



The Nature Project

EXECUTIVE SUMMARY

June 2012



David
Suzuki
Foundation

SOLUTIONS ARE IN OUR NATURE



Fondation de la Famille
Claudine et Stephen Bronfman | Créer et innover
Family Foundation



Fondation de la faune du Québec

This document is the executive summary of *Projet Nature – Rapport final*.

This executive summary, as well as the *rapport final du Projet Nature* (in French only), are available at www.fondationdelafaune.qc.ca and at www.davidsuzuki.org/fr.

The report and the summary were written by Janice Astbury and Michel Séguin under the direction of The Nature Project Steering Committee, composed of Claude Grondin of the *Fondation de la faune du Québec*, Karel Mayrand of the David Suzuki Foundation and Nancy Rosenfeld of the Claudine and Stephen Bronfman Family Foundation, with support from Benoît Mercille of the *Fondation Monique Fitz-Back*. Becky Van Bussel did the layout and graphic design.

The Nature Project — Executive Summary

Table of Contents

Introduction	1
Key Findings	3
A framework for developing a response	7
TABLE 1 — Types of interventions to include in an integrated approach to reuniting people and nature	8
FIGURE 1 — Types of linked interventions within a potential integrated approach	9
Pathways back to nature	11
Conclusion	14
References	15





Introduction

A growing body of research has confirmed that contact with nature offers tremendous physical, social and psychological benefits. Unfortunately, few of us are aware of this accumulating evidence or of the importance of developing and maintaining relationships with the natural world. Most of us simply do not make nature a part of our everyday lives. We spend most of our days inside a building or a vehicle while our children sit for hours in front of screens of one sort or another. This ‘nature deficit’ has a negative impact on our health and well-being. It also threatens the healthy growth and development of our children. Are we destined to end humanity’s special relationship with nature, source of immeasurable individual and collective riches? Or are there solutions to the challenge of nature deficit that will allow us to enjoy the benefits of nature in our everyday lives?

Beginning in 2011, the Claudine and Stephen Bronfman Family Foundation (CSBFF), the *Fondation de la faune du Québec* and the David Suzuki Foundation came together to better understand the relationship between people--particularly those living in urban settings—and nature. Their interest in this issue was the result of a common concern about an emerging problem often described as ‘nature deficit disorder’. This phenomenon is linked to the fact that increasingly large segments of the urban population have practically no contact with nature.

The three foundations undertook a process of participatory research¹, which was carried out through the following stages: (1) an extensive review of the literature in order to establish the extent of the problem and the state of knowledge in the field; (2) development of an empirical approach to respond to the questions identified by the three foundations and refined through the literature review; (3) documentation of approximately 100 existing practices and interviews with 33 people active in the field; (4) analysis of data and preparation of a preliminary report; (5) two meetings with 36 key actors in Montreal and Quebec City on January 23rd and 25th, 2012 to discuss the preliminary results and validate or propose next steps/ solutions; and (6) distillation of key findings and preparation of the final report on which this executive summary is based.

Before presenting the key findings, it is useful to look briefly at the ‘why’ of the Nature Project.



1 See Séguin and Tremblay (2005) for a discussion of participatory research methodology.



We speak of ‘nature’ knowing that it is an imprecise word that does not have the same meaning for everyone. At the same time, it is a commonly used term to describe everything that is not human (even if we understand that human beings are part of nature and that nature has often been subject to human intervention). We could have spoken of ‘biodiversity’ given that it is often the key element that we are trying to value and conserve. Biodiversity has garnered a lot of interest both from scientists and other stakeholders as well as those who depend directly on natural resources for their livelihoods. However, ‘nature’, i.e. that which touches people both physically and psychologically, is a term that is often difficult to define in a precise way; it has a broader meaning than ‘biodiversity’ or ‘natural resources’. It includes living and non-living elements. It communicates the existence of a world beyond that of human beings, which is not completely predictable or controllable, and does not exist only to meet human needs. The love of nature, which is sometimes described as ‘biophilia’, seems to be programmed into our DNA. Nature evokes feelings of well-being and of awe, a “sense of wonder” as described by Rachel Carson in 1965. In some individuals, these sensations provoke a desire to enter into and stay in contact with nature, and to protect it, while the sustained absence of this contact can have the opposite effect. Unfortunately, it is this absence that seems to be growing in our contemporary, highly urbanized and technology-dominated societies. This is the phenomenon that is discussed in this document, and for this reason the term ‘nature’ has been chosen to describe it.

