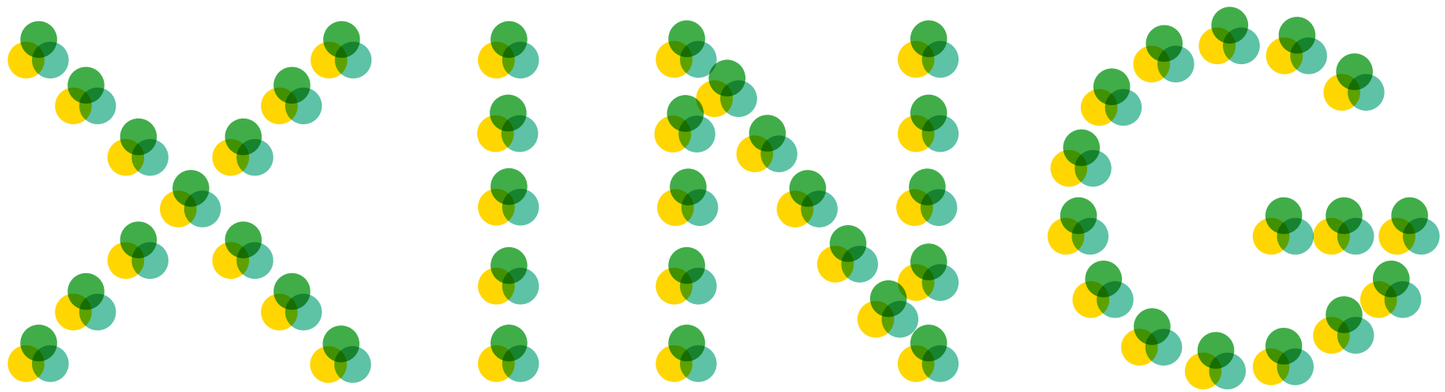

XING
(RE)CONNECTING LANDSCAPES

What happens when people and wildlife cross paths?

XING is an educational interactive public exhibit that brings forward the emerging dialogue on landscape connectivity, engaging with the ways humans and wildlife collide, converge, and ultimately reconnect.

The XING exhibit opened in North Kilns at Evergreen Brick Works, and was on public display from September through December 2013. During the life of the exhibit, a diverse audience of visitors engaged in conversations on issues surrounding wildlife mobility and landscape connectivity.

Evergreen Brick Works--Toronto's urban centre for sustainability, green living and learning--draws approximately 350,000 visitors each year. Many visitors are participants in events that take place during the autumn months, including (e.g.) the weekly farmers' market, walking tours of the Brick Works, nature hikes in the surrounding Don River ravine, educational programming for local schools, and other on-site activities. The Brick Works site and audience extended the reach for XING's timely message of the importance of reconnecting our landscapes.

XING

(RE)CONNECTING LANDSCAPES

WHAT HAPPENS WHEN PEOPLE AND WILD ANIMALS CROSS PATHS?

XING is an exhibit about the need to (re)connect the landscapes we all call home.

- Wildlife/vehicle collisions cost North Americans $8 billion every year
- 4-8 large animal/vehicle collisions take place in Canada every hour
- Wildlife crossing structures are a proven solution that can reduce these collisions by as much as 95%

XING will be on display at Evergreen Brick Works from September to December, 2013.

YOU CAN HELP.

Write your political representatives and let them know that wildlife crossings save money and lives. For more information, visit www.arc-solutions.org.

*XING is part of a research collaborative at Ryerson University under the direction of Professor Nina-Marie Lister (**nm.lister@ryerson.ca**).*

XING

JOIN US FOR THE OPENING CELEBRATION.

Evergreen Brick Works, North Kilns, Tuesday September 17th 2013, 5-7pm.

RSVP to Marta at **mbrocki@ryerson.ca**

WHAT HAPPENS WHEN PEOPLE AND WILD ANIMALS CROSS PATHS?

XING is a new exhibit that brings forward the emerging dialogue on landscape connectivity, engaging with the ways in which we collide, converge, diverge, and ultimately reconnect.

DID YOU KNOW...

- 4-8 large animal-vehicle collisions take place in Canada every hour
- These collisions cost North Americans over $8 billion every year
- Wildlife crossings are a proven solution, reducing these collisions by over 95% where implemented

*XING is a partnership between ARC, Ryerson University, Calgary Creative City Collaboration (C4), and Evergreen. For more information please visit **arc-solutions.org, evergreen.ca, c4-yyc.tumblr.com**, and **ryerson.ca.***

C4 RYERSON UNIVERSITY ARC EVERGREEN

XING

WHAT HAPPENS WHEN PEOPLE AND WILD ANIMALS CROSS PATHS?

How do we connect humans, wildlife, infrastructure and mobility? XING brings forward the emerging dialogue on landscape connectivity, engaging with the public on the ways in which we collide, converge, diverge, and ultimately reconnect. By bridging science and art through design, XING evokes a broad public interest and curiosity about the ways in which green infrastructure can reconnect Canada's landscapes, from urban to wild. XING is about moving people and animals safely, by building a system of networks – both built and metaphorical bridges – to link wildlife to habitats, art to science, and engineering to ecology.

HOW CAN DESIGN SAVE WILDLIFE AND WILD SPACES?

XING was inspired by the success of the 2010 ARC international design competition to build a wildlife crossing bridge in Vail, Colorado. As part of a continental project to ensure safe passage for both humans and animals on and across our roads, ARC works to educate, innovate and advocate for leading-edge solutions to human and wildlife mobility and for long-term landscape connectivity. In collaboration with ARC and other partners, XING extends this mission beyond a single bridge for wildlife to engage with the public through interactive research-based exhibits that creatively explore new thinking, new methods, new materials and new solutions for safe passage.

There is powerful scientific evidence that wildlife road crossings work. Together with these innovative and economical new technologies, public support and political leadership are needed to advance landscape connectivity. Investigating the tensions at the intersection of people and wildlife, science and design, XING engages this dialogue to reconnect nature and culture in our growing cities, and ultimately to reweave the shared landscapes we call home.

XING is a partnership between ARC, Ryerson University, Calgary Creative City Collaboration (C4), and Evergreen. For more information please visit arc-solutions.org, evergreen.ca, c4-yyc.tumblr.com, and ryerson.ca.

XING (RE)CONNECTING LANDSCAPES

The Venue

Evergreen Brick Works is an environmental community centre. A year-round destination for hands-on learning about ecology, sustainable living, and industrial heritage. Evergreen is a national not-for-profit that inspires action to green cities. Through its community programs, Evergreen reveals connections between urban spaces and the infrastructures that support them from watersheds to food systems. The venue itself is a place of crossings between historic industrial infrastructure, significant archeological artifacts, and a restored ecological wetland in the heart of Toronto's Don River Watershed.

The Partners

Evergreen

Evergreen (evergreen.ca) is a national not-for-profit that inspires action to green cities. By deepening the connection between people and nature, and empowering Canadians to take a hands-on approach to their urban environments, Evergreen is improving the health of our cities – now and for the future. Focusing on four program areas – Greenspace, Children, Food and CityWorks – we build partnerships with diverse groups and engage key influences and the public to inspire local action to create sustainable cities.

ARC

ARC (www.arc-solutions.org) is an international network whose mission is to find and promote leading-edge solutions to human and wildlife mobility and to long-term landscape connectivity. As an interdisciplinary partnership, ARC works to facilitate new thinking, new methods, new materials and new solutions to ensure safe passage for both humans and animals on and across our roads. ARC innovates, educates, and advocates to support the study, design, construction and promotion of wildlife crossing structures throughout North America.

