March 31, 2022

Prepared by: The Estuary Group Inc.

SUSTAINING CANADIANS:

How Protected and Conserved Areas Can Support Canadian Society as a Whole

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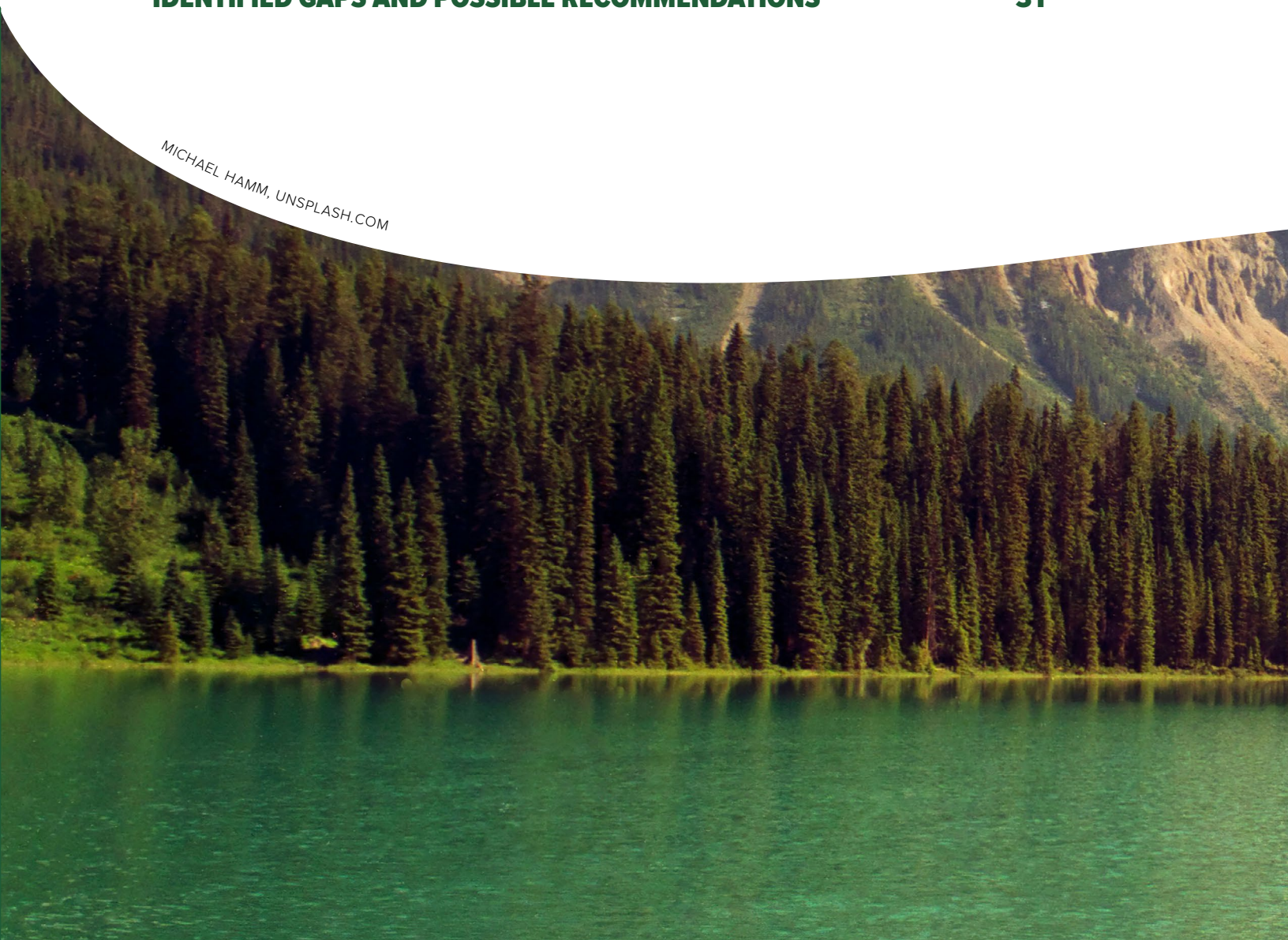
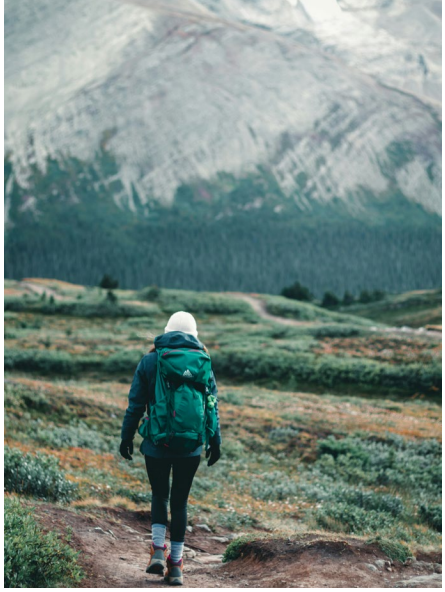


MICHAEL HAMM, UNSPLASH.COM

EXECUTIVE SUMMARY

Biodiversity — the sum of all living things — is essential to human survival. It provides us with clean water, clean air, medicine and food. It underpins our economies and our societies. And it sustains our physical, mental and social wellbeing.

Protected and conserved areas are the cornerstone of biodiversity conservation. Yet they also provide a wide range of social, economic and cultural benefits that help deliver on broader government priorities. The purpose of this report is to effectively highlight these benefits, as part of efforts to support the Pathway process.



ALI KAZAL, UNSPLASH.COM

Almost 9 in 10 Canadians say that the more 'connected' they feel to nature, the happier they are.

Improved Access to Nature

Canadians value nature for the benefits it provides in terms of recreation and rejuvenation, physical and mental wellbeing, spirituality and quality of life.

Almost 9 in 10 Canadians say that the more 'connected' they feel to nature, the happier they are. However, we are increasingly disconnected from nature as a society. Canada is increasingly urbanized, and access to nature in urban areas can be inequitable.

Local protected areas can play a particularly vital role in improving access to nature for Canadians, particularly in urban areas. For example, they provide important gathering places for families and community members of all ages and of all different socio-economic backgrounds. Access to urban parks and the recreational opportunities they offer has been linked to reductions in crime, lower levels of vandalism, and reduced delinquency in youth.

Canada's Public Health Officers and Medical Officers of Health have recommended active play in nature and the outdoors as being essential to healthy child development.

Physical and Mental Wellbeing

Some of the most powerful benefits that protected and conserved areas provide are the many ways in which they support our physical and mental health at all stages of life.

For example, regular access to nature through protected areas can help prevent serious illness, while also helping us to recover faster. It can also help reduce, treat and manage a range of diseases, such as coronary heart disease and stroke, Type 2 diabetes, and even dementia.

Parks and other green spaces can also help improve mental health in a variety of ways. For example, they can help ease depression and anxiety, improve sleep and overall mood, and can play a critical role in both cognitive and emotional development in children.

These benefits are so powerful that Canada's Public Health Officers and Medical Officers of Health have recommended active play in nature and the outdoors as being essential to healthy child development.

Enhanced Quality of Life

Protected and conserved areas can play an important role in enhancing quality of life for Canadians while producing powerful benefits for Canadian society as a whole.

For example, local protected areas and trail systems can help both attract new businesses and families to an area, while also playing an important role in retaining existing populations. Quality parks and recreation opportunities are often cited as one of the top three drivers informing business location and are also often quoted by citizens as being what makes their communities liveable.

In addition, studies suggest that access to nature through protected and conserved areas can offer strong public health benefits, by contributing to reduced rates of crime, strengthened family connections and decreased domestic violence.

Reconnections to Land

A growing body of research suggests that connections to nature that go beyond simply having access to green space are essential to our health and wellbeing. Protected and conserved areas can be critical conduits for this connection.

For example, protected and conserved areas can provide 'living' classrooms, which not only enhance environmental learning and literacy but also foster outdoor play, collaboration and problem-solving.

These connections in turn can help shape long-term attitudes to nature and the importance of conserving it. The relationships people have with nature deeply influence their behaviour towards the environment, particularly in children, whose development and future conservation ethic is formed in part by these direct experiences.

Reconciliation with Indigenous Peoples

Indigenous peoples around the world are critically important leaders in stewardship and conservation, with deep and direct connections with the lands and waters they have stewarded since time immemorial.

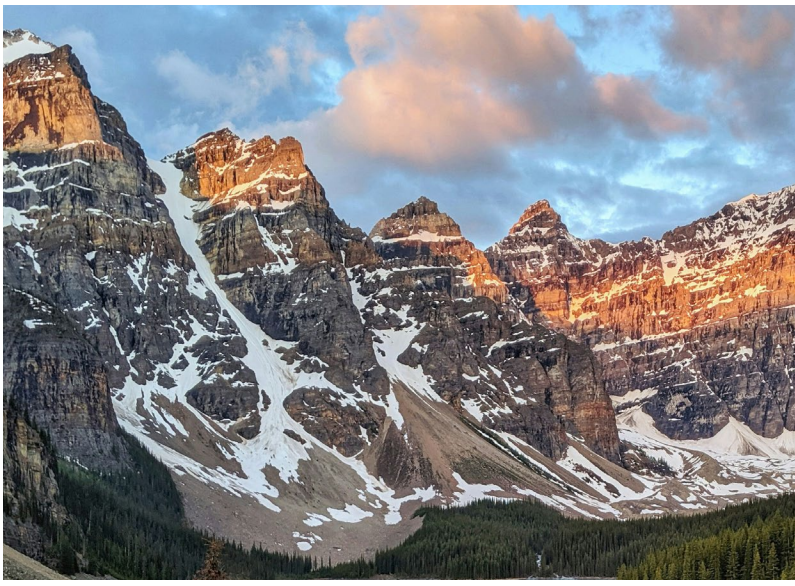
Yet the history of many existing parks and protected areas is one of displacement and alienation for Indigenous communities. Given this history, many protected area agencies have begun work to advance reconciliation with Indigenous peoples.

At the same time, Indigenous-led conservation — including the establishment of Indigenous Protected and Conserved Areas and Indigenous Guardians that help steward them — offers an important beacon of hope.

Finally, IPCAs can provide powerful economic benefits to Indigenous communities, including direct employment as well as opportunities for the broader local and regional economies in which they are located. For some communities, they also represent an opportunity to 'seed' new conservation-based economies as an alternative economic future that emphasizes community and cultural wellbeing and connection to land.

IPCAs are explicitly designed to conserve the ecological and cultural values important to the nations pursuing them. They offer powerful benefits for species and habitat conservation, especially for culturally significant species. They can help maintain and revitalize Indigenous traditions, languages and culture, as well as facilitating intergenerational transfer of traditional ecological knowledge between Elders and youth.

