



THIS IS A TRUE STORY.



PHILANTHROPIC IMPACT REPORT

JULY 1, 2012 - MARCH 31, 2014

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Thank you for your generous support of ROM Biodiversity. Your investment in Canada's world museum helps connect people to their world and to each other. Since 1914, philanthropy has been at the cornerstone of the ROM. Donors like you make the Museum an indispensable resource for building community by nurturing discovery and inspiring wonder.

Your investment in ROM Biodiversity has had a great impact on the Museum and has enabled many meaningful activities and powerful initiatives, including world-class exhibitions such as *Wildlife Photographer of the Year* and community programs such as the annual Bioblitz, which brings together citizen scientists and top biologists, in the quest to discover and conserve our natural heritage.

Thank you for playing an important role in shaping and growing ROM Biodiversity, helping the ROM build community through its exciting public programs, engaging exhibitions and special events.

“Our donors and sponsors have helped make cutting-edge research, stunning exhibitions and educational programs possible at the ROM. Your philanthropic gifts fuel the acquisition of new specimens and artifacts, which enable us to offer unforgettable experiences, share our collections with the public, and tell fascinating stories about nature and culture.”

– Dr. Mark Engstrom, Senior Curator and Deputy Director of Collections & Research, ROM

Message from the Managing Director

Thank you for making ROM Biodiversity a leading resource for understanding and conserving our natural world. It is an exciting time to be working at the ROM. The 100th anniversary celebrations are positioning all that we do in a bright, new context, one of change and innovation. The Centres of Discovery are taking shape, and it's amazing to see staff and volunteers and you, our partners, embracing this new ROM. I am lucky to be directly involved in ROM Biodiversity, the largest and most active of the Centres, but it is also great to be exposed to many of the other areas of the ROM—from ROM Contemporary Culture, to World Art & Culture and Fossils & Evolution.

ROM Biodiversity has been the focus of some incredible projects and events over the last year, and the goal of this report is to convey to you the impact of our work. One of my favourite projects was our work to produce the North American premiere of the *Wildlife Photographer of the Year* exhibition and program festival. The exhibition was beautiful, and attendance surpassed our expectations, but it was the associated events, workshops and partnerships that truly made this overall experience a success—one that we plan to continue on an annual basis! Watch out for our 2014 show in mid-November.

The other project that stands out for me is Dr. Allan Baker's research on contemporary and fossil birds. The re-sighting of "Moonbird" or B95 (a Red knot that Allan and his team initially tagged in 1995)



@klw_kat @ROMBiodiversity more here as well: youtu.be/tr3WqAMotHc #bluewhale

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CONGRATULATIONS, DAVE!

Dave Ireland, Managing Director of ROM Biodiversity, was recognized with this year's 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.

twice in 2014 was simply incredible. This bird, likely the oldest known from its species at 21 years old, continues to teach researchers about migratory shorebirds, and teaches us to have hope in nature—its resiliency and connectivity. Allan and his team also uncovered an age-old dilemma for ornithologists: how does a flightless bird cross an ocean? Using ground-breaking DNA techniques on very old specimens from our collection, they found the answer: they fly! More on this and other great stories on our webpage: www.rom.on.ca/nature.

Looking forward is exciting too. As you may have heard, a ROM Biodiversity team, led by Dr. Mark Engstrom, has been to Newfoundland to recover two Blue whales that washed ashore in April of 2014. Sadly, these two animals were part of a group of nine that were entrapped in ice off the southwestern coast of Newfoundland and Labrador. Recovery did go very smoothly, and we have the pictures and video to prove it! I'm looking forward to sharing more of this story as it emerges.

I'm also excited to report that the Ontario BioBlitz Program, a ROM-led initiative that combines novice naturalists with expert biologists to work together to survey life in a given area, has become a model program for national and international partners. Now in its third year, we've made important, strategic partnerships that should see the program grow to a national level by 2017.

Dave Ireland
Managing Director
ROM Biodiversity

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ROM Biodiversity Research

Thanks to the Life in Crisis: Schad Gallery of Biodiversity Research Fund, the Salamander Biodiversity Fund and other sources, the ROM can continue to conduct important conservation research all over the globe.

ALLAN BAKER AND MARK PECK, ORNITHOLOGY

Senior Curator Allan Baker and Technician Mark Peck monitored the Red-knot populations from Argentina, to Mingan Archipelago National Park Reserve, to the Hudson Bay lowlands. Red knots are migratory shorebirds that cross continental boundaries, showing the interconnectedness of world ecosystems. Allan and Mark were thrilled to re-discover Red-knot B-95—a bird that has been tagged for more than two decades. To raise awareness of the obstacles faced by such animals, the ROM Biodiversity team put together a summer “Wildzone Workshop” about migration in the Earth Rangers’ Studio. Visitors could touch the ROM’s collection of migratory animal specimens and learned about the ROM’s research and conservation efforts to help protect these ecologically-important species.