This report focuses, on one hand, on the documented impact of ‘nature deficit’, and on the other hand, on the potential of enhanced relationships with nature to lead to pro-environment behaviours (especially those that support biodiversity conservation and the maintenance of healthy ecosystems). Other impacts and consequences are considered but the primary interest here is contact with nature leading to the development of both emotional ties with nature and the necessary knowledge to act in its favour. This is an important element in broader efforts to understand and confront current environmental issues; to find ways to protect our living world, thus simultaneously improving our quality of life and that of all living species.



Key Findings

La population montréalaise a un déficit nature, ils sont en manque de nature. Les jeunes, quand ils arrivent dans la forêt, sont très impressionnés. Ils ne se sentent pas en sécurité. Ils demandent s'il y a des animaux sauvages et il faut dédramatiser en leur disant qu'il y a des animaux mais qu'ils ne sont pas dangereux.²

Nature deficit is a serious and global problem. The consequences of having no contact with nature are severe. Numerous benefits related to contact with nature have been identified in terms of physical and mental health, and these benefits are particularly significant among children and disadvantaged populations (Barton & Pretty, 2010; Maller & Townsend, 2006; Maller *et al.*, 2006; Taylor & Kuo, 2006; Tzoulas *et al.*, 2007). Furthermore, many researchers have noted an association between contact with nature and pro-environment behaviours (Chawla, 1999; Chawla & Cushing, 2007; Cheng & Monroe, 2010; Kals, Schumacher, & Montada, 1999; Palmer & Suggate, 2006; Wells & Lekies, 2006).

The growing awareness of this problem and its effects can inspire a certain amount of optimism regarding its resolution. However, we must not underestimate the extent of the barriers to be overcome. We live in a context where knowledge about nature is generally lacking and fear of the perceived dangers of the outside world is rampant.

² Quotations are italicized and are drawn from statements made by respondents and participants in this research. The complete list of respondents and meeting participants along with a summary of key outcomes of the meetings are included in the final report.



The fear young people have of nature, as mentioned in the opening quotation, comes from a lack of experience of being in nature. It is compounded by the absence of capable guides or mentors to help young people understand and feel comfortable in nature, along with messages of anxiety about being outdoors put forward by parents and other authority figures.

Les enseignants ne vont pas en nature avec les jeunes, car ils ne savent pas identifier les oiseaux ou les arbres. C'est la même chose pour les familles, les parents ne savent pas identifier la nature les entourant, donc ils ne peuvent éduquer leurs jeunes.

...there is the fear on the part of parents. There is the issue of supervision of kids to allow them to go out on their own. They're restricted within the school system and at home.

To overcome ignorance and fear, one must first of all develop a positive emotional attachment.

Il faut un lien affectif pour vouloir protéger l'environnement. Les enfants ont besoin d'un contact sensuel. Comme quelqu'un de brillant a eu à dire : pour protéger, il faut aimer; pour aimer, il faut connaître. À l'école, on parle trop de protéger « la planète », c'est trop général, ça ne nous touche pas du point de vue affectif. Et une photo d'un oiseau n'est pas assez. Il faut en voir un vrai, entendre ses sons, voir ses mouvements, et ainsi passer dans l'émotion.

Il faut une expérience affective forte et idéalement lorsque nous sommes jeunes. Une fois que le lien affectif est établi, c'est facile d'aller chercher des connaissances.

Sometimes simply being in contact with nature is enough to like and understand it. However in a context of fear and ignorance, it is often insufficient.

(Schoolchildren doing nature workshop in a park) already know about some things in some ways but not in a way where you just come across it by chance. They don't have this experience of finding things in nature... This role of mentor that we play is important. It needs people who know the park well and know where to find things. The fact that we're there makes a big difference to the experience.

Accompaniment by someone who knows and loves nature (a parent, friend, teacher or other mentor) can maximize and multiply the positive impact of experiences in nature. This sort of accompaniment can calm fears and thus ensure that first experiences in nature are positive. Mentors can also transmit their knowledge and their passion for nature. They can share stories along with other cultural and historical references (associated with the place or with the cultures that people bring with them from elsewhere), which can contribute to making nature more meaningful.

Families and communities have key roles to play in this process but schools are also essential contributors. Engaged teachers; policies that mandate a certain number of days spent outside (and which overcome the multiple legal, institutional and physical barriers to getting outside); naturalization of schoolyards; and pre-schools/schools where most activities take place outside; these are examples of some of the elements that should be put into practice across the board.

Le plus important est de toucher le cœur des enseignants. Si l'enseignant est convaincu du bien-fondé du contact avec la nature, il va trouver le moyen d'aller dehors, il va en faire des expériences nature.

