dr. Brad deYoung: You are asking about managing an inshore directed local fishery. When you want to create a fishery, you have to ask why you're doing it. There's always a risk attached to going out and catching, because we never have perfect knowledge.

In this situation, clearly the risk is somewhat greater, because we've already brought it to the potential of complete and utter decimation. There's a nice edge to that, but in that context you would have to be even more precautionary than you would normally be, given the trajectory, the history, of the last 15 years.

If the argument is you're doing it for a scientific basis, then I think you would have to show there was no substantial harm from it—harm in the sense of limiting potential recovery over a time scale that was reasonable in an economic, social, and ecosystem sense. My general answer would be that present information doesn't really support it. What you would really have would be just a very short-term fishery. The data you would collect from that fishery, if it were a fishery alone, would not be scientifically all that significant. The risk for harm, I think, with the knowledge available now, is significant.

Mr. Gerald Keddy: Part of the difficulty of making decisions—I'm still going to continue on this theme of inadequate, unsatisfactory, limited, often incorrect data. A lot of the scientific decisions, I think, were based on bad data and inaccurate data, and I'll back that up a little bit with the mobile gear fleet. The offshore fleet had a horrendous record of misreporting. There's also the issue of shacking or simply throwing the smaller, less valuable fish over the side. So we've made decisions—and I'm not trying to defend any of the decisions that have been made, I'm trying to correct them—based on bad data.

In Bonavista Bay, Trinity Bay—that area—the fishermen are saying they're seeing fish in multi-year classes. They're seeing small fish around the docks. They're seeing big fish in lump nets. There was a sentinel fishery last year in the blackback fishery. They were catching cod where they never expected to catch them. They were catching them on ground they never expected to catch them on and they were catching them at the time of year when they would never expect to see them. All of that information would lead us to believe that there are more inshore cod than we would think. If you add that to the fact that with what information we do have.... I think the great failure of the collapse of the cod has been that we never had an increase in science. We decreased science at the same time. We decreased our information that we need to rebuild the stocks on. We have probably less information today than we've ever had.

Dr. Brad deYoung: There was a national centre of excellence proposal that we submitted about two years after the collapse that was meant to address the exploration of the recovery trajectory, which tried to define and explore the science around that. It was not funded, somewhat for scientific reasons, but fundamentally for political reasons to do with funding of activity that was meant to be in the DFO mandate. DFO really never picked that up.

I think that the problem in the inshore, the conflict that you mentioned, the disagreements between science and fishermen.... I've spent a lot of time talking to fishermen in the last few years around the island and around Atlantic Canada. On snow crab, which I've mostly been talking to them about, there really isn't a big conflict. Fishermen and scientists don't really fundamentally disagree about all issues and about all approaches. I think one wouldn't want to exaggerate too much the conflict that exists.

I think the difficulty with the inshore cod here and cod in the northern gulf at the moment as well is that the data that fishermen see directly is the good data, and the data, particularly in northern cod, that they don't see is the bad data. So it's very difficult for them to value the bad data, because they don't see it, in the way that they do the good. So they see all these fish inshore, along this narrow strip, and to them that's a huge amount of fish, but in a comparative historical sense it's not a huge amount of fish, yet. And you can say that, and they'll kind of hear that, but it doesn't change the fact that they're seeing big fish and seeing small fish. But that stock, by all the independent measures, isn't growing at a rate that really would warrant enthusiasm to the extent of saying you could have a directed fishery and still expect recovery.

● (1720)

Mr. Gerald Keddy: That's the second or third time you've said that. My question then is, where did that data come from? What data do you have from—

Mr. Bill Matthews: The bad data.

Mr. Gerald Keddy: Where does your data come from?

Dr. Brad deYoung: It's not my data. It's a combination of the directed acoustic surveys that George Rose and others have done, and offshore trawl surveys that aren't finding cod out there, and no cod's being found in any number in bycatch in other fisheries offshore.

Mr. Gerald Keddy: But the offshore acoustic survey isn't accurate once it gets into shoal water.

Dr. Brad deYoung: The inshore survey that George does is an inshore directed acoustic survey. It's not the same as the DFO acoustic survey system.

On the question of the quality of those estimates, there are always going to be arguments. You commented about the quality of the poor data, and I agree. There are often poor data. I think a more significant problem, actually, is poor understanding or poor interpretation of the data, and the limitations of the data, in a sense. The data are just the data, but how we use and interpret them is often where we really run ourselves into trouble.

