



STATEMENT

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CONVENTION ON BIOLOGICAL DIVERSITY**

ON THE OCCASION OF

THE MCGILL UNIVERSITY ENVIRONMENTAL SYMPOSIUM

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Life in harmony, into the future
いのちの共生を、未来へ
COP 10 / MOP 5

Ladies and gentlemen,

It is an honour to be speaking at one of the world's foremost research and learning institutions. This year, McGill University placed in the Top 25 of the prestigious Times Higher Education-QS world university rankings for the sixth year in a row. McGill's reputation for excellence comes in part from its strong commitment to the environment and biodiversity. The Biology Department, the Redpath Museum and the School of Environment, with their host of cutting-edge researchers, are leading the way in providing us with the knowledge base to tackle some of the world's most pressing problems. I would therefore like to thank the organizers for the invitation to open this symposium.

I would also like to commend McGill University for its history of reaching out to Convention on Biological Diversity at exactly the right moments. This past June our secretariat was invited to participate in a biodiversity symposium at McGill, co-organized by the British High Commission. Occurring only two weeks after the International Day for Biodiversity – which is celebrated every year on May 22nd – it was an excellent opportunity to raise awareness about this year's theme of invasive alien species. Similarly, the current symposium is taking place with less than a month to go before 2010, which the United Nations has designated the International Year of Biodiversity. This is a very important and active time in the history of the Convention, and therefore an opportune moment to speak to you about our activities, our links with university researchers, and the type of research we hope to encourage and promote going into the future.

As you might be aware, the planet is now experiencing a mass extinction event comparable in magnitude to the one that wiped out the dinosaurs 65 millions years ago. The statistics are truly startling. Species are currently disappearing at up to 1,000 times the natural background rate of extinction. The recently-released 2009 IUCN Red List revealed that 36 per cent of all evaluated species on the globe are threatened with extinction, including 21 per cent of mammals, 30 per cent of amphibians, 12 per cent of birds, and 28 per cent of reptiles, 37 per cent of freshwater fishes, 35 per cent of invertebrates, and a staggering 70 per cent of plants. Even among species not threatened with extinction, the past 20–40 years have seen substantial declines in population or range size in most groups monitored. The overall result is that approximately 60 per cent of examined ecosystem services have been degraded worldwide in the last 50 years. If current loss rates continue, it is projected that an area of 1.3 billion ha worldwide – about 1.5 times the United States – will completely lose its original biodiversity levels by 2050.

And yet unlike past mass extinction events this one can be stopped, for we humans are the ones who are driving it. How are we doing this? We are altering natural habitats, for example by converting forests into agriculture fields or by destructively fishing around coral reefs. We are moving species around the planet through increased trade, transport, travel and tourism, allowing a number of these species to become invasive: introduced to an environment where they lack natural predators and competitors, they rapidly reproduce and wreak havoc on local ecosystems. We are overexploiting our resources by overfishing lakes and oceans and overharvesting forests. We are releasing harmful chemicals from our industrial and agricultural practices into the environment. And we are increasingly putting greenhouse gases into the atmosphere, in the process changing the global climate much too quickly for most species to adapt.

I am sure that I do not have to convince this audience that we have to change our ways. Writing in the journal *Nature* two years ago, McGill biologist Michel Loreau stated: “There is

growing recognition that the diversity of life on earth, including the variety of genes, species and ecosystems, is an irreplaceable natural heritage crucial to human well-being and sustainable development.” This could not be truer: by eroding our biological resource base, we are undermining our own long-term wellbeing, health and quality of life. Biodiversity is our ultimate source of food, fuel, medicine, and much of our fibre and building materials. Moreover, the planet’s many ecosystems provide human beings with a range of irreplaceable services. These include air and water purification, detoxification and decomposition of wastes, stabilization and moderation of Earth’s climate, moderation of floods, droughts, temperature extremes and the forces of wind, renewal of soil fertility, nutrient cycling, pollination of wild plants and crops, and control of pests and diseases. Given the importance of biodiversity to humanity, we simply cannot afford to continue along the same destructive path. To quote McGill alumnus, astrophysicist and environmental activist Hubert Reeves, “Biodiversity is our guarantee of survival”.

