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In spring 2013, the Advisory Committee on Cities and Biodiversity of the Global Partnership on Local and Subnational Action for Biodiversity met at the Montréal headquarters of the UN Convention on Biological Diversity (CBD). Seizing the opportunity, the Montréal municipal administration decided to organize a three-day meeting to discuss biodiversity as it applies to urban settings in collaboration with the Secretariat of the Convention on Biological Diversity (SCBD), the International Council for Local Environmental Initiatives (ICLEI — Local Governments for Sustainability) and a scientific advisory committee. What better way to celebrate May 22, the International Day for Biological Diversity, than by taking stock of the latest ideas and practices related to urban biodiversity?

Biological diversity (or biodiversity) is the diversity of everything living on Earth; it includes diversity of species (plants, animals, bacteria, fungi, etc.), genes and ecosystems (adapted from definitions by the Secretariat of the Convention on Biological Diversity, the Millennium Ecosystem Assessment report and Richard Primack). More than 150 representatives of international organizations, governments, cities, businesses, non-governmental organizations and universities shared their field experience and cutting-edge research. The selected theme, “Urban Biodiversity, a Value to Appreciate” invited discussions on innovative perspectives to improve awareness of biodiversity in cities, which are now home to over half the world’s human population, and meet the challenges involved in protecting biodiversity in an urban context.

The program, which focused exclusively on the “values” of biodiversity, consisted of plenary sessions and workshops, supported by question and discussion periods, as well as a final panel discussion. The event took place in two of Montréal’s most iconic landmarks: the parc du Mont-Royal and the Montréal Botanical Garden (the latter is one of the four scientific facilities comprised in the Espace pour la Vie museum complex). The conference also featured information kiosks and site visits, which gave participants the opportunity to discover urban biodiversity for themselves.

According to the Ministère des Affaires municipales, des Régions et de l’Occupation du territoire du Québec (Quebec’s department of municipal affairs, regions and lands), urban biodiversity refers to the variety of living organisms, including their genetic variations, as well as the multiplicity of habitats within and around human settlements.

Given the quality of the presentations and discussions, the City decided to publish a document to disseminate the conference highlights. The objective was not to provide a synthesis of the entire conference, or an exhaustive summary of the workshops and field presentations. Nor is this document the conference proceedings. Instead, the organizers wanted to produce a compendium, i.e., a brief synthesis or condensed version of a corpus of information in order to shed light on approaches, practices and questions related to biodiversity that were discussed at the conference. That is why the ideas proposed by speakers have been organized by theme, rather than addressed one by one. Ideas are attributed to the speakers who presented them, with their names listed in parentheses. The principal goal of this publication is to bring together knowledge, innovative ideas and avenues worth exploring to establish new benchmarks for future discussions on the necessary integration of biodiversity in cities.

1. The Direction des grands parcs et du verdissement (DGPV) of the Ville de Montréal was responsible for organizing the event and created an advisory committee to provide assistance. The committee was composed of the following people: Daniel Hodder (DGPV), Pierre Jutras (DGPV), Rita Rachelle Dandavino (DGPV), Sabine Courcier (DGPV), Joëlle Roy-LeFrançois (DGPV), Joanne Proulx (DGPV), Claude Thiffault (DGPV), Martin Séguin (Ville de Montréal, Direction des affaires institutionnelles), André Mader (SCBD), Pierre Bélec (Soverdi), Jean-Pierre Reverêt (UQAM), Mélanie Roussel (CRE) and Benoît Limoges (Réseau Environnement).

A value of urban biodiversity: improving community well-being

Since the Convention on Biological Diversity was adopted in 1992, the diversity of life on Earth has continued to decline. Biodiversity preservation poses considerable challenges. Action by cities and regional governments has become essential to help countries in their efforts to protect biodiversity (Braulio Ferreira De Souza Dias).

Biophilic cities, integrated with nature

How do we live in cities that are becoming increasingly dense—owing to the need to reduce our ecological footprint—and still maintain contact with nature? One way to overcome this apparent paradox is the development of biophilic cities, i.e., cities that are “integrated or affiliated with nature” (Timothy Beatley). Urban dwellers need a connection to nature; this is not an option but an obligation for living happily and healthfully.

Biophilia: “...the innately emotional affiliation of human beings to other living organisms. Innate means hereditary and hence part of ultimate human nature.” E. O. Wilson, cited by T. Beatley.

In Philadelphia, Pennsylvania (U.S.), planting trees on vacant lots has helped reduce violence, including gun assaults (T. Beatley). Studies in cities everywhere have shown that parks encourage socialization and physical exercise. For the first time in U.S. history, children may live shorter lives than their parents because of obesity and diabetes. To counter this phenomenon, the organization Education Outside wants to “open the classroom door”. Biophilia posits that knowing nature will mean protecting it better. The increased socialization resulting from contact with nature not only enhances human health but also improves public safety. Moreover, our connection to nature stimulates creativity because such contact is a multi-sensory experience (bird song, crickets chirping, presence of water and greenery, etc.).

But what is the minimum daily requirement of nature for city-dwellers? In order to answer this question, the Beatley research team suggest adopting the concept of the “nature pyramid” developed by Tanya Denckla Cobb. By cross-referencing frequency, duration and intensity of the relationship to nature, this pyramid sets daily contact as the basis on which to build the human–nature relationship. Daily contact with nature (the base of the pyramid) is much more beneficial than experiencing nature during a two-week vacation in a country with high biodiversity such as Costa Rica (the apex of the pyramid).

In measuring the human need for nature, a daily connection is the foundation, the basis of the recommended “dose” for a fulfilled human being. However, this type of connection requires that everyone have access to nature in close proximity everywhere, including people living in lower income neighbourhoods. Therefore, it is important for cities to develop all kinds of connectivity: greenbelts, green corridors, microparks, etc. Indeed, this is an essential condition for creating a biophilic city.
Red and green: heart health and biodiversity

Why have cardiologists taken an interest in biodiversity? According to interventional cardiologist Dr. François Reeves, there is an astonishing resemblance between the human body and nature. For example, hemoglobin and chlorophyll have the same type of molecular structure. Historically, industrial revolutions, regardless of their period and location, have led to a sharp increase in coronary disease. Today, cardiovascular diseases have the dubious distinction of being the greatest killer on the planet (F. Reeves).

Together with genetics and lifestyle, the environment is one of the key factors in cardiovascular health. A study on mice has shown that air pollution results in oxidative damage in the arteries of mice, including those provided a healthful diet. Similarly, in humans, it has been found that improved air quality can prolong life by four to five years, which is something few medications can provide!

The Biotopes study on urban heat islands in the Montréal region demonstrates the clear connection between a lack of vegetation and increased air temperatures. Due to climate change, the effects of urban heat islands can be disastrous, as was demonstrated by the death of thousands of seniors from heart disease in Paris in 2003, under the combined effect of a heat wave and air pollution. Indeed, heat increases the toxicity of pollutants emitted from fossil fuel combustion.

