



CLIMATE CHANGE ADAPTATION PLANNING TOOLKIT

FOR INDIGENOUS COMMUNITIES

ANISHINAABEMOWIN

CLIMATE CHANGE GLOSSARY

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BACKGROUND

The Anishinaabemowin Climate Change Glossary was developed as part of the Centre for Indigenous Environmental Resources' *Indigenous Climate Change Adaptation Planning Toolkit*. The project team worked with fluent Anishinaabemowin speakers and language experts from 12 communities (and organizations) to develop the content for the glossary. Participants met in-person to discuss climate change impacts being felt in, and by, different Anishinaabe communities, as they relate to the four seasons. Participants shared their experiences, observations, and stories in the Anishinaabemowin language.

The intent of this glossary is to support Anishinaabe communities with climate change adaptation planning, and to provide a resource that can support language revitalization efforts related to climate change adaptation (e.g. conversations with Elders about changing landscapes, climate, etc.).

Additionally, the Anishinaabemowin Climate Change Glossary may be a helpful resource for non-Indigenous governments and industries to communicate information to community partners in a respectful and culturally relevant manner.

Anishinaabemowin was selected as the language for this glossary as part of the *Indigenous Climate Change Adaptation Planning Toolkit*. However, the intention is that the process used to develop this glossary can be applied by other communities and language groups, in order to develop glossaries in other Indigenous languages. If you are interested in developing a language glossary in your own language, please refer to the Indigenous Languages Glossary Workbook, which guides communities and individuals through the process of developing a language glossary.

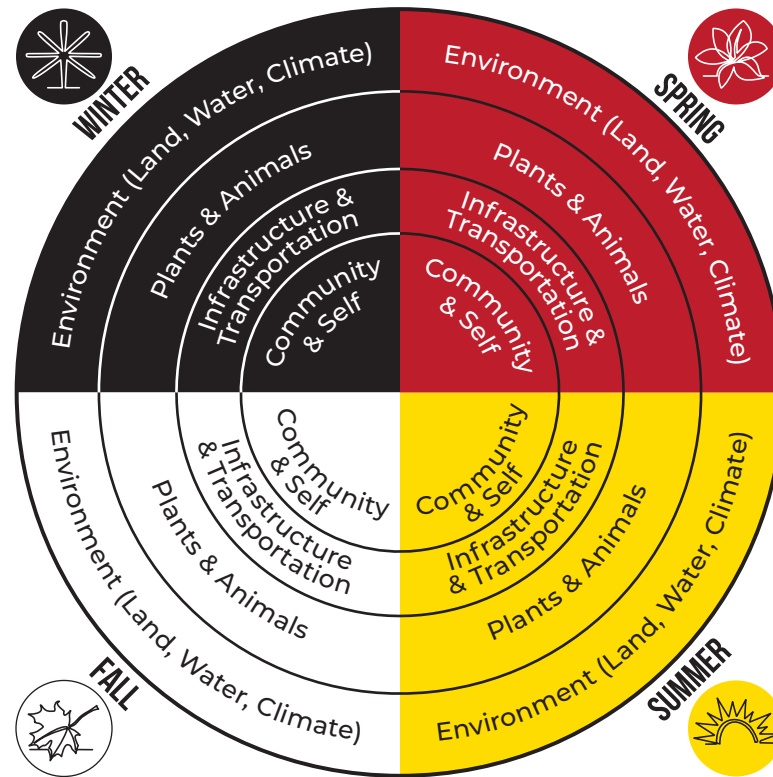
A note on dialects, spelling, and pronunciation: please note, while we have done our best to include proper spelling and provide alternate terms and spelling options where applicable, we understand that different communities may have different dialects, pronunciation, or methods of spelling some terms than those reflected in this glossary. For example, some communities may pronounce a "K" and "P" in place of "G" and "B" and nouns may sound like a "K" "P", "T", "SH" or "CH" at the beginning of a word, however, if an "O" is added in front of the noun, it may sound like: "G", "B", "D", "ZH" or "J". We suggest following up with someone who speaks Anishinaabemowin to help provide more clarity on questions surrounding dialects, spelling and pronunciation in your community.

To learn more about different pronunciations, visit: The Manitoba First Nations Education Resource Centre (<https://mfnerc.org/community-map/>).