In addition, studies in both Australia and Canada have underscored the powerful benefits associated with Indigenous Guardians programs. Investments in Guardians have been found to generate a return on investment — in terms of economic, cultural and social values — of as much as ten dollars for each dollar invested.



JACKY HUANG, UNSPLASH.COM

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Direct Economic Benefits

Protected and conserved areas create jobs, generate tax revenue for governments, help local businesses thrive, and promote economic diversification, particularly in rural and remote areas. They also play a powerful role as an engine of domestic and international tourism.

For example, in 2009, parks agencies spent $0.8 billion on their operations. Parks visitors in turn spent an estimated $4.4 billion that same year. These expenditures then contributed an estimated $4.6 billion to Canada's GDP as well as $0.3 billion in tax revenue, while also supporting more than 64,000 jobs.

A 2020 global report found that protecting 30% of the world's lands, waters and oceans would generate an extra $64 to $454 billion in global economic output by the year 2050, largely as a result of an increase in global nature-based tourism and its associated benefits.

Many of these direct economic benefits are expected to grow as protected and conserved areas expand across Canada and the world. For example, a 2020 global report found that protecting 30% of the world's lands, waters and oceans would generate an extra $64 to $454 billion in global economic output by the year 2050, largely as a result of an increase in global nature-based tourism and its associated benefits.

Indirect Economic Benefits

There are also a host of indirect economic benefits associated with protected and conserved areas in Canada. For example, the ecosystem services provided by Parks Canada sites alone have an estimated annual value of $329 billion, including climate regulation, the provision of habitat for key species, and nutrient cycling.

There are also important commercial benefits associated with protected areas that go beyond direct jobs and consumer spending. For example, a Nova Scotia study found that protected areas in that province helped to create a positive investment climate, boosted its tourism brand and supported a range of new and innovative business models.

In addition, the improvements to mental health from protected areas and access to nature can help reduce healthcare costs, improve workplace productivity and strengthen public health outcomes. In fact, a recent global study of the economic value of improved mental health for visitors to protected areas estimated its global value at $6 trillion US every year — several orders of magnitude greater than the sum total of all global protected area agency budgets combined.

NEED AND CONTEXT

Biodiversity — the sum of all living things — is essential to human survival. It provides us with clean water, clean air, medicine and food. It underpins our economies and our societies. And it sustains our physical, mental and social wellbeing.

Given its importance to all aspects of life on earth, loss of biodiversity is a clear and serious issue for policy-makers and citizens alike.

Rapid decline of biodiversity has been identified around the world, with a 2019 global assessment stating that human actions now threaten more species with global extinction 'than ever before'[1]. Even in Canada, populations of many species at risk have dropped almost 60% since the 1970s[2].

Protected and conserved areas are a critically important tool in safeguarding biodiversity. They protect vital areas such as intact and/or carbon-rich ecosystems. They also conserve critical habitat for key species, including those threatened with extinction.

For example, species richness and abundance are typically higher within protected and conserved areas than outside of them[3]. For this reason, the United Nations Convention on Biological Diversity calls protected areas 'the cornerstone of biodiversity conservation'[4].

Global efforts to stem the tide of biodiversity decline are informed by the United Nations Convention on Biological Diversity (CBD)[5].

In Canada, responsibility for biodiversity stewardship is shared among federal, provincial and territorial (FPT) governments. Indigenous and local governments also play a critical role in conservation efforts.

The United Nations Convention on Biological Diversity calls protected areas 'the cornerstone of biodiversity conservation'

Previously, Canada Target 1 related to protecting at least 17% of lands and inland waters, and 10% of marine and coastal areas, through networks of protected areas and other effective area-based conservation measures (OECMs) that meet national standards[6].

In 2016, FPT governments launched a highly collaborative process to advance area-based conservation across Canada[7]. This process, referred to as the Pathway to Canada Target 1 initiative, was informed by recommendations from two advisory committees — a National Advisory Panel and an Indigenous Circle of Experts – and continues to be guided by a National Steering Committee (NSC) that includes local and Indigenous participants in addition to FPT partners.

The Pathway process has been instrumental in accelerating progress towards shared conservation goals, including the establishment of a pan-Canadian framework supported by definitions for recognizing and reporting on protected areas and other effective conservation measures (OECMs) and guidance on Indigenous protected and conserved areas (IPCAs). Since 2015, an estimated 300,000 km² have been added to Canada's networks of protected and conserved areas. Many of these new areas reflect Indigenous leadership with some proposed as IPCAs.

[1] Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), Summary for policymakers of the IPBES global assessment report on biodiversity and ecosystem services, 2019, Available at: https://www.ipbes.net/global-assessment
[2] World Wildlife Fund Canada, Living Planet Report Canada: 2020 Wildlife at Risk. 2020. Available at: https://wwf.ca/wp-content/uploads/2020/09/WWF-7-x-9-LPRC_Web.pdf
[3] Gray et al, Local biodiversity is higher inside than outside terrestrial protected areas worldwide, Nature Communications July 2016, Available at: https://www.nature.com/articles/ncomms12306
[4] https://www.cbd.int/protected/overview/
[5] https://www.hacfornatureandpeople.org/home
[6] https://www.canada.ca/en/news/archive/2015/02/2020-biodiversity-goals-targets-canada.html
[7] https://www.conservation2020canada.ca/home

In 2022, the Kunming-Montréal Global Biodiversity Framework to safeguard nature and halt and reverse biodiversity loss, putting nature on a path to recovery by 2050 was agreed to at the 15th Conference of Parties to the United Nations Convention on Biological Diversity[8]. Under this framework, Target 3 focuses on the conservation of land and water.

Target 3: Ensure and enable that by 2030 at least 30 per cent of terrestrial, inland water, and of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed through ecologically representative, well-connected and equitably governed systems of protected areas and other effective area-based conservation measures, recognizing indigenous and traditional territories where applicable, and integrated into wider landscapes, seascapes and the ocean, while ensuring that any sustainable use, where appropriate in such areas, is fully consistent with conservation outcomes, recognizing and respecting the rights of indigenous peoples and local communities, including over their traditional territories.

While these joint efforts have been led to significant advances on area-based conservation in Canada, much work remains to achieve the Pathway vision articulated in *One with Nature* to, in the spirit and practice of reconciliation, Canada conserves its natural diversity in interconnected networks of protected and conserved areas for the enduring benefit of nature and future generations, through collective efforts in the Pathway to Canada Target 1 and beyond.

Systemic, cross-cutting barriers to progress persist as protected area agencies across the country work to advance biodiversity conservation within the broader context of their governments' mandates and priorities. The COVID-19 pandemic has only served to exacerbate these challenges.

Effectively highlighting the many benefits of protected and conserved areas within this broader social, economic and cultural context will be key to advancing collective efforts. The objective of this report, designed to also be used as a series of fact sheets, focused on distilling and articulating these benefits.

[8] https://www.cbd.int/gbf/targets

ADMBRISSON VASEUX LANDSCAPE

PURPOSE AND METHODOLOGY

The purpose of this report is to provide a high-level summary of benefits that protected and conserved areas can provide to Canadian society as a whole.

It represents a scan of readily-available information rather than a comprehensive technical report or detailed assessment of benefits associated with existing or prospective areas. To the extent possible, it focuses on Canadian sources of information, although data from other countries and contexts has been included where Canadian sources were limited or not available.

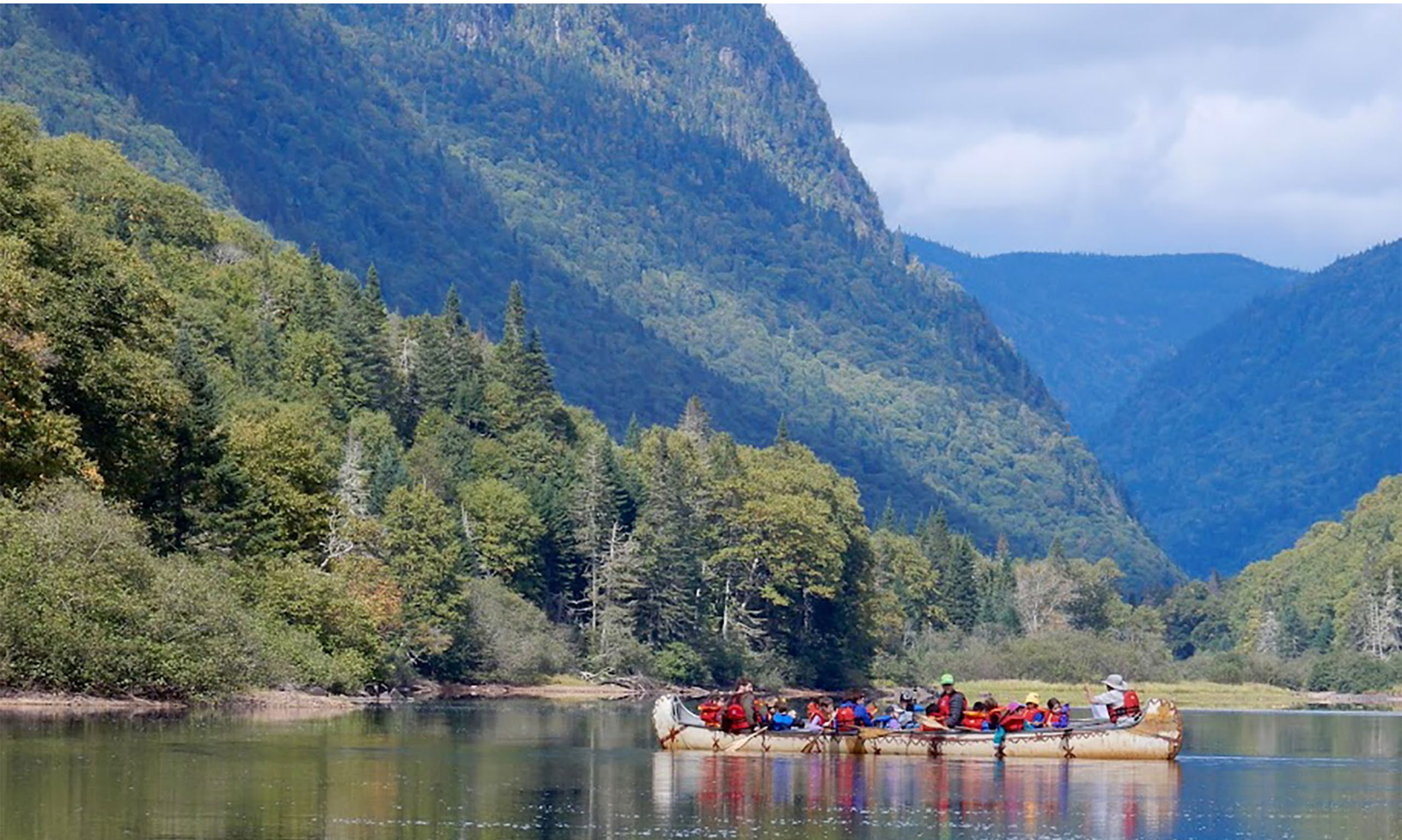
The report was developed in February and March 2022 using a mix of approaches, including:

- A broad scan of available on-line resources;
- A review and synthesis of information from the Pathway process;
- Outreach to and follow up with members of the Pathway NSC and other experts identified by ECCC and/or Pathway representatives; and
- Review by and inputs from ECCC and members of the NSC.

