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- 1. In order to maintain the integrity of the knowledge shared work together with Turtle Lodge Knowledge Keepers to develop materials based on this information.
- 2. Lead with the positive.
- 3. Use direct quotes and attributions from the Knowledge Keepers.

Report compiled by Sabina Ijaz, Turtle Lodge.

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Natural laws are teachings of the Earth. Nature operates on the principle of balance. For the First People, following Natural Laws has always helped us to live in balance and harmony.

*

We have dehumanized ourselves as human beings. There has been a loss of value for the sacredness of life. The victims of that have been our own children and the land.

Dave Courchene, Anishinabe Knowledge Keeper and Elder Chair,
 4th Onjisay Gathering of Elders, Youth & Scientists on Climate Change

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Background

According to the World Scientists' Warning to Humanity 1992 (signed by more than half of all Nobel prizewinners):

Human beings and the natural world are on a collision course. Human activities inflict harsh and often irreversible damage on the environment... A great change in our stewardship of the Earth and life on it is required, if vast human misery is to be avoided and our global home on this planet is not to be irretrievably mutilated.

Traditional Indigenous Knowledge Keepers can help all people come to terms with how we are behaving and how we are treating the Earth. They can offer the perspectives and observations of Earth, animal and plant life changes perceived by a People who has lived for thousands of years in close relationship with nature.

Even more importantly, Traditional Indigenous Knowledge Keepers provide a foundation of solutions, values and protocols of relationship that can reintroduce humanity to the reverence and respect for the sacredness of life required for lasting sustainability, and offer a vision and holistic approach for the future.

This is the Anthropocene Epoch, when human beings have become the dominant force altering the physical, chemical and biological properties of the planet on a geological scale.

Modern science's great strength, its ability to focus on a part of nature and apply analytical tools and techniques, is also its fatal weakness. By being focused, science routinely shatters and fragments, thereby obliterating context, connections and interactions that make a piece of nature interesting in the first place.

And the recognition that "emergent properties" of the whole cannot be anticipated by the sum of the properties of its parts, makes it imperative to guide scientific application within a broader perspective of Indigenous knowledge.

Knowledge without spirit is soulless, lacking in love, humility and responsibility that must guide and constrain its application.

Knowledge embedded in Indigenous languages and cultures, will never be duplicated by science, so like endangered plants and animals, must be protected and encouraged to flourish.

 Excerpt from the Turtle Lodge Declaration 2017, signed by Scientists and Knowledge Keepers at the Gathering of Indigenous Knowledge Keepers and Scientists in Sagkeeng First Nation, Manitoba, in September 2017

Introduction

Almost 70 Traditional Indigenous Elders and Knowledge Keepers, scientists, representatives from Manitoba Sustainable Development, and Indigenous youth and community mentors from nine First Nation communities representing the Ininiwak (Cree), Anishinabe (Ojibway), Oji-Cree and Dakota Nations, gathered for the 4th Onjisay Aki Gathering of Elders, Youth & Scientists on Climate Change March 19-21, 2019 at the Turtle Lodge Central House of Knowledge in Sagkeeng First Nation.

In an initiative sponsored by Manitoba Sustainable Development and the Giigewigamig First Nation Health Authority, the gathering was the fourth in a series of Onjisay Aki gatherings initiated by the Turtle Lodge since 2016. Onjisay Aki means "Our changing Earth" in the Anishinabe language, and is a word that carries hope for the future. It acknowledges the leadership of Mother Earth herself as a living entity, who carries the true influence to bring birth to new life and to restore balance to life, correcting imbalances that lead to challenges like climate change. Onjisay Aki suggests that as the Earth changes, she has the influence to change us as people, correcting and inspiring us, out of her love for us, to align ourselves with her spiritual and natural laws.

Objective

Understanding that climate change has become an issue that concerns us all, representatives came together in partnership, with an objective to recognize that all partners have a duty and responsibility to prepare youth with the best tools to deal with this change. The Turtle Lodge gathered traditional Indigenous Knowledge Keepers, land-based teachers, scientists, academics, and government representatives along with youth, to raise the bar of concern for the environment, and to outline suggested ways of reconnecting with and supporting the land.

Engaged Participants

Indigenous Elders and Knowledge Keepers

Respected community Elders and Knowledge Keepers were chosen carefully from the respective Nations and communities. These were Elders and Knowledge Keepers considered by the communities as the true experts in Indigenous knowledge-based approaches to stewardship, based on Indigenous traditions of Elder leadership. Most of the Knowledge Keepers were fluent in their languages, and respected within their communities as being knowledgeable in their land-based and spiritual ways of life and traditional teachings and practices.

Scientists

Scientists were selected based on consultation with Manitoba Sustainable Development, and based on previous relationships developed between the Turtle Lodge Central House of Knowledge and Manitoba-based scientists, including established relationships with the Prairie Climate Centre, University of Winnipeg, Indigenous Leadership Initiative, International Institute for Sustainable Development, International Boreal Conservation Campaign, Assembly of Manitoba Chiefs, David Suzuki Foundation, Lake Winnipeg Indigenous Collective and others. Availability of certain invitees was limited given the fairly short notice provided.

Youth

Youth were selected by the invited Elders and Knowledge Keepers from their respective Nations, based on leadership qualities, humility, integrity and interest in learning as recognized by their Elders.

See Appendix E for list of participants.



Miigwech to our Sponsors

Climate and Green Plan Implementation Office, Manitoba Sustainable Development

The Climate & Green Plan Implementation Office of Sustainable Development is pleased to support the 4th Onjisay Aki Gathering of Elders, Youth and Scientists on Climate Change. This gathering is a further step in bringing together people and government to share their stories on climate change, and more so, to gain and broaden knowledge among Elders, youth, western climate science practitioners on how a changing climate is affecting all our communities and way of life.

Indigenous Knowledge Keepers hold a seven generation philosophy of living at one with their surroundings, to be stewards of the land, water and animals. This knowledge or long-term view is essential to be able to prepare for the impacts that come from a changing climate. Climate science strongly suggests a future of more floods, drought, wildfires, heatwaves and pests. As well, more variable seasonal conditions resulting



in less predictability about ice, winter roads, insects and berries. Many of these future changes have already been observed in areas of Manitoba over recent years, especially in northern regions.

Being resilient or prepared means that individuals, communities and organizations are able to withstand, respond and recover well from the impacts of fire, flood or other effects of a changing climate. This requires information, knowledge and tools to plan and adapt for these changing conditions even before they occur.



Giigewigamig First Nation Health Authority

The Giigewigamig First Nation Health Authority is pleased to offer support to the 4th Onjisay Aki Gathering of Elders, Youth and Scientists on Climate Change.

Giigewigamig takes a unique approach to addressing the health crisis in the Anishinaabe communities of Sagkeeng, Hollow Water, Black River and Bloodvein. Elders from these communities came together in the spirit of love and kindness to provide maximum support to the spiritual, emotional, mental and physical health of our community members.

The health crisis that we currently face is a direct result of colonization, including the residential school system, racism and intergenerational trauma that has resulted in a disconnection from the land, our spirituality and our language. It is the connection to our Ancestral ways and values that must be restored so that we can return to mino pimatiziwin (live a good life).

Indigenous People have a strong track record of maintaining an intimate relationship with the natural world that has nourished our communities and sustained our cultures for millennia. Our connection to and stewardship of the land is based on respect, reciprocity, restraint and reverence. Teachings on cultivating a respectful relationship with the land were passed from one generation to the next on the land and in our Sacred Lodges so it is fitting that the 4th Onjisay Aki Gathering of Elders, Youth and Scientists was hosted by the Turtle Lodge Central House of Knowledge.

We have always been, and continue to be a resilient People. Sharing ancient knowledge through gatherings such as this is key to surviving in the new reality of climate change. Our Ancestral ways and values, combined with our resiliency ensures that

we can adapt to a changing climate. Western science is now beginning to recognize the value of this knowledge. We hope that gatherings such as this leads to empowering our youth so they can return to the ways of our Ancestors, connected to each other and all living beings.

