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Chair

Mr. Mark Warawa

Standing Committee on Environment and Sustainable Development

Monday, November 5, 2012

● (1530)

[*English*]

The Chair (Mr. Mark Warawa (Langley, CPC)): I call the meeting to order. This is the 51st meeting of the Standing Committee on Environment and Sustainable Development.

I want to welcome Ms. Dodds and Mr. Lin as we study ozone monitoring.

You have up to ten minutes, and then we'll open it up for questions. This portion of the meeting will go until 4:30.

Thank you.

Dr. Karen Dodds (Assistant Deputy Minister, Science and Technology Branch, Department of the Environment): Thank you very much.

I'd like to begin by thanking everyone for the opportunity to come back and provide an update on Environment Canada's ozone program. As I stated when I was here last December, Environment Canada remains fully committed to monitoring ozone. This time I have some opening remarks, but you should also have a deck. There are some visuals, some ozone maps that we thought you might be interested in having with you as a more interesting reminder of what we will be talking about today.

Ozone in the upper atmosphere, known as stratospheric ozone, as you know plays a very important role in protecting the earth's surface, and humans, from harmful ultraviolet, or UV, radiation from the sun.

[*Translation*]

As you may be aware, Environment Canada's ozone program dates back more than 50 years, and has played a pivotal role in helping to understand ozone and the risks posed by thinning of the ozone layer. Canada's current ozone activities are the direct result of the significant contributions that Environment Canada has made over the years in ozone science.

In this statement, I will share with you examples of these contributions and provide you with an update on the status of our ozone program.

[*English*]

In 1982 Environment Canada scientists made an important contribution to ozone monitoring when they developed the Brewer ozone spectrophotometer, which is an instrument that measures the total thickness of the ozone layer. This device was developed at a time when concerns about ozone depletion were just emerging and improved data on the ozone layer was urgently needed. The Brewer ozone spectrophotometer is capable of taking automated measurements, which make it very useful, and of measuring both ozone and UV radiation. It's a significant technological advancement compared with earlier instruments.

The Brewer ozone spectrophotometer continues to be recognized today as the most accurate ground-based instrument for measuring ozone in the upper atmosphere, and it's used for monitoring of ozone by countries around the world.

[*Translation*]

In 1992, Environment Canada improved services for Canadians with the development of the UV index, a tool used to express the sunburn potential of UV radiation at the earth's surface.

Because of Environment Canada's work, Canada was the first country to provide forecasts of predicted daily UV levels. The UV index is now used worldwide and has been extremely influential in raising awareness of the potential risks for exposure to UV radiation.

[*English*]

Since Environment Canada's ozone program began more than 50 years ago, our scientific understanding of stratospheric ozone has significantly advanced. Scientific knowledge on ozone was essential in driving the formation of the Montreal protocol in 1987, and in the protocol's success in reducing ozone-depleting substances.

Both Environment Canada and the World Meteorological Organization have documented the positive trends in the recovery of the ozone layer. However, it's important to note that there continues to be variability and uncertainty in this recovery process.

For example, as you're aware, a 2011 paper co-authored by one of our scientists and published in the prestigious journal *Nature* reported a record loss in the ozone in the Arctic in spring 2011. Environment Canada's monitoring helps in identifying ozone losses, such as the one reported in that paper, and our long-term monitoring records help us understand these observations within the context of the overall trends in the ozone layer in the Arctic.

Our most recent observational data show that in this year, 2012, Arctic ozone levels were closer to normal pre-depletion levels, or pre-1980 levels, than they were in spring 2011, but the depletion of about 5% to 10% below normal was still observed. This kind of variability underscores the importance of ongoing monitoring of ozone.

Similarly, the U.S. National Oceanic and Atmospheric Administration, commonly known as NOAA, recently reported on the ozone layer in the Antarctic, noting that this year's seasonal ozone hole in the Antarctic, which occurs in September and October, is the second-smallest observed over the last 20 years. The smallest ozone hole was observed ten years ago, in 2002.

● (1535)

[*Translation*]

In my previous discussion with this committee, I provided information on the path forward for Environment Canada's ozone program. As a result of our continuing efforts to make optimal use of the public funds allocated to us, Environment Canada identified that operational efficiencies can be achieved in our ozone program, while still ensuring that we continue to meet our ongoing ozone-related obligations.

[*English*]

To achieve greater operational efficiency, we've stated our intent to integrate the operations of our two main ozone monitoring methods—as you will recall, these are the Brewer method and the ozone method—into a larger, integrated, and more sustainable monitoring network.

In the past, our ozone program focused heavily on the development of new monitoring technology in order to respond to the need for more advanced tools to understand the ozone layer. As a result, Environment Canada's monitoring efforts, using the Brewer method and the ozone-sonde method, evolved separately, leading to separate operations and maintenance systems that each required uniquely trained staff. This separation meant that our monitoring was vulnerable to fluctuations in the availability of staff capacity trained to maintain the operations for each method.