Ryerson University

Ryerson (ryerson.ca) is Canada's leader in innovative, career-focused education and a university clearly on the move. It is a distinctly urban university with a focus on innovation and entrepreneurship. Ryerson has a mission to serve societal need and a long-standing commitment to engaging its community.

Calgary Creative City Collaboration (C4)

C4 (c4-yyc.tumblr.com) promotes and sponsors arts, culture and urbanity by mixing them together in unexpected ways. This not-for-profit provides inspiration for the burgeoning Calgary scene by profiling local talent, organizing unique events, and releasing a hand-made zine called Semaphore. As part of the conceptual development of the XING exhibit, C4 will be presenting a parallel exhibit in Calgary in 2014.

Exhibit Team

Kelsey Blackwell (Studio Blackwell) • Marta Brocki (Ryerson) Jeremy Guth (ARC) • Joshua Kohler (Ryerson) • Nina-Marie Lister (Ryerson, ARC) • Brendan McCabe (C4) • Judith McKay (Studio Blackwell) • David Stonehouse (Evergreen) • Erin Windross (C4) Melissa Yu (Evergreen)

Acknowledgements

Arctos & Bird • Eco-Kare International • Highway Wilding • Long Point Causeway Improvement Project • Miistakis Institute National Film Board • Ontario Ministry of Transportation • Parks Canada • Relay Studio • Woodcock Foundation • Western Transportation Institute

Thank You

Leanne Allison • Tony Clevenger • David Cooper • Kari Gunson Rachelle Haddock • Alicia Harding • Elise Hodson • Matt Knapik Rick Levick • Andrew Lovett-Barron • Rafael Santos

EVERGREEN ARC C4 RYERSON UNIVERSITY

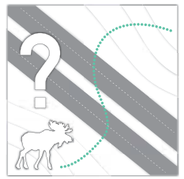
This exhibit is part of a research collaborative at Ryerson University under the direction of Professor Nina-Marie Lister (nm.lister@ryerson.ca).

XING (RE)CONNECTING LANDSCAPES

HIGHWAYS & WILDLIFE

1. WHAT IS THE PROBLEM?

1 All wildlife need to be able to move freely throughout their habitat to access water, food, and mates.

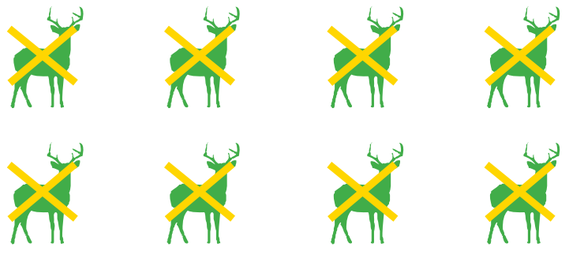


2 When highways are built through habitat, wildlife must find ways to cross.

3 Sometimes vehicles collide with crossing wildlife. These collisions are unsafe and very costly.

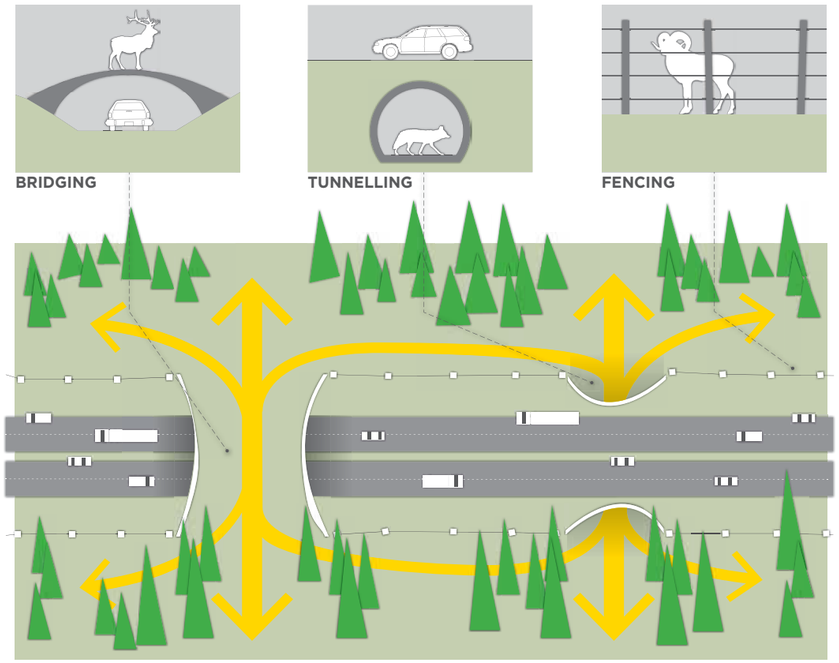
4 When highways are built or widened, this fragments wildlife habitat and increases the risk of wildlife-vehicle collisions.

4 - 8 LARGE ANIMAL/VEHICLE COLLISIONS TAKE PLACE IN CANADA **EVERY HOUR**



2. WHAT IS THE SOLUTION?

We can make highways safer for both wildlife and people by separating traffic and wildlife with crossing structures -- including bridges, tunnels, and highway fencing.



3. DO CROSSING STRUCTURES WORK?

Absolutely! Scientists have now collected over 15 years of data on wildlife using highway crossing structures. While some animals take time getting used to these structures, many types of animals -- from salamanders to grizzly bears -- now use them regularly.

3 SECONDS on average between vehicles on the Trans-Canada Highway in Banff National Park

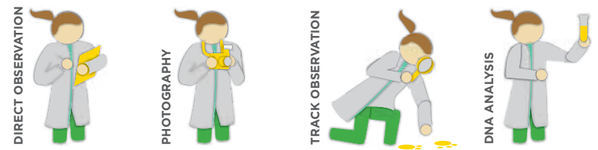
15 YEARS of research on crossing structures in Banff National Park

95% REDUCTION in wildlife-vehicle collisions on highways with crossing structures in Banff National Park

200,000+ large mammals detected using crossing structures in Banff National Park

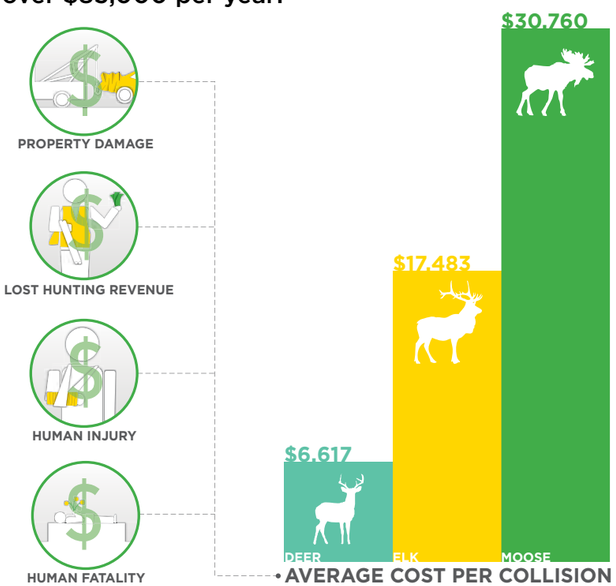
4. HOW DO WE KNOW THEY WORK?

Scientists have a variety of ways to measure the use of crossing structures by wildlife. These include direct observation, motion-sensing cameras, track observation, and DNA analysis (of fur captured from crossing animals).



5. ARE THEY COST EFFECTIVE?

At sites where highways interrupt regular wildlife movement, the cost of collisions -- including property damage, loss of hunting revenue, and human injury and fatality -- far outweighs the cost of building bridges, tunnels, and fencing. By installing crossing structures, the Trans-Canada Highway near Dead Man's Flats in Alberta has saved over $85,000 per year!