Interaction with nature permits the on-going development, consolidation and deepening of relationships with nature. Taking care of something leads to deeper emotional attachment (Fuller & Irvine, 2010). Furthermore, feeling one's interdependence with nature is a key factor in the multiplication of pro-environment behaviours. Having confidence in one's self and one's community, having the capacity to act and having people around us that support us; these are some of the essential ingredients in moving from values to action (Clayton & Myers, 2009), and these abilities often develop through action (Chawla & Cushing, 2007).

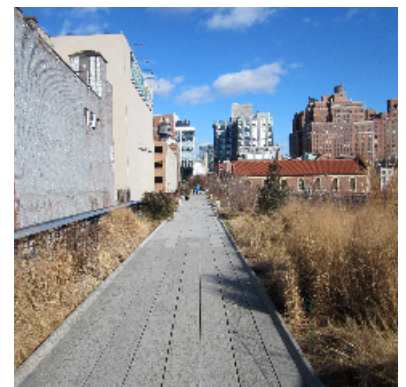
Il faut souligner l'importance des activités libres et porteuses comme ramasser le bois, faire un feu, pêcher...

People need to experience caring relationships with nature, relationships that are active and interactive. These occur most commonly in the garden where people really see the results of their actions--and where there is delayed gratification. A lot of natural cycles are longer-term than those to which people have become accustomed. It's important for people to understand, to absorb the pace and the working of natural systems in this very immediate way in order to be able to apply this understanding to broader natural systems.

The key factor in developing a meaningful relationship with nature is creating opportunities for people to be engaged--doing something, stewardship.

It appears that a profound and positive relationship with nature develops through a series of stages: discovery + emotional attachment + understanding + action. Effective programming will ensure that all of these elements are present and appropriately linked. There is no age limit for moving through these stages but they are ideally linked to those of human development. According to this logic, contact with the natural environment should begin early in life and then individuals should become progressively more active in their communities as they reach adolescence and later adulthood. This does not mean that very young children cannot take action, nor that adults should not enter into contact with nature for the first time, but rather that the most effective initiatives touch target audiences at strategic moments.

Many practitioners and researchers (Irvine *et al.*, 2008; Kaplan & Kaplan, 2003; Sarigöllü, 2009) emphasize that in order to develop an emotional attachment, one must have repeated contact with nature that permits attachment to a specific place. Some have noted that in an ideal world, everyone should have access to wilderness with the necessary mentorship to deal with and overcome any lack of experience and knowledge. However, the great majority insist that it is more important to enjoy regular and repeated contact with familiar and nearby nature than anything else. They point out that for increasingly urbanized populations, it is not realistic that this



regular contact take place in untouched “wild nature”. Investment should therefore first be directed to programming supporting contact with nature in the urban environment. Among respondents who have become naturalists or defenders of nature, many mentioned the fact that the awakening of their interest occurred in a vacant lot or in their backyards rather than in wilderness.

La meilleure façon de connecter les enfants à la nature c'est par la proximité, les écosystèmes plus proches. Si c'est en pleine ville, parlez-en des pigeons. Par la suite, les enfants vont aller regarder ce pigeon, essayer de comprendre comment il vit. Si on comprend ce qu'est un écosystème urbain, on peut comprendre tous les écosystèmes.

According to the 2006 Statistics Canada Census, 80 % of Quebecers and Canadians live in cities. This information confirms that regular contact with nature for most people must happen first and foremost in urban environments. This implies that in order to engage with and promote nature, and enjoy the multiple benefits associated with direct contact, access to nature must be assured for all urban dwellers. Urban nature has much more value than is generally acknowledged and the potential to value it and to enhance its quality and accessibility is very real!

La découverte que j'ai faite il y a plusieurs années de la qualité de la biodiversité en milieu urbain m'a vraiment motivée à protéger des milieux en région métropolitaine. La plus grande biodiversité du Québec se trouve au sud, dans la région de Laval et Montréal. Les gens ne sont pas conscients de cela, il faut le leur montrer, le leur enseigner. Végétations, plans d'eau (marais, marécages), faune, insectes.... il faut garder les habitats!!!

While the emphasis should be on work on cities, it must be borne in mind that urban lifestyles are not unique to cities and therefore strategies must also be adopted in less densely populated areas. The importance of supporting activities in wilderness areas must not be neglected either.

Il ne faut pas oublier le patrimoine naturel hors ville. Les camps de vacances disparaissent et les espaces naturels aussi, il ne faut pas perdre ce que l'on a. L'impact de passer plus de 24 heures en nature est grand. Il ne faut pas négliger ce point.

L'augmentation de la fréquentation des parcs démontre aussi qu'il y a une tendance lourde au niveau de la recherche de contact avec la nature. En 2000, on comptait 2,6 millions de visiteurs alors qu'en 2010 ils sont rendus à 4,5 millions de visiteurs. Les gens répondent bien aux nouveaux services offerts, comme les nouveaux sentiers et nouveaux lieux de camping ou encore les tentes Utopia déjà installées permettant une expérience de camping plus facile.

