



The largest natural history museum in Canada known for: nature inspiration and engagement; Arctic knowledge and exploration; species discovery and change; and a 14.6 million specimen collection housed at a 76 hectare research campus.

## 2017-2018 ANNUAL REPORT





➤ Sea ice provides a unique habitat for many species.

➤ Because it has limited any change to tundra has a significant impact

➤ The Arctic **coastline** is a **dynamic** environment, home to **diverse** and **abundant** life.

➤ The number that live or is severely by clim

➤ La **côte** arctique est un environnement **dynamique** qui accueille des formes de vie aussi **abondantes** que **diversifiées**.

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# message from the chair

On December 14, 2017, I had the honour of taking over from Mr. Stephen Henley as Chair of the Board of Trustees for the Canadian Museum of Nature. I am thrilled to be joining Canada's national museum of natural sciences and natural history at this important time in the Museum's history.

I take over as Chair after four years of operational transformation at the Canadian Museum of Nature, during which enterprise sustainability has been a central theme in guiding the Museum's mission and mandate. The Museum's progress in this regard, aligned with the strategic plan moving forward, has placed the Museum on a path to playing a vital role in creating a sustainable natural future for Canada and the world.

As stated by our CEO Meg Beckel, "Museum boards today are called upon to draw on a variety of skills sets, from executive leadership to governance to fundraising. Stephen Henley has been a leader in all these areas and we thank him for his devotion to the Museum and in setting us on a sustainable path. I look forward to harnessing the diverse skills and energy of our Board under the direction of Ms. LaRocque to enable continued growth for the Museum as a respected cultural and scientific institution."

As I take over as Chair, I am inspired by what has been recently accomplished by the Museum with the unending support and engagement of the Board of Trustees. Between 2013 and 2017, the Museum achieved some significant results related to fulfillment of its mission and mandate. These include:

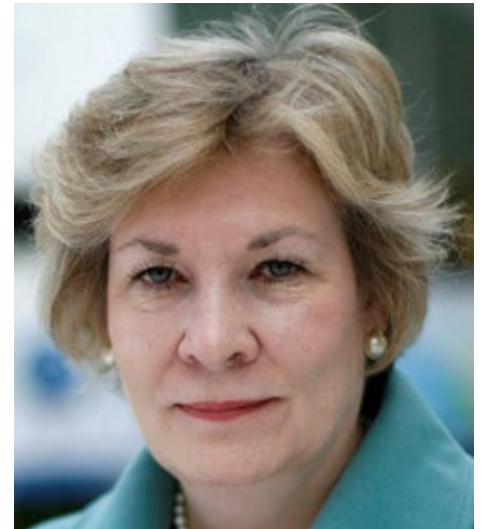
- External Investment: Cash and in-kind funds raised over the past four years - \$27 million
- Engagement: Cumulative visitation at the museum's public exhibitions site - 1,800,000

- Outreach: travelling exhibits and attendance - 166 venues and 3,496,000 visitors
- Research impact: 128 graduate students trained, 237 peer reviewed publications
- Global access: 325 million digital downloads of collections knowledge
- Board philanthropy and sponsorship: \$369,863

The Canadian Museum of Nature conducts research to create knowledge that has direct relevance to understanding environmental change. And, through the national natural history collection, it maintains a scientific body of evidence that is vital to environmental management. To continue this important research, the Museum is becoming a sustainable museum enterprise, which, to be relevant, must be clear in the value it provides to the scientific community and the public at large.

The growing support and reach of the Museum is a testament to the dedication and engagement of a number of Trustees who are stepping down after years of service to the Museum. I applaud and appreciate the wisdom and commitment of Martin Joanisse, Byron Neiles, Reg Manhas, and Erin Rankin Nash.

The Board continues to be focused on fulfilling its roles to govern, give and galvanize support for the Museum. With the support and engagement of many new Trustees, I am confident the Museum will continue to play a vital role in its global mission to save the world for future generations with evidence, knowledge and inspiration.



**JUDITH LAROCQUE**  
Chair, Board of Trustees



# message from the president and chief executive officer

The Arctic Biodiversity Summit hosted research scientists from across Canada committed to creating and sharing knowledge about Canada's north.

The Ross Beatty family invested \$4 million in the research and future programs of the Museum. The largest philanthropic gift in our history. Transformative.

The Museum scientists take the lead in creating new knowledge about the biodiversity of Canada C3 coastlines aboard the Canada 150 Canada C3 expedition.

The Canada Goose Arctic Gallery opens to the public on June 21<sup>st</sup>.

Our annual Donor Recognition Dinner celebrated our nature Patrons, Donors, and Sponsors as part of the opening festivities for the Canada Goose Arctic Gallery.

Pavers in our *Landscapes of Canada* gardens continue to be installed demonstrating the commitment of donors to the life and future of the Museum.

*Populace* inspired and amazed our visitors young and old, close and far with ceramic roses, feathers, and fleurs-de-lys to honour the cultures in the area at the time of Confederation.

Canada Bioblitz 150 included special public engagement activities in Gatineau Park.

*Voices from Nunavut* offered visions of Canada from north to south in a series of videos created by youth in Nunavut's 26 communities.

Dancing polar bears took over the national capital region and even joined the yoga on Parliament Hill.

An inspiring photographic installation called *Frost*, hosted by the Norwegian Embassy, provided visitors with a glimpse of life in Norway past and present.

Our annual Open House at our research campus welcomed over 3,700 visitors.

The fifth Nature Inspiration Awards celebrated individuals, organizations, and industry committed to creative, innovative, and leading approaches to nature conservation or engagement.

Employee long service awards celebrated our staff who have committed five to thirty years of service to inspiring understanding and respect for nature.

The annual volunteer potluck luncheon provided great food and conversation with our dedicated volunteers who support our employees at our Ottawa and Gatineau campus.

*Butterflies in Flight* delighted our visitors with live encounters with amazing and beautiful creatures of nature.

**2.65** million visitors participated in experiences at the Victoria Memorial Museum Building in Ottawa or created at the Natural Heritage Campus in Gatineau.

**46** venues across Canada hosted a travelling exhibit or a suitcase.

**112** specimen loans to 60 international and 52 Canadian institutions.

**\$6 million** raised in cash and in kind to support our mission and mandate.

**23** new experts guided by our research scientists.

**27%** of operating budget earned revenue.

**136** Museum professionals passionate about our purpose.



**MARGARET BECKEL**

President and Chief Executive Officer

**244** volunteers dedicated to the cause.

**14.6** million specimens of nature's evidence over time.

**940** million digital knowledge downloads sharing understanding with the world.

**80** million social media impressions connecting people with nature.

The Canadian Museum of Nature is saving the world for future generations with evidence, knowledge and inspiration.

Thank you for playing your part in our vital future.



# CORPORATE OVERVIEW

The Canadian Museum of Nature pursues its national mandate as described in the *Museums Act*, within the context of the governance and accountability regime established in Part X of the *Financial Administration Act*. The Museum's Board of Trustees and management are firmly committed to managing the public and private funds invested in the institution in a transparent, accountable manner, and to optimizing the value of the contribution the Museum makes to Canadians and Canadian society.

National museums are a key component of Canada's social and natural capital.

National museums reflect who we are as a country by virtue of what we value, save, share and protect: Art, History, Science & Innovation, Human Rights, Immigration and Nature. Canada's national museums have a local, national and international role. Local, as visitor destinations that inspire through evidence based story telling. National and Global, as creators and distributors of Canada's stories, through outreach programs and events in cities across Canada and around the world. Through collection loans to museums, galleries, libraries and community centres, through collaborative research on natural and cultural heritage. With digital content in virtual exhibits, digital apps, on-line collections, downloadable resource materials and all social media platforms, through access to physical and digital content as source information for content producers in TV, Radio, Film, News, education, research and public policy. And finally, with international programming through exhibits, programs, collaborative research, conference presentations and content co-creation. National museums play a vital role as trusted sources of contextualized knowledge, as keepers of the record of our past and as catalyzers of conversations about our future aspirations.

The Canadian Museum of Nature is one of Canada's national museums, each committed to reflecting who we have been, who we are now and who we aspire to be as a country and as Canadians. Canada's national museums reflect what we value as a country and as citizens by virtue of what we collect, preserve, study and share knowledge about: Art, History, Human Rights, Immigration, Science & Innovation and Nature. As part of the portfolio of Canadian Heritage institutions, we reflect the past, contextualize the present and anticipate and inspire a better future.

The Canadian Museum of Nature became a Crown corporation on July 1, 1990 through the *Museums Act*. The Museum is named in Part 1 of Schedule III to the *Financial Administration Act* and is subject to the control and accountability requirements set out for Crown corporations in that Act. It reports to Parliament through the Minister of Canadian Heritage.

The Museum is responsible for two facilities, the Victoria Memorial Museum Building (VMMB) in Ottawa, ON and the Natural Heritage Campus (NHC) in Gatineau, QC. The Museum's galleries and most of the exhibitions and programmes are offered at the VMMB. The campus is situated on 76 hectares of land and was designed to provide the standards of safety, security and preservation necessary to safeguard Canada's natural history collection.



## Vision

To inspire understanding and respect for nature.

## Mission

To create and deliver inspiring and memorable connections with nature through engaging and impactful programs of research, collections management, exhibitions and engagement in a 21<sup>st</sup> century global context.

At the highest level, the mission of the Canadian Museum of Nature is nothing less than to support making the vision of a sustainable future a reality. As current trends of greenhouse gas emissions, mass species extinctions, and their causal factors run counter to this vision, the museum's mission is one of inspiring change. We are an instrument, one of many working in concert within the scientific community, for providing the foundation required to foster the change required to "save the world". It is a foundation built on evidence, knowledge and inspiration, which are the mainstays of our work.

At a micro level, we are already "saving the world", as we build and maintain the National Natural History Collection, a scientifically active collection of over 14 million specimens which creates a geo-temporal record of nature – e.g. what is, and what is living on, the world where and when. From this evidence of the world and life on it, we can develop knowledge of interdependencies, a record of change, and a basis to understand impacts and where change is leading.

## Position

A national museum of international first rank known for excellence in arctic knowledge and species discovery and for evidence-based insights, inspiring visitor experiences and real engagement with nature's past, present and future.

Dynamic change is required to seize opportunities in the Museum's **nature inspiration**, Arctic knowledge and species discovery activities. Environmental trends will increase the value of the Museum's mandate over the planning period, but the Museum needs to adapt significantly to deliver. The ability to invest in change will be conditioned by the Museum's financial framework which demands new sources of revenue and efficiencies in order to sustain its operations. **The commemoration of the 150<sup>th</sup> anniversary of confederation allowed the Museum to seize many opportunities to extend the reach and impact of our public engagement and our research and discovery programs.**

The opening of the Canada Goose Arctic Gallery last year demonstrated the Museum's expertise in Arctic knowledge and exploration and it provided an inspiring space for learning about our natural world.

## Fulfilling the Mission

Knowing more about nature gives us the tools to make better decisions about resources. It provides the basis for new technologies and developments, and promotes a better understanding of how we affect, and are affected by, the natural world.

The Museum is home to one of the world's largest and finest natural history collections. Comprised of 26 major science collections of more than 14.6 million specimens, the museum's holdings cover four billion years of Earth history.

In addition to preserving these precious specimens for posterity, the collection is a vital resource for scientists, researchers and museums in Canada and around the world. For instance, by examining past patterns of species distribution, climate change and extinction, palaeobiology research helps scientists understand natural events that occur during environmental changes and assists in predicting future consequences.

At the museum, we use the past to prepare for the future. Our specimens provide the backbone for our many special exhibitions and signature galleries, and they greatly enhance our educational programmes, designed for adults, teens and children, about the natural world.

## Our Mandate

The Canadian Museum of Nature has its origins in the Geological Survey of Canada, which was formed in 1842. Nearly 150 years later, on July 1, 1990, the Museum became a Crown Corporation by an Act of Parliament.

The *Museums Act* was a significant event in the history of the Museum. With Crown Corporation status came a new name, a new "arms-length" status and an expanded mandate.

**"The purpose of the Canadian Museum of Nature is to increase throughout Canada and internationally, interest in, knowledge of and appreciation and respect for the natural world by establishing, maintaining and developing for research and posterity a collection of natural history objects, with special but not exclusive reference to Canada, and by demonstrating the natural world, the knowledge derived from it and the understanding it represents."**

– from the *Museums Act*, Section II (1990, c. 3)

## Putting Our Mandate to Work

The Canadian Museum of Nature's vision is to inspire understanding and respect for nature. We advance this vision by providing evidence-based insights, inspiring visitor experiences, and real engagement with nature's past, present and future.

Our Experience and Engagement division is leading our effort to deliver dynamic personal experiences, powerful dialogue and debate, expert narratives and extraordinary chronicles about our collections. A connection with the museum promises to inspire connections with nature and explorations of our natural future.

Through the activities of our Research and Collections division, the museum continues to conserve and maintain its natural history collections, for which it has developed considerable expertise in the areas of collection conservation and collection management. In the research area, activities are focused on major areas of interest and relevance to society. Our key efforts are directed towards the discovery of new knowledge, and the gathering and analysis of scientific information to increase our understanding of natural diversity.

The wealth of knowledge gained through our natural history collections and leading-edge research forms the core of the museum's exciting exhibitions and educational initiatives. As a result, our public programmes engage Canadians in guided dialogues about nature and challenge fixed opinions and views. In all activities, we aim to interpret natural history and science themes in an exciting and interactive way. We seek to increase nature literacy and science literacy among Canadians of all ages.



## Our Promise, Our Position, Our Approach

### Our Promise

Those who connect with the Canadian Museum of Nature will be inspired by natural history to explore our natural future.

### Our Position

We are a national museum of international first rank known for evidence-based insights, inspiring visitor experiences and real and relevant engagement with nature's past, present and future.

### Our Approach

We advance and package our centres of excellence in Arctic Knowledge and Exploration and Species Discovery so they focus and anchor our research, collection and education programmes while raising our profile and position.

We identify and act on collaborations with local, national and international partners that advance the strategic positioning and objectives of the museum.

We create and deliver enhanced and new programming options that keep current and attract new audiences.

We advance bold and consistent marketing, communications and identity campaigns that position the museum in the eyes of key influencers and markets across Canada and around the world.

We advance the enterprise business model of operation with clear bottom-line metrics and management accountabilities.

We cultivate meaningful relationships with visitors, members, donors, partners and stakeholders who are philosophically and financially committed to the vision and mandate of the museum and wish to play a part in its life and future.



# ASSESSMENT OF RESULTS FOR 2017-2018



In 2017-18, the Museum advanced its year four of a strategic plan that leverages its research and collections strengths in Arctic Knowledge and Species Discovery. New approaches to the design and delivery of visitor experiences enabled the Museum to attract and inspire new audiences. These new engaging experiences lead to higher memberships, higher membership renewal and provided a foundation for enhanced fundraising. Overall higher levels of engagement lead to a better understanding of and connection with Canada's natural world.

## STRATEGIC OBJECTIVE #1:

Create a Centre for Arctic Knowledge and Exploration that **transforms people's understanding of Canada's Arctic** and its relationship with Canada as a country in a 21<sup>st</sup> century global context.

**Strategies:** Advance a five year program to enhance and advance the research, collections, education and exhibition programs focused on Canada's Arctic within a national and global context.

- Open the Canada Goose Arctic Gallery supported by public programming
- Invest Budget 2016 funds in the completion of the Canada Goose Arctic Gallery
- Launch a ten year program of exhibits in the Northern Voices Gallery
- Invest in arctic collection digitization and digital imaging
- Continue to raise the profile of the Centre for Arctic Knowledge and Exploration

**Outcome #1:** Be a global museum leader in Arctic Knowledge and Exploration.

### Performance Measures:

Outcome	Measure	2014–15 to 2018-19 Performance Target Range	2017–18 Performance Target / Actual
Be a global museum leader in Arctic Knowledge and Exploration	• Number of participants in Arctic themed experiences: gallery, exhibit, program, digital	• From 250,000 annually to 1 million annually	• 500,000 / <b>720,110</b>
	• Funds raised supporting Arctic research, collections and engagement programming	• From \$100,000 annually to \$500,000 annually	• \$400,000 / <b>\$385,000</b>
	• Number of contacts with the Museum of Nature and its experts and collections for Arctic related content, expertise and collaboration	• From 50 annually to 200 annually	• 75 / <b>80</b>
	• Awareness of the Museum's Arctic content and expertise as measured by media mentions, stories, etc.	• From 150 to 200 stories and mentions annually	• 175 / <b>314</b>

The opening of the Canada Goose Arctic Gallery provided an excellent platform for engagement with the Museum's expertise and public programming.

## STRATEGIC OBJECTIVE #2:

Create a Centre for Species Discovery and Change that **transforms people's understanding of the relevance of species diversity** to their lives now and in the future.

**Strategies:** Advance a five year program to advance and disseminate the research, collections, education and exhibition programs explaining Canada's species diversity aligned with the United Nations Convention on Biodiversity 2020 program.

- Launch a five year scientific training program
- Create an endowed Beaty Post Doctoral position in Species Discovery and Species At Risk
- Build the Museum's presence in major digital knowledge portals

**Outcome #2:** Be a national leader and global influencer in advancing and sharing knowledge about species discovery and change.