Meeting Venue

The gathering took place at the Turtle Lodge Central House of Knowledge, an international centre for Indigenous education and wellness, located on the Sagkeeng First Nation, Manitoba, 100 km north of Winnipeg. Over the past 17 years, the Turtle Lodge has been a centre for sharing Indigenous knowledge through events, ceremonies, conferences, and summits that include people from around the world.

The Turtle Lodge was built in 2002 based on a vision received by Sagkeeng First Nation Elder Dave Courchene, over 30 years ago. Built as a labour of love by predominantly First Nation youth volunteers, the sacred lodge is a testament to the survival to a way of life. Founded on ancient and universal Indigenous values known as the Seven Sacred Laws, the Lodge's main focus is on youth of all colours finding their identity through connection to the spirit and the land. Our goal is *Mino Pi Mati Zi Win* – a good and peaceful way of life.

The Turtle Lodge has been endorsed by the Assembly of First Nations and Assembly of Manitoba Chiefs, and is recognized as a First Nation Cultural Centre by Indigenous and Northern Affairs Canada. In 2017, Turtle Lodge received the Anne Lindsay Protecting the Earth Award from the Manitoba Eco-Network. In 2018, Traditional Elders from across Great Turtle Island and Abya Yala (North, Central and South America) named Turtle Lodge their Central House

of Knowledge as traditional leaders of their Nations and Peoples. Turtle Lodge operates under a not-for-profit corporate entity, Anishnabe Mikinack Kinamakamik, which has registered Canadian charitable status.

The Turtle Lodge was chosen as the meeting venue to highlight the importance of setting a ceremonial context for discussions on Indigenous nationhood, consistent with direction given by Knowledge Keepers. Part

of the protocol of the Turtle Lodge includes daily Pipe and water ceremonies, which begin and set the context for all discussions.



Ceremonial Context

Following traditional community and Turtle Lodge protocols, ceremony set the context for all discussions. The ceremonies are ancient practices of nationhood that acknowledge Indigenous identity, demonstrate gratitude, encourage love for the land, and reflect a commitment to duties and responsibilities made on behalf of all participants to the Spirit, to the land, and to all life.

The two and a half-day gathering began in ceremony with a sweat lodge on March 19, which represented entering into the womb of the mother – ultimately Mother Earth – for healing, cleansing, clarity and rebirth,

in advance of the discussions that were to begin on March 20. Daily Pipe and Water ceremonies were conducted each morning to begin each day in a good way, led and guided by the spirit. A healing ceremony was conducted for the youth on the final afternoon, along with a traditional giveaway.

Sacred songs on the traditional drum were rendered throughout the gathering by the Walking Wolf drum group, to carry the voice and message of the people far and wide.

"Whenever we gather in the lodges of our people, it is always done following the ceremonial context. These protocols are followed as we search for guidance and direction from the Spirit.

Practising our nationhood must reflect our way of life, never overstepping the Spirit. The spiritual realm is considered the place of higher intelligence, which we enter into through the Pipe ceremony, to seek direction in life. In our world as Anishinabe and many of our other Nations, it is the gift of the Pipe that is lifted to the Spirit. The Pipe has the power to invoke the Spirit and the ancestors to come within our presence, to inspire and to guide us in our words to be spoken.

Lifting the Pipe helps us to remember our dreams, to remember that feeling of being on the land, and to be inspired to find our own memory of our duties and responsibilities as a people. Our duties and responsibilities are to lead human beings in how to take care of the land, and how to take care of life."

— Dave Courchene, Anishinabe Knowledge Keeper



Outcomes

Here are some of the themes addressed at the 4th Onjisay Aki Gathering of Elders, Youth and Scientists:

Theme 1: The Earth is Alive and Has a Voice

What is climate change from an Indigenous perspective?

Elders shared that from an Indigenous perspective, climate change is really nature releasing its forces to clean the Earth, to bring us back into balance.

"The Earth is alive. Climate change is really nature releasing its forces to clean the Earth, to bring us back into balance. We shouldn't look at climate change as a negative thing. It is because of how we have behaved as human beings that we have to feel the impact of what we have done to the Earth. Ultimately it will be Mother Earth that will correct us as humanity, because of the love she has for us."

Dave Courchene, Anishinabe
 Knowledge Keeper and Elder Chair

It is because of how we have behaved as human beings that we have to feel the impact of what we have done to the Earth.

They emphasized that the Earth is a living being, with a spirit, and that we should not look at climate change as a negative thing. Ultimately it will be Mother Earth that will correct us as humanity, because of the love she has for us, as her children.

The Elders say the Earth has a voice. What is she telling us?

Mother Earth is the greatest teacher who will correct and teach those who are willing to listen.

The Earth is a living entity. She is alive, she breathes. All we have got to do is listen to what she has to say. When the wind blows, when the storms come, when the rains fall, when we see or hear the birds or the animals, there are messages that can be heard. The Earth wishes for us to speak on her behalf.

To hear the messages of the Earth, one has to prepare oneself spiritually to connect with that voice, which can be revealed to anyone. It is up to each of us to take the time to listen and to hear the language of the land itself. It will come in many different ways, including in dreams. The language of the land is not only spoken in the original languages or in English, but it is rather something that one can feel in one's heart as the message is being brought.

It is the Earth herself who has the solutions to climate change. We cannot overstep the Earth who can offer guidance to those willing to listen by including her in the dialogue, connecting with her as a living being.

Theme 2: Natural and Spiritual Laws

What do the Elders mean when they tell us we need to align with the forces of Nature by living natural and spiritual laws?

As we reflect on the issue of climate change, we must be prepared to understand the root of this reality. The reason we have climate change is because we have broken natural law. As much as there have been advancements in technology and science, we have not evolved morally and ethically. This is the crisis of our time.



The spirit in each of our beings carries moral and ethical principles of what should be the basis of our human conduct. We understand these moral principles as natural laws.

Natural laws are innate to all living beings. They are the invisible laws that govern all life. All living beings, including Mother Earth herself, are governed by natural laws – whether they know it or not. At the end of the day, we determine who we are by what we do, through our actions.

There is a natural law of the Earth, the Law of the Circle – *Onjinaywin* in the Anishinabe language. Whatever we put into our circle

sets the consequences of our actions, and returns multiplied. Natural laws and forces of nature are self-enforcing, more powerful than any human laws we could possibly create. Every act of kindness sets off a chain reaction with the powers of nature that are in support of life.

The Elders warn the people, "Be careful what you put into your circle." If you harm any living beings, nature dictates there will be a consequence, which could be realized not only for oneself but also one's children and descendants.

Indigenous Peoples have known natural laws of living and surviving on the land. What humanity needs most now is to learn the natural laws – the rules of conduct we must follow in defining a sustainable relationship with the earth and each other. Some examples of natural law are:

- Don't take more than you need from the land to survive. If you take too much, your greed will increase.
- Treat all life with respect, and abundance will return to you.
- Show gratitude for whatever you receive from life, and life will return its blessings.
- Give back to the Earth by returning her love, and making offerings, a common practice of Indigenous People, and the earth will continue to sustain you.

When we act according to our sacred teachings, we draw the same force that we have given from nature. Love draws more love. Acting with courage draws more courage into your life. Like attracts like, spiritually. One of the biggest secrets to life is to give of oneself, which is a gift that ultimately returns to those who give.

The ceremonies and traditions of Indigenous Peoples are all about teaching, learning, understanding and implementing natural law. For example, the traditional Giveaway Ceremony, in some nations referred to as the potlatch, once outlawed by the Indian Act, is an Indigenous tradition that encourages the practice of natural law through giving. Through the tradition of storytelling, Elders shared stories to teach us about natural law, and to respect life.

Our biggest challenge as humanity is to shift from negative to positive values that support the natural laws of the Earth. The Elders humbly proposed working with Indigenous Knowledge Keepers to help understand natural laws, and lay down values that are in support of life.

Theme 3: Identity and Spirit

The Elders said that knowing one's identity is key to addressing climate change.

A main focus addressed by the Indigenous Knowledge Keepers was the importance of finding one's personal spiritual identity, sense of purpose, duties, responsibilities and unique gifts, that when understood, are to be shared collectively to take care of our home, Mother Earth.