How do we connect urban nature to the broader natural world? Is it possible to link experiences in urban environments to comprehension of nature everywhere? Can the experience of nature in our backyard lead us to understand that it is part of a large and complex natural system? One respondent told the story of how his son had incorrectly identified a bird during a recent walk in the forest. He saw this as a positive event because his son was observing and looking for birds like those that he saw at home--and he was capable of identifying birds resembling those he knew thanks to experiences in his backyard. The boy's interest in birdwatching would not have been awakened without the backyard experience.

If you're in a pocket park in Pittsburgh and you want to connect it to the wildlife reserve, you talk about how the birds and squirrels need a place to be, and similarly the brown bears need a place to be—a big place to be!

Urban nature has the capacity to provide connection but it depends on how you frame it to be seen. It's about learning to see it in cities, making it visible. Nature is there; there is urban wildlife and rivers and parks. Take Montreal, there is a lot of potential. The organizations, the municipal government have the capacity to cast Montreal as a natural environment.

The problem of nature deficit is clearly large and complex. No single sector or institution or organization (be it public, private or community-based) can resolve it. This creates some particular challenges.

C'est un défi pour tous les secteurs touchés par cette question, mais ce n'est pas le « gagne-pain » ou la raison d'être d'aucun secteur ou de personne en particulier.

Collaboration among all sectors and stakeholders is thus essential. So how can we all begin to assume our responsibilities to seek the required solutions?

A framework for developing a response

The above findings indicate that the challenge can be outlined as follows:

- The necessary conditions must be created to encourage multiplication of opportunities to enter into contact with nature in accordance with the formula DISCOVERY + EMOTIONAL ATTACHMENT + UNDERSTANDING + ACTION;
- This will only be possible through taking into account the numerous challenges that need to be overcome (including fear and questions of liability, along with lack of: information, opportunities, capable mentors and access to high quality nature);
- In this way, we can ensure that everyone can enjoy the benefits of nature while also contributing to its protection.

Table 1 below outlines the categories of key interventions that would likely form part of a strategic and integrated approach to reuniting people with nature. For each type of intervention, target audiences and infrastructure, as well as anticipated results and necessary supports, are indicated. Figure 1 represents an attempt to illustrate the 'landscape' of linked interventions.



Table 1 —Types of interventions to include in an integrated approach to reuniting people and nature

TARGET	YOUNG CHILDREN					URBAN LANDSCAPES			ADOLESCENTS		
ANTICIPATED RESULTS	Regular contact with nature					High quality urban nature			Involvement in protecting and enhancing nearby nature		Forays into wilderness
ACTIVITIES	Playing outside		Active Transport			Protect	Enhance	Restore	Community action		Supported outings/ expeditions
MENTORS	Parents		Community actors	Education sector		Adults should contribute to the enhancement of urban landscapes and are also a secondary target audience (both directly and indirectly through their roles in accompanying children and youth)			Organizations that support <i>civic ecology</i> and are equally concerned with youth participation and development and environmental issues		
	Amateur naturalists and nature-focused clubs	Cultural	Daycares/ pre-schools	Engaged teachers							
COMPETENCIES TO BE DEVELOPED	Basic 'nature literacy'		Capacity to perceive urban nature		Skills for interacting with nature (e.g. gardening, fishing, habitat enhancement)		Adults will develop the range of competencies suggested for young children and adolescents but through more informal routes			Skills for protecting, enhancing and restoring nature	Collaborative leadership
NECESSARY SUPPORTS	Information – both to increase understanding of nature and to facilitate access to activities	Services (particularly those that offer support for children's autonomy)	Events to introduce children to new activities and to develop social bonds (<i>while taking advantage of existing activities and mentors</i>)			For adults, spontaneous opportunities to discover and connect with nature linked to activities for children and adolescents (<i>in targeting young people, those that accompany them are also affected</i>)			Mentorship		Opportunities to get involved in projects
PROVIDERS	Municipalities, NGOs, private sector, schools, nature museums, parks (municipal, provincial and national)					Municipalities, NGOs, private sector			Municipalities, NGOs, private sector, parks		
FUNDERS	Education, recreation and health sectors; private sector					Environment, recreation and health sectors; private sector			Youth development and employment sectors		

Figure 1 — Types of linked interventions within a potential integrated approach





Looking at the above table and accompanying figure, it seems evident that simultaneous efforts are required in two key areas: (a) improving the **quality of urban nature** (and the capacity to appreciate wilder, i.e. less manicured, urban spaces) and (b) increasing **opportunities for contact with nature**.