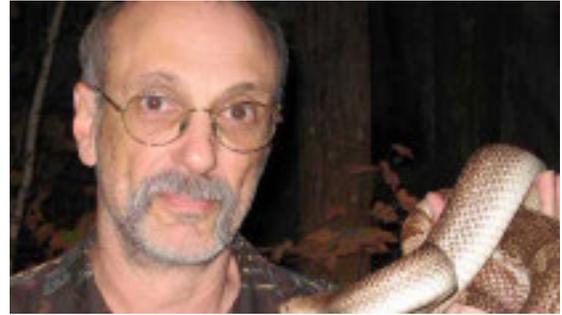
EXPLORING THE EVOLUTION OF FLIGHTLESS BIRDS

Ratites—a group of flightless birds including the emu, ostrich and extinct moa—were long believed to have evolved from a single flightless ancestor, but recent research published in *Molecular Biology and Evolution* shows they lost their power of flight independently.

Allan Baker and colleagues from the ROM, University of Toronto and Ontario Institute for Cancer Research used genetic techniques to show that tinamous, small flying birds from Central and South America, actually evolved within the ratites group. “We confirmed previous studies based on small DNA data sets that moa are most closely related to tinamous,” said Allan. “This means that the ancestor of all these birds was most likely flighted.”

BOB MURPHY, HERPETOLOGY

Senior Curator Bob Murphy and his team of students continue to help document and understand biodiversity around the globe, and the initiatives extend far beyond amphibians and reptiles. His lab had more than 20 collaborative publications this past year. These include studies on inter-kingdom gene transfer, published in *PLOS ONE*, the genome of the Tibetan antelope, which documents adaptations to living at very high elevations, published in *Nature Communications*, "Sex in the Half-shell," an extensive review of courtship behaviour in freshwater turtles, published in *Chelonian Conservation and Biology*, and even a paper on variation and evolution of Hepatitis B in humans, published in *Virus Research*.



CHRISTOPHER DARLING, ENTOMOLOGY

Senior Curator Christopher Darling is a true taxonomist and has been working at the ROM for the past three decades, studying insects from across the globe. His most recent work involved a publication in the scientific journal *Biology Letters*, describing the fascinating behaviour of the caterpillar *Calindoea trifascialis*. This caterpillar lives in the hot, dry open forests of southern Vietnam and feeds on the leaves of dipterocarp trees. Wilderness in Southeast Asia is quickly vanishing, so fieldwork by naturalists who can help reveal these wonders is all the more important.

After feeding, the caterpillar constructs a different type of retreat on a leaf, which detaches and falls to the forest floor during the night. It then begins to jump and retreat for two-three days. Together with Kim Humphreys (lead author), Chris offered a detailed description of this behaviour and examined the evolutionary benefit of jumping in the context of the caterpillar's habitat. This story sparks the interest of several media outlets including BBC Nature, Scientific American, ABC Science and Live Science.





HERNÁN LÓPEZ-FERNÁNDEZ, ICHTHYOLOGY

Associate Curator Hernán López-Fernández is carrying on a 100-year tradition legacy of fish exploration and research at the ROM. His work primarily concentrates on the neo-tropical region of the Amazon. By studying the evolution of fish and how they have diversified, Hernán and other scientists can offer powerful insights into the sustainability of all life on Earth.

One of Hernán's publications made the cover of the prestigious scientific journal *Evolution* on January 7, 2013. He used DNA sequences and the fossil records to reconstruct the evolutionary relationships and times of origin of South American cichlids, one of the three most diverse families of Neotropical freshwater fishes. Katriina Ives, Rebanks Post-doctoral Fellow in Natural History, worked on this project with Hernán.

Hernán undertook fieldwork in the highlands of Guyana's Guiana Shield. This expedition was funded by the Interamerican Development Bank (IDB) and organized through World Wildlife Fund-Guyana. Hernán was part of the first Biodiversity Assessment Team (BAT) to assess the upper Potaro River region. His research was part of the environmental assessment required for the construction of a hydroelectric dam. ROM scientists described *Characidium amaila*, and the IDB requested further exploration of available habitat for this new species.

JEAN-MARC MONCALVO, MYCOLOGY

Senior Curator Jean-Marc Moncalvo and his collaborators in Vietnam discovered and isolated in culture a new fungal species (*Tomophagus cattienensis*), from which novel bioactive compounds that show toxicity against human epidermal carcinoma were extracted. Their findings were reported in *Fitoterapia*, a journal for the study of medicinal plants in August 2013. This October, Jean-Marc and his University of Toronto/ROM students Santiago Sanchez and Matt Stata submitted the first whole genome sequence of a wild edible mushroom (*Amanita jacksonii*), to the journal *Genome Announcements*. Collected in the wild in Awenda Provincial Park, Ontario, this fungal species is apparently moving northward due to climate change, and its study is supported in part from a Graduate Student Award to Santiago from the Centre for Global Change Science (CGCS) at the University of Toronto.