### Performance Measures:

Outcome	Measure	2014-15 to 2018-19 Performance Target Range	2017-18 Performance Target / Actual
Be a national leader and global influencer in advancing and sharing knowledge about species discovery and change	• Number of publications	• From 40 annually to 60 annually	• 50 / <b>61</b>
	• Number of new species described by the Museum	• From 10 to 20 species	• 20 / <b>13</b>
	• Number of collaborators involved in the work the Museum does	• From 200 to 400 collaborators	• 250 / <b>187</b>
	• Number of new experts being guided by us	• From 20 to 30 students/post docs	• 25 / <b>23</b>
	• Amount of data shared digitally through nature.ca	• From 10 million to 25 million downloads and retrievals	• 20 million / <b>103 million</b>

The Beaty gift of 2017 provided the necessary investment to advance the Museum's scientific training program, the new postdoc in Species at Risk and the growth in digital knowledge shared through existing portals.

## STRATEGIC OBJECTIVE #3:

Create a Centre for Nature Inspiration and Engagement that **transforms people's expectations of the Canadian Museum of Nature as a destination** for discussion, connection and exploration with nature's past, present, and future that advances understanding and respect for Canada's natural world.

**Strategies:** Advance a five year program of inspiration and engagement activities on-site and off-site that deliver a different and compelling approach to connection and engagement with nature.

- Launch a five year content rethink and refresh program: Galleries and digital programs
- Host a year-long program of events celebrating Canada 150 with an Arctic theme
- Plan a year-long program of events **celebrating** Women's Federal Electoral Franchise 2018
- Participate and support Canada C3, Canada Bioblitz and Ottawa 2017

**Outcome #3:** Be a national leader in nature inspiration experiences on-site and off-site.

### Performance Measures:

Outcome	Measure	2014–15 to 2018-19 Performance Target Range	2017–18 Performance Target / Actual
Be a national leader in nature inspiration experiences on-site and off-site	• Number of visitors attending the VMMB and NHC generated experiences	• From 1 to 3 million	• 1.5 million / <b>1.03 million</b>
	• Change in membership renewal rate and total memberships	• From 4,200 and 42% renewal to 5,000 and 60% renewal	• 5,000 and 55% renewal / <b>4,400 and 45% renewal</b>
	• Change in reach of Museum expertise demonstrated by number of collaborations, conference presentations and workshop	• From 20 to 30 events	• 30 events / <b>85</b>
	• Number of organizations collaborating with the Museum for content and experience creations	• From 25 to 100 collaborations	• 75 collaborators / <b>113</b>
	• Funds raised in support of nature inspiration, content and experiences	• From \$100,000 to \$500,000 annually	• \$500,000 / <b>\$517,400</b>

The content refresh was at 80% completion at year end and ready for fundraising. The Canada 150 special programming attracted new collaborators and funds to the Museum and positively impacted our ability to engage in outside events and conferences.



## STRATEGIC OBJECTIVE #4:

**Position the Natural Heritage Campus as a centre of excellence** in collections management and knowledge creation, advancement and sharing by becoming a collections collaborator with institutions around the world seeking to collect, preserve, digitize and disseminate specimens that document the nature of Canada.

**Strategies:** Advance a five year program that positions the Campus as a globally excellent research, collections, administration and experience site that advances understanding and respect for nature.

- Invest in a cryogenic collections facility
- Invest Budget 2016 funds in scientific equipment essential to program integrity

**Outcome #4:** Be a global museum leader in natural heritage collections storage, study, preservation, digitization, and dissemination.

### Performance Measures:

Outcome	Measure	2014–15 to 2018-19 Performance Target Range	2017–18 Performance Target / Actual
Be a global museum leader in natural heritage collections storage, study, preservation, digitization and dissemination	• Number of roles in national and international collections management and research bodies	• From 10 to 50	• 35 / 20
	• Growth of collections through new signature public and private sources gifted to the Canadian Museum of Nature	• Increase collection by 10,000 to 50,000 lots per year	• 22,000 / 100,960
	• Access to NHC digitally through the Museum and third party created experiences	• From 25 million downloads and retrievals to 100 million annually	• 80 million / 940 million
	• Position relative to Alliance of Natural History Museums of collections digitized	• From 700,000 digitized Canadian specimens to 1 million	• 810,000 / 855,199
	• Attract in-kind support from research collaborators to fund field and lab research	• From \$300,000 to \$500,000 per year	• \$300,000 / \$435,000

Excellence in scientific research and collections care continued to attract new collections, downloading of our digital content and confirmation of support for our research program. Efforts to support our Canada 150 programming negatively impacted our ability to fulfill roles on national and international bodies.

## STRATEGIC OBJECTIVE #5:

Create a **sustainable business enterprise model of operation** that leverages the Museum's strategic imperatives: knowledge and discovery, inspiration and engagement, presence, performance and advancement.

**Strategies:** Advance a five year program of continuous innovation in all aspects of the Museum operation in order to create a financial and operational model that sustains the Museum now and into the future.

- Update the Digital Knowledge Framework mapping all key data systems
- Invest in a new admissions data system and collections data system
- Invest Budget 2016 funds in urgent, essential and required capital projects

**Outcome #5:** Be a national leader in sustainable museum enterprise operations within an international best practice context.

### Performance Measures:

Outcome	Measure	2014–15 to 2018-19 Performance Target Range	2017–18 Performance Target / Actual
Be a national leader in sustainable museum enterprise operations within an international best practice context	• Earned revenue as % of total budget	• From 17 to 25%	• 25% / <b>27%</b>
	• Penetration of tourist market	• From 10% market penetration to 20% market penetration	• 12% / <b>11%</b>
	• Advancement revenue as % of earned revenue	• From 15% to 20%	• 17% / <b>14%</b>
	• Number of experience connections per FTE	• From 28,000 to 35,000 per FTE	• 31,000 / <b>30,183</b>
	• Number of media mentions and stories	• From 500 mentions to 1,200 mentions per year	• 1,200 / <b>1,663</b>
	• Align the performance management and succession plans to support the enterprise model with the skills and human resource practices needed	• Combined and integrated approach to human resource development and management	• Fully integrated PMP, health and wellness and succession plan

Growth in earned revenue as a percent of total operating funds continued to grow this fiscal with the success of museum enterprises such as facility rentals and parking. Advancement revenue relative to other sources did not keep pace this fiscal due to lower than planned major gifts. Media mentions grew beyond expectations with the success of the Canada Goose Arctic Gallery and a number of scientific research and collections stories in the news. Performance management, health and wellness, and succession plan programs are all fully activated.



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# OVERVIEW OF CENTRES OF EXCELLENCE



## THE BEATY CENTRE FOR SPECIES DISCOVERY

You can't manage a business without an inventory! In the Anthropocene era, where humans are charged with managing the Earth, natural sciences collections, like that of the Canadian Museum of Nature, provide the "inventory" of the natural world now dependent on our actions. They form a record, in geography and time, of the flora, fauna and minerals that exist or existed in any given location. Where new discoveries are made, taxonomy names them and classifies them in relation to their own or other species. Over time the evidence of changes in what is found and where, demonstrates the impact of, and correlation with, their causes. In turn, this can inform our decisions and actions in accordance with their consequences. This is essential for the sustainability of human progress within the context of nature and our natural future.

The Beaty Centre for Species Discovery is a matrix organization focused on the Canadian Museum of Nature's expertise in discovering, describing and classifying earth's biodiversity (living and extinct) and geodiversity. It contributes to global initiatives to document earth's natural diversity and to understand its interdependencies. It does this through creating and maintaining a scientific natural history collection and making that collection accessible through loans and digitization to scientists and scientific bodies within the Museum, within Canada, and around the world. In turn, the Centre's experts also access the collections of other organizations and work independently and in collaboration with them to develop knowledge and a deeper understanding of our natural world.

The number of new species the Museum discovers and/or names, the number of scientists that actively borrow specimens from our collection, and the number of scientific publications published by Museum scientists or by those that borrowed from our collection, are all testament to our relevance and success. Currently, the Centre has 13 research projects underway discovering and classifying species, and digitization initiatives are underway to improve access to collection data by putting it online. In addition to its own "collections online" portal, specimen data is made available worldwide through the Global Biodiversity Information Facility (GBIF). The Museum leads Canada's representation to GBIF, with Museum Vice President Dr. Mark Graham serving on its executive committee.

The Centre not only shares knowledge, but, as a knowledge leader, it encourages the conversations and debate that extend and develop understanding. This year, the Beaty Centre for Species Discovery hosted a Biodiversity Conservation Forum at the Canadian Museum of Nature's Victoria Memorial Museum Building location in downtown Ottawa. The symposium featured leaders in biodiversity conservation from across Canada and the United States, both presenting and attending, and it was live-streamed online by Canadian Geographic to audiences worldwide.

As part of the national museum of natural sciences, the Centre has an important voice on both the national and world stage. This includes active participation in the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), of which the Canadian Museum of Nature was a founding member, and in the International Union for the Conservation of Nature (IUCN) for which the Museum's CEO Margaret Beckel is the President of the Canadian Chapter (CCIUCN). These bodies assess species to identify their risk of extinction, and are informed by knowledge garnered from our and other scientific collections as well as other sources. For example, increasing concentrations of harmful metals found within a species can be determined from



In February 2017, resource entrepreneur Ross Beaty announces his family's \$4 million philanthropic gift to support scientific initiatives for the Museum's newly named Beaty Centre for Species Discovery.



analyzing specimens collected over time. From that, resulting risks to that species, or to other species that rely on it as a food source, can be assessed.

In addition to federal government funding, the Centre receives support directly and in-kind from partner researchers and research institutions, foundations, corporate sponsors, and individuals. Notably, the Ross Beatty Family invested \$4 million last year to create a national cryogenic facility to curate tissue samples and genetic material, a post-doctoral fellowship on species at risk, and a program to digitize the Museum's extensive collection of Arctic specimens.

The Centre's priorities will continue to include collection digitization in the upcoming year, which will include extending digitization of Arctic specimens to species other than plants (plants now being largely completed), and to digitizing type specimens (specimens that were used to scientifically identify a species). The Centre's scientists will continue to add to the Museum's collections through exploration and discovery, through acquisition, and through the work of visiting scientists. Importantly, the Centre will open the National Biodiversity Cryobank of Canada (Cryobanque nationale canadienne de la biodiversité). This state-of-the-art facility will allow the Museum to develop and curate a national tissue collection, critical for investigating DNA sequencing and molecular study as it relates to species research.

The Museum's public engagement role is also supported by the activities of the Centre. Special events such as *Science By Night* and *Ignite* feature Museum scientists engaging with the public on their research work. *Science in Action* weekend programming at the Museum also features Museum scientists, as does special programming events such as *Garden Days*. The Museum's permanent and special exhibits are enhanced to feature content and interpretation from Museum scientists, as was the case for *Butterflies in Flight* featured this year and next. Knowledge from the Beatty Centre for Species Discovery, presented by the Museum, informs the public of species, their evolution and change, their interdependencies, and the impact of human activity upon them.

In providing the scientific knowledge to develop understanding, the Centre also provides the evidence to direct policy. As a result, human decisions that impact the myriad species of our planet can be made with the best knowledge of what those species are, and how they will be affected.

## THE CENTRE FOR ARCTIC KNOWLEDGE AND EXPLORATION

Change is constant. But the rate of change in the Arctic is unprecedented. Climate change, security, tourism, and demand for resources all present new issues, new pressures and new opportunities for its environment and for the people that call the Arctic home. The Arctic represents almost 40% of our country's land mass, and the Canadian Arctic in turn represents about a third of the global Arctic. The changes taking place right now and into the future are not contained to the Arctic. They have repercussions for the world - and for us all. Change in the Arctic environment has human causes. Our ability as humans to sustainably manage change in the Arctic may well be the test of our ability to sustainably manage our planet. Doing this will rely on understanding the Arctic, what species live there and their interdependencies, and what are the changes taking place.

The Canadian Museum of Nature knows the Arctic. The end of the seminal Canadian Arctic Expedition (1913–1918), in which the Museum was deeply involved, will celebrate its 100th anniversary this year. For over a century, our scientific explorers have been discovering and documenting the flora, fauna and minerals of the Arctic, which continues to this day. Through this work, the Museum has compiled the largest collection of specimens from the Canadian Arctic in the world. This is a record of nature from which we can reconstruct what the environment looked like at different times, whether ancient (through the fossil record) or recent. This evidence provides a record of change from which future impacts can be assessed.

The Centre for Arctic Knowledge and Exploration stewards and co-ordinates the Museum's expertise in all things "Arctic". This expertise in turn draws on and supports the Museum's other centres of excellence – whether the Beaty Centre for Species Discovery or the Nature Inspiration Centre. The Museum's record of change goes back millions of years. The Museum curates the Nunavut Palaeontology Collection, which includes Tiktaalik, the famous fossil of a "walking fish" – a 375 million year old possible transitional form between fishes and four-legged animals. Museum scientist Natalia Rybczynski discovered both the "walking seal", another transitional form of evolutionary interest, and the High Arctic camel, an example of more recent adaptation and species migration. Contemporary specimens may speak to species migration and hybridization, as well as adaptation to current climate change.

This year the work of the Centre for Arctic Knowledge and Exploration included Dr. Troy McMullin's discoveries of lichens in Arctic locations where they have never been previously found. Other lichen research, led by McMullin and Museum botanist Paul Sokoloff, is being presented to COSEWIC in determination of whether a rare Arctic species is endangered. The Museum, under Dr. Mark Graham, led the scientific program on the Canada C3 Expedition, a Canada 150 Signature Project, which traversed Canada along its coastline, including the Arctic. Museum scientists were engaged throughout, including research in Arctic vascular plants (Dr. Jeff Saarela), freshwater diatoms (Paul Hamilton), and benthic organisms (Dr. Jean-Marc Gagnon). The new book, *Marine Fishes of Arctic Canada*, co-edited by Dr. Brian Coad and including chapters written by other Museum researchers (Dr. Claude Renaud and Noel Alfonso), was published and launched early in 2018, serving as a compendium of the Museum's long history of work in exploring and identifying Arctic fish species. It will be a lasting resource to those interested in the Arctic's astounding fish biodiversity and its conservation.





Digitization of Arctic specimens, benefitting from the targeted investment from the Ross Beatty Family, proceeded rapidly last year – such that imaging of all Arctic vascular plant herbarium specimens will be completed by the end of the upcoming year. Arctic bird, mammal and invertebrate records are now all being digitized. Dominique Fauteux, an Arctic mammal biologist, has joined the Museum's scientific team and is involved in ArcticWEB, an international multi-disciplinary Arctic research network, that is studying ecosystem processes in the Arctic and the functioning of terrestrial ecosystems in the context of climate change. Work with the Arctic Council's biodiversity working group Conservation of Arctic Flora and Fauna (CAFF), based in Iceland, has included studies on plant diversity (Drs. Lynn Gillespie and Jeff Saarela) and the circumpolar biodiversity marine monitoring program (Dr. Michel Poulin).

The Museum is also the co-founder of the Arctic Natural History Museums Alliance (ANHMA), which comprises the national natural-history museums of the eight Arctic Council states. The ANHMA acts to co-ordinate dissemination of knowledge between the museums and to co-ordinate collections digitization, research contribution and collaboration, and to co-operate in impactful public programming and outreach.

Co-operation from ANHMA members contributed to the development of the Canada Goose Arctic Gallery, which the Museum opened to the public on June 21, 2017, in

commemoration of Canada's 150<sup>th</sup> anniversary. The Centre for Arctic Knowledge and Exploration provided scientific leadership for the Canada Goose Arctic Gallery, contributing specimens, expertise, and content to the gallery and to public programming. In testimony to this, visitors can virtually "meet" Museum scientists throughout the Canada Goose Arctic Gallery in life-size video "people capsules" in which they present key Arctic learnings.

While the Centre has leading expertise in many areas of natural science pertaining to the Arctic, it does not cover all areas. For instance, other institutions are leaders in Arctic insects, birds, flatworms and fossil plants. Specialization is a consequence of more and more scientific information becoming available, as before moving on to develop new knowledge we must first be aware of what is already known. It is simply harder and harder to synthesize the extent of what is known, and even more so across disparate areas of focus, which is why specialization within scientific institutions and co-operation among them is so vitally important. Partnerships, trading specimens for research purposes, and of course digitization of specimen data, increases our ability to specialize and to share and augment information to interpret bigger picture dynamics. Correspondingly, the Centre's work contributes to other areas of scientific work undertaken by external organizations and individuals. Arctic ecologists, for example, will draw on our work in addition to others, bringing various disciplines together.

The Centre continues to welcome new scientists as others retire. Their early career stage calls for active in-field exploration of the Arctic, which is expensive. Existing resources will not suffice, which will demand that the Centre explore partnerships that will provide it, and/or sponsors to support. Next year and moving forward, the Centre will focus on developing new collaborations, new expeditions, and new outreach.

Recognizing the importance of the Arctic to the world, and Canada's Arctic to the global Arctic, the Centre will increasingly demonstrate leadership nationally and internationally to build and preserve the specimen-based Arctic scientific record and to generate new knowledge from that record. This knowledge, shared and presented through scientific and public fora, will inform the public and policy makers to guide decisions for a sustainable Arctic and a sustainable natural future.

## NATURE INSPIRATION CENTRE

There is no “planet B”. A sustainable future on Earth will demand that collectively decisions are made that recognize the interdependencies and impacts of human endeavour to, and within, natural ecosystems. Such decisions can only be made on the basis of knowledge derived from the foundation of scientific evidence. For widespread decisions to support a common direction, the knowledge that supports them must be widespread as well. As must also the desire and urgency to not only make those decisions, but to turn decisions into action.