These aren't my surveys, so I'm not really going to defend that. I'm just giving my perspective on how I've seen those results presented. I'm not guaranteeing who is right or wrong here, but given the whole 15- to 20-year collapse story, I just don't see that there's enough good data to generate enough enthusiasm to say that we know for sure this is a good idea.

Mr. Gerald Keddy: I think Loyola had a question, Mr. Chair.

The Chair: I'm afraid ten minutes go by quickly.

Monsieur Blais.

[*Translation*]

Mr. Raynald Blais: Thank you very much, Mr. Chair.

Good afternoon, Mr. deYoung.

First, I thank you for broadening our perspective as far as oceanography goes and also our knowledge of what is really happening in our oceans, and for broadening the scope of our analysis. That is why I would like you to further explain what impact the reduction of the ice cap is having on oceans. This must make the oceans colder. It certainly has an impact on oceans. We are talking about global warming and rising ocean levels, and that must have an impact on the resource. I would like to have your comments.

[*English*]

Dr. Brad deYoung: Thank you.

Is it okay if I reply in English? I would be very clumsy in French.

[*Translation*]

I could speak French, but it would be more difficult to express my ideas. I will switch to English.

[*English*]

The larger-scale issue is the context in which we need to develop greater understanding to interpret the data we were referring to earlier. One of our difficulties is that when we see little bits of data, we know it's in a larger-scale context, but our understanding of that context is even weaker, in a sense, than our understanding of fisheries dynamics.

I think the big change that's occurred over the last few decades in our understanding of how oceans and environment systems work has not just been climate change, although the evidence for climate change among scientists is well accepted—perhaps it's not accepted everywhere politically. More broadly, it's our understanding of the importance of very large-scale cycles in these systems—not simply climate change cycles, but the understanding that natural systems vary in ways we did not formerly understand.

Prior to this period there was a general expectation that if fish were out in the ocean, they'd always be out in the ocean, and they wouldn't be going up and down. They'd be there. If you stopped fishing, they'd grow back somehow, and it would all take care of itself. What we've learned is that there are big changes in these systems even when we're not there.

Clearly, in a fishing sense, we can significantly outpace that kind of variability, but in the north Atlantic there are oscillations in pressure patterns that lead to changes in temperature patterns that lead to an ongoing, cascading kind of ecological effect. Coupling that with the climate change story makes it very difficult for us to forecast where ocean characteristics or conditions will go, because most of that climate change is at the fundamental level of ocean water properties and ocean transports, and then it has to move through that system. It influences productivity at a basic level in the ocean plankton productivity, but changing temperature also influences growth rates of organisms. Then the two influences come together—from the top, from the organisms, and from the bottom, from the primary or plant productivity in the oceans.

To pick one fundamental change, then, there are these enormously easy-to-see, in a sense, temperature changes—but then there are very subtle interactions as to how that will work through the ocean food web from plants up and fish down.

But I haven't answered your question.

● (1725)

[*Translation*]

Mr. Raynald Blais: You are getting there slowly, but I would like you to go a bit faster because I have only about four minutes left. From what you said, I understand there are a macroscopic and a microscopic way of looking at things. Right now, very special phenomena are happening in the big whole. We should understand and interpret them well to be able to make good decisions. I also get the impression that our information, which is considered inadequate at the local level, is even more inadequate globally.

[*English*]

Dr. Brad deYoung: Even though we've been talking about these kinds of long scale changes, I think the other thing we've learned is that there are potential abrupt shifts that can occur and that you can gradually make a change in characteristics and reach a threshold where you will change a key growth characteristic or key interaction between two characteristics of the system in ways that are surprising.

The other thing that we've learned, not just in this ocean but elsewhere, is that oceans can go on their natural variability and suddenly jump in a way that's surprising to us. We've done that here in the northwest Atlantic by removing most of the groundfish. So removing the million metric tonnes of cod from this environment is an ecological experiment. We don't know how to interpret the outcome of the experiment directly because we haven't been studying it in a way that allows us to do that.

[*Translation*]

Mr. Raynald Blais: Let us talk about the local level and inshore fishing in Bonavista Bay or in other coastal areas in Quebec, near my riding of Gaspésie—Îles-de-la-Madeleine. Even if in high seas, the resource has been ruined, can we say there has not been a huge variation inshore?