XING (RE)CONNECTING LANDSCAPES

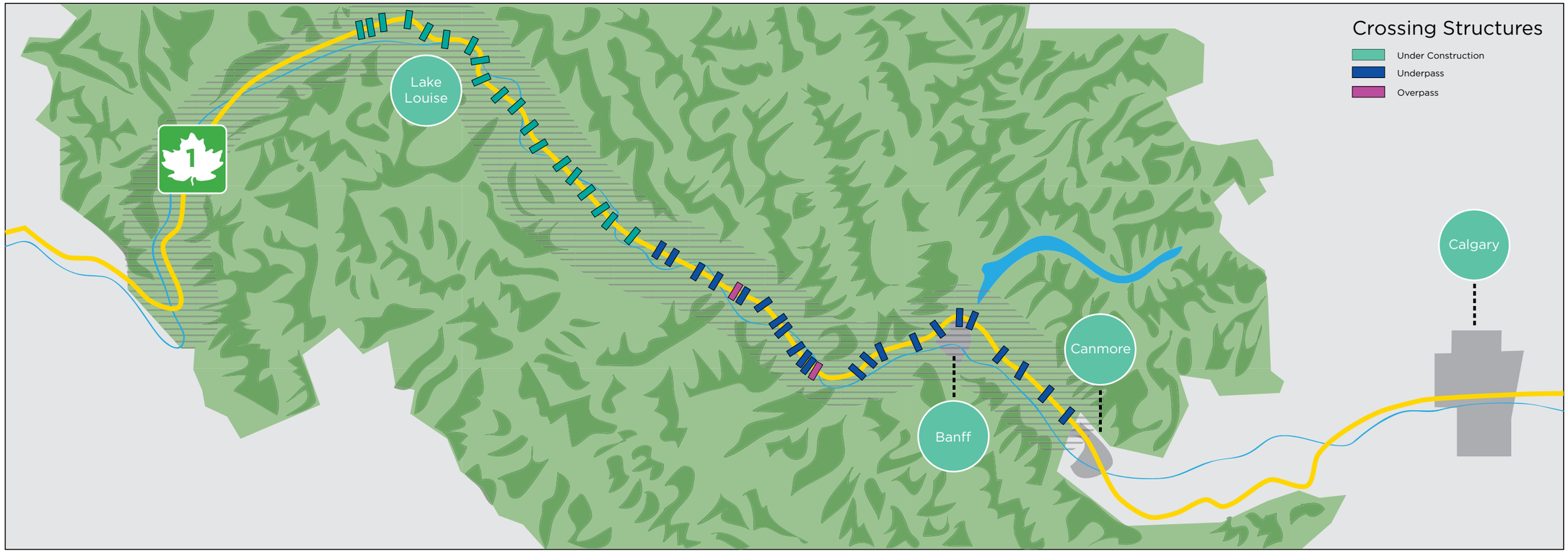
Highways & Wildlife Infographic
Provided by The Miistakis Institute for the Rockies
Design and Illustration © Matt Knapik
Adapted for exhibition by Joshua Kohler

Highway Wilding
Wildlife Monitoring and Research Collaborative in the Canadian Rocky Mountains
www.highwaywilding.org

Woodcock Foundation
Wilburforce Foundation
Galvin Family Fund
Alberta Real Estate Foundation

Alberta Ecotrust Foundation
Parks Canada
Western Transportation Institute

BANFF: A CASE STUDY FOR SAFE CROSSINGS



Since the mid-1990s, Parks Canada has sought to balance its mandate to protect the biodiversity of its mountain parks with the need to expand the Trans - Canada Highway as it passes through Banff and Lake Louise. To date, they have built a system of 24 underpasses and overpasses with exclusionary fencing between crossings. Over 17 years of research and monitoring has proven their effectiveness in facilitating the movement of wildlife across the highway while almost completely eliminating incidents of collision with vehicles. This system serves globally as a leading example for how to reduce the environmental impact of our roads and make them safer for everyone.

COUGARS AND BLACK BEARS GRAVITATE TOWARDS MORE CONFINED, SMALLER UNDERPASSES

WOLVES, GRIZZLIES, AND MOOSE PREFER LARGER OVERPASSES WITH GOOD VISIBILITY

SMALL REPTILES, AMPHIBIANS, AND MAMMALS ARE ACCOMMODATED BY CULVERTS INSTALLED EVERY 400M

YELLOWSTONE TO YUKON

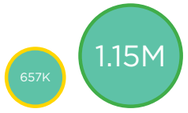
Canada's mountain parks serve as critical cores of conserved habitat in the Y2Y region which extends from Yellowstone Park in the United States through to the Yukon in Canada. It is the last remaining intact mountain ecosystem in the world. The fragmentation of such landscapes by human development and roads is the most significant cause of decline in the world's biodiversity - particularly as wildlife needs to move to adapt to climate change. Parks Canada's animal crossing system significantly reduces the threat of fragmentation to Y2Y by the expansion of the Trans - Canada Highway, and it has inspired the construction of other crossing structures in the region. Notably, an effective system of crossings has been built on Highway US 93N known as the "People's Way" where it passes through the Flathead Indian Reservation in Montana.

URBAN GROWTH (1988 2013)

↑127%

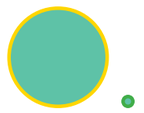
TRANS - CANADA HIGHWAY TRAFFIC

↑75%



POPULATION INCREASE

↓80-95%

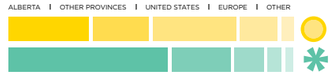


WILDLIFE - VEHICLE COLLISIONS

Calgary is one of the fastest growing cities in North America. With this growth has come increased use of mountain parks and the Trans - Canada Highway by the city's inhabitants. Parks Canada's mitigation system provides the infrastructure that is needed to support the increasing integration between western Canada's spectacular natural ecosystems and its growing cities.

TOURISM

Banff National Park receives visitors year-round from a variety of places in Canada and worldwide (top : summer, bottom: winter). Visits to the park have increase exponentially over recent decades and the majority of this traffic arrives via the Trans - Canada Highway.



XING (RE)CONNECTING LANDSCAPES

LIVING LABORATORIES

Wildlife crossings tell stories of intersection between the paths of animals and humans. Scientists use simple tools to collect a wealth of information that gives insight into the effectiveness of crossing structures in reconnecting landscapes as well as the health and migratory patterns of wildlife populations.

An animal's world is vision, sound, touch, smell. It's not about language. You have to get into the sensory world in order to understand them.

– Temple Grandin

DATA SOURCES

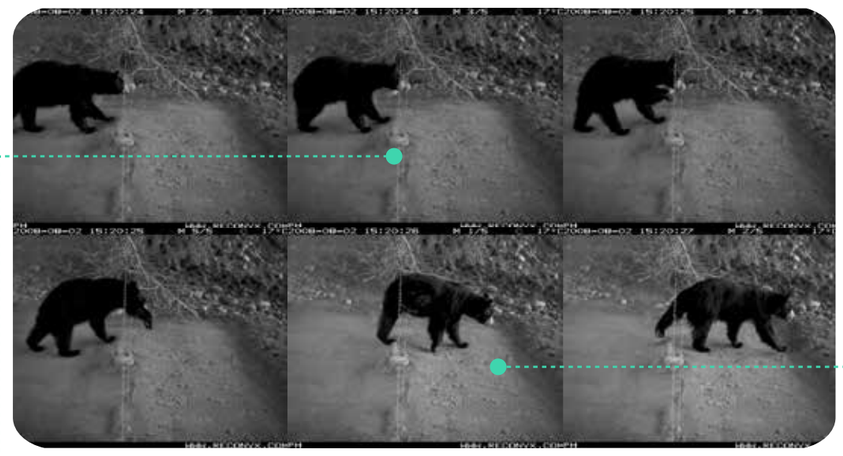
Track pads made of raked soil collect footprints used to identify and track different species. Scientists count the type and number of species using each crossing, and establish their direction of travel. Fur samples are collected using wire strung across pads, providing DNA samples to distinguish individual animals for further study.

