2024

ENVIRONMENTAL CONSERVATION AND CLIMATE CHANGE OFFICE (ECCCO)

▲ Peregrine Falcon
page 16

TOOLKIT – IMPACT OF CLIMATE CHANGE on Indigenous Women, Girls, Two-Spirit, Transgender and Gender-Diverse People

NATIVE WOMEN'S ASSOCIATION OF CANADA ENVIRONMENTAL

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :

Environment and Climate Change Canada
Environnement et Changement climatique Canada

TABLE OF CONTENTS

NATIVE WOMEN'S ASSOCIATION OF CANADA

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :

Environment and Climate Change Canada
Environnement et Changement climatique Canada

1 INTRODUCTION

Climate change is impacting Indigenous women and their communities in a multiplicity of ways. Despite the catastrophic consequences of climate change, Indigenous women, girls, Two-Spirit, transgender and gender-diverse people have established themselves as resilient protectors of this planet. Consequently, this toolkit serves to recognize their critical role in today's world. Indigenous Peoples live in close connection with the land and are thus more directly affected by environmental changes. Hence, environmental distress is experienced in Indigenous communities because of reduced well-being due to the lower access to ecosystem services, hindered transmission of Traditional Knowledge, and altered lifestyles. Storytelling and experiential knowledge from Indigenous women and their communities hold tremendous value in climate change adaptation and mitigation. Our goal here is to share cross-cultural knowledge about Mother Earth and the countless Indigenous practices that have sustained her for generations. We hope that this toolkit will grow to become a way of sharing Indigenous adaptation strategies to climate change, and will be used to advocate for the incorporation of traditional ecological knowledge into climate change policy at the community, provincial, and federal levels.

Guiding questions to consider as you go through this toolkit:

1. What is climate change?
2. How is climate change impacting Indigenous women, girls, Two-Spirit, transgender, and gender-diverse people?
3. How can exploring climate change through a culturally relevant gender-diverse lens help us better navigate the challenges that come with a global crisis?

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

FAST FACTS:

- **What is climate change?**
  The Earth's climate has been impacted by industrial-era human activities, which contribute to greenhouse gas emissions. Greenhouse gases, such as carbon dioxide and methane, act like an insulating blanket on the planet by trapping heat in the atmosphere which raises the global mean surface temperature (**GMST**)–commonly known as global warming. Climate change has become more and more evident with the reduction of arctic sea ice, the consistently increasing global temperature, melting and thinning of land ice which causes sea levels to rise, flooding, catastrophic fires, natural disasters, and an increase in water vapour and ocean heat content into the atmosphere.

- Average sea levels have swelled **over 8 inches since 1880**, with about three of those inches gained in the last **25 years.** Every year, sea levels are rising; and new **research** shows an accelerating rate and projected increase to stretch a foot by 2050.

- The term **global warming** refers to the long-term warming of the planet. The term climate change encompasses global warming but refers to the broader range of changes that are happening to our planet.

- The **greenhouse effect** refers to the way the Earth's atmosphere traps and absorbs solar energy.

- Currently, global temperatures have risen to 1.1 degrees Celsius and are heading towards 1.5°C. If temperatures rise between 1.7-1.8°C above 1850s levels, **IPCC** estimates that half the world's population could be exposed to life-threatening heat and humidity.

- By **2060**, the cost of inaction on climate change is predicted to reach a staggering **$44 trillion**, with the highest anticipated GDP losses in the Middle-East, Northern, and Sub-Saharan Africa, and South and Southeast Asia.

- A new report from the **Institute for Sustainable Finance** (ISF) estimates that the total cost of abating the impacts of climate change to the Canadian economy could be trillions of dollars by the end of the century if global temperatures continue to rise.

- Each year, more than 12 million hectares of land are lost to desertification, land degradation and drought, according to the **UN**–a surface area equivalent to the entire **arable land of Germany**.

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

- Climate change enhances the spread of **pests** that causes life-threatening diseases like dengue, malaria, Lyme disease etc.
- Plastic production and use is forecast to double over the next 20 years, and quadruple by the early 2050s, warns the **Heinrich Böll Foundation**, despite the fact that greenhouse gases, such as CO_2 and methane, are released at every stage of plastic's lifecycle–from the extraction and refinery of oil to the manufacturing process and end-of-life disposal and incineration. Every year, 17 million barrels of oil are used to make plastic and 13 million tonnes of plastic leak into the ocean, calculates the **UN**.
- Antarctica is losing 151 billion tons of ice per year, roughly equivalent in weight to the rock that makes **Mount Everest**, according to **NASA**'s Grace Follow-On satellite.

- The world's seas have absorbed more than 90 per cent of heat caused by greenhouse gases, but it's taking a toll on our oceans; **2021 set a new record** for ocean heating.
- Indigenous Peoples living in the Arctic regions depend on hunting, herding, fishing, and gathering, not only for food and economic stability, but also for the preservation of their cultural and social identities. There are growing concerns that with climate change and biodiversity loss, the availability of traditional food sources is at risk. Changed migratory patterns, for instance, has forced Indigenous hunters to travel farther distances and incur greater supply costs, including gas. Additionally, the travel required over snow and ice to access these food supplies is growing more dangerous with weather unpredictability and thinning ice. These issues pose serious threats to human health, food security, economic stability, and the preservation of Indigenous practices.
- Some Indigenous communities are trying to cope with climate change by focusing on the economic opportunities that it may create. For example, the increased demand for renewable energy using wind or solar power could offer communities economic stability and employment opportunities in a sustainable manner. Plus, the implementation of renewable energy sources would replace fossil fuel derived energy, thus limiting greenhouse gas emissions that intensify climate change.
- The UN has estimated that **80 per cent** of people displaced by climate change are women. Such a disproportionate scale has meant many gains to gender equality are now being reversed by climate impacts.

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

When disaster hits, women lose their homes, livelihoods, and stability: "Women and girls face greater **obstacles** to climate adaptation, disproportionate economic repercussions, increased unpaid care and domestic work, and heightened risk of violence due to the crisis's compounding impacts," commented the **UN Women**.

- Only about **6 per cent** of the world's population identifies as Indigenous, and yet, this small proportion of people are protecting **80 per cent** of the Earth's biodiversity.
- Women and girls are more likely to carry the burden of energy poverty and experience the adverse effects of a lack of safe, reliable, affordable, and clean energy. Indoor air pollution from using combustible fuels for household energy caused **4.3 million** deaths in 2012, with women and girls accounting for six out of every 10 deaths.
- The relationship between gender and vulnerability is complex. Worldwide, mortality due to natural disasters, including droughts, floods, and storms, is higher among **women** than men.
- In Canada's Inuit population, **women** may be more vulnerable to the effects of diminished food supplies.
- The effect of **food insecurity** on growth and development in childhood may be more damaging for girls than boys.
- Pregnancy is a period of increased vulnerability to a wide range of environmental hazards, including **extreme heat** and **infectious diseases** such as malaria, foodborne infections, and influenza. Thus, the impacts of climate change are exacerbating the vulnerability of pregnant women.

Around 80 per cent of Indigenous communities in Canada are located in forests prone to wildfire, and climate change has increasingly perpetuated longer, harsher, and more complex fire seasons.

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

2 GENDER AND CLIMATE CHANGE:

A *Deep Dive* into This Entanglement

Indigenous women experience intersectional and multi-dimensional disempowerment by,

and exclusion from, key socio-political and economic centres of decision making in the climate, energy, water, and food (WEF) nexus. This 'WEF nexus' is generally understood as the connection between energy, climate, water, food, and political systems. This '**WEF nexus**' discourse is said to have emerged in the international community in **2011 at the Bonn Conference,** in response to climate change, population growth, urbanization, globalization, and the subsequent resource-related pressures. Missing from the international 'WEF nexus' conceptual framework is an explicit recognition of Indigenous Traditional Ecological Knowledge (TEK), ecofeminist, gender equality, and social justice discourses.