Dr. Brad deYoung: Do you mean a different scale?

Mr. Raynald Blais: Yes. The reduction in cod stocks in high seas has been almost 100%. But closer to the coast, there is still a bit of cod. The stocks may have changed, but not as much as they did offshore.

● (1730)

[*English*]

Dr. Brad deYoung: Prior to the collapse here, there was a lot of discussion. There was a growing interest in the inshore stocks and whether inshore fish were really separate, and then there was work done in the late 1980s, early 1990s—genetic work and various other kinds of studies—that began to try to explore those stocks. Then since the collapse they were the only cod to really study, so much attention was paid to them.

It's clear that there's been a lot of work to show that inshore fish are very focused in this particular environment and that they can have specific closed life history characteristics. In other words, they're happy in that environment, and potentially there's been work that shows they will return—I think Ran mentioned this, that in Norway they've looked and they can see fish returning to particular zones and such.

I think though that the question is still out. I know there's work going on right now in the North Sea to try to determine what substructure exists for cod. There's still great uncertainty about what the real biological interactions are between these groups of populations. Genetics is telling us one thing; fishermen are telling us something. I think this is all information, but I think the real question of whether they are all really interactions or whether these can be treated as closed systems remains unanswered.

The Chair: Mr. Stoffer.

Mr. Peter Stoffer: Well, sir, thank you very much for helping us get through this. I know you must be very tired, so I'll try to keep it brief.

In 3Ps right now there's limited commercial and limited food and recreational fishery, and yet we're hearing that that stock is getting better, even with that type of activity. We hear on 2J3KL in the bay stocks that those fish are seen in numbers unheard of before by local fishermen and people in the area.

So if 3Ps could handle a small commercial fishery, limited at best, and a small food and recreational fishery, could not that same opinion apply to 2J3KL bay stocks?

Dr. Brad deYoung: 3Ps right now has a substantially higher total number of fish, by three or four at least, perhaps much more, than we're talking in the bay stocks. That fishery is also coupled.... Some of the fish they catch are likely gulf cod that are migrating back in, so they're not fishing solely.... The problem with the 3Ps fishery right at the moment is that the mortality inshore, which is on those 3Ps fish alone, is very high. The offshore fishing in some sense, even though it's the so-called bad fishing—the trawl fishery—is directed across not just the 3Ps fish but also the gulf fish that have migrated out of the northern gulf and are on Burgeo Bank and St. Pierre Bank. So the relative numbers of fish are much different. Also, the relative decline of that stock is much smaller than we're talking about for northern cod. It didn't decline by a factor of 100. The comparison of relative numbers and the absolute numbers I don't think is completely appropriate.

The additional point would be that the northern inshore cod, the so-called cod now that everyone sees, may not have the same biological and functional characteristics as they did historically. I think this would at least potentially provide partial explanation as to why fishermen make comments such as “We see fish where we never saw them before.” These are fish that are behaving perhaps in ways they never quite behaved before, because this isn't simply the inshore stock. It's like the refugia for all the leftover cod, some of whom may have wanted to migrate but had no one to join with and so simply joined that group. I'm not sure there's any real evidence for the population dynamics of how that would happen so I'm not going to push that idea too far, but I certainly don't think that comparison gets you clearly onto safe ground.

Mr. Peter Stoffer: We spoke to fishermen who indicated their children aren't into the industry. We asked them who was coming up behind them, and they said not many. In the science world, we've heard from scientists who indicated we need more funding, more research, a hybrid system of more independent science, more government science. I'm asking this question because I haven't asked it yet. Are there a lot of younger scientists coming up behind you to continue that research for 20, 30, 40 years down the road? Or are you like the ageing fishermen—is this it?

What will happen if you and Ransom and Jeff do all the studies...? It takes a long time to analyze all of this information. You're saying that the research is going to take a long time. We've been doing this for years and years and we still don't understand it. It's going to take many more years to understand it. Are there younger scientists coming in to fill your role eventually? Are you seeing a lot of younger people coming into your field of expertise?

Dr. Brad deYoung: There are more scientists around today than there were 20 years ago. But are there more scientists doing the appropriate or the required work? There are huge gaps—and one would have to go through the definition of what it is one wants to understand—where areas of scientific interest that were once covered are no longer being covered. Basically scientists chase after funding because funding is what makes their science happen. When the funding world defines certain targets, then scientists move towards those areas. There have been shifts towards certain kinds of science and shifts away from others, both in terms of what scientists are doing and where young scientists appoint themselves.

