

**Mr. Allan Kristofferson (Lake Winnipeg Research Consortium):
Presentation on Bill 46: Save Lake Winnipeg Act, June 13, 2011**

Thank you, Mr. Chairman, and good evening to the committee. My name is Allan Kristofferson. I'm the managing director of the Lake Winnipeg Research Consortium, and I have to take this opportunity to say that I am genuinely proud to be a close associate of Mr. Robert T. Kristjanson. In my opinion, he is the sole individual who, through his own initiative, raised the red flag on Lake Winnipeg 15 years ago when the rest of us had no idea what was going on. I think he's—and I have to drive him home to get enough sleep—so he can get on the—then he can get on the—it'll be an interesting conversation on the way back, and we had a good one on the way in.

The Lake Winnipeg Research Consortium, as perhaps all of you know, is a not-for-profit organization that was funded in 1998, and it's a partnership, and it's a partnership that includes everybody, deliberately—all those who have stake or a responsibility or an interest in Lake Winnipeg. And it consists of government, many different levels of government—federal, provincial, municipal, First Nations, Crown corporations, cottage owners and commercial fishers and private citizens.

And our primary goal is to facilitate or make happen research that wasn't taking place on the lake for many different reasons. We need multidisciplinary research on Lake Winnipeg because it's a very complex body of water. We do this, we accomplish this in a number of different ways, not the least of which is that we own and operate a research vessel, the motor vessel Namao. It's a dedicated and capable vessel that allows us to reach every part of Lake Winnipeg effectively, and we host an annual science forum whereby research—we invite researchers, actually, to build capacity. We discuss research results. We identify research gaps and we help to set priorities on research.

And our activities can be divided, basically, up into two main categories. And the first one is monitoring. It's not a very exciting thing, but it's a very necessary thing. And essentially what it is, is we go to the same place at the same time year after year and look at the same things to see if, in fact, the lake is changing. We have 65 locations, GPS locations over the lake that we visit each year in the spring, in the summer and in the fall. It's very necessary to do that because we have to get an understanding of the seasonal changes in the lake, and we have to do it year after year to get an understanding of the natural—annual variation in the lake as well. And at each station we monitor chemical, biological and physical parameters, and we've been doing this every year since 2002.

Now, I wish I could say differently, but the results of that monitoring tell us that the lake isn't getting any better; it's, in fact, getting worse. We've seen significant increases in the concentration of both phosphorus and nitrogen since we started. And if we compare it to baseline information that was collected in 1969, it is, indeed, a significant increase.

So it's very clear to all and having listened to the presentations previously, I think there's a general consensus in this room that Lake Winnipeg is under stress from excessive nutrient concentrations. So the initiative to—and it's generally recognized and

accepted that there needs to be very, very soon a significant reduction in the concentration, particularly of phosphorus. The lake's algal community is dominated by cyanobacteria, 90 per cent now, compared to, say, 30 per cent in 1969, and one of the most effective ways of dealing with that in a short period of time, and this comes from experience on Lake Erie and other lakes around the world, is to significantly reduce phosphorus. And I certainly applaud the efforts of the government in moving in that direction.

Algal blooms continue to proliferate on the lake. Indeed, they foul swimming beaches, they clog fisherman's nets, but they've also been damaging the lake, and we have documented evidence that a large area of the north basin of the lake has suffered from oxygen depletion. When these large masses of algae die, they sink to the bottom, they decompose and they use up oxygen. And our researchers, particularly from the University of Manitoba, have seen a significant change in the composition of the benthos, the creatures that live on the mud. From those that—very important fish food, particularly for whitefish, the *Diporeia brevicornis*, a little scud, benthic amphipod, has been reduced in abundance and is being replaced by Oligochaete worms, which can survive depleted oxygen conditions.

So even though we don't see that, we certainly know that something's going on. Not a lot has happened in terms of positive things on Lake Winnipeg, but the damage is being done slowly, and that's why it's very, very important that we recognize that time is of the essence and something be done as quickly and as effectively as possible.

The other area of activity, of course, that we're involved in is research. This is a lake that we know very little about, and our research is—and many different aspects of research that need to be understood, but we're focusing on the nutrient issue and we're trying to get an understanding of how the lake processes these nutrients. From the time they enter the system, they are incorporated into the primary produces and they move their way up the food web to the top predators, which Mr. Kristjanson is going to be trying to catch tomorrow, the pickerel and the sauger and the whitefish.

The objectives are clear, then, and it isn't just one. The objectives are, certainly, we have to reduce the mass—biomass of blue-greens and this an important step forward in doing that, but we also have to maintain a productive fishery. And when you start manipulating key nutrients like nitrogen and phosphorus, you can, in fact, have detrimental effects if you're not careful.

So what we're trying to do there is to model the lake. We're using two robust models that have been used effectively in other lakes. Indeed, there are similarities between lakes and we can take advantage of the knowledge we have on that, and one of the similarities is lakes have water, amongst other things, but there are very, very particular aspects of Lake Winnipeg that are unique to it: its morphology, its geochemistry, its thermal regimes, and so on and so forth. So we have to gather—and this is what we're doing as we speak, the ship is up the lake as I'm speaking—gather lake-specific information from Lake Winnipeg that we can plug into these models and hopefully, in the not-too-distant future,

we can use these models to help us predict optimum levels of nutrient reduction. Indeed, we have to reduce the nutrient levels right now as quickly as we possibly can, but we also want to settle on where—what we call the sweet spots are. So, on the one hand, we can get rid of the blue-greens or at least reduce them significantly, you won't ever get rid of them, but we can maintain a productive fishery. And that work is in progress. So that's what we're working on.

Now the other role that the consortium has assumed and has been doing as effectively as it possibly can—is the role of education. We actually have an onboard program where we take classes of students out on the lake and they go through a hands-on field program, and the last couple of years we've taken over 500 students out for this issue. But it has to be far more reaching than this. The Lake Winnipeg watershed is almost a million square kilometres, 6.6 million people live in that watershed, five and a half in Canada and 1.1 just south of the border.

I was disturbed over the last little while that although a lot of people are aware there's a problem in Lake Winnipeg, they didn't understand the nature of the problem. The media was reporting the lake was dead or dying or polluted or contaminated or sick, [inaudible] maybe the lake is lost. What should we do?

So the first step is awareness. That seems to be widespread. The next step is understanding. The third step is individual acceptance of responsibility. And the fourth step, of course, is the willingness of all individuals, including myself, to do the right thing. But you have to understand what the right thing is. And we've been involved in the production of a number of media productions, including most lately, the David Suzuki Nature of Things program called, Save My Lake. Manitoba Moments, A Blooming Crisis, a locally produced documentary called the Fat Lake and another one, by Jim Byrne out of Lethbridge called Choking Lake Winnipeg.

And I think those have reached a lot of people and they've helped people to understand the nature of the lake. And we're hoping through government action and individual understanding and acceptance of responsibility and willingness to do the right thing, we can turn the lake around. Indeed, the solutions are obvious: which treatment, best management practices, restoration of wetlands, holding back runoff, individual things as simple as conserving water, not over fertilizing your lawns, and there's a whole host of them, we have them on our website. And I feel that if we all, regardless of our backgrounds and our—whatever it is that we're concerned with, are willing to accept responsibility and turn things around.

I have no doubt, in the foreseeable future, that we can restore Lake Winnipeg to good health. Thank you.