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Chair

Mr. Harold Albrecht

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● (0845)

[*English*]

The Chair (Mr. Harold Albrecht (Kitchener—Conestoga, CPC)): I'd like to call to order this meeting of the Standing Committee on Environment and Sustainable Development.

We have with us today witnesses from Ducks Unlimited Canada: Mr. George Siekaniec, Mr. Jim Brennan, and Karla Guyn. We welcome you here in person to share with us your thoughts on wetland conservation.

As well, appearing by video conference from Olds, Alberta, we have Mr. Abiola, the director of applied research and the lead scientist.

Mr. Abiola, we'll have you proceed first. I understand you've presented a written copy of your comments. However, because your comments are in English only, we're not able to distribute them to the committee. They will, however, be translated and made available to the committee members at a later date.

I would encourage you to keep your opening comments to about 10 minutes. This will give time for the other witnesses to give their comments and then each of our committee members to ask questions.

With that, Mr. Abiola, would you please proceed.

Dr. Abimbola Abiola (Director of Applied Research and Lead Scientist, Olds College): Thank you very much, Mr. Chairman and members of the House of Commons Standing Committee on Environment and Sustainable Development.

It is really my pleasure to be here today, and I count it a privilege to be invited, along with others, to be a witness at this committee.

It was about a year ago, on May 16, 2012, that we had the privilege of having members of the committee—I think there were about six or seven of you—here at the college: the honourable François Choquette, the honourable François Pilon, the honourable Hedy Fry, the honourable James Lunney, the honourable Lawrence Toet, and the honourable Mark Warawa. They were here last year in order to tour our campus and be provided with a tour of the wetland facility at the college, which at that time was under construction and was almost completed. I'm very pleased to inform you today that the facility has been completed and is functional, and it has increased our ability to provide applied research to industry, government, and other agencies in the area of wetland research.

We know that wetlands play a very important role in our environment. Their survival and existence are paramount to our own existence, and the disappearance or non-existence of any part of them will definitely be the beginning of the end, in one way or another, of our own existence. We are looking then at what will actually be a harbinger of what is happening—or the fallout of what is happening—now in our environment.

Over the last 200 years, when you look at a lot of the historical records, many parts of Canada, especially areas to the south, mostly in the Prairies, have experienced a lot of loss of wetlands. When you look at it the same way, at the same time there have been increases in drought and all those types of issues related to lack of water.

I shouldn't really go through defining what wetlands are to this particular committee—you are very familiar with that—but there are different types of wetlands. Generally they are classified as swamps, bogs, marshes, fens, and riparian wetlands. Many of these wetlands are also subdivided into different types. I'll only try to highlight two or three of those, especially those that are known to be peculiar to the North American and Canadian environments, and many of them really are under threat. Specifically, I would like to talk about bogs and fens, many of which are in northern parts of Canada, and they are the most distinctive kinds of wetlands to North America. They are characterized by peaty deposits, in the case of bogs. The environment is acidic, and when you are looking at fens it is less acidic; it has more nutrients, but they are critical and paramount to our environment.

The other type of wetlands, the riparian, is very common, and is typically found along banks, lakes, and rivers. They are also very sensitive, especially to many of our human activities.

Along the coastal part of this country we have different types of wetlands: tidal, non-tidal wetlands, saline as well as fresh water. Many of these are also critical when...[*Technical difficulty—Editor*]

The one major thing we have to realize is the functionality and the ecological benefit of wetlands. Wetlands are dynamic and complex habitats. They contribute to biodiversity and other ecological functions. They are habitats for many endangered species and many species that are at risk. I feel that my colleagues from Ducks Unlimited, who will be speaking later, may also talk about those, especially biodiversity.

One of the areas in which wetlands are actually critical in terms of function is in the area of water quality. In fact, they are living systems that have been filtering contaminants, breaking down contaminants, reducing contaminants, and even immobilizing contaminants in water that passes through them.

● (0850)

We cannot underestimate the hydrological functions of wetlands. They help reduce floods, soil erosion, and run-off. They store water, they recharge groundwater, and they actually recharge a lot of the aquifers, so they are very important.

We also use wetlands for many human activities, such as recreation and education. They also have social uses and, to varying degrees, cultural significance, especially for our first nations.

The relative abundance of wetlands is also important. Certain wetlands are disappearing fast in different parts of this country. There are critical knowledge gaps when it comes to understanding and managing wetlands in cold climates, which we are blessed with in Canada. A lot of the available information on wetlands is relevant for warmer climates, especially the lower part of the United States. But we still need to continue the evaluation of different treatment options required to enhance wetlands, to investigate mechanisms by which different pollutants can be removed, to examine the effect of hydraulic loading and retention times on treatment efficacies, and to study the identification and propagation of wetlands species. Talking with many of our industry partners, especially in the area of constructed wetlands, we found a reduction in the number of species propagated in those sites.

In addition to all this, there are other things that we need to focus on in this country, especially the use of wetlands for phytoremediation of environmental contaminants using selected aquatic and terrestrial species.

I will quickly go through some of the work we are doing at Olds College. Constructed wetlands have proven to be effective in reducing concentrations of contaminants and enhancing biodiversity. At Olds College, we have focused on finding cost-effective, innovative strategies to meet the needs of our community and our industry partners. It is our goal to be a leading centre of excellence for research in wetland functionality in cold climates.

The Olds College project is a constructed wetlands. The main goal of the Olds College wetlands research facility is to address some of the gaps that were identified by the Alberta Water for Life strategy. This includes the knowledge and research required to improve scientific understanding and to provide interested parties with the information they need to make effective policy and management decisions.

We also identify knowledge and information-sharing gaps, especially in the collaboration between the scientific communities and industry, and the need for training and educational tools for our young people. Partnership is important as well as our ability to conserve water. Most times, when we talk about water conservation, people think mainly about quantitative conservation, but we also have to look at qualitative conservation of our water.

The completion of the constructed wetlands at Olds College has added significantly to the research capacity of the college in a manner that is consistent with the college's requirements for outcomes and its comprehensive constitutional plan. The project has been designed to increase the capacity of the constructed wetland in a significant manner, specifically the operational gains and benefits from the expansion of our physical research capacity and a new level of research monitoring, reporting, and stakeholder engagement.

To date, the college and our government have invested a lot of money in our facility. A total of over $8 million has been invested, and recently we received another $2 million, of which $800,000 came from the Canada Foundation for Innovation for the installation of a real-time monitoring facility for the wetlands. This provides us with the ability to monitor what is happening in real time, in terms of water quality, biodiversity, and other parameters in the wetlands.

● (0855)

This is a 20-acre facility, with about 20 ponds for treatment and two extra ponds for storage. It's unique. It's a living laboratory for students who have been working with other institutions—the University of Alberta, the University of Lethbridge, the University of Calgary, and now with Queen's University—on the use of this facility. It is the first of its type in this country, and with the facility we have the opportunity to work in real time to manage these wetlands. I have provided a picture of the wetlands.

Our partners include Ducks Unlimited—who have contributed both financially and with personnel—the Government of Canada, the Alberta government, the Red Deer River Watershed Alliance, Foothills Landscaping Limited, NSERC, WestCreek Developments, and others.

One thing I would really like to submit to this committee is that we need some policy in this country. Canada is blessed with an abundance of resources, including flora, fauna, water, minerals, and what I would call clean air. We owe it to our children, our future generation, to preserve these resources.

I have travelled and worked in over 20 countries around the world and this is still the best place to be. In looking at the infrastructure and resources we have, Canada has moved a lot of resources in this area. I might make a submission to this committee that we need to develop a national net-zero-loss policy, especially for the wetlands in this country. We cannot continue to see our wetlands disappear.

I know many of the provinces have wetland education policies whereby any wetlands that are taken out of activity have been replaced. Ducks Unlimited and many other organizations are involved in that process. This should be a national policy so that we stop the disappearance of wetlands.

● (0900)

The Chair: Mr. Abiola, we're—

Dr. Abimbola Abiola: We need to protect our—

The Chair: Mr. Abiola, please wrap up quickly.

Dr. Abimbola Abiola: We have to protect our wetlands and protect aquatic ecosystems from quality degradation and quantitative depletion. We need to adopt a watershed approach in wetland management in this country so that wetland replacement and mitigation are within the same watershed of loss, not just within a water basin.

I would also suggest that you develop and adopt a science-based matrix for measuring wetland functionality on a national level.

Thank you very much.

The Chair: Thank you very much, Mr. Abiola.

We'll move now to Ducks Unlimited Canada.

Mr. Brennan, are you going to lead it off?

Mr. Jim Brennan (Director of Government Affairs, Ducks Unlimited Canada): It's actually going to be Mr. Siekaniec.

The Chair: Welcome, Mr. Siekaniec.

Mr. Greg Siekaniec (Chief Executive Officer, Ducks Unlimited Canada): Good morning. Thank you, Mr. Chairman and members of the committee, for inviting Ducks Unlimited Canada to follow up on the testimony we gave earlier this month. We are very encouraged by your interest in wetlands because we feel they must be at the very core of a national conservation plan for Canada.