Clearly in fisheries and oceans there's been an enormous decline of that rejuvenation of young scientists, particularly in certain areas of fisheries ecology. In the university community we have not done well to fill the gaps left by the disappearance of basic or applied DFO fisheries ecology science, because it's not what we're funded to do.

● (1735)

Mr. Peter Stoffer: Thank you.

The Chair: We'll go to Mr. Matthews.

Mr. Bill Matthews: Thank you very much, Mr. Chairman, and thank you for coming, Dr. deYoung.

I will ask my colleagues to forgive me. My question is not about northern cod.

In responding to Mr. Stoffer about 3Ps sustaining a commercial fishery and a recreational fishery, of course you referenced 3Pn, where we have right now the commercial fishery but no recreational fishery. You mentioned that the stocks are intermingling or intermixing, so there's finally been an acceptance, hasn't there, that this happens? For years DFO resisted that theory. They totally denied and resisted that there was any such thing as an intermingling and mixing of 3Pn and 3Ps. Is that accepted now?

Dr. Brad deYoung: There has been work done that's not yet fully complete, where acoustic tags were placed on fish and gates were basically placed along the south coast to look at the transit of fish out of the gulf in the winter.

I've only heard casual stories, really, about the full outcome of that work. The extent of the intermingling is still not agreed to, I would say, in general, in the fisheries and oceans department. I don't think that the gulf scientists and those here.... The stocks certainly can bounce into each other. The extent to which they overlap, I wouldn't want to say there is agreement on that, no.

Mr. Bill Matthews: No, I just asked you the question because I'm of the understanding now that they accepted that this was the case.

Dr. Brad deYoung: I think increasingly so...offshore, yes.

Mr. Bill Matthews: Yes, but it takes a long time to get it through the head sometimes. I guess that's part of the reason we're in the problem we're in now with the northern stock. We've heard of migratory patterns and changes, and one thing and another. There are all kinds of theories about northern cod changing its migratory patterns. Now we're starting to recognize that there indeed is a migratory pattern for gulf cod coming down into 3Ps and then going back up.

The first thing that comes to my mind is that the 3Pn cod has a chance of getting caught twice. If there's a commercial fishery in 3Pn and there's a commercial fishery in 3Ps, which there is, and that 3Pn stock comes down.... You know what I'm saying. It brings about an awful lot of questions, and I don't even know if what I'm saying makes any sense, but I'm beginning to think now maybe the mortality rate of 3Pn cod might be a little high because of that. I don't know if it's unfair to ask you to comment on that. I'm just thinking about this now, so I'm putting it to you.

● (1740)

Dr. Brad deYoung: I think the studies that are now being done are the right studies to address the answer, so what we all collectively should do is look at the outcome, because they seem to be fairly effective. The acoustic tags seem to work well. They worked well in 4V, where they first tried them, and if they work as well in the south coast then we'll look at that data.

It's been a thorny issue. It was always an issue in the gulf and it remains that way now.

Mr. Bill Matthews: Sure it was, and that's why I asked.

I will just conclude by making this comment. I have represented that area now for eight years, and for eight years fishermen in 3Pn have contended what we're now talking about. Until fairly recently there's been a total denial. The 3Pn fishermen have contended it for longer than I've been a member of Parliament, but certainly since my time. So that's part of the problem.

We're back to part of our fundamental problem with what's happened with the northern cod. For years fishermen warned there was something radically wrong going on out here, and they weren't really listened to. What's annoying fishermen now, and what we picked up on during the last couple of days, is, “We're the people who you wouldn't listen to back when we were headed for the big trouble, and now we're here telling you that the situation in our bays”—in the three or four that they named—“is not all that bad. You wouldn't listen to us when things were getting bad, and now you won't listen to us when things are getting better.”

Dr. Brad deYoung: So you never listen, right.

On the listening point, I'd have to say that fishermen need to be able to listen too.

Mr. Bill Matthews: Sure, I agree.

Dr. Brad deYoung: The listening needs to go both ways, and I hear that complaint. While sitting on the FRCC in the last year and a half—I will comment on this a little—the first thing that we would always get hit with was “You crazy guys, you never listen to us on cod”. We weren't there to talk about cod, but they would still start by talking about cod.