It is significantly importance to note the lack of recognition Indigenous and gender knowledge discourses are given in the frame up of 'WEF nexus'; not only is it a continuation of colonial and neoliberal capitalist mechanisms of othering, devaluing, and oppression, but it pushes already marginalized women and Indigenous populations (who are the most at risk for climate related vulnerabilities) further into the margins of chronic disempowerment. It also significantly continues to decrease the collective human capacity to draw on the abundance of environmentally and socially equitable knowledge inherent in traditional Indigenous and gender knowledge.

Globally, systemic gender, class, and race inequality has produced and perpetuated poor social determinants of health for Indigenous populations. Indigenous people

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

and women are the most vulnerable to, and disproportionality affected by climate change, and though all life is impacted by climate change issues, the solutions, risks, and impacts on livelihoods is not the same for everybody. **Dr. Vandana Shiva** a gender, social justice, and environmental scholar, advocate, and pioneer of ecofeminism, explains that climate change and its impact on women are not two separate issues. Gender inequality and climate change are bound up, entrenched, and perpetuated by the same racist, patriarchal, colonial, sexist, marginalizing worldview, **Vandana** states, "The same world view that does violence to the earth and treats nature as dead, is the same world view that treats women as a second sex." Anglo-European colonial worldviews produced and 'scientized' a knowledge discourse of class, race, and gender in order to manufacture hierarchical difference (i.e. great chain of being etc.). In Canada this 'knowledge' materialized and was executed with precise intentionality, in order to other, devalue and subordinate First Nations, Inuit and Métis. Make no mistake, the goal of the Canadian government was never to assimilate the Indigenous Peoples of Canada into the population, but to exterminate them. The deployment of intrinsically ethnocidal ideologies that were enshrined in law and embedded into the legal, political, and economic social fabric of Canada was a strategic, purposeful, government sanctioned genocide waged against all Indigenous people in Canada. This abhorrent ethnocentric campaign was actualized through federal legislative mechanisms, such as the *Indian Act*, residential school system, and the Sixties Scoop, and through the lack of or intentional underfunding to essential human rights and services, such as food, water, housing, and

access to culturally sensitive health care and education. This has **resulted** in a multiplicity of poor psychosocial, physiological, and social determinants of health for First Nations, Inuit, and Métis people across Canada, of which Indigenous women, girls, and 2SLGBTQQIA people bear a disproportionate burden.

As climate change continues to alter the Earth's ice, water, air, land, and soil composition, the impact will be seen and felt by all living things. Climate change will negatively impact those who are already vulnerable due to inadequate access to housing, health care, food, and water among other **factors**. Indigenous women, girls,

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

Two-Spirit, transgender and gender-diverse people in Canada are already marginalized from equitable access to housing, health care, food, and clean water by the very macro-economic architectures that are in place to provide these human rights and services. For decades, the Canadian federal legislative infrastructure has denied Indigenous women access to basic standards of living in a time of economic and natural resource abundance. As climate change worsens and resources become scarce (and even more unaffordable to those entrenched in poverty by virtue of race and gender), it seems unlikely that the government would prioritize First Nations, Inuit, and Métis people's health and well-being during a time of scarcity when it has failed to do so in times of prosperity. With limitless power and funding, the exclusion campaigns against First Nations, Métis, and Inuit women have been methodical and persistent. The ramifications of colonialism and the continuation of its sexist and racist structural oppression through neo-liberal capitalist discourses cannot be understated. The impact on First Nations, Inuit, and Métis social determinants of health and health inequalities are rooted in these infrastructures, which are saturated in ideologies of subordination, unbridled resource extraction, patriarchy, gender inequality, and racism. The collective resiliency, adaptability, and determination of First Nations, Métis, and Inuit people to preserve and restore their culture, knowledge, language, and lands from the margins of dislocation is a true embodiment of the power of collective capacity and advocacy to fight for all life, for the environment, and for well-being, equality, and justice.

As climate change worsens and resources become scarce—and even more unaffordable to those entrenched in poverty by virtue of race and gender.

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

A **statement** delivered by Dr. Vandana Shiva to the European Union Parliament encapsulates the destructive ideologies driving gender and Indigenous inequity and the correlated climate crises, and the paramount importance of women as agents of change, as protectors of knowledge, and as guardians of sustainable ecological and social wellbeing for all:

To further preserve biodiversity and limit its degradation, Indigenous Peoples can and should play a leading role in the global response to climate change. Indigenous women play a vital role as stewards of natural resources; and so, a greater inclusion of Indigenous communities and Indigenous women in decision-making processes would offer significant improvement in mitigation and adaptation measures.

"When economics works against the science of ecology, it results in the mismanagement of the earth, our home.

The climate crisis, the water crisis, the biodiversity crisis, the food crisis are different symptoms of this crisis of mismanagement of the earth and her resources. We mismanage the earth and destroy her ecological processes when we do not recognize nature's capital as the real capital and everything else as derived. If we have no land, we have no economy. Without nature and her ecological processes to sustain life on earth, the grandest economies collapse, and biggest civilizations disappear. We mismanage our homes when we ignore women's knowledge and contributions for caring for the earth and ensuring human well being and discount the processes that disempower women through structures of inequality. The objective of capitalist patriarchy is to own and control the real wealth that nature and people produce, through a paradigm that sees nature as dead, mere raw material for exploitation, and women as a "passive" second sex , incapable of creating and producing. A fictitious "Creation Boundary" has been put in place, rendering women's creativity and knowledge invisible.
Over five decades, my work has included making women's ecological knowledge, their knowledge of biodiversity, of water systems, of seeds, of food, of health, visible."

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

3 INDIGENOUS WOMEN AND CLIMATE CHANGE

The UN has estimated that **80 per cent** of people displaced by climate change are women. When disaster hits, women lose their homes, livelihoods, and stability: "Women and girls face greater **obstacles** to climate adaptation, disproportionate economic repercussions, increased unpaid care and domestic work, and heightened risk of violence due to the crisis's compounding impacts," commented the **UN Women.**

Despite their socio-economic and environmental struggles, women play a critical role in climate action. **Evidence** suggests women's involvement in climate leadership and decision making has led to better resource management, better conservation outcomes, lower carbon emissions, and better disaster readiness. **Rural and Indigenous women** on the frontlines of climate crisis are deploying ancestral knowledge and practices to build resilience and sustainable revolutions. **Young women and girls** are on the streets demanding change, and have been leading **global movements** that have effectively shifted the climate discourse in a matter of years, and many **women in government** have been pushing for climate-positive laws.

The undeniable truth is that women are key to reaching sustainable goals and ending the climate crisis. Because while women, and Indigenous women in particular, are often the most vulnerable to climate change, their experiences have equipped them to become revolutionary leaders of climate solutions.