It has been updated to reflect the establishment of the new Kunming-Montréal Global Biodiversity Framework.

Note: The Pathway NSC has commissioned a separate analysis of climate-related benefits associated with protected areas. As such, this report acknowledges but does not include the very considerable contribution that protected areas can make to climate change mitigation and adaptation, including the conservation of carbon in soils, peatlands, forests and coastal areas.

AMELIE ST-LAURENT-SAMUEL



BENEFITS

Ecosystem services is a broad term used to reflect the many ways in which nature provides benefits to people. This includes all of the services that nature delivers to maintain life on earth, such as clean air, clean water, climate regulation, food and medicine.

It also refers to the role of ecosystems in providing security, whether that be mitigating extreme weather events or preventing the spread of disease. And finally, it refers to the many ways that natural systems enhance quality of life, such as by offering recreational opportunities as well as support to our mental and physical health[9].

Protected area establishment, planning, and management is grounded in a strong understanding of the roles that protected areas play in sustaining healthy, functioning ecosystems. As such, the focus of this report is to outline the *additional* benefits protected and conserved areas can provide to our health, quality of life, social fabric, and economy.

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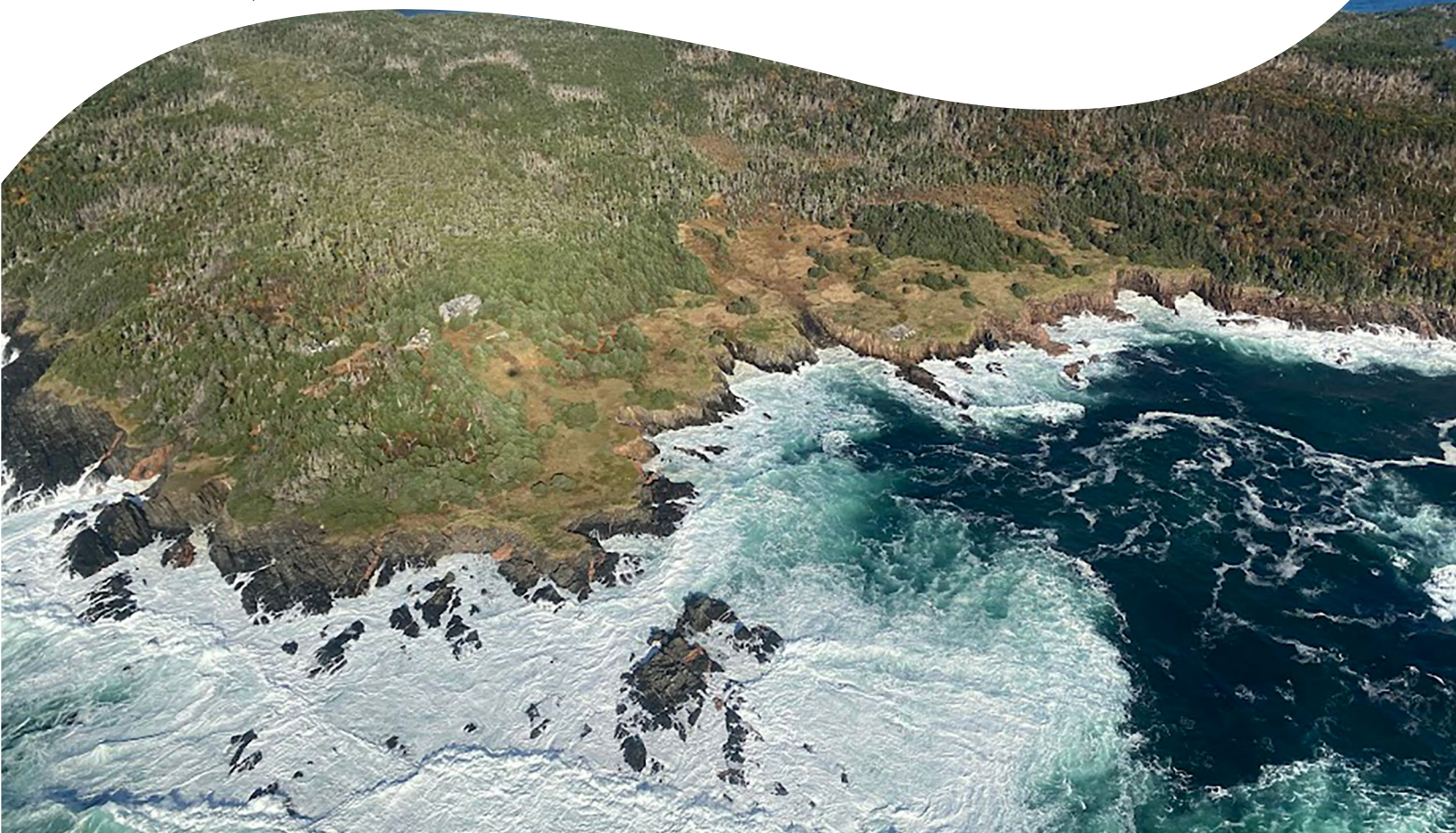
[9] Ecosystem Services Toolkit: Completing and Using Ecosystem Service Assessment for Decision-Making: An Interdisciplinary Toolkit for Managers and Analysts. Value of Nature to Canadians Study Taskforce, Federal, Provincial and Territorial Governments of Canada, 2017. Available at: https://biodivcanada.chm-cbd.net/sites/ca/files/inline-files/2017_Ecosystem_Services_Toolkit.pdf

ANDREW KENNEDY



Improved Access to Nature

There is no question that Canadians value nature for the benefits it provides in terms of recreation and rejuvenation, physical and mental wellbeing, spirituality and quality of life.

In fact, almost 9 in 10 Canadians say that the more connected they are to nature, the happier they are[10]. Conversely, a growing body of evidence confirms that separation from nature can have detrimental, long-term effects on human health[11].

However, while Canada is home to a rich and storied array of protected and conserved areas, we are increasingly disconnected from nature as a society.

Many factors contribute to this growing separation. Canada is increasingly urbanized, with almost 82% of Canadians living in urban areas by the year 2020[12]. This in turn can reduce the amount of green space available, particularly in the southernmost parts of our country, to support the establishment or expansion of parks and conserved areas. In addition, Canadians now spend an estimated 90% of our time indoors and are stretched for time more than ever before[13].

Protected and conserved areas have an essential role to play in overcoming these barriers and improving Canadians' access to nature, along with all of the essential benefits that provides.

Local protected areas can play a particularly vital role in improving access to nature for Canadians, especially in urban areas. Protected and conserved places in urban and peri-urban areas can provide important gathering places for families and community members of all ages and of all different socio-economic backgrounds.

We have only to look at our experience during the COVID-19 pandemic to see this in action. According to a 2021 Ipsos poll, 94% of respondents saw access in nature as a critical coping mechanism during COVID[14].

In addition, a 2020 study by Park People found that over half of municipalities canvassed said that park use had increased during COVID-19, while almost two thirds of Canadian respondents reported visiting parks at least several times a week or more[15].

Given the direct role that local governments play in engaging with Canadians, as well as the key role the protected areas they manage can play in providing benefits to Canadians, local governments have emphasized the importance of recognizing these areas within the Pathway process.

https://www.conservation2020canada.ca/resources

Importantly, the study also found that **proximity and equity of access matters**. Only 3% of respondents with access to parks within walking distance did not use them during COVID, compared to 16% of those without similar access. This highlights the need to not only improve access overall to protected and conserved areas, but also to consider equity in their design and establishment[16].

The benefits of enhanced access to nature through protected and conserved areas go beyond individuals and families to society as a whole. Access to parks and the recreational opportunities they offer has been linked to reductions in crime, lower levels of vandalism, and reduced delinquency in youth[17]. Similarly, a growing body of evidence suggests that access to nature can help address health inequities at all stages of life[18].

Indeed, these benefits are so powerful that commentators such as Richard Louv — who coined the term 'nature deficit disorder' to refer to the growing separation of children from the natural world[19] — has called for access to nature to be considered a basic right for all people[20].

[10] https://www.ipsos.com/en-ca/nine-ten-87-canadians-say-when-connected-nature-they-feel-happier#

[11] https://www.nrpa.org/our-work/three-pillars/health-wellness/parksandhealth/fact-sheets/parks-improved-mental-health-quality-life/

[12] https://www.statista.com/statistics/271208/urbanization-in-canada/

[13] Canadian Parks Council, Connecting Canadians with Nature: An investment in the well-being of our citizens. 2014. Available at: https://www.parks-parcs.ca/wp-content/uploads/2020/09/ConnectingCanadians-English_web.pdf

[14] https://www.theweathernetwork.com/ca/news/article/canadians-turn-to-nature-for-relief-from-covid19-pandemic-stress-coronavirus-ipsos-poll-conservancy-of-canada

[15] https://resources.parkpeople.ca/en/resource/19297/covid-19-and-parks-highlights-from-our-national-surveys

[16] ibid

[17] https://recreation.eku.edu/importance-parks-and-recreation

[18] http://www.europarc.org/wp-content/uploads/2018/03/Nature-for-Health-and-Equity_IEEP_FoE.pdf

[19] https://bcparksfoundation.ca/blog/the-benefits-of-being-outside/

[20] https://www.childrenandnature.org/resources/outdoors-for-all-access-to-nature-is-a-human-right/

KERRY HECKER

Regular access to and interaction with nature has been widely shown to help guard against, treat and manage a broad range of health issues.

Physical and Mental Wellbeing

Some of the most powerful benefits that protected and conserved areas provide are the many ways in which they support our physical and mental health at all stages of life. For example, they can help prevent serious illness, while also helping us to recover faster. They can also help ease depression and anxiety, and can play a critical role in both cognitive and emotional development[21].

These benefits are so powerful that Canada's Public Health Officers and Medical Officers of Health have recommended active play in nature and the outdoors as being essential to healthy child development[22].

In addition, a ground-breaking effort led by the BC Parks Foundation has launched Canada's first national nature prescription program, through which doctors and other medical professionals can prescribe doses of nature as a way of supporting optimum physical and mental health[23].