A cardiologist’s prescription: plant trees... and take a forest bath!

Nature helps absorb pollutants; when in contact with nature, a person’s blood pressure drops and cortisol secretion decreases. Research in Japan has shown that a walk in the woods, termed “forest bathing” (Shinrin-yoku in Japanese), strengthens the immune system and reduces stress hormones, which contributes to physical and mental well-being. For Japanese researchers, a walk in the forest is a public health measure (T. Beatley and F. Reeves).

In addition, according to a study done at the University of Glasgow, Scotland, exposure to nature has a significant impact on longevity. This single factor could reduce the traditional gap between the life expectancy of rich and less affluent citizens (related to cardiovascular health) by half. Throughout the world, socio-economic differences are key factors in human life expectancy. The impacts of these differences can be mitigated by spending time in parks and natural areas.

Another telling illustration of the health benefits of trees and biodiversity is the significant increase in human mortality associated with the loss of thousands of ash trees in 15 U.S. states, with 6,113 additional deaths occurring from pulmonary disease and 15,080 deaths from cardiovascular diseases.1 The huge die-off of ash trees was due to the recent infestation by the emerald ash borer, an exotic pest with no known predator, which is also present in Canada and Québec.

More and more large cities are becoming concerned about their residents’ poor diet. Dr. Reeves asks why aren’t cities also trying to become biophilic and heart healthy?

Biodiversity now inextricably linked to urban development

Although cities occupy only 3% of the Earth’s land mass, they contain over 50% of the world’s population and consume 75% of available resources, with a huge impact on the environment. Consequently, decision making by local and subnational governments (i.e., provinces, counties, metropolitan regions and the like) has become crucial to biodiversity.

The Secretariat of the Convention on Biological Diversity (SCBD) promotes efforts and contributions by cities and subnational governments in order to increase joint efforts with national governments regarding biodiversity.

The SCBD has developed tools, including ecoevaluation (the evaluation of ecosystems), to better take biodiversity issues into account. This approach has aroused a great deal of interest and is also used at the local and regional government levels.

Ecoevaluation: a strategic process

First and foremost, ecoevaluation is a strategic process, based on the services provided by nature within a specific context. In particular, it is used to define the loss of quality of life for local inhabitants when nothing is done to protect threatened spaces. For this reason, taking account of surrounding ecosystems and the populations living there is an essential part of the ecoevaluation process (Braulio Ferreira de Souza Dias).

Mexico City (Jose Bernal Stoopen) produced an evaluation of the state of biodiversity within the municipality, as part of the Local Action for Biodiversity (LAB) project and with support from the International Council for Local Environmental Initiatives (ICLEI - Local Governments for Sustainability), enabling it to better identify ways to cope with the challenges posed by deforestation, soil erosion and air pollution. Montréal and Edmonton have produced similar assessments.2

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UN-Habitat has underlined the significant role regional governments play in the creation of green corridors, which help to counter land fragmentation, and are consequently essential for biodiversity (Andrew Rudd). Based on approximately 50 case studies, the organization identified many ecological services, some unrecognized, which provide benefits to cities, including carbon capture and pollination. In order to stop urban sprawl into the countryside, and pollution associated with it, a nearly ubiquitous phenomenon observed on almost all continents, cities and regional authorities should adopt urban planning measures (related to transportation, water, and preservation of agricultural use in surrounding areas).

Singapore and Paris, two very densely populated cities, have adopted their own biodiversity plans. Singapore, which is a city, island and state, has taken on a major challenge in this respect (Wendy Yapp Hwee Min). Its 5.3-million inhabitants enjoy vegetation on 56% of the land; however, truly natural areas only cover 4.5% of this area, with the rest consisting of plantings. This tradition of landscaping dates to the 1960s, when visionary leaders already understood that planting vegetation was a way to increase competitiveness. Today, Singapore plans to increase biodiversity by extending horticulture and gardening to walls and roofs and by re-creating forests and other natural areas in its parks. It also plans to pursue the creation of a greenbelt on the periphery of the island as well as greenways linking its parks (with a total projected length of 360 km in 2030). Already a garden-city, Singapore aims to become a city in a garden.

Cities must integrate nature into their development, since nature ensures the well-being of the community by providing numerous benefits, especially for the health of residents and for public safety. The concept of a biophilic city, the evaluation of ecosystem services and the development of biodiversity plans are methods to attain this integration.
The economic value of urban biodiversity: expense or investment

Evaluating the benefits of biodiversity to support decision making

Why and how should we put a value on environmental goods and services? Ecosystem valuation is done primarily to support decision making. In 2007–2008, the German Department of Environment and the European Commission launched The Economics of Ecosystems and Biodiversity initiative, or TEEB. The main goal was to sensitize decision-makers to the economic advantages of the ecological services provided by nature (André Mader).

When environmental data is incorporated in data used in the decision-making process, decision-makers ascribe an implicit value to it (Jean Nolet). Therefore, tools are needed to produce as objective an evaluation as possible, i.e., one based on specific criteria. An example could be a cost-benefit analysis of an environmental policy or a natural resource extraction project. If negative impacts are foreseen, the loss of ecological services can be evaluated to determine the amount of compensation to provide to affected communities. Economic-value criteria are often based on passive and active uses, both direct and indirect.

Whatever the evaluation tools or criteria used, economists recognize that they can only provide an order of magnitude of the value of ecological goods and services (J. Nolet).

An ecosystem approach

While we are able to grasp problems such as the loss of a species, it is more difficult to adopt an ecosystem approach, i.e., to measure the impact of such a loss on a specific ecosystem and to quantify the value of ecosystems as a whole.

Greenbelt around Montréal, according to a study by the David Suzuki Foundation (from the presentation by Karel Mayrand)
The David Suzuki Foundation, a Canadian environmental organization, studied the benefits in ecological goods and services that would be produced annually by three potential greenbelts around the Canadian cities of Toronto, Vancouver and Montréal. The resulting financial assessments (in billions of dollars) are a function of the characteristics and size of each greenbelt.

- Toronto C$2.6 billion/year
- Vancouver C$5.4 billion/year
- Montréal C$4.3 billion/year

Despite the difficulties involved, this approach was used by the David Suzuki Foundation in analyzing greenbelt projects, and the value of their potential ecological benefits, in the three largest Canadian cities: Toronto, Vancouver and Montréal. The principal goal of the studies was to raise awareness of the breadth of services provided by such greenbelts, rather than to ascribe a market value to nature (Karel Mayrand).

Analyses were carried out by types of services (flood control, outdoor recreation and tourism, habitats for biodiversity, pollination, etc.) and environments (urban forests, rural wetlands, orchards, etc.). Here again, the results, which range from millions to billions of dollars depending on the size of the areas studied, provide an order of magnitude of the value of the services that would need to be compensated if the functionality of these ecosystems was not preserved.