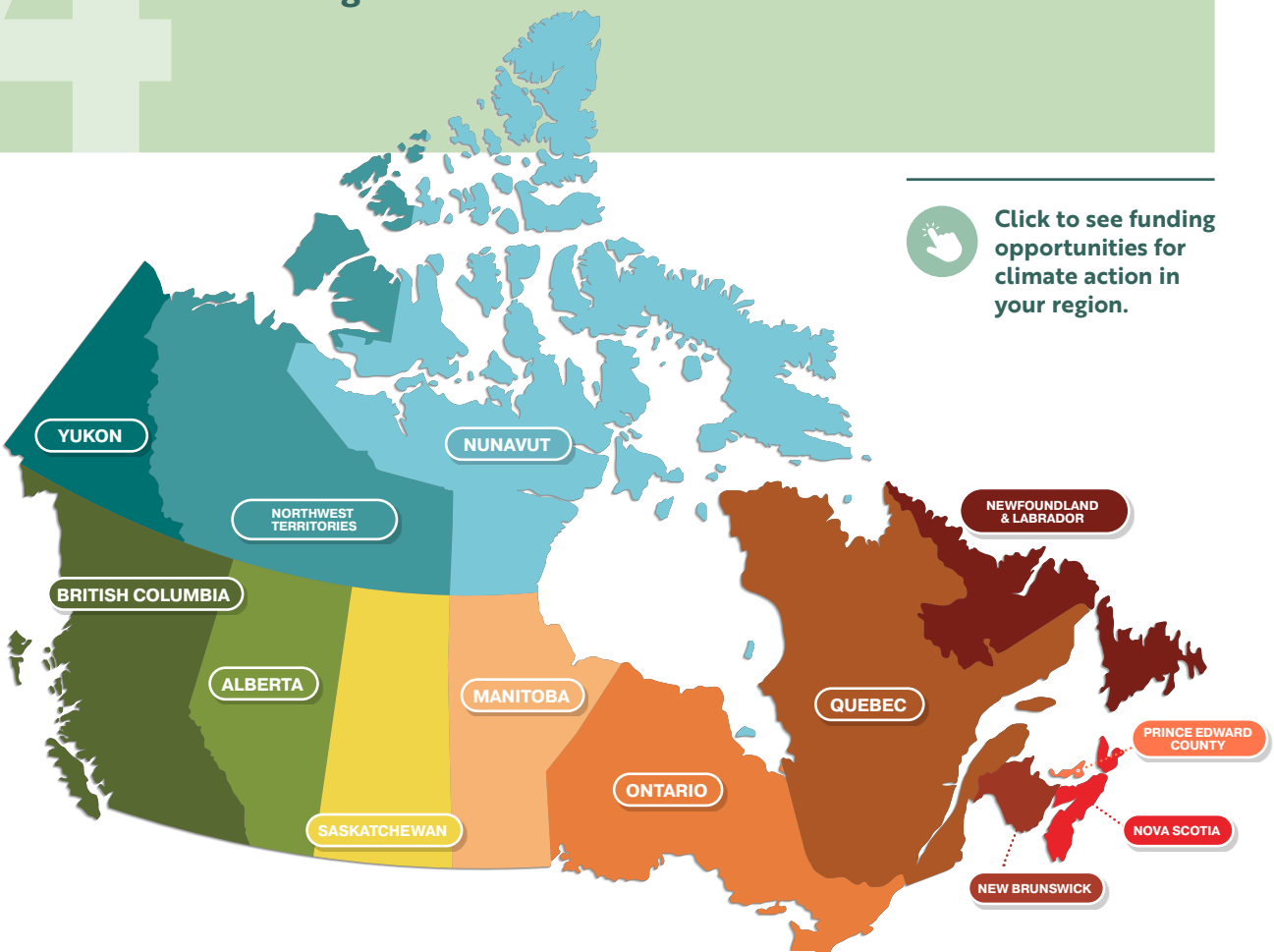
Moreover, Indigenous Peoples have an immense amount of knowledge regarding Mother Earth and how to sustain this planet. And in many Indigenous cultures, women are inherent guardians and nurturers of the environment. Thus, it is imperative that Indigenous women and girls are empowered to take up space in climate arenas, because their unique knowledge and experience truly can bring forth THE solution to the climate crisis.

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :

Environment and Climate Change Canada | Environnement et Changement climatique Canada

4 TOOL #1:

Funding Resources



Click to see funding opportunities for climate action in your region.

Funding opportunities and grants through the Government of Canada

New funding opportunity for Toronto area

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

5

TOOL #2:

Let's Talk about Biodiversity

WHY DOES BIODIVERSITY MATTER?

Biodiversity loss has many negative consequences for humans and the natural world. It can lead to a loss of valuable ecosystem services like pollination and pest control, and it can also lead to economic impacts like decreased agricultural production. Climate change contributes to biodiversity loss by altering the conditions that many species need to thrive. **Observed ecosystem impacts in North America** that have been attributed to climate change include water quality impairment and pollution, changing sea levels, degraded shorelines, food web disruptions, and changes in species' natural calendars across terrestrial, freshwater, and ocean biomes.

Climate change contributes to biodiversity loss by altering the conditions that many species need to thrive.

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

BIODIVERSITY LOSS IN CANADA

Biodiversity refers to the variety of diverse types of living things that can be found in a defined geographic area that work together to keep the environment healthy and balanced. The more biodiverse an area is, the more resilient the ecosystem will be to climate change impacts.

Canada is home to a wide variety of unique and diverse species of birds, mammals, fish, and plants. Approximately **30 per cent** of the world's boreal forest, **20 per cent** of the world's freshwater resources, the **world's longest coastline**, and one of the world's largest marine territories can be found in Canada. However, many species are at risk of extinction due to habitat loss, climate change, and human activity. For instance, Elders in British Columbia have reported an extreme loss of salmon, some accounting an **83 per cent** decline throughout their lifetimes.

Biodiversity has declined by 20 per cent in North America since 1970.

- At least 80,000 species exist in Canada, 30,000 of which have been assessed for risk. It was found that **80 per cent** are secure or apparently secure.
- As of May 2022, there are **841 species in Canada** that are extirpated, endangered, threatened, or listed as a species of special concern.

Selection of Canada's most at risk species (left to right): **SRKW**, **Blanding's Turtle**, **Polar Bear**, **Atlantic Cod**.

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada | Environnement et Changement climatique Canada

Species most as risk in Canada:

- **Atlantic Cod** (Endangered, 2003) stocks are less than 10 per cent of their original population due to unregulated overfishing. The Newfoundland and Labrador populations have declined **99 per cent** since the 1960s.
- **Blanding's Turtle** (Endangered, 2016) have lost habitat to wetland modifications, invasive species and increased road and rail development. Blanding's turtles are also at risk due to being collected in the wild for the pet trade.
- Northeast Pacific and **Southern Resident Killer Whales** (Endangered, 2001) with only **73** individual Southern Resident Killer Whales remaining.
- **Polar Bears** (Not at risk 1986, Special concern 1991) act as indicator species for the Arctic marine ecosystem and are impacted by sea ice loss.

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) designates the conservation status of wild species using the following status categories:

Extinct: Species no longer exists.

Extirpated: A local extinction of the species in the wild, but it exists elsewhere.

Endangered: Species faces probably extirpation or extinction.

Threatened: Species may become endangered if conservation efforts are not put in place.

Special Concern: Species may become threatened or endangered because of biological characteristics and identified threats

Data Deficient: Applies when there is not enough available information to determine if a species should be assessed or to allow an assessment of the species' risk of extinction

Not at Risk: Species has been evaluated and not found to be at risk of extinction given the current circumstances.

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

Species showing signs of recovery within Canada thanks to conservation efforts:

- Swift foxes (Extirpated 1978, Endangered 1998, Threatened 2009) are considered to be one of the **most successful species reintroductions** in Canada. They were no longer found in Canada after the 1930s when their grassland habitat was converted to agricultural land.
- Sea otter (Endangered 1978, Threatened 1996, Special concern 2007) populations have increased and expanded into their historical ranges, lowering the threat to "**special concern**". Sea otters are a keystone species (those species in an ecosystem whom other species depend on, and their removal would dramatically alter the ecosystem) within kelp forest ecosystems. Sea otters are still threatened by human activities such vessel strikes, entanglement in fishing nets, and those activities which increase the risk of oil spills and contamination.
- Peregrine Falcon (Endangered 1978, Threatened 1999, Special concern 2007, Not as risk 2017)

Species showing signs of recovery within Canada (top to bottom):
Swift fox,
Sea otter,
Peregrine Falcon.

Humans and human activity are the greatest threats to biodiversity.

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

Humans and human activity are the greatest threats to biodiversity.

