

**ROYAL
ONTARIO
MUSEUM**



EXTINCTION 6.0

EARTH ON THE EDGE

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NEWS RELEASE

Attention Editors: Arts and Culture, City

MEDIA CONTACT

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Humber Assignment

WritingLab1@fall2019

Monday, Feb. 3, 2020

ROM opens Extinction 6.0: Earth on the Edge

New exhibition tells the story of biodiversity in crisis; past, present and future

TORONTO – With the planet amid the worst spate of species die-offs since the loss of the dinosaurs some 66 million years ago, the Royal Ontario Museum opens *Extinction 6.0: Earth on the Edge*. This thought-provoking and interactive exhibition, which runs from February 3 to April 3, 2020, examines the cause and impact of previous extinction events on earth. It also examines the one factor that sets this current sixth mass extinction event apart from the others, the role human beings have played in its development.

"Extinction is nothing new," says Dave Ireland, managing director, ROM Biodiversity. "In the last 500 million years, life on earth has come close to being wiped out five times by events such as asteroid strikes and massive volcanic eruptions. This time around, the actions of mankind are to blame. Actions such as burning fossil fuels and habitat loss due to deforestation have led to a steep drop in the number of wild animals over the past 50 years. The human population has doubled in the same timeframe."

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The exhibition builds on several damning scientific reports from around the world, warning of the irreversible consequences of inaction. Among them, a report from the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). It finds Canada risks losing some emblematic pieces of its biodiversity puzzle, including the woodland caribou.

"This is most certainly a global problem with potentially devastating global consequences," says Ireland. "However, Canada is warming at twice the global average and Canadians need only look as far as their backyard to see the effects human activity is having on the plants and animals that help define who we are as a nation. Ultimately, we must strive to cultivate curiosity and encourage action towards protecting our natural world, as the choices we make today will paint the picture of tomorrow."

Extinction 6.0: Earth on the Edge is laid out in three distinct zones, looking at past, present and future. It features thousands of specimens from the ROM collection, including a rare fossil dodo skeleton, the long-extinct flightless bird once found in abundance on the island of Mauritius. Live wildlife shows highlight the current depth and breadth of biodiversity on earth, illustrating what's at stake. The exhibition also includes interactive simulation models that help visitors understand what the future might look like if current trends continue, including the fate humanity could face.

About: The ROM is Canada's largest museum of natural history and world cultures. The museum has amassed thirteen million natural history specimens, artworks and cultural objects since it opened its doors to the public in 1914. The ROM is also the largest field research institution in Canada, playing a vital role in advancing our knowledge and understanding of disciplines including biodiversity, palaeontology, archaeology, ethnology and earth sciences. Visit www.rom.on.ca for tickets and further information.



Attention: Arts and Culture, City

MEDIA ADVISORY: ROM launches new exhibition examining plant and animal extinction as the planet enters its sixth mass extinction event

Toronto, Thursday, Jan. 23, 2020

What: Media preview of *Extinction 6.0: Earth on the Edge*, the ROM's upcoming exhibition examining the current crisis in biodiversity both in Canada and worldwide, as we experience the worst spate of species die-offs since the loss of the dinosaurs 65 million years ago. Unlike past mass extinctions caused by events like asteroid strikes, volcanic eruptions, and natural climate shifts, the current crisis is almost entirely caused by us - humans.

Who: Dave Ireland, managing director of ROM biodiversity

Where: Royal Ontario Museum
100 Queen's Park
Toronto

When: Monday, Jan. 27, 2020 from 12 p.m. to 3 p.m.

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Biography: Dave Ireland, MSc

An award-winning environmental speaker and educator with over 17 years of experience, Dave Ireland spends his time studying, conducting research, teaching and working in conservation biology and ecology. His unique ability to connect biodiversity and conservation to sustainable development practices has inspired many and led to national recognition. As managing director of biodiversity at the Royal Ontario Museum (ROM), Dave Ireland is responsible for sharing relevant ROM collections and research with the museum's diverse audiences.