My name is Greg Siekaniec. I am the CEO of Ducks Unlimited Canada, this nation's leading wetland conservation organization. Joining me today are Dr. Karla Guyn and Jim Brennan. Karla is currently our director of conservation planning and she will soon be our national director of conservation. Karla will address the committee's questions about wetland types, values, and conservation efforts.

Jim, our director of governmental affairs, is joining us from our Ottawa office. He will describe the state of wetland protection in Canada and will outline the role we feel the federal government can play to help improve that.

When we've appeared before you in the past, we've described our organization and we've left related details behind in the form of briefs. Today, as you've requested, we will focus our presentation on the habitat type central to our mission: wetland and wetland conservation.

Before I give the floor to Karla and Jim, I would like to emphasize four key points that will be reinforced throughout the presentation you will see today. Wetlands are some of the most valuable ecosystems in the world, in part because of the incredible diversity of plants and animals, including humans, they support. Wetlands are also some of the most threatened ecosystems in the world. In fact, the Ramsar Convention on Wetlands of International Importance states that “the degradation and loss of wetlands is more rapid than that of other ecosystems”.

As we heard earlier, Canada contains the largest wetland area in the world, nearly one-quarter of the globe's supply of this precious form of natural capital. Yet up to 70% of wetlands have been drained or filled within settled areas of this country. Simply put, we are depleting our wetland stock faster than we can restore it. Even organizations such as ours, Ducks Unlimited Canada, which have committed billions of dollars to the cause, cannot keep pace with wetland loss in Canada.

We are in this dilemma due primarily to a lack of several things: political will at all levels of government; uniform legislative and regulatory safeguards; and what we believe to be landowner incentives, which will lead to my fourth and final point, which is that the federal government can help solve this wetland loss dilemma. Although the provinces have legislative authority over wetlands, many interjurisdictional issues arise that transcend these provincial boundaries and responsibilities. For example, as water being drained from the Saskatchewan fields comes surging across the border toward Manitoba during flood season, the provinces have thus far been unable to address this particular issue. The issue is not lost on the voting public; there are expectations that their elected officials will help, will take meaningful steps to help us address this problem.

In addition, as the public learns about the other ways wetlands support them, not only by protecting them from floods, they are asking who will help with a leadership role in safeguarding these natural areas and natural assets. The federal government can drive solutions by making a major landscape-scale investment in conservation, particularly wetland restoration, which will also require a strong commitment to investments in science.

By rising to that challenge, not only will the Government of Canada fulfill its legal commitments, such as the Migratory Birds Convention Act, it will also demonstrate it is taking concrete steps to realize the net environmental, social, and economic benefits of making wetlands the core focus of Canada's national conservation plan.

Last week Professor Howard Wheater from the University of Saskatchewan spoke in Ottawa about rapidly emerging water quality and quantity issues, particularly in the three prairie provinces. In particular, he referenced the 2011 algal blooms on Lake Winnipeg as a great crisis for this country and one that could easily be replicated in the Saskatchewan River watershed—a river system that provides 80% of drinking water to three of the largest cities in Canada: Edmonton, Calgary, and Saskatoon.

As I said in my remarks to this committee earlier this month, choosing not to act is a decision in itself, a decision that will enable the continued loss and degradation of valuable habitats. If we choose to live with the status quo, we must be prepared to live with the consequences, such as historic levels of flooding, loss of biodiversity, as well as a variety of climate change impacts that will only compound the issues we face today.

● (0905)

However, there are solutions. These solutions are based in sound science and effective conservation practices, and we invite you, as leaders in this country, to work with us to meet these imperatives for this generation and, importantly, for the generations to follow

With that, I would like to open the floor for Karla. Thank you again for inviting us to provide this presentation, and I look forward to continuing this very important conservation conversation with all of you.

Thank you.

The Chair: Thank you.

Ms. Guyn.

Dr. Karla Guyn (Director of Conservation Planning, Ducks Unlimited Canada): First, thank you for inviting us back to talk more specifically about wetland conservation. Over the course of this presentation I want to give you a little about wetland basics: the kinds of wetlands we have in Canada; what some of the benefits are of wetlands; a brief overview of wetland loss in Canada; DU's wetland conservation approach; the value of conservation in Canada; and what the federal government can do to help advance wetland conservation.

First, let's talk briefly about some of the different types of wetlands. At the very basis, what is a wetland? It is land that is saturated with water long enough to promote wetland or aquatic processes. It's indicated by poorly drained soils, water-loving vegetation, and biological activities adapted to the wet environment.

In Canada there are five different classes of wetlands. The first two, bogs and fens, are called organic wetlands and they're the wetlands that develop peatlands. The other three, swamps, marshes, and shallow open water, are referred to as mineral wetlands. Just to give you an idea of what these wetlands look like, on the left here we have bogs. Bogs are isolated from groundwater. They're very low-nutrient wetlands, and any nutrients they do get come from precipitation; vegetation types are mosses, trees, and shrubs.

On the right, that is a fen. Fens are exposed to groundwater. They have higher nutrients. They're less acidic than bogs and the plants include more grasses.

Looking at the mineral-forming or non-peat-forming wetlands, the first are marshes. Marshes have varying water levels. The vegetation types include reeds, sedges, and rushes and they're very nutrient rich. Swamps, on the other hand, usually have standing water and are characterized by dense tree stands with water-loving plants. Lastly, we have the shallow, open water wetlands. They're typically in your lake-marsh transition, with some submerged plants.

Let's just briefly touch on some of the benefits of wetlands. First and foremost, wetlands really are biodiversity hot spots. Wetlands support a disproportionately high number of terrestrial and aquatic species compared to other ecosystem types. One third of the species at risk listed by the Committee on the Status of Endangered Wildlife in Canada live in or near wetlands.

Wetland habitats are also particularly important for species at risk in that species dependent on both fresh water and coastal wetlands are declining faster than those reliant on other ecosystem types.

They're important for thriving fisheries. Two-thirds or more of all fish that we consume in North America are dependent on coastal wetlands; for example, 75% of the U.S.'s commercial fish and shellfish stocks depend on estuaries. They're important for recreation and tourism. In 1988 Environment Canada estimated that non-consumptive recreation, fishing, and hunting in Canada's wetlands generated $4 billion per year.

They're particularly important for water quality. Wetlands capture and hold back sediments, harmful bacteria, and nutrients—example, nutrients from fertilizer—from entering downstream waterways where they can cause human health issues. As an example, wetlands are able to retain up to 70% of sediments and up to 95% of nitrogen.

Just to give you a real-world example of what can happen with poor water quality, the image you see here is Grand Beach, which is on Lake Winnipeg. It's touted as being one of the best beaches in North America and it's a great beach on a good day, not so great a beach on a bad day. Lake Winnipeg has been known to have extensive algae outbreaks in late summer and this has been causing a considerable amount of trouble for the lake.

Wetlands also provide protection from floods. They collect and hold water, which reduces the amount of water moving downstream, thus reducing threats from floods.

I'm going to go through a series of images here that helps to depict how wetlands go about helping to reduce floods. The image you see here is one of a number of intact wetlands—those are the little blue dots—with a stream running through it. The darker green area is what's considered to be the contributing area to that stream. Once wetland drainage starts to happen, it starts to connect those wetlands' basins to the contributing area and the contributing area becomes bigger. There's more flow going into the stream. You continue to have wetland drainage. The stream flow begins to increase even more, and ultimately, with substantial amounts of wetland drainage, you end up having downstream flooding impacts.

● (0910)

We've talked a little about some of the detriments of wetland loss. I want to give you a brief overview of some of the estimates of wetland loss in Canada and some of the impacts.

The first example shows wetland loss in southern Ontario. This was a study that we did that looked at wetland loss from 1800 to 2002. Over that period of time, as you can see by the different colours, in anything that's orange or red, those particular areas have lost more than 65% of their wetlands.

Overall in this area, 3.5 million acres or 72% of the wetlands were lost up until 2002, basically due to settlement. This is a very conservative estimate, in that this wetland loss study only looked at wetlands that were 25 hectares or larger. A 25-hectare wetland is a very large wetland, so this is a very conservative estimate.

Moving into the Prairies, unlike southern Ontario, where a lot of the wetland loss is due to urban expansion, we see that in the Prairies much of the wetland loss is often due to expanding agriculture. This image from eastern Saskatchewan shows a drainage ditch that was put in, in about 2008-09. It's a big ditch. Different images of drainage across the Prairies can look different. On the top left-hand corner of the image is a shallow ditch. You can see more extensive ditching in some of these other shots. When we're talking about wetland drainage, that's what we're looking at. That's what we're talking about.

I want to give you a real-world example from Manitoba. We did a study on the Broughton's Creek watershed. The Broughton's Creek watershed is shown as a little black polygon in the left-hand side of this image. The water from that watershed flows into the Little Saskatchewan River, which then flows into the Assiniboine River and ultimately the Red River, and then into Lake Winnipeg. We've already talked about the fact that Lake Winnipeg is having issues with over-nutrification.

This image shows a very small part of that Broughton's Creek watershed. All of the blue colour you see is intact wetlands. The little red hatched areas are drained or degraded wetlands, and the red lines are actually drainage ditches. This is what the image looks like in 1968. This is the number of wetlands that were in that area in 1968.