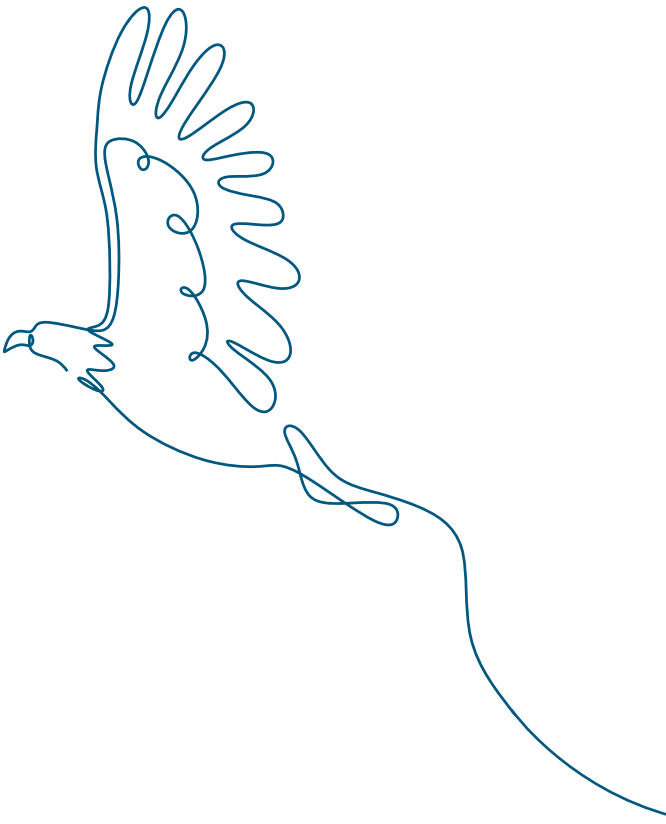
1. Land use has had the largest negative impact on terrestrial biodiversity, while direct exploitation of marine organisms had the largest negative impact on marine biodiversity since **1970**.
2. Habitat loss due to human activities such as urbanization, agriculture, and resource extraction, account for **52 per cent** of biodiversity loss in North America.
3. Ranking threats to biodiversity are **context- specific**. Invasive species may be the top threat to biodiversity in Island settings, whereas, pollution may be the top threat in more urban and industrial settings, such as Ontario's "**Chemical Valley**." Regardless of the type of threat, almost all of them are created or made worse by human activity.

Loss of biodiversity has a direct impact on humans.

1. As humans, we depend on biodiverse ecosystems for a wide variety of products such as food, raw materials, and medicines. Forests and oceans also have an important role in helping to **regulate climate by absorbing carbon dioxide** and the other greenhouse gases that are responsible for climate change.
2. As of December 2021, Canada has conserved **13.5 per cent** of its land and freshwater and **13.9 per cent** of its marine territory. Canada has maintained a goal of conserving 25 per cent of both land (which includes freshwater) and ocean by 2025 and **30 per cent** by 2030.

TOP 5 THREATS TO BIODIVERSITY:

- **Habitat loss and degradation**
- **Overexploitation**
- **Invasive alien species**
- **Pollution**
- **Climate Change**



This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :

Environment and Climate Change Canada | Environnement et Changement climatique Canada

WHAT CAN BE DONE TO STOP BIODIVERSITY LOSS?

1. Support Indigenous-led conservation efforts.
   - Indigenous Peoples have a long history of stewarding and protecting their lands and waters. Supporting Indigenous-led conservation efforts will protect and help restore natural habitats in a holistic way.
2. Promote the inclusion and leadership of Indigenous women in conservation efforts.
   - Indigenous women have a unique perspective and hold Traditional Knowledge that plays an important role in conservation efforts. Promoting the inclusion and leadership of Indigenous women in these efforts will ensure their voices are heard and that their Traditional Knowledge is valued.
3. Promote Sustainable Development.
   - Promoting sustainable development practices that respect and align with the rights and needs of Indigenous communities can help reduce the negative impacts of development on biodiversity.
4. Increase funding for Indigenous-led conservation and restoration efforts.
   - To effectively address biodiversity loss, it is important to invest in conservation and restoration efforts. This could for be funding for research, monitoring, and restoration projects.
5. Raise Awareness.
   - Some people may not be aware of the importance of biodiversity and the role it plays in our daily lives. Raising awareness will encourage more people to take action to protect and restore natural habitats.
6. Everyday activities.
   - Practice eco-friendly gardening by planting native plants to attract pollinators, birds, and beneficial insects.

How Indigenous guardians protect the planet and humanity–Ted Talk by Valérie Courtois (Innu), the director of the Indigenous Leadership Initiative.

VIDEO

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

6

TOOL #3:

Three Sister's Garden–Biodiversity in Our Own Backyards

HOW IT WORKS

A Three Sisters Garden is companion planting at its best. When grown together, the Three Sisters - corn, beans, and squash– work together to collectively thrive. Like many things in this world, the Three Sisters grow better together than they do apart.

"As older sisters often do, the corn offers the beans necessary support. The pole beans, the giving sister, pull nitrogen from the air and bring it to the soil for the benefit of all three. As the beans grow through the tangle of squash vines and wind their way up the cornstalks into the sunlight, they hold the sisters close together. The large leaves of the sprawling squash protect the three by creating living mulch that shades the soil, keeping it cool and moist and preventing weeds. The prickly squash leaves also keep away raccoons and other pests, which don't like to step on them." - **Almanac**

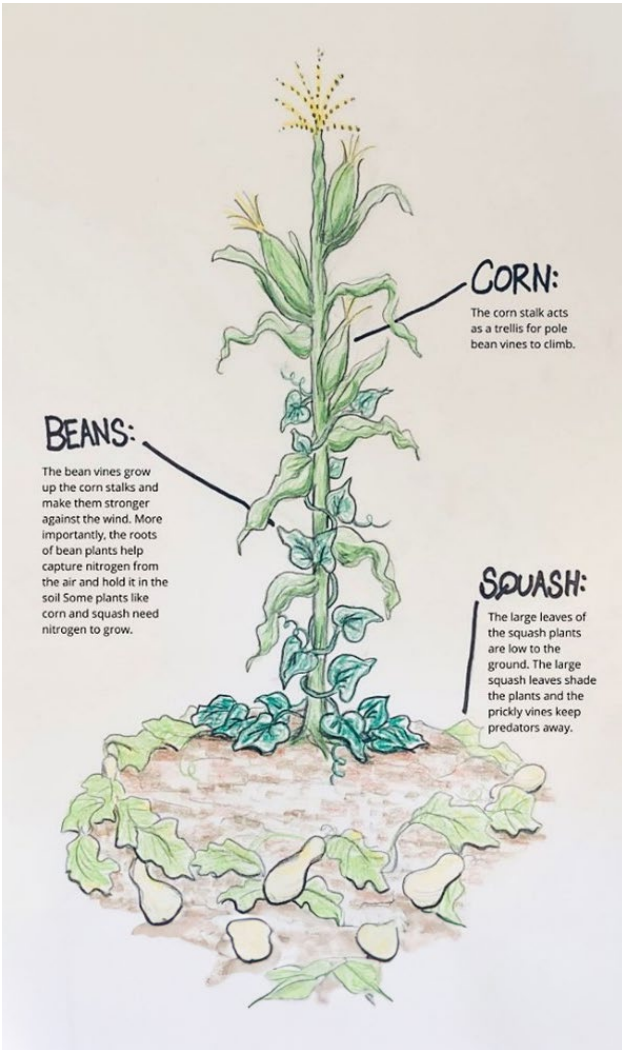
This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

Opposed to monoculture crops, planting multiple types of plants near one another can create a more diverse ecosystem in your garden. This helps to attract pollinators, beneficial insects, and other wildlife to the area, thereby promoting biodiversity and improving the health of the ecosystem.

HISTORY

The Three Sisters technique is practiced within Indigenous communities across what is now known as the "Americas." From the Hopi and Diné (Navajo) in the Southwest, and the Sioux in the Midwest, to the Iroquois and Huron in the Northeast–the Three Sisters are a spiritual and nutritional staple. Though the tradition of calling these crops the "Three Sisters" (or **Tey'o'nhekwen**) originated from the Haudenosaunee, also known as the Iroquois, around the Great Lakes.

The Three Sisters are often regarded as gifts from Creator, and as such, are deliberately cared for. Apart from providing nutrition and sustenance, these sacred plants are respected as teachers in nature. By supporting one another, the Three Sisters create their own resilient self-sustaining ecosystem, and this sort of unity is a model which us humans can look up to.



Click here to read the Haudenosaunee teaching of the Three Sisters.