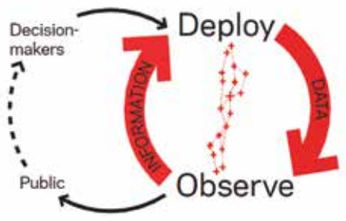
MONITOR, LEARN, ADAPT

Data gathered at wildlife crossings allows for the continuous improvement of design and mitigation strategies. Continued monitoring allows scientists to better understand the complex interactions between species and their changing habitats. From these insights, new construction technologies can be developed and crossing designs adapted to species' needs and to changing environmental conditions.

XING STORIES

Motion-activated cameras placed at crossings serve as windows into the lives of wildlife. Videos and photographs document the many species that are served by crossing structures and allow for the observation of animal behaviour over time. Some species take years to begin using crossing structures. However, once the adults become familiar with these pathways they can be seen teaching their offspring to navigate them and the number of crossings increases significantly.





CITIZEN SCIENCE

Systematic observation of crossing structures (re)connects us to the shared landscapes we call home. Facilitating the real-time monitoring of wildlife using digital media positions the public as "citizen scientists" - revealing the ecosystems that surround us and building awareness of the need to reweave fragmented landscapes.

XING (RE)CONNECTING LANDSCAPES

XING HIGHWAY 69

In the spring of 2011, the Ontario Ministry of Transportation built 3 large wildlife crossings along a new section of Highway 69. This section of highway cuts through a forested ecosystem that is home to many large wildlife species - including Black Bears, Moose, Deer, and Elk - all of which need to cross the highway to access food, water, shelter and mates. 10 km of continuous fencing directs wildlife to the 3 new safe crossings. For animals that find their way onto the highway, 27 one-way gates provide access to the safe side of the road. A local specialist, Eco-Kare International, is monitoring the effectiveness of these crossing systems on behalf of the Ministry, and has already documented over 2000 safe wildlife interactions with the system. Preliminary monitoring has shown that the crossings have been a success: diverse wildlife species, from coyotes to black bears, are already using the crossings thus reducing wildlife mortality and improving safety for both motorists and animals.

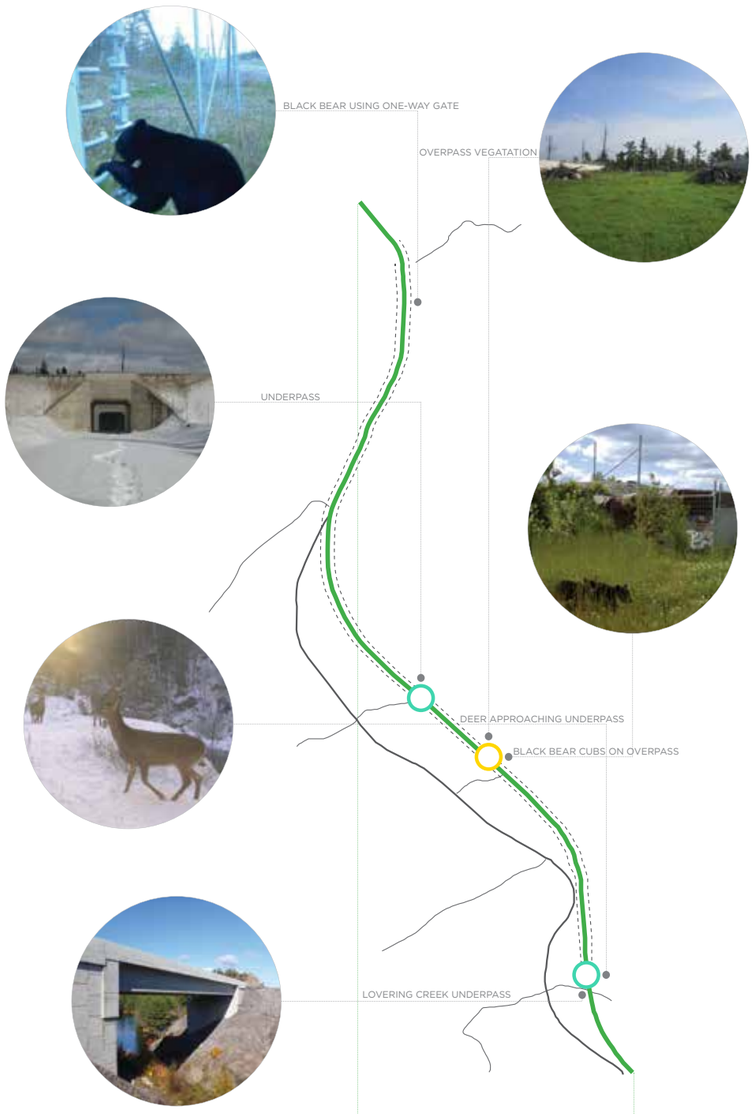
ONTARIO'S DEADLIEST ROAD

For turtles, frogs, and snakes that is. The Long Point Causeway is the only entrance into the Long Point World Biosphere, running between Lake Erie and Big Creek National Wildlife Area. 30 years of monitoring has shown that the road interrupts key migration corridors for amphibians and reptiles, including multiple Species at Risk. Animals are forced to cross this busy road to access essential habitat, resulting in numerous collisions fatal to wildlife.

The citizen-led Long Point Causeway Improvement Project has raised funds to install a system of road signs, fencing, and ecopassages that allow wildlife to pass safely underneath the road. To date over 4000m of fencing and 3 ecopassages have been installed, reducing road mortality of amphibians and reptiles by over 50%. The group is working to install a total of 12 ecopassages along the 3.6 km road to (re)connect Long Point Bay and the Big Creek Marsh.

ecokare international

Photo Credits: Sean Boyle and Kari Gunson



(RE)CONNECTING ONTARIO'S LANDSCAPES

The extensive network of roads in Canada's most populous province fragments our ecological systems, forcing wildlife to cross roads to access the food, water, shelter, and mates they need to survive. This can result in collisions that are dangerous or even fatal for both people and wildlife.

By tracking wildlife movements and documenting collisions between animals and drivers, we are now able to identify where our roads are having the greatest impact on the environment. Where roads interupt key corridors for wildlife movement our government and concerned citizens are finding new ways to improve safety both for people and wildlife.

Systems of fencing, one-way gates, underpasses, and overpasses allow wildlife safer ways to cross roadways. These new crossings take into account the different needs of diverse species, and work to (re)connect the shared landscapes we all call home.

XING (RE)CONNECTING LANDSCAPES

Roads and bridges were once epic stories of human engineering triumphing over natural obstacles. ARC tells a new story. It's about our capacity to build public infrastructure with and for nature, as well as people.

ARC International Wildlife Infrastructure Design Competition

ARC engaged the best and most innovative international, interdisciplinary design teams — comprised of landscape architects, architects, engineers, ecologists, and other experts — to create the next generation of wildlife crossing structures for North America's roadways. This competition sought specifically from its entries innovation in feasible, buildable context-sensitive and compelling design solutions for safe, efficient, cost-effective, and ecologically responsive wildlife crossings. In doing so, the competition has raised international awareness of a need to better reconcile the construction and maintenance of road networks with wildlife movement.