But next is how many were there in 2005. All of those red hatched areas are wetlands that have been drained or degraded, and all of the red lines, the deep red lines, are new drainage ditches that have gone in. During this time, there has been a 21% reduction in wetland area, and nearly 70% of the wetland basins have been lost or degraded.

What does this impact? What are the impacts of 37 years of wetland drainage? Well, ultimately, it means more water, sediments, and nutrients moving downstream, causing issues with flooding, erosion, and water quality.

That drainage in the Broughton's Creek watershed increased the contributing area by 53%. It increased the total stream flow by 62%. There was a 37% increase in peak flow, a 32% increase in phosphorous loading, and a 57% increase in nitrogen loading. This has significant issues for downstream communities. As we've already talked about, Lake Winnipeg was named the world's most threatened lake in 2013. This is not a title that we particularly wanted.

One of the other impacts that has less to do with things moving downstream and more about releasing greenhouse gases into the atmosphere is that wetlands are very effective at sequestering and storing carbon, so the carbon in those wetlands that would have otherwise been trapped is released into the atmosphere once those wetlands are drained and then cultivated, compounding the climate change issues. The drainage of those 5,900 wetlands has resulted in the release of 34,000 tonnes of carbon. This is like adding the annual emissions of over 23,000 cars to the atmosphere. To relate this back to that hypothetical diagram we looked at earlier on, the drainage of the 28 wetlands in this image would release the equivalent of the annual emissions of over 108 cars.

This all sounds fairly doom-and-gloomy. What can we do about it? Ducks Unlimited has been working, and continues to work, towards wetland conservation. In this next series of slides, I want to briefly touch on some of the tools we use to conduct wetland conservation.

The first is conservation easements, or CEs. A conservation easement is a legally binding agreement between a property owner and a qualified easement holder that allows the title to remain with the landowner while restricting certain land uses or management practices in order to protect specified environmental values. In our case, our CEs are typically “no break, no drain”, meaning that you can't drain the wetlands and you can't break the uplands or wetlands.

To give you an example, in this image we have a real-world example in southern Saskatchewan in the Missouri Coteau. This is one of our CEs. The area shown outlined in colour is the area in that quarter section where the CE is placed. It includes both the wetlands and the native prairie.

● (0915)

Another tool we've been using is land purchase. Particularly, as we go forward, we'll be doing this through a revolving land conservation program. The key thing here is that it involves a willing seller and a willing buyer. DU buys the land, restores it if necessary, and resells with a conservation easement. This is particularly important for other program types, specifically mitigation, which we'll talk about later on.

To give you an example, here's a quarter section in Alberta. You can see the drainage ditches in that quarter section. We purchased this quarter section. We went in and put in ditch plugs. All of those little red dots on that image are ditch plugs that help to restore those wetlands. So we restored all the wetlands, we restored the grassland cover. Then we put a CE on it and turned around and sold it.

I want to move all the way out to the B.C. coast and give you another example. This is the Chemainus River Estuary on Vancouver Island. This was a land purchase that we did in order to protect the tidal wetlands that are in the area. It was a partnership with a paper company and the B.C. public land trust. In this case we will be selling off the agriculture land back to farmers in the local area, with a restricted covenant on it. We will retain title to the tidal areas to protect the estuary.

Let's move into Quebec. This is an example of a wetland in Quebec. This is an actual Ramsar site. I want to highlight this project because it's one that we've done in partnership with the Quebec Ministry of Natural Resources. It was done to enhance the waterfowl value of the marsh and to engage the community in reducing sedimentation from adjoining farmland.

The project will enhance 1,400 acres of wetlands on the south shore of Lac Saint-Pierre. The total value of the project is $1.5 million, with proposed investment by DU of $500,000, so we were able to leverage our investment by three to one.

I want to talk briefly about mitigation. Within the federal wetland policy there is a mitigation sequence that is proposed: first of all, to avoid wetlands if possible; secondly, to minimize the impacts; and thirdly, to replace them by a ratio of three to one if avoidance cannot be realized.

In those provinces where wetland mitigation is being implemented, it is a very effective way of providing revenue for us to restore wetlands. Unfortunately, wetland mitigation is only being utilized in Alberta, New Brunswick, Nova Scotia, and Prince Edward Island.

I want to talk briefly about how we work in the boreal. When we are working in the working landscapes of the boreal, the most important factor is to work in conjunction with the industries. I want to highlight the document on the left. This is a document we did, along with Suncor Energy Foundation, where we held a workshop with the oil and gas industry to describe and explore ways where oil and gas development could be done in a way that would minimize impacts to boreal wetlands.

On the right is a fact sheet we have developed with the forest industry that outlines ways to build roads in ways that will reduce the detrimental impacts on fens and bogs. There are images of a corduroy road going into a boreal landscape.

The other way we work in the boreal is through existing conservation processes. One of those is the protected area strategy in the Northwest Territories. We are currently a member of the protected area steering committee that oversees all of the protected areas activities in the Northwest Territories. We've been involved since 2000-01 and support the process both financially and with in-kind. Primarily we've been helping them with wetland inventories and doing waterfowl surveys, which help to identify key areas for waterfowl that the community is interested in.

One of these projects that I want to highlight is Edéhzhíe. Edéhzhíe is currently in an order of council interim withdrawal. It has been proposed as a Northwest Territories national wildlife area. We provided financial assistance for the ecological assessment of this area. Unfortunately, devolution in the Northwest Territories has made some of the Northwest Territories protected areas partners uncertain about the future of the protected area strategy and the overall security of critical wildlife habitats that have been earmarked for protection. We have been encouraging Environment Canada to begin the consultation process on the establishment of the proposed Edéhzhíe national wildlife area with the hopes of formally designating it in the near future.

● (0920)

Finally, I just want to touch on a couple of key partnerships with government. The Atlantic habitat partnership was done in 2009. It was a joint partnership between Environment Canada, Ducks Unlimited Canada, and the Atlantic provinces. This money has been used to maintain critical infrastructure such as upgrades to 560 water control systems, 150 fish ladders, and 106 miles of dikes on more than 150 square miles of wetlands.

Second is the partnership with the federal government on the southern Ontario development program, where $3 million from the federal government was matched with another $1.3 million from Ducks Unlimited Canada to ensure that 30,000 acres of wetland projects remained on the landscape and 57 projects were rebuilt.

We've talked about the different conservation tools and programs that we can do. What return on investment does this give to Canadians? We have worked with a resource economist by the name of Mark Anielski to do an assessment on that. We will soon be releasing that report, but we just wanted to give you a sneak peek here today of a couple of the findings he came up with.

Wetland conservation definitely provides valuable ecosystem services. These ecosystem services include many that we've already talked about: carbon storage, water purification, regulation of water flows, erosion, etc. The total value of these ecosystem services associated with Ducks Unlimited's total amount of secured land of 2.538 million hectares is estimated to be $4.27 billion per annum, with most of those services being related to climate regulation, water supply, and water purification.

Wetland conservation also provides a high return on investment. Between 2008 and 2012, DU's annual spending resulted in direct economic benefits of $77 million in GDP, 970 full-time equivalents in jobs, $60 million in employment income, and $15.8 million in operating profits for Canadian business.

At this point I want to turn it over to Jim Brennan, who is going to give a brief overview of existing policy in Canada.

● (0925)

The Chair: Mr. Brennan.

Mr. Jim Brennan: Thank you.

Mr. Chair, the last couple of slides talk a little bit about the current state of policy affairs in Canada. I'm sure committee members will know that Canada does in fact have an existing federal wetlands policy. There are two components to that. There is the policy document, which was prepared in 1991, ten years after Canada joined the Ramsar Convention, the international convention that was signed in the 1970s to protect wetlands of global significance. There is also an implementation guide for land managers that federal government staff use in managing wetlands on their land.

The document itself is, in many respects, quite relevant today. It talks about many of the things that Ducks Unlimited Canada has spoken to you about on this occasion and on previous visits to this committee: the ecological and socio-economic functions of wetlands, as well as the pure economic values that are provided by wetlands on the landscape. The federal wetland policy, as you would imagine, applies to federal lands only. However, about 30% of all wetlands right across Canada fall on federal lands, so it is a significant policy for the protection of wetlands in Canada.

The next thing I want to talk to you about is the core elements of that federal wetlands policy. It's built around seven core strategies, and those are listed on your screens in front of you: developing public awareness of wetlands, managing wetlands on federal lands and waters as well as in other programs, promoting wetlands conservation in federally protected areas, enhancing cooperation with other levels of government and with NGOs, conserving wetlands of significance, ensuring a sound scientific basis for policy, and promoting international actions. Of course, when this policy was developed, the North American Wetlands Conservation Act was relatively new, and this was one of the hallmarks and showpieces of the Canadian wetlands policy at the time it was prepared in the late 1980s and early 1990s.

On a quick overview of provincial wetlands policies in Canada, Karla has already talked about the programs that are in place in the Atlantic provinces. This just gives you sort of a quick overview of how these programs work and which provinces are doing what to protect wetlands.

The Atlantic provinces, we think, have a very good set of policies in place, particularly Nova Scotia, New Brunswick, and Prince Edward Island. In Newfoundland there are specific policy directives that guide development in and around wetlands, and there's a different set of circumstances in that province.