"The way we can support the land and support the young people is one and the same. It's all about identity, bringing back our identity as a People. To me, it is to teach the young people about their duties and responsibilities, and provide the teachings, ceremonies and opportunities to go to the land that will allow young people to find their identity."

— Dave Courchene, Anishinabe Knowledge Keeper

We can each be a part of solving climate change by finding our purpose and using our unique gifts to create a better world, as human beings were created with an innate





duty and responsibility to be stewards of the land.

They shared that connecting to the land was the best way to find one's identity, as well as a deep sense of love and connection to the living Earth.

The Elders stressed the importance of taking care of our spiritual nature, which carries our identity and original instructions on how to live and behave as human beings.

Rites of passage are a very important way to help young people find their purpose.

Theme 4: The Importance of Ceremony

The ceremonial context was emphasized as important to finding solutions to any of the problems we seek as humanity, including climate change.

Anishinabe Elder Dave Courchene, Chair of the gathering, stated, "Whenever we gather in the lodges of our people, it is always done following the ceremonial context. These protocols are followed as we search for guidance and direction from

the Spirit." Courchene added, "Practising our nationhood must reflect our way of life, never overstepping the Spirit. The spiritual realm is considered the place of higher intelligence, which we enter into through the Pipe ceremony, to seek direction in life. In our world as Anishinabe and many of our other Nations, it is the gift of the Pipe that is lifted to the Spirit. The Pipe has the power to invoke the Spirit and the ancestors to come within our presence, to inspire and to guide us in our words to be spoken."

Knowledge Keepers shared that lifting the Pipe helps us to remember our dreams, to remember that feeling of being on the land, and to be inspired to find our own memory of our duties and responsibilities as a people. They emphasized the leadership role of Indigenous Peoples in their homeland, in terms of duties and responsibilities to lead human beings in how to take care of the land, and how to take care of life.

Theme 5: The Importance of Language

Many Knowledge Keepers stressed the importance of language. The original languages help make a spiritual connection to the land, and are one of the strongest means of sharing the values, teachings and worldview of a people who love the land. The Elders and Knowledge Keepers say that the original languages can help translate the language of Mother Earth.

Theme 6: Earth Literacy through Land-Based Education

The Elders said we need to learn how to read the Earth. Book knowledge is nothing compared to the literacy of knowing and understanding the land.

Elders stressed the need to gain cultural and spiritual connection, knowledge and teachings, in the sacred lodges, before going out on the land and engaging in selfsustaining stewardship activities.

Theme 7: Creation of a Traditional Ceremonial and Land-Based Education Curriculum

Knowledge Keeper David Courchene III, an elected Councillor and Traditional Teacher from Biigtigong First Nation, shared at length about the land-based and ceremonially-based curriculum that their community of Biigtigong First Nation had developed, at the direction of the Elders to "get our youth back to the land."

Ceremonies, including the sacred fire, pipe ceremony, water ceremony, and sacred drum form an integral part of their curriculum, emphasized as an essential part of any Indigenous land-based education curriculum. Canoe trips, moose camp, fish camp, wild rice camp, a micro-hatchery of fish, sacred site and historical site visits, gathering plants, berries and medicines, a pizza garden and science projects are all a part of the curriculum to help introduce youth to the land to appreciate its sacredness.

Theme 8: The Importance of Cultural Restoration Lodges

It was shared that the restoration of the land and environment is intrinsically linked to restoration of Indigenous cultures, which are imbued with cultural responsibilities of stewardship.

Knowledge Keepers and Youth expressed that there is a need for cultural teaching and healing lodges to be built and supported widely in Indigenous communities, to heal themselves and also the environment, through restoration of their culture.

"We need to change and I think places like this, like Turtle Lodge, are working to achieve that. Where ceremony and culture is more accessible to the young people. I think if we all work together and all bring our different gifts that we have as children, young people, adults, and Elders, I think we can move towards what we need to achieve when it comes to our own healing, but also healing our environment."

 Nitanis Nipin Leary, Ininu (Cree) Youth leader, Norway House Cree Nation

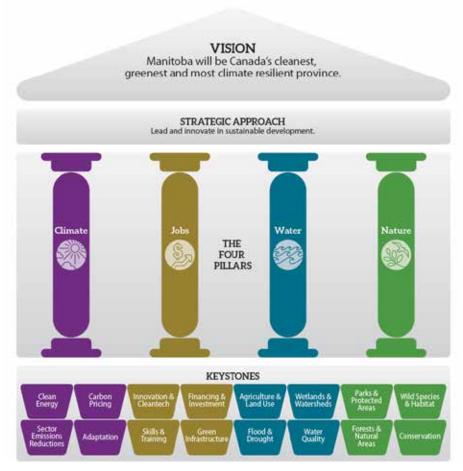
Communities expressed an interest in building Turtle Lodges in their areas, as regional sites for Indigenous Knowledge sharing and making spiritual connection to the Earth, connecting to the spirit, the land and one's identity. As requested, Founder of Turtle Lodge, Elder Dave Courchene, shared his experience of building a Lodge, built based on a vision he received over 30 years ago on a Vision Quest.

Theme 9: Climate Change Connection with the Well-Being of Children

Knowledge Keepers, particularly the Grandmothers, shared how we need to consider and talk about the well-being of children when we talk about climate change. They highlighted the interconnectedness of climate change with all of life, including our health and well-being, food security, education and other areas.

Elders shared their perspectives on how recent changes in nature and environmental contaminants, are affecting the food chain, air, water and human health, as well as acknowledging the scarcity of traditional foods today due to climate change.





Theme 10: Manitoba Climate and Green Plan approach: vision, strategic approach, pillars and keystones

Elaine Fox from Manitoba Sustainable Development shared the Manitoba Climate and Green Plan approach with the group, highlighting four pillars of climate, jobs, water and nature, and the various interrelated keystones in each area:

The Manitoba Government is taking action on climate change. Through actions outlined in the Climate and Green Plan, we are working with partners to enable action to reduce carbon emissions and better prepare for the impacts of a changing climate. The graphic below provides an overview of the Climate and Green Plan, starting with a bold vision statement, which includes becoming the most resilient province. The Climate and Green Plan also contains four key Pillars of action with four Keystones under each pillar. The full Climate and Green Plan can be seen at: gov.mb.ca/climateandgreenplan/index. html

See Appendix A for the full transcript of Elaine Fox's presentation.

Theme 11: Onjisay Aki Initiative

Laura Cameron, M.A., from the University of Winnipeg, shared about the Onjisay Aki Initiative, which started in 2016 through Turtle Lodge's vision to talk about climate change and specifically bring forward Indigenous knowledge, traditions, and values in the conversation on climate change. She also highlighted some of the recent work being done collaboratively with Traditional Indigenous Knowledge Keepers and Western Scientists, including collaborative videodocumenting of traditional knowledge,

following OCAP principles of First Nation community ownership, control, access and possession of all initiatives, processes and outcomes.

The Onjisay Aki initiative began in 2016 with the Onjisay Aki Youth Gathering, a gathering of Youth and Elders, at the Turtle Lodge. Based on their experience of the ceremonies and teachings provided by the Elders, youth developed the Onjisay Aki Youth Declaration, committing themselves to seeking the mentorship of the Elders in connecting with land and spirit, and developing initiatives in support of the land. (Appendix B). Here is an excerpt:

We are walking in the footsteps of our ancestors as loving and kind spirit warriors, Vision Walkers. Acknowledging the Spirit, we honour the knowledge and accept the privilege and gift of sharing this beauty for the betterment of our people, our Creator, and most importantly *Mide Aki*, our kind hearted Mother Earth.

- From Onjisay Aki Youth Declaration 2016

The Onjisay Aki International Summit on Climate Change, initiated by the Turtle Lodge and hosted by First Peoples, took place at Turtle Lodge in June 2017. The Summit brought Indigenous knowledge of living in balance with nature's laws through Indigenous Knowledge Keepers together with contributions of international climate leaders. The Onjisay Aki Summit convened speakers over three days who engaged in activities that encouraged the comprehension and appreciation of Indigenous knowledge, and roundtable discussions that focused on action.