[21] Canadian Parks Council, Connecting Canadians with Nature: An Investment in the Well-Being of our Citizens, 2014. Available at: https://www.parks-parcs.ca/wp-content/uploads/2020/09/ConnectingCanadians-English_web.pdf

[22] https://bcparksfoundation.ca/blog/the-benefits-of-being-outside/

[23] https://bcfamilydocs.ca/new-parx-parks-canada-collaboration/

Physical Wellbeing

Regular access to and interaction with nature has been widely shown to help guard against, treat and manage a broad range of health issues. These include coronary heart disease and stroke, Type 2 diabetes, and even dementia[24]. Time in nature can also provide strong respiratory health benefits, improve inflammation, and boost the immune system[25].

In part, these benefits stem from the opportunities protected and conserved areas offer for recreation and exercise, important determinants of overall health. For example, exercise contributes to our energy levels, decreases our stress levels, prolongs independence as we age, contributes positively to sleep[26] and helps prevent many prevalent chronic diseases[27].

Indeed, studies have shown that when people have access to parks they exercise more, although access within urban cities and in low-income areas is often limited[28]. Evidence also suggests that proximity to natural spaces is one of the best predictors of physical activity[29].

These benefits are particularly valuable for children. Physical activity helps children reduce the risk of chronic disease, develop fitness and strength, and feel better overall. Yet less than 40% of children and youth in Canada currently reach recommended levels of daily physical activity, putting them at risk of high blood pressure, type 2 diabetes and other chronic diseases[30]. Protected and conserved areas can be an important part of the solution to this issue.

Children who spend more time in outdoor environments such as protected and conserved areas experience these benefits throughout their lives. Some of these benefits — such as increased confidence, self-awareness and autonomy — can have important long-term effects on our ability to respond to stress and develop resilience as adults[31].

Other health benefits that protected and conserved areas can provide are linked to their role in improving air quality and lessening the impact of the 'urban heat island effect'[32], which has been linked to respiratory difficulties, heat exhaustion, and increased morbidity during heat waves[33].

Given the powerful role that parks can play in supporting our physical, social, mental and spiritual health, the Canadian Parks and Recreation Association (CPRA) and Canadian Parks Council (CPC) have worked to advance *Parks for All, An Action Plan for Canada's Parks Community.* The Plan emphasizes the linkages between and importance of connection with nature, human health and happiness, support for nature conservation, and stronger parks networks across the country.

Parks for All, 2017

GREGORY BOURGUELAT

[24] EUROPARC, EUROPARC Toolkit: Health and Well-being Benefits from Parks and Protected Areas, 2018.
[25] https://bcparksfoundation.ca/site/assets/files/1697/parx_respiratory_health_and_immunity_handout_oct20_-_ml-1.pdf
[26] http://csepguidelines.ca
https://conservationtools.org/library_items/196-The-Health-Benefits-of-Parks
[27] https://www.canada.ca/en/public-health/services/being-active/physical-activity-your-health.html
[28] https://conservationtools.org/library_items/196-The-Health-Benefits-of-Parks
[29] Kaczynski, A.T. and Henderson, K.A. 2007. Environmental correlates of physical activity: A Review of Evidence about parks and recreation. Leisure Sciences 29(4): 315–325.
[30] https://www.canada.ca/en/public-health/services/being-active/children-physical-activity.html
[31] https://bcparksfoundation.ca/blog/the-benefits-of-being-outside/
[32] This refers to urban areas that experience higher temperatures than surrounding areas, due to a concentration of buildings, roads and other infrastructure.
[33] City of Toronto, Green City: Why Nature Matters to Health, 2015. Available at: https://www.toronto.ca/legdocs/mmis/2015/hl/bgrd/backgroundfile-83420.pdf

Mental Health

Mental health refers to our overall psychological, emotional, and social wellbeing. It is crucial to our longevity and enjoyment of life, as well as to the overall wellbeing of society as a whole.

One in every two Canadians have experienced mental illness by the time they are 40, with 70% of mental health issues arising during childhood or adolescence. Those in Canada's lowest income bracket are 3 to 4 times more likely to report poor or fair mental health than those in the highest income group[34].

Mental health is also a leading cause of disability in Canada, and represents a higher disease burden than all forms of cancer combined. Estimates suggest that the economic burden of mental illness — including lost productivity, costs to the health care system, and reduced quality of life — could be as high as $51 billion every year in Canada[35].

Protected and conserved areas can play a profoundly important role in providing mental health-related benefits to Canadians. This includes improved attention, cognition, sleep, and stress recovery — results that are consistent across all ages and socioeconomic demographics[36].

Parks and other green spaces have also been found to positively impact mood and overall mental health, especially in urban settings. They can also help mitigate the physical toll of mental health problems such as anxiety and depression, particularly in vulnerable groups[37].

Protected and conserved areas can play a profoundly important role in providing mental health-related benefits to Canadians.

One recent study even suggests that the higher an area is in biodiversity, the greater the benefits in terms of positive emotions and enhanced well-being. It found that participants reported being happier in parks with greater avian biodiversity and a greater diversity of habitats, even when actual biodiversity levels were not necessarily higher[38].

In addition, time spent in parks and other natural setting has been proven to increase attention capacity, positive emotions, and an ability to reflect on life problems[39].

These mental health benefits are particularly important for children. Visiting natural areas can allow children an opportunity to play and socialize, which is critical to their cognitive development, lifelong resilience and sense of community[40].

[34] https://www.camh.ca/en/Driving-Change/The-Crisis-is-Real/Mental-Health-Statistics
[35] ibid
[36] Buckley et al, Economic Value of Protected Areas via Visitor Mental Health, Nature Communications, Vol 10. 2019
[37] Toronto Official Plan, Parks Plan 2013-2017 and Strategic Forest Management Plan (2012-2022)
[38] Cameron et al, Where the Wild Things Are! Do urban green spaces with greater avian biodiversity promote more positive emotions in humans? Urban Ecosystems (2020). 2020.
[39] https://journals.sagepub.com/doi/10.1177/0013916508319745
[40] https://conservationtools.org/library_items/196-The-Health-Benefits-of-Parks

Enhanced Quality of Life

Quality of life refers to the overall wellbeing of individuals, communities and societies as a whole.

Protected and conserved areas can play an important role in enhancing quality of life for Canadians. In addition to the physical and mental health benefits they provide for individual Canadians, access to nature also produces powerful benefits for Canadian society as a whole.

For example, studies suggest that access to nature through protected and conserved areas can offer strong public health benefits, such as by contributing to reduced rates of crime, strengthened family connections and decreased domestic violence[41].

In addition, local protected areas and trail systems can help both attract new businesses and families to an area, while also playing an important role in retaining existing populations[42]. Quality parks and recreation opportunities are typically cited as one of the top three drivers informing business location and are also often quoted by citizens as being what makes their communities 'liveable'[43].

Protected and conserved areas often also represent a tangible reflection or symbol of quality of life. For example, Canada's national park system has consistently been identified as a key source of national identity for Canadians[44].

[41] http://norwegianjournaloffriluftsliv.com/doc/122010.pdf
[42] https://headwaterseconomics.org/economic-development/trails-pathways/trails-quality-of-life/
[43] ibid
[44] https://www.environicsinstitute.org/docs/default-source/project-documents/focus-canada-2012/canadian-identity-and-symbols.pdf?sfvrsn=46403bca_2

CHANTALE LEPIRE

Reconnections to Land

While connecting and reconnecting to land can mean many different things, it ultimately refers to our overall relationship to nature, including our emotional connections and responses to it.

A growing body of research suggests that connections to nature that go beyond simply having access to green space are essential to our health and wellbeing[45]. Protected and conserved areas can be critical conduits for this connection[46].

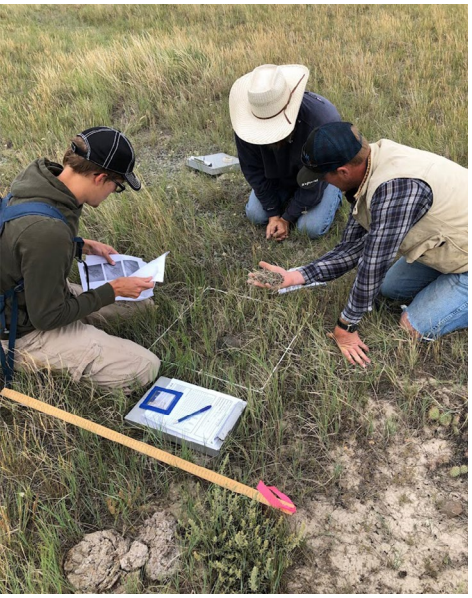
The relationships people have with nature deeply influence their behaviour towards the environment.

For example, numerous studies have emphasized the critical importance of nature for children in particular, both in terms of their physical and mental health and wellbeing. Children and youth are spending less and less time outdoors, putting their sense of connection with nature at risk.

Parks and protected areas can play a key role in addressing this loss of connection in many ways, such as by providing 'living' classrooms, which not only enhance environmental learning and literacy but also foster outdoor play and all of the benefits that connotes[47]. Parks programming such as Parks Canada's 'Learn to Camp' initiatives can also help deepen these connections for children and their families, including for new Canadians.

These connections in turn can help shape long-term attitudes to nature and the importance of conserving it. There is growing scientific evidence that the relationships people have with nature deeply influence their behaviour towards the environment, particularly in children, whose development and future conservation ethic is formed in part by these direct experiences[48].

Particularly in urban areas, protected areas can also provide opportunities for socialization and a greater sense of connection to community, especially for newer Canadians. For example, Park People in Toronto has worked to engage people, particularly in underserved communities, in helping to revitalize their parks and turn them into outdoor community hubs[49]. This underscores the powerful community development benefits that protected areas can provide, which can in turn help foster greater social cohesion[50].



MOLLY KIRK

Urban parks as 'social infrastructure'

In its 2017 report, Sparking Change, Park People highlighted the valuable role that urban parks can play as a force for dynamic change and community development within the areas they serve. They identified a set of core social impacts associated with park engagement: creating a sense of change and *shared ownership,* building confidence and *inspiring civic leaders, reducing social isolation* and *creating more inclusive communities,* providing a place for *diverse people to gather,* and *supporting local economic development.*

[45] Nature Connectness Research Group, University of Derby, A New Relationship with Nature: What it Means and What We can do. 2020. Available at: https://findingnatureblog.files.wordpress.com/2020/04/naturerelationship.pdf
[46] Europarc Federation, Europarc Toolkit: Health and Well-being benefits from Parks and Protected Areas, 2018.
[47] Reichstein, The Classroom in open air: Outdoor environmental learning in Vancouver Parks. Prepared for the Vancouver Board of Parks and Recreation Planning and Research Development. 2018. Available at: https://sustain.ubc.ca/sites/default/files/2018-45%20The%20classroom%20in%20open%20air%20-%20Outdoor%20environmental%20learning%20in%20Vancouver%20parks_Reichstein%20-%20Copy.pdf
[48] IUCN @NatureForAll and Children & Nature Network, Home to Us All: How Connecting with Nature Helps us Care for Ourselves and the Earth, 2018. Available at: http://natureforall.global/why
[49] https://parkpeople.ca/2016/09/21/exploring-the-social-impacts-of-parks-in-underserved-neighbourhoods/
[50] Konijnedijk et al, Benefits of Urban Parks: A Systemic Review, IFPRA, 2013. Available at: https://worldurbanparks.org/images/Newsletters/IfpraBenefitsOfUrbanParks.pdf

KERRY HECKER

Indigenous Peoples

Indigenous Peoples have deep direct connections with the lands and waters they have stewarded since time immemorial. Protected areas can help honour and sustain these connections.