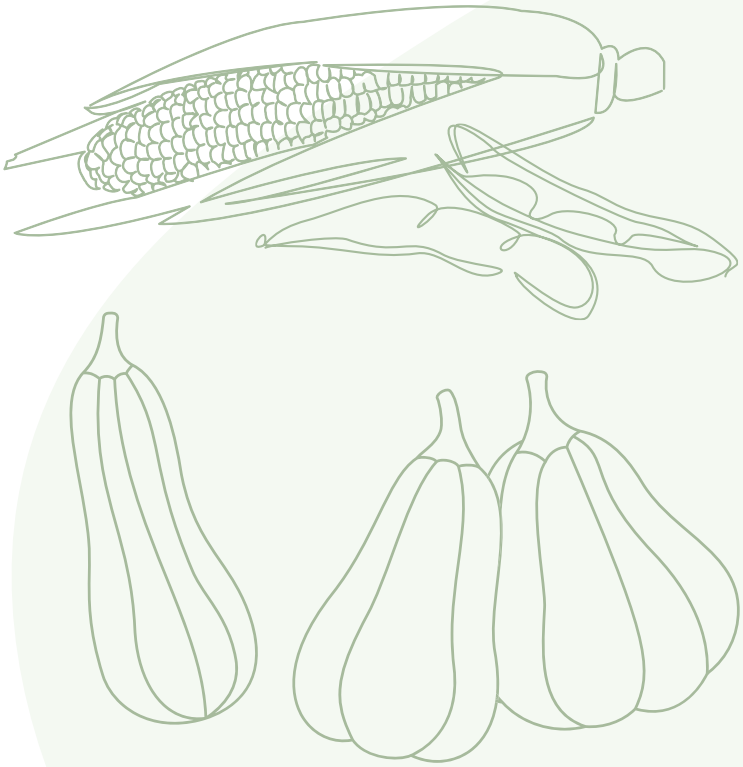
READ

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

HOW TO

The Three Sisters are incredibly resilient, adaptive, and versatile. Not only can you grow them on a large scale to feed your community, but the Three Sisters can also thrive in smaller spaces like patios and balconies.

Check out the **Native Seeds** website to learn how to grow your own Three Sisters Garden.



BEYOND THE GARDEN

Alfred Melbourne is an Indigenous man from West Sacramento, California. He and his community embody the potential of the Three Sisters in today's world. Despite living in a food desert, the Three Sisters have brought them food sovereignty, cultural continuity, and community engagement. In many ways, this ancestral practice provides hope even in the most strenuous circumstances. Listen to his story **here**.

The Three Sisters Plants at the Indigenous Garden. Isaac Crosby (Ojibwa) is an Indigenous mentor at the University of Toronto Scarborough campus's Indigenous Garden, where he mentors students in Indigenous agriculture and the benefits of using sister crops in the garden.

VIDEO

NATIVE WOMEN'S ASSOCIATION OF CANADA

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :

Environment and Climate Change Canada | Environnement et Changement climatique Canada

7

TOOL #4:

Climate Change Is Worsening Food Insecurity–Indigenous Communities Seeking Food Sovereignty

On account of ongoing **colonial forces,** Indigenous Peoples continue to find themselves in marginalized circumstances; from **food deserts** to **poverty traps**, many Indigenous people do not have equal access to sustenance.

While estimates vary across different regions, there is a general consensus that roughly half of Indigenous people on Turtle Island experience **food insecurity**–some communities reaching rates as high as **92 per cent**. Climate change threatens traditional food sources, through salmon disappearing, forests burning, algae blooms spreading, and caribou under threat.

Many have argued that the specific conditions of Indigenous food insecurity can only be overcome with self-determination and achieving food sovereignty–the ability to choose what food is available and having control over one's diet. One of the best ways to achieve this is by returning to our ancestorial roots, sustainable, biodiverse food practices and sharing in community.

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

Women of the Earth: How This Indigenous Farmer Is Solving Food Insecurity

This short documentary features Michelle Week (sngaytskstx, Sinixt), the owner of **x̌ast sc̓it** (Good Rain Farm)–a direct-to-consumer community supported vegetable farm, which grows and serves ancestorial plants to Indigenous Peoples living in urban settings. Her mission is to feed food-insecure tribal members while also reconnecting them to their cultural roots.

This incredible documentary touches on many important topics such as colonial impacts on ancestorial foods, monoculture food systems, climate chaos, sustainable and regenerative agriculture, and more!

VIDEO

IS YOUR COMMUNITY FACING FOOD INSECURITY?

Get in touch with Indigenous Food Systems Network (ISFP) which is an organization dedicated to helping communities achieve self-determined food security through efforts like revitalizing First Nation hunting, fishing, gathering, and trade practices, and establishing community gardens and other projects.

CONTACT

Haudenosaunee Community of Six Nations on Route to Achieving Food Sovereignty:

Watch this webinar to learn about the Haudenosaunee community of Six Nations who launched some inspiring and replicable Indigenous-led initiatives that fight food insecurity.

VIDEO

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

8

TOOL #5:

Manoomin – Sustainability of Our Ancestors

HISTORY

According to oral tradition, thousands of years ago the Anishinaabe people were guided by Creator to follow a shell in the sky until they found the place where food grows on water. Their journey led them from the Northeastern coast of Turtle Island to the Great Lakes region where they found wild rice. Known to the Anishinaabeg as *manoomin*, meaning the "good berry", wild rice became a spiritual and cultural staple as well as a culinary one. It is used medicinally, by mixing herbs in cooked rice to make poultices. It is also widely used as an offering in ceremonies such as funerals. To express gratitude to Creator for the gift of *manoomin*, the Anishinaabe people continue act as respectful stewards of this valuable resource. For these reasons, many Anishinaabeg communities strongly believe that *manoomin* should be a wild harvested food, not a cultivated crop.

"There is something irreplaceable about following the canoe path of your ancestors through the rice beds. It's sort of a miracle in this millennium that this age-old tradition continues. But it does. And it will. Apane. Always."
- Winona LaDuke

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

TEACHINGS

The process of harvesting *manoomin* is itself a cultural tradition, in that, it is a time where language, prayer, and teachings are passed down. By continually honouring *manoomin* and harvesting it in the same waters and respectful ways as our ancestors, we are keeping our culture alive.

FACTS

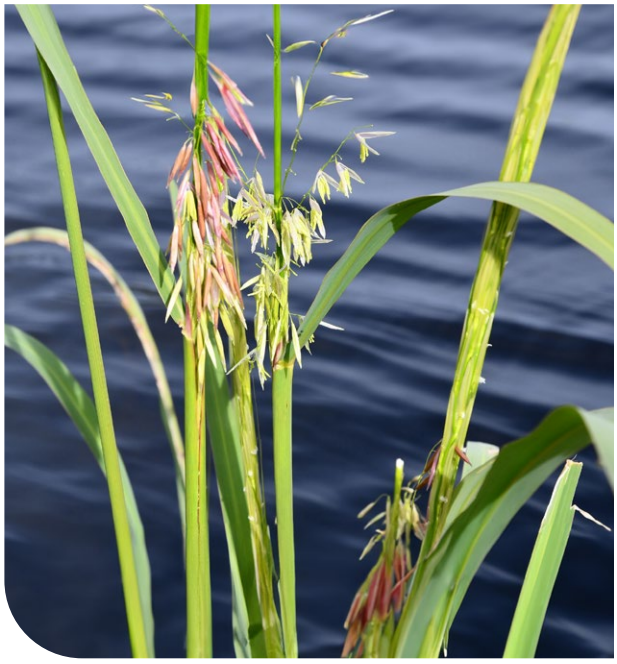
Manoomin filters the waters, binds loose soils, provides protection from high winds and waves along the shorelines, and provides habitat for species at risk, such as **least bittern and black terns**. Some *manoomin* plants grow tall and live in deep water, while others have adapted to shallow water. Some strains have fat grains and others have long grains. *Manoomin* can range in colour from green to light brown to purple. The green seed is a food for birds such as **geese, ducks and songbirds**. People harvest the dark mature seed and process it so it can be stored, cooked, and eaten. While the plant is eaten by **muskrat, beaver and other animals** that live in wetlands. So, *manoomin* provides a great deal of biodiversity which many forms of life depend on.

More on this can be found in this report by Plenty Canada.

READ

Manoomin
(Anishinaabemowin)
or
Manomin
(Cree)

Manoomin is the word for "good seed" or "good berry" in Anishnaabemowin.