Twelve **Onjisay Aki International Climate Calls to Action** were born at the
International Onjisay Aki Climate Summit.
(Appendix B) (http://onjisay-aki.org/onjisay-aki-international-climate-calls-action).

The Onjisay Aki Calls to Action focused on four prime areas:

- 1. Restoring **Indigenous ancestral knowledge** and ways of living in balance with the Earth;
- 2. Supporting **Indigenous** communities in defining and building their own **nationhood and sovereignty** with the recognition that healthy Indigenous communities are best equipped to offer leadership in protecting nature;
- 3. **Building alliances** between Indigenous communities with government bodies, nongovernment bodies, scientists and industry to foster stewardship; and
- 4. **Transformation** of global approaches to sustainability and respect for the Earth, incorporating Indigenous knowledge and approaches, with a focus on passing original understandings of our duties and responsibilities to nature, to the youth as the leaders of the future.

Especially significant was the lifting of a special Pipe that had been commissioned by the Elders, and the coming together and sharing of knowledge from the North and South Americas, in fulfillment of a prophecy commonly identified among Indigenous Peoples as the Prophecy of the Eagle and the Condor. The Summit culminated with an ancient ceremony to build a Thunderbird nest, to acknowledge and re-establish a human alliance with nature.

From September 9-12th 2017, Traditional Knowledge Keepers from across Turtle Island gathered with scientists at Turtle Lodge to discuss the bridging of traditional knowledge and western knowledge to address the environmental challenges that we face today. The Gathering was chaired by Knowledge Keepers, Dave Courchene and Miles Richardson, and scientist, David Suzuki. Building on the 1st and 2nd Onjisay

Aki Gatherings, in particular, the gathering responded to Onjisay Aki Call to Action #9, calling for relationships to be developed between traditional Knowledge Keepers and scientists to address climate change.

The 3rd Onjisay Aki Gathering of Elders, Youth and Scientists took place at the Turtle Lodge on February 26th and 27th, 2018. This gathering brought together Elders, Youth and Mentors from 4 Manitoba First Nations - Sagkeeng, Norway House, Bloodvein, and Biigtigong First Nations, to gather with Scientists. The gathering responded to Onjisay Aki Call to Action #2, with a focus being the development of an Indigenousled regional ancestral school of knowledge. Discussions and sharing took place on how to bring together traditional and western knowledge to advance earth restoration through Indigenous cultural revitalization and western scientific techniques.

The message and Calls to Action born of the Onjisay Aki Initiative are inspiring a national and international dialogue on cultural and environmental stewardship, based on Indigenous values, in partnership with all people. Our children are the center of our lives, and we believe this message can provide guidance for current youth and future generations.

Theme 12: Climate Mapping, The Prairie Climate Atlas, and Indigenous Climate Atlas

Dr. Steven McCullough from the Prairie Climate Centre (PCC) presented on the work PCC has been doing in climate mapping, with the creation of the Prairie Climate Atlas, and the initiation and partnership with Indigenous communities nationally in the current development of the Indigenous Climate Atlas, including video documenting First Nation community stewardship initiatives across the country using AFN-endorsed "OCAP" principles of participatory



community action research: First Nation community Ownership, Control, Access and Possession of traditional knowledge, processes and outcomes.

More information on what future climate conditions may hold for Manitoba can be found at the Prairie Climate Centre and its Climate Atlas, which includes easy to read maps and graphics.

Prairie Climate Centre-information about climate change in Manitoba and beyond: http://prairieclimatecentre.ca/

Climate Atlas of Canada-local maps, graphics, videos https://climateatlas.ca

Please see Appendix D for more detail on the Prairie Climate Centre and the Climate Atlas.

Theme 13: National Guardians Initiative

Shaunna Morgan Siegers from the Indigenous Leadership Initiative shared about the Indigenous Leadership Initiative, which fosters Indigenous nationhood as a way to conserve and manage Indigenous lands. An Indigenous-led effort, it empowers Indigenous governments, communities and Nations to honour and fulfill our cultural responsibility to the land.

Indigenous-led Guardians programs empower communities to manage ancestral lands according to traditional laws and values.

Guardians are employed as the "eyes on the ground" in Indigenous territories. They monitor ecological health, maintain cultural sites and protect sensitive areas and species. They play a vital role in creating land-use and marine-use plans. And they promote intergenerational sharing of Indigenous knowledge—helping train the next generation of educators, ministers and nation builders. The Indigenous Leadership

Initiative is proud to have partnered with Dechinta Bush University in developing the Guardians Pilot Program, a training opportunity focused on core skills guardians need to conduct land use planning and other management projects.

The Indigenous Leadership Initiative is promoting a federally funded, Indigenous-led National Indigenous Guardians Network in Canada that supports development and employment of guardians across the country. This network has generated broad support, including from the Assembly of First Nations which passed a resolution in 2015 calling for a national Guardians program.

The movement to create a National Indigenous Guardians Network gained ground when the government of Canada included an initial investment of \$25 million over 5 years in the 2017-2018 federal budget. While this investment will not enable new guardian programs to be established immediately, this seed funding will help develop the national network and prepare Indigenous Nations and communities to launch their own Indigenous Guardians programs.

A proven model, ILI draws inspiration from Australia's Working on Country initiative. Since 2007, the Australian government has invested hundreds of millions of dollars in Indigenous ranger programs that protect cultural sites, foster biodiversity and manage fire. Research shows that for every \$1 invested, ranger programs generate \$3 in conservation, health and economic results.

Indigenous Guardians in Canada deliver similar benefits. An analysis of two emerging programs in the Northwest Territories found they create about \$2.50 of social, economic, cultural and environmental results for every \$1 invested. With support from a national network, researchers projected the value could increase to up to \$3.70 for each dollar of investment.

Theme 14: A Call to the Youth

A number of Indigenous Youth shared their own experiences of connecting to the land and their identity as Indigenous people. Cree filmmaker and youth leader, Erica Daniels, shared her film entitled Mikinakay – Trail of the Turtle, which highlighted the healing journey of two Indigenous youth finding their identity and cultural responsibilities of stewardship, through ancient coming of age ceremonies and rites of passage to adulthood.

"You are so very important to this, what we are doing here, because it is your life. Every day that you help your people, it is your life that you are helping. It is not work. You are giving yourself to helping yourself and your people and your families to make life better.

Give what you have, which is give of yourself, and share of yourself, and do what you need to do so that you and your children, your grandchildren coming forward are going to have a good life."

— Katherine Whitecloud, Dakota Knowledge Keeper

Anishinabe youth Ocean Bruyere shared her personal experiences of healing and learning natural laws through her rites of passage. Ininu (Cree) youth, Nitanis Nipin Leary, shared her impressions of where youth were positioned in their communities, and what was needed to revitalize Indigenous cultures and restore the land – cultural restoration lodges. Dakota youth, Jasmin Hall, also shared her background and expressed the interest that many Indigenous youth were reflecting about finding their identity through traditional practices and teachings.

Many of the Elders and Knowledge Keepers, including Dakota Grandmother Katherine Whitecloud, called on youth to take up the mantle of leadership, to become spiritual leaders and unite the people of Turtle Island to come together for the sake of the Earth and our survival as humanity.

The Knowledge Keepers expressed the following:

- Each of you young people was chosen to be here because you were recognized as having a purpose and a voice as leaders.
- We encourage youth to learn the traditional teachings and ways.
- We encourage youth to seek out the Knowledge Keepers.
- Everything you do today is going to impact tomorrow.
- Your responsibility is to live a life where you leave the smallest footprint possible on this land.

"What we need more than ever is spiritual leadership. That spiritual leadership is going to be found in the Lodges of our people. It is you, the young people, that have to make the effort to come to the Lodges and listen to the knowledge that the Elders bring because you cannot move forward without having that knowledge in order to carry out your responsibility."

Dave Courchene, Anishinabe
 Knowledge Keeper

Oji-Cree Elder Chris Harper invited the youth to participate in a special ceremony of healing and strengthening their identity and spiritual connection, which was conducted near the end of the third day.

A strong statement was made by the Elders to discourage conflict and confrontation-based approaches such as protest.