Today our focus is on better implementing and using these technologies to monitor ozone. Our focus is on the ozone rather than the technology. Our decision to integrate Brewer and ozone monitoring into an integrated network will help reduce operational vulnerabilities and ensure that our ozone monitoring is more robust and sustainable over the long term. This is a natural decision for us in light of the maturity of our technologies and the importance of ongoing ozone monitoring.

At my last appearance, I reported that Environment Canada was launching a review of our ozone monitoring in order to inform the integration of monitoring operations into a larger network. Our senior research scientists are in the process of evaluating all of our ozone monitoring sites and developing options and timelines for how to proceed with the integration of the operations, while still continuing delivery of the ozone monitoring for Canadians. It is estimated that this review and the design and implementation of the new integrated network will be completed and fully operational within a three-year period.

Throughout this process, we continue to monitor stratospheric ozone at ten Brewer sites and eight ozone sites across Canada. This includes our three long-term sites in Canada's far north, based at Alert, Eureka, and Resolute, which are of course important for comparison to baselines.

At my previous committee appearance, I also reported that we continue to be committed to operating the World Meteorological Organization's world ozone and UV data centre. This is an international scientific archive and database that provides a variety of ozone and UV radiation data sets to the global scientific community.

To better deliver on the commitment, the operational functions of the data centre have been transferred to my colleague in the Meteorological Service of Canada, still within Environment Canada, and managed by David Grimes.

I am pleased to report that the transfer of the data centre's operations is now almost complete. The centre continues to provide service to the ozone community worldwide. Within my shop, we continue to work closely with our colleague by providing scientific oversight. By migrating the operations to the meteorological service, global ozone data will be managed in a more modern data management system.

Environment Canada reported on the status of the data centre at recent meetings of the World Meteorological Organization's science advisory group for ozone. We reconfirmed Canada's commitment to hosting the data centre, as we have done since 1962.

● (1540)

[*Translation*]

Environment Canada also continues to fulfil its responsibilities to the WMO and the global scientific community with respect to the maintenance of the Brewer Triad.

The Brewer Triad is a trio of Brewer ozone spectrophotometers that serve as the reference for the calibration of other spectrophotometers throughout the world. Environment Canada is responsible for the data collected by the triad, ensuring that the instruments are operating correctly, and for periodically calibrating the triad with Environment Canada's two spectrophotometers situated at the NOAA facility in Mauna Loa, Hawaii.

A fourth Brewer spectrophotometer, known as the “travelling standard”, is provided by Environment Canada to calibrate other Brewer instruments throughout the world.

[*English*]

Before closing, I want to provide a little extra information on the full range of air quality monitoring that we do. In addition to monitoring stratospheric ozone, we monitor a wide range of air pollutants that impact air quality and human and ecosystem health, including surface-level ozone, or tropospheric ozone; nitrogen oxide; sulphur dioxide; carbon monoxide; a number of persistent organic pollutants; particulate matter; and metals and mercuries, among others.

We lead a national integrated air quality monitoring effort that includes the National Air Pollution Surveillance Network in partnerships with all of our provinces. This network was established in 1969 as a cooperative initiative with the provinces and territories to monitor the quality of ambient air. This monitoring network is comprised of 186 urban and rural sites in communities across Canada. Major ambient air pollutants are monitored continuously at these sites, and more than 300 chemical substances are analyzed in samples collected from the sites.

From this work we know that significant improvements have been made to Canada's air quality over the last 30 to 40 years. For example, emissions of sulphur dioxide and nitrogen oxides have decreased by 63% and 17% respectively between 1985 and 2010. Concentrations of ambient particulate matter at urban sites across Canada have declined by approximately 35% between 1984 and 2009.

Our air quality monitoring is an important background in the development and future operations of the air quality management system, which was recently agreed to by ministers at the federal and provincial levels.

I'm extremely proud of the calibre of our air monitoring and the dedication of our scientists and staff in producing the data and knowledge necessary to support the delivery of environmental services and to inform policy and regulatory decisions that help Environment Canada help protect Canada's environment.

[*Translation*]

Thank you again for this opportunity to provide you with further information about Environment Canada's ozone program.

Thank you.

[*English*]

The Chair: Thank you very much.

We will begin our seven-minute round with Mr. Kenney—excuse me: with Mr. Lunney.

Mr. James Lunney (Nanaimo—Alberni, CPC): Thank you very much, Mr. Chair.

Well, Mr. Kenney was honoured just last night in Toronto at a function. We would love to have him here with us, but.... They're both good Irish names.

Thank you very much to our witnesses, to Ms. Dodds, for being here with us today. Air quality is important to Canada. Ozone monitoring is something Canadians can and should be proud of—a 50-year history. I'm just looking over the testimony you laid out for us here. Over 50 years there are a couple of big firsts where Canada has led the way: the development of monitoring standards; the Brewer ozone spectrophotometer; and then, of course, ten years later, in 1992, coming up with the UV index. These are useful tools that are now used worldwide.

I appreciate the update you've given us today. It's a bit of a technical presentation, but I want to ask whether you might be able to review for us what the new science is telling us about ozone depletion, what the next challenges might be, and how Canada is utilizing new technology to monitor and protect the ozone as we move forward with some changes.