Moving a little bit further west to Ontario and Quebec, as we mentioned earlier, there are fairly dramatic losses on those two landscapes. In Ontario, in particular, there has been about a 72% loss. However, under provincial regulation, only one-third of all wetlands are protected; those are classified as provincially significant. Then there is a variety of policy statements that guide municipalities and the province with respect to wetland protection, with no mitigation sequence in Quebec and Ontario. Quebec is actually in the process of developing a new and more comprehensive wetland policy, and we'll be very interested to work with them to see what that looks like as it develops in the next year or so.

Moving to the west, particularly the prairie provinces, there is no comprehensive wetlands policy in Manitoba, but there are about 12 different acts that address water and water management, with no mitigation sequence, with the exception of highways and infrastructure.

Moving into Saskatchewan, Alberta, and B.C., again there is no comprehensive policy in Saskatchewan. There is an interim wetlands policy that was developed in Alberta, and work is progressing quite rapidly toward a more permanent wetlands policy, which we also expect sometime in the next 12 months. In British Columbia there is no really comprehensive wetlands policy and no mitigation sequence, and there has been quite a dramatic loss, primarily in the developed areas, which is where certainly the bulk of coastal wetlands are located in the lower mainland of British Columbia.

What can government do to address wetlands loss? We have raised a number of issues in our brief, and this takes us to the last slide in our presentation. One is to implement laws and regulations that protect the remaining wetlands habitats in Canada.

● (0930)

We have about 28%...approximately less on aggregate left in the country, and we believe steps should be taken to protect those remaining wetlands on the landscape.

Next is to create conservation offset programs that are supported by mitigation sequences. There are instances where wetlands loss will be unavoidable, but there should be a mitigation sequence that is followed right across the country to avoid, minimize, and mitigate wetlands loss, creating a national wetlands conservation program that could fund market-based incentives for private landowners to retain habitat, particularly on the working landscape.

On restoration of lost and degraded habitats, we would like to see significant net gains in wetlands habitat. We continue to lose habitats at an unsustainable pace, and we believe steps need to be taken to mitigate for that activity.

I have two final points. Strong science and planning efforts need to underpin and drive decision-making. We need to protect our critical natural habitats in boreal Canada, particularly the candidate areas for national wildlife status in the Northwest Territories.

That's it for our presentation. We appreciate your indulgence and the extra time you have given us, Mr. Chair, and we would be happy to turn it back to you to answer any questions you might have.

The Chair: Thank you.

We did acknowledge at the outset that we did give extra time today. Hopefully, we have fewer rounds of questions.

We'll proceed with the questions at this point, beginning with Mr. Sopuck.

Mr. Robert Sopuck (Dauphin—Swan River—Marquette, CPC): Thank you very much.

Thanks to our presenters for very comprehensive presentations.

Mr. Brennan, regarding the private land landscape, which as you know is a particular interest of mine—the agricultural landscape—you would agree that the incentives for individual landowners to conserve wetlands simply are not there. In fact, would you go so far as to say the incentives that are in place, and I mean market incentives, actually incent private landowners to eliminate wetlands?

Mr. Jim Brennan: There is definitely a lack of market incentive almost right across the board. There are some provinces like in Ontario, for example, where the Drainage Act is actually promoting wetlands drainage as opposed to maintaining habitat on the landscape. Certainly, there is definitely a lack of market-based and market incentives to retain habitat on the landscape.

Mr. Robert Sopuck: But it's even more than that. All of the incentives are geared actually to eliminate habitats, aren't they? When one looks at land in southern Ontario that has potential for residential development, you would probably have to buy the land for $1 million an acre just to start. If there's a wetland there, would you agree the incentives are all in place to eliminate wetlands on the private land landscape, by and large?

Mr. Jim Brennan: Yes. It's very difficult to protect wetlands in highly developed landscapes such as that. We found the price of land in some areas is sufficiently high that we were simply out of the market at this point.

Mr. Robert Sopuck: I was very interested in your province-by-province survey. I think P.E.I. should be singled out for special notice, given that there are less than two hectares of wetlands altered per year. You are aware that Prince Edward Island actually has a program entitled Alternative Land Use Services, modelled after the Manitoba pilot project I was involved with in a previous life.

Can you credit the Alternative Land Use Services program in P.E.I. with the relative success of wetlands conservation there?

Mr. Jim Brennan: P.E.I. has a peculiar set of circumstances, as you know. It has a very small geography, and the agricultural practices on P.E.I., particularly around potato farming, have compelled the province to take very strong remedial actions to protect the watersheds. There's a tremendous amount of herbicides and fertilizers that are used for agriculture, and the province has had to take fairly dramatic steps to not only protect the water, but protect the wetlands base that supports the drinking water in that province.

A market-based incentive like ALUS's is certainly an incentive program that has contributed to protecting habitat on the landscape in P.E.I. Certainly, we think P.E.I. is an example, from a public policy standpoint, where other provinces and the federal government could learn from those practices.

Mr. Robert Sopuck: Your first policy recommendation talked about implementing laws and regulations, but we heard from previous witnesses that the Migratory Birds Convention has been in place for 100 years, give or take, and yet even though these laws are on the books, they have done very little or nothing to conserve wetlands.

Why are you advocating for the regulatory approach, especially as it pertains to the privately owned agricultural landscape?

● (0935)

Mr. Jim Brennan: We think we've arrived at a point in Canada where we have depleted the wetlands base down to about less than one third of what existed prior to settlement. We're not suggesting we will ever get back to that point, but we believe our policy is to achieve significant net gains in habitat. We believe the start of doing that is to protect and maintain the base of habitat on the landscape.

We believe there needs to be a combination of regulatory measures coupled with incentives to help work with landowners to retain and restore, in particular, lost or degraded habitats that are on their landscape.

Mr. Robert Sopuck: How do Canada's major farm organizations respond when you ask for greater regulation of wetlands on the privately owned agricultural landscape?

Mr. Jim Brennan: They generally would like more information as to what that means. But in my estimation, they're business people and they are looking to derive income off the land. We believe there's room to work with them to try to achieve some kind of compromise in this.

By and large, the members of the farm organizations we have spoken to—and we have spoken to all the large farm organizations—are aware of the importance of wetlands and what they provide on their landscape. It's a complex issue, obviously, and one that needs some focus and effort on the part of not only conservation organizations like Ducks Unlimited, but governments and farm organizations as well.

Mr. Robert Sopuck: Dr. Guyn, would you say relative to other types of habitats—let's say hardwood forests in Ontario—that wetlands are relatively easy to restore?

Dr. Karla Guyn: It depends on the type of wetland, but some wetlands certainly are fairly easy to restore. If I'm talking about prairie potholes, as I showed you in some of the slides, simply putting in an earthen ditch plug is a means of restoring those wetlands. You don't have to go in and re-seed the vegetation; the seedbank is already there. You simply need to facilitate that water staying in that base and the wetland vegetation returns.

Depending upon what the wetland type is, it is more difficult to restore some of the bogs and fens. We're learning more about doing that, but some wetlands are fairly easy to restore if you can get people who want to restore them.

Mr. Robert Sopuck: I think it should be noted that Ducks Unlimited's Canadian head office is on a restored wetland, which is one of the most remarkable natural features in Manitoba.

How much time do I have Mr. Chair?

The Chair: You've got about 30 seconds.

Mr. Robert Sopuck: Back to Mr. Brennan regarding the concept of your mitigation sequence—conservation offsets sometimes referred to as habitat banking. Would you advocate a greater flexibility in terms of public policy so that we can actually use mitigation dollars, let's say away from a particular site, to perhaps create and restore wetlands in other areas that are potentially more valuable?

Do we want more flexibility in our mitigation policies?

Mr. Jim Brennan: Certainly there's room for flexibility. Typically we fall back on the scientific question, which is, what is the specific habitat function that is being lost? If it's one that allows us to move outside of the general area, I think there's room for flexibility. Typically public policy has been directed towards replicating or replacing habitats within the same watershed.

The Chair: Thank you, Mr. Sopuck.

We move now to Mr. Pilon.

[*Translation*]

Mr. François Pilon (Laval—Les Îles, NDP): Thank you, Mr. Chair.

Thank you to our witnesses for their presentations. They were very interesting. I will start with Mr. Abiola.

Mr. Abiola, I was one of the people who went to see you last year. Could you tell me what the tangible results are with respect to the wetlands you have recreated? Are the results satisfactory or have they fallen short of your expectations? What are the results?

● (0940)

[*English*]

Dr. Abimbola Abiola: Thank you very much, Honourable Pilon.

Yes, our expectations have been on track. When you were here last year, it was under construction; it has been finished since then. We have acquired all the infrastructure that we require for our research activities and for monitoring. We currently have about three industry projects on site: one with the municipality, one with the agricultural industry, and one with...[*Technical difficulty—Editor*]

Definitely things are on track.

[*Translation*]

Mr. François Pilon: Second, do you feel that your facilities should be supported by the federal government so that they can be available to industries and, in turn, to municipalities?

[*English*]

Dr. Abimbola Abiola: Yes, sir, in the last little while, since your last visit, we have been working with different municipalities. Currently we are working with eight municipalities in...[*Technical difficulty—Editor*]...to use the same type of technology as was presented by colleagues from Ducks Unlimited. It's not just maintaining current wetlands; we have to develop new wetlands. So it's not just meeting that number.