Manoomin, Wild Rice

Manoomin filters the waters, binds loose soils, provides protection from high winds and waves along the shorelines, and provides habitat for species at risk

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

HOW TO

The whole process of harvesting the crop is called *manoominikewin* or *ricing* in English. The season begins in fall, and harvesters will go out multiple times throughout the season because *manoomin* plants grow at different paces.

Manoominikewin is Traditional Knowledge, and as such, it should be taught intergenerationally from Elders and harvesters who know the practice best. So, we encourage you to take a moment and click the videos below to visually learn about the manoominikewin process, and the culture that guides it, from two Elders.

Featuring Elder John Henry

VIDEO

Featuring Elder Makoonse

VIDEO

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

SUSTAINABILITY

What many do not know, is that *manoomin* is an **annual plant** that requires reseeding each year. The stalks from the previous season die below the water, and new growth begins in the same spot. This means that the *manoomin* lifecycle is quite fragile and can be jeopardized with interference. If water levels change or not enough seeds are left behind after harvest, a crop size could fraction to nothing.

The Anishinaabeg, however, have seemed to master the art of harvesting *manoomin,* and the key is reciprocity. With intentions of reciprocity, harvesting is not about acquiring as much food as possible, rather it is about acting in harmony with nature. Instead of domesticating *manoomin* for maximum control, the Anishinaabeg let it be as Mother Earth intends. They harvest it by hand to prevent damage to the plant or disturbance of the ecosystem. They only take what they need, not what they want; collecting every last grain of rice is not necessary because remainders will fall into the water and reseed. In many communities, motorboats are prohibited from the lakes, and bird hunting is prohibited during the harvest season to prevent human interference.

The Anishinaabeg have a relationship with *manoomin*: as they look after the waterways and continue to honour and respect the *manoomin,* it returns year after year, feeding families and communities. This is what the Creator intended. This is how *manoomin* has thrived for thousands of years. Much can be learned from the Anishinaabe ways of harvesting.

Consider where your food comes from, what sort of relationship has been established with these plants and animals? Is it one of reciprocity, honour, and respect? How can we incorporate better, more sustainable methods of harvest into our food system?

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

9

TOOL #6:

Children's Activities

Indigenous Peoples have a unique relationship with the natural world. They maintain a deep understanding of the importance of preserving biodiversity and maintaining balance in the environment. As caretakers, it is important to discuss the impacts of climate change and the importance of biodiversity with the future generation of land stewards. By doing so, they will develop a sense of personal responsibility and desire to make a positive difference. The following activities can foster critical thinking skills and a sense of curiosity, encouraging children to ask questions and seek out answers.

BIODIVERSITY SCAVENGER HUNT:

Create a scavenger hunt for children to find plants and animals in their local environment. To prepare for the activity, provide the children with a scavenger hunt list of items to look for such as different plants, animals, and insects. Encourage them to observe the different organisms they come across and to think about how they fit into the ecosystem. In addition, incorporate teachings from Indigenous perspectives by pointing out traditional uses and the cultural importance of plants and animals.

After the walk, have the children share what they learned and observed during the scavenger hunt. Encourage them to think about how their actions can impact the environment and ways people can protect it.

This activity helps children to understand the importance of biodiversity and the role they play in protecting the natural world while offering a chance to be more connected with nature.

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

SEED BOMB MAKING:

Making and spreading "seed bombs" are an easy way to restore or enhance areas that have been degraded. Seed bombs do not have to be planted! Simply toss or place the seed bomb around your neighbourhood. Seed bombs also make great handmade gifts for neighbours, friends, and family.

These DIY seed bombs, only require a few ingredients and are a great way to grow flowers in bare and neglected spots. They will support biodiversity by creating pockets of beauty and habitats for pollinators.

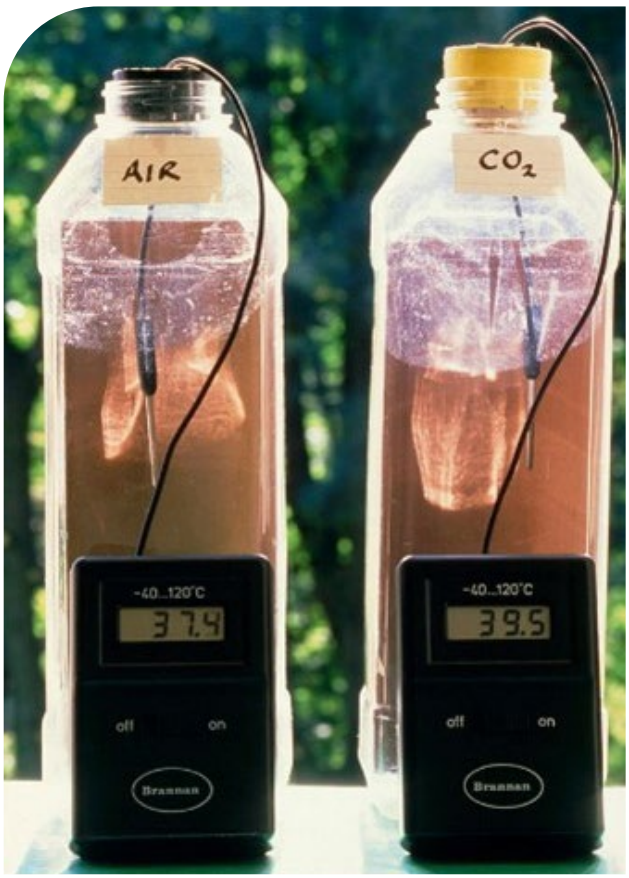
Alternatively, you can fill a clean empty spice container and shake the flower seeds out instead of using a seed bomb, though the seed bombs have an advantage of holding the seeds together until they get rained on.

Seed bombs do not have to be planted! Simply toss or place the seed bomb around your neighbourhood.

GREENHOUSE GAS EXPERIMENT:

The greenhouse effect is like a warm blanket that helps keeps Earth at the right temperature for plants and animals survive by trapping the heat from the sun with greenhouse gases. But, if there is too much of these gases in the Earth's atmosphere, the temperature will be too warm. This is called global warming. Similar to how we can take blankets off ourselves when we get too warm, we can help reduce the amount of greenhouse gases in the atmosphere by using less fossil fuels and energy, reusing and recycling items to offset those produced, and planting more trees to absorb carbon.

Using a few household items, create your own mini greenhouse. Conduct **this simple experiment** to demonstrate the effect greenhouse gases have on the Earth's temperature.



This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

10

TOOL #7:

Cultural Burns and Indigenous Approaches to Wildfire Management

A major frustration felt by Indigenous communities across Turtle Island is that present-day wildfires could have been avoided by use of traditional cultural burns.

Cultural burning refers to the Indigenous practice of intentionally lighting small, controlled fires, at a specific time and place, to rebalance ecosystems and support wildlife, food sources, and medicinal plants. The **Tsilhqot'in word for fire translates to "lightening the load off the land,"** and that's exactly what cultural burns do. Fire is strategically lit to burn off organic build up and dead grass, which then encourages new growth and healthy vegetation.

Post-burn, a thinned-out and spacious forest breathes new life, and regeneration begins. Wild grasses bounce back with vengeance. Old shrubs sprout new shoots. Native and medicinal plants bask in the sun. Elk, bison, and big-horned sheep return to graze. Insects munch on fresh broadleaf plants and berry bushes. Importantly, big trees grow bigger and develop thicker bark, thus, becoming more resistant to surface fires.

The benefits of cultural burns are undeniable, which is why fire has been purposely used by Indigenous Peoples for centuries. However, when colonizers spread across Turtle Island, fire suppression became more common. British Columbia was the first province in Canada to ban cultural burns with the **Bush Fire Act of 1874**, and other provinces followed suit in the early 1900s. Similar to the **Potlatch ban**, which the federal government implemented in 1884, the burning ban aimed to remove ceremony and assimilate Indigenous Peoples. This contributed to a loss of **Fire Keeping Knowledge** and impacted the ecosystems and landscape we see today.