● (1545)

Dr. Karen Dodds: Thanks. I'll start, and then my colleague, Dr. Charles Lin, may add, since he's even closer to the science than I am.

If you consider the issue of ozone depleting substances, when action was taken under the Montreal protocol, there were predictions that it would take quite a long time to see the ozone layer regain its health and start stabilizing. That's what our monitoring, I would say, is starting to see. Even ten years ago scientists were predicting it would be the middle of this century, 2050, before we would really see those kinds of improvements.

We continue to be interested and have scientists look at the role ozone plays in the overall health of the atmosphere, because this is important to other issues, such as climate change. The interactions and impact of ozone, and the ozone level just in the atmosphere generally, are important to us.

Charles, did you want to add something more?

Dr. Charles Lin (Director General, Atmospheric Science and Technology, Department of the Environment): Yes. I can do that.

The interaction between climate change and ozone is a complex story. Many of the players, in addition to reacting chemically with ozone, are also greenhouse gases themselves. There are two parallel stories going on. An active area of research is just to try to tease that out: the role of ozone on climate change and the impact of climate change on stratospheric ozone. This involves observations, models, and many process studies that isolate a particular process of interest. That's a major challenge that lies ahead in the ozone-climate change story.

Another scientific advance is the use of satellites. Satellites can give us good spatial coverage. There is usually a trade-off between spatial coverage and time coverage when we talk about satellites. Also, satellites need calibration to make sure that what they are measuring is indeed ground truth. That's where the Brewers and ozone-sondes come in as well. The potential added coverage of satellites offers a new and exciting possibility in monitoring ozone.

The third and final aspect I will mention is the incorporation of ozone data into our weather prediction and air quality models. In technical language, we refer to this as “assimilation of data”. These observations have to be brought into, or assimilated into, the models to make sure the models don't run off, and to make sure the models behave properly and are properly constrained. This is a whole area of research. Right now, the Canadian weather and air quality models do not assimilate ozone data directly. One of the major moves we plan to make—one of the major scientific advances—is to actually assimilate or incorporate the ozone data into the model and to make them a happy duo.

Mr. James Lunney: Great.

There has been a lot of discussion in the media about our use of LiDAR systems. Could you explain to us how these work and tell us whether or not they are the best option for measuring ozone?

Dr. Karen Dodds: Again, the LiDAR is a technology, it is not what are you studying with the technology. Environment Canada has a number of LiDARs. We maintain that kind of capability.

Without getting too technical, the LiDAR can detect different kinds of particles and chemicals in the atmosphere. You can put it to different uses. Right now, we're most interested in two things using LiDARs. One is looking at the long-range transportation of air pollutants. We have one at Whistler that looks to see whether we are receiving air pollutants from others around the world. Another one or two we are looking to deploy—I'm not sure if they are there yet—to the oil sands to support us in the work we are doing in monitoring different contaminants in the atmosphere of interest with respect to oil sands development.

● (1550)

Mr. James Lunney: Thanks for that.

From the development of the Brewer spectrophotometer and the UV index to our continued operation of the WMO's world ozone and UV data centre, I gather that Canada has a reputation as a world leader in ozone monitoring.

Can you tell us about Canada's standing on these issues internationally? How do you believe we currently rank related to other countries of similar size and capability?

Dr. Karen Dodds: The use of the Brewer spectrophotometer is, if anything, continuing to increase in other countries around the world, with others recognizing the advantages that the Brewer instrument can offer. I think we still have an excellent reputation there. Our role in using the Brewer triad, in calibrating everybody else's Brewer instruments, is a very critical one.

On the science side and developing other technologies, we remain interested, but our focus is more on what's the issue—ozone—than on just technologies.

Charles, do you want to add anything?

Dr. Charles Lin: Yes.

One of the most famous observatories in the environmental field is Mauna Loa in Hawaii. There are two Brewers at Mauna Loa that are really Environment Canada Brewers. There's a sticker on them that says NOAA, but they are Environment Canada Brewers.

Their function, in addition to gathering data and looking at the ozone in that part of the world, is to help with this calibration method. To calibrate properly you need stable values, and Mauna Loa is a location that gives a fairly stable value, being high up and away from the lowest layer of the atmosphere. It's also away from the polar latitudes, where a lot of interaction takes place to generate ozone.

The Chair: Thank you very much.

Mr. James Lunney: Do I have some more time, Mr. Chair?

The Chair: No. Your time is up.

Ms. Leslie, you have seven minutes.

Ms. Megan Leslie (Halifax, NDP): Time flies when you're having fun.

Thanks very much for being here. It's good to have you both back.

Really we asked you back—well, the reason why I think we asked you back—is to look at your testimony in December last year and look at the changes since then. I welcome this opportunity to talk to you.

Last year, when the two of you were here at committee, Dr. Dodds, you said in your opening remarks that oversight of WOUDC would continue. In responding to a question from one of my colleagues, I think Mr. Sopuck, you said:

> In discussions within Environment Canada, my colleagues in the meteorological service, who with weather monitoring, have a lot more demand on them for data management and information management technologies, have agreed that on the more IT/IM perspective, they will take over that part of the World Ozone and Ultraviolet Radiation Data Centre, the WOUDC. We will maintain the scientific input and the scientific oversight of the integrity of the data.