Dave holds a master's degree in science from Trent University and a bachelor's of science degree from Mount Allison University. He has taught courses in conservation biology, environmental resource management and community ecology.

Dave joined the ROM in 2011, and in 2014 received the Environmental Studies Association of Canada's ECO-Award. This national award recognizes individuals, teams, or organizations who have positively contributed to the field of environmental studies in Canada through community-building and research.

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November 21, 2019

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BACKGROUNDER

February 3, 2020

MEDIA CONTACT

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Previous mass extinction events

- ❖ Ordovician-Silurian extinction, 444 million years ago, 86 per cent of species lost

This first mass extinction event was probably caused by a short, severe ice age that lowered sea levels, possibly caused by the sudden uplift of North America's Appalachian Mountains. The result was a rapid cooling of the planet as the newly exposed rock sucked carbon dioxide out of the atmosphere.

- ❖ Late Devonian, 383-359 million years ago, 75 per cent of species lost

This event spanning roughly 20 million years primarily affected the ocean dwellers of the age. Its cause is difficult to pin down exactly, but volcanism is a possible trigger. Evolving land plants may also have played a role, their roots stirring up the earth, and releasing nutrients into the ocean. This release may have triggered algal blooms, which dramatically reduced the oxygen levels in the water.

- ❖ Permian-Triassic extinction, 251 million years ago, 96 per cent of species lost

Nearly ending life on earth entirely, this was by far the worst extinction event in history. The world's forests were wiped out along with most animal life on land and in the sea in the event known as the "great dying." A massive volcanic eruption triggered the release of nearly 15 trillion tonnes of carbon, more than twice what would be released if all fossil fuel on earth were burned.

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- ❖ Triassic – Jurassic extinction, 200 million years ago, 80 per cent of species lost

At the end of the Triassic period, the earth entered yet another era of rapid global warming. It's thought the warming was the result of vast amounts of carbon dioxide released from the Central Atlantic Magmatic Province, a large igneous province in the middle of Pangea, the supercontinent of the day.

- ❖ End Cretaceous, 66 million years ago, 76 per cent of all species lost

Roughly 66 million years ago, an asteroid measuring at least 10 kilometres wide slammed into the Gulf of Mexico and brought about changes that led to the demise of the dinosaurs. Huge volumes of debris were flung into the atmosphere, blocking out the sun's rays and bringing on severe global cooling. All life within 1,500 kilometres of the impact site was wiped out instantly.

The world today: Factors contributing to the sixth mass extinction event

- ❖ Climate change

As with the previous five mass extinction events, climate change is a major contributing factor. The difference this time around is the rising temperatures have not been caused by massive volcanic eruptions but rather by the activities of humans, such as the burning of fossil fuels. The average temperature of the earth's surface has increased by an estimated 0.7 C since the beginning of the 20th century and, according to the most recent projections of an Intergovernmental Panel on Climate Change, could rise by 1.6 C to 4.3 C compared to an 1850 – 1900 baseline by 2100. Canada is particularly vulnerable, with Canada's Changing Climate report finding that Canada is warming twice as fast as the rest of the world, and it's effectively irreversible.

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❖ Habitat loss and deforestation

Deforestation is a direct cause of extinction and biodiversity loss. An estimated 18 million acres of forest are lost each year, due in part to logging and other human practices, destroying the ecosystems on which many species depend. In the Amazon, three football fields' worth of rainforest per minute is being lost, with scientists warning that if this trend continues, the rainforest may never recover. In turn, its death could release billions of tons of stored carbon into the atmosphere, warming the planet even further.

❖ Overexploitation

Overfishing, overhunting and overharvesting contribute significantly to a loss of biodiversity. These practices have led to the extinction or near extinction of numerous species over the past several hundred years, as shown in the rapid decline of big game species on the African subcontinent. Closer to home, only 34 per cent of Canada's fish stocks are considered healthy as a result of overfishing. Twenty-nine per cent are in a critical or cautious zone, while 37 per cent don't have sufficient data to assign a health status.