Winning Entry: Hypar-Nature

HNTB with Michael Van Valkenburgh Associates

The structure relies on a modular and cost-effective system of thin-shell, pre-cast concrete hypar forms that allow for minimal site disturbance and easy creation, assembly, and deployment, given the availability of local pre-casting facilities. The forms can be readily expanded or adapted as wildlife movements and habitats change, or as site specific conditions dictate. The scheme is a landscape and structural collaboration, bridging both under and over the road, layering driver experience and animal preferences.

MCS/Modular Crossing System

Balmori Associates

The goal of this design is to create a modular "kit of parts" using sustainable materials. The design uses locally manufactured girders made from timbers killed by the pine beetle. The resulting bridge is a free-form structure that stores more CO2 than was used for manufacturing. The topography of the local landscape is reflected in the underside contours, while the surface habitat is designed to blend seamlessly into the surrounding landscape.

RED/Research Evolve Design

Janet Rosenberg + Associates

The design goal for this concept is to build a lightweight, flexible structure that is iconic yet almost invisible. The design uses lightweight wood-core fiberglass, which is designed in modular configurations. This strategy makes use of varied possible routes across the bridge, based on the travel habits and preferences of target species. The bright red bridge is an iconic structure for humans, but is unremarkable to wildlife, who cannot see the colour red.

Wild (X)ing

The Olin Studio

A double-curved inverted arc, the Wild X-ing structure is a steel and Ductal grid overlaid by a rhomboid micro-grid lattice. The lattice is composed of pre-vegetated lightweight glass reinforced plastic habitat modules that can be adapted, or expanded as site conditions dictate. Customized to local habitat conditions, the modules can be planted off-site and easily transported by flatbed trailer to the site for insertion or replacement.

LANDSHAPE

Zwarts & Jansma Architects

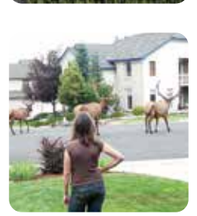
This scheme proposes a thin-shell, double-curved concrete pillar-less structure that appears to float across the highway. Using concrete formwork that can be reused for each subsequent crossing, the structure is cost-effective due to the thin layer of concrete required and the intention of repetitive construction. The upper curve of the "landshape" contains the habitat for the crossing, including a system of ponds to serve as a draw for wildlife.

ARC

ARC is an international network whose mission is to find and promote leading edge solutions to human and wildlife mobility, and to long-term landscape connectivity.

INNOVATE

Improve the State of Practice



EDUCATE

Build Support Where it Matters

ADVOCATE

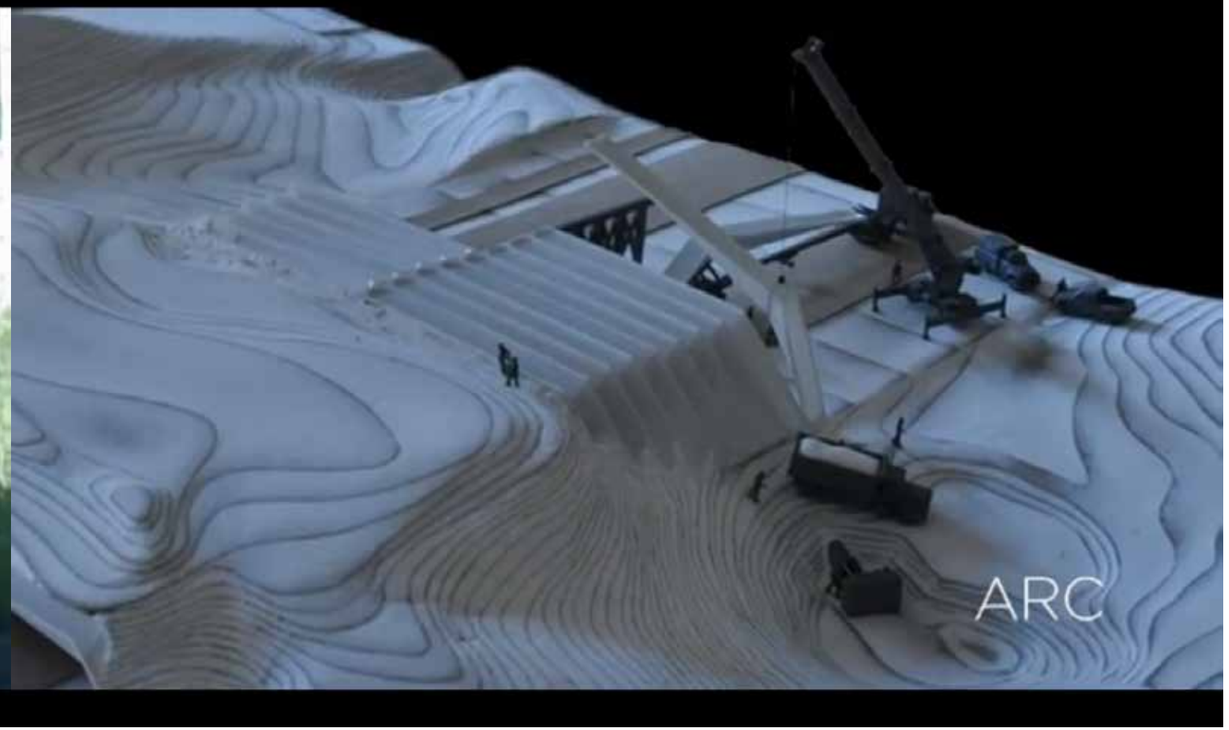
Move the Policy Needle

XING (RE)CONNECTING LANDSCAPES


Making North American highways safer for
both drivers and wildlife is a critical priority.


ARC


ARC


ARC

The ARC competition short-listed five, world-class, interdisciplinary teams to develop concept designs for a wildlife crossing structure at Colorado's West Vail Pass along I-70. Through interviews and footage, this video puts forward the compelling case for ARC, the competition process through the perspective of its participants, and its remarkable results.

Special thanks to Dr. Tony Clevenger (initiator of the ARC International Wildlife Crossing Infrastructure Design Competition)

Individual Appearances
Diana Balmori, Balmori Associates | Tony Clevenger, Western Transportation Institute | Nina-Marie Lister, Ryerson University | Frosty Merriott, Town of Carbondale, Colorado | Dave Neely, USDA Forest Service | Brian Pinkerton, (formerly) CDOT / City of Denver, Colorado | Congressman Jared Polis, Second District of Colorado | Janet Rosenberg, Janet Rosenberg & Associates | David Rubin, The Olin Studio | Rob Torsing, Zwarts & Jansma Architects | Charles Waldheim, Harvard University | Carole Walker, Rocky Mountain Insurance Information Association Jane Wernick, Jane Wernick Associates | Jane Wolff, University of Toronto | Ted Zoli, HNTB Inc.