Dr. Lin, in response to a question from Laurin Lui, my colleague, you said:

> We've decided to put the ozone data centre, the WOUDC, under the auspices of the MSC. But at the same time, the S and T branch under Karen will provide scientific oversight. So this is combining the best of both worlds, the one where we have scientific expertise and the other where MSC has the experience in maintaining operational networks.

I guess you would agree.... Obviously, those statements were on the record. But it seems that what you're really trying to communicate is that S and T has the necessary expertise that the meteorological services doesn't have, so they're well placed to work together.

Is that a good characterization?

● (1555)

Dr. Karen Dodds: Yes.

Ms. Megan Leslie: Okay. Thanks.

I'd like to ask some questions about recent developments. Despite the assertions that scientific oversight would continue, this September we learned that Environment Canada had dissolved the program responsible for scientific oversight and that a data manager would be put in charge of the operation of WOUDC. We also heard that the Brewer spectrophotometers, which are an integral part of that research and used by scientists around the world, would be maintained by people without the scientific knowledge to be carrying out the task.

What I'm seeing in the scientific community is that they're pretty upset by this. They claim, and I think they have the on-the-ground information and experience to make these assertions, that it puts world ozone layer depletion data in jeopardy. They say that data managers won't be able to catch data errors because of lack of scientific knowledge.

S and T's claim that services aren't going to be jeopardized are countered by these folks in the scientific community on the ground.

I would like to know how you respond to these critiques that are coming from the very users of this data.

Dr. Karen Dodds: Thank you. I'm happy to do so.

In terms of the scientific oversight from science and technology branch, that continues, and we have research scientists whose expertise is in ozone and in the data related to ozone in the atmosphere.

An immense amount of data is collected by our different monitoring programs, and the World Ozone and UV Radiation Data Centre is exactly that, it's a data centre. So it's not just our scientists, but our scientists working with others.

When I say “scientists”, MSC has meteorological scientists, they have scientists in statistics and in treatment, and we have scientists in atmospheric science, in meteorological science. So you can use the words “science oversight”. But we are supplying scientific oversight in terms like...what's the best method for using for monitoring, standardizing the method? Again, if you're using ozone monitoring around the world, you just don't want to calibrate the Brewers. You want to standardize the method, calibrate the method.

Those are the kinds of things where you have primarily a scientific input and give standards to the data centre to adhere to them.

Last time I checked, I think there were 400 sites around the world that provide spectro data into the World Ozone and UV Radiation Data Centre. This is a huge amount of data. Meteorological services, with its background in weather data, is very experienced in the handling of data. We certainly felt it was quite an appropriate move to give the data management to people with an expertise in data management and to maintain the science of ozone and the health of the ozone layer in the science and technology branch.

Ms. Megan Leslie: Thanks for that.

I guess when I think about the criticisms of this plan, with the example I used about data managers not being able to catch data errors because of their lack of scientific knowledge, I understand, or I think I understand, how you're explaining scientific oversight when you say there are standards they need to adhere to. But I still hear criticism coming from the community that says this plan is inadequate and that the acceptable standards of oversight aren't met, maybe as a lack of integration. We do have data managers handling this information who don't have the necessary scientific lens to judge what it is they're managing.

Dr. Karen Dodds: The individual scientists you have maybe heard from may not be representative of the general community.

Certainly some of my staff met with the scientific advisory group at the end of the summer. Just last week I was in Geneva and met with the individuals at the World Meteorological Organization who oversee this. They understand what we're doing and they were supportive of it.

Ms. Megan Leslie: Actually, I would like to ask you questions about the feedback you are getting about this. I mean, I'm not in your department, right? I'm not interacting with these folks every day.

What other feedback are you getting from the scientific community?

Dr. Karen Dodds: As far as I know, apart from the discussion at the scientific advisory group, we certainly haven't received any direct criticisms.

I don't know, Charles, whether you've had letters in.

Again, the scientific advisory group would be the world's congregation of those who are considered the experts on ozone, which is different from.... We are at a stage in looking at the ozone in terms of moving this to a routine monitoring function and some research work. There have been a lot of researchers, but to do routine monitoring around the world and really understand things, you need to be very standardized and very consistent in your methods and in your analysis of data. That's where we're going.

● (1600)

The Chair: Time has expired, but Mr. Lin, you may go ahead.

Dr. Charles Lin: If I may jump in here, for the scientific advisory group that Dr. Dodds mentioned, the last meeting came at the tail end of the Quadrennial Ozone Symposium, which is an international symposium held every four years that gathers all the ozone experts from around the world. The announcement was made of this change, that the data centre would still remain within Environment Canada but would be under the auspices of the meteorological service for the reasons that Dr. Dodds already explained. It was in front of an international audience and scientists that this announcement was made and received.

Now, the second point I want to make is that Environment Canada still has top scientists in ozone science. In Dr. Dodds' speech, she mentioned the 2011 *Nature* paper co-authored with others by, I believe, two Environment Canada scientists.