TERMINOLOGY

The seasons – spring, summer, fall, and winter - were selected as the themes for discussion and translation as there are unique climate change impacts on the Environment (land, water, and climate), Plants and Animals, Infrastructure and Transportation, and the Community and Self during each season. The medicine wheel below was used to help participants visualize different impacts related to each season, in order to help guide the discussion.





SPRING

Ojibwe	Translation	Comment (i.e. notes to provide additional context or further description of the literal translation)
Aabijibaa	Hibernate	Concern bears wake up during hibernation
Aabiziishin	To be revived, resurrected	
Aami	They are spawning	Wag; (they are) plural form
Aanji-izhiwebad	Change in weather, climate change	
Akakojiish(ag)	Groundhog	Akakojiish(ag)
Aki	Land, earth	
Andowaashowe	Egg hunt, search	Variation: Nandawaashowe
Andowaashowewag omagakiig	The frogs hunt/search for eggs	Concern; unusual
Ani-baate	Becoming dry	
Aniibimin(an)	Cranberry	
Ani-iskate	Draining, lowering water level	
Anoojigo gegoo omiijinaawaa'	They eat any old thing	
Baashkaabigwanii	Blooming flowers	
Baate	Dry	
Bakaan izhiwebak	Difference in weather, climate change	
Bakaan noongom apagoziwag waawaashkeshiwag, bichibowag aaniish	The deer taste differently today because they're being poisoned	Pesticides, etc.
Banajaa(yag)	Baby bird, nestling	
Banajaayens(ag)	Small baby bird	
Bengokamigaa	The land/earth is dry	
Bichibo	One gets poisoned	
Boogidaagamisin	Stinky liquid (set), fermentation	
Daashkaamigishkaa	Split in medium (land)	Variation: Daashkikamigishkaa
Daashkikaa	Slow cracking in medium (land)	
Gaaganookwe	Deep sleep, hibernation	Gaaganookwe makwa; bear in hibernation/deep sleep
Gaa-okosing	The pile, the heap	Name of Winnipeg, Mb.
Gaa-okoteg	The pile, the heap	Name of Winnipeg, Mb. Variation: Kakitchi-okoteg
Gaawiin aapiji ayaasinoon miinan	There isn't as many berries	Gaawiin aapiji ayaasinoon miinan
Gaawiin aapiji zegimekaasinoon	There isn't as many mosquitos	
Gego ankwaandaweken mitigong zigwang	Don't climb trees in the spring	Traditional Ojibwe teaching (children)
Gezika	Suddenly, sudden	
Gezika memeshkwajiwebise	Sudden changes in weather	
Gii-wii-gimiwan	It's supposed to rain	
Gimiwan	Rain, it is	Gimiwan

Ojibwe	Translation	Comment (i.e. notes to provide additional context or further description of the literal translation)
Ginebig(oog)	Snake	Ginebig(oog)
Ishpibii	High water level	
Izhinamowin	Optical illusion, personal impression	
Jaajajiibaan	Sparse, far in-between	Jaajajiibaan
Maanagam	Contaminated water (liquid)	Variation: Maanaagamin
Maanagaming	In contaminated water (liquid)	
Mashkikiwan ani-baatewan gimiwanzinog	The medicines are getting dry when it doesn't rain	
Memaamii	To be varied in characteristics	Sparingly
Memeshkwajiwebise	Sudden changes, sudden weather changes	
Metasishing awesii	Animal being late	As in expected time of action
Metishkaa aki	Erosion of land, earth	
Misakamig ani-zakide	There are a lot more fires	
Mitig(oog)	Tree	
Mooshka'an	Flood	
Namebin(ag)	Sucker (fish)	
Nibaajjiishkiwagaa	Constant muddiness	
Noondegin	To be stunted in growth, undeveloped growth	
Noondese nibi	Water shortage	
Noondeskade	He/she is hungry	
Noondeskadewag makwag, ani-miigaazowag	The bears are hungry and they are starting to be violent	
Ogwiinawi-miijin/Ogwenawi-miijin	Have nothing to eat	
Omagakii(g)	Frog	
Ombanate	Ground heat haze	
Oojii(g)	Housefly	
Oojiins(ag)	Housefly (small)	
Oojiinsag dakongewag	The flies are biting	
Waabigwan	Flower	Waabigwan
Waagitig	Bent tree	
Waagitigokaa	Bent trees	
Waawanoke	Lay eggs, produce eggs	Wag; (they are) plural form
Wanashkwengwaami	Disrupted sleep	Bear awoken during hibernation
Wiijiindiwig	They are mating	Fig. Procreation (animate)
Wiikongem gii-ziigwang	Feasts are held during spring	
Zhaabobiijiwan	Liquid permeation	
Ziibisidoosi	Tornado, twister	
Ziibisidooshi	Tornado, twister	
Ziibisidoosi nawach noongom ishkoniganing biizhaawag	The tornados are coming closer to reserves	