Images courtesy of
Tony Clevenger | Colorado Department of Transportation | Neil Hetherington | Sandra Jacobson | Nina-Marie Lister | Shane Macomber | Western Transportation Institute

Production Team
Studio Blackwell & Gallivan Media | with Neil Hetherington, Western Transportation Institute | Nina-Marie Lister, Ryerson University

Music by Jonathan Gallivan

ARC Steering Committee
Steve Albert, Western Transportation Institute | Rob Ament, Western Transportation Institute | Terry Brennan, United States Forest Service | Alexandra Christy, Woodcock Foundation Tony Clevenger, Western Transportation Institute | Monique DiGiorgio, Western Environmental Law Center | Mary Gray, Federal Highway Administration | Jeremy Guth, Woodcock Foundation Angela Kociolek, Western Transportation Institute | Steve Liebowitz, Woodcock Foundation | Nina-Marie Lister, Ryerson University | Ted Smith, Yellowstone to Yukon | Roger Surdahl, Federal Highway Administration

ARC Technical Advisory Committee
Sandra Jacobson, USDA Forest Service | Peter Kozinski, CDOT Regions 1 & 3 | Fil Salustri, Ryerson University | Paul Stevens, ZAS Architects Inc. | Patricia White, Defenders of Wildlife

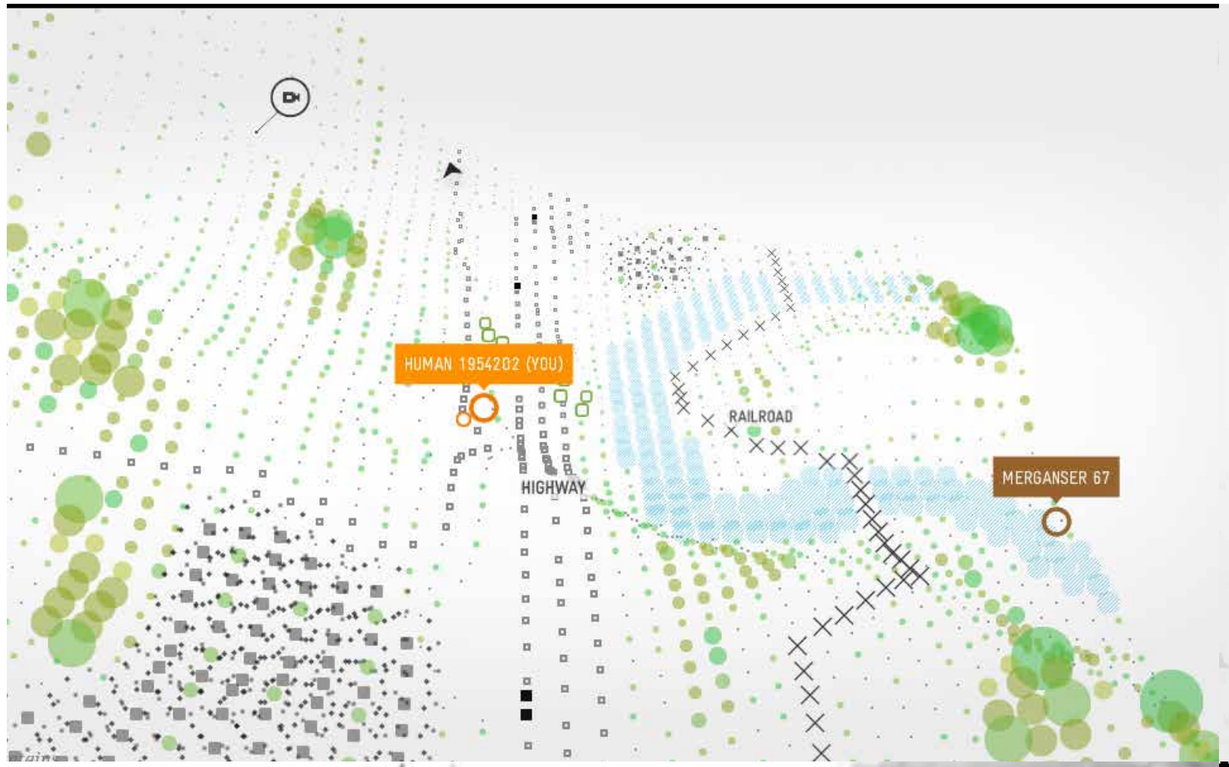
ARC Finalists
Balmori Associates (New York) with StudioMDA, Knippers Helbig Inc., David Skelly, CITA, Bluegreen, John A. Martin & Associates, and David Langdon | HNTB Engineering with Michael Van Valkenburgh & Associates (New York) with Applied Ecological Services, Inc. | The Olin Studio (Philadelphia) with Explorations Architecture (Paris), Buro Happold (London) and Applied Ecological Services | Janet Rosenberg & Associates (Toronto) with Blackwell Bowick Partnership, Dougan & Associates, and Ecokare International | Zwarts & Jansma Architects (Amsterdam) with OKRA Landscape Architects, IV-infra and Planecologie

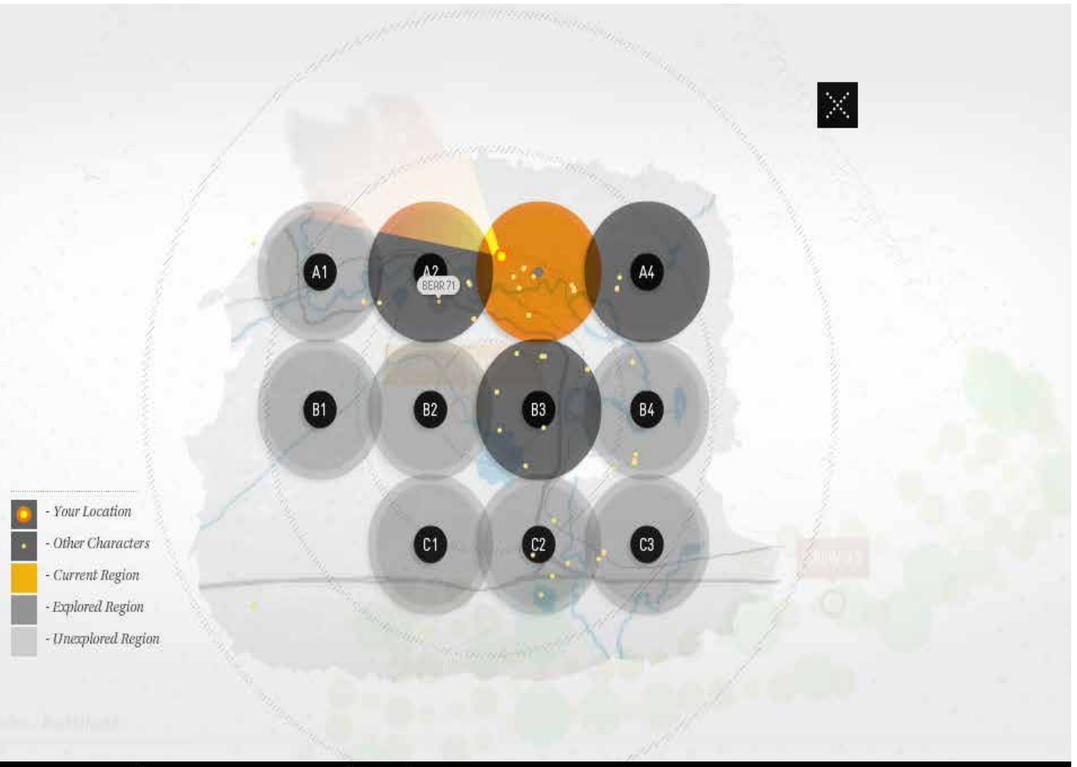
ARC Jury
Tony Clevenger, Western Transportation Institute | Charles Waldheim, Harvard University | Jane Wernick, Jane Wernick Associates | Bill Withuhn, Smithsonian Institution | Jane Wolff, University of Toronto

ARC Partners
American Association of State Highway and Transportation Officials | American Society of Landscape Architects | Animal Assistance Foundation | Canadian Pacific Center for Large Landscape Conservation | Center for Native Ecosystems | Colorado Department of Transportation Coordinated Technology Improvement Program for:
Federal Highway Administration, Federal Lands Highway, National Park Service, Bureau of Indian Affairs, United States Fish and Wildlife Service, United States Forest Service Defenders of Wildlife | Edmonton Community Foundation | Federal Highway Administration | I-70 Coalition | Montana State University, Western Transportation Institute National Parks Service | Parks Canada | Ryerson University | University of Toronto | Research & Innovative Technology Administration | United States Forest Service Western Environmental Law Center | Western Governors' Wildlife Council | Woodcock Foundation | Yellowstone to Yukon | ZAS Architects Inc.