That is why two decades ago the international community came together to create the Convention on Biological Diversity, opened for signing at the Earth Summit in Rio de Janeiro in June 1992. The Convention is an international, legally-binding treaty that comprehensively covers all aspects of biodiversity: genes, species and ecosystems. It also recognizes that the conservation of biological diversity is a common concern of humanity and an integral part of sustainable development. To achieve its objectives – the conservation of biological diversity, the sustainable use of biological resources, and the fair and equitable sharing of the benefits arising from the use of genetic resources – the Convention promotes cooperation among countries, particularly on scientific and technical issues and the use of environmentally sound technologies. As of today, the Convention has been ratified by 192 countries and the European Community, making it the most-subscribed environmental treaty on the planet.

At the international level, the Convention is coordinated by the Conference of the Parties, which is made up of all the governments that have ratified the Convention. Over nine meetings so far, the COP has established seven main work programmes, creating implementation and action guidelines for each: agricultural, forest, inland water, island, marine and coastal, mountain, and dry- and sub-humid land biodiversity. The COP has also established 18 cross-cutting issues, including climate change, tourism, incentive measures, impact assessment, and technology transfer and cooperation. At the national level, based on their own unique circumstances member countries develop national biodiversity strategy and action plans, which typically incorporate the sustainable use biodiversity, *ex situ* and *in situ* conservation, the adoption of incentive measures and the mainstreaming of biodiversity into governmental decision-making. When requested, the secretariat of the Convention mobilizes support for individual countries in a number of ways, such as by providing guidelines, securing funding, and organizing capacity-building workshops.

A milestone in the history of the Convention was the adoption by the Conference of the Parties, in 2002 in The Hague at their sixth meeting, of the 2010 biodiversity target. This target is to significantly slow rates of biodiversity loss worldwide by 2010 as a contribution to poverty alleviation and to the benefit of all life on Earth. The 2010 target was endorsed later in 2002 by the Johannesburg World Summit on Sustainable Development and the United Nations General Assembly. In 2006, it was then incorporated as a new target under the UN Millennium Development Goals. The last three meetings of G8 environment ministers have also endorsed the 2010 target, putting biodiversity loss on the agenda at G8 summits in Heiligendamm in 2007, Hokkaido/Toyako in 2008, and L’Aquila in 2009.

This momentum will continue during the International Year of Biodiversity, with its slogan “Biodiversity is life. Biodiversity is our life”. In September 2010 the United Nations General Assembly will convene, for the first time ever, a high-level segment on biodiversity with the participation of heads of state and government. Then in October, at its tenth meeting in Nagoya, Japan, the Conference of the Parties will assess progress toward the 2010 target, adopt a post-2010 strategic plan, and create new biodiversity targets for 2020 and 2050.

So as I said, this is a very important time in the history of the Convention. It is therefore a critical time for us to both develop new links and expand existing partnerships with universities and other research institutions. Institutional research underpins almost everything we know about biodiversity, including its extent, the rate and drivers of its loss, and how to protect it. Without such research, our secretariat would not have been able to produce implementation guidelines for our various programmes of work. Nor would we have been able to produce the first two editions of Global Biodiversity Outlook, which are comprehensive summaries of the status of biodiversity and analyses of the steps being taken by the global community to ensure that biodiversity is conserved and used sustainably. The international community is currently looking forward to the upcoming third edition of Global Biodiversity Outlook, which was produced through heavy scientific involvement and peer review and will be launched in May 2010. GBO3 will offer a first global assessment of progress made toward the 2010 target, provide an analysis of attempts thus far to implement the objectives of the Convention, and offer a projection of future changes in biodiversity levels and possible response measures.

University and research involvement has also been important in Convention initiatives such as the Global Strategy for Plant Conservation, which was started in 2002. The strategy has the long-term objective of halting the continuing loss of plant diversity, and includes 16 outcome-oriented global targets set for 2010. It provides a framework for harmonizing existing initiatives aimed at plant conservation, identifying gaps where new initiatives are required, and promoting mobilization of the necessary resources. Research involvement has likewise been critical in Convention initiatives related to the preservation of pollinator and soil biodiversity.