For children and youth, increasing contact with nature means above all (a) **playing outside** (or later on, spending leisure time outside) particularly in **non-structured** ways; (b) getting involved in **interactive activities with nature** (e.g. gardening); and (c) as much as possible, using **active transport** to travel to and from school and other daily destinations. Links can be developed or reinforced among these interventions. For example, adolescents could contribute to improving the quality of urban nature, which young children would then discover. In parallel, adults would benefit directly from their contact with high quality nature and would be co-beneficiaries when accompanying children in their activities—and adults could also of course contribute to enhancing nature.



How should implementation of all of these elements be envisaged? We suggest that any local or regional initiative should be defined and developed within the context in which it will be carried out. A first step is to map the **structure of existing opportunities** for children, youth and adults to access nature. In making the connection between what already exists and what should exist, we can begin to create and implement **the ideal structure of opportunities**. In other words, based on existing actors and their activities, as well as available and accessible natural areas, new opportunities should be created and those that already exist should be reinforced and further developed. Maximizing participation and improving the quality of natural spaces must remain a central objective at all times in order to move from the existing structure of opportunities to the ideal structure.





Pathways back to nature

In order to respond to the challenges described above, and with the assistance of the framework presented in the last section, six areas for action have been identified. For each area, some examples of promising practices³ are provided in order to stimulate reflection about scaling up existing initiatives, and creating new ones.

1 Increasing quality and quantity of urban nature —

making urban green space more accessible and more natural, with more opportunities for interaction with nature (both alone and in the company of others); the range of urban nature should align with the “discovery + emotional attachment + understanding + action” process.

Promising practices for offering accessible, high quality urban nature

- *Citizen-led renaturalization: Ruelle champêtre Henri-Julien/Drolet in Montreal (www.sites.google.com/site/ruellechampetre); Boisés-des-douze in St-Hyacinthe (www.boisedesdouze.org)*
- *Preservation and enhancement of existing parks: Mount Royal in Montreal (www.lemontroyal.com/en) and Rouge Park in Toronto (www.rougepark.com)*

³ All of the identified examples of promising practices, along with a more thorough discussion of potential solutions, is available in the (French only) final report.



- *Large scale regeneration: Evergreen Brickworks in Toronto (ebw.evergreen.ca); St-Michel Environmental Complex in Montreal (tohu.ca/en/CESM); the St-Charles river in Quebec City (www.ville.quebec.qc.ca/en/rivierestcharles)*
- *Municipal policies that mandate accessible nature (5 to 10 minutes on foot) for all in Vancouver (vancouver.ca/greencity) and in New York (www.nyc.gov/html/planyc2030/html/theplan/public-spaces.shtml)*

2 Give children back their freedom

— the necessary supports should be put in place to reassure parents, schools and other organizations involved in caring for children. Public discourse needs to change so that people understand that adventurous activities in outdoor spaces that are not subject to constant control by adults are necessary for children's development; that they contribute to improved health and increased ability to stay safe in the longer term.

Free-range kids

- *Outdoor daycare and kindergartens: There are existing models where most or all activities take place outdoors, notably in Scandinavia, Germany and Scotland. A pilot project based on this model is scheduled to begin in British Columbia in September 2012 (naturekindergarten.sd62.bc.ca).*
- *"Take Our Children to the Park...And Leave Them There Day" in the U.S. (freerangekids.wordpress.com)*
- *Walking School Bus (www.walkingschoolbus.org/resources.html)*

3 Increase opportunities for learning through accompaniment by mentors who know and love nature

which means: (a) support individuals and organizations who are passionate and well-informed, able to offer activities that are attractive to young people and can make links between

urban nature and the wider natural world; (b) inform citizens of the opportunities available; (c) find ways to reassure parents with respect to 'strangers'; (d) help parents and teachers to improve their own knowledge and enjoyment of nature

Mentors par excellence

- *Passionate individuals: Je pêche à la mouche in Montreal (www.jepechealamouche.com); Green Club in Vancouver (www.greenclub.bc.ca)*
- *Urban rangers in parks in New York (www.nycgovparks.org/programs/rangers) and Los Angeles (laurbanrangers.org) who offer nature interpretation and guided visits*
- *Experiential education for teachers: Forest School training in the UK (www.forestschoools.com); Summer Institute, Canadian Wildlife Federation (www.cwf-fcf.org/en/educate/programs/learning-institute/summer-course)*
- *Support for parents: Famille nature: jouer dehors au Québec manual by Michel Leboeuf (www.editionsmichelquintin.ca/livre/famille-nature); Family Nature Clubs in the U.S. (www.childrenandnature.org/movement/naturalfamilies/clubs)*