So we have the science capacity to oversee the data. We're not going to do it alone. We're going to rely on science experts from other countries. But that's fair enough. The ozone issue is a worldwide issue, and the distribution of ozone varies from one location to another, so it is truly an international effort under the auspices of the WMO.

The Chair: Thank you. Time has expired.

Ms. Leslie, you have seven minutes.

Ms. Megan Leslie: Oh. Another?

Ms. Michelle Rempel (Calgary Centre-North, CPC): It's Rempel.

The Chair: Yes.

What is wrong with me?

Voices: Oh, oh!

The Chair: Go ahead, Ms. Rempel.

Ms. Michelle Rempel: Thank you, Mr. Chair.

Ms. Dodds and Dr. Lin, thank you both for coming out again today.

In your speech, Ms. Dodds, you mentioned a variety of things that we monitor through Environment Canada that your department looks at. I noted that you mentioned specifically surface-level ozone. So just to clarify, we do monitor that within Environment Canada, correct?

Dr. Karen Dodds: Yes.

Ms. Michelle Rempel: Excellent.

The other thing I wanted to talk about, building on my colleague Ms. Leslie's questioning, is about the science capacity that we have within Environment Canada to both collect the data and then use it in an international forum.

Just to clarify your earlier comments, in consultation with other world organizations such as the WMO that participate in this, the feedback has been that we have the science capacity to carry out our obligations adequately.

Dr. Karen Dodds: Yes.

Ms. Michelle Rempel: Great.

Dr. Lin?

Dr. Charles Lin: Yes.

Ms. Michelle Rempel: Great.

Another thing that I wanted to talk about is something you started to talk about, Dr. Lin. As a country we do have, across the country, capacity for ozone research that continues, that's above and beyond Environment Canada. There is a lot of work happening at Canadian academic institutions. We continue to fund this work.

Is that correct? Would you characterize that as correct?

Dr. Charles Lin: What I said was that Environment Canada still has significant capacity in ozone science. Now, we of course collaborate with many partners, including academia. That is true in ozone science and in other endeavours that we do.

Ms. Michelle Rempel: Great.

The other thing you mentioned today was that the LiDAR system has been used within the oil sands monitoring program. Do you foresee that continuing in the future as well?

Dr. Karen Dodds: Yes, I do.

I want to just explain a little bit or elaborate a little bit on Environment Canada's role and academia's role. When it comes to long-term monitoring of something, that seldom gets research grants from the large research-granting councils either at the federal level or at the provincial level, because it's not the research of most interest. So when you're talking about wanting ongoing monitoring, meeting the standards that are needed for that, that is very often the remit of federal government and Environment Canada, and in my branch we're responsible for a lot of that.

Then research is something where research scientists will have an area of interest and they'll respond to where money is being given and what the newest science is. So ozone and/or a technology like LiDARs might be of interest this year and in three or four years not of interest.

LiDARs are of interest, but remain right now really a research technology. They're very expensive. They haven't developed to the point where you could apply them really for routine monitoring, as I understand them. The way we're using them and planning to use them in the oil sands is as an additional method to look at some of these air contaminants that we do have some concerns about.

● (1605)

Ms. Michelle Rempel: I'm really glad you made that distinction, because I think it's one that's been core to a lot of the discussion on this topic over the last 12 months, in what the role of Environment Canada has been.

Just to clarify, after you made that point, you do feel that we have the capacity right now to meet our obligation when it comes to data measurement and data management, correct?

Dr. Karen Dodds: Yes.

Ms. Michelle Rempel: I want to go now to Dr. Lin. You mentioned the *Nature* paper, which I think was a great thing to come out of Environment Canada science. It showed again that there was a large hole that had formed over the Arctic.

Maybe you can elaborate for the committee on what Environment Canada is now doing with this data or this finding. What's the next step? Does it mean that the ozone hole...? Has it shrunk?

What are we seeing with that data, the follow-up that came from that paper?

Dr. Charles Lin: There's significant variability. There are many factors that determine the distribution of ozone over the Arctic: the chemical reactions, the solar exposure, polar stratospheric clouds, the snow and ice distribution. These parameters change from year to year. It is a challenge to try to weave the story together, to tease out what is contributing to what.

Environment Canada scientists are working hard on that. This involves a combination of not just working with the data, but working with the numerical models, the satellite observations, as I had mentioned earlier.

This is not a question of collecting the data, noting that the hole is changing in size; we want to go one step further and try to ask the question of why this is happening. That's the much bigger story that I already mentioned.

Ms. Michelle Rempel: Great. Thank you.

Perhaps I'll close, because I'm sure my time is drawing short. You mentioned I think one of the great stories in the last few years, which has been the improvement in air quality in the country. Obviously the measurement components you spoke to today play a role in monitoring that.

Perhaps I'll give you the rest of my time just to elaborate on this trend in air quality improvement in the country. Perhaps you could speak to some of the bigger contributors that you found to this trend.

Dr. Karen Dodds: The science and technology branch has an important role to play in this, but we're not the policy setters and we're not the regulator. But when you monitor something, attention gets paid to it, and people need to respond to what the monitoring is showing.