ROM BIODIVERSITY TEAM IN BORNEO (ENTOMOLOGY, MYCOLOGY AND MAMMALOLOGY)

ROM Biodiversity travelled to Mulu National Park in Borneo—a biodiversity hot spot—to build on important research from 30 years ago. ROM experts from entomology, mycology and mammalogy surveyed life along a mountain transect in the Sarawak region, helping to guide local conservation strategies and increasing our general understanding of all life on Earth. The ROM is documenting and protecting life in this UNESCO World Heritage site, in partnership with local university teams, the Sarawak Forestry Service and WWF International.



NSERC SUPPORT FOR ROM BIODIVERSITY

Three ROM Biodiversity curators were awarded new grants from Canada's prestigious Natural Sciences and Engineering Research Council (NSERC) for a total of \$440,000 over five years. Drs. Hernán López-Fernández, Jean-Marc Moncalvo and Bob Murphy each run very active labs and study the ecology, evolutionary biology and conservation of life on Earth.



WHY STUDY BATS?

Bats are important members of ecosystems across the world. Different species eat insects, pollinate plants, disperse seeds and have much to teach us about biodiversity.

BURTON LIM, MAMMALOGY

Assistant Curator Burton Lim believes teaching the next generation of scientists about taxonomy and conservation science is a needed step toward protecting our planet, and indeed promoting his own research on bat diversity around the world. Last year, Burton was part of the first professional cohort to complete the “Fellowship in Global Journalism” at the Munk School of Global Affairs. As a result, he has regularly been sharing stories of his fieldwork and research in *The Globe and Mail* and *The National Post*.

Burton continues to partner with the UK-based group Operation Wallacea, a network of scientists from North America and Europe who build capacity of university students to survey and study biodiversity from across the planet. He returned to Guyana to lead students through mammal research surveys in the region. A world expert in bats, Burton was recently honoured with the naming of a new species of yellow-shouldered bat (*Sturnira burtonlimi*) after him by researchers at the Field Museum and American Museum of Natural History, in recognition of his incredible contributions to the study of bat diversity.



How I discovered a new species of opossum, and why it matters

BURTON LIM

The Globe and Mail

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11 comments



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TRY IT TODAY

I had barely recovered from the adrenalin rush of touching down on a tiny airstrip hacked out of the Guyanese rain forest when my heart sank. I had expected to be greeted by a group of Amerindian porters hired to carry a ton of food and field equipment to the summit of Mount Ayanganna, clear visible 40 kilometres away.

MORE RELATED TO THIS STORY

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VIDEO

New species discovered in Amazon

Instead, the porters – known locally as drudger – were about to head home. They had been double-booked, and were just getting back from an excursion with another group of biologists.

For me, turning back was out of the question. As a curator of mammalogy at the Royal Ontario Museum in Toronto, I had come to 2,000-

Connecting Advances in Biodiversity & Conservation Research with Audiences

The ROM effectively shares breakthroughs in biodiversity and conservation research with Museum audiences through engaging gallery exhibits and dynamic, educational programming.

This past year, ROM Biodiversity with partners from the Ontario Ministry of Education developed a new “power of plants” Ontario curriculum package for Grade 3-6 students. This engaging bilingual educational tool was released on International Biodiversity Day on May 22, 2014. The ROM also engaged with diverse audiences and communities through informal events such as Biodiversity Trivia Nights, facilitating interaction with our collections and experts. With questions ranging from easy to challenging, ROM Trivia Nights encourage members of the community to test their knowledge on different subjects and compete for bragging rights.



Life In Crisis: Schad Gallery of Biodiversity

CONNECTING WITH OUR GALLERY VISITORS

We interact with our visitors through Summer Club activities, impromptu workshops, touch tables and our popular mainstay programs such as Curators Corners. This interactive program provides a platform for ROM researchers to share their stories with the public, and is held seven times a year on Saturdays. Below is a snapshot of just three of the Curators Corners featured this past year:

ARCTIC ADVENTURES | November 22, 2012

Dr. Douglas Currie, ROM Senior Curator of Entomology, and his colleagues, technicians and grad students talked about the pesky black fly and what it can tell us about our changing natural world. A world authority on black flies, Dr. Currie's research has revealed some interesting trends about climate change and our Arctic ecosystems. This intriguing Curators Corner gave visitors a first-hand glimpse at how research scientists live when they're working in the Arctic, the tools they use to catch bugs, and what they do with such critters after they catch them.



DNA AND YOU | July 27, 2013

ROM molecular biology technicians Oliver Haddrath and Kristen Choffe talked about their work with the Museum's large collection of DNA samples. Representatives from the Natural Resource DNA Profiling and Forensic Center and from the Biodiversity Institute of Ontario's Barcode of Life Project also joined this fascinating conversation. Participants learned how researchers across the world record and monitor the biodiversity and the tools used to help protect this diversity. Kids and adults gained an understanding of how modern techniques can be used to study ancient DNA, and how this may help rescue species from the brink of extinction.