### Canada C3

Last summer, the Nature Inspiration Centre applied this thinking to the C3 hub located within the Museum’s Water Gallery. It served as a leading public engagement node with the Canada 150 C3 Expedition, which circumnavigated Canada’s coastline from Toronto to Victoria across the Northwest passage of the Arctic Ocean. The Museum’s own Dr. Mark Graham led all scientific programs on the voyage, and the Museum’s C3 hub engaged with the expedition and these projects directly through Facebook Live forums connected real-time with a live audience in the Museum.

This is where the Nature Inspiration Centre (NIC) comes in. It is the Canadian Museum of Nature’s centre of excellence and expertise dedicated to improving, extending, and innovating the ways the Museum engages the public in order to increase understanding of how, as humans, we are part of the natural world and the consequences of our actions. The NIC’s perspective is to build on the evidence and knowledge from the Museum’s scientific collections and research, specifically the Beaty Centre for Species Discovery and the Centre for Arctic Knowledge and Exploration, and connect this to a broader context of nature and the world.

The Canadian Museum of Nature, as Canada’s national museum of natural sciences, is uniquely placed to do so, by using Canada as a prism for viewing the world. For example, from a global perspective the world has not multiple oceans, rather we have but one - as all oceans converge with each other. In this light, a better understanding of the issues and concerns on Canada’s three coasts readily ladder up to a better understanding of the issues and concerns for oceans (or the ocean) across the world. The sheer size of Canada’s coasts and its extensive Arctic presence, where the impacts of climate change are most acute and rapid, make it especially relevant.

Last year, the NIC carried out extensive audience research to better understand what audiences expect from us, who we are reaching, how we are reaching them and with what messages, and what has been successful. Coupled with this was a strategic content study examining global trends and best-in-class benchmarks in public engagement at natural sciences museums around the world. Reflective of these inputs, the NIC practices continuous improvement, testing concepts for success and providing for agility in responding to measured visitor feedback through remediation and ongoing improvements.

The Canada Goose Arctic Gallery, launched in June 2017, represents a successful application of the thinking behind the NIC. Using, as a foundation, the evidence and knowledge from the scientific collections and research of our own Centre for Arctic Knowledge and Exploration, the Gallery explores a range of different perspectives to think about and understand the Arctic. A broad consultation process included Indigenous, artistic, and environmental voices which were incorporated within the Gallery’s themes and afforded separate spaces within the gallery to tell their stories. Innovative means of engagement were explored, such as *Beyond Ice*, made in partnership with the National Film Board of Canada, in which a multimedia experience is projected onto towering sculptures of real ice that, on the surface, will even melt to a visitor’s touch.

Accreditations received speak to the success of this approach. *Beyond Ice* will be the recipient of a MUSE Award from the American Alliance of Museums, and the Canada Goose Arctic Gallery has been recognized as an Ontario Signature Experience by Destination Ontario.



Building on the knowledge of the Beaty Centre for Species Discovery, a new live butterfly experience was opened for the winter of 2017-18. It gave visitors an up close and personal connection to explore species diversity, pollination, and the beauty of nature. The experience was so impactful and well-received that it will become an ongoing feature of the Museum's winter offering in years to come.

In the upcoming year, the NIC will focus on exploring and developing public engagement within three different themes:

### **1. Content Strategy**

Building on the learnings from the content strategy research delivered last year, the NIC will focus on a content plan for refreshing the Museum's galleries moving forward. This will consider gallery life cycle, best practice, and innovation to optimize public engagement.

### **2. New Approaches to Public Education About the Natural World**

Impacts from production of goods and services (supply), consumer consumption (demand), and resultant waste are not broadly understood. For example, how much water is used to create a T-shirt? Or, how many rare metals are used to make a cell phone? Different schools of thought present different approaches to the same story, with the same end – right decisions for a sustainable future – in mind. For example, the

approach put forward under an auspice of "conservation" may differ the approach put forward under an auspice of "natural capital". The NIC will connect with partners internationally and globally to contribute to, and provide fora for, conversations to develop better understandings.

### **3. Peer-to-Peer Best Practice**

Next year, the Canadian Museum of Nature will host the NOICE / I.L.L.C. summit of museum professionals in science and natural sciences. Fifty subject leaders will discuss best practice in public engagement.

The leadership role of the NIC ensures the Canadian Museum of Nature holds its place as a museum of international first rank, at the cutting-edge of public engagement best practice. The NIC is continually testing and improving to push the boundaries of increasing effectiveness. This supports the Museum's goal to extend and heighten public awareness and understanding of the natural world, so to inspire decisions and action to provide a sustainable natural future.





# SCIENTIFIC RESEARCH PROGRAM FOR 2017-2018



The Museum has Research Scientists, Curators and Senior Research Assistants who create and develop this program of work. Each of the multi-year projects draws upon the resources of the Museum as well as contributions from a significant list of collaborators. This list is a reference to understand the topics being investigated, the range of activities, and who is involved. The information in this document is summarized from the pages of the detailed research proposals (available upon request), and also provides links to the corresponding Research and Collections web-pages at [nature.ca](http://nature.ca).



## MINERALOGY

### 1.

**Title:** The Role of Crystal Chemistry in Species Discovery and Change

**Principal Investigator:** Paula Piilonen (<http://nature.ca/en/research-collections/research-projects/evolution-alkaline-environments>)

**Abstract:**

Crystal chemistry is the study of how the physical and chemical properties of a material are related to its atomic structure. The material can be a mineral or a synthetic phase, the latter of which can be either organic or inorganic. The working premise of crystal chemistry is that by understanding atomic systematics of minerals and compounds one can and will eventually be able to predict and model their behaviour in the natural world. This activity is a basic need of mineralogical research. Preliminary study can be done at the CMN, but crystal structure analysis must be done at other sites with the appropriate equipment.

### 2.

**Title:** The Speciation and Evolution of Alkaline Environments: Trace Elements, Accessory Minerals and Magma

**Principal Investigator:** Paula Piilonen (<http://nature.ca/en/research-collections/research-projects/evolution-alkaline-environments>)

**Abstract:**

The foci of this study are extremely evolved suites of highly alkaline basalts and syenitic rocks. These rocks record melting in specialized environments at various depths within our planet, coupled with extreme evolution, that together produce exotic and sometimes economic deposits of rare metals such as niobium, zirconium, thorium and rare-earth elements. The complex chemistry of the deposits is typically concentrated in accessory minerals; consequently, studies concentrating on the chemistry of these minerals are among the best ways to trace the evolution of their hosts. Key goals of the study are to determine how these elements behave during the generation and evolution of magmas, and to discover new ways that these elements and their mineral hosts can be used to study the generation and evolution of magmas.





## PALAEOBIOLOGY

### 1.

**Title:** Species coexistence and change during the Late Cretaceous of North America

**Principal Investigator:** Jordan Mallon (<http://nature.ca/en/research-collections/research-projects/palaeoecology-canadian-dinosaurs>)

**Abstract:**

The Late Cretaceous period of North America (~85–66 Ma) witnessed an explosion in dinosaur diversity, followed by a decline in some groups leading up to the end-Cretaceous mass extinction. Internal processes, like niche partitioning, and external processes, like sea level and climate change, are among the factors that have been invoked to account for the rise and subsequent fall of dinosaur diversity. Addressing these matters may therefore shed light on related conservation issues today. My approach combines fieldwork with integrative and collaborative research to investigate the evolution and palaeoecology of Canadian dinosaurs within this broader context.

### 2.

**Title:** Changing faunas and human activities in the Canadian Northwest coast for the past 6,000 years

**Principal Investigator:** Kathlyn Stewart (<http://nature.ca/en/research-collections/research-projects/changing-faunas-human-activities-canadian-northwest-coast-pas>)

**Abstract:**

Differences in past environments, faunas and human activities between southern and northern coastal BC are investigated in this project. Field excavations were undertaken at two Vancouver Island sites, and at four northern BC sites, the latter funded by SSHRC grants of \$75,000 and \$175,000. Most of the identification and analysis of vertebrate remains was undertaken by the author. Findings have been presented to the public, to scientific conferences, and in peer-reviewed journals. I and my colleagues are now writing up data from the southern BC archaeological site (Maplebank). The findings will be published both in a Royal BC Museum-published book, in a peer-reviewed journal and presented at an upcoming 2017 conference.

### 3.

**Vertebrate Evolution, Hominids and Environmental Change in the Later Cenozoic**

**Principal Investigator:** Kathlyn Stewart (<http://nature.ca/en/research-collections/research-projects/changing-faunas-human-activities-canadian-northwest-coast-pas>)

**Abstract:**

In 2003, the US-based “Revealing Hominid Origins Initiative” (RHOI), was awarded US\$2,500,000 by NSF to investigate early hominins, vertebrates and environmental change. I coordinated data on fish fossils which were recovered. Since the project ended, I have authored several publications and named 10 species of fossil fish. Extending from RHOI now are two further projects: 1) investigating the role of fish in the diet and evolution of hominins. This has resulted in journal articles, presentations, books, and popular articles; I was also invited speaker at two conferences in London UK, expenses paid; 2) investigating Mio-Pliocene hominin sites, vertebrates and environments in eastern Africa for evolutionary and environmental information. I have received fossil fish for analysis from Olduvai Gorge (Oct 2015), and Scott Rufolo has travelled to eastern Africa (Jan 2016) to identify new recently recovered fish fossils.

### 4.

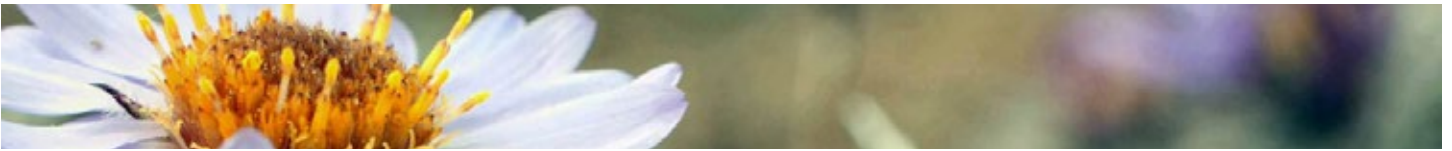
**Title:** Study on the Mesozoic reptiles (mainly diapsids) from Canada and China

**Principal Investigator:** Xiao-chun Wu (<http://nature.ca/en/research-collections/research-projects/reptiles-mesozoic-era>)

**Abstract:**

New marine reptiles, such as sauropterygians, thalattosaurs, archosauromorphs, turtles from the Triassic, and new terrestrial dinosaurs and other vertebrates from the Jurassic have been continuously collected in south-west China by our Chinese collaborators. Studies of these new finds will be significant to better understand faunal changes during the Triassic and the Tr-J transition from marine to terrestrial environments on a global scale.

The study of new reptiles in the upper Cretaceous (77 to 65 Ma ago), and the early-middle Paleogene (35 Ma ago) in southern Alberta and China will continue to increase our understanding of the diversity and number of dinosaurs and other vertebrates before and after the K-Pg extinction. This work will increase our knowledge of the response of the vertebrate assemblages to their paleoenvironments and geological events during the periods.



## BOTANY

### 1.

**Title:** Biodiversity of the Canadian Arctic Flora

**Principal Investigators:** Lynn Gillespie (<http://nature.ca/en/research-collections/research-projects/canadian-arctic-flora-biodiversity-change>), Jeffery Saarela (<http://nature.ca/en/research-collections/research-projects/canadian-arctic-flora-biodiversity-change>), and Troy McMullin

**Abstract:**

This research program aims to increase our knowledge of the diversity and distribution of Canadian Arctic vascular plants. This knowledge is fundamental to understanding how the Arctic flora may be impacted by environmental change, and provides baseline data for conservation, ecological monitoring, and predictive modelling studies. The main goals of the project are to: produce a new flora treating all Canadian Arctic vascular plant species; produce DNA barcode data for all Canadian Arctic vascular plants; undertake field expeditions to the Arctic; analyse patterns of species and genetic diversity across the Canadian Arctic; and conduct systematic studies of taxonomically problematic species complexes.

### 2.

**Title:** Taxonomy and phylogenetics of grasses (Poaceae) and their monocot relatives

**Principal Investigator:** Jeffery Saarela (<http://nature.ca/en/research-collections/research-projects/taxonomy-phylogenetics-grasses-poaceae-their-relatives>)

**Abstract:**

I conduct taxonomic and phylogenetic research on grasses, sedges and their relatives. I conduct collections-based studies, which provide comprehensive baseline data on plant nomenclature, morphology, and distribution in time in space, providing up-to-date information that is critical for understanding and monitoring organismal responses to environmental change. I use DNA sequence data to produce DNA-based identification tools, identify major lineages and reconstruct their evolutionary relationships, develop and clarify taxonomic classifications, characterize patterns of molecular evolution, and understand patterns of morphological change within and among lineages. I make extensive field collections, and all material is deposited in the National Herbarium of Canada.

### 3.

**Title:** Phylogenetic and molecular systematics of flowering plants: species discovery and evolutionary history

**Principal Investigator:** Lynn Gillespie (<http://nature.ca/en/research-collections/research-projects/understanding-evolutionary-history-flowering-plants>)

**Abstract:**

This research program aims to increase our knowledge of the systematics and evolution of flowering plants, focusing on the grass tribe Poeae and the spurge family Euphorbiaceae. We use phylogenetic analyses of molecular data and detailed morphological studies to assess current taxonomy and classification, explore the evolution of morphological and ecological traits, and examine historical biogeography. Our goals are to understand evolutionary relationships over time and space, devise new classifications reflecting phylogenetic history, discover species and genera new to science, and produce taxonomic revisions and floristic treatments.

### 4.

**Title:** Canadian Arctic Marine Protists (CAMP)

**Principal Investigator:** Michel Poulin (<http://nature.ca/fr/recherche-collections/scientifiques/michel-poulin>)

**Abstract:**

The CAMP project aims to document the diversity of Canadian Arctic marine protists before changes in species composition and distribution occur in relation to on-going climate change. A key component of CAMP is to raise awareness and foster a better knowledge and understanding of the microscopic world of marine autotrophic unicellular eukaryote cells in the Arctic for the scientific community, Northerners, the general public and decision-makers. The main goal of CAMP is to address the science knowledge gap regarding marine autotrophic eukaryotes, with the publication of original, well-illustrated papers to the identification of the Canadian Arctic marine protists.



**5.**

**Title:** Freshwater micro-organism diversity and environment (FMODE): multi-proxy approach to systematics, global biodiversity, Arctic toxicology, impact assessment and environmental change using conventional and genetic markers

**Principal Investigator:** Paul Hamilton (<http://nature.ca/en/research-collections/research-projects/freshwater-micro-organisms-systematics-biodiversity-toxicolog>)

**Supervising Scientist:** Michel Poulin (<http://nature.ca/fr/recherche-collections/scientifiques/michel-poulin>)

**Abstract:**

Diatoms are markers of habitat integrity, anthropogenic impacts and environmental change. This research is within two strategic themes (directive to inspire understanding & respect for nature). Diversity in environmentally stressed systems will be aligned with Canadian and global biodiversity. Impacts of mercury and organic contaminants will be assessed in the Canadian Arctic. The taxonomy of *Neidium*, *Pinnularia*, *Surirella* and *Nitzschia* will be studied. Diatoms are biomarkers for nutrient and metal pollution. A multi-proxy protocol will be taken to evaluate cryptic species using morphology and gene barcoding. The objective is to link global microbial biodiversity with environmental health and biogeography.

**6.**

**Title:** The biogeography, ecology, and taxonomy of Canadian lichens

**Principal Investigator:** Troy McMullin

**Abstract:**

The aim of my research program is to advance our knowledge of the Canadian lichen biota. I will conduct interdisciplinary collection-based research throughout the country with a focus on regions, habitats, and species that are poorly understood. My objectives are to: 1) develop regional base-line data for areas with knowledge gaps, 2) address taxonomic uncertainties using morphometrics, metabolite determinations, and phylogenetic analyses, and 3) resolve unknown questions in lichen ecology.

**7.**

**Title:** Bryophytes of Canada

**Principal Investigator:** Jennifer Doubt (<http://nature.ca/fr/recherche-collections/projets-recherche/bryophytes-canada>)

**Supervising Scientist:** Lynn Gillespie (<http://nature.ca/fr/recherche-collections/scientifiques/michel-poulin>)

**Abstract:**

This research on mosses, liverworts and hornworts supports the understanding of plant diversity and conservation in Canada, and builds a key strength of the National Herbarium of Canada. Bryophytes provide all the ecosystem services that plants provide worldwide, while also filling unique roles specific to their distinctive size and biological traits, making life possible in extreme terrestrial environments, notably the Arctic. Bryophytes have yet to be studied in detail in most parts of Canada, creating abundant opportunity for discovery and meaningful contribution to natural history knowledge.





## ZOOLOGY

### 1.

**Title:** Systematics of New World Weevils (Coleoptera: Curculionidae)

**Principal Investigator:** Robert Anderson (<http://nature.ca/en/research-collections/research-projects/taxonomy-weevils-americas>)

**Abstract:**

This proposal is for an ongoing project on the systematics of weevils of the New World using standard methods of morphological systematics to assess the taxonomy, classification, distribution and natural history for various taxa. The primary focus will be on systematics, biogeography and evolution of the fauna of leaf litter, particularly those members of the tribe Lymantini (Molytinae) and Cryptorhynchini (Cryptorhynchinae). Primary target areas for study are Central America, the West Indies and North America. Studies will include taxonomic revisions, descriptions of new species, biogeographic assessments of endemism and species richness and faunal reviews. Opportunities for collaboration on molecular studies will be pursued where appropriate.