A good example of that was when some of our scientists and others around the world showed that the ozone in the atmosphere was decreasing. Another very good example is work our scientists were part of that showed that acid rain was a significant problem probably in the mid-seventies to early eighties. When you have this ongoing monitoring looking at contaminants or pollutants of interest, then it is incumbent on the policy-makers and the regulators....

There was a Canada-U.S. air quality agreement, and action was taken in terms of emissions from vehicles and other things that really resulted in a very significant decline in the nitric oxides and the sulphur oxides. So you see very significant decreases in those contaminants and in acid rain and the consequent damage to the environment caused by acid rain.

It's the same thing for particulate matter. Ozone at the ground level is an important component of smog, so whenever you take action on these, you're getting benefits for human health and you're getting benefits for the environment writ large as well.

● (1610)

The Chair: Your time has expired.

Ms. Duncan, you have seven minutes.

Ms. Kirsty Duncan (Etobicoke North, Lib.): Thank you very much, Mr. Chair.

Thank you to you both for coming.

It's my understanding that a year ago last August all of the members of Environment Canada's experimental studies division—code name ARQX, and also known as the ozone science group—received letters telling them that their job function had been eliminated.

Can you confirm whether that is true, yes or no?

Dr. Karen Dodds: I'm not actually familiar with the acronym that you mentioned.

Ms. Kirsty Duncan: The ozone science group?

Dr. Karen Dodds: There were some folks who received initial letters and they were rescinded, so not everybody who got a letter ended up being impacted. That was something that the department was at great efforts to make clear to people at the outset: that not everybody who got a letter would be impacted.

Ms. Kirsty Duncan: I understand that. Thanks, Dr. Dodds. I'm asking a very specific question.

I really feel that monitoring the ozone layer is one of the most important jobs that Environment Canada does, and I would expect an answer for this. I would ask that you table it with this committee.

As my next question, can you confirm whether ARQX has actually been dissolved or not?

I would like both of those answers tabled with this committee, please.

It is well known in the ozone science community that the long-time manager of the World Ozone and Ultraviolet Radiation Data Centre is no longer in that position, yet at a meeting—and my colleague Ms. Leslie talked about this—on December 13, 2011, we heard from you.

Dr. Lin stated, and I quote, that "The manager is being transitioned to the MSC...."

Why has Environment Canada not followed through on a commitment made to this committee? I can quote from this report. It's now almost complete.

Dr. Karen Dodds: I know that the individual who was responsible for data had a choice as to whether or not he would move with the centre or stay with the science and technology branch. It was his choice to stay with the science and technology branch, not to move with the data centre.

I'm also aware that when Dr. Lin talked about moving the manager, he really meant the manager position, not the individual.

Ms. Kirsty Duncan: Thank you for the clarification.

Last fall the environment minister said dozens of times that the World Ozone and Ultraviolet Radiation Data Centre will continue to provide world-class services. An important component of those world-class services is scientific oversight of the data centre.

Last December, Dr. Dodds, you told this committee: "We will maintain the scientific...oversight of the integrity of the data."

At the same meeting, Dr. Lin agreed, saying, "...the S and T branch under Karen will provide scientific oversight."

What we know now is that the ozone group scientists have all been reassigned to the air quality directorate, and so science and technology branch is not providing oversight to the data centre.

Dr. Karen Dodds: That's not correct. As Dr. Lin has said, we continue to have scientists who have ozone as their priority occupation.

I would not focus on whether there is an organizational unit, because, again, our focus has been on integrating and having a more efficient production of the information than had been previous.

We are continuing to specialize in ozone. We're continuing to do scientific research in ozone—

Ms. Kirsty Duncan: Have the—

Dr. Karen Dodds: —having a research scientist whose only focus is ozone. He's in my branch, and he is in Dr. Lin's area.

Ms. Kirsty Duncan: Have the ozone group scientists been reassigned to air quality directorate, yes or no?

Dr. Charles Lin: Perhaps I could jump in here.

Ms. Kirsty Duncan: No, if I could get an answer, please: I'm looking for yes or no.

Dr. Karen Dodds: But yes or no is not an appropriate answer.

Where they're assigned, ozone is part of an air quality issue—

Ms. Kirsty Duncan: I used to teach air quality. I understand that.

Dr. Karen Dodds: Right.

So again, we have scientists who study ozone, and they remain within Environment Canada.

Ms. Kirsty Duncan: I feel things are being worded very carefully. I'm asking a very specific question. Has the ozone group of scientists been reassigned to the air quality directorate, please, yes or no?

● (1615)

Dr. Charles Lin: The answer would be yes and no. I'll explain. ARQX was part of air quality, so it is not a question of taking a group that was outside of air quality and putting that into air quality.

Ms. Kirsty Duncan: Does ARQX still exist?

Dr. Charles Lin: The people have moved into two divisions, into modelling and monitoring.

Ms. Kirsty Duncan: Does ARQX still exist?

Dr. Charles Lin: The answer is no.

Ms. Kirsty Duncan: Thank you. That's what I thought.

Dr. Charles Lin: So it's yes and no: yes and no.