NATURE IN THE CITY | August 31, 2013

Visitors learned how the Greater Toronto Area is home to an astonishing array of living things, many of which thrive right under our very noses in downtown Toronto. There are many others, though, whose habitats and communities are impacted negatively by human activities, and we need to be acutely aware of how to protect these organisms and their surroundings. Participants talked about turtles with Ontario Nature and the Ontario Road Ecology Group; worked out habitats for plants and animals with volunteers from Rouge Park; populated a map of Toronto with wildlife and learned about genetic barcoding initiatives with BIObus. We were also joined by our friends from the Toronto Zoo.

SCOPIFYROM

is an exciting new smartphone app that allows visitors to experience ROM objects in fun and interactive ways, including X-raying a mummy and skinning a dino. ScopifyROM lets visitors uncover exclusive ROM research and curatorial secrets. Kids and adults can also learn about the ROM's bat research and specimens through *Bat Hunt*, an arcade-style game where players fly and steer bats, using echolocation to avoid obstacles and catch prey.



Patrick and Barbara Keenan Family Gallery of Hands-on Biodiversity

Thanks to the generous support of Patrick and Barbara Keenan, ROM staff continue to re-design and refresh key areas of the Patrick and Barbara Keenan Family Gallery of Hands-on Biodiversity to provide new content and offer new learning experiences for visitors.

As one of the most popular galleries at the ROM, we are proud to report that the Keenan Family Gallery welcomed over 242,000 visitors this past year. Of this total, 39,215 individuals visited during ROM for the Holidays from December 26, 2013 to January 5, 2014 inclusive, and 47,250 during March Break from March 8 to 16, 2014.

Bright, colourful activity circles at the entrance to the Keenan Family Gallery have been applied to the floor, and children are enjoying leaping from one circle to the next to find the answers hidden somewhere in the gallery. Improvements to the Carolinian Forest and Great Lakes Marsh Alcoves such as updated labels, new discovery boxes and touch tables are also being implemented.

Over the last year, the Keenan Family Gallery engaged visitors with dynamic and educational programming. Our new Oceans Touch Table, for instance, featured new specimens such as a Loggerhead Turtle shell, Beluga Whale vertebrae and a jar of Sea Lampreys. Other key highlights from last year included:

FRIDAY NIGHT LIVE

The gallery was open for both seasons of Friday Night Live (FNL). Our volunteers brought the cockroaches out from our live insect display, and helped many a visitor conquer their fear of these fascinating hissing insects.

BEE DAY | June 25 and 26, 2013

Our ever-popular Bee Day was well attended with staff and volunteers sharing native seeds with visitors to encourage native pollinators—hummingbirds, Monarch butterflies and bees.

ANIMAL WEEKEND | April 27 and 28, 2014

The ROM's Animal Weekend had staff from the gallery bringing snakes from the ROM's live room out into the gallery to meet visitors. A professional storyteller was stationed in front of the Mixed Wood Forest to awe visitors with stories about the animals who live in Algonquin Park.



BY THE NUMBERS: THE PATRICK AND BARBARA KEENAN FAMILY GALLERY OF HANDS-ON BIODIVERSITY

- 9 interns hosted from teacher's college, Evolutionary Biology and Media Communications
- 116 volunteers
- 242,000 visitors

Programming and Outreach

Thanks to the Life in Crisis: Schad Gallery of Biodiversity Programming Fund, the ROM continues to develop strategic partnerships and programs that go beyond the Museum's physical footprint to engage visitors in the quest to discover and protect life on Earth.

2012-2014 ROM Biodiversity Programs

2013 BIOBLITZ AT ROUGE PARK | September 14-15, 2013

Parks Canada and the ROM, along with six other partners, launched the world's largest Bioblitz. This was also a landmark day as the ROM and Parks Canada signed a Memorandum of Understanding to formalize the long-standing partnership between these two iconic Canadian institutions. More than 400 citizen scientists, including some of the best biologists in the country converged on Rouge Park—soon to be Canada's first urban national park—to survey all life over a 24-hour period. The general public was invited to attend and participate in the many workshops, hikes and Base Camp programs. More than 25 staff from the ROM participated, and most Taxon Teams were led by ROM Biodiversity staff. This event was a huge success and our next report will feature the 2014 Ontario BioBlitz, which took place on the Humber River Watershed from May 24-25, 2014.

ENVIRONMENTAL VISUAL COMMUNICATIONS PROGRAM

Now in its third year, the Environmental Visual Communications Program truly bridges the gap between art and science to train and inspire the next generation of environmental storytellers. Fleming College is partnering with the ROM to deliver this cutting-edge program that teaches students to identify strategies to inform and educate, garner engagement and support, and build and share campaigns to address conservation issues. The ultimate goal of the EVC program is to motivate the public to care about and become active participants in saving our planet. The 2013 cohort of students came from the U.S., Colombia and all over Canada.