Spring Climate Change Impacts and Stories

Aanji-izhiwebak Ziigwang/dibajimowinan ji-aanikanootegin

- Nimaaminonaabandaamin nawach bangii gegoon nitaawigigin. Waawaasa nanitaawiginoon waabigwaniin. Naanigoding noonde-nitaawiginoon¹.
- Onzaam gisinaa ziigwang ji-gitigeng, onzaam gaye wiiba dagwaagin – mii wenji-gikenjigaadesinog aaniin minik gitigaan ge-giizhiging, naagajitoosiwan, mii wiiba gisinaag gidaa-wanitoonan².
- Shke mitigook wiijiindyok³.



¹ We are noticing sparse plants. The flowers are growing far apart from each other. Sometimes they cannot grow to their full potential anymore.

² It's too cold in the spring to garden and fall comes too quickly – it impacts how much we can grow and to what extent and if you don't pay attention you can lose it to frost early now.

³ Look trees mating; referencing the sound the trees make as they rub against one another in the early spring months.



SUMMER

Ojibwe	Translation	Comment (i.e. notes to provide additional context or further description of the literal translation)
Aamanooziwin wanashkwese	Mating is interrupted	Referring to later births, etc.
Adikameg(wag)	Sturgeon	
Aniibimin(an)	Cranberry	Aniibimin(an)
Animikiikaa	There are thunderers (spirits) about	
Anokiiwag gakina awiyag	Everyone is working	
Ashaageshi(wag)	Crayfish	
Bagizo(wag)	He/she swims	Recreation
Bagizom	Collective action of swimming	Recreation
Bekish ngoding gii-biboong, binesiikaa zoogipong	Even during the winter, there are thunderbirds when it snows	Not only present during summer thunderstorms
Bengwaakodin	The earth/ground has become dry	
Bigizamaa	Burning grass for mosquitos	Many Indigenous people burned stubble early spring
Binesi(wag)	Thunderbird	Variation: Animiki
Binesiikaa	There are thunderbirds about	
Binesiawag bakite'igewag	Thunderbirds strike	Variation: Animikik Paginigawag
Dootoogan	Bog; floating bog	
Dootooganiwan	Bog-like, soft ground	
Gaashitaagozi(wag)	He/she sounds raspy/hoarse	Sounds of thunderbirds
Gawizagimewe	To collapse from mosquito (bites)	Term associated with legends
Gibaate'igan	Act as a shade (from sun)	
Giigoo(yag)	Fish	
Googiiwag moonzoog e-miijiwaad	The moose dive to eat	Due to rising waters
Gozi(wag)	Relocate, move	
Jiisaakowesi(wag)	Crab/crayfish	
Maadaanimad	Gust of wind begins	
Maajiigozi(wag)	To physically move, relocate	
Maanameg	Catfish	
Mawinzo	He/she picks berries	
Mawinzowag awesiinsag	The small animals are picking berries	
Memeshkwaji-izhiwebad	There are weather changes	Variation: Memeshkwagji-izhiwe - aki
Meta'aan jiigew	The beach (water edge) is eroding	
Miinan	Blueberries	
Mikomiinsikaa	There is hail, small icicles	
Mishtadamokeshi(wag)	Cricket	Variation: Mishtadimokeshi(wag) Variation: Paapakinii
Miskomin(ag)	Raspberry	