Economic and/or social returns

The foresight of elected officials in cities like New York and Montréal provides full meaning to the question of “return on investments” for ecological goods and services. In New York, the city council decided to use every possible means to preserve the Catskill Mountains watershed, the source of the city’s drinking water, since the construction of a water filtration plant would have cost US$10 billion. Investing in natural capital cost New York City one-fifth as much.

Similarly, in the 1870s, Montréal City Council earmarked the equivalent of almost the entire annual municipal budget for purchasing and developing a portion of Mount Royal for a park (Daniel Hodder). Parc du Mont-Royal, which Olmstead designed to serve as the “lungs of the city”, currently attracts millions of Montréalers and tourists each year. The economic cost-effectiveness of these actions has been amply demonstrated.

“How can we assess the economic value of ecological services along with the other benefits of urban biodiversity? Recently, New York City assessed the value of vegetation for its effectiveness in the absorption of stormwater. The current replacement cost for New York’s urban forests has been estimated to be US$5.2 billion (David Maddox).

Since Hurricane Sandy in 2012, which devastated a large part of Long Island, near New York City, a new interest in green infrastructure has emerged. We must take advantage of this interest to demonstrate the positive impacts of biodiversity on citizens’ lives. In fact, the experience of this superstorm highlighted a new benefit of urban biodiversity: resilience (D. Maddox). In Sandy’s aftermath, the most resilient neighbourhoods proved to be those with healthy ecosystems and strong cohesion among residents. Biophilic cities provide better proximity to nature, which promotes social cohesion. Today, Long Island is well on the road to recovery.
Despite these examples, comparisons between the known added-value of ecological services and the property values of potential development are often made to the detriment of biodiversity conservation.

What future are we preparing for tomorrow’s generations? What type of cities do we want? These questions demonstrate the urgency of addressing the relationship between economic and social profitability. Gérald Larose, inspired by the theory of Hungarian economist Karl Polanyi, calls into question the weight placed on the “market” in comparison to other sources of wealth such as domestic activities and activities involving reciprocity (barter) and redistribution (taxes). The currently dominant ideology makes “market value” the only widely recognized benefit, to the detriment of other benefits. As long as this is the case, and since time is of the essence, it may be useful to quantify the economic value of biodiversity to support decision making, without forgetting its other dimensions.

Attributing a value to biodiversity provides context to decision making in project evaluation. However, market value is all too often the only benefit taken into account, and only partially, due to the difficulty of understanding all consequences of a project. It is important to include all ecosystem services provided by natural areas and emphasize that their preservation makes cities more resilient, both socially and environmentally.
The search for a convergence of interests

An example of an industrial best practice

Holcim, a multinational cement, concrete and asphalt producer, has more than 547 extraction sites around the world, more than half of which have undergone environmental assessment. Its activities, primarily extractive, also entail the rehabilitation of properties after use. Why has Holcim changed its practices to be more respectful of the environment? The firm determined that the industry, under increasing public pressure and faced with stricter environmental regulation, had to evolve and change its practices. Holcim found that this was in its own best interests, since its operations were based on the intensive exploitation of non-renewable resources, hence the “importance of putting them to good use”. (Luc Robitaille).

Recognizing the expertise of environmental organizations, the multinational called on the International Union for Conservation of Nature (IUCN) to develop, jointly with Holcim’s own experts, a best practices guide for site rehabilitation. Based on the recommendations in the guide, the company decided to go beyond ensuring compliance with regulatory requirements and simply restoring the quarries it operates.

Henceforth, it would take biodiversity and the needs of surrounding communities into account in its site rehabilitation efforts. This entailed working together with municipalities and citizens’ groups to understand their future aspirations for the site’s future, e.g., a park, wetlands or agricultural land. In certain cases, the site restoration itself was carried out with non-governmental organizations and schools in the region.

Ecological restoration: integrated into quarry operation planning
(from the presentation by Luc Robitaille)

Reconciling the protection of biodiversity with urban development

Biodiversity preservation in urban and suburban settings requires contributions from all players involved in such areas. With the adoption by Montréal of the Policy on the Protection and Enhancement of Natural Habitats in 2004, the municipal administration developed urban planning guidelines to conserve nature in the city (Josée Duplessis). The creation of ecoterritories on the island of Montréal, and the use of studies and public consultations, has

A restored quarry site, rich in biodiversity
(from the presentation by Luc Robitaille)
resulted in land developers increasing the density of their construction projects, preserving streams instead of channeling them or burying them, and creating and protecting green spaces, enhancement measures that can counteract suburban sprawl. Today, Montréal protects 5.75% of the area on the island (with an objective of 6%), which is more than half of its remaining terrestrial natural areas.

Karel Mayrand points out that vigilance is still necessary, however, because certain builders, especially in less developed areas, seek to take advantage of the trend toward Transit Oriented Development (TOD) in order to encroach on areas rich in biodiversity.

Constructing tomorrow’s sustainable city

An example of another tool used to harmonize urban land development practices and promote biodiversity is a guide produced by the municipal administration of Montpellier, France titled “Améliorer l’Urbanisme par un Référentiel d’Aménagement” [Improving urban planning through a development reference system] (Jacques Touchon). The “AURA Guide” was developed for all stakeholders involved in urban development. Based on various indicators (including service proximity, greenhouse gas emissions and the ratio of permeable surfaces), construction and urban development in Montpellier is evaluated using a point system based on sustainable development principles. The project-rating system takes into account elements ranging from citizen participation to drinking water consumption.

This convergence of interests is also illustrated by measures taken at the Technoparc Saint-Laurent, in Montréal (Alan DeSousa). Municipal decision-makers and environmental organizations challenged the occupants of the industrial park to take action to protect biodiversity. As a result, several business owners realized that a landscaped site, surrounded by protected natural areas, a tree-canopied parking lot and exterior recreational space would contribute to the well-being of their workers, which in turn would increase employee-retention rates. Moreover, other companies are following this example. New knowledge-based industries have become increasingly conscious of the fact that such measures can help attract “brains” (Éco-campus Hubert Reeves at the Technoparc).

The delicate question of compensation

Sustainability criteria are increasingly being incorporated in the financing criteria for certain types of projects, including mining operations. Financial institutions have adopted analysis methods based on the “Equator Principles,” which impose conditions on financing. The key component of these principles is that there can be no
Mitigation measures can take several forms, including the transfer of fauna from a forest slated for clearing and the creation of completely new nesting areas for marine turtles when their traditional breeding sites are disturbed. When protected areas are affected, offsets in another location are mandatory, and must result in a net gain in biodiversity. It is possible to compensate through equivalents: for example, by planting trees to compensate for the loss of amphibian habitat.

A key component of the Equator Principles: no net loss of biodiversity.