Ms. Kirsty Duncan: Okay. I'm going to move on. I've never heard yes and no at the same time.

Ozone-sondes are required to profile ozone pollution in the lower atmosphere. Ozone launches have ceased at Egbert and Bratt's Lake, leaving only five southern stations still operating—Churchill, Edmonton, Goose Bay, Kelowna, and Yarmouth. There are currently no ozone-sonde launches in Canada's two most populated provinces, Ontario and Quebec, and nothing in P.E.I. or New Brunswick, which are both downwind from pollution sources in Canada and the U.S.

What are Environment Canada's plans for the remaining five ozone-sonde stations, and will any of them be shut down, please?

Dr. Karen Dodds: As I said, our scientists are looking at what the future configuration will be. That's one of the reasons why we thought we would include graphics: to show that the kind of ozone we're talking about is not a local issue, it is a regional and global issue.

Ms. Kirsty Duncan: Dr. Dodds, I understand that.

Dr. Karen Dodds: These kinds of maps can still be developed, and are still being developed—this is 2012—based on our current monitoring.

Ms. Kirsty Duncan: Dr. Dodds, please, I understand this. I taught this at the university too.

I'm asking, will any of them be shut down, please?

Dr. Karen Dodds: Will any of the...?

Ms. Kirsty Duncan: Ozone-sonde stations be shut down. And I've asked this repeatedly.

Dr. Karen Dodds: We may shut down some. We will let everybody know what decision will be made.

What we're looking at is what contributes best to overall ozone monitoring in the most efficient, effective manner.

Ms. Kirsty Duncan: Okay, so we still have no answer since last December on this. Is that correct?

Dr. Karen Dodds: No, as I said in my comments, our scientists who know ozone are studying this.

The Chair: Time has expired. Thank you.

Ms. Kirsty Duncan: Thank you.

The Chair: There was a request for answers to be tabled, and that would be totally voluntary, if you would like. It's up to you.

Dr. Karen Dodds: We'd be happy to provide the answers, absolutely.

The Chair: Thank you.

Now we will start the five-minute round, and we'll begin with Ms. Leslie.

Ms. Megan Leslie: Thanks, Mr. Chair.

I just have one quick question, and then I'm going to pass it over to my colleague Madame Quach.

Dr. Dodds, in my last round of questioning you said you had received no direct criticisms about what it is that's happening here with ozone. I just did a quick scan, because I know I've read criticisms from the international community, and found on the public record an article by Mark Weber from Germany's University of Bremen saying that the person assigned to manage the data isn't sufficiently qualified for doing the job and they need a stronger scientific background. I saw that Christos Zerefos, from Greece, who presides over an international committee of ozone researchers, warned that Canada is losing its leadership with this decision. I also found Gord McBean, former ADM of Environment Canada and president-elect of the International Council for Science, warning that this was a bad decision.

So you're saying that you've not received any criticism of this decision.

Dr. Karen Dodds: I have not received any criticism. People from the Wegener institute, from the World Meteorological Organization, from the National Oceanic and Atmospheric Administration in the States, who have phoned and asked what the situation is and who have had answers to their questions, have been very satisfied with the answers to their questions, because they understand our monitoring continues, we continue to do research, and we're doing it to international standards.

Ms. Megan Leslie: So these folks, these scientists, who are commenting publicly—have you followed up with them to try to get them the information that you think they need?

Dr. Karen Dodds: Anybody who writes in would get an answer. I don't know whether any of those individuals have actually tried to verify with Environment Canada, with me, with Dr. Lin, what the situation is. We have talked to our stakeholders, so folks who are involved in the World Meteorological Organization's international global oversight of ozone all know. I can't speak for research scientists, because there are literally thousands of scientific institutes in universities around the world who may or may not have an ozone research scientist.

● (1620)

Ms. Megan Leslie: Okay.

Thanks very much.

[*Translation*]

Ms. Anne Minh-Thu Quach (Beauharnois—Salaberry, NDP): Thank you very much for joining us today.

I would like to know what the repercussions might be of the National Research Council's changed mandate in terms of ozone monitoring. We know that that could result in a decrease in the number of trainees working at the NRC.

Furthermore, approximately 12,000 articles are written by scientists every year. Will this change result in fewer articles being published?

Ms. Dodds, you said earlier that this could result in the closing of some stations. What is the scope of the impact? How many stations are we talking about? How many fewer researchers will there be?

[*English*]

Dr. Karen Dodds: Let me start with your question about changes to the National Research Council's mandate.

I don't know the specifics about the work of the National Research Council. To the best of my understanding, they have not been partners in ozone monitoring. It's not an area that NRC is known for. The National Research Council is a very important research organization in Canada, but it is not a granting council, nor does it provide scholarships to doctoral or post-doctoral students outside of the National Research Council.

In terms of numbers of publications that can be used as a way of monitoring output, the science and technology branch publishes about 700 scientific publications per year, and that's remained constant over the last number of years, roughly speaking.

[*Translation*]

Ms. Anne Minh-Thu Quach: Will all of the changes you referred to earlier as well as those in 2011 result in fewer scientific publications, student trainees, stations and scientists whose work is concentrated on the ozone?