For example, a growing number of protected and conserved areas in Canada are Indigenous cultural landscapes. These are living landscapes that reflect the long-standing connections and relationships that an Indigenous community may have with an area. These can include networks of trails, sacred sites, traditional gathering places or other sites infused with history, spirituality, and culture[51].

Cultural landscapes are usually identified through traditional knowledge and sustained through oral tradition, traditional use, and Indigenous language. The cultural values they reflect are often inextricably linked with the ecological values of the landscapes they embody. This is the case with Pimachiowin Aki — Canada's first World Heritage Site nominated for both its ecological integrity and its strong cultural values for the Anishinaabeg, who have stewarded the area for thousands of years[52].

The Indigenous Circle of Experts underscored the importance of these places as spaces for cultural connection and regeneration through healing, and suggested that these areas can help foster respect, cultural learning, and language revitalization over time[53].

ICE also emphasized the importance of dialogue and action with Indigenous communities that have been affected by past protected area policies that alienated them from their lands and waters. Healing and reconnection to land could include formal commemoration of this dark history as well as efforts to reclaim place names, stories, and traditional activities[54].

Cultural landscapes refer to any geographical area that has been modified, influenced, or given special cultural meaning by people. For example, Saoyú and ?ehdacho National Historic Site and protected area is a large cultural landscape established with the Sahtu Dene due to its environmental quality, traditional use and cultural values that reflect the nation's deep relationship and connection with the land, oral history and cultural resources.

[51] https://www.thecanadianencyclopedia.ca/en/article/aboriginal-cultural-landscape
[52] https://www.pc.gc.ca/en/culture/spm-whs/sites-canada/sec02s
[53] Indigenous Circle of Experts, We Rise Together, 2018. Available at: https://www.conservation2020canada.ca/resources/
[54] ibid

Reconciliation with Indigenous Peoples

Indigenous peoples around the world are critically important leaders in stewardship and conservation. Approximately 40% of the world's ecologically intact landscapes are stewarded by Indigenous peoples[55] and an estimated 80% of the world's biodiversity is found on Indigenous lands[56]. A 2019 study by the University of British Columbia also found that bird, mammal, amphibian and reptile populations were highest on lands managed or co-managed by Indigenous nations[57].

Yet less than 5% of protected areas around the globe are governed by Indigenous peoples, despite growing evidence of the positive impacts that Indigenous and local community management and tenure systems can have on conservation outcomes[58].

In Canada and around the world, the impacts of colonial histories and institutions on Indigenous peoples have been widespread and profound. This includes the history of existing parks and protected areas, many of which have displaced and alienated Indigenous peoples from the lands and waters they have stewarded for generations[59].

Given this history, many protected area agencies have begun work to advance reconciliation with Indigenous peoples. For example, Parks Canada has developed a strategy called 'Mapping Change: Fostering a Culture of Reconciliation within Park Canada', which outlines actions the Agency will take to further advance reconciliation with Indigenous peoples in the sites that it manages or co-manages[60].

Reconciliation was defined by the Truth and Reconciliation Commission of Canada (TRC) as an ongoing process that involves acknowledging and atoning for past harms, while taking action to change behaviour[61]. The TRC also underscored the importance of revitalizing Indigenous law and legal traditions as part of the reconciliation process[62].

KERRY HECKER

Approximately 40% of the world's ecologically intact landscapes are stewarded by Indigenous peoples and an estimated 80% of the world's biodiversity is found on Indigenous lands.

[55] Garnett et al, A Spatial overview of the global importance of Indigenous lands for conservation, Nature Sustainability, Vol 1 July 2018 369-374, Available at: https://www.nature.com/articles/s41893-018-0100-6.epdf?sharing_token=XQj_zcv4uaXcVdgb3-QAadRgN0jAjWel9jnR3ZoTv0NlxfG9aDwpfTJNvkjtO-hIO3PFB-aZq2SSCNsoN66Y9xxtccyAcYckRRmUJ2xf8-h4y3aeRYCCOYFqFtSjlbOu8BMgXO78XvTHh9813X7K7a7bNxFpw2oINXZgKuvMf6jul_sTyJ8RIg-pXduRlaLXhHXKzbRmRyvqWERK2BbKX2oL7LO7gMG5IA2M_GeyaAK3Q%3D&tracking_referrer=www.nationalgeographic.com

[56] https://www.reutersevents.com/sustainability/indigenous-people-are-guardians-global-biodiversity-we-need-protection-too; see also https://www.ips-news.net/2017/02/indigenous-peoples-lands-guard-80-per-cent-of-worlds-biodiversity/ and https://www.worldbank.org/en/topic/indigenouspeoples#1

[57] https://indigenouswatchdog.org/2020/07/18/can-indigenous-leadership-help-save-the-environment/

[58] A thematic analysis of conservation measures and their impact on indigenous peoples' rights, Report of the Special Rapporteur of the Human Rights Council on the rights of indigenous peoples, Victoria Tauli Corpuz, 2016. Available at: https://justconservation.org/a-thematic-analysis-of-conservation-measures-and-their-impact-on-indigenous-peoples-rights

[59] https://nationalpost.com/news/canada/the-shady-past-of-parks-canada-forced-out-indigenous-people-are-forging-a-comeback

[60] https://www.pc.gc.ca/en/agence-agency/aa-ia/reconciliation

[61] Truth and Reconciliation Commission of Canada, Honouring the Truth, Reconciling for the Future, Summary of the Final Report of the Truth and Reconciliation Commission, 2015. Summary available at: https://ehprnh2mwo3.exactdn.com/wp-content/uploads/2021/01/Executive_Summary_English_Web.pdf

[62] ibid

CHLOE LOPEZ

Ecological and Cultural Values

Given the role of Indigenous peoples in stewarding much of the world's remaining biodiversity, Indigenous-led conservation can make critical contributions to biodiversity conservation, including area-based targets.

IPCAs are defined as "lands and waters where Indigenous Peoples have the primary role in protecting and conserving ecosystems through Indigenous laws, governance and knowledge systems." There are three essential elements of IPCAs:

- **They are Indigenous-led;**
- **They represent a long-term commitment to conservation; and**
- **They elevate Indigenous rights and responsibilities.**

We Rise Together (2018)*; One with Nature* (2018)

Indigenous-led conservation includes the establishment of Indigenous Protected and Conserved Areas (IPCAs) as well as Indigenous Guardians that help steward these areas and the broader land- and sea-scapes in which they are located.

IPCAs are explicitly designed to conserve the ecological and cultural values important to the nations pursuing them. IPCAs are often proposed in places that reflect strong spiritual or cultural connections for these nations. This can include cultural or sacred sites, as well as cultural landscapes that reflect a nation's relationship with land[63].

IPCAs also offer powerful benefits for species and habitat conservation, especially for culturally significant species. This in turn can help support food security, for example, by protecting key habitat for fish, caribou or other species that are important traditional foods for communities and have been for millennia[64].

[63] https://nomadit.co.uk/conference/rai2021/p/10263; see also Gagnon et al, Caribou culture: exploring the Pessamuilnuat's vision of an Indigenous Protected Area in the Quebec context. Presentation to Royal Anthropology and Conservation Virtual Conference 2021, available at: https://nomadit.co.uk/conference/rai2021/paper/62404

[64] Tran et al, A Review of successes, challenges and lessons from Indigenous protected and conserved areas, Biological Conservation, 2019, Available at: https://oursharedseas.com/wp-content/uploads/2020/10/Tran_et_al_2020_A-review-of-successes-challenges-and-lessons-from-Indigenous-protected-and-conserved-areas.pdf

Governance and Law

Another important benefit of IPCAs is the opportunities they present to revitalize and apply Indigenous laws and legal traditions. By simultaneously recognizing Indigenous and Crown jurisdictions and seeking to integrate Indigenous laws into shared decision-making, IPCAs can help build stronger Nation-to-Nation and Inuit-to-Crown relationships while also protecting and conserving lands and waters[65].

There are many different Indigenous Nations across the country, each with their own particular legal contexts, concepts and traditional laws. Recognizing the richness of this diversity can help build understanding of Indigenous laws at all levels, from Crown governments to the public[66].

Existing and emerging IPCAs reflect this diverse reality and take many forms, from tribal parks established exclusively under Indigenous jurisdiction to shared decision-making models that reflect dual designations and/or co-management approaches[67].

Some reflect multiple designations, such as Edéhzhíe in the Northwest Territories. Edéhzhíe was established under Indigenous low as a Dehcho Indigenous Protected Area and is also proposed as a National Wildlife Area[68].

LISA PIRIE

Knowledge and Language

Indigenous languages are core expressions of Indigenous identity, nationhood and worldviews. They are often inextricably connected to the land and waters and hold vital knowledge of the landscapes, plants and animals that live there[69].

As the ICE said in their landmark report, ***'Culture and language are the heart of IPCAs'***[70]. As such, a key benefit of IPCAs is the role they can play in maintaining or revitalizing Indigenous knowledge and culture.

IPCAs can also play a critical role in facilitating intergenerational transfer of traditional ecological knowledge, by bringing together Elders and youth to ensure that cultural and environmental knowledge persists.

IPCAs can also represent important opportunities for the exchange of Indigenous and non-Indigenous knowledges. This has been referred to as 'ethical space' — where knowledge systems can meet and interact with mutual respect and equality[71].

New economic futures

Finally, IPCAs can provide powerful economic benefits to Indigenous communities, including direct employment as well as opportunities for the broader local and regional economies in which they are located. For some communities, they also represent an opportunity to 'seed' new conservation-based economies as an alternative economic future that emphasizes community and cultural wellbeing and connection to land[72].

For example, the Coast Funds in British Columbia was established in 2007 to support both the conservation and associated community economic development aspirations of Indigenous nations within the Great Bear Rainforest. Established with funds from philanthropy, the Government of British Columbia and the Government of Canada, Coast Funds has successfully supported a wide range of conservation outcomes as well as compatible economic development initiatives throughout the region[73].