Discussions during “Rendez-vous – Urban Biodiversity, a Value to Appreciate” shed light on some questions raised regarding the monitoring of compensatory measures. In order for monitoring to be effective, it must be rigorously implemented.

Several successful projects show that it is possible to create a convergence of interests around projects and transcend the traditional conflict between protecting natural areas and economic development. Early collaboration can allow stakeholders to express their concerns and help find a winning solution for everyone. Long-term project monitoring ensures that objectives can be attained.

The Equator Principles: a way to integrate biodiversity into project planning (from the presentation by Benoît Limoges)

net loss to biodiversity (Benoît Limoges). Despite efforts to limit impacts on biodiversity, projects can still have harmful consequences and, consequently, mitigation is required.

Biodiversity Conservation

Hierarchy of impact mitigation
I. Avoid (create a reserve)
II. Minimize (maintain connectivity)
III. Compensate biodiversity and ecological services (restore or create)
Governance and mobilization: complementary approaches

Who should take the initiative?

Participants at the Rendez-vous all agreed that the primary task is to make citizens understand the importance of biodiversity to human well-being. Creating biophilic cities requires strengthening the daily links between city-dwellers and nature. People have to get to know the nature that surrounds them in order to protect it (T. Beatley). In Kampala, Uganda, recognition of the role of wetlands in filtering water and providing flood protection has helped increase awareness of the benefits of biodiversity (A. Rudd). Without a doubt, understanding this is a prerequisite, as much by decision-makers as by the general public.

Mobilize stakeholders on an on-going basis

Paris recently adopted an ambitious biodiversity plan for 2011–2020 (Fabienne Giboudeaux). The plan provides 30 actions for biodiversity. All public consultation and mobilization work, Ms. Giboudeaux noted, requires commitment to a long-term process.

To draft this plan, the Paris municipal administration organized workshops bringing together representatives of municipal departments and various citizens’ associations (e.g., community gardens, neighbourhood councils) as well as experts (urban planners, landscape architects, etc.) to consult the participants and create interaction among these groups. Such interactions encouraged the formation of multidisciplinary teams and raised awareness of the challenges of urban biodiversity.

Montpellier, which is part of an urban agglomeration of a half-million inhabitants, is faced with significant population growth (J. Touchon). To provide effective growth management, in addition to creating the AURA guide (see chapter 3), the city opted for a citizen-based approach, as part of its project, Montpellier 2040. As part of this project, residents are invited to define and imagine what the city would be like in 30 years. According to Touchon, participatory democracy is an essential tool for protecting biodiversity.

Input from specialists and knowledge transfer

Montpellier obtained support and guidance from several research organizations in its efforts to protect biodiversity. Paris consulted researchers to synthesize a definition of biodiversity and pooled their knowledge to help establish the Observatoire parisien de la biodiversité, an administrative organization created to monitor changes in biodiversity conservation.

The Master Naturalist Program, created by the city of Edmonton, Canada as a mobilization tool (G. Pearsell), makes use of the contributions of qualified people, experts from many fields, and ordinary citizens wishing to do their part. The population of Edmonton includes many highly educated people and members of numerous cultural communities who can act as intermediaries with their respective communities.
Pearsell’s team wondered how they could make use of this pool of expertise, which the city of Edmonton could not afford to pay for. They proposed a kind of barter: the municipality would provide 35 hours of training to people interested in biodiversity and, in exchange, participants would be asked to contribute the equivalent amount of time on biodiversity preservation work, based on their areas of interest and expertise. Examples included protecting a marsh, eradicating invasive plants and building awareness among recent immigrants about the benefits of urban biodiversity.

“People who work together in a place become a community, and community, in time, grows a culture. To work on behalf of the wild is to restore a culture.”

Gary Snyder, Conservationist & “poet laureate” of Deep Ecology

“The ultimate goal of the Master Naturalist Program is to encourage the emergence of a culture of biodiversity protection.” Grant Pearsell

Currently, the training, which is often given by previous participants—thus promoting continuous knowledge sharing—lasts three weeks. Continuity is provided, in part, by efforts to recognize the work of volunteers. Moreover, the value of this type of program is often underestimated, because it also acts as a means to understand the perceptions and expectations of citizens regarding their city.

Some aspects still need work: the effectiveness of actions needs to be evaluated and their benefits demonstrated with persuasive results (G. Pearsell). In addition, Edmonton’s citizen mobilization programs are vulnerable to various financial constraints that may arise.

The City of Toronto has organized a series of presentations on biodiversity, in which researchers and naturalists present the diversity of species living in this metropolis.

Various “Schools of Ants”, which are springing up in many US states, have been established by local citizen-scientists. The goal of this initiative is to interest urban children and get them involved with nature that is easily accessible to them (T. Beatley).

Mobilization methods and mechanisms

ICLEI - Local Governments for Sustainability, an international organization, has published numerous studies and analyses of cities and biodiversity. ICLEI-Canada plans to develop a guidebook in which cities can share their experiences in biodiversity, especially with regard to citizen mobilization (Nicole Marzok).

Here are some of the methods proposed:
- establish objectives and set goals based on quantifiable data
- listen to the public, and raise citizen awareness
- maintain favourable conditions
- recognize leaders
- make use of existing networks and resources.

Examples of how cities have taken biodiversity into account (from the presentation by Nicole Marzok)
The role of decision-makers and the public

Who determines if wetlands will be protected? Public authorities, provided that the decision is the result of societal reflection, a debate in which the benefits of biodiversity, in addition to developers’ economic interests, have been explained (G. Larose). In this way, decisions are based on a search for social consensus.

The government of the Singapore city-state has shown leadership in promoting biodiversity, considered to be beneficial to the city’s competitiveness. However, according to Wendy Yapp Hwee Min, governments mostly have planning powers and they are very sensitive to pressure from citizens.

Municipal elected officials must be challenged and supported, because they are subject to incessant pressures from developers (K. Mayrand). Numerous cities have launched projects or adopted measures to preserve the environment. For example, Paris is implementing green corridors, including portions on private property; San Francisco issues permits to allow people to take over the planting strips along city sidewalks; some U.S. cities have increased water taxes based on the proportion of paved surface of the property.

The credit for launching awareness-building initiatives and actions in favour of urban biodiversity goes to decision-makers just as much as private citizens (T. Beatley). The announcement during the Rendez-vous of the creation of a council of Québec municipalities for biodiversity is an example of such an initiative. The idea of such a working group was proposed by Réseau Environnement (a Québec network of environmental specialists) in order to support municipalities in their efforts to protect and enhance urban and suburban ecosystems.

Biodiversity can be fun

One of the ways to mobilize and share knowledge on biodiversity stems from the communal nature of initiatives. Biodiversity brings people in a community together. Why not make it an opportunity to celebrate? For example, Montpellier organizes an annual Biodiversity Day. With his Health Tree Day, Dr. François Reeves has started an annual tree planting event within Québec’s health network, which has also spread to the education sector (schools and daycare centres). According to the cardiologist, this day quickly became an opportunity for participants to celebrate their collective efforts; for children it has become a great deal of fun. After all, children are tomorrow’s citizens!