Ojibwe	Translation	Comment (i.e. notes to provide additional context or further description of the literal translation)
Naanookaasi(wag)	Hummingbird	
Nawadide mashkosi(in)	Grass catches on fire	
Niibaagweshimo(wag)	To participate in a Sundance	Traditional/ceremony
Niibin	Summer	Summer is summer. In the past, many cultures, such as Indigenous people, would prepare and preserve foods for the winter.
Niibing	When it is summer	Different mode in grammar for when, during winter.
Niibiwa gaagige-gimiwan	There is too much of continuous rain	
Niimidin	Weak ground	To land erosion
Nisaabaawemaganoon gitigaanan gii-gimiwang	The garden/crops are being saturated/drowned when it rains	
Noodin	wind, windy	
Noosookaa	To be soft (texture)	To land erosion
Ode'iminan	Strawberries	Niibing ode'iminan, is an incomplete sentence to say strawberries during the summer...
Ogaa(wag)	Pickering	
Ombaanimad	Gust of wind	
Onjine(wag)	To have bad karma	
Ozhiigoomagadoon	He/she (animate) destroys it (physically)	Variation: Ozhiigoodaan
Ozigwaakomin(ag)	Saskatoon berry	
Waakowazh omakizinan waabigwaniin ani-angwiiwan	Lady Slippers are disappearing	
Waawaasikwanese	Lightning flashes	
Wiikongem gii-niibing	Feasts were held during the summer	Berries were used during feasts
Wiisiniwag awensiwag, makwag	The animals are eating, bears	Connection is vague; no recording
Zhigaag(wag)	Skunk(s)	
Ziibidoosi	Tornado, twister	Variation: Ziibisidooshi
Ziibiins(an)	Stream	With the accompanying text refers to when streams or rivers are hit by tornados, the water is displaced to make other small streams
Ziibisidoosiins(ag)	Dust devils	
Ziizibaakodwaatig(oog)	Maple tree	

Summer Climate Change Impacts and Stories

Niibing meshkwaji-izhiwebak/dibaajimowinan ji-aanikanootegin

- Wiikaa wiijiindiwig awesiwig. Aanind obiitonaawaa' ji-niibing jibwaa wiijiindiwaad. Mii wiikaa ani-maajii-ayaawishensa' odayaawaawaa.' Animoshag ishkoniiganing wiikaa animoonsa' odayaawaawaa' dagwaagig⁴.
- Apii ishkoniiganig gaa-asindwaa awiyag, minjimiziwig awiyag gegoon ji-dazhiikamowaad meshkwaji-izhiwebadinig. Mii zanagan apii gotaamigwak. Minjmiziwig ishkoniiganing. Gaawiin mashi onagadendanziinaawaa' meshkwaji-izhiwebadinig⁵.



⁴ The animals are mating late. Some animals are waiting for summer to mate. Now they are having their babies too late in the season. Dogs in the community are having puppies too late in the fall.

⁵ Since being placed on reserves, people feel stuck and cannot follow the seasonal rounds. This makes it a problem when the storms come. People are stuck on the reserve and have nowhere to go. Reserves are not adapting to climate change.



Ojibwe	Translation	Comment (i.e. notes to provide additional context or further description of the literal translation)
Aamoo(g)	Bee (honey)	
Agonjiwepizon(an)	Lifejacket	
Aniibiish(an)	Leaf	Variation: waabaziins(an)
Anwaakamigad	Peace	Fig. as in no war
Ayaangwaamizi	To be careful, cautious	
Bagaan(ag)	Peanut, nut	
Bagidawaa	To set nets	
Bakite'ige(wag)	To strike, hit	Reference to thunderbirds
Bangan	Peaceful, quiet	
Bashkoda'ige	To cut down trees, brush	Deforestation/commercial activity/ clear cutting. Intentional manmade deforestation
Biboonishiwi	Migration, spend winter elsewhere	e.g. birds; stays there for the winter
Bichibo(wag)	Poisoned, botulism	
Bichiboshkade(wag)	Stomach illness, intestines due to substance, condition	
Binaakwe	Falling leaves (from trees)	
Binaakwii-giizisi	November	November (local term); fall
Bizaag	Be silent	Listening to nature
Bizindan	Listen	
Dagwaagin	Fall, autumn	
Dawaakoga'ige	Clear trees, brush	
Dawagana (unverified)	Late	Wagana means to bend something
Gaaskiwag	Dry meat	
Ginebig(oog)	Snake	
Goon	Snow	
Jiibaakwe	To cook (usually soup/stew)	
Maajiiniinimading	Ice gets weaker in early spring	
Maanamemikwam	Water calms, hibernates, certain type of ice	Change in weather "We used to identify where fish were in the winter when we saw that ice. We don't often see this ice anymore. It requires lots of water. We don't have lots of water anymore."
Maji-ginebig(oog)	Bad snake	Ojibwe cultural belief bad snakes hide in trees
Memegwesi(wag)	Little (water/stone) people	
Miiwishkamowin	Encroaching, loss of habitat	Taking or using land habitat from animals
Mikwamiingwan(g)	Crusty snow	
Mooshka'an	Flood	Var. Mooshkaaganan