4 Offer everyone (and especially adolescents) opportunities to take action to enhance local nature;

support eco-citizenship or civic ecology initiatives (Tidball & Krasny, 2010)

Supporting Eco-citizenship

- *C-Vert in Montreal, Gatineau and Quebec City (www.c-vert.org)*
- *Student Conservation Association in the U.S. (www.thesca.org)*
- *Urban Bushcare and Landcare in Australia (www.landcareonline.com)*
- *Friends of parks in the UK (Glasgow example: www.glasgow.gov.uk/en/Residents/Parks_Outdoors/Parks_gardens/friendsofglasgowsparks.htm)*

5 Change public discourse regarding the value of urban nature and the importance of regular contact

with nature; put in place public policies, private initiatives and community actions that support these values in an integrated way (recognizing the environment, health, education and sustainable development elements involved)

Cross-sectoral public policy

The UK released a White Paper in June 2011 entitled The Natural Choice: securing the value of nature that “places the value of nature at the centre of the choices the nation must make to enhance environment, economic growth and personal well-being” (www.defra.gov.uk/environment/natural/whitepaper).

Reconceptualizing the city as a natural ecosystem

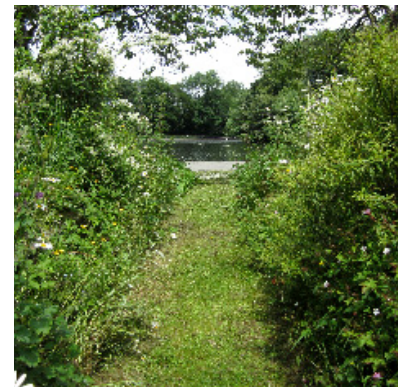
The Community Forest initiative in England recasts cities (with their forest fragments and street trees) as forests and encourages residents to see themselves as integral parts of the forest ecosystem with a role to play in enhancing it (www.communityforest.org.uk). Similarly in the U.S., some cities are redefining themselves thanks to efforts by organizations like Chicago Wilderness (www.chicagowilderness.org) and the publishing of guides such as the Field Guide to the Natural World of New York City (www.fieldguidenyc.com).

6 Celebrate the natural riches of cities by linking interaction with nature, better neighbourhoods and improved quality of urban life

for all with events like ‘Nature Days’, which would be at the heart of a panoply of initiatives, actions and policies. The impact of this large scale event, celebrating both that which already exists and that still to come, will be such that the bridge linking urban nature and wilderness and biodiversity conservation can be reinforced for the benefit of all. Such a celebration would have the power to mobilize and incite individual as well as collective action in support of biodiversity and the natural environment.

Culture Days (but for nature!)

- *Journées de la culture, three days of interactive activities, discovery and appreciation of arts and culture, offered free to the public throughout Quebec (www.journeesdelaculture.qc.ca/about-us.html) and now celebrated Canada-wide (www.culturedays.ca)*
- *Fête de la nature (www.fetedelanature.com) in France*



Conclusion

Since research for The Nature Project began, studies and reports concerning the problem of nature deficit have multiplied, and new initiatives have been launched in a number of countries; all of which highlights the importance of the issue. This executive summary does not permit a detailed discussion, and nor does the complete final report do justice to the wealth of evidence and examples now available. As new information continued to appear weekly, we realized that our report would not necessarily succeed in capturing the full story in all its complexity. It was however clear that we should not wait to act. The urgency of sharing this portrait of the situation with everyone already involved in work on the ground, as well as those who are ready or able to get involved, seemed to us to be the priority. We hope that this summary, as well as the full report from which it is drawn, will contribute to facilitating the collaboration necessary to support the reuniting of people and nature. We are convinced that we will be increasingly numerous in this effort because of the real benefits for both our environment and our own physical and mental well-being.

Have you noticed the different leaves that appear throughout the text? They are leaves of indigenous trees found in Quebec, which are listed below and also on the back cover. In reading this summary, hopefully you have not only gained a new perspective on a key environmental issue but have also become a bit more aware of Quebec's ecological heritage. In effect, you now hold in your hands a mini-guide permitting the identification of certain marvels of this natural heritage that is present and growing around you. And should it be absent, then these illustrations can provide you with a menu for tree-planting that will enhance your environment and enrich your own daily life--and that of other members of your community. If you would like to find out more, please consult the final report *Projet Nature – Rapport final*, which presents a more thorough reflection on this important issue, as well as providing a multitude of examples and tangible means to get you ever closer to nature!