Biodiversity is everyone’s business, and the starting point should be to understand this. Both citizens and experts can—and must—take part. The participatory approaches that have been instituted by various cities committed for the long term demonstrate their interest. They address the objectives of training and awareness building, and are geared towards planning and action.
Conclusion and issues to consider

Why be concerned with the benefits of biodiversity?

Participants in “Rendez-vous — Urban Biodiversity, a Value to Appreciate” feel there is an urgent need to act. Urban development has impacts on ecosystems, to the point where their functioning is compromised and biodiversity losses become even greater. As the level of government closest to local ecosystems, municipalities need to play a major role in protecting biodiversity. Raising questions about the value of biodiversity can improve how it is taken into account in urban development projects.

What is the value of biodiversity?

Biodiversity has social, monetary, economic and public health benefits. It has an aesthetic value, and provides tranquility and other benefits. Furthermore, biodiversity has an intrinsic value. High biodiversity ensures that ecosystems are healthy, which allows them to provide numerous ecological services such as water filtration, air pollutant removal, carbon capture, climate regulation, as well as protection during extreme climatic events.

Consequently, the value of biodiversity is uncontested. However, consensus has yet to be reached on how to quantify these benefits, or even on the possibility or usefulness of doing so. Nevertheless, a consensus seems to be developing among economists and business organizations that an “order of magnitude” can be established, although the methods for doing so remain unproven. It would be dangerous to ascribe a market value to nature while forgetting the value of its very existence.

Biodiversity valuation: useful in decision making

To succeed in convincing different levels of government, it is sometimes necessary to use the same ways of seeing things, the same paradigms, as employed by those trying to influence governments (investors, developers and owners of resources). By recognizing that economic value is currently a predominant decision-making criterion, those advocating for the preservation of biodiversity can use this same terminology, in conjunction with order-of-magnitude calculations to make their case.
In addition to the difficulty of persuading the authorities to take action, the varying interests of the different levels of government must be taken into account. For example, municipalities assume the costs of revegetation, which translates into savings to the health care system. But these savings do not accrue directly to the municipal level, because funding of the health care system is generally a responsibility of a higher level of government.

Biophilic cities:
livable, sustainable and resilient

Going beyond the issue of orders of magnitude, perhaps there is a need to recognize the value of all types of benefits provided by investment in biodiversity protection, instead of persisting with the dichotomy of costs of protection versus development. This involves taking into account the values, issues and interests of the stakeholders to find winning solutions for everyone.

What kind of cities do we want to live in? The idea of biophilic cities, integrated with nature, is a grand objective. In place of an assessment which is more or less quantifiable, let’s propose a vision of the future, one that brings people together and is humanly scaled—so that biodiversity will no longer be seen as an obstacle to development, but instead as common capital to be protected, for more resilient and competitive cities.

The benefits of protecting biodiversity can be demonstrated in concrete projects that are the result of the public and the political will to define new ways of development in harmony with nature. Information, mobilization and partnership are key to the success of collaborative projects.

Visit of parc du Mont-Royal, May 21, 2013
(Photo credit: Jean Landry - Landscape Architect/Photographer)
TIMOTHY BEATLEY
BOOKS
Link to Google books: http://books.google.ca/books?id=CrDqGKwMFAkC&hl=fr&source=gbs_similarbooks
Link to Google books: http://books.google.ca/books/about/Biophilic_Cities.html?id=H9Y46W8SqUCredir_esc=y
COLLECTIVE BLOG
http://biophiliccities.org/
DOCUMENTARY
Nature of cities – Documentary
http://biophiliccities.org/nocfilm.html

FABIENNE GIBOULDEAUX
Plan Biodiversité de Paris – Paris municipal website
Plan Biodiversité de Paris – PDF
http://www.paris.fr/viewmultimediadocument?multimediadocument_id=110097
Livre blanc de la biodiversité à Paris – PDF
http://labs.paris.fr/commun/pdf/Livre_blanc_bivodiv_ok.pdf

FRANÇOIS REEVES
REPORTS
Framingham Heart Study – Website
http://www.framinghamheartstudy.org/
Biotopes, étude sur les îlots de chaleur de la région métropolitaine – Website
http://cmm.qc.ca/biotopes/
The Relationship Between Trees and Human Health, Evidence from the Spread of the Emerald Ash Borer (Geoffrey H. Donovan et al.) – PDF
http://donovan.hnrinfo.info/Studies/donovan_et_alEAB.pdf
Effect of exposure to natural environment on health inequalities: an observational population study (Richard Mitchell & Frank Popham) – PDF
BOOKS
http://multim.com/titre/?ID=338
Mal de Terre (Hubert Reeves) – Website
http://www.hubertreeves.info/livres/maldeetreer.html
Tree, A Life Story (David Suzuki) – Website
http://www.davidsuzuki.org/publications/books/tree-a-life-story/
Trees : relief for the city – PDF
http://edepot.wur.nl/20634

ANDRÉ MADER
BOOKS
The Economics of Ecosystems and Biodiversity : Ecological and Economic Foundations – TEEB website
The Economics of Ecosystems and Biodiversity : Mainstreaming the Economics of Nature – PDF
The Economics of Ecosystems and Biodiversity : TEEB for Policy Makers – PDF
The Economics of Ecosystems and Biodiversity : TEEB for Business (Executive Summary) – PDF
The Economics of Ecosystems and Biodiversity : TEEB for Local and Regional Policy Makers – PDF
The Economics of Ecosystems and Biodiversity : TEEB Manual for cities – PDF

JACQUES TOUCHON
Biodiversity page – Montpellier municipal website
http://www.montpellier.fr/3313-biodiversite.htm
Plan d'action biodiversité – Montpellier municipal website
Guide AURA – Montpellier municipal website
Guide AURA – PDF
Grille AURA – Montpellier municipal website
http://www.montpellier.fr/4034-grille-aura.htm

JOSE BERNAL
REPORTS
City of Mexico LAB-ICLEI Biodiversity Report 2012
(Not available online)
LBSAP Mexico: Estrategia y plan de acción para la Biodiversidad de la Ciudad de México 2013-2023 – PDF
Part 1: http://cbc.iclei.org/content/Docs/Da%20la%20Ciudad%20de%20Mexico1.pdf
Part 2: http://cbbc.iclei.org/content/Docs/Da%20la%20Ciudad%20de%20Mexico2.pdf
Part 3: http://cbbc.iclei.org/content/Docs/Da%20la%20Ciudad%20de%20Mexico3.pdf
Part 4: http://cbbc.iclei.org/content/Docs/Da%20la%20Ciudad%20de%20Mexico4.pdf
Estrategia Nacional sobre la biodiversidad de México – PDF
http://www.conabio.gob.mx/conocimiento/estrategia_nacional/doctos/pdf/ENB.pdf
WENDY YAPP HWEE MIN
Singapore index on cities biodiversity - tool developed by the National Parks Board of Singapore with the SCBD – CBD website
https://www.cbd.int/authorities/gettinginvolved/cbi.shtml