THE TRIAL OF DAVID SUZUKI | November 6, 2013

One of Canada’s most well-known scientists, Dr. David Suzuki, was accused of seditious libel, and stood on trial at the ROM. Suzuki answered for his *Carbon Manifesto*—a bold, uncompromising plan that spelled out the end of oil and sets a new course for Canada’s sustainable energy future.

This mock trial featured real lawyers, expert witnesses, a judge and a jury of 12 people who, along with the audience voted on the fate of Suzuki. This unique theatrical event challenged science, law, art—and the audience. Along with the jury, the audience listened to the expert testimony and decided if David Suzuki was innocent or guilty, right or wrong.

“Many of us are confused about climate change, and often the conversation on this important subject stalls,” said creator, Laurie Brown. “I wanted to create an art piece that catapults the conversation into a new place: what would happen if Canada did something big to counter global warming? Like leave oil in the ground? I want The Trial of David Suzuki to imagine that future for Canadians.”

ROM REVEALED WEEKEND | May 3-4, 2014

To celebrate our Centennial, the ROM threw open its doors to the public, offering free general admission. ROM Revealed weekend offered a rare opportunity to go behind-the-scenes and explore the areas of the Museum traditionally not open to the public, including the ROM’s DNA lab, our collections vaults, antler room and much more.





ROM Biodiversity staff participated in many aspects of ROM Revealed weekend. Curators and technicians participated in the “Wild Wonders” tour of the Louise Hawley Stone Curatorial Centre, with collection room highlights including our DNA labs, and full access tours of the bird, insect, invertebrate, fish, mammal and plant collections. ROM Biodiversity curators also contributed a session to ROM Ideas, the 2014 ROM research colloquium. Speakers included:

- Hernán López-Fernández: “Using The Record of Nature Through All the Ages: the ROM Fish Collection in a Changing, Unexplored World”
- Jean-Marc Moncalvo: “The Importance and Diversity of Fungi”
- Doug Currie: “Barbarians at the Gate: Bloodsucking Black Flies of the Canadian Arctic Archipelago”
- Oliver Haddrath: “Unraveling the Past Using DNA”
- Curator emeritus Rick Winterbottom: “From Microscopes to Molecules-The Biodiversity of the Goby Fishes of the Genus *Trimma*.”

ROM Research Colloquium, February 8, 2013

The ROM is the largest field research museum in the country and is a world leader in several research areas, including biodiversity. ROM Biodiversity staff participated in the 34th annual ROM Colloquium. This day-long event gives everyone the chance to hear ROM experts give 15-minute presentations on the latest research in the arts, archaeology and pure and applied sciences. Presentations by ROM Biodiversity staff included:

- Julia Fenn: "Using Gecko Adhesive Surfaces for Exhibition and Conservation"
- Deborah Metsger, Jenny Bull, John Barker: "Online Botanical Outreach"
- Kevin Seymour: "The Oregon caves fossil jaguar, and the puzzle of the paucity of fossil jaguars from the western USA"
- Santiago Sanchez-Ramirez: "A Tale of the Caesar's Mushroom, Ecology and Evolutionary Biology"
- Henry Choong: "*Sertularella mutsuensis* Stechow, 1931 (Cnidaria: Hydrozoa: Sertulariidae) from Japanese tsunami debris: Systematics and evidence for transoceanic dispersal."

ROM Biodiversity Month, April 2013

EARTH RANGERS GREAT LAKES SHOW | April 6/13/20, 2013

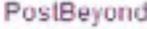
A focal story of this professional and engaging show was the Bald Eagle, an animal that almost went extinct in the Great Lakes but has made a remarkable recovery.

ONTARIO ENDANGERED SPECIES ACT CONFERENCE | April 8-9, 2013

The ROM opened its doors to its first ever two-day meeting with leading biodiversity experts including policy makers, scientists, farmers, students and consultants to discuss proposed amendments to the revolutionary Endangered Species Act 2007. Speakers included Janet Carding, ROM Director & CEO, the Honourable David Orazetti, Minister of Natural Resources, Gord Miller, the Environmental Commissioner of Ontario, and Karen Clark-Whistler, Chief Environment Officer, TD Financial Group. Managing Director Dave Ireland was the keynote speaker for the event, delivering his talk on "Global Issues, Local Champions."



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GOOGLE+ HANGOUTS WITH ROM EXPERTS

We kicked off ROM Biodiversity Month with an incredible series of ROM Biodiversity Month Google Hang-outs. The public was invited to log in and engage with ROM experts as they answered questions in real time. Our experts participated in 11 Google+ Hangouts, sharing their latest research and fieldwork, and offering an insider's view of the most important recent and historical discoveries pertaining to the biodiversity of life on earth. The ROM is the first Canadian museum to participate in ongoing Google+ Hangouts and is proud to pioneer the use of this interactive new technology.