We ask the spirit to guide us and inspire us to be kind to each other. When we work together we show respect and kindness for each other. This is no place for conflict or confrontation in this Lodge. That is not our way. We can have differences, but those differences should never lead that we start to argue and make things personal because we don't happen to agree. That is not our way. Our way is to try to make each other understand and to be patient with each other.

These gifts that we have, like hand drums for example, I don't really appreciate a lot of these younger ones, who are going out to these protest movements, and who are hitting the drums in protest. I know there is a lot of anger involved. That is not how those drums are given to us. They are to call the Grandfathers, and you can't call a Grandfather in anger. It is not going to work. I have tried it, and it has not worked for me. In doing that, very often, the people start being angry. Show some kindness, and that is the way the Grandfathers will come.

The role of spiritual people is to remove confrontation, to remove protest. And we all have that freedom to do what we want. If people want to engage in that, they have to understand the consequences of it too.

— Dave Courchene, Anishinabe Knowledge Keeper

Appendices

Appendix A: Presentation by Elaine Fox, Climate and Green Plan Implementation Office, Manager Sustainable Development

Good morning everyone. I would like to thank Dave and the organization for allowing Sustainable Development to sponsor this event.

I'll talk about the Climate and Green Plan. This Climate and Green Plan, is not just about climate, it is also about environmental issues. The Climate and Green Plan vision is for Manitoba to be Canada's cleanest, greenest, and most resilient province. How we have structured it is by four pillars. We included (the strategic framework of the plan) in the documentation.

There are four pillars to the plan. One is climate, and the mission of that pillar is to reduce greenhouse gas emissions, invest in clean energy, and ensure Manitoba adapts to climate change impacts. There are the mitigation and the adaptation sides. The jobs pillar is about sustainable development, bringing the environment and economy together. Water, as I have said, is



the essence of life. The water pillar brings together challenges of quality and quantity. It recognizes the important relationship between land uses and water. The final pillar is the nature pillar. Its mission is to connect Manitoba families so that they can enjoy a greater connection with nature.

Each of the pillars, again, has four keystones. So, it drills down a little bit more as we go into it. The plan is available online; it is comprehensive. But one of the main things to climate and climate adaptations is the critical role communities have. This is where the decisions are made. It is communities and the individuals within those communities that are making decisions that are helping us to change our behaviours, change our lifestyles so that it is more in balance with the earth around us. And absolutely, balance is what we are trying to achieve.



Appendix B: Onjisay Aki Youth Statement

ONJISAY AKI YOUTH STATEMENT

Turtle Lodge, September 19, 2016

"We are grateful to be on the land today. We are very grateful to the Turtle Lodge and the Knowledge Keepers for gifting us with the teachings and space to receive knowledge in a safe and loving way. We acknowledge we must always begin with the Spirit. We reach out to the highest source of power and influence, found in the spirit and the land. We strive to make an alliance with Mide Aki (the kind-hearted Mother Earth), an alliance that begins with our Elders and Knowledge Keepers. This alliance will ensure the survival of all our children.

We identify ourselves, and our brothers and sisters, as resilient and adapting spirits to all facets of life. We know the answers are to be found within our own people when we are nurtured and grounded in our own identity, languages, ceremonies, traditions and teachings.

We are committed to grounding ourselves in the respectful relationship between Mide Aki, Knowledge Keepers, Youth and the teachings that are being passed down.

We have heard our Elders speak, we have received our direction and inherent responsibility to live Mino-Bimadisiwin, which means to live the good life.

We recognize ourselves as messengers of the knowledge to inspire other Youth to do ceremony and join us in honouring, recognizing and celebrating the ones who have passed, the ones that are here and the ones yet to come. We commit ourselves to reaching out to Youth from our home communities to join us.

Water is life, the blood of our beautiful Mide Aki. This water, this blood of the earth, will unite us as her children, as we, the Indigenous People, speak with the voice of the land herself. The water will carry our message. Once the offerings are made the water will carry our love to all waters of the Earth. As we drink the water we can be healed with Mide Aki.

We are walking in the footsteps of our ancestors as loving and kind spirit warriors – Vision Walkers. Acknowledging the spirit, we honour the knowledge and accept the privilege and gift of sharing this beauty for the betterment of our people, our Creator and most importantly Mide Aki – our kind-hearted Mother, the Earth."

The Onjisay Aki Youth Statement was originally written by Onjisay Aki Youth Climate Summit Co-Chair Sadie-Phoenix Lavoie and Summit Co-Coordinator Janeil Jackson, on behalf of the Youth, at the sacred fire at Turtle Lodge on Saturday September 17, 2016. Its message was inspired by the ceremonies, teachings and guidance from the Knowledge Keepers at the Onjisay Aki Youth Climate Summit led by the First Peoples (Sept 16-19, 2016). Co-Chair Lavoie took the statement into a sharing circle with Youth and Knowledge Keepers on Sunday September 18, for their input and consensus. After the document was finalized, it was taken into ceremony and, with the help of Grandmothers Florence Paynter and Mary Maytwayashing, spiritualized through a water ceremony on Lake Winnipeg on September 19, for its message to be carried by the water and shared worldwide.



Appendix C: Onjisay Aki International Climate Calls to Action

ONJISAY AKI INTERNATIONAL CLIMATE CALLS TO ACTION

Developed by Consensus by the Speakers of the
Onjisay Aki – Our Changing Earth – International Climate Summit
Turtle Lodge | Sagkeeng First Nation | Manitoba, Canada

The <u>Onjisay Aki International Climate Summit</u> was held at the <u>Turtle Lodge</u> in Sagkeeng First Nation, Manitoba, Canada from June 8-10, 2017. The Summit was led by Indigenous Peoples from the center of the continent of Turtle Island (North America) who steered the proceedings by following Indigenous protocols of engaging and sharing ancestral knowledges concerning relationships with the natural world. Twenty-four speakers – Indigenous knowledge keepers and international climate leaders – were invited by the Turtle Lodge to represent the diversity of the human family, highlighting in accordance with Indigenous teachings that everyone has something to contribute. These individuals came together as concerned citizens out of a common concern for the Earth and future generations.

"The Earth is our mother, we need to take care of her. That responsibility belongs to each and every one of us." – Elmer Courchene, Anishinabe Nation

Onjisay Aki means "our changing Earth" in the Anishinabe language. *Onjisay Aki* is a word that offers hope for the future. It acknowledges the leadership of Mother Earth herself, who as a living being carries the true influence to bring birth to new life, to counter imbalances that lead to issues like climate change, and to restore balance in the world. *Onjisay Aki* also means that as Earth changes, so must we as people. This change cannot be forced, but must come from within us and be based on an understanding found through observation of the Earth itself, and ancestral and natural laws.

"Our culture has guided us how to live the right way, how to listen, how to understand the natural law." – Miles Richardson, Haida Nation

To effectively deal with climate change there must be a change of heart. This change is illustrated by the Trail of the Turtle, a body of ancestral knowledge and teachings, introduced at the Summit, that inspire us to walk a path of life that is based on values and laws of conduct.

"We are part of the generation that has created this catastrophe, therefore it is our responsibility, every day, to do something about it." - Katherine Whitecloud, Dakota Nation

The Onjisay Aki International Climate Summit convened speakers over three days who engaged in activities that encouraged the comprehension and appreciation of Indigenous knowledge, and roundtable discussions that focused on action. Especially significant was the lifting of a special Pipe that had been commissioned by the Elders, and the coming together and sharing of knowledge from the North and South Americas, in fulfillment of a prophecy commonly identified among Indigenous Peoples as the prophecy of the Eagle and the Condor. The Summit culminated with an ancient ceremony to build a Thunderbird nest, to acknowledge and reestablish a human alliance with nature.

"There is still so much incredible knowledge that our people have that the world has never heard." - Lawrence Nayally, Dene Nation

The roundtable discussion centered on four major themes: ancestral knowledge, sovereignty, relationships, and transformation. The following <u>Calls to Action</u>, developed at the Summit, have been established in accordance with the Trail of the Turtle. They are steps that we must take to return to a balanced way of life, founded on stewardship of the Earth.