JOSÉ PUPPIM DE OLIVIERA
COP 10 Decision X/22 – CBD website
http://www.cbd.int/decision/cop/default.shtml?id=12288
Singapore index on cities biodiversity – CBD website
https://www.cbd.int/authorities/gettinginvolved/cbi.shtml

The Economics of Ecosystems and Biodiversity : TEEB Manual for cities – PDF

Local Biodiversity Strategies and Action Plans (LBSAP) : Guidelines – PDF

Integrating Biodiversity with Local and City Planning: The Experience of the Studios in the Development of Local Biodiversity Strategies and Action Plans – PDF
http://studiobiodiversidade.files.wordpress.com/2012/12/uni-biodiversity-forthcoming.pdf

Cities, Biodiversity and Governance : Perspectives and Challenges of the Implementation of the Convention on Biological Diversity and the City Level – PDF

Biodiversity Planning : an assessment of national biodiversity strategies and action plans – PDF

Effective Implementation of NBSAPs: Using a decentralized approach – PDF
http://www.ias.unu.edu/resource_centre/Effective%20Implementation%20of%20NBSAPs%20-%20Pisupati.pdf

Governance Challenges for Greening the Urban Economy: Understanding and Assessing the Links between Governance and Green Economy in Cities – PDF
http://www.ias.unu.edu/resource_centre/Governance%20Challenges%20for%20Greening%20the%20Urban%20Economy.pdf

ICLEI-LAB Guidebook – Website

Supporting Local Action for Biodiversity : The Role of Local Governments (UN Habitat) – PDF
http://www.unscd2012.org/content/documents/Supporting%20Local%20Action%20for%20Biodiversity.pdf

KAREL MAYRAND
STUDIES
Ontario’s wealth Canada’s future : Appreciating the value of the greenbelt’s eco-services – PDF

Natural Capital in BC’s Lower Mainland : Valuing the Benefits from nature – PDF

Capital écologique de la Ceinture verte : évaluation économique de la biodiversité et des écosystèmes – PDF

Biotopes, étude sur les îlots de chaleur de la région métropolitaine – Website
http://cmm.qc.ca/biotopes/

WEBITES
La Ceinture verte du Grand Montréal procure des services écologiques dont la valeur atteint plus de 4 milliards de dollars par année – Press release
http://www.davidsuzuki.org/fr/medias/communiques-de-presse/2013/02/la-ceinture-verte-du-grand-montreal-procure-des-services-ecologiques-dont-la-val/

Que vaut la nature? – Website

BENOÎT LIMOGES
Equator Principles (Used by banks for project assessment) – Website
http://equator-principles.com/

IFC (International Finance Corporation) Performance Standards on Environmental and Social Sustainability – PDF

LUC ROBITAILLE
IUCN-Holcim Biodiversity Management System launched in Nagoya – Press release
http://www.iucn.org/fr/nouvelles_homepage/nouvelles_par_theme/economie_news/76343/Biodiversity-Management-System

Biodiversity Management System (HOLCIM, with IUCN) – PDF

DAVID MADDOX
Green cities list – Sustainable Cities Collective Blog
https://sustainablecitiescollective.com/nature-cities/95786/we-re-number-1-depending-values-embedded-most-green-city-lists

Millions Trees (New York Restoration Project) – Website
http://www.nyrp.org/Greening_Sustainability/MillionTreesNYC

Stormwater capture research – Poster
http://digitalcommons.limu.edu/cgi/viewcontent.cgi?article=1052&context=cate

GRANT PEARSELL
Master Naturalist Program, Edmonton – Website
http://www.edmonton.ca/environmental/natural_areas/master-naturalist-program.aspx

ANDREW RUDD
COP 10 Decision X/22 – CBD website
http://www.cbd.int/decision/cop/default.shtml?id=12288

UN-Habitat 23rd Governing Council (Resolution 23/17) – PDF
http://www.unhabitat.org/downloads/docs/10697_1_594295.pdf

Rio+20, Final Report – PDF

Cities and Biodiversity Outlook, Action and policy – PDF
http://www.unhabitat.org/pmss/listItemDetails.asp?publicationID=3341

NICOLE MARZOK
Having the Climate Conversation, Strategies for local governments – PDF
http://www.icleicanada.org/images/icleicanada/pdfs/having_the_climate_conversation.pdf

Biokits – Environment Canada website

Leadership & Legacy : handbook for local elected officials on climate change – PDF

TEEB Manual for cities – PDF
# PROGRAM
(As conducted)

## DAY 1: TUESDAY, MAY 21, 2013

### DISCOVERING URBAN BIODIVERSITY

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 – 9:30 a.m.</td>
<td>Welcoming and Registration at the Chalet du parc du Mont-Royal</td>
</tr>
<tr>
<td>9:30 – 10:15 a.m.</td>
<td>Official Opening Session</td>
</tr>
<tr>
<td></td>
<td>Suzanne Asselin</td>
</tr>
<tr>
<td></td>
<td>Master of ceremonies</td>
</tr>
<tr>
<td>10:15 – 11:45 a.m.</td>
<td>Plenary Session</td>
</tr>
<tr>
<td></td>
<td>Timothy Beatley</td>
</tr>
<tr>
<td></td>
<td>Teresa Heinz Professor of Sustainable Communities</td>
</tr>
<tr>
<td></td>
<td>University of Virginia, Charlottesville, USA</td>
</tr>
<tr>
<td></td>
<td><em>Biophilic Cities: The Importance of Nature in Urban Life</em></td>
</tr>
<tr>
<td>11:45 a.m. – 1:00 p.m.</td>
<td>Lunch on the mountain</td>
</tr>
</tbody>
</table>

Location: Chalet du parc du Mont-Royal

### Location: Chalet du parc du Mont-Royal

- **Suzanne Asselin**
  - Master of ceremonies

- **Josée Duplessis**
  - Member of the Executive committee,
  - Responsible for sustainable development, environment, large parks and green spaces.
  - Ville de Montréal, Canada

- **Scott McKay**
  - Member of the National Assembly for Repentigny - Parliamentary Assistant to the Minister of Substainable Development,
  - Environment, Wildlife and Parks (for wildlife and parks)

- **Braulio Ferreira de Souza Dias**
  - Executive Secretary
  - Secretariat of the Convention on Biological Diversity (CBD), Montreal, Canada

- **Timothy Beatley**
  - Teresa Heinz Professor of Sustainable Communities
  - University of Virginia, Charlottesville, USA
  - *Biophilic Cities: The Importance of Nature in Urban Life*