Academic research also underpins our knowledge of the social and economic costs of biodiversity loss. As Greg Mikkelson, a philosophy professor here in the School of Environment, has pointed out: “Economic models have not included the environment. But the economy is a subsystem embedded within the ecosystem – and since the whole ecosystem is not growing, the economy cannot grow forever either.” This is the rationale behind the ongoing study “The Economics of Ecosystems and Biodiversity” or the TEEB, headed by Mr. Pavan Sukhdev of Deutsche Bank, which is synthesizing a broad range of scientific, economic and social studies in order to develop a much-needed economic valuation framework for our biological resources. With the first two phases already published, the remainder of the study will come out over the course of 2010, with the final synthesis being launched at COP10 in Nagoya.

Given the immense contribution of academic researchers to the activities of both the Convention and its partners to date, it is abundantly clear that a reinforced partnership with the research community will be critical during the International Year of Biodiversity and beyond. There are several key areas in particular where future research needs to be focused. The first is in the development and strengthening of biodiversity indicators. Needless to say, having a clear sense of exactly where and how quickly biodiversity is being lost is absolutely integral to preserving it. And yet because of the complexity of ecological systems, finding clear and easily assessable metrics of biodiversity and biodiversity loss can and has been a challenging task. The

lack of good indicators is currently being addressed by the Biodiversity Indicators Partnership (BIP), a collaborative project between several international organizations to systematically track global changes in biodiversity levels. BIP and similar initiatives need strong university support: research into the development of effective biodiversity indicators, as well as ecological monitoring and assessment programmes, must be a priority for the research community.

Of course, being able to track changes in biodiversity levels requires having sound taxonomic knowledge. Hence, the expansion of such knowledge must be another research priority. By some estimates, the number of species on Earth is 100 million or more if we include microorganisms – and yet classified species number less than two million. To quote E.O. Wilson on the problem this poses for biodiversity research, “It's like having astronomy without knowing where the stars are.” Fortunately, taxonomy is an increasingly flourishing science. Large amounts of information on biodiversity have been made accessible by global initiatives and institutions such as the Barcode of Life, the Catalogue of Life, the Global Biodiversity Information Facility, and the Census of Marine Life. The Convention is doing its part through its Global Taxonomy Initiative, developed by member governments and designed to support implementation taxonomic objectives throughout our work programmes. And yet much more work remains to be done if we are truly to come to terms with the sheer abundance of life on Earth.

In speaking earlier of the study “The Economics of Ecosystems and Biodiversity”, I alluded to another research priority going into the future: the social and economics costs of biodiversity loss. For many of us, the destruction of our biological heritage is a crime in its own right, but of course there are many more reasons for concern – and for those who need further convincing, these reasons need to be made clear through quantitative research.

We can start creating these links by pointing out how biodiversity loss exacerbates poverty. 300 million people worldwide, the majority poor, are estimated to depend substantially on forest biodiversity, including non-wood forest products, for their survival and livelihood. And yet about 13 million hectares of the world's forests are lost due to deforestation each year. 1 billion people depend on fish as their sole or main source of animal protein. And yet about half of marine stocks worldwide were fully exploited in 2005, while another one-quarter were overexploited, depleted or recovering from depletion. Coral reefs provide food and livelihood for most of the estimated 30 million small-scale fishers in the developing world. And yet 60 per cent of coral reefs could be lost by 2030 through fishing damage, pollution, disease, invasive alien species and coral bleaching.

We can further develop these links by pointing out the economic value of protecting biodiversity. Approximately half of synthetic drugs have a natural origin, including 10 of the 25 highest selling drugs in the United States of America. Of all the anti-cancer drugs available, 42% are natural and 34% semi-natural. The value of the watershed protection provided by intact coastal ecosystems, such as mangroves and other wetlands, has been estimated at US\$ 845 per hectare per year in Malaysia and US\$ 1,022 per hectare per year in Hawaii. Coral reef recreation has been estimated at US\$ 184 per visit globally, at US\$ 231-2,700 per hectare per year in Southeast Asia and at US\$ 1,654 per hectare per year in the Caribbean. Global coastal capture fisheries yields are estimated to be worth a minimum of US\$ 34 billion annually.