At Olds College we are developing science-based constructed wetlands out of pastures. It becomes a functional wetland, but we can also use it to meet the needs of scientific data collection. Definitely, it is applicable to municipalities for use in waste water treatment, in stormwater retention, and in other functions.

So definitely, yes, sir.

[*Translation*]

Mr. François Pilon: I have one last question for you.

Given that the municipal, provincial and federal governments are involved, do you believe that the federal government should play a leadership role and ensure that the three levels of government work together?

[*English*]

Dr. Abimbola Abiola: I believe the federal government should play a leadership role, not just in wetlands, but in areas of environment, when it comes to environmental conservation and development. In this particular case, definitely, yes, I would suggest that similar research facilities be developed in different ecoclimate zones of this country, in different parts of this country, so that we create a network of this type of research facility across the country. Yes, the federal government should take the lead in that.

[*Translation*]

Mr. François Pilon: Thank you.

My next question is for Ms. Guyn.

In your slides, I think we saw a method for building roads using tree trunks. Could you explain that method to us? This is the first time I have seen something like that.

[*English*]

Dr. Karla Guyn: I'll try to. I don't know a whole lot about it. It's actually something that we are just investigating now. It's part of a research project that we're doing with one of the forest companies, where they're using cordwood to build the roads. It allows the water to flow through those logs that are underneath the road, so it doesn't end up blocking that water flow, which is particularly detrimental in fens and in some other boreal wetland systems.

We're actually just investigating it right now, but I can't really tell you a whole lot more, other than that we're working with the forest industry to better understand how we can develop roads to lessen the impacts on boreal wetlands.

[*Translation*]

Mr. François Pilon: Do you at least know whether this would be a long-term method? We know that tree trunks end up deteriorating. Can the lifespan still be long or do you not have this information yet?

[*English*]

Dr. Karla Guyn: I don't know specifically, but given that most of this is associated with forestry, where they're going in for a relatively short period of time to remove the trees, that may be one of the reasons why they're using the logs. I don't know how long they actually last.

[*Translation*]

Mr. François Pilon: My next question is for the representatives from Ducks Unlimited Canada.

We have heard a lot about wetlands. Many witnesses told us that wetlands should not be considered independent areas. However, we need to protect biodiversity between wetlands to ensure some connectivity. Do you agree with that?

● (0945)

[*English*]

Mr. Greg Siekaniec: Yes, we believe very much that your wetlands represent a system. Whether you classify it as a smaller-based system or a complete watershed, they are very much interconnected, as well as the biological diversity with that. It provides the connectivity for numerous species of wildlife, as well as the water movement itself, and nutrient trapping. It presents a much healthier system, and we view it as very much a system.

[*Translation*]

Mr. François Pilon: You also talked about how the federal government should have incentives.

Do you have any suggestions for the federal government on how to encourage people, municipalities and companies to protect wetlands?

[*English*]

Mr. Jim Brennan: In the 1991 policy, one of the recommendations was a call for all jurisdictions in Canada to develop mutually supporting wetland conservation policies by 1991. We believe that as a part of the national conservation plan the government is developing there could be measures underwritten by public funds and supported by partnership dollars. This would build incentives for landowners on the working landscape.

There are model programs. The one I am familiar with is the stewardship program in Ontario where Ducks Unlimited brought money to the table matched by provincial and in some instances federal dollars to do wetland restoration work, as well as small-scale wetland restoration work on the agricultural landscape. That's what we call our landowner extension program. We were able to do quite a bit of work in that area.

The Chair: *Merci beaucoup, M. Pilon.*

We'll move now to Mr. Toet.

Mr. Lawrence Toet (Elmwood—Transcona, CPC): Thank you, Mr. Chair, and my thanks to our witnesses today. It's very interesting once again.

Dr. Guyn, you responded in one of your questions that the restoration of wetlands in some cases can be relatively easy. You said that in some cases earth plugs are all it takes. When you say it's relatively easy to do, what kinds of timeframes would be required for a functional wetland? It may not be completely restored, but it would be starting to contribute to the work that a wetland can do.

Dr. Karla Guyn: It doesn't take that much time, actually. If we put a ditch plug in during the fall, typically by the next summer, if the water returns, we'll start to see some of the aquatic vegetation coming back. Two to three years down the road, you'd be hard-pressed to know by looking at it that it was a restored wetland. Some of the functions may take a bit longer to fully develop, but from a visual perspective it looks very similar to a wetland that has not been impacted. It's amazing how fast they can return.

Mr. Lawrence Toet: In fact, your picture of the bog was very interesting. When I first looked at it, I thought somebody snuck into my backyard and took a picture, and I wondered when that happened. Even on my own property, when I did some of this restoration, it took very little time for it to actually come back and become a functioning wetland. I had to do it because I had no drainage on my property, and I had to create my own wetland in order to have the facility I needed on my property.

You said you needed somebody willing to do this.

Dr. Karla Guyn: Right.

Mr. Lawrence Toet: What are some of the best practices that you have found with Ducks Unlimited when you have worked through this process with people who have a real incentive to want to do it? What kinds of things make people want to carry a good start to the next level?

Dr. Karla Guyn: It varies regionally. In Atlantic Canada, a lot of landowners just want to have a wetland in their backyard. They want to have a pond, a pair of geese, and they want to use that pond for skating in the winter. When you move into the Prairies, however, you're thinking about annual crops, and most of those landowners don't see any benefit to restoring wetlands on their property. There would have to be a financial incentive for them to restore the wetlands on their property.

Cattle producers, on the other hand, do see some benefits for restoring wetlands in that it provides a water source for cattle and moves the cattle around on the quarter section. We have had some success in working with cattle producers. When they're converting cropland back into grassland, we will often work with them to restore the wetlands at the same time. When working with annual croppers, there's just not a lot of financial incentive for them to restore wetlands. Frankly, it's been very challenging to restore wetlands on the agricultural landscape. In many cases, we buy the land, restore it, and then turn around and sell it, because it is so challenging to get access to the land to restore the wetlands.

● (0950)

Mr. Lawrence Toet: That leads very nicely into the next question I want to ask you. You talked about the restoration of those lands and then selling them, and you talked about the Bryksa purchase as an example of that.

I'm very curious. Who are you selling that restored land to?

Dr. Karla Guyn: There are usually two groups of people who will be buying the land. It will be either ranchers, cattle producers who want to use the land for grazing their cows or for hay land, or on the other side of things, depending upon where the property is, it can be a conservation buyer, someone who wants to buy a quarter section to use for recreation, etc.

Those are the two main groups.

Mr. Lawrence Toet: Just getting back to the cropland aspect of it, do you believe it's also part of an educational process?

I look at Manitoba, for example, with some of the flooding we've had in the past number of years that has had a really adverse effect on the croplands. It's an educational process to have an understanding among these farmers that the wetlands will actually protect them in a lot of years, that they can get their crops in because they'll have the retention ability, they'll have this natural sponge happening on the land. Actually, over the course of years they will get the same amount of crop off it because there won't be those years when they're so saturated that they can't get crops in, etc.

Is that part of that educational process?

Dr. Karla Guyn: Yes, educating the public about the value of wetlands is a big part of what we do. I think we're starting to see some of that across the Prairies with the recent flood events we've had. We're starting to hear more talk about retaining the wetlands we have, with farmers doing it on their own, talking about the impacts they've had with upstream drainage as the water then flows onto their land. You're starting to see farmers talking to farmers about the need to retain those wetlands.

So yes, it's public education, letting people know what the benefits are of wetlands and really changing the psyche of society about what wetlands mean, that they're not simply wastelands and they do provide benefits to all of society.

Mr. Lawrence Toet: Thank you.

Dr. Abiola, I just want to ask quickly about your work at Olds College. I also had the benefit of being there. I've actually been there twice now, and it's great to see the work you're doing there.

I want to ask you about the potential use for wetlands, using wetlands instead of our traditional grey infrastructure in our urban areas. Is there real potential for that? Is that something that's being researched at Olds College?

Dr. Abimbola Abiola: Yes, this is one of the areas that we are researching here, looking at the use of wetlands for treatment of grey water or polluted stormwater, in terms of increasing water quality so that it can be used for something else. Fortunately, we already have four municipalities that are working with us in that particular area.

In my presentation I was talking about science-based information. We get the work done here. The data collected from this is then implemented in other areas. Strathmore is an example of a community that is actually benefiting already from this type of work.

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

We'll move now to Ms. Duncan for seven minutes.

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

Thank you to everyone. You've provided us with terrific background and really good ideas, and I'd just like to dig a little more deeply into those, if I may.

One of the recommendations was to implement laws and regulations that protect remaining wetland habitat in Canada. I'd like to know what that would look like for you, and what would be your wish list to this committee?

● (0955)

Mr. Jim Brennan: We have a wetland base across the country that has ebbed and flowed a little bit, but generally has been in decline for many years.

It was interesting reading the federal policy document in preparation for today's presentation, because it talks about where Canada was at 22 years ago in terms of numbers of wetlands on the landscape. We note from our own data that the level of wetland loss has increased since that policy document was created.

Ms. Kirsty Duncan: Where were we 22 years ago, and where are we today?