Ojibwe	Translation	Comment (i.e. notes to provide additional context or further description of the literal translation)
Nabagaatig(oon)	Shrub (low-lying)	Rabbits are forced to eat different thing to survive and my harm them
Nibaawin	Sleep	Fig. plants (medicines) become dormant
Nika(g)	Canada Goose	
Omaanishkaagon	He/she has an allergy, adverse effect	Substance, condition, etc.
Ozhiitaa(wag)	One gets ready, prepares	
Waabaatebagaa-giizis	October	October (local term)
Wakibanaajise	Spoils easily	Var. Okibanaajise
Wazhashk(wag)	Muskrat	Wazhashk(oog)
Wiikonge	To hold a feast, have a feast	Traditional
Zagakii	To become dormant, settle down	
Zagakiim(iwin)	Nature hibernates, becomes dormant	Variation: Zagakiim-agut
Zhiginaagish(ag)	Salamander	Gisinaashag, move due to cold weather

Fall Climate Change Impacts and Stories

Dagwaagig meshkwaji-izhiwebak/dibaajimowinan ji-aanikanootegin

- Dabasaagamin nibi. Mii dash zhiishiibag zhigwa nikag maagizhaa bichibowag⁶.
- Gegoo izhi-ayaawag awesiwag. Mii o'o apii ji-baasigaadeg wiiyaas, ishkwaaw giizizamaang, giikanaabasamaang, nimaaminonendaamin bakaan izhipogwak wiiyaas. Nawach mashkawaa, jiishtanaa gaye memindage zhiishiibag zhigwa nikag⁷.



⁶ The water gets so low. This seems to affect the ducks and geese. It creates botulism.

⁷ There is something wrong with the animals. This is the season to smoke meat, but after we cook or smoke the meat, we notice something is not right in how the meat tastes. The meat is harder and more firm. We notice this in ducks and geese.

WINTER

Ojibwe	Translation	Comment (i.e. notes to provide additional context or further description of the literal translation)
Amik(wag)	Beaver	Variation: Amik(oog)
Baate	Dry, something is	
Biboon	Winter	
Bine(wag)	Partridge	
Bineshi(wag)	Birds	
Edawetawaage giizis	Sundog	Literal: Sun having ears; sun with rainbows on either side Variation: Kiishotaaweo-kisis
Gichi-giizis	December	Variation: Manidoo-giizis (Local term)
Giigoo(wag)	Fish	
Giiizis(oog)	Sun	
Giizis ogiizhootawagepizonan	Sun's earmuffs	It's so cold the sun has to wear earmuffs
Iskakoodin	Dry, thin ice	
Madwejiishkaawag mitigoog	Cracking of trees	
Madweyaakwajiwag	To crack from the cold	
Mitig(oog)	Tree	
Okogin(oon)	To grow in a cluster	
Omagakii-aniibiish	Plantain plant	Literal: Frog leaf
Oshki-giizis	January	Local term



Winter Climate Change Impacts and Stories

Biboong meshkwaji-izhiwebak/dibaajimowinan ji-aanikanootegin (gagiiginan niizha gemaa gegoo nawach ge-minosegiban

- Gaa-bangang apii gii-ishkwaa-zoogipong. Bemaadiziwaad nibaawag. Mii o'o apii dibaazomangwaa manidoog. Mii apii ji-gikina'amaading. Onjida ishkode ji-ayaamagak. Bizindan bezaag: niibiwa gegoo giga-wiidamaagon⁸.
- Ningoding ako mitigoog gii-gizhiwewag madweshkaawaad gisinaamagak. Giganoonigonaan awe mitig. Epiichi-gisinaag, gaapaakweshkaawag mitigoog. Waawiikaa owe ginoondaan noongom⁹.
- Aaniin ezhi-meshkwaji-bimaadiziwaad awesiwag gikendaamin ani-meshkwaji-izhiwebak. Gaawiin awashime ogosaasi'aawaa' awesiwag Anishinaabe'. Nawach Anishinaabeg ji-gagwe-gaganoonaawaad awesiwa', bineshiya' gaye. Geyaabi awiyag ji-gagwe-gikenimaawaad. Awesiwag omiigaanaawaa' Anishinaabe' dago bakaan awesiwa'. Aaniin onji owe?¹⁰