These figures are merely a beginning. To build on and complement the existing literature on this topic, we need more long-term research into the societal ramifications biodiversity loss.

Such research will call for collaboration between many disciplines. To quote professor Loreau again, “This task demands that we bring together taxonomists, ecologists, social scientists, economists, policy specialists and philosophers – we can’t understand biodiversity by working independently.”

One of our main hopes is that by involving more researchers in the Convention’s activities, we will be able to establish of a common platform for biodiversity research. This platform, in turn, would provide decision-makers with clearer policy options. David Green, director of the Redpath Museum, has very precisely captured the current difficulties that scientists and policymakers have in communicating with each other: “Government needs science in order to do its job, but doesn’t know what to ask science, and science doesn’t necessarily know how to give answers to government in ways that policymakers can use.” To address this situation, the establishment of an Intergovernmental Panel on Biodiversity and Ecosystem Services, akin to the highly successful Intergovernmental Panel on Climate Change, is currently being discussed. The Ministers of Environment of Germany and Japan, acting as presidents of the previous and upcoming meetings of the Conference of the Parties respectively, have expressed their strong support for such a mechanism, which would build on and complement the work being carried out by the Convention’s scientific body. It would also help in the development of information-sharing networks, a key component of internationally-coordinated research.

Another of the Convention’s hopes in developing links with universities is to promote and strengthen public-outreach efforts. After all, who better than professional researchers to communicate to the layperson the value of biodiversity, the threats it faces, and how to preserve it? In the long term the level of public awareness about the importance of biodiversity, and so the concomitant level of public will to protect it, might very well be the main factor that makes or breaks our efforts. In 2007, a ‘flash Eurobarometer’ EU-wide opinion poll on biodiversity found that two-thirds of EU citizens do not know the meaning of the word 'biodiversity', or understand the main threats to biodiversity. A recent survey of 1,500 school-aged children in the UK commissioned by Airbus showed that, when asked to identify different species from photos, 37 per cent of the children could not properly identify a creature as common as a bee – more than a third mistook it for a wasp, and some even confused it with a fly. Here in Quebec, studies have found that children today spend 30 per cent less time outside than their parents did. With humans becoming increasingly cut off from nature through urbanization, it is deeply important that our institutions of learning raise awareness amongst the general public about our fundamental dependence on diverse, healthy, and resilient ecosystems. The International Year of Biodiversity offers a prime opportunity for McGill and other universities to do just that.

More generally, the International Year of Biodiversity should serve as a rallying point for the research community. During 2010, it will be extremely important that researchers organize and participate in events where they can identify emerging issues, build capacity and extend networks, highlight and launch biodiversity-relevant research, and liaise with policy-makers and national governments. Universities and research institutions must help shape the discussion of the Convention’s post-2010 strategic plan and post-2010 biodiversity targets: it is absolutely critical that the Convention’s future agenda has sound scientific underpinnings.

The Convention stands ready to do what it can to support and facilitate your research and outreach endeavours. I should also point out to the students in the audience that they too can join our cause. If you are currently in school and interested in the interface between environmental

research and international policy, whether from a scientific, social or economic perspective, then consider doing an internship at the secretariat: by visiting our website at www.cbd.int, you can find out more about what we offer. And if you are thinking of a career in research, make sure to consider one of the biodiversity-related fields I have spoken of today. They promise to be active and important areas of research in the years to come.

I hope I have convinced you that being able to harness the ingenuity of the research community is essential for the Convention and other interested parties to be able to effectively tackle the biodiversity crisis. As David Suzuki has said, “The human brain now holds the key to our future. We have to recall the image of the planet from outer space: a single entity in which air, water, and continents are interconnected. That is our home.”

Thank you for your kind attention.