### 2.

**Title:** Living on the cold ocean floor: biodiversity and the effects of icebergs, natural gas and resource extraction

**Principal Investigator:** Kathleen Conlan (<http://nature.ca/en/research-collections/science-experts/kathleen-e-conlan>), **with Ed Hendrycks** (<http://nature.ca/en/research-collections/science-experts/edward-hendrycks>)

**Abstract:**

This research explores the diversity and patterns of marine life on three cold ocean floors: the Arctic, the Antarctic and the abyssal deep. Numerous unusual and unknown species are being discovered and community patterns are being assessed in relation to impacts from iceberg groundings, natural gas seeps and hydrocarbon extraction. The results will enhance our understanding of the diversity and dynamics of cold oceans and will help us to predict responses to climate change and seafloor resource extraction.

### 3.

**Title:** Native freshwater mussels of Canada: studies on their taxonomy, distribution & decline

**Principal Investigator:** André Martel (<http://nature.ca/en/research-collections/research-projects/freshwater-mussels-marine-mussels-canada-studies-taxonomy-dis>)

**Abstract:**

This research focuses on a speciose yet declining group of bivalve molluscs within Canada, native freshwater mussels (Unionacea). (1) Species differentiation and taxonomy are studied by comparative morphology of siphonal apertures and mantle flaps of adults, as well as by mtDNA. (2) Distribution is assessed during field surveys in selected rivers and lakes. (3) Temporal changes in freshwater mussel communities are evaluated, with emphasis on species loss, by comparing results from recent field surveys with past surveys and historical collection records, as well as by evaluating the impact of the invasive zebra mussel and changes in fish communities (host fishes).

### 4.

**Title:** Ecology and Taxonomy of Northwest Atlantic/Arctic Marine Invertebrate Species

**Principal Investigator:** Jean-Marc Gagnon (<http://nature.ca/en/research-collections/research-projects/ecology-taxonomy-northwest-atlantic-marine-species>)

**Abstract:**

This research project contains four activities that examine taxonomic, biogeographic and ecological questions for North Atlantic and Arctic species of crustaceans, mollusc and polychaete. The first activity looks at population differentiation and distribution for the Lady Crab (*Ovalipes ocellatus*) in the Northwest Atlantic; a collaboration with DFO- Moncton, an Ottawa U Honours student and US researchers (to be confirmed). The second activity was started in June 2012, as a collaboration with a Barcode of Life post-doctoral researcher; it has been on hiatus but now reactivated with a collaboration with Dr. Roy. We are comparing morphological traits and DNA information for scavenging amphipods of the northwest Atlantic and Canadian Arctic. The third activity aims to describe a new *Chaetopterus* species (Polychaeta) from the St. Lawrence Estuary. The fourth activity is a continuation of the research on the newly described species of giant file clam, *Acesta cryptadelphe*. New data from the US continental slope of the Northwest Atlantic will result in the description of the distribution of the latter species.



## 5.

Title: Morphogenetic Characterizations of Large Carnivores and Implications for their Conservation in Canada

**Head Researcher:** Kamal Khidas (<http://nature.ca/en/research-collections/research-projects/morphogenetic-characteristics-large-carnivores-canada-implica>)

### Summary:

Morphogenetic characteristics and their variation are studied in the Canada lynx, grey wolf, polar bear and brown bear in order to identify significant evolutionary units and, possibly, to validate taxa that were previously described or remain to be revealed by elucidating the mechanisms of adaptation and evolution (microevolution) of populations. Influential environmental factors and revelations that will be made about the impacts of spatial habitat patterns and environmental changes on the distribution of these units are an important part of these studies. It will finally be possible to refine conservation strategies for these species.



OUR PEOPLE

## BOARD OF TRUSTEES

The Board of Trustees is the Museum's governing body, responsible to Parliament through the Minister of Canadian Heritage. The 11 members are Governor-in-Council appointees from all regions of Canada. Through accountability and strategic policy and planning frameworks, the Board provides corporate direction and delegates authority to the President and CEO for the management of the Museum. In 2017-2018, the Board met three times, either in person, by conference call or by videoconference. Ten meetings of the Committees of the Board were held.

### Standing Committees

#### Executive Committee

##### **Judith LaRocque, Chair**

**Mandate:** The Executive Committee's sole purpose is to act for the Board on urgent matters arising between regular Board meetings in cases where it is not possible to convene a meeting of the Board, and to do other things as delegated by the Board to the Committee.

#### Audit and Finance Committee

##### **Ron Calderoni, Chair**

**Mandate:** The Audit and Finance Committee is responsible for overseeing the Canadian Museum of Nature's standards of integrity and behaviour, the integrity and credibility of the Canadian Museum of Nature's financial reports, and the systems and practices of internal control.

#### Governance and Nominating Committee

##### **Nicholas Offord, Chair**

**Mandate:** The Governance and Nominating Committee is responsible for monitoring adherence to Board policies, monitoring when terms of office for members of the Board of Trustees expire and for recommending to the Board individuals to be encouraged to participate in the Government of Canada appointment process. The Committee also leads the annual review of the President's performance and provides oversight for key human resources policies approved by the Board.

### Board of Trustees

#### **Stephen Henley**

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(06-Jun-2013 to 13-Dec-2017)

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#### **Erin Rankin Nash**

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Corporate Secretary

#### **Skye Cameron**

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#### **Stacy Wakeford**

Director, Content

#### **Xiao-Chun Wu**

Section Head, Palaeobiology





# COMMUNICATING RESEARCH RESULTS

## Research and Collections Staff

Museum staff published 61 articles in refereed journals - which have other scientists review all articles submitted before they are accepted for publication - and 22 in non-refereed publications. Museum staff also published a selection of books, reports and other papers. A complete list follows (names in boldface are Museum staff members). Publications are listed in the language in which they are written.

### Refereed publications

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## Research/Museum Associates

**Dr. G.W. Argus**, Merrickville, ON

**Dr. F. Brodo**, Ottawa, ON

**Dr. I. Brodo**, Ottawa, ON

**Dr. M. Caldwell**, Edmonton, AB

**Dr. F.R. Cook**, North Augusta, ON

**Dr. F. Chapleau**, Ottawa, ON

**Dr. B. Coad**, Ottawa, ON

**Dr. S. Cumbaa**, Ottawa, ON

**Dr. S. Ercit**, Ottawa, ON

**Mr. G.R. Fitzgerald**, Ottawa, ON

**Mr. R. Gault**, Clayton, ON

**Dr. J. Grice**, Ottawa, ON

**Dr. R. Harington**, Ottawa, ON

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**Dr. R.B. Holmes**, Edmonton, AB

**Mr. J. Lauriault**, Gatineau, QC

**Dr. D. Leaman**, Ottawa, ON

**Dr. G. Levin**, Chelsea, QC

**Mr. C. Lewis**, Kingston, ON

**Dr. H. Maddin**, Ottawa, ON

**Dr. P. Outridge**, Ottawa, ON

**Mr. M. Picard**, Osgoode, ON

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**Dr. M. Poulin**, Gatineau, QC

**Dr. C. Renaud**, Orleans, ON

**Dr. D.A. Russell**, California, USA

**Dr. M. Ryan**, Ohio, USA

**Dr. N. Rybczynski**, Chelsea, QC

**Dr. T. Sato**, Tokyo, Japan

**Dr. F. Schueler**, Oxford Station, ON

**Dr. A.B.T. Smith**, Kanata, ON

**Dr. R.Y. Smith**, Calgary, AB

**Dr. J. Starr**, Gatineau, QC

**Dr. K. Stewart**, Ottawa, ON

**Dr. V. Tait**, Ottawa, ON

**Dr. K. Tanoue**, Fukuota, Japan

**Dr. R.R. Waller**, Orleans, ON

**Mrs. W. Wight**, Ottawa

**Dr. M.-C. Williamson**, Ottawa, ON





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## Non-refereed publications

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species based on morphology, embryology and phylogenomics. Canadian Botanical Association Annual Meeting, Waterloo, Canada, 4-8 July.

Lévillé-Bourret, É., **J.R. Starr**, B.A. Ford, T.K.T. Nguyễn and A.T. Vũ. 2017. [Abstract]. *Sumatrosclirpus*: taxonomic revision and the discovery of a new monotypic Southeast Asian sedge tribe (Cariceae-Dulichieae-Scirpeae Clade, Cyperaceae). Canadian Botanical Association Annual Meeting, Waterloo, Canada, 4-8 July.

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## Reports and other

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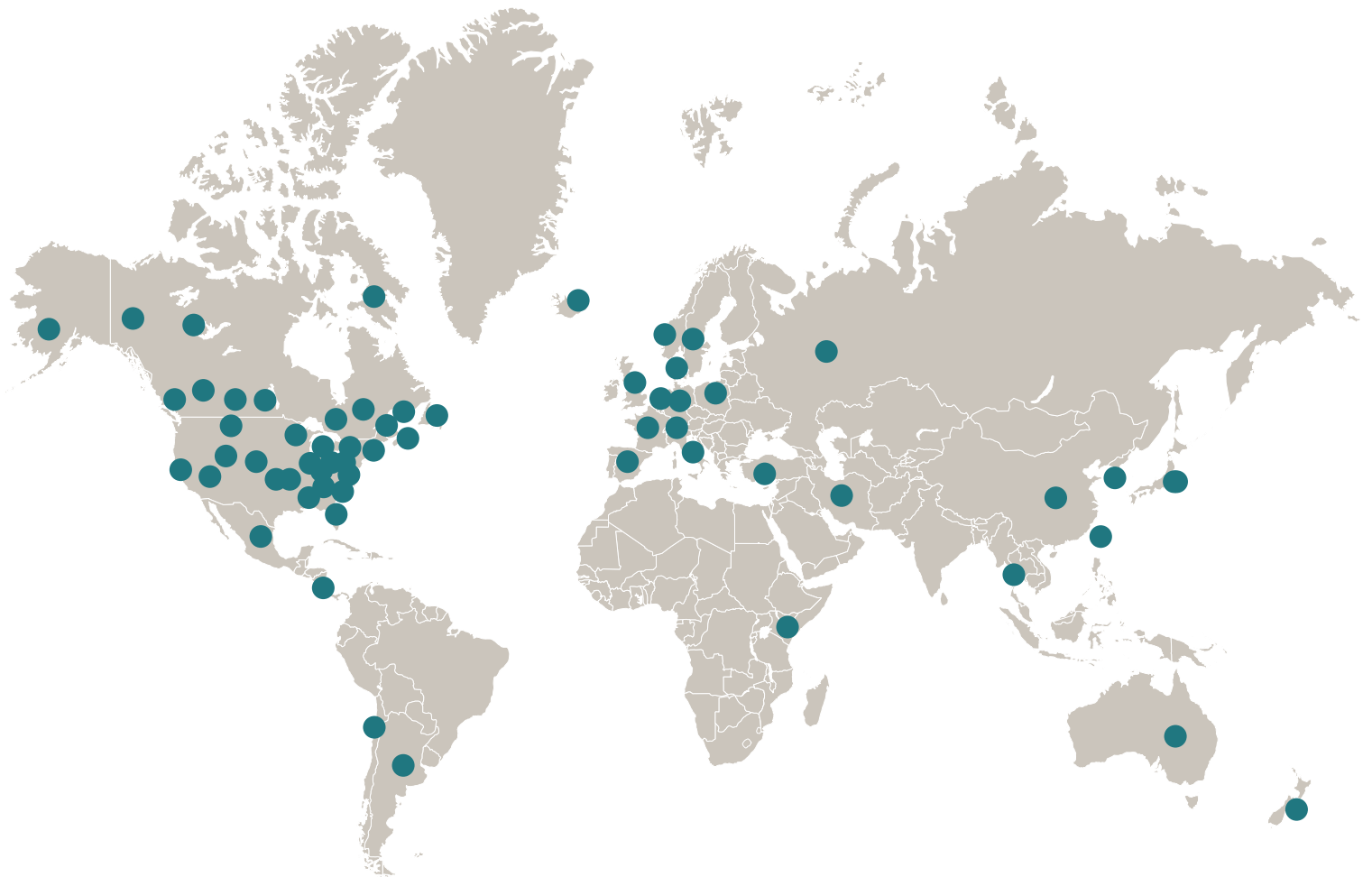
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<b>Ottawa Public Health</b> , Ottawa	<b>Bibliothèque Saint-Zotique</b> , Saint-Zotique
<b>Ottawa Riverkeeper</b> , Ottawa	<b>Biophare</b> , Sorel-Tracy
<b>Parks Canada</b> , Ottawa	<b>Bombardier Inc.</b> , Montreal
<b>Past Recovery Archaeological Services Inc.</b> , Maberly	<b>CHSLD Vigi de l'Outaouais</b> , Gatineau
<b>Peel Art Gallery</b> , Brampton	<b>Canadian Heritage Information Network</b> , Gatineau
<b>Peterborough Centennial Museum and Archives</b> , Peterborough	<b>Canadian Museum of History</b> , Gatineau
<b>Polar Continental Shelf Program</b> , Ottawa	<b>Centre de la Biodiversité</b> , Becancour
<b>Polar Knowledge Canada</b> , Ottawa	<b>Commission géologique du Canada</b> , Québec
<b>Public Health Agency of Canada</b> , Ottawa	<b>Commission de la capitale nationale (Parc de la Gatineau)</b> , Chelsea
<b>Queen's University</b> , Kingston	<b>Concordia University</b> , Montreal
	<b>Conseil du loisir scientifique de l'Outaouais</b> , Gatineau
	<b>Coordination Mechanism of the Global Taxonomy Initiative</b> , Montreal

**École Alphonse-Pesant**, St-Leonard  
**Education and Water Monitoring Action Group**  
**Environment Canada**, Gatineau & Montréal  
**Expographiq**, Gatineau  
**Fednav**, Montreal  
**Indigenous and Northern Affairs**, Gatineau  
**Institut Maurice Lamontagne**, Mont Joli  
**La Branche culturelle**, Brownsburg-Chatham  
**Luke Mettaweskum School**, Nemaska  
**Maison Lenoblet-du-Plessis**, Contrecoeur  
**Makivik Corporation**, Montreal  
**McCord Museum**, Montreal  
**McGill University**, Montréal  
**Mineralogical Association of Canada**, Quebec  
**Ministère des forêts, de la faune et des parcs**, Québec & Chibougamau  
**Ministère des ressources naturelles et de la faune du Québec**, Québec  
**Montreal Biodome**, Montreal  
**Montreal Insectarium**, Montreal  
**Montreal Space for Life**  
**Musée de la nature et des sciences de Sherbrooke**, Sherbrooke  
**Musée d'histoire naturelle de Miguasha**, Nouvelle  
**Musée du Fjord**, Saguenay  
**Musée minéralogique et minier de Thetford Mines**, Thetford Mines  
**Musée régional de la Côte-Nord**, Sept-Îles  
**Musée régional de Rimouski**, Rimouski  
**National Film Board**, Montreal  
**Parc Découverte nature**, Coaticook  
**Parc national de Plaisance**, Plaisance  
**Parc national de la Gaspésie**, Sainte-Anne-des-Monts  
**Parks Canada**, Gatineau  
**Pointe-à-Callière Museum**, Montreal  
**Quality Engineering Test Establishment**, Gatineau  
**Redpath Museum**, Montreal  
**Société d'art et d'histoire de Beauport**, Bibliothèque Etienne-Parent, Quebec  
**Société Québécoise de bryologie**, Saint-Valérien-de- Rimouski  
**Students on Ice**, Gatineau

**Université Laval**, Québec  
**Université de Montréal (Canadensys)**, Montréal  
**Université du Québec à Rimouski**, Rimouski  
**Université du Québec à Chicoutimi**, Saguenay  
**Université de Québec en Abitibi-Témiscamingue**, Rouyn-Noranda  
**Université de Sherbrooke**, Sherbrooke  
**Ville de Levis**, Levis  
**Saskatchewan**  
**International Centre for Northern Governance and Development**, University of Saskatchewan, Saskatoon  
**Kleanpals Cleaning Ltd**, Estevan  
**Royal Saskatchewan Museum**, Regina  
**Strasbourg and District Museum**, Strasbourg  
**T. Rex Discovery Centre**, Eastend  
**Yukon**  
**Department of Tourism and Culture**, Whitehorse  
**Environment Canada**, Whitehorse  
**NatureServe Yukon**, Yukon Department of the Environment, Whitehorse  
**Yukon Arts Centre**, Whitehorse  
**Yukon Beringia Interpretive Centre**, Whitehorse  
**Yukon Research Centre**  
**Yukon Territory Conservation Data Centre**, Whitehorse







# MANAGING OUR FINANCIAL RESOURCES

The Canadian Museum of Nature's (the "Museum") primary objective is to fulfill its national mandate as described in the *Museums Act*, within the context of the governance and accountability regime established in that Act and Part X of the *Financial Administration Act*. To this end, the Museum's Board of Trustees and Management are committed to managing the public and private funds invested in the Museum in a transparent, accountable manner and to optimizing the value of the contribution the Museum makes to Canadians and to Canadian society.

## MANAGEMENT DISCUSSION AND ANALYSIS

### Financial overview

The Museum has made significant progress towards achieving financial sustainability through a combination of revenue generation and expenditure reduction measures implemented over the past six years. In order to maintain financial sustainability, the Museum will strive to increase self-generated revenue by 5% annually while limiting increases in expenditures to 1% annually. To enable that outcome, the Museum is shifting from an appropriation dependent operating model to a sustainable museum enterprise operating model. This shift is meant to foster innovation and calls for new skills and accountability for staff and volunteers since growth and new programs will be earned revenue growth dependent rather than appropriation growth dependent. The ongoing challenge for the Museum is ensuring this shift happens at the required pace through recruitment, training and performance management.