[*English*]

Dr. Karen Dodds: Well, in terms of resources, I work with what I have. The budget for the department is allocated by the government.

Working with my directors general, my job is to make sure that Environment Canada has the science and the research that it needs.

[*Translation*]

Ms. Anne Minh-Thu Quach: I want to know what the repercussions will be and what will be cutback in the area of ozone research.

[*English*]

Dr. Karen Dodds: We don't anticipate any cuts, going forward.

The department was impacted in the budget of this year, as were all departments. Again, we took a very high degree of care to make sure we maintained all the monitoring and the scientific capacity that is needed, and we continue to look to find as many efficiencies as we can.

[*Translation*]

Ms. Anne Minh-Thu Quach: Are you saying that scientists, researchers and students will not be subject to cutbacks?

[*English*]

Dr. Karen Dodds: We don't anticipate any more—

A voice: [*Inaudible—Editor*]

Ms. Anne Minh-Thu Quach: "Any more", but there were....

The Chair: Your time has expired. Thank you.

Mr. Woodworth, you have five minutes.

Mr. Stephen Woodworth (Kitchener Centre, CPC): Thank you.

I hardly know where to start, but perhaps I'll begin with what was almost a drive-by shooting a few minutes ago.

Some mentioned that the individual in your department who was responsible for monitoring the data isn't qualified, and there was some reference to somebody from who-knows-where saying that person wasn't qualified.

First of all, have you satisfied yourself that the individual is qualified? I'm not going to mention names, because it's bad enough we're even having this discussion. Have you satisfied yourself that the person is qualified?

Dr. Karen Dodds: Yes, I have. The World Meteorological Organization actually—my colleague David Grimes is the current president—sets international standards, and it has for years. We've made sure that we meet those standards.

All the scientists who work in Charles' shop, or the large majority, know how difficult it is to meet those standards, because that includes ISO certification.

● (1625)

Mr. Stephen Woodworth: All right. That's good enough for me. Thank you.

I also want to apologize for some of the questions you had from some of my colleagues earlier that were very clearly torqued to get you to come up with a specific phrase without explanation.

I'd like to go back to one point regarding ARQX, and whether or not it was always part of air quality. I think it was Dr. Lin who answered that question.

I think at some point you were required to say, without explanation, that ARQX doesn't exist. But what I sort of heard you saying was that all of the functions that were being performed are still being performed.

Am I right about that, or did I miss that?

Dr. Charles Lin: That is correct. In terms of the ARQX organizational changes, what I did not mention was that the manager resigned—left for, shall we say, greener pastures, for personal reasons—and also a senior research scientist left as well.

So it's not like we are laying off people and reducing, through budget cuts, staff.

Mr. Stephen Woodworth: Are the functions still being performed?

Dr. Charles Lin: Yes. The oversight function for the ozone data centre, the capacity to do ozone science, still remains within Environment Canada.

Mr. Stephen Woodworth: All right. To be honest with you, I think it would be nothing more than partisan torquing to worry about whether it's being performed by one group or another.

With respect to a good phrase that Ms. Leslie used in the course of her questions, it was “these folks in the scientific community on the ground”. I happened to come across an article in the British scientific journal *Nature*, published September 12, 2011, that relied on informal information—I imagine pretty much from the “folks in the scientific community on the ground”. It resulted in a lot of alarmism and running around by politicians critical of Canada—I might say none on the government side—but it made a few statements. I'd like to test them out and see if they came true.

In the article by Quirin Schiermeier, it said that it's been learned “…that Environment Canada…has decided to drastically reduce its ozone science and monitoring programme.”

Did that ever happen?

Dr. Karen Dodds: No.

Mr. Stephen Woodworth: It said the ozone monitoring network would be “shut down as early as this coming winter”. That would be last winter.

Did that happen?

Dr. Karen Dodds: No.

Mr. Stephen Woodworth: It said that it would be “the end of *in situ* ozone measurements”.

Did that ever happen?

Dr. Karen Dodds: No.

Mr. Stephen Woodworth: It said that Environment Canada's ozone and radiation research group will also be substantially reduced as a result of staff cuts driven by financial constraints.

Did that happen?

Dr. Karen Dodds: No.

Mr. Stephen Woodworth: I'm really not too impressed with some of these reports that come out from the folks in the scientific community on the ground.

It also mentioned that Environment Canada would “no longer host the Toronto-based World Ozone and Ultraviolet Radiation Data Centre”.

As I understand it, that has gone to the Meteorological Service of Canada. Is that correct?

Dr. Karen Dodds: Yes, and that is also part of Environment Canada.

Mr. Stephen Woodworth: So that's another prediction here, or report, that wasn't true.

I appreciate that clarification. I think altogether too much alarmism goes on as a result of uninformed comment.

I want to ask you one or two—

The Chair: Unfortunately, time has expired.

Mr. Stephen Woodworth: All right. Thank you.

The Chair: I want to thank the witnesses, Dr. Dodds and Dr. Lin, for being with us again and for the good work they do.

Colleagues, we will suspend to move in camera.

[*Proceedings continue in camera*]

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