	Front cover: <i>Fraxinus pennsylvanica</i> (Green ash)		Page 5: <i>Juglans cinerea</i> (Butternut walnut)
	Table of Contents: <i>Ulmus americana</i> (White elm)		Page 7: <i>Acer spicatum</i> (Mountain maple)
	Page 1: <i>Populus balsamifera</i> (Balsam poplar)		Page 10: <i>Quercus alba</i> (White oak)
	Page 2: <i>Rhus typhina</i> (Staghorn sumac)		Page 11: <i>Betula papyrifera</i> (White birch)
	Page 3: <i>Acer rubrum</i> (Red maple)		Page 13: <i>Salix nigra</i> (Black willow)

References

The references cited in the text as well as some other key references are provided here. The full list is available in the final report.

- Barton, J., & Pretty, J. (2010). Urban Ecology and Human Health and Wellbeing. In K. Gaston (Ed.), *Urban Ecology* (pp. 202-229). Cambridge: Cambridge University Press.
- Beatley, T. (2010). *Biophilic Cities: Integrating Nature Into Urban Design and Planning*. Island Press.
- Cardinal, F. (2010). *Perdus sans la nature: pourquoi les jeunes ne jouent plus dehors et comment y remédier*. Québec Amérique.
- Carson, R. (1965). *The Sense of Wonder*. New York: Harper & Row.
- Chawla, L. (1999). Life paths into effective environmental action. *The Journal of Environmental Education*, 31(1), 15–26. Heldref Publications.
- Chawla, L., & Cushing, D. F. (2007). Education for strategic environmental behavior. *Environmental Education Research*, 13(4), 437-452.
- Cheng, J. C.-H., & Monroe, M. C. (2010). Connection to Nature: Children's Affective Attitude Toward Nature. *Environment and Behavior*, 44(1), 31-49.
- Clayton, S., & Myers, O. G. (2009). *Conservation psychology: understanding and promoting human care for nature*. Wiley-Blackwell.
- Cranz, G., & Boland, M. (2004). Defining the Sustainable Park: A Fifth Model for Urban Parks. *Landscape Journal*, 23(2), 102-120.
- Dunn, R. R., Gavin, M. C., Sanchez, M. C., & Solomon, J. N. (2006). The pigeon paradox: dependence of global conservation on urban nature. *Conservation biology : the journal of the Society for Conservation Biology*, 20(6), 1814-6.
- Fuller, R. A., & Irvine, K. N. (2010). Interactions between people and nature in urban environments. In K. J. Gaston (Ed.), *Urban Ecology* (pp. 134-171). Cambridge University Press.
- Gaster, S. (1991). Urban Children's Access to their Neighborhood: Changes Over Three Generations. *Environment and Behavior*, 23(1), 70-85.
- Gobster, P. H. (2011). Appreciating Urban Wildscapes. In A. Jorgensen & R. Keenan (Eds.), *Urban Wildscapes* (pp. 33-48). Routledge.
- Irvine, K. N., Fuller, R. A., Devine-wright, P., Tratalos, J., Payne, S. R., Warren, P. H., Lomas, K. J., et al. (2008). Ecological and Psychological Value of Urban Green Space. In M. Jenks & C. Jones (Eds.), *Dimensions of the Sustainable City* (Vol. 2, pp. 215-238). Dordrecht: Springer Netherlands.
- Kals, E., Schumacher, D., & Montada, L. (1999). Emotional Affinity toward Nature as a Motivational Basis to Protect Nature. *Environment and Behavior*, 31(2), 178-202.
- Kaplan, R., & Kaplan, S. (1989). *The experience of nature: a psychological perspective*. Cambridge University Press.
- Kaplan, S., & Kaplan, R. (2003). Health, supportive environments, and the Reasonable Person Model. *American journal of public health*, 93(9), 1484-9.
- Kellert, S. (1996). *The value of life: biological diversity and human society*. Washington, D.C.: Island Press.
- Larson, L., Whiting, J., & Green, G. (2011). Exploring the influence of outdoor recreation participation on pro-environmental behaviour in a demographically diverse population. *Local Environment* 16(1), 67-86.
- Leboeuf, M. (2008). *Famille Nature: Jouer Dehors Au Québec*. Quintin Publishers/Éditions Michel Quintin.
- Leboeuf, M. (2010). *Nous n'irons plus au bois*. Vélo-Québec Éditions.
- Lohr, V. I. (2007). Benefits of Nature: What We Are Learning about Why People Respond to Nature. *Journal of Physiological Anthropology*, 26(2), 83-85.
- Loukaitou-Sideris, A. (1995). Urban Form and Social Context: Cultural Differentiation in the Uses of Urban Parks. *Journal of Planning Education and Research* 14(2), 89-102.
- Louv, R. (2005). *Last child in the woods: saving our children from nature-deficit disorder*. Chapel Hill, NC: Algonquin Books.