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[65] Innes et al, Indigenous Laws in the Context of Conservation, March 2021. Available at: https://static1.squarespace.com/static/5d3f1e8262d8ed00013cdff1/t/60cb38cdf63bea0402196c8d/1623931091227/indigenouslawsinthecontextofconservation_mar2021_final_web.pdf

[66] ibid

[67] Zurba et al, Indigenous Protected and Conserved Areas, Aichi Target 11 and Canada's Pathway to Target 1: Focusing Conservation on Reconciliation. Land, January 2019. https://res.mdpi.com/land/land-08-00010/article_deploy/land-08-00010-v4.pdf

[68] https://dehcho.org/resource-management/edehzhie/; https://www.canada.ca/en/environment-climate-change/services/national-wildlife-areas/locations/edehzhie.html

[69] M'sit No'kmaq et al, "Awakening the sleeping giant": re-Indigenization principles for transforming biodiversity conservation in Canada and beyond, Facets, Volume 6, Number 1, 2021.Available at: https://www.facetsjournal.com/doi/10.1139/facets-2020-0083#sec-1

[70] ICE, p 5

[71] ibid

[72] https://www.indigenousguardianstoolkit.ca/sites/default/files/Community%20Resource_Guardians-valuationreport_v10_Final_TNC%20Canada.pdf

[73] https://coastfunds.ca/about/our-mandate/

Direct Economic Benefits

The establishment, planning, management, and operations of parks and conserved areas has been shown to provide clear and direct economic benefits to Canadians. Protected and conserved areas provide jobs and help support economic diversification, particularly in rural and remote areas. They also play a powerful role as an engine of domestic and international tourism.

Understanding these economic benefits can play an important role in strengthening diverse constituencies for conservation. It can also bolster the rationale for protected area agencies in seeking enhanced funding required to establish and manage these areas, while also promoting potential economic benefits for communities adjacent to existing or potential protected areas[74].

A review of the economic impact of Canada's national, provincial and territorial parks was published in 2010. It found that, in 2009, parks agencies spent $0.8 billion on their operations while park visitors spent an estimated $4.4 billion[75]. These expenditures in turn contributed $4.6 billion to Canada's Gross Domestic Product (GDP) as well as $0.3 billion in tax revenue, while also supporting more than 64,000 jobs[76].

These impacts extended across all parts of the country. In British Columbia, for example, parks were estimated to generate $394 million in visitor expenditures (including on food, entertainment, transportation and other goods and services) — an estimated $8.42 in visitor spending for every dollar spent[77].

Table 1, below, from this report, summarizes the economic impacts associated by these expenditures for every province and territory in Canada. Figures are included for both federal protected areas in each jurisdiction, as well as those managed by provincial or territorial agencies.

[74] Equilibrium Research, Making Money Local: Can Protected Areas Deliver both Economic Benefits and Conservation Objectives? (draft), August 2020. Available at: https://www.cbd.int/pa/doc/equilibrium-research-2020-making-money-local-en.pdf

[75] The Outspan Group for the Canadian Parks Council, The Economic Impact of Canada's National, Provincial and Territorial Parks in 2009, 2010. Available at: https://cpcil.ca/wp-content/uploads/2020/02/CPC-Economic-impact-of-canadais-national-provincial-and-territorial-parks-in-2009.pdf

[76] ibid

[77] https://bcparks.ca/research/

PRISCILLA DU PREEZ, UNSPLASH.COM

Table 1: Economic Impacts Associated with Expenditures by Protected Area Agencies and Visitor Spending, 2008-2009

Province/Territory	Jurisdiction	Economic Impact			
		Gross Domestic Product (Millions)	Labour Income (Millions)	Employment (FTE)	Tax Revenue (Millions)
Newfoundland & Labrador	Province	$13.3	$10.0	246	$1.3
	Federal	$79.8	$53.8	1,686	$7.8
Nova Scotia	Province	$41.1	$27.8	789	$4.1
	Federal	$41.4	$31.1	708	$5.0
Prince Edward Island	Province	$7.5	$5.6	189	$0.9
	Federal	$23.0	$15.5	465	$2.9
New Brunswick	Province	$30.1	$20.3	646	$3.2
	Federal	$43.4	$33.2	861	$5.2
Québec	Province	$315.8	$204.2	5,104	$28.7
	Federal	$166.6	$114.3	2,718	$15.7
Ontario	Province	$291.5	$198.3	4,314	$35.0
	Federal	$107.5	$77.7	1,470	$10.8
Manitoba	Province	$140.2	$99.0	2,524	$14.8
	Federal	$35.6	$27.3	600	$3.4
Saskatchewan	Province	$88.6	$55.8	1,561	$8.3
	Federal	$26.4	$17.8	434	$2.7
Alberta	Province	$306.6	$196.0	3,721	$24.3
	Federal	$1,118.7	$683.3	13,894	$66.1
British Columbia	Province	$278.8	$191.3	4,336	$25.0
	Federal	$259.8	$179.4	4,001	$23.9
Yukon	Territory	$5.7	$4.6	88	$0.3
	Federal	$7.0	$5.6	107	$0.4
Nunavut	Territory	$3.5	$2.8	42	$0.2
	Federal	$8.5	$7.1	98	$0.5
Northwest Territories	Territory	$6.5	$5.1	62	$0.5
	Federal	$16.4	$13.1	184	$1.2
TOTAL	Provinces & Territories	$1,529.2	$1,020.8	23,622	$146.6
	Federal	$1,934.1	$1,259.2	27,226	$145.6
OVERALL TOTAL		**$3,463.3**	**$2,280.0**	**50,848**	**$292.2**

Source: The Outspan Group, Inc.

While no national-scale assessment of this nature has been conducted since that time, some agencies continue to track the economic impacts of their investments. For example, Parks Canada reported that in 2018/2019, its operational spending combined with visitor spending for the sites it manages totalled $5.8 billion. This in turn generated an estimated $5.0 billion in GDP, tax revenue of $581 million, and more than 46,000 jobs[78]. Visitor spending alone contributed an estimated $3.4 billion to GDP and over 21,000 direct jobs[79] to the Canadian economy.

[78] Parks Canada Agency, 2018-19 Economic Impact of Parks Canada.

[79] ibid

According to a 2012 study on the value of nature to Canadians, Canadian adults spent an estimated $41.3 B on nature-based activities. This study also found that almost 1 in 5 Canadians gave money to nature or conservation organizations through donations and/or membership dues.

These findings underscore the potential impacts that protected and conserved areas have on Canada's economy, in terms of jobs, income for local businesses and tax revenue for governments.

Similar findings exist for other countries. In the United States, the total economic value of the National Parks Service is estimated to be $92 billion. This estimate includes both the value attributed by visitors to the park system, as well as a significant *'existence' value* independent of whether or not they visited them. Almost 85% of respondents felt the benefited personally from the park system and nearly 95% felt that protecting these places was important for current and future generations, regardless of visitation[80].

Local protected areas can also generate significant economic benefits. According to the National Recreation and Park Association, local and regional park agencies in the U.S. generated nearly $140 billion in economic activity from their operations and capital spending alone in 2013 — and also supported almost one million jobs[81].

However, it is also important to note that studies in the literature which focus on protected areas in the US found either no impact or a relatively small positive impact of the protected areas assessed on regional economic performance (i.e., per capita income, income growth, population, employment). (Duffy-Deno (1997)[82], Kim et al. (2005), Lewis et al. (2002)[83] and (2003)[84], Lorah and Southwick (2003)[85], Wu and Plantinga (2003)[86], Pugliese et al. (2015)[87], White and Hanink (2004)[88], Jakus and Akhundjanov (2018)[89]). Studies focusing on the socioeconomic impact of the protected areas on local communities found no significant negative impact; on the contrary, Rasker (2006)[90], Chen and Weber (2011)[91], Chen et al. (2016)[92] , and Sims et al. (2019)[93] found higher population growth and higher employment growth in local communities around the protected areas.

Other studies have sought to quantify economic benefits of individual parks. For example, in 2017, Gatineau Park in Quebec contributed $241.5 million and 4700 jobs to the regional economy, while park visitors spent an estimated $184 million on food, activities and shopping[94].

[80] Haefele et al, Total Economic Valuation of the National Park Service Lands and Programs: Results of a Survey of the American Public. 2016.
[81] National Recreation and Park Association, The Economic Impact of Local Parks: An Examination of the Economic Impacts of Operations and Capital Spending on the United States Economy. 2015.
[82] Duffy-Deno, K. T. (1997). The effect of state parks on the county economies of the West. Journal of Leisure Research, 29(2), 201-224.
[83] Lewis, D. J., Hunt, G. L., & Plantinga, A. J. (2002). Public conservation land and employment growth in the northern forest region. Land Economics, 78(2), 245-259.
[84] Lewis, D. J., Hunt, G. L., Plantinga, A. J. (2003). Does public lands policy affect local wage growth? Growth and Change, 34(1), 64–86.
[85] Lorah, P., & R. Southwick. (2003). Environmental protection, population change, and economic development in the rural Western United States. Population and Environment, 24(3), 255–272.
[86] Wu, J., & Plantinga, A. J. (2003). The influence of public open space on urban spatial structure. Journal of Environmental Economics and Management, 46(2), 288-309.
[87] Pugliese A., McCann L., Artz G. (2015). Impacts of national forests in the West on county population and employment. Forest Policy and Economics 50, 62–69.
[88] White, K. D. & Hanink, M. (2004). "Moderate" environmental amenities and economic change: The nonmetropolitan northern forest of the Northeast U.S., 1970-2000, Growth and Change, 35(1), 42-60.
[89] Jakus, P. M. & Akhundjanov, S., B. (2018). Neither boon nor bane: The economic effects of a landscape-scale national monument, Land Economics, 94(3), 323-339.
[90] Rasker R. 2006. An exploration into the economic impact of industrial development versus conservation on western public lands, Society and Natural Resources, 19: 191–207.
[91] Chen Y. & Bruce Weber, B. 2011. Federal policy, rural community growth, and wealth creation: The impact of the federal forest policy and rural development spending in the Pacific Northwest, American Journal of Agricultural Economics, Agricultural and Applied Economics, 94(2), 542-548.
[92] Chen, Y., Lewis, D. J., & Weber, B. (2016). Conservation land amenities and regional economies: a postmatching difference- in- differences analysis of the Northwest Forest Plan. Journal of Regional Science, 56, 373-394.
[93] Sims, K. R., Thompson, J. R., Meyer, S. R., Nolte, C., & Plisinski, J. S. (2019). Assessing the local economic impacts of land protection. Conservation biology, 33(5), 1035-1044.
[94] As quoted in Canadian Parks and Wilderness Society, Backgrounder: The Economic Value of Investing in Nature, 2019. Available at: https://cpaws.org/wp-content/uploads/2020/09/CPAWS-InvestingInNature-EconomicValue-Backgrounder-1Sep2020.pdf

CHANTAL LEPIRE

Looking Forward

Many of these direct economic benefits are expected to grow as protected and conserved areas expand across Canada and the world.