❖ Invasive species

Invasive species are the second largest threat to biodiversity after habitat loss. An invasive species is one that is not native to a particular ecosystem but arrives there, usually as a result of human activity. Once established, the newly arrived organism can wreak havoc on native species through competition, predation and the introduction of pathogens.

❖ Pollution

While pollution does not directly lead to species extinction, it can have devastating impacts on habitats and the environment. Think of the 19 billion pounds of plastic that makes its way into the world's oceans each year.



FACT SHEET

February 3, 2020

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Iconic Canadian species under threat

Mass extinctions are characterized by the loss of at least 75 per cent of species within a geologically short period of time. Extinction occurs at a natural background rate of between one to five species each year. It's estimated that species loss is now occurring at up to 1,000 times the background rate, and one million species are facing extinction, many within decades.

From the Pacific coast to the Alberta prairies to the cold lands of northern Manitoba and the waters off Atlantic Canada, more than 500 plant and animal species are considered at risk. Among them, several iconic species, synonymous with life in the world's second largest country.

❖ Woodland caribou

Native to Alberta, the endangered woodland caribou is a national symbol that appears on the tail side of the Canadian quarter. In 2011, there were only an estimated 34,000 left across Canada. The most consistent and pervasive threat to the persistence of a viable caribou population in Alberta stems from resource extraction industries, which are causing an overall loss and fragmentation of habitat.

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❖ **Chinook salmon**

Populations of Chinook salmon are federally listed as endangered. Threats to Chinook salmon including overfishing, overuse of water resources, development, and habitat loss. The Chinook salmon is an important keystone species of the Pacific Northwest. It is a vital food source for a wide range of wildlife, including orcas, bears and seals.

❖ **Orcas**

The Salish Sea is home today to 73 southern resident killer whales. In fewer than 20 years, their population has dropped by more than 20 per cent, leaving their population at a 30-year low. Salmon farming has led to a decline in prey for orcas which is one reason for their dwindling numbers.

❖ **Black ash**

Found predominantly in the North American Great Lakes region, the tree is under immense threat due to an invasive beetle species named the emerald ash borer. This beetle has killed roughly two billion ash trees and wiped out many found in Canadian city parks. In the southern Ontario city of Windsor, where the beetle was first detected in 2002, more than 90 per cent of the ash trees have already died.

❖ **Vancouver Island marmot**

Known as Canada's panda, marmots are found only on Vancouver Island, making them one of the rarest mammals in the world. There are currently just over 200 left in the wild. Habitat loss and degradation due to human encroachment and activity are responsible for their dwindling numbers. However, conservation efforts in recent years are now proving fruitful.



As more species go the way of the dodo, the ROM opens extinction exhibition

Extinction 6.0: Earth on the Edge opens at the ROM today. The exhibition features thousands of specimens, including a rare fossil dodo skeleton, extinct since 1681. This flightless bird shares one thing in common with the dozens of species that go extinct on planet earth every day. Its extinction is wholly attributable to the actions of humankind. Through this exhibition, the ROM seeks to highlight man's role in causing the sixth mass extinction event this planet has ever seen, which, if allowed to carry on unchecked, could lead to the demise of close to half of all species by mid-century. The exhibition runs from February 3 to August to July 31, 2020.

Photography credit: Royal Ontario Museum

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ROM launches new exhibition examining plant and animal extinction as the planet enters its sixth mass extinction event

Today marks the launch of the new ROM exhibition *Extinction 6.0: Earth on the Edge*. This exhibition will examine the current crisis in biodiversity both in Canada and worldwide by reviewing how human activity, like the extraction of resources, has led to the sixth mass extinction event on planet Earth. The exhibition runs from February 3 to August to July 31, 2020.

Photography credit: Stock Image

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