Funding for this production was provided by the Woodcock Foundation.

arc-solutions.org


HUMAN 1954202 (YOU)
RAILROAD
HIGHWAY
MERGANSER 67


A1
A2
BEAR71
A4
B1
B2
B3
B4
C1
C2
C3
- Your Location
- Other Characters
- Current Region
- Explored Region
- Unexplored Region


+ Story
2007-06-17 20:10:07
M 2/5
16°C
RAILROAD
BEAR 71
BEAR 71
A grizzly bear can smell a baby elk about as well as you can hear a pin drop.
LATIN Ursus Arctos
TIMES SPOTTED AT CAMPGROUND 3
TIMES 'AVERSIVE CONDITIONING' USED: 3
WEIGHT (KG) 135
AGE (YRS) 4
00:26 / 02:35
ABOUT | READ THE STORY | TUMBLR | CREDITS

Bear 71 is an interactive multi-user online experience told from the point of view of an omniscient female grizzly bear, dubbed “Bear 71” by the park rangers who track her. The bear’s story speaks to how we coexist with wildlife in the age of networks, surveillance, and digital information en mass. Bear 71 is created by the National Film Board of Canada’s groundbreaking digital studio, which has produced award-winning projects: Welcome to Pine Point, The Test Tube with David Suzuki, and Waterlife.

Created by
Jeremy Mendes | Leanne Allison | the NFB

Bear 71 Voice Mia Kirschner

Executive producers
Loc Dao | David Christensen | Rob McLaughlin

Producers
Loc Dao | Dana Dansereau | Bonnie Thompson | Rob McLaughlin

Interactive Design, Development & Programming JAM3 **Writer** JB MacKinnon **Editor** Jennifer Moss
Design Aubyn Freybe-Smith **Sound Designer** Joshua Stevenson **Video Editor** Bill Hardman | Hart Snider
Music Consultant Jonathan Orr **Wordmark Design** Patrick Johnson **Social Story Desgn/Installation Co-Creator** Lance Weiler
Marketing JS Defoy | Moira Keigher **Publicist** Jennifer Mair **Associate Creative Technologist** Vincent McCurley
Project Manager Vanessa Fukuyama **Production Manager** Janine Steele **Centre Administrator** Darin Clausen
Prodution Coordinator Faye Yoneda | Ginette D’Silva

Trail Camera Images provided by Parks Canada | Alberta Provincial Parks | Montana State University
Stills Photography provided by Graeme Pole | Mountain Vision **Additional Footage by** Alex Taylor | Leanne Allison

The Creators would like to thank Steve Michel | Colleen Campbell | Jesse Whittington | Tony Clevenger | Nikki Heim | Adam Ford | Melanie Percy

bear71.nfb.ca

Highway Wilding

Build them and they will live. That is the simple message of Highway Wilding, a short documentary exploring highway-wildlife conflicts and the pioneering solutions that are preventing roadkill and reconnecting landscapes in Western Canada. Here in the Rocky Mountains we have a unique opportunity to maintain a fully functioning mountain ecosystem, but highways remain a significant barrier to ecosystem health and connectivity. Everything from grizzly bears and wolverines to ducks and salamanders need to cross roads safely to meet their life needs, and these critical connections are increasingly threatened by highway expansion. After seeing Highway Wilding, you will never look at highways the same way again.

Film by Leanne Allison
Aerial Photography Ron Chapple (provided in kind by Banff Lake Louise Tourism and the Banff Centre) **Post Production** The Banff Centre

Executive Director, Film & Media Kerry Stauffer **Program Manager, Film & Media** Jean Macpherson **Post Production Manager** Todd Langille
Editor / Colorist Jessica Dymond **Salamander Animation** Tyler Jordan

Director/Executive Producer, Audio Theresa Leonard **Senior Recording Engineer** Graham Lessard

Audio Production Coordinator Henry Ng **Sound Design and Mix** Marta Olga | Magdalena Kaspered **Colorado Footage** Morgan Heim
Additional Footage Alex Taylor **Richard Forman interview** Dan Rafla **Maps and Animation** Matt Knapik | Greg Chernoff

Appearances by
Dr Tony Clevenger | Prof. Richard Forman | Karsten Heuer | Nikki Heim | Marg Gmoser | Barb Bertch
Justin Thompson | Tracy Lee | Barb Johnston | Bill Andree | Josh Pollock | Nicolena Johnson | Jesse Whittington

Supported by
Highway Wilding | Miistakis Institute | Parks Canada | Western Transportation Institute at Montana State University | Woodcock Foundation
The Community Grants Program at The Calgary Foundation | Patagonia Environmental Grant | TD Friends of the Environment Foundation

Music
'Chuckwagon '- by Elliot Brood | 'Salamandre '- by Sarah Harmer | Copper Mountain' - by Brian denHertog

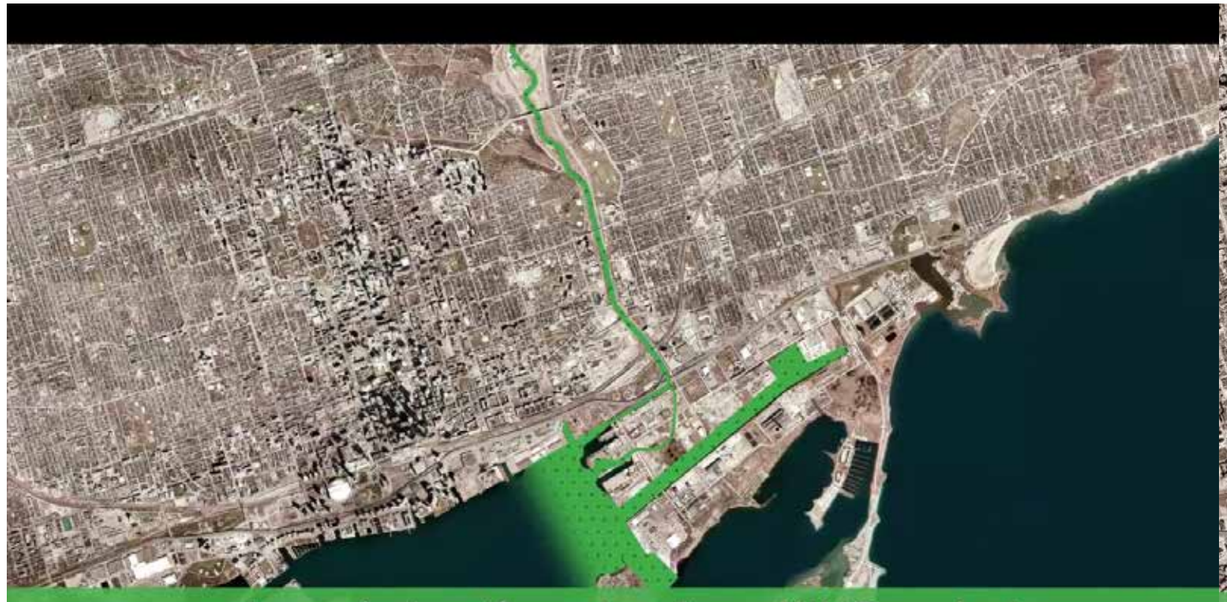
Photo
Long Toed Salamanders: Mike Jokinen
Trail Cam photos: Highway Wilding/Parks Canada
Grizzly Bear 122 - animation created by Jesse Whittington

Special thanks to
Danah Duke | Rachelle Haddock | Tony Clevenger
Karsten Heuer | Woody MacPhail | Rob and Loretta Schaufele

highwaywilding.org

The Brick Works exists at the intersection of human and ecological systems.