Mr. Jim Brennan: I think the numbers we use are about 70% to 75%. It really depends on the province you're in.

Dr. Karla Guyn: It's probably important to note that Canada does not have a comprehensive wetland inventory.

Ms. Kirsty Duncan: This is the information I want.

Dr. Karla Guyn: There is no way to really assess how many wetlands we have or may have lost. Unlike the United States, which does have a comprehensive wetland inventory that is repeated through time, they know how many wetlands they currently have and how many they've lost; Canada does not have a wetland inventory.

Ms. Kirsty Duncan: Should a recommendation to this committee therefore be that we have a national wetland inventory?

Dr. Karla Guyn: Yes.

Mr. Jim Brennan: Absolutely.

Ms. Kirsty Duncan: Terrific. Okay, that's one. What else do we need?

Mr. Jim Brennan: We would like to see, as I mentioned earlier, significant net gains in habitat. The only way to do that is to incentivize it and to.... It costs money, obviously, to restore wetlands. It's one of the lessons we've learned, and one of the reasons we're active in landscapes that are not developed in terms of agriculture or in terms of industrial developments, such as the north, is to not replicate those mistakes that have been made in southern landscapes, and to maintain those landscapes, or at least the most important areas of those landscapes, as they are.

Ms. Kirsty Duncan: Okay. In terms of these laws and regulations, very specifically, what are you looking for?

Mr. Greg Siekaniec: I would like to add that we should be looking at an absolute no net loss of wetland type regulation and/or policy with a mitigation sequence that requires avoid, minimize, and then mitigate the loss, fully recognizing that you are not going to be able to stop all wetland loss. There is a need for development, and there will continue to be, but with an adequate sequence that requires you to work towards the no net loss, and in many places a restoration that provides for a net gain.

Ms. Kirsty Duncan: Dr. Abiola also recommended a no net loss policy. So one is the inventory; the second is no net loss.

What else are we looking for in terms of laws and regulations?

Dr. Abimbola Abiola: One of the things we have to do on a national basis is to be able to monitor what is happening in the wetlands. We have to develop a wetland monitoring process nationwide.

Ms. Kirsty Duncan: Yes.

Dr. Abimbola Abiola: Currently we don't even have the details on any of the wetland functionality parameters across the country.

I can go onto the Environment Canada website and get information on what the temperature is in Nunavut, or everything on what is happening in the Yukon. For our wetlands, which are a key resource to us, we don't even have information on what, for an area of land, is the quality of water in there at any particular time.

Ms. Kirsty Duncan: Dr. Abiola, I'm going to pick up on that. You're really picking up on something that Ducks Unlimited Canada has also asked about, the strong science and planning efforts to underpin and drive decision-making.

Can I ask Dr. Guyn, and then come back to Dr. Abiola, what that means? What does strong science look like to you?

Dr. Karla Guyn: In my mind, first and foremost, it is having a wetland inventory. I'll go back to that, because until you know the numbers and types of wetlands that you have on a landscape, it's very difficult to build models or to be able to predict what the impacts may be of removing any of those wetlands. And having that is really the very basis for how you plan. When we do our conservation planning, having the wetland inventory is the very basic layer that you need.

● (1000)

Ms. Kirsty Duncan: Can you describe what that inventory should look like, please, and what monitoring is required, what science is required, the scientists, everything?

Dr. Karla Guyn: There actually was a proposal put forward by the Canadian Wetland Inventory for a Canadian wetland inventory that laid out an entire approach on how to do this. It varies by region. In some locations of the country you don't need to get into that very fine detail, whereas when you get into the Prairies, you have to get down to a quarter-acre-size wetland. In other portions of the country, for example, in the boreal, you can have a lower resolution imagery. It depends on the types of wetlands you have.

Ms. Kirsty Duncan: Can you table that report with the committee?

Dr. Karla Guyn: Yes. Absolutely.

Ms. Kirsty Duncan: And very specifically your recommendations.

Dr. Karla Guyn: Absolutely. I'd be pleased to.

Ms. Kirsty Duncan: Terrific.

Something else you talked about was major landscape investment. What does that look like?

Mr. Jim Brennan: Last year, we held an advocacy day in Ottawa. One of the things we talked about at that time was a $250 million investment, about $50 million a year just for wetlands, matched by privately raised funds. We believe that something on that scale is required to address the level of loss, particularly on the restoration side of the equation. We certainly have a document we can table with you that goes into more detail on a regional basis of what it is we're looking at.

The Chair: Thank you, Ms. Duncan.

We move now to Madam Quach for five minutes.

[*Translation*]

Ms. Anne Minh-Thu Quach (Beauharnois—Salaberry, NDP): Thank you, Mr. Chair.

Thank you all for providing us with very concrete information today.

I will start with the representatives from Ducks Unlimited Canada, but I am not sure who exactly to direct my questions to.

I was astonished and pleasantly surprised to see that, on pages 7 and 23, you talked at length about economic benefits from tourism, investments made by Ducks Unlimited, as well as simple economic spinoffs spread over a four-year period. You talked about $77.1 million in GDP, the equivalent of almost 1,000 full-time jobs.

We do not hear about those benefits often. When we talk about conserving the environment, a number of people are afraid that investing in this sector will cost the economy money. In fact, you are creating jobs and economic activity.

Could you elaborate on those spinoffs?

[*English*]

Dr. Karla Guyn: I can address it a little bit, not that I'm an expert on the economic side of things. But it was the same sort of thing. We had questions as well: what are the economic benefits of doing this conservation work? That's why we partnered with Mark Anielski to do this assessment, where he came in and got all of our data and came back with a report that highlighted some of those economic benefits.

I'll tell you basically how he did it, but this is definitely not my forté. He has used an input/output model used in economic input analysis of capital projects. It was based on the 2008 input/output multipliers developed by Statistics Canada for B.C., Alberta, Manitoba, and Ontario. Essentially we gave him our data on how much land we had secured, whether it was wetlands, whether it was uplands, and he used basic science information to help determine some of those output multipliers.

That's about as much detail as I can give you, but it's a standard economic approach to developing those kinds of statistics.

[*Translation*]

Ms. Anne Minh-Thu Quach: Mr. Brennan, do you have something to add to that?

[*English*]

Mr. Jim Brennan: Before I came into this role, I was responsible for the habitat program in Ontario, so I can speak to the southern Ontario development program investment. Certainly we learned a lot from that undertaking because it was a source of funds that drew attention to what we've been doing all along, for 75 years in Canada, which is hiring local contractors, sourcing supplies for habitat construction, hiring people to monitor and oversee the work—right across Ontario, in the case of this program, but also in the Prairies, where we've done a great deal of work, and in the Atlantic provinces and so on.

● (1005)

[*Translation*]

Ms. Anne Minh-Thu Quach: That creates lasting jobs in our communities and regions. So it is very good for the regions.

You also talked about a 37-year period and sequestered carbon. During a period like that, the drainage of wetlands could cause carbon to be released in the atmosphere, which would exacerbate climate change. You said that the drainage of nearly 6,000 wetland basins resulted in the release of 34,000 tonnes of carbon.

Could you tell us more about the purpose of wetlands, the importance of conserving them and their connection to carbon sequestration? Could you also tell us about the impact on the environment and people's health?

[*English*]

Dr. Karla Guyn: I can talk a bit about it. Some wetlands in particular are very good at storing or sequestering carbon in the wetland vegetation. What happens is that when those wetlands are drained, they're no longer sequestering that carbon, and then, even worse, when they're cultivated or broken, that soil is turned over and the carbon that has been stored in that vegetation is then released through greenhouse gases.

That was based on some of the research we did in southern Manitoba. We have equipment and instruments out there that were actually measuring the release of greenhouse gases from these drained wetlands. That was just some of the early work that has been done on it.

I think one positive thing that has come out of it is that wetland restoration is being thought about as a protocol in Alberta for mitigating climate change. We're just waiting to see whether that's going to be approved. It has gone through all of the scientific review. We're hoping that wetland restoration will become an approved protocol.

The Chair: Merci, Madam Quach.

We'll move now to Mr. Lunney for five minutes.

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

Thanks for contributing to a great discussion here.

First, just as a clarification about the proposal for inventory that Kirsty Duncan was asking about, was it Ducks Unlimited that prepared that proposal?

Dr. Karla Guyn: It was done in conjunction with Environment Canada.

Mr. James Lunney: Okay. Thanks.

Ducks Unlimited was the main—

Dr. Karla Guyn: We were one of the parties, one of the partners.

Mr. James Lunney: You were one of the multi-partners.

Dr. Karla Guyn: Yes.

Mr. James Lunney: Okay. Thanks for that.

For my friends from Ducks Unlimited, in your previous testimony I think I picked up that 50% of waterfowl in North America were hatched and raised in the Canadian Prairies. Is that right?

Dr. Karla Guyn: It's pretty close.

Mr. James Lunney: As for my question, the North American waterfowl management plan has protected and improved—and you guys are major partners in that—some 27 million hectares of wetlands-related ecosystems on both sides of the border. Of these 27 million hectares, for many of them it's Ducks Unlimited contributing to that, with your partners on both sides of the border.

These are apparently not considered protected by the International Union for Conservation of Nature. Can you explain why they're not? Do you feel they should be considered as protected?