ANCESTRAL KNOWLEDGE is the foundation for living in balance with the Earth. The traditional wisdom of Indigenous Peoples, rooted in laws of peaceful conduct, and a love for and spiritual relationship with the land, air, water, fire, and plant, animal, human and celestial worlds, has allowed them to live sustainably within diverse homelands for millennia. Indigenous Nations were given original instructions of how to live with the land and her elements, here on this continent we call Turtle Island, and around the globe. This wisdom and knowledge of stewardship techniques is a gift from the Creator and is needed to help humanity navigate an uncertain future in an era of climate change.

Call to Action 1. To support numerous forms of education and training disciplines throughout Indigenous homelands based on the wisdom of Elders and Knowledge Keepers. Rites of Passage are an especially important ancestral tradition of educating Youth. The ultimate goal is the training and development of Young People as true leaders who will walk a road of peace and take care of the Earth.

<u>Call to Action 2.</u> To support the development of "Ancestral Schools of Knowledge" overseen by the Elders who facilitate intergenerational knowledge transmission between Youth and Elders. The establishment of these Schools is a foundational step in our shared journey towards reconciliation and sustainability.

<u>Call to Action 3.</u> To support revitalization of Indigenous languages, which are foundational to stewardship. Indigenous languages are connected to our land-based ancestral knowledge. Critical concepts and teachings are embedded in Indigenous language, stories and songs.

<u>Call to Action 4.</u> To support ancestral knowledge being shared around the globe, beginning with North and South America, building on existing relationships and further fulfilling <u>the prophecy of the Eagle and the Condor.</u>

SOVEREIGNTY for Indigenous Peoples – over ecological, cultural, political, and legal environments and communities – is fundamental for fostering stewardship. Sovereign Indigenous Nations will ensure the wisdom of their cultures remains strong and able to guide humanity into the future. We recognize that Sovereignty for Indigenous Nations is defined by Indigenous people and based upon relationships with the Creator and the Earth.

<u>Call to Action 5.</u> To support Indigenous communities in defining their own Nationhood, based on their ancestral laws and understandings of the natural world, as the foundation of governance of their territories.

<u>Call to Action 6.</u> To support the <u>Indigenous Leadership Initiative's Guardianship Network</u> that promotes Nationhood and stewardship over Indigenous homelands. This network supports Indigenous Peoples in taking responsibility for their traditional territories by demonstrating leadership as caretakers of these lands. This network also supports our collective duty to train young people to carry this stewardship into the future.

<u>Call to Action 7.</u> To support the right of Indigenous communities in developing and having Sovereign control over their energy systems.

RELATIONSHIPS across the diverse ecologies, cultures and communities of the world are essential for growing and strengthening our relationship with the Earth, and our interconnections with allies that share common values of Earth stewardship. Like a forest, we stand as unique trees that are rooted in a common soil that binds us together and makes us stronger. We recognize that all of Earth's people have vision and gifts to share, and we seek to expand our relationships with Indigenous and non-Indigenous partners. True partnerships and collaborations based on trust, respect, understanding and reciprocity are essential to address the challenges we face today and into the future.

<u>Call to Action 8.</u> To support individuals in being guided by ancestral knowledge for healing and strengthening of the spirit and identity.

<u>Call to Action 9.</u> To build alliances between Indigenous communities, government bodies, and non-governmental organizations that share common values of Earth stewardship, who are working in the area of climate and energy justice.

<u>Call to Action 10.</u> To build alliances between keepers of both Indigenous knowledge and scientific knowledge, provided this is done in a respectful manner that equally values their respective contributions to understanding the challenges and opportunities of our time.

<u>Call to Action 11.</u> To build alliances between Indigenous communities and corporate and industrial partners working in areas related to renewable energy and clean technologies, to help usher in a social, ecological, and economically sustainable future for the Earth and its human and non-human inhabitants.

TRANSFORMATION of our global society will be possible if the leadership of Indigenous Peoples is respected. Climate change can lead to a positive human change as we reflect on what is causing the changes in the Earth, and transform our reality through direct action. Collectively as the human race, guided by ancestral knowledge, we have the ability to establish relationships based on principles of growth and resurgence.

<u>Call to Action 12.</u> It is our sacred duty and responsibility to carry out the original ancestral instructions that we were all given, and to pass this knowledge to the Youth of today, for them to become true peaceful stewards of the Earth. Working peacefully, in alliance with ancestral and natural laws to support the above mentioned actions, will initiate a planetary transformation that creates a healthier future for our children, grandchildren and seven generations to come.

"We have within our own power to make the changes necessary. It is not only about Indigenous peoples, it is about all people, about life itself"

— Dave Courchene, Anishinabe Nation

Authors of the ONJISAY AKI INTERNATIONAL CALLS TO ACTION

<u>Dave Courchene (Nii Gaani Aki Inini – Leading Earth Man)</u>, Knowledge Keeper of the Anishinabe Nation, Founder and Lead Elder of Turtle Lodge, Convener of the Onjisay Aki International Climate Summit

Katherine Whitecloud, Knowledge Keeper and Spokesperson of the Dakota Nation

Paul K. Chappell, Peace Leadership Director, Nuclear Age Peace Foundation

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Bill McKibben, Founder of 350.org, Author, Schumann Distinguished Scholar

Chief Jack Caesar (Nei Kau Da Zo), Knowledge Keeper and Chief of Ross River Dene Nation

Alvin Manitopyes, Knowledge Keeper of the Plains Cree and Anishnawbe Nations

Florence Paynter, Knowledge Keeper of the Anishinabe Nation

<u>Stephen Kakfwi</u>, Former President of the Dene Nation and Former Premier of the Northwest Territories

<u>Chief Arvol Looking Horse</u>, Knowledge Keeper and Spiritual Leader of the Dakota, Lakota and Nakota Nation

Antaurko, Knowledge Keeper and Spiritual Leader of the Inka Amauta, Peru

Alexander Kofi, West African, Blackfoot Lakota and Cherokee/Choctaw Nations, Athlete, Reggae
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Yoshimaru Higa (Kumiko Ahara), Knowledge Keeper, Shaman and Spiritual Leader, Japan

Lawrence Nayally, Dene Nation, Host of Trails End, CBC News

<u>Vivian Delgado</u>, Knowledge Keeper of the Tewa Pueblo and Yaqui Pueblo Nation from Taos Territory, Assistant Professor, Indigenous Native Nations Studies, Bemidji University Paqarina Wanka (Sonia Astuhuaman), Knowledge Keeper of the Inka Nation, Andean Medicine Woman

<u>T'ito Kuntur-Kanki (Rodolfo Ttito Condori)</u>, Knowledge Keeper of the Inka Nation, Member of the Andean Masters Community

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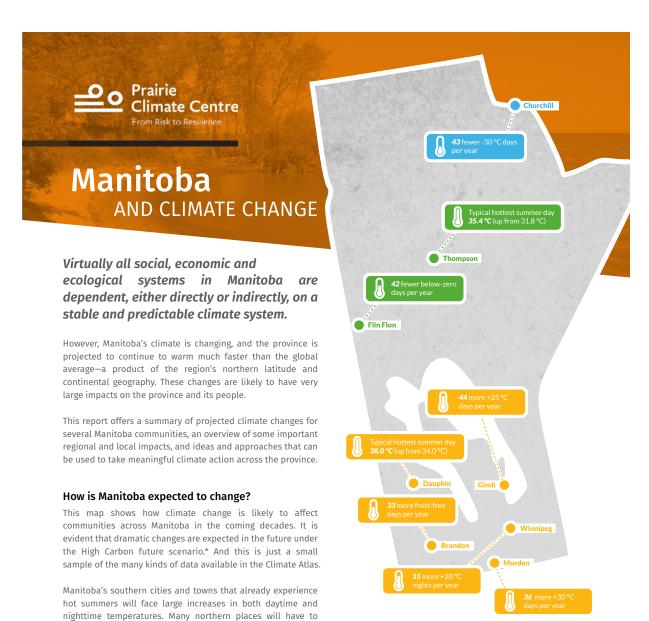
Avi Lewis, Award-Winning Documentary Filmmaker, Co-Author of The Leap Manifesto
Naomi Klein, Canadian Author, Social Activist
David Suzuki, Author, Environmental Activist
Severn Cullis-Suzuki, Activist, Author, Environmental Communicator
Serena Ryder, Canadian Singer and Songwriter, Eight-time Juno Award Winner
Les Stroud, Canadian Screen Award-winning Producer, Creator, and Star of Survivorman
Ian Mauro, PhD, Professor and Film maker, University of Winnipeg
Laura Cameron, Masters Candidate in Indigenous Governance, University of Winnipeg
Sabina Ijaz, MD CCFP, Turtle Lodge Volunteer, Writer and Family Physician
Erica Marie Daniels, Executive Producer Kejic Productions, Associate Producer CBC Unreserved



Become an Official Partner and Make a Commitment to the Onjisay Aki International Calls to Action on Climate at <u>onjisay-aki.org</u>



Appendix D: Prairie Climate Centre - Climate Atlas Report



governance, and economy. However, solutions to this pressing global problem do exist. When these solutions incorporate local perspectives, expertise, and commitment, we can take meaningful and effective adaptation and mitigation measures where we live.