- Maller, C., & Townsend, M. (2006). Children's mental health and wellbeing and hands-on contact with nature. *International journal of learning*, 12(4), 1447-9494.
- Maller, C., Townsend, M., Pryor, A., Brown, P., & St Leger, L. (2006). Healthy nature healthy people: "contact with nature" as an upstream health promotion intervention for populations. *Health promotion international*, 21(1), 45-54.
- Manfredo, M., Teel, T., & Bright, A. (2003). Why Are Public Values Toward Wildlife Changing? *Human Dimensions of Wildlife*, 8(4), 287-306.
- Mayer, F., & Frantz, C. (2004). The connectedness to nature scale: A measure of individuals' feeling in community with nature. *Journal of Environmental Psychology*, 24, 503-515.
- Miller, J. (2006). Restoration, reconciliation, and reconnecting with nature nearby. *Biological Conservation*, 127(3), 356-361.
- Nabhan, G. P., & Trimble, S. (1995). *The Geography of Childhood: Why Children Need Wild Places*. Beacon Press.
- NEETF, & Roper Starch Worldwide. (2001). *Lessons from the Environment: The ninth annual report card on environmental attitudes, knowledge and behaviour*. Washington, DC: National Environmental Education and Training Foundation.
- Newell, P. B. (1997). A Cross-Cultural Examination of Favorite Places. *Environment and Behavior*, 29(4), 495-514.
- Palmer, J. A., & Suggate, J. (2006). Influences and Experiences Affecting Educators Influences and Experiences Affecting the Pro-environmental Behaviour of Educators. *Environmental Education*, (March 2012), 37-41.
- Sarigollu, E. (2008). A Cross-Country Exploration of Environmental Attitudes. *Environment and Behavior*, 41(3), 365-386.
- Séguin, Michel et François Tremblay (2005) « La recherche participative et l'écocitoyenneté ». *Nouvelles Pratiques sociales de l'UQAM*, vol.18, no.1, 117-130.
- Shultis, J., & More, T. (2011). American and Canadian National Park Agency Responses to Declining Visitation. *Journal of Leisure Research*, 43(1), 110-132.
- Sister, C., Wolch, J., & Wilson, J. (2010). Got green? addressing environmental justice in park provision. *GeoJournal*, 75(3), 229–248. Springer.
- Strife, S., & Downey, L. (2009). Childhood Development and Access to Nature: A New Direction for Environmental Inequality Research. *Organization & Environment*, 22(1), 99-122. SAGE.
- Taylor, A., & Kuo, F. (2006). Is contact with nature important for healthy child development? State of the evidence. In C. Spencer & M. Blades (Eds.), *Children and their Environments: Learning, Using And Designing Spaces* (pp. 124-140). Cambridge University Press.
- Teel, T., Manfredo, M., & Stinchfield, H. (2007). The Need and Theoretical Basis for Exploring Wildlife Value Orientations Cross-Culturally. *Human Dimensions of Wildlife*, 12(5), 297-305.
- Tidball, K. G., & Krasny, M. E. (2010). Urban environmental education from a social-ecological perspective: conceptual framework for civic ecology education. *Cities and the Environment*, 3(1), 1–20.
- Tzoulas, K., Korpela, K., Venn, S., Ylipelkonen, V., Kazmierczak, A., Niemela, J., & James, P. (2007). Promoting ecosystem and human health in urban areas using Green Infrastructure: A literature review. *Landscape and Urban Planning*, 81(3), 167-178.
- UK Department of Environment of Environment Food and Rural Affairs (DEFRA) (2011). *The Natural Choice: securing the value of nature*.
- Wells, N. M., & Lekies, K. S. (2006). Nature and the life course: Pathways from childhood nature experiences to adult environmentalism. *Children, Youth and Environments*, 16(1), 1–24.



Front cover:
Fraxinus pennsylvanica
(Green ash)

Table of Contents:
Ulmus americana
(White elm)

Page 1:
Populus balsamifera
(Balsam poplar)

Page 2:
Rhus typhina
(Staghorn sumac)

Page 3:
Acer rubrum
(Red maple)

Page 5:
Juglans cinerea
(Butternut walnut)

Page 7:
Acer spicatum
(Mountain maple)

Page 10:
Quercus alba
(White oak)

Page 11:
Betula papyrifera
(White birch)

Page 13:
Salix nigra
(Black willow)



David
Suzuki
Foundation

SOLUTIONS ARE IN OUR NATURE



Fondation de la Famille
Claudine et Stephen Bronfman
Family Foundation

Créer et innover



25
ans

Fondation de la faune du Québec