Mr. Greg Siekaniec: I think partly the reason they're viewed as not being protected is that in most instances and jurisdictions the surface ownership is what a typical landowner administers or controls. They do not have the mineral estate or the oil and gas estate, the subsurface rights. If those subsurface rights are not put into some permanent protection, they do not give it the global protected status.

Mr. James Lunney: Okay. Thanks for that.

You mentioned examples of secured lands. You take a piece of land and restore it. You put in the plugs and drains and restore wetlands, and then you turn it over for resale. I think we heard that some of your partners could be ranchers or they could be conservation buyers.

One of the examples you gave was the Chemainus Estuary. Being on Vancouver Island, I actually wasn't aware of your work down there. It's a little bit off the highway, off the main route, and south of my area, but I'm glad to hear that you've been involved there.

Can you give us an idea of the turnover of a project like that in terms of the time involved and invested from beginning to end to make that work?

Dr. Karla Guyn: For Chemainus, there was no real restoration work that we had to do there, so there wasn't a lot of work we had to do once we acquired it. The work came primarily with getting all of the titles and subdivisions in place. As you probably are aware, British Columbia has a very complicated land system, so it has taken us a substantial amount of time just to get the agricultural areas re-surveyed and to have titles associated with them.

We just actually got that done two or three weeks ago. We bought it three years ago, so it has taken us some time to get to this point, but those agricultural lands will be coming up for sale this summer.

Mr. James Lunney: What does the turnover on that look like? On the anticipated revenues from sales, considering the investment to make the purchase in the first place, is this a net win for you? Does it vary by region and from project to project? Could you comment on that?

● (1010)

Dr. Karla Guyn: It's going to depend on the project itself. In some cases—I'm going to use an example from the Prairies—if you're taking land that's already in grassland and you're simply going in and restoring the wetlands in that quarter section and holding it for maybe two or three years, you're probably going to break even or come close to breaking even.

However, if you're taking cropland, turning it into grassland, and restoring the wetlands, it's going to sell for a lower-dollar value, simply because cropland is valued higher than grassland. In those cases, we likely would lose some money.

Mr. James Lunney: Yes, but it's great that it does cycle right back into more projects.

Dr. Karla Guyn: Exactly. You're reinvesting that capital. You're reinvesting in order to increase your conservation footprint on the ground. You still have some land in purchase or in ownership at any one time, but it's not the same piece of land. You're moving that around while you go about doing the restoration work.

Mr. Greg Siekaniec: I might add that it's keeping landowners on the land. It's keeping the tax base in place and it's keeping production of the lands in some status.

Mr. James Lunney: Thanks for that, Greg.

Dr. Abiola—

The Chair: You have 20 seconds.

Mr. James Lunney: Dr. Abiola, I want to thank you for the good work you're doing down there.

I wanted to give you a chance to talk a little bit about the research you're doing with plants and how they specifically target different minerals and pollutants, but I'm afraid we're out of time. Maybe you'll have a chance to address that as we move ahead.

The Chair: We'll come back to you, Dr. Abiola, in a few minutes if there's an opportunity.

Dr. Abimbola Abiola: Thank you.

The Chair: We'll go now to Mr. Choquette for five minutes.

[*Translation*]

Mr. François Choquette (Drummond, NDP): Thank you, Mr. Chair.

My thanks to the witnesses for being here with us today.

Mr. Abiola, I am happy to see you again. I had the opportunity to visit the wetlands you are working on and I would like to turn to the question of national inventory.

I am pleased that all the witnesses talked about it today because the witnesses from last week also mentioned the importance of having a national inventory. I am sure that the Conservatives will agree with us that this should be included in the report, given that you are unanimous on the issue.

Mr. Abiola, given that you are a scientist and you work in science, how could a national inventory of wetlands make it possible to better conserve them in Canada?

[*English*]

Dr. Abimbola Abiola: Thank you very much.

We really have to know where we are with the baseline information, where we are for us to know if we have accomplished anything, whether in the area of conservation or in the area of water quality.

Can you hear me?

[*Translation*]

Mr. François Choquette: Yes.

[*English*]

Dr. Abimbola Abiola: A national wetland inventory, first of all, provides us with the baseline information of where we are.

The second thing is that the inventory is not only going to be the number of wetlands we have, but the types of wetlands. Therefore, over time, if there is going to be any change in the types of wetlands and in the functionality of the wetlands, we will be able to monitor those before it gets to a crisis situation.

As a scientist, in addition to knowing where the wetlands are and what types of wetlands, it will also be necessary for us to be able to continually assist and monitor the functionality of those wetlands.

● (1015)

[*Translation*]

Mr. François Choquette: Thank you very much, Mr. Abiola.

I would like to continue talking about the importance of wetlands in the fight against climate change.

My colleague Ms. Quach also mentioned that wetlands are environmental goods and services and that they allow us to better adapt to climate change, which is a scourge right now. In my view and according to the National Round Table on the Environment and the Economy and the Commissioner of the Environment and Sustainable Development, the Conservatives have not done enough to address this problem and will unfortunately not meet their target for 2020. However, having a national investment plan to conserve wetlands can mitigate things, when it comes to draughts and floods, for instance.

What do you think about that, Mr. Abiola? If I still have some time, I would like to turn to the representatives from Ducks Unlimited Canada afterwards.

[*English*]

Dr. Abimbola Abiola: Actually, one of the main reasons why we put our own wetlands on the campus was to drought-proof our campus, because we know the benefit of the wetlands.

In our own campus, for example, we don't even use municipal water or any type of water for use on the farm for irrigation. We use the same water that goes through our process year by year.

The other fact is that in wetlands it's not just the plants. The accumulation of organic matter in the substrate is where a lot of the carbon has been sequestered, so if you drain the wetland, it's not only the plants that are gone, but the substrate and other things are gone.

One of the other scientific processes we are developing here is appropriate materials that we can use for constructing wetlands or substrate. We are working with some industry partners, and whether it is organic matter, whether it's from the forestry industry or from compost or other things, how to blend those together so that a wetland is developed is very effective.

Thank you.

The Chair: You have 20 seconds for Ducks Unlimited to respond.

Mr. Greg Siekaniec: I would add, in the big picture of wetland conservation, that you are increasing and maintaining your biological diversity, you are maintaining and improving water quality, you are decreasing soil erosion, you are reducing flooding for downstream recipients of water, and you are remediating nutrients in wetlands.

Those are just some of the values provided that all relate to the climate change aspect we all face.

The Chair: *Merci beaucoup, M. Choquette.*

We move now to Ms. Rempel for five minutes.

Ms. Michelle Rempel (Calgary Centre-North, CPC): Thank you, Mr. Chair.

I just want to continue on the line of questioning with regard to the national inventory. I would also like to see this document. I think it's something the Conservatives can certainly support looking into. We have heard over and over again that this is something that's potentially within our jurisdiction to facilitate as well. Certainly as a committee we would be interested in looking into that.

I also wanted to continue along the lines of questioning about the recommendation for specific laws and regulations that you put forward. I'd like to give you a little bit more time to drill down into that with some specificity, with a focus on where potential regulation is needed to meet gaps. Perhaps you could give an example of an outstanding gap in legislation, for example, and of how we could address that within the federal scope, as well as the alternatives to regulation, if there are any.

I'll let Ducks Unlimited start, and I'd like to reserve one minute at the end for Olds College.

Mr. Jim Brennan: In our presentation, one of the things we tried to draw attention to is that there's some shared responsibility. The full implementation of some of the federal wetland policy is certainly a start. We think the federal government can play a leadership role vis-à-vis the work done by the various provinces.

There's a very uneven approach to wetland protection on the regulatory side.

Ms. Michelle Rempel: How so?

Mr. Jim Brennan: From the slides you can see that in the Atlantic provinces there's a much higher level of regulatory safeguards, and where loss occurs, there are mechanisms in place to compensate for that loss.

On the regulatory side, we think that's a good model that all provinces should look at. To just pick up on something Mr. Choquette asked earlier, you either pay for habitat restoration and protect what you have or you pay for it downstream. We have a study on our website that focuses on the Black River subwatershed of Lake Simcoe. It relates to the fact that there have been water quality issues in that lake—and the federal government has certainly made some significant investments in terms of cleaning up Lake Simcoe, which we acknowledge and congratulate you for—but certainly the level of loss in the Simcoe watershed, if you were to remove all the remaining wetlands, would be equivalent to putting about 250,000 bags of fertilizer a year into that lake.

The municipality of East Gwillimbury has had to build a water treatment plant at Sutton in order to remove the nitrogen and phosphorous that are going into the lake out of the watershed. You're either spending money ahead of the game or your spending money after the fact. That's why maintaining the base of habitat on the landscape is so important.

● (1020)

Ms. Michelle Rempel: Fair enough. And just to continue on that point and to re-emphasize, as somebody who grew up on Grand Beach, when I see that picture of Grand Beach it just strikes my heart. I was out at Oak Hammock Marsh, and I saw the presentation on the loss of wetlands. This is something we absolutely need to act on.

When you talk about federal leadership and working with the provinces, what does that look like? Being respective of jurisdiction, what are you asking for?