Climate Change and Manitoba

will impact the entire province.

start coping with significant heat for the first time, which will have serious consequences for communities, ecosystems and infrastructure. Changes in seasonal patterns of precipitation

Climate change will affect our seasonal experience of place,

identity, and community, as well as our built environment,

Projected Temperature Changes for Cities and Towns in Manitoba

This table shows five temperature indicators that are important for understanding the implications of climate change for select communities in Manitoba. These indicators demonstrate how climate change could transform the seasonal conditions that are the basis of many of Manitoba's cultural and economic activities.

The table allows you to compare values for the **recent past (1976-2005)** with values for the **near future (2051-2080)** for both the High Carbon and Low Carbon scenarios.* The dramatic difference between the two possible outcomes shows just how important it is that we act now to mitigate greenhouse gas emissions in an effort to reduce the societal and environmental risks associated with climate change. Importantly, global greenhouse gas emissions are tracking very closely with the High Carbon scenario.

These data also show the need to adapt to moderate changes even if we avoid a worst-case level of warming. Understanding possible climate futures such as those summarized here is the first step to taking meaningful climate action.

Communities	M	Average I temperat the year		Û	Average temperations the year			Average r of days p above 25		辮	Average r of below- days per			Average l of the fro season	
	Recent Past	Low- Carbon Future	High- Carbon Future	Recent Past	Low- Carbon Future	High- Carbon Future			High- Carbon Future	Recent Past	Low- Carbon Future	High- Carbon Future	Recent Past		High- Carbon Future
Winnipeg	34.5 °C	37.8 °C	39.3 °C	-36.0 °C	-31.5 °C	-29.8 °C	55	87	98	189	161	149	127	149	161
Brandon	34.8 °C	37.7 °C	39.3 °C	-37.9°C	-33.2 °C	-31.5°C	57	88	100	196	170	157	117	140	150
Morden	35.1°C	38.5 °C	40.1°C	-34.1°C	-29.6 °C	-27.9 °C	57	90	102	186	158	145	130	153	164
Dauphin	34.0 °C	36.6 °C	38.0 °C	-37.4°C	-33.5 °C	-31.8 °C	48	79	91	196	168	156	118	141	148
Gimli	32.8 °C	35.8 °C	37.3 °C	-37.5 °C	-33.2 °C	-31.3 °C	41	73	85	194	164	152	124	146	156
Flin Flon	32.5 °C	35.0 °C	36.5 °C	-39.0°C	-35.3 °C	-33.2 °C	28	52	66	205	177	164	124	147	158
Thompson	31.8 °C	33.9 °C	35.4 °C	-43.3 °C	-38.6 °C	-36.3 °C	22	41	53	225	198	185	94	118	134
Churchill	29.4°C	31.5 °C	33.1 °C	-40.7°C	-35.0°C	-32.3 °C	7	13	18	242	216	204	97	118	132

Climate Change and Manitoba



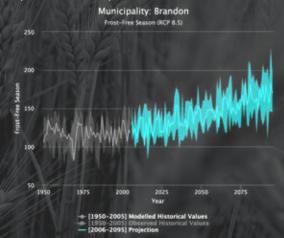
Agriculture

Manitoba farmers know all too well that agriculture is highly dependent on weather and climate. The length of the growing season, typical average temperatures, and the timing and severity of hot and cold spells all work together to determine what crops can be grown and how to best manage livestock.

Climate models show that Manitoba's winters will get shorter, resulting in a longer growing season and, therefore, new opportunities for agriculture. However, the longer growing season will have higher temperatures, which will likely increase the risk of drought, crop heat stress, and pest problems. The models also show that summer precipitation in southern Manitoba may decline.

Interviews featured in the Climate Atlas demonstrate that many farmers are not only aware of these changes, but are already taking action by breeding climate resilient seed, sequestering carbon through livestock management, and developing on-farm renewable energy strategies.

These lessons from the land show that there is great potential for agricultural producers to continue to adapt and demonstrate climate leadership. Agricultural adaptation and mitigation are necessary to create a sustainable future for Manitoba's farms, and the rest of society has a fundamental role to play in supporting the development of the resilient agricultural systems so necessary for us all.



This graph shows the projected changes in the the length of the frost-free season for Brandon, Manitoba under the High Carbon scenario.*

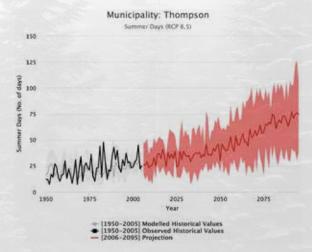


Forests

Manitoba's forests clean the air, water, and soil. They support human and natural systems and are vital for tourism, recreation, and commercial and traditional activities.

Hotter summers are projected for all parts of Manitoba and will have a significant impact on our forests. These conditions are expected to increase the frequency, intensity, and extent of forest fires, droughts, and pest outbreaks. Forestry management, emergency preparedness, and planning standards that take the new climate reality into account can help communities adapt.

Manitoba's forests – especially its boreal forest – are a vital part of the climate change solution because they are a "carbon sink" that helps reduce greenhouse gas levels in the atmosphere. Protecting these forests is necessary given their capacity to defend against climate change, as well as their ecological, cultural and economic importance.



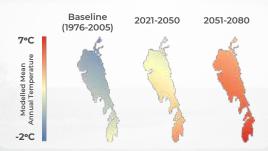
This graph shows projected changes in the number of summer days (+25 °C) per year for Thompson, Manitoba under the High Carbon scenario.*

Climate Change and Manitoba

Lake Winnipeg

Lake Winnipeg – an iconic and important feature of Manitoba – is a vibrant lake ecosystem, which now supports fishing, recreation, tourism, and community and economic development.

The lake will be impacted by climate change. Its water level, temperature, nutrient load, oxygen content, and ice thickness are all susceptible to climate change. In turn, these changes will have profound effects on the lake's productivity, biodiversity, and overall health.



These maps show projected mean annual air temperatures over Lake Winnipeg under the High Carbon scenario.*

Many communities will be affected by these changes. This underscores the importance of watershed and lake management, adaptation planning and policy, and effective collaborations that address climate change and the other immediate threats facing Lake Winnipeg.

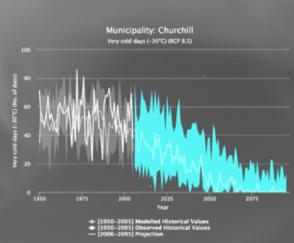
Northern Life

Manitoba's north is a vast landscape made up of diverse yet remote communities and environments, which have largely been reliant on a cold climate. However, northern climates are changing rapidly.

In the coming decades, northern Manitoba is projected to experience a dramatic reduction in the number of cold days. For example, Churchill could lose virtually all of its -30 °C days by the end of the century under a High Carbon scenario. This would be a loss of six weeks of -30 °C weather.

Many of Manitoba's remote communities rely on winter roads for the delivery of food, fuel, construction supplies and equipment, and other vital goods that are too large, heavy, or costly to fly in. The ongoing loss of cold weather will decrease the reliability and viability of these roads.