For example, a 2020 global report led by over 100 experts examined the economic implications of adopting the goal of protecting 30% of the earth by 2030. This report suggested that economic growth associated with protected and conserved areas may be *many times faster* than growth rates projected for other sectors of the economy.

In particular, the report estimated that expanding protected and conserved areas to 30% of the earth's surface would generate an extra $64 to $454 billion in global economic output by the year 2050, largely as a result of an increase in global nature-based tourism and its associated benefits[95]. In fact, total projected economic output associated with achieving the 30% goal was *higher* than scenarios where this target was not pursued. These numbers were even larger when other values were considered, such as the avoided cost of restoring ecosystem services[96].

[95] Waldron et al, Protecting 30% of the planet for nature: costs, benefits and economic implications, Working Paper analysing the economic implications of the proposed 30% target for areal protection in the draft post-2020 Global Biodiversity Framework. 2020. Available at: https://www.conservation.cam.ac.uk/files/waldron_report_30_by_30_publish.pdf ; Note that these estimates rely on the use of a multiplier from a study that may not have been peer-reviewed, the applicability of which to cases like the one considered in the Waldron et al study some authors have questioned - see, for example, John L. Crompton, Ji Youn Jeong, and Rebekka M. Dudensing (2015), "Sources of variation in economic impact multipliers," *Journal of Travel Research.*

[96] ibid

Indigenous-led conservation

There are also important economic benefits associated with Indigenous-led conservation, including Indigenous Protected and Conserved Areas (IPCAs) and Indigenous Guardians.

Australia offers important lessons in this regard. Since the late 1990s, the Australian government has made major investments in Indigenous Protected Areas and Indigenous Rangers. As a result of these investments, IPAs now make up almost half of Australia's national reserve system of protected areas.

In addition, Australia established the Working in Country program in 2007 to create meaningful job opportunities and career pathways for Indigenous peoples, along with opportunities for nationally accredited training and career pathways. It complements Australia's IPA program, as more than 60% of IPAs are managed by Indigenous ranger programs funded through the program[97].

By 2015, 108 Indigenous ranger groups were funded through Working in Country. More than 1,600 Rangers were employed across 775 full-time equivalent contracted positions[98].

While federal funding for Indigenous Guardians in Canada is more recent, Guardians programs play an increasingly important role in the management and stewardship of protected and conserved areas.

BRANIMIR GJETVAJ

The Ni Hat'ni Dene are Guardians and stewards of Thaidene Nëné — an Indigenous protected area in the NWT that includes a national park reserve, a territorial park and a wildlife conservation area. Ni Hat'ni Dene has been operating since 2008 and became a full-time, year-round program in 2020. Ni Hat'ni Dene employs four Guardians and one program coordinator and are based out of Lutsel K'e, a community of 400 people.

http://www.landoftheancestors.ca/ni-hatni-dene.html

A 2016 study of two emerging Guardians programs in the Northwest Territories estimated that 32 Indigenous people were engaged as Guardians during the study period. The study identified an increase in both technical and social skills, including those related to western science (such as GIS mapping and water quality monitoring)[99]. These findings underscore the powerful direct economic benefits associated with Indigenous-led conservation for Indigenous communities across the country.

Another example of direct economic benefits associated with Indigenous-led conservation efforts lies with emerging carbon markets. In 2015, Coastal First Nations and British Columbia signed an "atmospheric benefit sharing agreement", which provides for revenue sharing between the province and participating First Nations for any carbon credits generated by the Great Bear Rainforest. Building on this model, there are now a number of Atmospheric Benefit Sharing Agreements in the province which enable First Nations to sell carbon credits associated with protected lands[100].

[97] https://www.niaa.gov.au/indigenous-affairs/environment/indigenous-protected-areas-ipas

[98] SVA Consulting, Consolidated report on Indigenous Protected Areas following Social Return on Investment analyses, February 2016. Available at: https://www.niaa.gov.au/sites/default/files/publications/SROI-Consolidated-Report-IPA_1.pdf)

[99] SVA Consulting, Analysis of the Current and Future Value of Indigenous Guardian work in Canada's Northwest Territories, November 2016. Available at: https://static1.squarespace.com/static/5f8367238502ed181766aaf0/t/5fb4067a20b4fb44c16568e1/1605633660632/value-in-indigenous-guardian-work-nwt.pdf

[100] https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/consulting-with-first-nations/first-nations-negotiations/atmospheric-benefit-sharing-agreements

A 2021 valuation of old growth forests on Vancouver Island found that the ecosystem services these forests provide – including carbon storage/ sequestration, salmon habitat, recreation, tourism and other values – have the potential to generate between $34 and $40 million more in economic value than their timber harvest value alone.

https://ancientforestalliance.org/wp-content/uploads/2022/02/Economic-Value-of-Old-Growth-Report-Web.pdf

Indirect Economic Benefits

In addition to all of the direct benefits they provide, there are a host of indirect economic benefits associated with protected and conserved areas in Canada.

Ecosystem Services

For example, while healthy ecosystems are essential to providing a host of ecosystem services, the economic value of these services — and the costs associated with restoring or replacing them if they are degraded or destroyed — is often ignored.

In response, there has been growing momentum internationally to advance ways to measure and consider the value of these services in broader decision- and policy-making. For example, an international framework for natural capital accounting — the System of Environmental Economic Accounting (SEEA) was adopted by the United Nations Statistical Commission in 2012[101].

The SEEA has worked to develop *environmental economic accounts* as a way to promote a more integrated approach to understanding and considering natural capital in decision-making. The SEEA framework includes 5 broad ecosystem accounts, including: ecosystem extent; ecosystem condition; ecosystem services; ecosystem monetary assets; and thematic accounts[102].

Many countries have begun to integrate these types of approaches into their accounting systems. In Canada, Statistics Canada has led the development of the Canadian System of Environmental-Economic Accounts (CSE-EA), which provides a framework for monitoring and considering the linkages between economic activity and environmental health.

In particular, the CSE-EA helps to generate detailed statistics that describe:

- The size and scale of Canada's natural resource stocks (and their contribution to national wealth);
- the extraction and distribution of these resources;
- waste generation; and
- expenditures made by businesses, households and governments for the purposes of protecting the environment[103]

These statistics in turn help provide a framework for understanding the interactions between the Canadian environment and economy[104].

[101] https://seea.un.org/introduction-to-ecosystem-accounting
[102] ibid
[103] https://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=5331
[104] ibid

Ecosystem Services in Protected and Conserved Areas

There has also been growing interest by protected area managers and policy-makers in recent years in better understanding the value of the natural capital stock represented by the protected and conserved areas they manage.

For example, a 2020 global report on the economic implications of protecting 30% of lands and waters by 2030 found that the value of these efforts — in term of avoiding costs associated with failing to protect nature, such as large-scale flooding, ill health and epidemics, wildfires and coastal erosion — could be in the range of $170 – $534 billion per year by 2050 for forests and mangroves alone[105].

Here in Canada, Parks Canada has initiated an ecosystem services valuation of the natural capital held within its network of national parks and national marine conservation areas. Preliminary estimates of the potential value of these ecosystem services is $329 billion per year, including $100 billion for climate regulation, $75 billion for the provision of habitat and refugia for key species, and $48 billion for nutrient cycling[106].

Other assessments have aimed to value the ecosystem services provided by individual protected areas in different parts of the country. For example, a 2017 Nature Conservancy of Canada report conducted several case studies of private protected areas under their stewardship. It found that, depending on the type and location of the forest, these protected areas provided ecosystem services ranging in value from $5,800 to $46,000 per hectare per year, with an average benefit of $26,382 per hectare per year[107].

Another study, by the Ontario Ministry of Natural Resources, explored benefits provided by their parks system, and estimated the value of ecosystem services within two protected areas alone at $1.1 billion annually[108]. A study of Ontario's Greenbelt (a permanently protected green space in southern Ontario) estimated that the ecosystem services provided by the area could be valued at approximately $2.6 billion annually (or $3,487 per hectare)[109].

Similarly, a Parks Canada study found that the annual value of ecosystem goods and services provided by the Thousand Islands National Park was somewhere between $12.5 and $14.7 million. Annual recreational services were valued at $3.9 million, while other values such as existence values ranged from approximately $434,000 to $530,800 (all figures in 2012 dollars)[110].

While some of these methodologies differ, they all tell the same story: protected and conserved areas across the entire country provide powerful benefits with real economic value that are typically under-reported and often misunderstood.

There are many potential approaches to considering the value of ecosystem services. Some analyses focus on the value of a commodity reliant on a given ecosystem (e.g. considering the value of marine ecosystems to supporting fish production). Other approaches consider willingness to pay for a given service (such as scenery and recreation). Others focus on replacement or avoided cost, i.e. how much it would cost to replace a given ecosystem service (such as water filtration) in a given area.

[105] Waldron et al, Protecting 30% of the planet for nature: costs, benefits and economic implications, Working Paper analysing the economic implications of the proposed 30% target for areal protection in the draft post-2020 Global Biodiversity Framework. 2020. Available at: https://www.conservation.cam.ac.uk/files/waldron_report_30_by_30_publish.pdf

[106] Parks Canada Economic Analytics, Parks Canada's Natural Capital Asset I, 2020 Ecosystem Services Valuation Estimate, August 2021 (internal).

[107] TD Group and Nature Conservancy of Canada, Putting a Value on the Ecosystem Services Provided by Forests in Canada: Case Studies on Natural Capital and Conservation, 2017. Available at: https://www.natureconservancy.ca/assets/documents/nat/Natural-Capital_2017_draft.pdf

[108] Spatial Informatics Group for the Ontario Ministry of Natural Resources, Mapping the off-site benefits from protected areas' ecosystem services, 2013. Available at: https://www.ontario.ca/page/ecosystem-service-values

[109] David Suzuki Foundation, Ontario's wealth, Canada's future: Appreciating the value of the Greenbelt's Eco-services. DSF, 2008

[110] Environment Accounts and Statistics Division, Statistics Canada, Human Activity and the Environment 2013. 2013. Available at: https://www150.statcan.gc.ca/n1/pub/16-201-x/2013000/beforetoc-avanttdm1-eng.htm

Commercial Benefits

Other studies have aimed to understand the value of commercial activities associated with protected and conserved areas. For example, a 2017 study for the Government of Nova Scotia examined benefits generated by their protected area network for companies that either made direct use of protected areas (such as outfitters or guides) as well as those offering more indirect services such as camps or accommodations.

Some of the most powerful indirect benefits identified (in addition to consumer spending; wages and salaries; and 'spin-off' spending) were the role these areas played in helping to support a positive investment climate in the province, boosting its tourism brand and supporting a range of innovative business models[111].