The Museum did not have major temporary exhibitions in 2017-18 as the prime focus of the Museum was the design and development of the Canada Goose Arctic Gallery and support of all its associated programming. The Canada Goose Arctic Gallery was the Museum's contribution to the Canada 150 initiative. The commemoration of the 150<sup>th</sup> anniversary of confederation presented many opportunities to extend the reach and impact of the Museum's nature inspiration programs. The opening of the Canada Goose Arctic Gallery demonstrated the Museum's expertise in Arctic knowledge and its role in Arctic exploration. In addition, the Canada Goose Arctic Gallery featured amazing specimens, innovative presentation, interactive storytelling, and a multimedia experience created in partnership with the National Film Board. The Arctic-focused programming attracted over 73,000 visitors and engaged over 30 external partners in the development and delivery of vibrant Arctic-themed activities.

The Museum also piloted a four month surcharged live Butterfly house and associated programming in the Solarium that opened December 2017 and continued to pilot Escape Manor to ascertain whether the program will be continued. Again this year, programs such as *Nature Nocturne* evenings have also contributed to the increase in revenue. These adult only evenings continue to be a successful program and a new perspective on the Museum as a place for young adults. The aforementioned revenue generation measures are in addition to those initiated in previous years such as the introduction of

a new pricing structure for admissions, surcharges for major temporary exhibitions, value-based pricing for education programs, new programming such as the 3D Theatre, aggressive membership marketing and automated parking. Other important initiatives were the revenue generated from collections storage and management service fees and facility leasing fees to fund strategic investments in the *Centre for Arctic Knowledge & Exploration* and the *Centre for Species Discovery & Change*. In 2017-18, the Museum generated revenue excluding specimen donations and in-kind sponsorships equivalent to 27% of base operating costs, compared to 29% in the previous year, well above its target of 25%.

An important element of a current and relevant visitor experience will be an ambitious program of refreshment of the permanent galleries to be phased in over five years subject to capital funding and contributions. The Museum will also be refreshing the Fossil Gallery, including an introduction to the cretaceous period and updated labelling.

The Museum continues to focus on increasing and enhancing all touch points of the visitor journey to create a world-class offer that deepens engagement and increases loyalty. The Museum also continues to effectively manage the visitor flow through frontline employee and volunteer engagement and intelligent signage. It also increases revenue from ancillary operations and aligns all commercial offerings within the Museum's mission and mandate.

The Museum continuously reviews its program, its means of delivery and its supporting activities to ensure they remain relevant to Canadians. Family Programming refreshed its offer and increased its volunteer base to increase and improve public reach and engagement during key periods and to continue to attract those visitors who are not motivated by our special temporary exhibitions.

Given the expenditure reduction measures implemented in previous years and recognizing the financial pressures of many museums across the country, the Museum embarked on collaborations with Science North in Sudbury, with Parks Canada and with Canadian Geographic Enterprises to create and deliver programs to Canadians. This collaboration approach reflects a direction the Museum continues to pursue to leverage scarce resources to best effect.

The national museums now have a systematic approach for identifying and advancing co-procurement projects, cooperative exhibit scheduling and cooperative marketing projects. Over the last four years, the Museum collaborated with other national museums on two requests for proposals that resulted in combined annual savings to the Museum of approximately \$200,000.

Operational objectives include ensuring there is a strategic approach to digital output, and an ongoing and efficient operation of the Museum's online presence across its website and social media channels. During 2017-18, the Museum continued to refine and improve digital performance measures and data collection methods to provide relevant and timely tactical and strategic information to guide decisions on content and user experience.

Building a high performance advancement operation focused on developing a pipeline of annual, sponsorship and major gifts prospects and donors is an important element of the sustainable museum enterprise operating model and to the success of the Museum in the future. The new advancement strategy implemented in 2014-15 focuses on building support from individual, corporate and foundation donors that includes a naturePATRON fundraising program and a major gift program to raise the Museum's profile and raise funds in support of the Museum's position as a leader in Arctic research and species discovery. Advancement programs fund both operations and special projects such as galleries, fieldwork, scientific equipment and landscaping.

The Museum was successful in significantly expanding its pipeline of potential donors, while acknowledging that much more work needs to be done to achieve a robust group of prospective supporters to achieve the \$25 million overall fundraising goal.

Revenue generation measures in 2017-18 and beyond included:

- Implementing a plan to increase revenue by capitalizing on the VMMB's commercial operations, especially in the areas of attendance and membership fees, rental of facilities, ticketed programs, boutique and online sales;
- Expanding the Museum's virtual presence and attracting new audiences through the use of new digital strategies including digital storytelling, digital apps, digital natureART exhibits, and downloadable teacher resources;
- Enhancing existing marketing and awareness campaigns, including the Museum's social media marketing campaign;

- Building and strengthening the Museum's exhibitions and public-education programming with a view to continuously increasing overall attendance and diversifying its audience base; and
- Evolving the business model for the travelling exhibitions program at the Museum; and monetizing the physical assets of the Museum at the VMMB and NHC sites.

In 2017-18, total support received from individual and corporate donations, sponsorships, memberships, collaborations, and in-kind support for research and collections and from the media amounts to \$6.0 million, exceeding the annual goal of \$5.8 million. These cash and in-kind commitments secured through the Museum's fundraising activities are broader in scope than the contributions recognized on the Museum's Statement of Operations.

In spite of the progress towards achieving financial sustainability, addressing the financial pressures related to operating the two facilities under its stewardship remains the most critical issue facing the Museum as it is still vulnerable to the impact of inflation on key inputs such as utilities and property taxes.

Budget 2016 provided funding to help Canada's national museums address immediate operational and capital pressures including the gap between established appropriations provided for payment in lieu of taxes (PILT) purposes and the actual amount of PILT being paid, and deferred recapitalization projects, primarily those related to immediate health and safety issues.

Through budget 2016, the Museum received \$6.4 million in 2017-18. Of this amount, \$6,072,000 was to address the backlog of health and safety and other recapitalization needs, and \$314,000 was to address the gap between the level of funding it currently receives in appropriations and the PILT level that is due to PSPC each year, based on estimates for 2016 provided by PSPC. This, however, does not offset the \$1.0 million in property taxes paid on the Gatineau site. The costs of managing the Museum's two buildings have increased since the completion of the renovated VMMB. The Museum has in place a number of strategies designed to manage both known and anticipated pressures. An enterprise risk management approach is being used to manage these strategies and pressures in support of the vision to inspire understanding and respect for nature.

## FINANCIAL PERFORMANCE

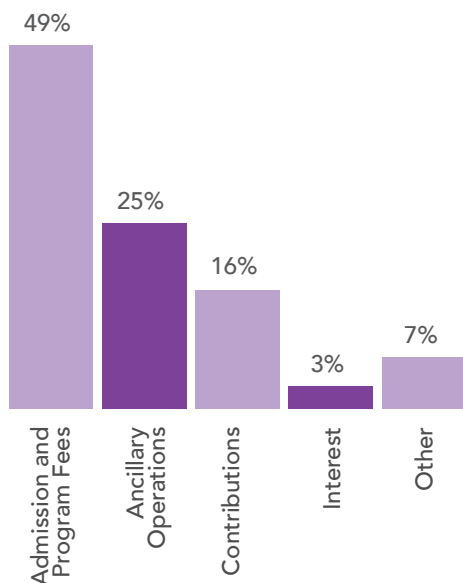
### Revenue and parliamentary appropriations

Revenue and parliamentary appropriations increased to \$43.2 million in 2017-18 from \$41.6 million in 2016-17 with appropriations representing 78% of the total in 2017-18 compared to 76% in 2016-17.

The Museum had established a target of generating revenue excluding specimen donations and in-kind sponsorships equivalent to 25% of base operating costs. In 2017-18, with attendance reaching 489,289 (525,938 in 2016-17), the Museum surpassed its target with revenue excluding specimen donations and in-kind sponsorships equivalent to 27% of base operating costs (29% in 2016-17).

#### Revenue

(Excluding parliamentary appropriations)



#### Parliamentary Appropriations

On an accrual basis, parliamentary appropriations increased by \$1.8 million to \$33.5 million in 2017-18 from \$31.7 million in 2016-17, mainly due to the second instalment of a 4-year investment by the federal government through Budget 2016 to address the backlog of health and safety and other recapitalization needs.

#### Admission and Program Fees

Revenue associated with admission and program fees decreased by \$1.1 million to \$4.3 million in 2017-18 from \$5.4 million in 2016-17. This decrease is mainly due to the anticipated decrease in admission and program fees as surcharges related to major temporary exhibits were expected to decrease. The Museum did not have major temporary exhibitions in 2017-18.

Fees from programs delivered at the Museum have totalled \$0.6 million in 2017-18, the same as 2016-17 as a result of the continuous success of *Nature Nocturne* evenings.

Membership revenue includes \$494,000 of membership revenue recorded for the year ended March 31, 2018, offset by \$247,000 one-time deferred revenue adjustment.

#### Ancillary Operations

Revenue associated with ancillary operations includes rentals of facilities, boutique sales and cafeteria leases, and parking. Revenue from ancillary operations increased by \$0.4 million to \$2.2 million in 2017-18 from \$1.8 million in 2016-17. The \$0.4 million increase is mainly due to the rental of facilities and parking revenue increase during 2017-18.

#### Contributions

Contributions recognized as revenue vary from year to year based upon the resources required to fund research, collections and public education programs including installing new permanent galleries. On an accrual basis, contributions including donations, sponsorships, in-kind sponsorships and specimen donations increased by \$0.5 million to \$2.4 million in 2017-18 from \$1.9 million in 2016-17. The increase is mainly due to higher in-kind sponsorships and specimen donations and higher deferred contributions used for the purchase of capital assets recognized as revenue during the year.

The Museum has been building its fundraising capacity since 2012 by hiring new professionals, cultivating a pipeline of prospective supporters and packaging attractive projects to support. On February 23, 2017, the Museum received a large philanthropic gift of \$4 million from the Ross Beaty family in Vancouver, which will enhance the Museum's national research and collections efforts focused on species discovery. One



million dollars from the \$4 million gift was endowed through the Ottawa Community Foundation (OCF). The remaining \$3 million invested within OCF and included in the deferred revenue will support the creation of a national cryogenic facility and the digitization of the Museum's collections.

### Interest

Interest revenue on cash and restricted cash held in the Museum's bank account increased by \$0.2 million to \$0.3 million in 2017-18 from \$0.1 million in 2016-17. The increase is attributable to higher interest rates during 2017-18.

### Other

Other revenue decreased by \$0.1 million to \$0.6 million in 2017-18 from \$0.7 million in 2016-17 mainly due to lower revenue generated from travelling exhibitions.

## Expenses

Expenses increased by \$1.0 million to \$41.0 million in 2017-18 from \$40.0 million in 2016-17.

### Inspiration and Engagement

Inspiration and engagement increased to \$10.6 million in 2017-18 from \$9.4 million in 2016-17. The increase of \$1.2 million is mainly due to higher amortization expenses related to the capitalization of the Canada Goose Arctic Gallery and lower salary expenses during 2016-17 due to capitalization of personnel costs related to the Canada Goose Arctic gallery permanent exhibition.

### Collections Care and Access

Collections care and access increased to \$3.4 million in 2017-18 from \$2.8 million in 2016-17. The increase of \$0.6 million is attributable to in-kind sponsorships and specimen donations which increased by \$0.2 million, arctic digitization expenses of \$0.2 million incurred during 2017-18 and higher expenses related to personnel costs and collections care expenses of \$0.2 million.

### Research and Discovery

Research and discovery decreased to \$3.9 million in 2017-18 from \$4.3 million in 2016-17. The \$0.4 million decrease is attributable to lower personnel costs of \$0.2 million due to vacant positions and \$0.2 million of non-capital research equipment expenditures incurred in 2016-17.

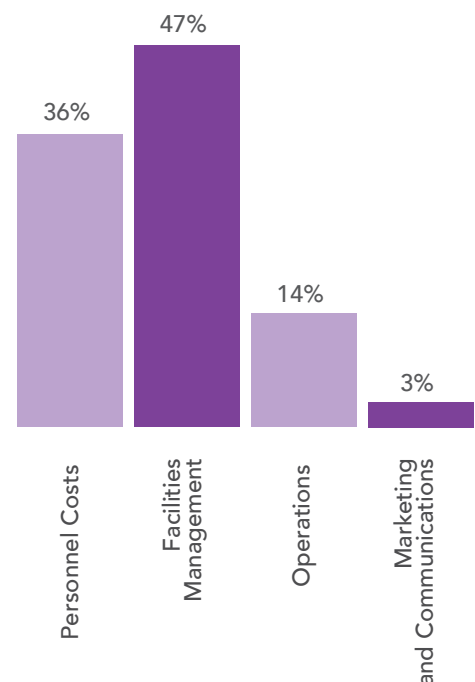
### Internal Support Services

Internal support services increased to \$5.3 million in 2017-18 from \$5.0 million in 2016-17. The \$0.3 million increase is attributable to higher amortization expenses related to the capitalization of the Museum's investment in its information technology infrastructure.

### Buildings and Grounds

Expenses related to the Museum's buildings and grounds decreased to \$17.8 million in 2017-18 from \$18.5 million in 2016-17. The \$0.7 million decrease is mainly attributable to real property taxes for the VMMB which decreased by \$0.6 million and \$0.1 million decrease in electricity costs as result of the Museum cost reduction and control measures. The decrease in property taxes for the VMMB may be subject to the City assessment review. The museum-standard environmental control systems and additional space that must now be maintained at the renovated VMMB have placed an additional pressure on the Museum's operating budget. The Museum continues to explore additional facilities cost reduction and control measures in order to minimize the financial impact on its programs.

### Expenses



## Net results of operations

The net results of operations resulted in a surplus of \$2.2 million in 2017-18 which can be attributed to the following:

- Excluding in-kind sponsorships and specimen donations, the Museum recorded \$0.6 million in revenue in excess of the plan, as admission and program fees, and ancillary operations were respectively \$0.2 million and \$0.4 million, higher than planned.
- The Museum recorded \$0.2 million in supplementary appropriations received or receivable for severance benefits paid during the year. The payments were the result of collective bargaining and consistent with the Government of Canada's approach, whereby effective April 1, 2012, employees no longer accumulate severance pay upon resignation or retirement. The accumulated severance recorded as an accrued benefit obligation was recognized in prior years and in part paid during the year as per the terms of the collective agreement. Therefore, this resulted in a timing difference between the accrued benefit obligation recognized in prior years and the supplementary appropriations recognized during the year.
- The Museum recorded \$0.5 million in a one time supplementary appropriation received to address prior years compensation adjustments.
- The Museum recorded \$0.5 million in revenue attributable to a timing difference between the recognition of parliamentary appropriations and deferred contributions for operating expenditures that are recognized in the fiscal year that they are approved and expenses that are recognized in the fiscal year they are incurred.
- The Museum recorded \$0.6 million savings in operation and maintenance of building expenses as a result of decreased operating costs related to the VM MB property taxes and utilities.
- Partially offsetting the surplus is \$0.2 million in expenses due to the accounting treatment related to the Museum's Natural Heritage Campus located in Gatineau, Quebec, which is recorded on the Statement of Financial Position as an obligation under capital lease. This accounting treatment will keep the Museum's accumulated deficit in a deficit position for many years due to the interest expense on the capital lease obligation being higher in the earlier years than in the years closer to the end of the lease term. Accordingly, the accumulated deficit related to this accounting treatment will begin to reverse in 2019-20 until it is fully eliminated by the end of the lease term in 2031. This does not impact the Museum's cash flow or financial stability in any way.

## Financial situation

### Assets

Cash increased by \$0.9 million to \$15.1 million in 2017-18 from \$14.2 million in 2016-17. This increase is attributable to the \$1.4 million in capital parliamentary appropriation received in current year through Budget 2016 deferred for next fiscal year capital expenditures and \$0.6 million savings in operation and maintenance of building expenses as a result of decreased operating costs related to the VMMB property taxes and utilities. Offsetting the increase in cash is \$1.1 million in timing difference of payment of invoices.

Prepaid expenses increased by \$0.3 million to \$1.2 million in 2017-18 from \$0.9 million in the 2016-17. This increase is attributable to prepaid expenses related to the *Brain: the Inside Story* temporary exhibition which opened on May 18. The current year balance also includes \$0.2 million for prepaid real property taxes and \$0.3 million for prepaid lease obligation payment.

Capital assets decreased by \$0.9 million to \$183.4 million in 2017-18 from \$184.3 million in 2016-17 due to amortization expense of \$9.0 million offset by acquisition of capital assets of \$8.1 million.

### Liabilities

Deferred revenue, contributions and parliamentary appropriations decreased by \$0.9 million to \$4.9 million in 2017-18 from \$5.8 million in 2016-17. This decrease is mainly attributable to capital parliamentary appropriations received in prior years through Budget 2016 and used this fiscal year for capital expenditures.

Deferred capital funding increased by \$0.2 million to \$169.5 million in 2017-18 from \$169.3 million in 2016-17. The increase is due to higher parliamentary appropriations used for the acquisition of capital assets reclassified as deferred capital funding.

### Accumulated Deficit

The accumulated deficit of \$4.2 million as at March 31, 2018, is mainly due to the accounting treatment related to the Museum's Natural Heritage Campus located in Gatineau, Quebec, as explained previously under Net Results of Operations. This does not impact the Museum's cash flow or financial stability in any way.