The challenges that climate change presents to the north are complex and will certainly affect culture, ecosystems, transportation and local economies. There may be new opportunities as a result of climate change, provided we plan for this future in collaboration with northern communities.



This graph shows projected changes in the number of -30 °C days per year fo Churchill, Manitoba under the High Carbon scenario.*

Climate Change and Manitoba



Flooding and Drought

Manitoba has always experienced floods and droughts. However, the frequency and intensity of these events are likely to increase as the climate changes.

Climate models suggest that southern Manitoba is expected to get wetter – especially in the spring – but summers may see a decline in precipitation. Given that many communities in the south are projected to see a tripling or even quadrupling in the number of very hot days, even minor declines in summer precipitation will create the perfect recipe for drought.

The combination of wetter springs and drier summers means that southern regions may have to cope with flooding and

Change in Seasonal Precipitation

(2051-2080 compared to 1976-2005; RCP8.5)



This graph shows projected changes in seasonal precipitation for select southern Manitoba communities under the High Carbon scenario.*

drought in the same year. We can foster community resilience to these conditions by adapting infrastructure, enhancing water and drought management, and refining emergency planning.



Take Action

With creative and forward-thinking planning, Manitobans can take meaningful action on climate change. Practical ways to take action include:

- Investing in strategies that increase resilience and protect communities in the event of floods, droughts, heatwaves, forest fires and other disasters that may increase as a result of climate change;
- Developing and improving long-range planning, engineering, emergency preparedness across all sectors within society, including communities, governments and businesses;
- Accelerating our transition to a low-carbon economy through policies and investments that promote carbon pricing and greenhouse gas mitigation through innovation in renewable energy and green jobs;
- Supporting education, training and outreach that engages citizens in conversation and action regarding climate change, its impacts, and local solutions;

- Enhancing active transportation and public transit through meaningful investments and changes in the built environment.
- Acting now to reduce economic risk and save on the rapidly increasing long-term damages and costs associated with climate change.

Climate change solutions start close to home, with simple actions in our own homes and families, but also involve new ways of thinking, planning, and acting in our workplaces, neighbourhoods, and communities. Smart climate action can help make all of Manitoba healthier, more livable, more productive, and more resilient.



"With creative and forward-thinking planning, Manitobans can take meaningful action on climate change."

Climate Change and Manitoba



The Prairie Climate Centre is committed to making climate change meaningful and relevant to Canadians of all walks of life. We bring an evidence-based perspective to communicating the science, impacts, and risks of climate change through maps, documentary video, research reports, and plain-language training, writing, and outreach.

The Climate Atlas Of Canada

The Climate Atlas of Canada is an interactive tool for citizens, researchers, businesses, and community and political leaders to learn about climate change in Canada. It combines climate science, mapping and storytelling to bring the global issue of climate change closer to home, and is designed to inspire local, regional, and national action and solutions.

The Atlas is one of the only tools in the world that integrates interactive web design with climatology, cinema, and cartography to geovisualize and connect scientific data with personal experience in compelling and easy-to-use ways.



Learn More at: climateatlas.ca

* The Climate Atlas of Canada presents climate indices derived from 12 downscaled global climate models obtained from the Pacific Climate Impacts Consortium (PCIC; pacificclimate.org). For each model, values for two future time periods (2021-2050 and 2051-2080) are computed under two emissions scenarios. The 'high carbon future' emissions scenario (RCP8.5) assumes greenhouse gas emissions will continue to increase at current rates for the foreseeable future. The 'low carbon future' scenario (RCP4.5) assumes emissions will peak mid-century and then rapidly decrease.

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Climate Change and Manitoba





Appendix E: Participants

Elders and Traditional Knowledge Keepers

1.	Dave Courchene, Elder Chair	Anishinabe Nation (Sagkeeng First Nation)
2.	Katherine Whitecloud	Dakota Nation (Sioux Valley Dakota Nation)
3.	Gordon Walker	Ininu Nation (Norway House Cree Nation)
4.	Chris Harper	Oji-Cree (Island Lake First Nation)
5.	Ivy Canard	Anishinabe Nation (Sagkeeng First Nation)
6.	Mary Maytwayashing	Anishinabe Nation (Lake Manitoba First Nation)
7.	David Courchene III	Anishinabe Nation (Sagkeeng/Biigtigong FNs)
8.	Troy Fontaine	Anishinabe Nation (Sagkeeng First Nation)
9.	Robert Maytwayashing	Anishinabe Nation (Lake Manitoba First Nation)

Scientists, Academia, Government and Health Authority Representatives

10.	Elaine Fox	Sustainable Development Manitoba
11.	Randall Shymko	Sustainable Development Manitoba
12.	Dina Bruyere	Giigewigamig First Nation Health Authority
13.	Laura Cameron, M.A.	Prairie Climate Centre, University of Winnipeg
14.	Steven McCullough, Ph.D.	Prairie Climate Centre, University of Winnipeg
15.	Shaunna Morgan, M.Sc.	Indigenous Leadership Initiative

Youth

16.	Paul Maclean	Lake Manitoba First Nation
17.	Ashley Swan	Lake Manitoba First Nation
18.	Daniel Crow	Hollow Water First Nation
19.	Suzan Wieb	
20.	Tate Pompana	Canupawakpa Dakota Nation
21.	Kasson Fisher	Bloodvein First Nation
22.	Jessica Fisher	Bloodvein First Nation
23.	Jolyn Harper	St. Theresa Point First Nation
24.	Cortlynn Mason	St. Theresa Point First Nation
25.	Daniel Munekesick	St. Theresa Point First Nation
26.	Raven Courchene	Biigiitong Niishinabwa First Nation
27.	Eddie York	Norway House Cree Nation
28.	Storm Swan	Lake Manitoba First Nation
29.	Nicholas McLean	Lake Manitoba First Nation
30.	Christoper Weedmark	Bloodvein First Nation
31.	Tavon Green	Bloodvein First Nation
32.	Amberly West	Lake Manitoba First Nation
33.	Jasmin Hall	Canupawakpa Dakota Nation
34.	April Hamilton	Bloodvein First Nation
35.	Carter Doug	St. Theresa Point First Nation

36.	Klain Cop	St. Theresa Point First Nation
37.	Scott Paupanekis	Norway House Cree Nation
38.	Preston Muswagon	Norway House Cree Nation
39.	Amberly West	Lake Manitoba First Nation
40.	Shanda Paud	Sagkeeng First Nation
41.	Dyan Langridge	Sagkeeng First Nation
42.	Camden Savaske	Sagkeeng First Nation
43.	Brandon Henderson	Sagkeeng First Nation
44.	Josiah Chartrand	Sagkeeng First Nation
45.	Gavin Cook	Sagkeeng First Nation
46.	James Cook	Sagkeeng First Nation
47.	Tyler Bruyere	Sagkeeng First Nation
48.	Bret Swampy	Sagkeeng First Nation
49.	Dakota Courchene	Sagkeeng First Nation
50.	Cody Courchene	Sagkeeng First Nation
51.	Alexandra Guimond	Sagkeeng First Nation
52.	Erica Daniels	Peguis Cree Nation
53.	Ocean Bruyere	Sagkeeng First Nation
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Community Mentors and Helpers

54.	Ray Co-Co Stevenson	Walking Wolf Drum Group (Peguis)
55.	Walking Wolf Singer 2	
56.	Walking Wolf Singer 3	
57.	Walking Wolf Singer 4	
58.	Sabina Ijaz, MD	Turtle Lodge
59.	Chris Harper Jr.	St. Theresa Point First Nation
60.	Allan Courchene	Sagkeeng First Nation
61.	Ramona Ladouceur	Bloodvein First Nation
62.	John Young	Bloodvein First Nation
63.	Donna Sais	Sagkeeng First Nation
64.	Norbert Hardisty	Hollow Water First Nation
65.	Patricia McPherson	Black River First Nation
66.	Frank Turner	The Pas
67.	Leah Stevenson	Peguis Cree Nation
68.	Durdana Islam	Prairie Climate Centre, University of Winnipeg



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