- ⁸ The quiet time that happens when the snow is on the ground. The beings are sleeping. This is the time we tell stories about these spirit beings. This is teaching time. There always had to be a fire. Bizindan bezaak: listen to the silence it tells you a lot.
- ⁹ The trees used to crack in the winter and make a loud noise. Telling us it's cold. The tree is living and communicating. The tree is frozen to the point it cracks. Can't hear this much anymore.
- ¹⁰ The changes animals are going through tell us a story as the climate warms. The animals are not scared anymore of humans. Humans need more understanding of the communication of animals and birds. Humans can study more. Animals are attacking humans and other animals. Why is this?

OTHER SEASONAL TERMS



Ojibwe	Translation	Comment (i.e. notes to provide additional context or further description of the literal translation)
Abinoojiiyag wedaminosigwaa agwajiing	When children don't play outside	Fear of familiar animals
Anomiping (unverified)	Stunted growth	
Bichibowang gimiwan	Acid rain	Literal: Contaminated rain
Boogidaagamisin	Fermentation	
Daashkikamigise	The splitting ground, earth	
Gibijimaandaan nibi	You can smell water	Change in water
Gwiinawi-wiisiniwag	Cannot find food to eat	Shrinking animal habitat
Izhinamowin	What is perceived to see, mirage	
Maanzhimaagon	It stinks	Water
Mamaagamiin (unverified)	Acid rain	Variation: Memaamiin
Miikanawan	Roads	
Miiwishkaawag	To squeeze out other	Animal habitat
Noondegin	Stunted (growth)	
Ombanate	Heat wave, heat rising	
Wiikaa nitaawigiwag awesiwag	The animals give birth late	
Zakide oshkaabag	New growth (plants) burn	
Ziizibaakwadwaatig	Maple tree	Syrup affected

GEOGRAPHICAL TERMS

Ojibwe	Translation
Aabajitoowaad Bemaadiziwaad (ani-aanjisewan aabadakin meshkwaji-izhiwebak)	Infrastructure (impact of climate change on infrastructure)
Aakoziwin	Disease
Aakwaateg	Heat wave
Adikwag	Caribou
Ani-wanishing mikwam, bibooniwi-miikanawan gaye	Winter/ice roads; loss of winter/ice roads
Ani-wanising nibi (dabasaagamisegin nibiin)	Water scarcity and (lower river/stream levels)
Baateg aki, azhashki	Dry soil/soil moisture
Bagwadakamig giowedinong	Boreal forest
Bemaashiwaad nibikaang dazhiikewaad	Waterfowl
Biboong gichi-izhiwebak	Snowstorm
Biindakamiseg aki nibiing (jiigew)	Coastal erosion (of banks and shoreline)
Binaakwewaad mitigoog	Deciduous trees
Dootooganong	Wetland/marsh
Epiichi-izhiwebak	Temperature
Gichi-ayizhiwebak/gotaamigwak	Extreme weather event/storms
Giigoo'ikewin, bebakaan giigoowag	Fisheries and fish stocks
Gimiwan	Precipitation
Gimiwanzinog	Drought
Ishpaagamiseg gichigami	Sea-level rise
Iskategin nibiin	Evaporation
Manijooshag	Pests
Mashkodeng netaawigingin	Grassland vegetation
Mashkwaakwading anaamakamig	Permafrost
Mawinzwaan	Berries
Metaa'an	Erosion by waves
Moonzoog	Moose
Mooshka'an	Flooding
Niisakamiseg	Landslide
Waawaashkeshiwag	Deer
Zasakidegin noopimiin	Wildfires
Zesegan, mikwam bangishing	Hail
Zhingobiikaanag	Coniferous trees
Ziibisidoosi	Tornado
Ziibisidoosiinsag	Dust devils

APPENDIX 1

Below are notes, discussion points, and anecdotes that were recorded during the development of the Anishinaabemowin Climate Change Glossary. These notes have been included in order to provide additional context, detail, and/or to serve as a reference point for the terms that were included in the glossary.