Mr. Jim Brennan: Certainly we're looking for a round table discussion along the lines of what was recommended in the 1991 plan and trying to harmonize approaches to wetland conservation on the landscape. The federal government has, and will continue to have, a very important role to play, given that migratory birds use the wetlands and those habitats are critical to migratory bird species.

Certainly we want a collaborative dialogue on looking at best practices across the country. There are some very good practices we can point to in the United States as well that Greg is familiar with and that we could take a look at.

Ms. Michelle Rempel: Thank you.

Do I have—?

The Chair: You have 20 seconds.

Ms. Michelle Rempel: I'd like to give Olds College some time to answer my colleague Mr. Lunney's question with respect to its practices on using wetlands to treat waste water.

Dr. Abimbola Abiola: Some of the research we are doing here is to look at plants that have an amazing ability to take pollutants out of water. Those are either hyperaccumulators or hyperdegraders of different types of contaminants. But the type of work we do is basically applied research, working with industry partners on specific problems.

We have a few of those plants now, which we are propagating and which are being used for environmental reclamation.

One other, probably more important point I will suggest is that in terms of leadership, it becomes a priority for the Canadian Council of Ministers of the Environment to work together to develop everything from guidelines to policies regarding wetland conservation for this country.

The Chair: Thank you.

Dr. Abimbola Abiola: They have various policies—

The Chair: Thank you, Ms. Rempel.

We're going to move on to Ms. Leslie for five minutes.

Maybe we'll get a chance to weave your point into a future answer.

Ms. Leslie.

Ms. Megan Leslie (Halifax, NDP): Thank you, Mr. Chair.

Thank you, all of you, for your testimony.

Ducks Unlimited, there were a number of pieces of your presentation that really piqued my interest. When you were talking about the role wetlands play in reducing things such natural occurrences as floods, I was thinking about the insurance industry association.

I'm getting big nods.

They've been pretty...activist, you might say, in their fight against climate change, saying that they are the ones who are going to be on the hook. Given the big nods here at the table, I assume you've been in touch with them or have been working with them in some way, or that you are aware of their work.

Mr. Jim Brennan: Yes. We've had some preliminary discussions with them. Some of our volunteer leadership are working in that sector, so certainly there have been some preliminary discussions about this issue.

● (1025)

Ms. Megan Leslie: Have you found that looking at this through the flood lens is something that resonates when you're talking to farming organizations—the nuts and bolts of recognizing that this pays off in the long run?

Mr. Jim Brennan: It certainly is starting to.

Ms. Megan Leslie: Is it tougher?

Mr. Jim Brennan: This is really a question that might be better put to some of the provincial governments. They tend to deal with them more on issues such as this than we do. Our work with farmers is very much focused on the program delivery side of things—our winter wheat program, for example, and some of our habitat retention and upland retention efforts.

Ms. Megan Leslie: When you were talking about carbon capture and storage—essentially the amount of carbon dioxide that is trapped in many of these wetlands—I was thinking about the Canadian boreal initiative. They were here recently, but I also met with them not too long ago, and we talked about the amount of carbon that is captured and stored in wetlands and about its being a CCS technology that has been proven to work, unlike many of the others.

It got me thinking about the available funding for things such as carbon capture and storage, but all the funding I could find available is really driven toward the technology side, toward developing new technologies for CCS.

I am assuming you can't access any of that funding if you ask, let us restore these wetlands; let us take that money and store the carbon in a way that we know works. Because it's a technology fund, I assume you're shut out.

Mr. Jim Brennan: That's my understanding, yes.

Ms. Megan Leslie: I have been thinking about the Migratory Birds Convention Act. I recognize that it's a pretty narrow act, in that it deals only with the hunting, commercialization, or trafficking of certain species. Habitat protection is not specifically in that act. If we're looking at the protection of habitat for these migratory birds, if we're looking at protecting wetlands in particular, is that something best served through this convention act, or is it something that would fit more under the Canada Wildlife Act?

I'm thinking about how to get at active habitat protection. What legal tool, what law, are we using?

Mr. Jim Brennan: Well, the 1917 act was built around addressing the specific problem of rapid species decline, the millinery trade acquiring feathers from migratory birds. It really focuses on addressing that particular circumstance.

We've learned in the 100 or so years since that time how biologically diverse and valuable these habitats are for a multitude of species, and that's just on the plant and animal side. Then there's the whole human benefit, and now we're just getting into better understanding of what the economic benefits are.

So I'm not sure that managing it in the context of the migratory bird act is the best place to do it.

Ms. Megan Leslie: I think I would agree with you, yes.

Is it something that needs to be addressed as a stand-alone, because it is so unique, or is it something that could be wrapped into the Canada Wildlife Act?

I'm trying to figure out how we get this habitat protection. For example, we used to have fish habitat protection in the Fisheries Act. How do we do that for...? If you're going to use migratory birds as the lens through which we can look at wetlands, where can we do this?

The Chair: She's left six seconds for you to respond.

Mr. Greg Siekaniec: I would think it's some element of a clean water perspective, a clean water act. Keeping water on the landscape and providing all of those functions I described earlier would be an important aspect of that.

Ms. Megan Leslie: Thank you.

The Chair: Thank you, Ms. Leslie.

We'll move now to Mr. Woodworth for our final question.

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

I would like to pick up where Ms. Leslie dropped off, because I've been thinking about this myself.

In particular, I found a reference in a document that was written in 1999, so I'm going to just start by asking if any of you have looked at it recently. It's an issues paper, and actually it just says it's number 1999-1, so I assume that means it was written in 1999. It's called "Wetlands and Government: Policy and Legislation for Wetland Conservation in Canada", and it's a joint product of Ducks Unlimited, Environment Canada, and the North American Wetlands Conservation Council.

Would any of you by chance have looked at that before coming here today?

● (1030)

Dr. Karla Guyn: Not recently.

Mr. Jim Brennan: No.

Mr. Stephen Woodworth: I won't go into that too much. But I would like to recommend to the committee, Mr. Chair, that if possible, committee members be provided with a copy of it, because although it deals with both federal and provincial legislation and policy, it has some good information in it about our federal concerns and the things we're here to discuss today.

In particular, I was struck by a section on page 1 of that document, which says the following:

> Legislation is evolving in two important ways: more explicit reference to wetlands in a range of statutes, and more enabling powers for voluntary stewardship. At the provincial level, new and revised acts—and associated policies and guidelines—with broader environmental objectives are explicitly recognizing wetlands as important ecosystems worthy of special attention.

I think what Ms. Leslie was getting at or asking about is whether you think that perhaps somewhere we should legislatively provide a more explicit recognition of wetlands as important ecosystems worthy of special attention.

May I assume your answer to that would be yes, we should?

Mr. Greg Siekaniec: My answer to that would be yes, we should.

Mr. Stephen Woodworth: Okay.

The reason I'm interested in this is because of the federal Species At Risk Act that deals with the protection and restoration and management of habitat for species. I wondered if you might consider that it would be an appropriate place for legislation to explicitly recognize wetlands as important ecosystems worthy of special attention.

Mr. Jim Brennan: Well, certainly, wetlands are critically important for many of the species found on the threatened or endangered species list.

Again, I would come back to the point I made earlier, which is that we know so much more about wetlands now that goes beyond species management. It has to do with clean drinking water; it has to do with impacts on agricultural practices. It really goes beyond a species.

There are references to the importance of wetlands and the role they play in supporting threatened species, but it wouldn't be our recommendation to manage that through the Species At Risk Act.

Mr. Stephen Woodworth: I'm just trying to find, as I think Ms. Leslie was, some federal legislative framework, and apart from mentioning the importance of water, I'm not sure you've been able to suggest one. I'll give you one last opportunity if you think there is one that you can suggest for us.

Mr. Jim Brennan: You may need to cut some new ground here.

Mr. Stephen Woodworth: All right.

The other thing I wanted to ask about, and I'm also very interested in, is the issue of a comprehensive wetland inventory. I'm going to keep my questions to Ducks Unlimited here because I think Ms. Guyn mentioned that. I wondered if any province has a comprehensive inventory of its wetlands.

Mr. Jim Brennan: The Atlantic provinces have fully mapped their wetlands. There's a revision process that has to take place to keep them current. But certainly the Atlantic provinces have the most comprehensive inventory. Ontario has done a reasonable job. We've worked in partnership with the province. Our GIS group, I know, has been working with the government in Quebec. When you move into the Prairies and the west, there's work that has been done, but there's considerably more work that needs to be done out there.

Mr. Stephen Woodworth: Does anyone have any notion of the cost of completing that on a national basis?

Dr. Karla Guyn: I don't remember the final tally, but it is in that report. It's broken out by region as to....

Mr. Stephen Woodworth: Which report are you referring to?

Dr. Karla Guyn: The one I'm going to table on the....

The Chair: Thank you, Mr. Woodworth. I know your time seems to have gone by quickly, but it actually was five minutes.

I want to thank our witnesses for appearing with us.

Dr. Abiola from Olds College, thank you for your appearance by way of video conference this morning.

To our representatives from Ducks Unlimited, again, thank you for your time, and thank you for the great work all of you do in helping to preserve our wetlands.

Mr. Greg Siekaniec: Thank you, Mr. Chairman.

● (1035)

The Chair: With that, we're going to adjourn the meeting for today.