The irony here is that by banning cultural burns, organic matter has built up more than it has ever before, and so forests are

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

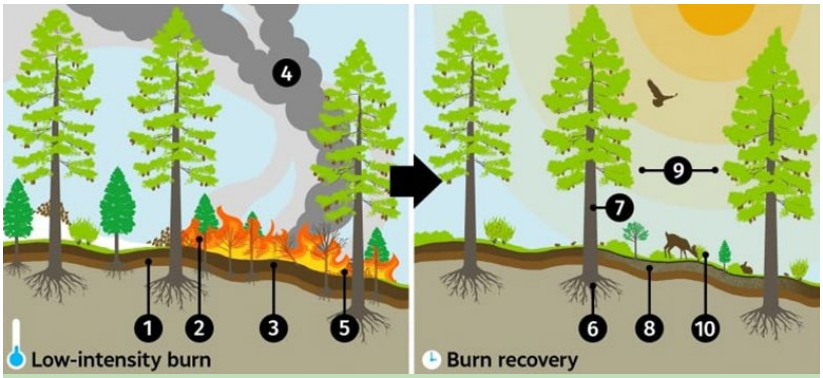
now at a much higher risk of devastating wildfires. Combined with the effects of climate change, this has led to frequent, large, uncontrollable fires that quickly spread through areas with lots of dry **underbrush** and organic debris–as we have seen this year.

DIFFERENCE BETWEEN LOW INTENSITY CULTURAL BURNS AND HIGH INTENSITY WILDFIRES

Today, Indigenous Peoples can have cultural burns on reserves and on title lands **without provincial approvals**. This works out well for Northern communities with large reserves but can be challenging for smaller reserves that want to manage the surrounding lands but do not have jurisdiction to do so—even though it's their territory.

The benefits of cultural burns are undeniable, which is why fire has been purposely used by Indigenous Peoples for centuries.

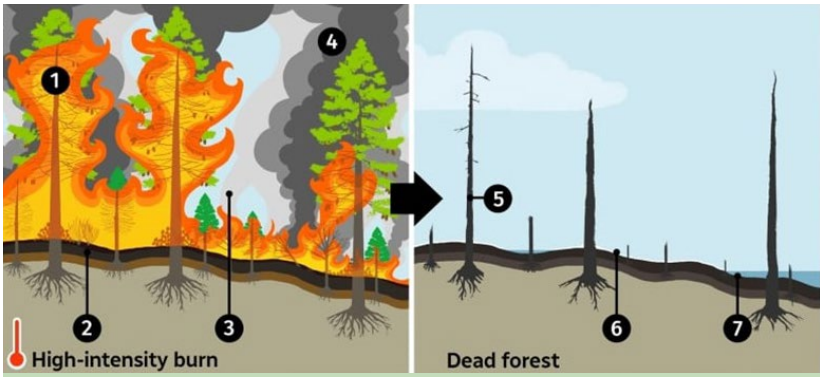
LOW-INTENSITY FIRE



1. Mineral soil
2. Ladder fuels (e.g. branches)
3. Duff layer intact
4. CO_2 release
5. Fine fuels (e.g. twigs. dead leaves)
6. Carbon storage
7. Thicker bark
8. Nutrient-rich mineral soil
9. Fire break
10. New plants

Source: CBC NEWS

HIGH-INTENSITY FIRE



1. Canopy destroyed
2. Duff layer burned
3. Nutrients evaporate
4. CO_2 release
5. No CO_2 capture
6. Ash
7. Hydrophobic soil

Source: CBC NEWS

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

Additionally, while some communities have a **Fire Keeper** with Traditional Knowledge on land management, other communities' relationship with fire has been totally severed. This is why projects like **Revitalizing Traditional Burning** are crucial. This initiative involves gathering stories about cultural burning from Elders and Knowledge Keepers from the Shackan Indian Band, the Xwisten (Bridge River) First Nation and the Yunesit'in. The goal is to come up with a burn plan for each community, which includes clear objectives, a list of resources, maps, and information on how to carry out a burn. By reigniting the relationship Indigenous Peoples have with fire, communities are able to achieve self-determined disaster mitigation and cultural revitalization.

First Nations Emergency Services Society: Indigenous Cultural Burning – Shackan

Watch this video to learn more about cultural burning across Canada, and how Indigenous communities are reviving this crucial practice to mitigate wildfire disasters.

VIDEO

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :

Environment and Climate Change Canada | Environnement et Changement climatique Canada

11

TOOL #8:

Climate Disaster Management Resources

First Nations Peoples are **18 times more likely** to be evacuated due to climate emergencies compared to non-First Nations communities. **And** in the coming years, this disparity is expected to **increase** because of climate change. So, it is important that Indigenous Peoples have access to as many resources and supports available to avoid long-term, critical consequences, as well as to achieve a level of agency amidst crises.

Below are some climate disaster resources for Indigenous Peoples at risk, some of which are specifically tailored to Indigenous women, girls, Two-Spirit, transgender and gender-diverse (WG2STGD) people.

First Nations Peoples are 18 times more likely to be evacuated due to climate emergencies compared to non-First Nations communities.

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

1

Preparing Our Home:

This program is accelerating a new approach to climate disaster management–one that is in line with traditional ways and current needs.

PREPARING OUR HOME:

Preparing Our Home is an Indigenous-led program that is helping Indigenous Youth become Emergency Preparedness Leaders in their communities. As opposed to conventional evacuation procedures that can be quite individualistic, Preparing Our Home prioritizes community-minded and culturally guided approaches to emergency management. Through annual training programs, Indigenous youth are taught how to initiate community-appropriate prevention and response practices, such as cultural evacuation camps–which are characterized by traditional foods and **collective resiliency**.

Click here to learn more or to get involved.

2

Emergency Management Assistance Program:

Indigenous Services Canada's Emergency Management Assistance Program (EMAP) helps communities on reserve gain access to emergency assistance services.

EMERGENCY MANAGEMENT ASSISTANCE PROGRAM:

In partnership with First Nations communities, provincial and territorial governments and non-government organizations, Indigenous Services Canada's Emergency Management Assistance Program (EMAP) helps communities on reserve gain access to emergency assistance services.

EMAP provides funding to First Nations communities so they can build resiliency, prepare for natural hazards, and respond to them using the four pillars of emergency management: mitigation, preparedness, response, and recovery.

Click here for more information.

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

3

Resource Hub:

This hub outlines numerous resources that communities can utilize during climate emergencies..

RESOURCE HUB:

The National Collaborating Centre for Environmental Health has created an Indigenous Disaster Response Page. This page outlines numerous resources that communities can utilize during climate emergencies. It also provides reports on successful methods used within Indigenous communities to prepare for and recover from climate disasters..

Indigenous Disaster Response Page.

4

Non-Insured Health Benefits Program (NIHB):

Health Canada provides eligible First Nations members not covered through private insurance or provincial health programs with a specified range of medically necessary health-related goods and services.

NON-INSURED HEALTH BENEFITS PROGRAM (NIHB):

During an evacuation, there may be an increased number of individuals requiring medical attention. Health Canada provides eligible First Nations members not covered through private insurance or provincial health programs with a specified range of medically necessary health-related goods and services.

Click here for more information

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :

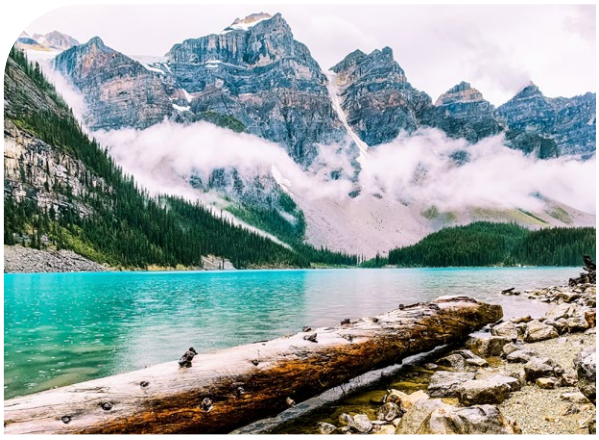
Environment and Climate Change Canada | Environnement et Changement climatique Canada

12

CASE STUDIES:

Indigenous Innovation and Response to Climate Change

Indigenous Peoples across Turtle Island and around the globe have taken initiative to address the impacts of climate change. As acts of Indigenous sovereignty, First Nation, Metis, and Inuit communities have accelerated mitigation and adaptions measures through independent research and strategizing. The following table outlines some of the work being done within Indigenous communities in what is now known as Canada. Our goal is to continue expanding this section in future iterations of the toolkit, and showcase the progressive strides Indigenous Peoples have been making for the sustainability of Mother Earth.