## Objectives for 2018-19 and beyond

In 2018-19, the Museum will advance year five of a strategic plan that leverages its research and collections strengths in Arctic Knowledge and Species Discovery and builds on the experience of previous years. New approaches to the design and delivery of visitor experiences will enable the Museum to attract and inspire new audiences. These new engaging experiences will lead to higher memberships, higher membership renewal and will provide a foundation for enhanced fundraising. Overall higher levels of engagement will lead to a better understanding of a connection with Canada's natural world.

The Museum sets out five strategic objectives:

- To Create a Centre for Arctic Knowledge and Exploration that transforms people's understanding of Canada's Arctic and its relationship with Canada as a country in a 21<sup>st</sup> century global context.
- To Create a Centre for Species Discovery and Change that transforms people's understanding of the relevance of species diversity to their lives now and in the future.
- To Create a Centre for Nature Inspiration and Engagement that transforms people's expectations of the Canadian Museum of Nature as a destination for discussion, connection and exploration with nature's past, present and future that advances understanding and respect for Canada's natural world.
- To position the Natural Heritage Campus as a centre of excellence in collections management and knowledge creation, advancement and sharing by becoming a collection collaborator with institutions around the world seeking to collect, preserve, digitize and disseminate specimens that document the nature of Canada.
- To create a sustainable museum enterprise model of operation that leverages the Museum's strategic imperatives: knowledge and discovery, inspiration and engagement, presence, performance and advancement.

The strategic directions for the Museum acknowledge the intent to be a leading source of natural history knowledge and scientific inquiry for scientists and the public, thus contributing a distinctly Canadian perspective to the global body of knowledge. The Museum will disseminate the results of this scientific inquiry, thus helping inspire Canadians to act conscientiously about the natural environment. As a public institution, the Museum also wishes to continue to demonstrate accountability, value and fiscal effectiveness through achieving measurable, meaningful results.

These measures combined with the continuing support of the Government of Canada and a highly motivated and skilled team will allow the Museum to continue to fulfill its mandate to *"...increase throughout Canada and internationally, interest in, knowledge of and appreciation and respect for the natural world..."*



## Risk analysis

The Museum has in place an enterprise risk management framework designed to effectively and proactively manage the risks that could prevent the Museum from achieving its objectives. This Corporate Plan identifies four risks and their related mitigation strategies. The risk mitigation step involves development of mitigation strategies designed to manage, eliminate, or reduce risk to an acceptable level, ideally low. The opportunity leveraging step involves development of a plan to maximize the benefits of the opportunity for the organization taking into account the costs. Once a strategy is implemented, it is continually monitored to assess its efficacy with the intent of revising the course-of-action if needed.

Summary of key risks and mitigation strategies are as follows:

1. Advancement – Risk that a limited donor pipeline may constrain financial resources available to support the investment required for initial implementation of the Museum’s strategic objectives. This is mitigated by a comprehensive advancement program that identifies, cultivates, solicits and stewards donors and prospects, led by a team of fundraising professionals and a new group of committed fundraising volunteers and board members.
2. Structural Deficit - Risk that the structural deficit will continue to increase due to expenses increasing at a greater rate than revenue, such as utilities, property, taxes and general inflation. This is mitigated by a continuous process of expenditure review, admission revenue monitoring and earned revenue growth.
3. Succession - Risk that a significant number of employees are eligible for retirement resulting in the loss of corporate memory and key skills. To mitigate this risk the Museum developed and monitors a succession plan that includes skills development.
4. Budget 2016 - Risk that capital projects funded through budget 2016 and identified in this submission would not be completed on time and on budget to meet the required scope. Quarterly tracking internally will ensure the Museum fulfills its spending commitments.



## MANAGEMENT'S RESPONSIBILITY FOR FINANCIAL REPORTING

Management is responsible for establishing and maintaining a system of books, records, internal controls and management practices to provide reasonable assurance that: reliable financial information is produced; the assets of the Corporation are safeguarded and controlled; the transactions of the Corporation are in accordance with the relevant legislation, regulations and by-laws of the Corporation; the resources of the Corporation are managed efficiently and economically; and, the operations of the Corporation are carried out effectively.

Management is also responsible for the integrity and objectivity of the financial statements of the Corporation. The accompanying financial statements were prepared in accordance with Public Sector Accounting Standards. The financial information contained elsewhere in this annual report is consistent with that in the financial statements.

The Board of Trustees is responsible for ensuring that Management fulfils its responsibilities for financial reporting and internal control. The Board exercises its responsibilities through the Audit and Finance Committee, which includes a majority of members who are not officers of the Corporation. The Committee meets from time to time with Management, the Corporation's internal auditors and the Office of the Auditor General of Canada to review the manner in which these groups are performing their responsibilities and to discuss auditing, internal controls, and other relevant financial matters. The Board of Trustees has reviewed and approved the financial statements following the audit of the Office of the Auditor General of Canada.

The financial statements have been audited by the Auditor General of Canada. The report offers an independent opinion on the financial statements to the Minister of Canadian Heritage.



Margaret Beckel  
*President and Chief Executive Officer*



Ikram Zouari, CPA, CGA  
*Chief Financial Officer and Director of Finance*

June 26, 2018  
Ottawa, Canada



Office of the  
Auditor General  
of Canada

Bureau du  
vérificateur général  
du Canada

## INDEPENDENT AUDITOR'S REPORT

To the Minister of Canadian Heritage

### Report on the Financial Statements

I have audited the accompanying financial statements of the Canadian Museum of Nature, which comprise the statement of financial position as at 31 March 2018, and the statement of operations, statement of changes in accumulated deficit and statement of cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information.

#### *Management's Responsibility for the Financial Statements*

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian public sector accounting standards, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

#### *Auditor's Responsibility*

My responsibility is to express an opinion on these financial statements based on my audit. I conducted my audit in accordance with Canadian generally accepted auditing standards. Those standards require that I comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

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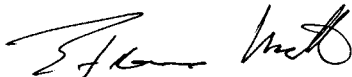
*Opinion*

In my opinion, the financial statements present fairly, in all material respects, the financial position of the Canadian Museum of Nature as at 31 March 2018, and the results of its operations and its cash flows for the year then ended in accordance with Canadian public sector accounting standards.

**Report on Other Legal and Regulatory Requirements**

As required by the *Financial Administration Act*, I report that, in my opinion, the accounting principles in Canadian public sector accounting standards have been applied on a basis consistent with that of the preceding year.

Further, in my opinion, the transactions of the Canadian Museum of Nature that have come to my notice during my audit of the financial statements have, in all significant respects, been in accordance with Part X of the *Financial Administration Act* and regulations, the *Museums Act* and regulations, the by-laws of the Canadian Museum of Nature, and the directive issued pursuant to section 89 of the *Financial Administration Act*.



Etienne Matte, CPA, CA  
Principal  
for the Auditor General of Canada

26 June 2018  
Ottawa, Canada

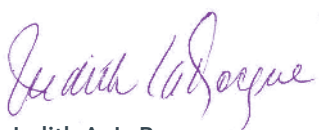


## Statement of Financial Position

	at March 31 2018	at March 31 2017
<i>(in thousands of dollars)</i>		
<b>Assets</b>		
Current		
Cash and cash equivalents (Note 3)	15,076	14,190
Restricted cash (Note 3)	190	3,450
Restricted investments (Note 5)	1,500	-
Accounts receivable		
Trade	914	466
Government departments and agencies (Note 18)	250	519
Inventories	44	-
Prepaid expenses	1,221	910
	19,195	19,535
Collections (Note 4)	1	1
Employee advances (Note 23)	538	-
Restricted investments (Note 5)	1,500	-
Investments (Note 6)	1,000	-
Capital assets (Note 7)	183,446	184,306
	<b>205,680</b>	<b>203,842</b>
<b>Liabilities</b>		
Current		
Accounts payable and accrued liabilities		
Trade	5,478	4,205
Government departments and agencies (Note 18)	971	949
Obligation under capital lease (Note 8)	964	873
Deferred revenues, contributions and parliamentary appropriations (Note 9)	4,908	5,793
Employee future benefits (Note 10)	242	262
	12,563	12,082
Obligation under capital lease (Note 8)	25,008	25,972
Deferred capital funding (Note 11)	169,522	169,324
Employee future benefits (Note 10)	2,741	2,820
	<b>209,834</b>	<b>210,198</b>
<b>Accumulated Deficit</b>		
Unrestricted	7,894	5,507
Investment in capital assets (Note 13)	(12,048)	(11,863)
	<b>(4,154)</b>	<b>(6,356)</b>
	<b>205,680</b>	<b>203,842</b>

The accompanying notes form an integral part of the financial statements.  
Contractual Obligations, Contractual Rights and Contingencies (Notes 20, 21 and 22).

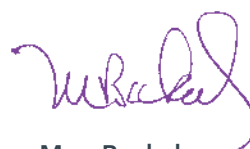
## Approved by the Board of Trustees:



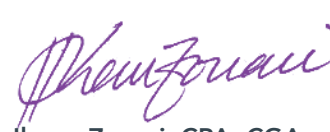
**Judith A. LaRocque**  
Chair of the Board of Trustees



**Ron Calderoni, CPA, CA**  
Chair of the Audit  
and Finance Committee



**Meg Beckel**  
President and Chief  
Executive Officer



**Ikram Zouari, CPA, CGA**  
CFO and Director of Finance

## Statement of Operations for the year ended March 31

<i>(in thousands of dollars)</i>	2018	2017
<b>Revenue</b>		
Admission and program fees (Note 15)	4,254	5,359
Ancillary operations (Note 16)	2,154	1,776
Contributions (Note 17)	2,382	1,899
Interest and Investment Income	262	126
Other	641	719
	<b>9,693</b>	<b>9,879</b>
<b>Expenses (Note 24)</b>		
Inspiration and engagement	10,569	9,442
Collections care and access	3,362	2,729
Research and discovery	3,949	4,316
Internal support services	5,320	5,018
Buildings and grounds	17,838	18,540
	<b>41,038</b>	<b>40,045</b>
<b>Net result of operations before government funding</b>	<b>(31,345)</b>	<b>(30,166)</b>
Parliamentary appropriations (Note 14)	33,547	31,699
<b>Net result of operations</b>	<b>2,202</b>	<b>1,533</b>

The accompanying notes form an integral part of the financial statements.

## Statement of Changes in Accumulated Deficit for the year ended March 31

<i>(in thousands of dollars)</i>	Unrestricted	Invested in Capital Assets	2018	2017
Accumulated deficit, beginning of year	5,507	(11,863)	(6,356)	(7,889)
Net result of operations	2,202	-	2,202	1,533
Endowment funds received	-	-	-	1,000
Transfer of endowment	-	-	-	(1,000)
Net change in investment in capital assets (Note 13)	185	(185)	-	-
<b>Accumulated deficit, end of year</b>	<b>7,894</b>	<b>(12,048)</b>	<b>(4,154)</b>	<b>(6,356)</b>

The accompanying notes form an integral part of the financial statements.

A statement of remeasurement gains and losses has been excluded as there have been no remeasurement gains or losses.

## Statement of Cash Flows for the year ended March 31

<i>(in thousands of dollars)</i>	2018	2017
<b>Operating activities</b>		
Cash receipts - customers and donors	7,544	10,070
Cash receipts - parliamentary appropriations	27,460	26,766
Cash disbursements - employees	(13,385)	(13,888)
Cash disbursements - suppliers	(14,423)	(13,981)
Interest received	272	139
Interest paid	(2,627)	(2,724)
<b>Cash provided by operating activities</b>	<b>4,841</b>	<b>6,382</b>
<b>Capital activities</b>		
Acquisition of capital assets	(8,425)	(2,168)
Disposition of capital assets	11	-
<b>Cash used in capital activities</b>	<b>(8,414)</b>	<b>(2,168)</b>
<b>Investment activities</b>		
Acquisition of restricted investment	(3,000)	-
Acquisition of investment	(1,000)	-
<b>Cash used in investing activities</b>	<b>(4,000)</b>	<b>-</b>
<b>Financing activities</b>		
Obligation under capital lease	(873)	(791)
Donations received for purchase of capital assets	-	2,000
Parliamentary appropriations received for purchase of capital assets	6,072	2,998
Endowment received	-	1,000
Transfer of endowment	-	(1,000)
<b>Cash provided by financing activities</b>	<b>5,199</b>	<b>4,207</b>
<b>Increase (decrease) in cash and restricted cash</b>	<b>(2,374)</b>	<b>8,421</b>
Cash and cash equivalents, beginning of year	14,190	8,444
Restricted cash, beginning of year	3,450	775
<b>Cash and cash equivalents and restricted cash, end of year</b>	<b>15,266</b>	<b>17,640</b>
<b>Cash and cash equivalents, end of year</b>	<b>15,076</b>	<b>14,190</b>
<b>Restricted cash, end of year</b>	<b>190</b>	<b>3,450</b>
<b>Cash and cash equivalents and restricted cash, end of the year</b>	<b>15,266</b>	<b>17,640</b>

The accompanying notes form an integral part of the financial statements.

# NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED MARCH 31, 2018

## 1. Authority and Mission

The Canadian Museum of Nature (the "Corporation") was established by the *Museums Act* on July 1, 1990. It is an agent Crown corporation named in Part I of Schedule III of the *Financial Administration Act* (FAA) and is not subject to the provisions of the *Income Tax Act*. The Corporation is classified as a government not-for-profit organization (GNPO).

The Corporation's mission is to increase, throughout Canada and internationally, interest in, knowledge of and appreciation and respect for the natural world by establishing, maintaining and developing for research and posterity a collection of natural history objects, with special but not exclusive reference to Canada, and by demonstrating the natural world, the knowledge derived from it and the understanding it represents.

Brief descriptions of the Corporation's activities are as follows:

- **Inspiration and engagement**

The Corporation develops and maintains exhibitions, programs, the **nature.ca** website, electronic and print publications, revenue generating activities and other activities to foster an understanding of, and respect for, nature.

- **Collections care and access**

The Corporation acquires, develops, preserves and makes accessible collections of natural history specimens, objects and information to meet the growing needs of the public and private sectors for research, education and informed decision-making about the natural world.

- **Research and discovery**

The Corporation studies the past and helps Canadians prepare for the future by conducting systematics and applied research, and by developing and maintaining networks and linkages with Canadian and international science communities.

- **Internal support services**

The Corporation develops and implements the policies, processes and an accountability structure to oversee the fulfilment of its mandate, including governance, strategic direction, corporate services, monitoring of corporate performance, and reporting to Parliament.

- **Buildings and grounds**

The Corporation provides secure and functional facilities that meet all safety and building code requirements. Among these facilities is the renovated Victoria Memorial Museum Building that furthers the vision and mandate of the Corporation.

On July 16, 2015, the Corporation was directed by the Governor General in Council (P.C. 2015-1105) pursuant to Section 89 of the FAA to align its travel, hospitality, conference and event expenditure policies, guidelines and practices with Treasury Board policies, directives and related instruments on travel, hospitality, conference and event expenditures in a manner that is consistent with its legal obligations, and to report on the implementation of this directive in the Corporation's Corporate Plan. Effective February 1, 2017, the Corporation has complied with this directive and has aligned its policies and practices to the Treasury Board policies, directives and related instruments for travel, hospitality and event expenditures.

## 2. Significant Accounting Policies

### A) Basis of Presentation

The financial statements have been prepared in accordance with Canadian Public Sector Accounting Standards (PSAS), and reflect the application of the Section 4200 series for GNPOs.

### B) Adoption of New Accounting Standards

**Related Party Disclosures, Section PS 2200:** In March 2015, The Public Sector Accounting Board (PSAB) issued a new standard *Related Party Disclosures - PS 2200*, applicable for fiscal years beginning on or after April 1, 2017. The new standard defines a related party and establishes disclosures required for related party transactions. The Corporation adopted the new accounting standards PS 2200. The adoption did not result in a significant impact on the disclosure included in the Corporation financial statements.

**Assets, Section PS 3210:** In June 2015, The PSAB issued a new standard *Assets - PS 3210*, applicable for fiscal years beginning on or after April 1, 2017. The new Standard provides guidance on applying the definition of assets and establishes disclosure standards for assets. Assets are defined as economic resources controlled by a public sector entity as a result of past transactions or events and from which future economic benefits are expected to be obtained. The Corporation adopted the new accounting standards PS 3210. The adoption of this new standard did not result in any financial impact on the Corporation's financial statements.

**Contingent Assets, PS 3320:** In June 2015, The PSAB issued a new standard *Contingent Assets - PS 3320*, applicable for fiscal years beginning on or after April 1, 2017. The new standard defines and establishes disclosure standards on contingent assets. Contingent assets are defined as possible assets arising from existing conditions or situations involving uncertainty. That uncertainty will ultimately be resolved when one or more future events not wholly within the public sector entity's control occurs or fails to occur. Resolution of the uncertainty will confirm



the existence or non-existence of an asset. The Corporation adopted the new accounting standards PS 3320. The adoption of this new standard did not result in any financial impact on the Corporation's financial statements.

**Inter-Entity Transactions, PS 3420:** In March 2015, The PSAB issued a new standard *Inter-Entity Transactions - PS 3420*, applicable for fiscal years beginning on or after April 1, 2017. The new standard provides guidance on how to account for and report transactions between public sector entities that comprise a government's reporting entity (i.e. inter-entity transactions) from the perspective of both the provider and the recipient. The new standard establishes the recognition, measurement and disclosures of inter-entity transactions. The Corporation adopted the new accounting standards PS 3420. The adoption of this new standard did not result in any financial impact on the Corporation's financial statements. The adoption of PS 3420 required additional information to be disclosed, see Note 2C for the Corporations' inter-entity transactions accounting policy.