Spring Discussion Notes and Anecdotes

Changes happening to trees

- A long time ago the ground was moist. Now the moisture is gone, or too low. The trees can't access that water and they are growing bent over.
- When it gets too dry the roots of trees gets weak and if it's by a bank it erodes
- Spring overlap - maple syrup does not run freely from the trees

Sparse plants

- The flowers are growing far apart from each other. Sometimes they cannot grow to their full potential anymore. They won't fully bloom. Other times the acid rain will come and cause the water lilies to turn upside down in the water.
- The berries are disappearing: Saskatoons, wild plums, nana berries, and high bush cranberries
- Cranberries are not coming in season
- People must travel further away for medicines – harder to get medicine

Earth losing groundwater

- There used to be aquifers running strong under the ground. This included underground rivers and lakes. Now, the water is not always permeating through the earth enough to replenish these aquifers. Sometimes the acid/bad rain can permeate into these waters and we can no longer use them to wash our hair or drink.
- Water is drying up – the land/ mud is cracking where there used to be more water

Changes in animals and animal behaviors

- Bears are getting aggressive and attacking (because it's the spring season they are just waking up)
- Bears are also eating garbage a lot more now – is it because there are less berries?
- Cougars are also coming in closer, cougars and bears that never used to be in our community are there and puts the whole community at a standstill like a lock down everyone stays inside
- The cougars and bears are coming from Riding Mountain – too many people and human activity there they're coming in closer to us (Keeseekowenin)
- Deer taste differently now and they are (deer) getting sick
- If the water is low and stagnant - the fish is mushy and foul tasting
- Noticing rabbits/**wapos** are leaving certain areas, now are sick and tumors are now seen when harvested
- Animals used to go to the marsh (Near Brokenhead) for **weekay** (Senenca Root) now they go elsewhere
- Hardly see porcupine anymore
- Bears/makwa are coming into communities - not enough food for them in bush
- Otters are coming back (Swan Lake) someone trapped by accident
- Martins and fishers are moving south from the north
- Rabbits not turning white - corresponding with snow fall
- We don't see muskrats in Brokenhead - there were a lot of muskrat, now not so much



- In Swan Lake the lake is now silty – turtles are getting stuck in the silty clay
- Frog calls are changing – different from the past
- “Canary in the coal mine” - Frogs ie. Being indicators of the environment.

Animal activities in the spring

- Gophers whistle before it rain – they warn us
- Spring is when animals start to thaw and wake up (as in snakes, frogs, turtles, and insects)
- Gophers; Flies; Cougar; Blooming/Bursting (as in flowers during the spring time)
- Animals wake up/ come out of hibernation
- Birds sing in the spring, birds lay eggs
- Sucker fish spawn
- Fish return to their environment and lay eggs
- Snakes come out and travel
- Snakes shedding their skin is a renewal just like spring

Human activities in the spring

- We hold spring feasts every year (one feast every season)
- Grandparents used to tell children “Don’t climb trees in the spring time because they are mating – they will hurt you”
- Don’t pick medicines in the spring
- Paved roads were called “black snakes” – the ground below the pavement is thawing and rising; the water below it rises and comes up through – causes potholes breaking roads
- It’s too cold in the spring to garden and fall comes too quickly – it impacts how much we can grow and to what extent and if you don’t pay attention you can lose it to frost early now



Allergy season

- The spring used to be allergy season, but now my partner has their allergies in June. The spring allergy season seems to shift all the way into summer.

Other

- Sandy Bay - The marsh is a filter
- Meadow larks are not in the area (Sandy Bay)

Summer Discussion Notes and Anecdotes

Weather and seasonal changes

- The sun will be shining and suddenly the thunderstorms will come with no warning.
- Warm fronts and cold front meeting which are causing thunder and snow at the same time
- Electrical storms are happening with no noise. Lightning is flashing with no sounds coming from thunder.
- In the prairies you can see mirages or heat waves
- Since being placed on reserves, people feel stuck and cannot follow the seasonal rounds. Problematic when storms come (stuck on reserve). Reserves are not adapting to climate change.
- Storms are prevalent – few houses have basements when there is extreme weather such as storms and tornados. People aren’t supposed to take pictures of lighting (omen?). The grandfathers come out at night. We don’t respect the thunder and lightning. In the past we could adapt and now its urgent/right now.