TREES FOR TORONTO GOES MOBILE | April 24, 2013

Deborah Metsger, Assistant Curator of Botany, taught visitors how to identify and learn about more than 75 species of trees from their computers or smart phones.

2013 EARTH MONTH YOUTH FORUM | April 27, 2013

The ROM and Earth Day Canada's EcoMentors Program joined forces with 250 environmental youth leaders and educators from across Ontario for an exciting, interactive day and evening of workshops at the ROM. The Earth Month Youth Forum featured Canadian astronaut and nature photographer Roberta Bondar, the first female neurologist in space, and award-winning photographer Sebastião Salgado, whose exhibition *Sebastião Salgado: Genesis* ran at the ROM as part of the CONTACT Photography Festival. The forum was hosted by Simon Jackson, Founder and Director of the Spirit Bear Youth Coalition.

SPRING FAMILY WEEKEND | April 27-28, 2013

This tradeshow-style event featured live animal displays and 10 of Ontario's top environmental education organizations. Families had a chance to get up close and personal with insects, mammals and reptiles and participate in fun activities and crafts.

MEET THE AQUARIUM EXPERT | April 7/14/21/28, 2013

The ROM is one of a few museums in the world to have an aquarium with a live coral reef. More than just a fish tank, it is a miniature coral reef ecosystem, cared for by Sheldon John, our aquarium keeper. Visitors had a chance to bombard Sheldon with their many questions and this dialogue can be directly related to the larger issues of conserving coral reefs on a global scale. "Meet the Aquarium Expert" is a now a regular program on Sundays.

PARKS CANADA AND ROM BIODIVERSITY PRESENT: IN SITU

Last summer, ROM Biodiversity and Parks Canada gave Museum-goers a chance to travel across the country and around the globe. ROM visitors had their pictures taken against amazing photographic backdrops of ROM research camps and one of Canada's many National Parks or Heritage sites. This fun activity taught people about nature, culture and how the ROM and Parks Canada are working together to inspire change.

ROMCAFÉ: THE URBAN BREEDING SEASON OF BIRDS | April 24, 2013

ROM Ornithology Technician Mark Peck spoke with members of the community at the Duke of York Pub. This was a unique chance for people to debate and discuss ornithology in the evening, outside of the ROM.

MARCH BREAK 2014

The ROM Biodiversity team was once again present in the galleries during the 2014 March Break activities, with collections and research staff engaging visitors from the Schad Gallery and the Keenan Family Gallery. One of the highlights of the citizen science program held in the Earth Rangers Studio was the return of the day-long layout of dead birds collected by volunteers in the Fatal Light Awareness Program (FLAP) and participation through the week by FLAP representatives.

WHAT'S ALL THE FLAP ABOUT? | March 21, 2013 and March 10, 2014

During spring and fall migration, thousands of birds die due to collisions with buildings in the GTA. Through the dedication of the Fatal Light Awareness Program (FLAP) and its volunteers, injured birds are rehabilitated through the Toronto Wildlife Centre and the dead birds are brought to the ROM. The frozen birds are laid out and displayed for the public and media as a poignant reminder of the problem. ROM staffers scan through the specimens for birds that may be added to our galleries, our permanent research collections or, with the support of Environment Canada, are made available to other governmental or non-governmental agencies for their research and educational programming.



Museum Diaries

TVO's newly commissioned series *Museum Diaries* is a family viewing adventure that offers unprecedented access to the ROM. Airing for six weeks beginning February 25, 2014, each episode mixed science, history and intrigue with educational segments led by ROM curators, technicians and other experts.

BORNEO BOUND

ROM Biodiversity staff participated in two episodes of this exciting new show: *Borneo Bound* and *DNA Dissected*. *Borneo Bound* follows a team of curators and technicians on a six-week research expedition to the rain forests of the Gunung Mulu Mountains in Borneo. The Entomology team conducts follow-up research to a large-scale survey conducted over 35 years ago. The Mycology team collects over 400 mushroom specimens, anticipating that 20% will be new to science. The Mammalogy team is the first scientific team to collect bat and rodent specimens from the top of the mountain. Together, they explore the evolution of indigenous species, which can lead to conclusions about the impact of climate change.

DNA DISSECTED

DNA Dissected follows curators using DNA research to discover ground-breaking facts about the evolution of species. For instance, research Technician Oliver Haddrath leads viewers through the Ornithology Department, explaining the power of DNA, the interconnectivity of species and the field's technological advancements. He reveals his current research using DNA to study large flightless birds that in some cases have been extinct for more than 500 years. The ROM's findings will help the New Zealand government to save their endangered Kiwi birds.