- **Fabienne Giboudeaux**
  - Deputy Mayor of Paris in charge of green spaces and biodiversity
  - City of Paris, France
  - *Elaboration and implementation of the Biodiversity Plan of the City of Paris*
## Day 1: Tuesday, May 21, 2013

### Discovering Urban Biodiversity

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Afternoon</strong></td>
<td><strong>Location: Parc du Mont-Royal, Maison Smith</strong></td>
</tr>
<tr>
<td>1:00 – 4:00 p.m.</td>
<td>Visit of the kiosks at the Maison Smith, 1260, chemin Remembrance</td>
</tr>
<tr>
<td></td>
<td>Open house</td>
</tr>
<tr>
<td></td>
<td>Meeting of the groups at the kiosks in the Maison Smith and an opportunity for various exchanges</td>
</tr>
<tr>
<td></td>
<td>• Centre de la Science de la Biodiversité du Québec</td>
</tr>
<tr>
<td></td>
<td>• Conférence régionale des élus de Montréal, Centre écologie urbaine, Soverdi, Conseil régional de l'environnement de Montréal, Espace pour la vie, Forum jeunesse de l’île de Montréal et Institut des sciences de l'environnement de l’UQAM</td>
</tr>
<tr>
<td></td>
<td>• Équiterre, la Caisse d’Économie Solidaire et la Commission for Environmental Cooperation of North America</td>
</tr>
<tr>
<td></td>
<td>• Gouvernement du Québec : Ministère du Développement durable, de l’Environnement, de la Faune et des Parcs; Ministère des Affaires municipales, des Régions et de l'Occupation du territoire</td>
</tr>
<tr>
<td></td>
<td>• ICLEI - Local Goverments for Sustainability</td>
</tr>
<tr>
<td></td>
<td>• Institut de la Francophonie pour le développement durable</td>
</tr>
<tr>
<td></td>
<td>• Secretariat of the Convention on Biological Diversity (CBD) and United Nations University</td>
</tr>
<tr>
<td></td>
<td>• Ville de Montréal, Direction des grands parcs et du verdissement</td>
</tr>
<tr>
<td>2:00 – 4:00 p.m.</td>
<td>First Visit</td>
</tr>
<tr>
<td></td>
<td>Biodiversity of the parc du Mont-Royal (30 min.)</td>
</tr>
<tr>
<td></td>
<td>(Arrival and departure: Maison Smith)</td>
</tr>
<tr>
<td></td>
<td>This walking tour showcases sites where interventions have been implemented in order to improve the park’s biodiversity. The tour also includes visits to special sites and projects such as: the bluebirds’ nesting site, the BioKit activity, planting along the ecological corridor, and research initiatives to control invasive species such as the Buckthorn and Norway maple. Animator: Mr. Claude Drolet, Coordinator of educational services, Les amis de la montagne. Walking tour (comfortable walking shoes recommended)</td>
</tr>
<tr>
<td></td>
<td>Group 1A In French (2:00 – 2:30 p.m.)</td>
</tr>
<tr>
<td></td>
<td>Group 1B In English (2:45 – 3:15 p.m.)</td>
</tr>
<tr>
<td>4:00 p.m.</td>
<td>Transfer from parc du Mont-Royal to the Botanical Garden</td>
</tr>
<tr>
<td></td>
<td><strong>Evening</strong></td>
</tr>
<tr>
<td>5:00 – 7:00 p.m.</td>
<td>Welcome Reception at the Botanical Garden</td>
</tr>
<tr>
<td></td>
<td>Welcome speech by Michel Labrecque, Curator, Botanical Garden</td>
</tr>
<tr>
<td></td>
<td>Cocktail - Dinner</td>
</tr>
<tr>
<td></td>
<td>Location: Complexe d’accueil at the Botanical Garden</td>
</tr>
<tr>
<td></td>
<td>Parking fee $12 (fixed rate for the evening)</td>
</tr>
<tr>
<td>7:00 p.m.</td>
<td>International guests return to their hotel</td>
</tr>
</tbody>
</table>
### Evaluating the Value of Urban Biodiversity

**DAY 2: WEDNESDAY, MAY 22, 2013**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 – 9:00 a.m.</td>
<td>Welcoming and Registration</td>
<td>at the Botanical Garden</td>
<td>Space for Life*, 4101, rue Sherbrooke Est</td>
</tr>
<tr>
<td>9:00 – 10:15 a.m.</td>
<td>Session A - Plenary Opening Session</td>
<td>at the Henry-Teuscher Auditorium of the Botanical Garden</td>
<td></td>
</tr>
<tr>
<td><strong>10:15 – 10:30 a.m.</strong></td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:30 – 11:45 a.m.</td>
<td>Session B1</td>
<td>The Value and Integration of Biodiversity by Cities</td>
<td>Location: Henry-Teuscher Auditorium</td>
</tr>
<tr>
<td>10:30 – 11:45 a.m.</td>
<td>Session B2</td>
<td>Reconciling Protection and Development</td>
<td>Location: Salle du Centre de la biodiversité</td>
</tr>
<tr>
<td><strong>11:45 a.m. – 1:30 p.m.</strong></td>
<td>Group 1: Lunch and Visit</td>
<td>Lunch</td>
<td>Group 2: Visit and lunch</td>
</tr>
<tr>
<td><strong>1:30 p.m.</strong></td>
<td>Group 2: Visit and Lunch</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Presentations**

**Session A - Plenary Opening Session**
- Suzanne Asselin - Master of ceremonies
- Anne Charpentier - Director, Montréal Insectarium | Space for Life, Ville de Montréal
- Marcel Lacharité - Directeur adjoint Administration, Finances et Information | IFDD - Institut de la Francophonie pour le développement durable, Québec, Canada
- Daniel Hodder - Division Head, Strategies, Programs and Policies | Direction des grands parcs et du verdissement, Ville de Montréal, Canada
- François Reeves - Interventional Cardiologist, Associate Clinical Professor of Medicine | Faculty of Medicine, department of Medicine, department of Environmental Science, Université de Montréal, Canada
- André Mader - Programme Director, Local Authorities and Biodiversity | Secretariat of the Convention on Biological Diversity (CBD), Montréal, Canada

**Session B1 - The Value and Integration of Biodiversity by Cities**
- President: Russell Galt, Program Manager | Local Governments for Sustainability, Cities Biodiversity Center, ICLEI Cape Town, South Africa
- Jacques Touchon - Deputy Mayor of Montpellier, Delegate for prevention, environment, healthcare and biodiversity | Montpellier, France
- José Bernal Stoopen - General Director of Zoological Parks and Wildlife | Ministry of the Environment, Mexico City, Mexico
- Wendy Yapp Hwee Min - Assistant Director, International Relations | National Parks Board, Singapore
- Jose Puppim de Oliveira - Assistant Director and Senior Research Fellow | United Nations University – Institute of Advanced Studies, Yokohama, Japan