Poorly planned crossings between cultural and natural features can result in fragmented and dysfunctional landscapes.



In exploring these tensions, XING seeks to (re)connect nature and culture in our growing cities, ultimately reweaving the shared landscapes we call home.

Animal. Human. Landscape.

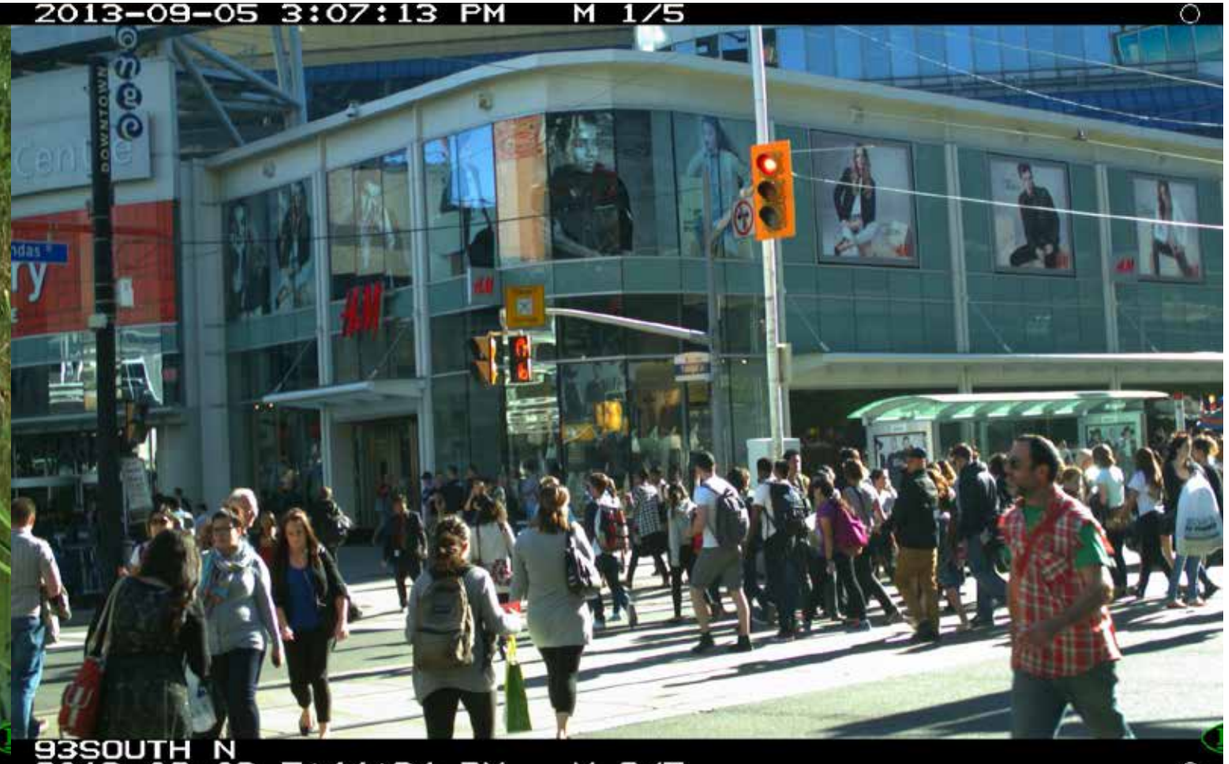
The Don Valley exists at the intersection of human and natural systems. These systems are made up of a variety of infrastructure, including roads, sewers, pipelines, ravines, valleys, streams and rivers. This short film explores the ways in which these systems overlap, intersect, diverge, and collide and the opportunities that exist to reconcile them.

Animation by Rafael Santos

Data Sources

Pipelines and Transmission (PTL). 2011.3. CanMap RouteLogistics. Markham: DMTI Spatial Inc. 2011-08-15 | Greater Toronto Area (GTA) Orthophotography Project 2007. Ontario Ministry of Natural Resources, 2007-05-30.
Parks and Recreation - Regions (PRR). 2012.3. CanMap RouteLogistics. Markham: DMTI Spatial Inc., 2012-08-15. | Rail and Transit Lines (RLL). 2012.3. CanMap RouteLogistics. Markham: DMTI Spatial Inc., 2012-08-15.
Major Water Regions (MJWTR). 2012. CanMap Water. Markham: DMTI Spatial Inc., 2012-08-15. | Highways (HWY). 2011.3. CanMap RouteLogistics. Markham: DMTI Spatial Inc., 2011-08-15.
Major Roads and Highways (HRD). 2011.3. CanMap RouteLogistics. Markham: DMTI Spatial Inc., 2011-08-15. | Route File (RTE). 2010.3. CanMap RouteLogistics. Markham: DMTI Spatial Inc., 2010-08-15.


2013-09-14 12:00:41 PM M 5/5


2013-09-05 3:07:13 PM M 1/5


93SOUTH N
2013-09-05 12:10:19 PM M 4/5
93SOUTH N


93SOUTH N
2013-09-03 5:44:34 PM M 2/5
93SOUTH N

Several cameras used for the scientific study and documentation of activity at crossing structures were donated to the XING exhibit. These tools were used to capture a series of interesting images showcasing crossings and intersections of urban and natural on and around the Evergreen Brick Works site.

TELL US YOUR ROAD STORIES

XING INVITES YOU TO SHARE YOUR ENCOUNTER WITH WILDLIFE ON THE ROAD

Too many of us have experienced a wildlife vehicle collision. Yet, each person's experience is unique, often vivid with trauma and loss but, as often, filled with awareness and insight.

NAME *optional P.S.

WHAT HAPPENED?

Colleagues visiting from the UAE - attending a staff party at a farm in Prince Edward Country. He and his daughter were driving to the farm in a rental car when a deer ran out in front of them and they hit it. The impact totaled their car and traumatized them, narrowly missing is daughter in the front seat. While they were shaken from the accident they were more upset by the farmer who stopped and asked if they were alright and when it was clear they were unhurt, he asked if he could have the deer for meat. He butchered it on the spot and hauled the carcass away.

WHERE? Prince Edward County

XING (RE)CONNECTING LANDSCAPES

TELL US YOUR ROAD STORIES

XING INVITES YOU TO SHARE YOUR ENCOUNTER WITH WILDLIFE ON THE ROAD

Too many of us have experienced a wildlife vehicle collision. Yet, each person's experience is unique, often vivid with trauma and loss but, as often, filled with awareness and insight.

NAME *optional

WHAT HAPPENED?

WHERE?

XING (RE)CONNECTING LANDSCAPES

TELL US YOUR ROAD STORIES

XING INVITES YOU TO SHARE YOUR ENCOUNTER WITH WILDLIFE ON THE ROAD

Too many of us have experienced a wildlife vehicle collision. Yet, each person's experience is unique, often vivid with trauma and loss but, as often, filled with awareness and insight.

NAME *optional J.G.

WHAT HAPPENED?

Driving on a two-lane country road when I noticed a small shape on the median. Only after I passed it did I realize it was a small bird and that it was alive. I turned around, pulled over, and went out to pick the bird up. It was stunned but otherwise fine. I had to be very careful as other cars continued to pass. I placed the bird safely on a branch and I hope that it recovered.

WHERE? Georgia

XING (RE)CONNECTING LANDSCAPES

XING offered opportunities for public engagement as an entry point into the dialogue surrounding reconciling human and wildlife mobility. By encouraging the public to reflect on their own experiences we highlight the relevance of these issues to urban populations and open the gateway to further advocacy and affect higher level decision making.