Lectures, Talks, Conferences and Workshops



MAKING A DIFFERENCE: AN EVENING WITH DR. JANE GOODALL | September 25, 2012

The ROM and the Jane Goodall Institute of Canada (JGI) presented a special evening with Dr. Jane Goodall, a world-renowned primatologist and UN Messenger of Peace. Dr. Goodall reflected on the remarkable insights her research has offered into our closest animal relatives, and the extraordinary change the world has seen since 1960 when she first began her chimpanzee research in Gombe Stream National Park, Tanzania. A moving and passionate speaker, she also discussed current threats facing the planet and her outlook for hope in these complex times, encouraging people to do their part to make the world a better place for people, animals and the environment.

ROM BIODIVERSITY STAFF IN THE COMMUNITY

ROM staff gave numerous presentations on their research developments at academic conferences throughout the year. The following is just a snapshot of some of the popular talks and workshops presented by ROM Biodiversity staff this past year.

- Entomology Technician Antonia Guidotti presented a workshop on aquatic insects found in Rouge Park on August 13, 2013.
- Mammalogy Assistant Curator Burton Lim and Dave Ireland, Managing Director of ROM Biodiversity, gave a talk on bats to students at Crestwood Public School in April, 2013. The ROM was the first museum in Canada to pilot live Google+ Hangouts with curatorial staff, as part of Biodiversity month.
- In April 2013, Mary Burridge had the First Nations School (kindergarten to Grade 4) from Georgina Island come to the ROM for tours of Life Science collections, Patrick and Barbara Keenan Family Gallery of Hands-on Biodiversity and the Daphne Cockwell Gallery of Canada: First Peoples.
- Mary Burridge also gave several hands-on presentations on Ontario's biodiversity using objects from all life science departments, including live reptiles, to several grades of high school students at a high school in Milton in June, and another to a high school in Burlington on October 2, 2013.
- Deepali Dewan, ROM Senior Curator, Curatorship of South Asian Visual Culture, and Doug Currie, Senior ROM Curator, Entomology, participated in a Game Changer Discussion at the ROM to explore issues of environment, art and climate change on June 25, 2013.
- We continue to work with the Ontario Professional Foresters Association to help increase messaging of sustainable forestry practices in the Boreal Forest Ecosystem Case.
- Jean-Marc Moncalvo presented on "The Fungi are Among us: Modern Applications of Mycology" as an Invited speaker at the Agri-Food and Health For Northern Ontario: Future Prospects Conference, on September 21, 2013.
- Antonia Guidotti presented a workshop on Aquatic insects for Rouge Park on August 13, 2013. She also gave a poster presentation on the Rouge Park BioBlitz at the Entomological Societies of Ontario and Canada Annual Conference, on October 19-23, 2013.
- Mark Peck gave a talk entitled "Birding Toronto" at the Toronto Reference Library in conjunction with their new exhibition Flight, on July 26, 2013.
- In May 2013, Allan Baker had a Skype conversation with two classes in San Antonio Oeste, Argentina. Allan answered their questions and showed them the elephant bird egg and moa bones, which they enjoyed immensely. He also talked about his work on conservation of Red Knots. The students invited him to visit them on his next trip to Argentina, which he has promised to do.
- In December 2013, Dave Ireland spoke at the Huntsville Summit Centre to the Muskoka community about ROM Biodiversity scientists, the emerging BioBlitz program and the biodiversity of the region.

2013-2014 FISH ID WORKSHOPS

During April and May, ROM Ichthyologists Erling Holm and Mary Burridge, assisted by Marg Zur and Brenna Wells, ran the annual ROM Fish Identification Workshops. Hosted by the University of Guelph, these workshops provide a valuable opportunity for biologists to improve their skills in identifying fish species found in Ontario.

In 2013, three Fish ID workshops were given, as well as two Species at Risk workshops. Attendance was at an all-time high, with 139 field biologists, technicians, environmental consultants and university students attending. A range of government agencies and non-governmental organizations was represented, including: Fisheries and Oceans Canada; the Ontario Ministry of Natural Resources; six universities, four regional conservation authorities, and 18 environmental consulting firms. Participants travelled from as far away as: Minnesota, Winnipeg, Kirkland Lake, Atikokan and Saskatchewan.

WE KNOW OUR FISH!