It needs to go the other way. Fishermen need to pay attention. They may distrust scientists, for whatever their reason of concern, but scientists are people who have information that's relevant to their concerns, and they should be at least thoughtful of the potential to get themselves into worse trouble again. A few thousand tonnes of fish aren't going to solve the social economy of the north coast of Newfoundland.

Mr. Bill Matthews: Absolutely not. We know that as a group.

Dr. Brad deYoung: Anyway....

Mr. Bill Matthews: Thank you.

The Chair: Is there anyone else from that side?

Mr. Murphy.

Hon. Shawn Murphy: Just a follow-up. You indicated that you are on the FRCC right now. It is supposedly a body that's representing science, industry, fishers, harvesters, and is giving independent advice to the minister and department. Is it working, in your view?

Dr. Brad deYoung: I don't think I can comment on that.

An hon. member: Oh.

Dr. Brad deYoung: I could, but the FRCC has a practice of identifying somebody to speak for them. I'd be speaking for them now, I think. Off the record, I could perhaps give a personal opinion, which I obviously have.

Voices: Oh, oh!

Dr. Brad deYoung: I can do sign language or something like that.

The Chair: We have somebody coming from FRCC tomorrow.

Dr. Brad deYoung: I think you will talk to Gabe Gregory tomorrow and will get his view on it.

Hon. Shawn Murphy: This is my last question. I listened to everything you said and you looked at things probably more globally from an ecosystem point of view. Would that be your recommendation to fisheries management, to look at a more ecosystem approach and to take each ecosystem—if an ecosystem can be defined—and to try to look at the fisheries issues, the non-fisheries issues, the climate change, water temperature, oil and gas, and to take the whole thing from a global perspective? Is that where you're coming from?

Dr. Brad deYoung: In general, in all fisheries management, the idea of some kind of ecosystems-based or ecosystems-assisted fisheries approach is where everyone is headed. The trick with that is what does it mean? It's very easy to say you should take this into account, but how do you take it into account? I think everyone pretty much agrees that we should all be looking at more than just the numbers of fish or the specifics of the fish, but at the related prey and predators, at the food supply, at the ocean temperature characteristics and to broaden out our perspective.

But the difficulty becomes.... Let's say the temperature.... People talk about cold water as if it were bad: cold water bad, warm water good. Well, what if the water gets really cold, is that twice as bad as bad? How do you take that into account in a real sense? I think we don't know how to do that, and that's connected to our lack of understanding of what the relationship is between those things we're looking at, like temperature or plankton concentrations or other aspects of the ocean ecosystem. But it's under the category of, well, let's try. It can't be any worse as long as we're sensible about our decision-making at the end of the day. I think that's what most people are trying to do now. We're in the dark, trying to feel our way towards the best way to do this.

● (1745)

The Chair: Professor, in your opening remarks you were talking about recovery. You mentioned that there is still bycatch and you talked a little bit about predation by seals. What I didn't hear you talk about was prey, as opposed to predators.

I'm just curious, when there were a million—I think you said a million—metric tonnes of fish, they were eating something. They were eating capelin; a million metric tonnes of fish were eating capelin. Now we have hardly any. One would think that there would be an explosion of capelin, because there isn't a million metric tonnes of fish to eat them. Is there an explosion of capelin? If not, why not—if you know, or if there's a theory about that? If there is an explosion of capelin, what's eating them?

Dr. Brad deYoung: You probably have heard of the work that's been done on the eastern Scotian shelf that shows, with the removal of groundfish there, there was a change described as the one you would expect: that by removing the predators on those planktivorous fish, the planktivorous fish get a chance to bounce up; and that there are large numbers of fish like capelin that eat plankton and then there are fewer zooplankton and then there are more nutrients and then you get what's called a cascade, from the top of the food chain down all the way through.

In the Newfoundland shelf we haven't seen that. We don't see these huge numbers of capelin and an explosion in capelin. What we've seen is an explosion—an expansion at the very least, not an explosion—perhaps of snow crab and shrimp. Is there a direct causal relationship? Well, there are hints in different aspects for crab and shrimp, but the capelin didn't do that.

So this is back to the unsatisfying simple explanations or our inability to do an experiment. If you'd done that experiment in advance, many might have told you that the capelin will explode if you do this because the capelin are being preyed on by the cod, but it turns out that something else expanded, whether it's a direct causal link. Those million tonnes of fish were clearly eating lots of things in the ecosystem, including capelin. Also cod are fairly omnivorous, so they would eat lots of other things. Perhaps the crab and shrimp productivity and other benthic productivity was really the release—the absence of cod is really having an effect in that system.