As acts of Indigenous sovereignty, First Nation, Metis, and Inuit communities have accelerated mitigation and adaptions measures through independent research and strategizing.

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada | Environnement et Changement climatique Canada

Potential Challenge	Community Goal	Toolkit Theme	Possible Tools to Facilitate Change/Pathway	Success Story/ Experiences
The deterioration of water quality in Pond Inlet motivated the community to give five young Inuit the opportunity to conduct research on water quality, health, and climate change	Building Capacity to Monitor the Risk of Climate Change on Water Quality and Human Health: A Two-Year Journey Expanding Community-Based Leadership in Pond Inlet	Knowledge mobilization	N/A	The young people were able to integrate the Inuit experiential approach to training, based on observation, experience, and the sharing of knowledge between generations.
On Banks Island in Canada's High Arctic, Inuvialuit hunters and trappers have a close relationship with the natural world. As they travel over the tundra or harvest fish from the sea, they notice even the smallest changes to their environment. Recently, the changes have been significant and worrying. The climate has become unpredictable, the landscape unfamiliar. These changes tell local people that the climate is warming. The residents of Sachs Harbour wonder if they can maintain their way of life if these changes continue	Develop an innovative method for recording and sharing local observations on climate change, to communicate the consequences of climate change in the Arctic (public awareness) and to understand the adaptive strategies that local people are using	Gender Inclusivity	A point of great interest from this case study is that the Inuvialuit community respondents identified during the evaluation phase of the project (completion) that, although the project was inclusive generally, it could be improved by having more women, more Elders, and more youth	During the two-year initiative, the project team produced a broadcast-quality video and published seven scientific journal articles to communicate the consequences of climate change in the Arctic and to understand the adaptive strategies that local people are using. The papers document the extent of Inuvialuit knowledge on climate change and explore how that knowledge can enrich scientific research in the Arctic. The video follows local people onto the land and sea as they take part in traditional activities. Their voices—and the beauty of a fragile and bountiful land—leave viewers with a clear understanding of what will be lost if climate change continues.
Co-develop a comprehensive climate change monitoring program that integrates Traditional Ecological Knowledge and science with a focus on species at risk and culturally significant ecology.	Integrating Traditional Knowledge and Science to Monitor the Implications of Climate Change on Culturally Significant and At-Risk Ecology of Indigenous Lands	Traditional Knowledge	Attain funding to support project.	Stay tuned, this project is ongoing!

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :

Environment and Climate Change Canada
Environnement et Changement climatique Canada

IN CLOSING:

We are committed to a consultation process for the development of these toolkits, and thus, if you have any questions or would like to get in contact, please email our Senior Policy Advisor:

Vilbert Vabi at **vvabi@nwac.ca**

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

13 GLOSSARY

Climate

In your place on the globe controls the weather where you live. Climate is the average weather pattern in a place over many years. So, the climate of Antarctica is quite different than the climate of a tropical island. Hot summer days are quite typical of climates in many regions of the world, even without the effects of global warming.

Weather

Weather is the mix of events that happen each day in our atmosphere including temperature, rainfall, and humidity. The weather is not the same everywhere. Perhaps it is hot, dry and sunny today where you live, but in other parts of the world it is cloudy, raining or even snowing. Every day, weather events are recorded and predicted by meteorologists worldwide.

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

Climate change	Climates are changing because our Earth is warming, according to research by scientists. Does this contribute to a warm summer day? It may, however global climate change is much more complicated than that because a change in the temperature can cause changes in other weather elements such as clouds or precipitation.
Carbon Dioxide Concentration	The atmospheric carbon dioxide concentration, at 398 parts per million volume (ppmv) in 2015, is now about 42 per cent greater than the pre-industrial (1750–1800) value of about 280 ppmv, and higher than at any time in at least the last 160,000 years. Carbon dioxide is currently rising at about 1.8 ppmv (0.5 per cent) per year due to human-caused emissions and currently accounts for approximately 84 per cent of US GHG emissions.
Chlorofluorocarbons (CFCs)	Compounds of carbon that contain some chlorine and some fluorine. CFCs do not occur naturally; they are synthetic products used in various industrial processes and also as propellant gas for sprays. CFCs are typically used in refrigerants, solvents, foam-makers and for use in aerosol sprays. CFCs are significant contributors to ozone depletion and also contribute to global warming. Replacement chemicals called hydroflourocarbons (HFC) do not deplete the ozone but are strong contributors to global warming. These chemicals are slated to be replaced with even newer hydrocarbon compounds with minimal global warming impact.
Base Year	The year used as a reference year to help understand future emissions.
Atmosphere	The gaseous envelope surrounding a planet. The Earth's atmosphere consists of nitrogen (79.1 per cent by volume), oxygen (20.9 per cent by volume), with about 0.04 per cent carbon dioxide, and traces of argon, krypton, xenon, neon, and helium, plus water vapour, traces of ammonia, organic matter, ozone, various salts, and suspended solid particles.

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :
Environment and Climate Change Canada
Environnement et Changement climatique Canada

Food Security	A situation that exits when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary need and food preferences for an active and healthy life.
Food Dessert	Geographic areas that have limited access to healthy and affordable foods.
Poverty Trap	A systematic mechanism that makes it very difficult for people to escape poverty. It is not caused merely by the absence of economic means, but it is also due to a mix of factors, such as access to education and healthcare, that work together to keep individuals or communities in poverty.
Carbon Dioxide	Carbon dioxide or CO_2, essential to living systems, is released by animal respiration, decay of organic matter and fossil fuel burning. It is removed from the atmosphere by photosynthesis in green plants. The amount of CO_2 in the atmosphere has increased by about 25 per cent since the burning of coal and oil began on a large scale. Atmospheric carbon dioxide varies by a small amount with the seasons, and the ocean contains many times the amount of the gas that is in the atmosphere.
Environmental Degradation	The deterioration of the environment through depletion of resources, the destruction of ecosystems, habitat destruction, the extinction of wildlife, and pollution.
Sex	Refers to biological differences between female and male. These differences exist for reproduction purposes.

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :

Environment and Climate Change Canada | Environnement et Changement climatique Canada

Gender

Arefers to the socially constructed roles and responsibilities of women and men. The concept of gender includes expectations about the characteristics, abilities, and behaviors of women and men - what people believe women and men can and should do. These roles and expectations are learned and vary across different cultures. The roles expected of women in a rural community in the Solomon Islands may be different from those expected of women in a city in Samoa. The responsibilities of a man in Kiribati may be different from those of a man in Palau. Transgender groups and individuals should also be considered, as they may identify their gender role as being different from their sex. These roles and expectations can change over time, and can be affected by things like economics, politics, technology, education, environment, the influence of other cultures and the media, mass advocacy, crisis, and conflict. An example of how gender can affect vulnerability to climate change is where a woman cannot attend training about climate change impacts because she is expected to cater for the training with other women. This limits the information she can access to help her make decisions on how best to manage climate change impacts. Another example is the expectation within a given society that a man's role is to provide for his family. If an event causes major losses in the main cash crop that men produce to make money for their families, they may feel significant stress, burden and social pressure to find another way to make money. In both cases, these roles (preparing meals and generating family income) are not 'natural'; they are based on the society's expectations of what men and women can and should do.

2024

ENVIRONMENTAL CONSERVATION

AND CLIMATE CHANGE OFFICE (ECCCO)

NWAC.CA

Native Women's Association of Canada
L'Association des femmes autochtones du Canada

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :

Environment and Climate Change Canada
Environnement et Changement climatique Canada