"Businesses can benefit indirectly through the presence of protected areas whose mere existence draws residents and tourists to an area and who then spend money on goods and services in surrounding communities. People driving to a remote protected area for a day hike, for example, may spend money on transportation, food, and gifts at various businesses along the way."

Commercial Benefits of Nova Scotia's Protected Areas, 2017

[111] Gardner Pinfold Consultants Inc, https://novascotia.ca/nse/protectedareas/docs/NS_Protected_Areas_Commercial_Benefits_Final_Report.pdf

OLAF JENSEN

Indigenous-led conservation

Indigenous-led conservation efforts can generate powerful benefits for Indigenous communities, nations, and the lands and waters they steward. In addition to direct job creation, they also have potential to provide significant indirect social and economic benefits.

The Australian government has conducted several important examinations of the social return of their investments in IPAs and Rangers that offers a useful point of comparison for Canada.

For example, a series of reports in 2016 commissioned by the Australian Department of the Prime Minister and Cabinet explored the social impacts of 5 Indigenous Protected Areas across the country. Using a Social Return on Investment (SROI) model, this assessment concluded that, between 2009 and 2015, the government's investment of $35.3 million (AUS) had generated social, economic, cultural and environmental outcomes worth $96.5 million (AUS) — a 3:1 rate of return[112].

A similar approach to considering the social impacts of investments in Indigenous Guardians has been applied on a smaller scale in Canada. For example, a 2017 report exploring the current and future potential value of Indigenous Guardians in the Northwest Territories found that emerging Guardians programs in Lutsel K'e and the Dehcho region created approximately $2.50 of social, economic, cultural and environmental results for every $1 invested. The researchers projected that this value could increase to $3.70 with sustained investments[113].

Another report prepared for British Columbia's Coastal Stewardship Network suggests that the net value generated by investments in these programs - as measured against core Indigenous values and program objectives[114] — reflected at least a 10 to 1 annual return on investment, reaching as high as 20 to 1 for some programs[115]. Further calculations may be warranted for transferability to other communities for this particular study.

Another important benefit of conservation for Indigenous communities is the value of subsistence harvesting, particularly the harvest of wild foods. For example, the dollar value of wild food production in Nunavut has been estimated to range from $30 million[116] to $143 million annually[117].

LISA PIRIE

[112] SVA Consulting, Consolidated report on Indigenous Protected Areas following Social Return on Investment analyses, February 2016. Available at: https://www.niaa.gov.au/sites/default/files/publications/SROI-Consolidated-Report-IPA_1.pdf

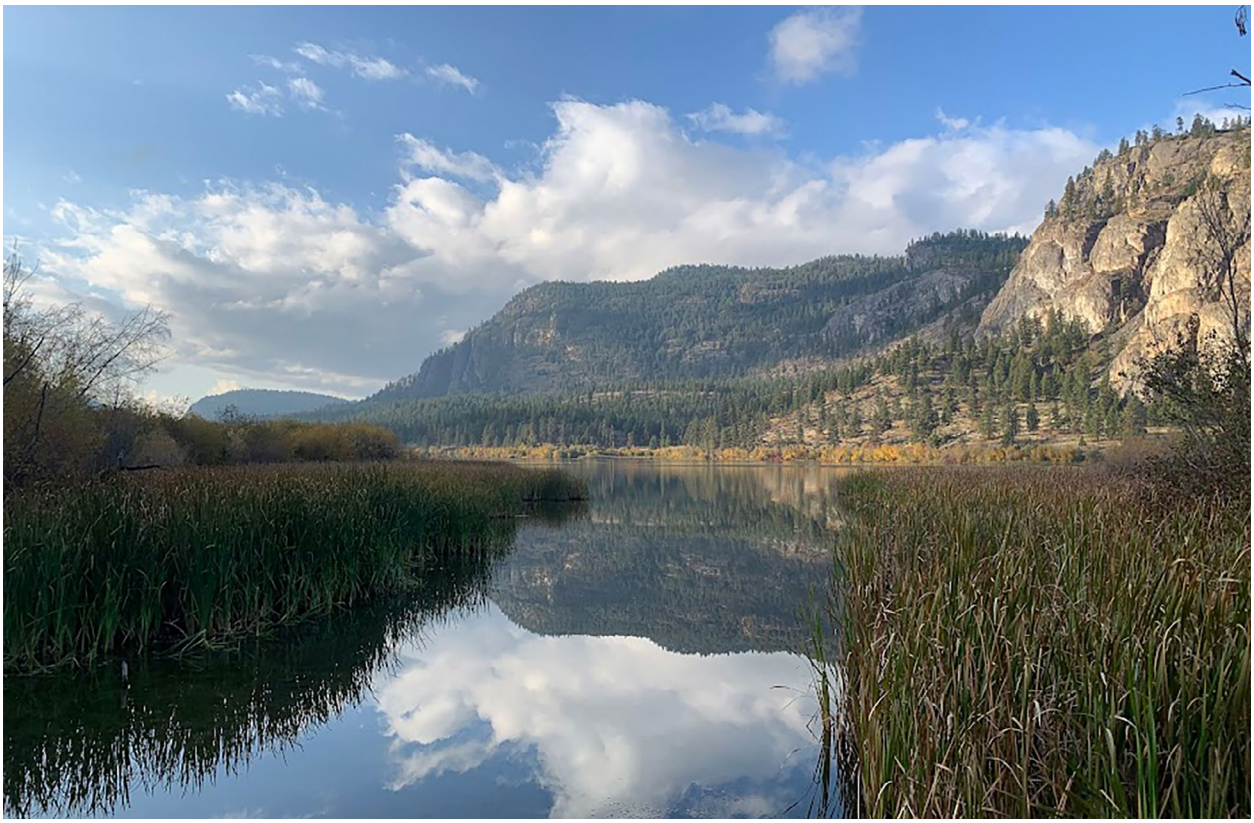
[113] SVA Consulting, Analysis of the Current and Future Value of Indigenous Guardian work in Canada's Northwest Territories, November 2016. Available at: https://static1.squarespace.com/static/5f8367238502ed181766aaf0/t/5fb4067a20b4fb44c16568e1/1605633660632/value-in-indigenous-guardian-work-nwt.pdf

[114] These included: Taking care of territory; Nurturing cultural wellbeing; Improving general health and community wellbeing; Advancing governance authority; Increasing community capacity; Opening and promoting economic opportunities in both Indigenous and conservation economies; and providing much needed financial capital inflows into the community.

[115] EPI EcoPlan international Inc, Valuing Coastal Guardian Watchmen Programs: A Business Case. 2016. Available at https://www.indigenousguardianstoolkit.ca/sites/default/files/Community%20Resource_Guardians-valuationreport_v10_Final_TNC%20Canada.pdf

[116] From Natcher, The Social Economy of Canada's Aboriginal North, 2008. Available at : https://www.rha.is/static/files/NRF/OpenAssemblies/Anchorage2008/natcher-nrf-submission.pdf

[117] https://nunatsiaq.com/stories/article/researcher-puts-a-dollar-figure-on-nunavuts-country-food-harvest/



JAMES REYNOLDS

Improving mental health through nature can reduce healthcare costs, improve workplace productivity and strengthen public health outcomes.

Other Societal Benefits

A recent study suggests that poor mental health costs approximately a tenth of global Gross National Product (GNP) — and that national parks provide a health service value estimated at trillions of dollars globally each year[118].

In fact, a global study of the economic value of improved mental health for visitors to protected and conserved areas estimated its value at $6 trillion US per year — significantly higher than the global value of tourism to these areas, and several orders of magnitude greater than the sum total of global protected area agency budgets[119].

In addition, parks — particularly in urban or sub-urban areas — have been found to improve property values and attract workers. Access to green spaces can also generate significant benefits in terms of worker productivity and wellbeing[120].

[118] Buckley, Nature tourism and mental health: parks, happiness and causation. Journal of Sustainable Tourism, 2020. Available at: https://www.tandfonline.com/doi/full/10.1080/09669582.2020.1742725

[119] Buckley et al, Economic Value of Protected Areas via Visitor Mental Health, Nature Communications, 2019. Available at: https://www.nature.com/articles/s41467-019-12631-6

[120] https://landscapeontario.com/the-financial-benefits-of-green-spaces

Benefits for Industry

There are also examples of indirect economic benefits to industry from nature conservation, although there is limited information available regarding the specific contribution to these benefits from protected and conserved areas.

However, it is certainly clear that critical natural resource sectors in Canada — such as agriculture, forestry, and fisheries — depend on healthy ecosystems, as do health and pharmaceutical companies and the tourism sector. According to the World Economic Forum, over half the world's total GDP (an estimated $44 trillion) could be at risk due to the dependence of industry on healthy ecosystems and the services they provide[121].

Conversely, **without effective conservation strategies in place, continued declines in biodiversity could seriously harm Canadian industry**. For example, studies have suggested that a 50% reduction in wild pollination would result in a $53 million reduction in the value of fruit production in Canada, while a 50% reduction in water supply would reduce the value of Canada's wood harvest by $375 million annually[122].

[121] World Economic Forum, The Future of Nature and Business, 2020. Available at: https://www3.weforum.org/docs/WEF_The_Future_Of_Nature_And_Business_2020.pdf

[122] CPAWS, Healthy Nature, Healthy People: A call to put nature protection at the heart of Canada's COVID-19 recovery strategies, 2020. Available at: https://cpaws.org/wp-content/uploads/2018/02/CPAWS-Parks-Report-2020-ENG.pdf

BRANIMIR GJETVAJ

IDENTIFIED GAPS AND POSSIBLE RECOMMENDATIONS

There is clear evidence that protected and conserved areas provide a host of powerful benefits for Canadians in every part of the country.

At the same time, several key information gaps were identified throughout the course of this project that may offer opportunities for further work among NSC partners moving forward.

For example, while there is a rich diversity of research available on the broad benefits associated with nature, there are fewer sources that focus specifically on the role of and benefits associated with protected and conserved areas. In addition, even fewer of these sources look specifically at the Canadian context.

Further, several key Canadian sources on the benefits of protected and conserved areas - such as the Value of Nature to Canadians survey and the Economic Impact of Parks study - are now more than ten years old.

Possible questions for consideration by the NSC therefore include:

- Would updating one or more of the national reports highlighted above help support the NSC's work in advancing protected and conserved areas across the country?
- Would a national framework for assessing ecosystem services in protected and conserved areas be valuable to the NSC moving forward?
- Could the NSC support the development of tools that could be used by protected area managers and planners to assess individual candidate protected areas / areas of interest in terms of the benefits they could generate?
- Would more targeted work quantifying the benefits associated with different types of designations — such as IPCAs and/or local protected areas — help communicate these benefits more effectively to respective decision-makers?
- Are there other reports or assessments that might help support and advance the NSC's work?

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Jay Patel, unsplash.com