But we're not doing this full ecosystem type of interpretation to look at the trajectory of all of those changes in a way that allows us to disentangle that.

The Chair: Bearing in mind that the professor's just landed from London, does anyone else have any quick question?

Mr. Hearn.

Mr. Loyola Hearn: Not a question, I just want to make a point in reference to one of Dr. deYoung's statements.

Thank you sincerely for coming in.

You said that our ocean science is very poor in Canada. While you were saying that, the Auditor General today issued a report and the first chapter is a scathing attack on fisheries and oceans management strategy. So you're not the only one who feels that way. In relation to that, here we are sitting in the middle of the Atlantic Ocean with a great university and a marine institute, so shouldn't we be the leaders in this field?

Dr. Brad deYoung: You might not be surprised to hear that I've made that point inside my university a few times. I'm trying to make it at a very broad level and not simply to do with fisheries and oceans or particular universities, but whether Canada as a nation has really set itself a goal in the same sense that Norway has.

Norway was mentioned earlier in terms of work done there. Norway spends a far greater percentage of their research budget on fishery science and marine science than we ever would, for obvious reasons. So I wouldn't want to say we should take their percentage and apply it to our national research funding. But at the same time, we're a nation with huge environmental concerns and a huge environmental scale, and it does strike me relative to those concerns and that scale that we do pay inadequate attention, not simply in the Department of Fisheries and Oceans or Environment Canada or Natural Resources Canada, but broadly across all the funding councils and all our various supportive research.

● (1750)

Mr. Loyola Hearn: We get what we pay for.

Dr. Brad deYoung: Yes.

The Chair: Monsieur Blais.

[*Translation*]

Mr. Raynald Blais: Thank you.

Before saying good night, I would have a quick question on the kind of action plan you could suggest to improve our knowledge globally and locally.

What kind of steps should we priorize if we are to improve the state of our knowledge?

[*English*]

Dr. Brad deYoung: I think there are various strategies that you can apply. Clearly, the federal government needs to make a basic decision about the relative balance of research inside its departments relative to outside. I guess that's part of the question or the tricky development, but regardless of that balance, there needs to be more integration between those various sectors, not only the sectors inside the government, but also between government departments. So in government departments, when we study the oceans, we have very few people at the same time studying the atmosphere above the oceans, for example, because we have the atmospheric guys all off in another department, and they basically don't bump into each other at all. So we have that question of the way in which we integrate the science because of the structures.

University science is funded fundamentally on basic science and particular scientists' interests. If there really are broad national requirements, then it would strike me that one could imagine developing broad national programs that would fund science—not just applied government science, but also broad university science that would be directed towards those. Whether those are things like centres of excellence or things like other integrated strategic programs, it seems to me that you want a mix. You always want a mix between people doing research on exploratory basic ideas, where you get surprises or things you don't expect, and coordinated activities where you tackle larger problems with larger groups of scientists and where you have collaboration between scientists from different organizations bringing different perspectives to the issue.

The Chair: Mr. Stoffer.

Mr. Peter Stoffer: Yes, very quickly, you had indicated that Canada maybe shouldn't go to Norway's level of investment in research. I think we should, because we have three oceans, and one ocean is warming up pretty quickly. The people in Nunavut are asking for fish quotas in 0A, 0B, and other areas that we have very, very little or no knowledge about. So if I were in your shoes and had your FFRC and others, Canada should be investing heavily in ocean research, because it's not just for fisheries matters; it's for everything else.

Dr. Brad deYoung: Well, I'd be happy to see it triple, but that would still not bring us up to Norway's level, in a relative sense.

Mr. Peter Stoffer: But it would help.

Dr. Brad deYoung: But it would help.

Mr. Peter Stoffer: And it would encourage young people to get into the field.

The Chair: Amazing.

Professor, thank you very much, and we wish you a very good night.

Dr. Brad deYoung: Thank you all.

The Chair: Colleagues, just for your information, we'll start tomorrow at 9 o'clock in the morning and we'll go until roughly 12 or 12:15. We'll start back again at 1:45, and then as we did on the west coast, we will end with the Department of Fisheries and Oceans officials at around 5 o'clock, and we'll go until there are no more questions.

Thank you very much.

I adjourn the meeting.

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