**Session B2 - Reconciling Protection and Development**
- Président: Gérald Larose, Guest Professor at l’UQAM and Board Chairman of the Caisse d’économie solidaire Desjardins | Montréal, Canada
- Karel Mayrand - Executive Director, David Suzuki Foundation’s Québec Office and chairman of the Al Gore Climate Reality Project Canada | Fondation David Suzuki, Montréal, Canada
- Alan DeSousa - Borough mayor of Saint-Laurent | Le défi de l’Éco-Campus Hubert Reeves
- Benoit Limoges - Vice-President Biodiversity | Réseau Environnement, Montréal, Canada
- José Bernal Stoopen - General Director of Zoological Parks and Wildlife | Ministry of the Environment, Mexico City, Mexico
- Wendy Yapp Hwee Min - Assistant Director, International Relations | National Parks Board, Singapore
- Jose Puppim de Oliveira - Assistant Director and Senior Research Fellow | United Nations University – Institute of Advanced Studies, Yokohama, Japan

**Group 1: Lunch and Visit**
- Lunch
- Visit of the Biodiversity Center at the Botanical Garden | Space for Life
- Contact with SEDNA’s crew - the famous boat travelling the world to document environmental change.

**Group 2: Visit and lunch**
- Contact with SEDNA’s crew - the famous boat travelling the world to document environmental change.
- Visit of the Biodiversity Center at the Botanical Garden | Space for Life
- Lunch

*The Botanical Garden is located close to the Pie-IX metro station.*
DAY 2: WEDNESDAY, MAY 22, 2013

EVALUATING THE VALUE OF URBAN BIODIVERSITY

| 1:30 – 2:45 p.m. | Session C1 Valuation Tools and Methods  
Location: Henry-Teuscher Auditorium | Session C2 Mobilizing New Stakeholders  
Location: Salle du Centre de la biodiversité |
| --- | --- | --- |
| Président: Martin Joly  
Team Leader Ecological Heritage and Parks Management  
Ministry of Subsustainable Development, Environment, Wildlife  
and Parks, Québec, Canada | Présidente: Coralie Deny  
Executive Director  
Montréal Regional Environmental Council (CRÉ), Canada |
| Jean Nolet  
Chief Executive Officer  
ÉcoRessources, Québec, Canada  
Évaluation de la valeur des biens et services environnementaux : exemples québécois | William Grant Pearsell  
Director, Office of Biodiversity, Urban Planning and Environment  
Sustainable Development,  
City of Edmonton, Canada  
City of Edmonton’s Master Naturalist Program: Connecting with Leaders to Steward Urban Biodiversity |
| Luc Robitaille  
Corporate Director of Environment at Holcim Canada  
Chair of the Canadian Business and Biodiversity Council,  
Concord, Canada  
Urban Biodiversity Management at Holcim Canada | Andrew Rudd  
Human Settlements Officer, Urban Environment,  
Planning and Design Branch  
UN-Habitat, New York, USA  
Integrating Biodiversity Considerations in Urban Planning |
| David Maddox  
Founder and Editor  
The Nature of Cities, New York, USA  
Intentional Urban Ecology—A Pile of Stones Becomes a Palace | Nicole Marzok  
Project Coordinator, ICLEI Canada  
Toronto, Canada  
Mainstreaming and Engaging: How Local Governments are Bringing Together their Partners to Protect Biodiversity |

2:45 – 3:00 p.m. Break

3:00 – 4:00 p.m. Plenary Session D - Closing Panel at the Henry-Teuscher auditorium in the Botanical Gardens

Moderator: Daniel Hodder  
Division Head, Strategies, Programs and Policies  
Direction des grands parcs et du verdissement,  
Ville de Montréal, Canada

Fabiennne Giboudeaux  
Deputy Mayor of Paris in charge of green spaces and biodiversity  
City of Paris, France

Coralie Deny  
Executive Director  
Montréal Regional Environmental Council (CRÉ), Canada

Gérald Larose  
Guest Professor at l’UQAM and Board Chairman of the  
Caisse d’économie solidaire Desjardins  
Montréal, Canada

Robert A. Dubé  
Board Chairman  
Réseau Environnement  
Montreal, Canada

Jose Puppim de Oliviera  
Deputy Director and Senior Research Fellow  
United Nations University – Institute of Advanced Studies (UNU-IAS),  
Yokohama, Japan

4:10 p.m. Transfer from the Botanical Garden I Space for Life to Montréal City Hall

5:00 – 7:00 p.m. Reception at Montréal City Hall, 275, rue Notre-Dame Est

Official reception in honour of the International Day for Biological Diversity in the presence of Josée Duplessis (Ville de Montréal), Jean-Pierre Laniel (MDDEFP) and Didier Babin (Secretariat of the CBD)

Launch of the Biodiversity Report | 2013 - Ville de Montréal
### MEETING OF THE GLOBAL PARTNERSHIP ON LOCAL AND SUB-NATIONAL ACTION FOR BIODIVERSITY
(upon invitation only)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 a.m. -</td>
<td>Meeting of the Global Partnership on Local and Sub-national for Biodiversity</td>
</tr>
<tr>
<td>12:15 p.m.</td>
<td>(upon invitation only)</td>
</tr>
<tr>
<td></td>
<td>Location: Secretariat of the Convention on Biological Diversity (CBD)</td>
</tr>
<tr>
<td></td>
<td>413, rue Saint-Jacques, suite 800, Montréal QC H2Y 1N9</td>
</tr>
<tr>
<td></td>
<td>Tel: 514 288-2220</td>
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<tr>
<td></td>
<td><a href="http://www.cbd.int">www.cbd.int</a></td>
</tr>
<tr>
<td>13:00 p.m.</td>
<td>Departure of the Visits - Arrival and departure location: CBD (Square Victoria)</td>
</tr>
<tr>
<td>13:00 a.m. -</td>
<td>Description: Transportation by bus and lunch provided</td>
</tr>
<tr>
<td>17:15 p.m.</td>
<td><strong>Tour 3: Visit of the Technoparc and the Parc-nature du Bois-de-l’Île-Bizard</strong></td>
</tr>
<tr>
<td></td>
<td>(4 hours 15 minutes)</td>
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<tr>
<td></td>
<td>Description: Minibus and walking tour of the biodiversity at the Technoparc and the</td>
</tr>
<tr>
<td></td>
<td>Parc-nature du Bois-de-l’Île-Bizard</td>
</tr>
<tr>
<td></td>
<td>(comfortable walking shoes recommended)</td>
</tr>
<tr>
<td></td>
<td>In French and in English</td>
</tr>
<tr>
<td></td>
<td><strong>Evening</strong></td>
</tr>
<tr>
<td></td>
<td>Departure of the International Participants</td>
</tr>
<tr>
<td></td>
<td>(during the evening or following days)</td>
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</tbody>
</table>
The Montréal municipal administration would like to thank everyone who contributed to the success of this event.