**Contractual Rights, PS 3380:** In June 2015, The PSAB issued a new standard *Contractual Rights - PS 3380*, applicable for fiscal years beginning on or after April 1, 2017. The new standard defines and establishes disclosure standards on contractual rights. Contractual rights are defined as rights to economic resources arising from contracts or agreements that will result in both an asset and revenue in the future. The new standard establishes disclosure of contractual rights. The Corporation adopted the new accounting standards PS 3380. The adoption of PS 3380 required additional information to be disclosed, see Note 21 for Contractual rights disclosure.

### C) Inter-Entity Transactions

Inter-entity transactions are transactions between commonly controlled entities. Inter-entity transactions, other than restructuring transactions, are recorded on a gross basis and are measured at the carrying amount, except for the following:

- i) Inter-entity transactions are measured at the exchange amount when undertaken on similar terms and conditions to those adopted if the entities were dealing at arm's length, or where costs provided are recovered.
- ii) Goods or services received without charge between commonly controlled entities are unallocated costs not recovered by the recipient and not recorded by the Corporation. Services received by the Corporation without charge include Audit services from the Office of the Auditor General of Canada and pension services from Public Services and Procurement Canada.

### D) Measurement Uncertainty

The preparation of financial statements in accordance with PSAS requires Management to make estimates and assumptions

that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses for the year. Employee future benefits, the estimated useful lives of capital assets, and the fair market value of specimens donated to the collections are the most significant items for which estimates are used. Actual results could differ significantly from those estimated. These estimates are reviewed annually and as adjustments become necessary, they are recorded in the financial statements in the fiscal year in which they become known.

### E) Inventories

Inventories are valued at the lower of cost and net realizable value. Inventory cost is determined by using the average weighted cost method, and net realizable value is based on retail price.

### F) Collections

The Corporation holds and preserves invaluable collections of natural history specimens for the benefit of Canadians, present and future. The collections are shown as an asset in the Statement of Financial Position at a nominal value of \$1,000 due to practical difficulties in determining a meaningful value for these assets. Specimens purchased for the collections are recorded as an expense in the year of acquisition.

### G) Capital Assets

Asset	Useful life
Victoria Memorial Museum Building	40 years
Property under capital lease Collection cabinets and compactors	35 years
Furnishings and office equipment General equipment Permanent exhibitions Research equipment	10 years
Building improvements	5 to 25 years
Leasehold improvements	5 years to end of lease term
Computer equipment	3 years

- Capital assets are recorded at cost, including material, equipment and other expenses acquired for the purpose of the design and the development of permanent exhibitions.
- Assets recorded as capital leases are initially recorded at the present value of the minimum lease payments at the inception of the lease.

- Land and building owned by the Government of Canada and that are under the control of the Corporation are recorded at their estimated cost.

Amortization is calculated on the straight-line method using rates based on the estimated useful life of the assets, except for leasehold improvements which are amortized on a straight-line basis over the shorter of the term of the lease agreement and the asset's useful life

When conditions indicate that an asset no longer contributes to the Corporation's ability to provide its services, the cost of the asset is written down to its residual value, if any.

## H) Employee Future Benefits

### i) Pension benefits

Substantially all the employees of the Corporation are covered by the public service pension plan (the "Plan"), a contributory defined benefit plan established through legislation and sponsored by the Government of Canada. Contributions are required by both the employees and the Corporation to cover current service costs. Pursuant to legislation currently in place, the Corporation has no legal or constructive obligation to pay further contributions with respect to any past service or funding deficiencies of the Plan. Consequently, contributions are recognized as an expense in the year when employees have rendered service and represent the total pension obligation of the Corporation.

### ii) Severance benefits

Employees are entitled to severance benefits up to March 31, 2012, as provided for under labor contracts and conditions of employment.

The severance benefit obligation for employees who retire or resign, that accrued up to March 31, 2012 and remains unpaid, is measured using the projected benefit method. The actuarial gains (losses) are recognized on a systematic basis over the expected average remaining service life of the related employee group.

Other event driven termination benefits are recognized in the period when the event that obligates the Corporation occurs.

### iii) Sick leave benefits

The Corporation provides sick leave benefits for employees that accumulate but do not vest. The Corporation recognizes a liability and an expense for sick leave in the period in which employees render services in return for the benefits. The cost of the accrued benefit obligations related to sick leave entitlement earned by employees is actuarially determined using the projected benefit method prorated on service and Management's best estimate of inflation, discount rate,

employee demographics and sick leave usage of active employees. Actuarial gains (losses) are recognized on a systematic basis over the remaining service life of active employees covered by these sick leave benefits.

## I) Revenue Recognition

### i) Admission and program fees, ancillary operations and other revenues

Revenues from admission and program fees, ancillary operations, and other revenues are recognized when persuasive evidence of an arrangement exists between the two parties, goods have been delivered or services have been provided to the customers, price is fixed and determinable and collection is reasonably assured. The Corporation also records deferred revenue when amounts are received in advance of providing goods and services.

### ii) Contributions

Contributions are comprised of donations received from individuals, foundations and corporations. The Corporation applies the deferral method to recognize its contributions as applicable for not-for-profit organizations.

Unrestricted contributions are recognized as revenue in the Statement of Operations when received or receivable if the amount to be received can be reasonably estimated and collection is reasonably assured.

Contributions externally restricted for specific projects or expenses are deferred in the Statement of Financial Position and recognized as revenue in the Statement of Operations in the fiscal year in which related obligations are fulfilled and the related expenses are incurred.

Investment income related to restricted contributions is first recorded in the Statement of Financial Position as deferred revenues and then recognized as revenue in the Statement of Operations in the fiscal year in which the related expenses are incurred.

### iii) In-kind sponsorships and specimen donations

In-kind sponsorships involve obtaining non-financial support for a project, activity or product in return for substantial public relations benefit. An in-kind sponsorship is recognized if the contributed good or service is used in the normal course of operations and would otherwise have been purchased, and once the exchange has taken place. In-kind sponsorships are recorded at their fair market value as contributions with an offset to the related expense in the Statement of Operations.

Specimens donated to the collections are recorded as contributions with an offsetting expense to collections care and access at fair market value, when the following three criteria

are met: i) a fair market value has been established for the specimen; ii) the acquisition has been approved; and iii) transfer of the specimen's title to the Corporation has taken place.

#### iv) Parliamentary appropriations

The Government of Canada provides financing to the Corporation through parliamentary appropriations.

- The parliamentary appropriations for operating expenditures are recognized as revenue in the fiscal years for which they are approved.
- The parliamentary appropriations for the purchase of depreciable capital assets are recorded as deferred parliamentary appropriations in the Statement of Financial Position. When the depreciable capital assets are purchased, the portion of the parliamentary appropriations used for acquisition of these capital assets is then reclassified as deferred capital funding in the Statement of Financial Position and recognized as revenue in the Statement of Operations on the same basis as the amortization of the corresponding capital assets.
- Parliamentary appropriations for specific expenses are recorded as deferred parliamentary appropriations in the Statement of Financial Position and recognized as revenue in the Statement of Operations in the fiscal year in which the related expenses are incurred.

The Corporation is required to report on the spending of appropriations in its annual report.

#### v) Restricted investments

Spend-down amounts and investment income distributed from the fund for the purchase of depreciable capital assets are recorded as deferred revenues in the Statement of Financial Position. When the depreciable capital assets are purchased, the portion of the revenues used for acquisition of these capital assets is then reclassified as deferred capital funding in the Statement of Financial Position and recognized as revenue in the Statement of Operations on the same basis as the amortization of the corresponding capital assets. Spend-down amounts and investment income distributed from the fund for specific expenses are deferred in the Statement of Financial Position and recognized as revenue in the Statement of Operations in the fiscal year in which related obligations are fulfilled and the related expenses are incurred.

#### vi) Investments

Investment income distributed from the term fund is recognized as revenue in the Statement of Operations.

#### J) Volunteer Services

Volunteers contribute a significant number of hours every year. Due to the difficulty of determining their fair value, those contributed services are not recognized in the financial statements.

#### K) Financial Instruments

The Corporation's financial assets and financial liabilities are measured at cost or amortized cost. Financial assets include cash and cash equivalents, restricted cash, restricted investments, investments and accounts receivable while financial liabilities include accounts payable and accrued liabilities.

Financial instruments are tested annually for impairment at the financial statements date, and any permanent impairment is reported in the Statement of Operations.

Transaction costs are added to the carrying value of items in the cost when they are initially recognized.

#### L) Restricted Investments

Restricted Investments within the Ottawa Community Foundation (OCF) as spend-down fund are recorded at amortized cost on the Statement of Financial Position, spend-down amounts and investment income distributed from the fund for the purchase of depreciable capital assets are recorded as deferred revenues in the Statement of Financial Position.

Service fees charged by the OCF for the management of the fund are recorded as expenses in the Statement of Operations in the year incurred.

#### M) Investments

Investments within OCF as 10-year term fund is recorded at amortized cost in the Statement of Financial Position.

Service fees charged by the OCF for the management of the fund are recorded as expenses in the Statement of Operations in the year incurred.

#### N) Allocation of Expenses

The Corporation does not apply the method of allocating costs for the purpose of distributing expenses between functions.

### 3. Cash and Cash Equivalents and Restricted Cash

Cash and Cash equivalents and restricted cash consist of balances with banks.

Restricted cash includes deferred contributions. Restricted cash accounts are managed in accordance with the donor's wishes and are invested in accordance with the Investment Policy of the Corporation.

As per the Corporation's Investment Policy, operating funds are invested in short-term money market instruments that are rated AA or better and guaranteed by the Government of Canada, a provincial government or the Canadian Imperial Bank of Commerce (CIBC). The investment vehicles consist of banker's acceptances, promissory notes and term deposits. Exceptions to the investment policy require the Board of Trustees approval.

The Corporation held a term deposit during the year and earned interest revenue on this term deposit. The Corporation invested \$2 million of its cash in a guaranteed investment certificate (at 1.65% matured on July 11, 2017) and earned interest on investment of \$22,000 (2017- \$11,000). However, as at March 31, 2018 the entire amount was held in cash.

The Corporation holds funds in trust on behalf of the Alliance of Natural History Museums of Canada. As of March 31, 2018, these funds represented \$66,486 (2017 – \$49,594). However they are not recorded in the financial statements.

### 4. Collections

The entire Museum's collections including library and archives consist of over 14.6 million specimens and objects. The natural history collections consist of 3.35 million specimen lots, and grew by 100,960 specimen lots this fiscal year (2017 – 34,363). These are exceptional scientific resources that are available nationally and internationally for research, exhibits and education.

The Corporation maintains multiple collection groupings, with the major collections as noted below divided into four discipline-related groups:

- the Earth Sciences collection (minerals, rocks, gems, fossils),
- the Vertebrates collection (mammals, birds, fish, amphibians and reptiles),
- the Invertebrates collection (molluscs, insects, crustaceans, parasites, annelids), and
- the Botany collection (algae, vascular plants, bryophytes, lichens).

The collections are managed and cared for through a collections risk assessment process that seeks to preserve the value of collections and uses a rational process for the establishment of priorities for their care. The Corporation has incurred \$2.6 million in 2018 (2017 – \$2.2 million) for the management, protection and conservation of its collections.

During the year, the Corporation purchased \$22,595 (2017 – \$12,772), and acquired through donation \$477,528 (2017 – \$272,715), of specimens for the collections.

There were no sales of specimens related to the collections during the year (2017 – nil).

### 5. Restricted Investments

On February 23, 2017 the Corporation received a large philanthropic gift of \$4 million from the Ross Beatty family in Vancouver, which will enhance the Museum's national research and collections efforts focused on species discovery. Three million of the \$4 million gift is restricted to support the creation of a national cryogenic facility and the digitization of the Corporation's collections.

The Corporation established a \$3 million spend-down fund within the OCF in order to maximize earnings while meeting the Museum's needs. With a spend-down fund, the capital is invested in the OCF's investment pool, with the intention of paying out the capital in agreed upon intervals, until the fund is fully depleted. This option allows the spend-down schedule to be determined by the Museum, while also providing flexibility for its own needs, with similar pay out and approach as for endowed funds. The OCF investment pool is mainly comprised of cash and short-term deposits, bonds and debentures and equities. The \$3 million was transferred to the OCF on April 26, 2017.

The fair market value of the spend-down fund amounts to \$3,045,391 according to the OCF's annual investment statement.

The investment income activity on spend-down fund during the period is \$78,633 (2017 – nil). The Service fees for the management of the fund expensed during the year is \$33,242 (2017- nil).



## 6. Investments

On October 4, 2017 the Corporation established a \$1 million 10-year term fund within the OCF in order to maximize earnings and create the Arctic Post-Doctoral Fellowship for Arctic Knowledge and Exploration. The principal amount is invested in the OCF's investment pool. In the event that the Corporation decides not to maintain the Fellowship, the fund shall be transferred back to the Corporation.

The fair market value of the term fund amounts to \$1,001,147 according to the OCF's annual investment statement.

The investment income activity on term fund during the period is \$3,655 (2017 – nil). Service fees for the management of the fund expensed during the period is \$2,508 (2017- nil).

## 7. Capital Assets

<i>(in thousands of dollars)</i>			March 31 2018	March 31 2017		
	Cost	Accumulated amortization	Net book value	Cost	Accumulated amortization	Net book value
Land	627	-	627	627	-	627
Victoria Memorial Museum Building	204,783	53,926	150,858	204,727	48,922	155,805
Property under capital lease	35,040	21,814	13,226	35,040	20,823	14,217
Leasehold improvements	10,522	6,632	3,890	9,668	6,275	3,393
Permanent exhibitions	10,011	3,217	6,794	5,227	2,215	3,012
Building improvements	4,056	2,560	1,496	3,842	2,069	1,773
Collection cabinets and compactors	3,840	2,290	1,550	3,840	2,179	1,661
Research equipment	3,596	2,157	1,439	2,543	2,108	435
Computer equipment	3,283	2,434	849	2,257	1,715	542
Furnishings and office equipment	1,519	1,299	220	1,492	1,216	276
General equipment	574	235	339	374	181	193
Work in progress - Assets	2,158	-	2,158	2,372	-	2,372
	<b>280,009</b>	<b>96,563</b>	<b>183,446</b>	<b>272,009</b>	<b>87,703</b>	<b>184,306</b>

The amortization expense for the year amounts to \$9,002,000 (2017 – \$7,952,000). During the year, the Corporation sold two assets in the category of research equipment for \$11,000 with a recorded cost of \$150,733 and accumulated amortization of \$140,894 resulting in a gain of \$1,161. During the prior year, the Corporation did not sell or retire assets.

## 8. Obligation Under Capital Lease

The Natural Heritage Campus houses the Corporation's natural history collections and administrative functions, on the Corporation's site in Gatineau, Quebec. The Corporation is acquiring the building through a lease purchase agreement with a term of 35 years. It is committed to pay rent under all circumstances and in the event of termination of the lease, at the Corporation's option or otherwise, pay sufficient rent to repay all financing on the building. Management intends to completely discharge its obligation under the lease and obtain free title to the building in 2031, after the Corporation uses its right to purchase the building for ten dollars.

Future minimum lease payments in aggregate, under the financing obligation are as follows:

<i>(in thousands of dollars)</i>	<b>March 31, 2018</b>		<b>March 31, 2017</b>
Total minimum future payments	(1)	47,250	50,750
Deduct: Imputed interest		(21,278)	(23,905)
<b>Present value of financing obligations</b>	<b>(2)</b>	<b>25,972</b>	<b>26,845</b>
Current portion		964	873
Long term portion		25,008	25,972
		<b>25,972</b>	<b>26,845</b>

1) The amounts payable under the capital lease are based on the fixed interest rate of 9.88%, for a period of 35 years, established at the time of signing the lease.

2) The present value of the capital lease obligation based on a current market interest rate of 8.75% is estimated at \$28 million.

Future minimum lease payments, by year under the financing obligation are as follows:

<i>(in thousands of dollars)</i>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>thereafter</b>
Future minimum payments	3,500	3,500	3,500	3,500	3,500	29,750

## 9. Deferred Revenues, Contributions and Parliamentary Appropriations

Deferred revenues, contributions and parliamentary appropriations during the year were as follows:

<i>(in thousands of dollars)</i>	<b>March 31, 2018</b>	<b>March 31, 2017</b>
Deferred contributions from non-government sources	3,028	3,230
Deferred parliamentary appropriations	1,353	2,240
Total deferred contributions and parliamentary appropriations	4,381	5,470
Deferred revenues – goods and services	527	323
	<b>4,908</b>	<b>5,793</b>

Changes in the deferred revenues, contributions and parliamentary appropriations during the year were as follows:

<i>(in thousands of dollars)</i>	<b>March 31 2018</b>	<b>March 31 2017</b>
Balance, beginning of year	5,793	950
Add:		
Restricted contributions received	215	3,403
Restricted parliamentary appropriations received	6,072	2,998
Deferred revenue and contribution for the provision of goods and services	1,076	730
	7,363	7,131
Less:		
Restricted contributions recognized	(459)	(777)
Restricted parliamentary appropriations spent	(6,960)	(758)
Deferred revenue for the provision of goods and services recognized	(829)	(753)
	(8,248)	(2,288)
<b>Balance, end of year</b>	<b>4,908</b>	<b>5,793</b>

## 10. Employee Future Benefits

### i) Pension benefits

The Corporation and all eligible employees contribute to the public service pension plan (the "Plan"). The Plan provides benefits based on years of services and average earnings at retirement. The benefits are fully indexed to the increase in the Consumer Price Index. The Corporation's and employees' contributions to the Plan during the year were as follows:

<i>(in thousands of dollars)</i>	<b>2018</b>	<b>2017</b>
Corporation's contributions	1,121	1,180
Employees' contributions	1,123	1,036

The President of the Treasury Board of Canada sets the required employer contributions based on a multiple of the employees' required contribution. The required employer contribution rate for 2018 was dependent on the employee's employment start date. For employment start dates before January 1, 2013, the Corporation's contribution rate effective at year end was 1.01 times (2017 – 1.01) the employee's contribution; and for employment start dates after December 31, 2012, the Corporation's contribution rate effective at year end was 1.00 times (2017 – 1.00) the employee's contribution.