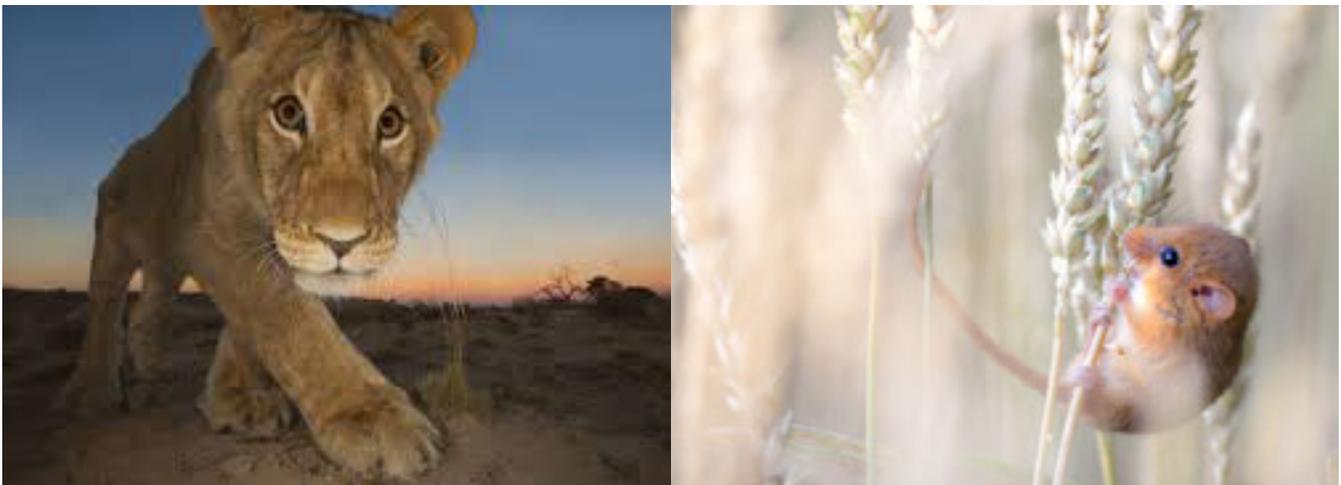
Ichthyology has offered Fish ID workshops for nearly 20 years and their popularity has not diminished—this year 119 people from various government agencies, conservation authorities, universities, and environmental consulting firms attended. In 2014, we added a two-day Minnow Identification workshop and two new Species at Risk workshops. It has become well known in the Ichthyology community that if you want to understand fishes, the ROM Fish ID course is a must.

Engaging Exhibitions

WILDLIFE PHOTOGRAPHER OF THE YEAR | November 22, 2013-March 23, 2014

The most respected and well known wildlife photography contest had its North American premiere at the ROM. Hosted by ROM Biodiversity, this stunning show featured 100 of 2013's best photographers. Programs included a members one-on-one with ROM Herpetologist Bob Murphy, a festival of visual communication with partners at the Environmental Visual Communications program, and a special media partnership with the Canadian Geographic Magazine and Photo Club Program.

To complement the exhibition, the ROM presented a variety of Museum-wide and off-site experiences. Wildlife photographers, from beginners to budding pros, shared their images using #ROMWPY (via Instagram, Twitter and Facebook). These pictures were displayed on video screens via an exclusive Sharypic Photo Wall at the ROM and on online platforms, including the ROM and Canadian Geographic websites. Together with our partners, the ROM also ran photography workshops, including *Instagram 101*, *Instagram 101 For Seniors*, and a *Get To Know Your DSLR Camera*. A special edition of Curator's Corner, *ROM Photographers of the Year*, featured the best curatorial photographs from the field at Friday Night Live on November 30, 2013.



Left: © Hannes Lochner (South Africa), Curiosity and the cat. Right: ©Etienne Francey (Switzerland) Harvest gold.

CARBON 14: CLIMATE IS CULTURE | October 19, 2013 – February 2, 2014

ROM Contemporary Culture and the Cape Farewell Foundation presented a visionary art exhibition, *Carbon 14: Climate is Culture*, curated by David Buckland and Claire Sykes. A culmination of a two-year project, the exhibition opened in the Roloff Beny Gallery and Thorsell Spirit House, as part of the *Carbon 14: Climate is Culture* Exhibition + Festival.

“Carbon 14: Climate is Culture explores themes of a changing Arctic, the health of oceans, biodiversity and extinction, sustainability and new, clean technologies; and central questions of politics, economics and ethics,” said David Buckland, Founder and International Director of Cape Farewell.

Cape Farewell began the project in November 2011, when artists, including film makers, poets and musicians, met with scientists, economists and other climate change professionals, to spark a creative dialogue on issues related to climate change. The resulting *Carbon 14: Climate is Culture* exhibition featured 13 art installations, including seven new commissions by Canadian and international artists, from various disciplines, all confronting the facts of climate change and responding in powerful and creative ways. Dave Ireland co-managed the exhibition and spoke at the American Museum of Natural History to museum professionals on the project and associated programs in the fall of 2013.



Inuk elder Lukie Airut hunting walrus in the Canadian Arctic, a region warming double the global average. *1000 Years Ago Today*, 2013 © Ian Mauro.

Funds

ROM BIODIVERSITY IS INFORMED BY AN EXPERT ADVISORY COMMITTEE THAT SHAPES CONTENT AND PROGRAMMING.

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Thank you again for your generous support. For further information on this report or ROM Biodiversity, please contact:

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