The Government of Canada holds a statutory obligation for the payment of benefits relating to the Plan. Pension benefits generally accrue up to a maximum period of 35 years at an annual rate of 2 percent of pensionable service times the average of the best five consecutive years of earnings. The benefits are coordinated with Canada/Quebec Pension Plan benefits and they are indexed to inflation.

### ii) Severance benefits

Since April 1, 2012, employees no longer accumulate severance benefits payable upon resignation or retirement. Employees were given the option to be paid the full or partial value of benefits earned at that date or to defer this payment until their departure from public service. The severance benefit liability represents the portion that employees chose to defer. This benefit plan is unfunded and thus has no assets, resulting in a plan deficit equal to the accrued benefit obligation. Benefits will be paid from future appropriations. The estimated average remaining service period of the employees is 8 years. The actuarial loss of severance benefits is amortized over 8 years.

Information about the Plan, evaluated by an actuary at the Statement of Financial Position date, is as follows:

<i>(in thousands of dollars)</i>	2018	2017
Accrued severance benefits obligation, at the beginning of year	831	1,144
Interest cost on benefit obligation	17	13
Actuarial loss on obligation	1	1
Severance benefits paid during the year	(218)	(327)
<b>Accrued severance benefits obligation, end of year</b>	<b>631</b>	<b>831</b>
Short term portion	107	122
Long term portion	524	709
	<b>631</b>	<b>831</b>

Assumptions in the actuarial evaluation include a discount rate of 2.10% (2017 – 2.40%), as well as an inflation rate of 1.80% (2017 – 1.90%). Included in the severance benefits obligation is a non-amortized actuarial loss of \$6,641 (2017 – \$4202).

### iii) Sick leave benefits

The Corporation has recorded an obligation related to sick leave benefits for its employees. The estimated average remaining service period of the employees is 14 years. The Corporation amortizes the actuarial gain of sick leave over the 14 years.

Information on these benefits, evaluated by an actuary at the date of the Statement of Financial Position, is as follows:

<i>(in thousands of dollars)</i>	2018	2017
Sick leave obligations, at the beginning of year	2,251	2,155
Current service cost	156	143
Interest cost on benefit obligation	35	27
Actuarial gain on obligation	(62)	(41)
Sick leave used during the year	(28)	(33)
<b>Sick leave benefits, end of year</b>	<b>2,352</b>	<b>2,251</b>
Short term portion	135	140
Long term portion	2,217	2,111
	<b>2,352</b>	<b>2,251</b>

Assumptions in the actuarial evaluation include a discount rate of 2.14% (2017 – 2.40%) as well as an inflation rate of 1.80% (2017 – 1.90%). Included in the sick leave obligation is a non-amortized actuarial gain of \$877,488 (2017 – \$872,963).



## 11. Deferred Capital Funding

Deferred capital funding represents the portion of the parliamentary appropriations and contributions from non-government sources used to purchase depreciable capital assets.

The deferred capital funding consists of the following:

<i>(in thousands of dollars)</i>	March 31 2018	March 31 2017
Used for acquisitions:		
Deferred capital contributions from non-government sources	1,994	2,406
Deferred capital funding through parliamentary appropriations	167,528	166,918
	<b>169,522</b>	<b>169,324</b>

Changes in the deferred capital funding balance are as follows:

<i>(in thousands of dollars)</i>	March 31 2018	March 31 2017
Balance, beginning of year	169,324	173,154
Add: Capital asset acquisitions	8,151	3,122
Less: Capital asset disposals	(1)	-
	8,152	3,122
Less amounts recognized as revenue:		
Contributions	(412)	(321)
Parliamentary appropriations	(7,542)	(6,631)
	(7,954)	(6,952)
<b>Balance, end of year</b>	<b>169,522</b>	<b>169,324</b>

## 12. Endowment Restrictions

An endowment fund for Systematic Entomology was received from Anne and Henry Howden in the principal amount of \$305,000, as well as a significant entomological collection. The endowment was established to enable professional studies and research of entomological collections for the Corporation. The principal amount was transferred to the OCF in 2014. In the event that the Corporation decides not to maintain entomological collections, the Systematic Entomology Endowment Fund shall be transferred, along with any entomological collections, to the Royal Ontario Museum.

On February 23, 2017 the Corporation received a large philanthropic gift of \$4 million from the Ross Beaty family in Vancouver, which will enhance the Museum's national research and collections efforts focused on species discovery. One million of the \$4 million gift was endowed through the OCF to create the Beaty Post-Doctoral Fellowship for Species Discovery, which will fund post-doctoral scientists to investigate species at risk. For the remaining \$3 million, the Corporation established a spend-down fund within the OCF as detailed in Note 5.

The net investment income earned on resources held for endowment during the period is \$25,571 (2017 – \$18,544). The total accumulated amount of deferred investment income earned is \$15,677 (2017 – \$46,256). During the period, \$56,150 was recognized in the Statement of Operations (2017 – \$588).

### 13. Investment in Capital Assets

The investment in capital assets consists of the following:

<i>(in thousands of dollars)</i>	March 31 2018	March 31 2017
Capital assets	183,446	184,306
Less amounts financed by:		
Capital lease	(25,972)	(26,845)
Deferred capital funding	(169,522)	(169,324)
	<b>(12,048)</b>	<b>(11,863)</b>

The net change in investment in capital assets is calculated as follows:

<i>(in thousands of dollars)</i>	March 31 2018	March 31 2017
Capital asset additions	8,151	3,122
Less: capital assets disposal	(10)	-
Add: repayment of obligation under capital lease	873	791
Less: capital assets financed with deferred capital funding	(8,151)	(3,122)
Capital assets purchased with the Corporation's funds	863	791
Amortization of deferred capital funding	7,954	6,952
Amortization of capital assets	(9,002)	(7,952)
<b>Net change in investment in capital assets</b>	<b>(185)</b>	<b>(209)</b>

### 14. Parliamentary Appropriations

To achieve its mission, the Corporation relies on government funding. This government funding is comprised as follows:

<i>(in thousands of dollars)</i>	2018	2017
<b>Appropriations received and receivable:</b>		
Operating and capital budgets	33,051	29,441
Supplementary budgets	218	329
	<b>33,269</b>	<b>29,770</b>
Portion of parliamentary appropriations received in current year deferred for future capital projects	(1,353)	(2,240)
Previous year's appropriations used in current period to complete specific projects	2,240	-
Appropriations used to purchase depreciable capital assets	(8,151)	(2,462)
Amortization of deferred capital funding	7,542	6,631
<b>Appropriations recognized during the year</b>	<b>33,547</b>	<b>31,699</b>

## 15. Admission and Program Fees

Admission and program fees are comprised as follows:

<i>(in thousands of dollars)</i>	<b>2018</b>	<b>2017</b>
Admission fees – general	3,233	3,106
Admission fees – temporary exhibitions	211	995
Memberships	247	666
Programs	563	592
	<b>4,254</b>	<b>5,359</b>

## 16. Ancillary Operations

Ancillary operations are comprised as follows:

<i>(in thousands of dollars)</i>	<b>2018</b>	<b>2017</b>
Parking	984	860
Rental of facilities	930	783
Boutique revenues	141	56
Cafeteria leases	99	77
	<b>2,154</b>	<b>1,776</b>

## 17. Contributions

Contributions are comprised as follows:

<i>(in thousands of dollars)</i>	<b>2018</b>	<b>2017</b>
Cash contributions and sponsorships	1,400	1,218
In-kind sponsorships	504	408
Specimen donations	478	273
	<b>2,382</b>	<b>1,899</b>

## 18. Related Party Transactions

The Corporation is related to all Government of Canada departments, agencies and Crown corporations. The Corporation conducted transactions with these entities in the normal course of operations, under the same terms and conditions that applied to outside parties and recorded at the exchange amount.

<i>(in thousands of dollars)</i>	2018	2017
<b>Revenues from Government of Canada related parties:</b>		
Ancillary operations	32	29
Other (1)	80	224
	<b>112</b>	<b>253</b>

(1) Does not include rental revenue from Bank of Canada (2017 – \$170,543).

<i>(in thousands of dollars)</i>	2018	2017
<b>Expenses with Government of Canada related parties:</b>		
Personnel costs	1,438	1,495
Real property taxes	1,108	1,783
Professional and special services	114	44
Information management infrastructure and systems	12	20
Freight and cartage	8	10
Marketing and communications	3	10
Operation and maintenance of buildings	2	7
Repairs and maintenance	1	3
	<b>2,686</b>	<b>3,372</b>

The following balances with Government of Canada related parties were outstanding at the end of year:

<i>(in thousands of dollars)</i>	2018	2017
Due from related parties	250	519
Due to related parties	971	949

Services received by the Corporation without charge include Audit services from the Office of the Auditor General of Canada and pension services from Public Services and Procurement Canada as indicated in Note 2C.

The Corporation's related parties also include its key management personnel which consist of 5 members of its senior management team and 10 members of its Board of Trustees, and their immediate family members. Transactions with these individuals, excluding compensation arrangements, include contributions of \$74,486 (2017 – \$67,659), recorded at exchange amounts.



## 19. Canadian Museum of Nature Foundation

The Canadian Museum of Nature Foundation (the “Foundation”) was incorporated under the Canada Not-for-profit Corporations Act on November 29, 2016. The purpose of the Foundation is to receive or maintain a fund or funds and to transfer from time to time all or part thereof or the income therefrom to the Corporation. This is a separate and distinct legal entity, non-share Capital Corporation. On September 28, 2017 the Foundation received its registered charitable status under the *Income Tax Act*. The Foundation will start its fundraising activities next fiscal year. The Foundation’s role is to design and implement a strategy and development plan that will raise as much financial support as possible to advance the mandate and vision of the Corporation with a focus on major donations. The Corporation has provided minimal services to the Foundation at no charge to establish the Foundation.

## 20. Contractual Obligations

As of March 31, 2018, the Corporation has contracts for the operation and maintenance of the building, professional and special services, information management infrastructure and systems, marketing and communications, and exhibitions with a remaining value of \$5,457,000 (2017 – \$8,082,000). Estimated future minimum payments under these contracts for the next 5 years are as follows:

<i>(in thousands of dollars)</i>	2019	2020	2021	2022	2023
Future minimum payments	3,696	1,196	514	51	-

## 21. Contractual Rights

As of March 31, 2018, the Corporation has various revenue contracts including rentals of public spaces, leases of office and storage space, collection management and care services, food services agreements and travelling exhibition fees.

Major contractual rights that will generate revenues in future years and that can be reasonably estimated are summarized in the table below. As of March 31, 2018, the estimated future minimum receipts under these contracts amounts to \$1,494,000 (2017 - \$1,887,000). The estimated future minimum receipts under these contracts for the next 5 years are as follows:

<i>(in thousands of dollars)</i>	2019	2020	2021	2022	2023
Lease space at the National Heritage Campus	144	145	146	148	-
Collection management and care	260	264	270	117	-
	<b>404</b>	<b>409</b>	<b>416</b>	<b>265</b>	-

## 22. Contingencies

In the normal course of its operations, the Corporation becomes involved in various claims or legal actions. Some of these potential liabilities may become actual liabilities when one or more future events occur or fail to occur. To the extent that the future event is likely to occur or fail to occur, and a reasonable estimate of the loss can be made, an estimated liability and an expense are recorded in the Corporation’s financial statements.

As of March 31, 2018, and March 31, 2017, there were no claims against the Corporation.

## 23. Financial Instruments

### A) Financial Risk Management

The Corporation has exposure to the following risks from its use of financial instruments: credit risk, market risk and liquidity risk.

The Corporation uses an enterprise risk management approach to manage risks proactively and prudently. The Corporation's Board of Trustees and Management ensure that an accountability regime, a governance structure, and systems are in place to appropriately manage risks through the systematic consideration of risk at the functional level. Management, in a timely and proactive manner will identify, assess, mitigate and monitor risks that may prevent the Corporation from achieving its objectives and priorities.

#### i) Credit risk

The credit risk is one party to a financial instrument that causes a financial loss for the other party by failing to meet its financial commitments. Such risks arise principally from certain financial assets held by the Corporation consisting of accounts receivable, cash and cash equivalents (unrestricted and restricted) and investments (unrestricted and restricted).

The maximum exposure to credit risk of the Corporation at March 31, 2018 is the carrying value of these assets.

#### Accounts receivable

The Corporation is exposed to credit risk, through its normal commercial activities, on its accounts receivable of \$1,164,040 (2017 – \$985,276). Accounts receivables from Government of Canada departments, agencies and Crown corporations comprise 22% (2017 – 53%) of the Corporation's accounts receivable, and no allowance has been provided for these amounts. In order to reduce this risk, the Corporation closely monitors the issuance of credit and collection of commercial clients, and the concentration of this risk is also minimized because the Corporation has a large and diverse customer base.

As at March 31, 2018, \$69,730 accounts receivable were past due and no allowance has been provided for bad debt (2017 – nil). The allowance for doubtful accounts is based on an account by account analysis that considers the aging of the account and the current creditworthiness of the customer. Accounts which have exceeded 120 days are considered past due.

#### Employee advances

On January 10, 2018, the Corporation implemented payment in arrears, an industry-standard payroll practice. All employees who were paid on a bi-weekly basis under the previous payroll system, received a one-time transition payment in the same

manner as their regular pay. The transition payment ensured that no employee would experience financial hardship because of the transition to payment in arrears. This one-time payment was equal to an employee regular pay received on December 28, 2017 and recorded as employee advances on the Statement of Financial Position. The Corporation will recover this payment when the employee leaves. The recovered amount will include all applicable deductions.

As at March 31, 2018, employee advances due to the transition to payment in arrears amount to \$ 538,000 and no allowance has been provided for this amount (2017 – nil).

#### Cash, investments, and restricted cash and investments

The Corporation manages its credit risk surrounding cash, investments, and restricted cash and investments by dealing solely with reputable banks and organizations, and utilizing an investment policy and risk management framework to guide their investment decisions. The Corporation invested \$3 million contributions and \$1 million cash to earn investment income with the objective to maintaining safety of principal and maximizing earnings while meeting the Museum's needs. The Corporation monitors the performance and the status of its investments on a quarterly basis. In a year of negative investment performance, the Corporation may decide to hold the distribution of the capital and investment income of its funds to a further year with a positive return in order to mitigate credit risk.

#### ii) Liquidity risk

Liquidity risk is the potential inability to meet financial obligations as they become due. The Corporation manages this risk by maintaining detailed cash forecasts, as well as long-term operating and strategic plans. The management of liquidity requires a constant monitoring of expected cash inflows and outflows which is achieved through a forecast of the Corporation's liquidity position, to ensure adequacy and efficient use of cash resources. The Corporation's financial liabilities are due within three months of the date of the Statement of Financial Position.

#### iii) Market risk

Market risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices, whether those changes are caused by factors specific to the individual financial instrument of its issuer, or factors affecting all similar financial instruments traded in the market. The Corporation is exposed to market risk on its investments and restricted investments. The Corporation monitors closely the performance of its investments and restricted investments to ensure market risks are being mitigated. In a year of negative

investment performance, the Corporation may decide to hold the distribution of the capital and investment income of its funds to a further year with a positive return. Market risks comprise three types of risk: Currency risk, Interest rate risk, and Price risk.

#### Currency risk

Currency risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates. The Corporation is exposed to currency risk on its investments and restricted investments. Currency risk is managed by hedging the portfolio with forward currency contracts or through portfolio diversification which acts as a hedge on its own. The Corporation's currency risk is not considered material.

#### Interest rate risk

Interest rate risk is the risk that the fair value of future cash flows of a fixed income investments will fluctuate because of changes in market interest rates. The Corporation is exposed to interest risk on its investments and restricted investments. The Corporation's interest rate risk is not considered material.

#### Price risk

Price risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of changes in market prices. The Corporation is exposed to price risk on its investments and restricted investments. Price risk is managed through portfolio diversification. The Corporation's price risk is not considered material.

## 24. Summary of Expenses by Object

<i>(in thousands of dollars)</i>	2018	2017
Personnel costs	14,611	13,597
Amortization of capital assets	9,002	7,952
Operation and maintenance of buildings	4,158	4,227
Professional and special services	3,438	3,008
Interest on capital lease obligation	2,627	2,709
Real property taxes	2,277	2,888
Information management infrastructure and systems	1,633	1,434
Marketing and communications	1,184	1,270
Repairs and maintenance	635	838
Objects for collections	500	286
Exhibitions	420	1,116
Travel	374	477
Freight and cartage	61	77
Cost of goods sold - natureBOUTIQUE	19	-
Other	99	166
	<b>41,038</b>	<b>40,045</b>

## 25. Comparative Figures

Certain comparative figures have been reclassified to conform to the current year's presentation.

## **Canadian Museum of Nature**

[nature.ca](http://nature.ca)

## **Victoria Memorial Museum Building**

240 McLeod Street, Ottawa, Ontario

## **Natural Heritage Campus**

1740 Pink Road, Gatineau, Quebec

## **Information**

613-566-4700 or 1-800-263-4433