- There is a type of wind near Regina and they are moving here. Gusts of wind? Unsure of the proper term in English. They are dust devils.
- There was a storm June 14/19 leaving people with little notice. The little birds cannot read the weather. One way of watching the weather is to observe the ants as they can feel the pressure the most.
- Rained out / lightning strikes – O'nchineh-wak - refering to pow wow at Ebb n Flow FN summer 2019
- Our bodies are impacted by being indoors more; getting depressed
- The sun burns way hotter now, you don't have to be outside long to get burnt, which means kids are spending a lot more time inside (or else they can get heat stroke or sick from the heat and A/C – or they just get really dark (haha).

Animal behaviors changing

- It's hard to read the messages the animals are giving us – but you can read the ants.
- The animals are mating late. Some animals are waiting for summer to mate. Now they are having their babies too late in the season. Dogs in the community are having puppies too late in the fall. People are finding puppies in the ditch
- Animals are not scared of humans. For example, there are deer in the city and someone had a fox come sit on their porch and look at the people inside the home.
- Beavers journeying further to establish homes
- Bees making hives in cracks in the ground
- The woodticks come out in the summer
- Gophers (apparently no word in Ojibway?) are making a comeback
- Summers are dryer – affects mosquitos and bees
- Skunks collect acorns when they are green (they are preparing for winter). Acorns are falling too soon and are being rejected by skunks/chikak). Skunks burry acorns for the little animals.
- Squirrels are eating mushrooms that make them high and you can see them shake.
- Animals aren't afraid of humans like they used to be – seen a deer one time and it ran up to us almost like it was a puppy and wanted to be hand fed it seemed



Concept of Ceremonies being affected by climate change

- Powwows are getting rained out a lot now – way more rain than usual causing them to be rained out or moved indoors – they used to say the grass dancers were the first ones to flatten the grass in the arbour for the other dancers – that's something that could be lost if we keep having indoor powwows
- Rain is also impacting ceremonies (same thing – getting rained out)
- Concept of climate change impacting Infrastructure and Transportation
- Tornadoes are happening now; also wind is coming in all directions now
- Roads get washed out

Changes to plants, medicines, trees, and land

- Farmers are polluting the lands
- Oak trees have fungus making the tree sick. David got a quote to see how much to treat the oak tree and the company quoted \$4700.00.
- People are scared to use the medicines – unsure of if they are contaminated and not able to help people
- In peoples gardens the potatoes are smaller – lack of moisture



- Soil has changed
- They are cutting down all the trees. Will people eat dollars in the future?
- Everything has a purpose – bees, dandelions and strawberries (cleansing).
- People used to eat bulrushes used like flour.
- You cannot eat snowberries when white – poisonous
- Rosehips are animal food. The group provided a word that translates to “gives an itchy bum” because of the seeds.
- Wild Columbine – medicine for digestive system
- People pick choke cherries
- Climate change is changing how we collect medicine.
- Ash Tree – men’s medicine (like Viagra)
- We’re getting diseases we never had – deer ticks, lyme disease, west nile, and so on
- In some areas new bodies of water are forming – the ground is moist now in a lot of areas but where there new little ponds its changing how we navigate
- The shores are getting washed out or breaking off
- Water is getting higher in some places while in others it’s drying up -especially the creeks and rivers it seems

Fall Discussion Notes and Anecdotes

Medicines, human health

- We have to change ceremonial protocols due to people having illnesses like diabetes
- Frozen Cranberries can be used for headaches
- Peoples cold are lasting longer and more severe
- One Knowledge holder’s grandma lived to 120 eating wild food and living off land
- Cedar tea would be prepped – strong medicine is prepared in the fall
- Sage tea
- Labrador tea – lots in Keeseekoowenin, in Riding Mountain Park
- November leaves fall – Binaakwe (leaves letting go)

Animals

- The water gets so low. This seems to affect the ducks and geese. It creates botulism
- Female geese are the leaders and take turns
- Geese mate for life and are loyal (the women in the group want the young people to learn about values of the animal & wished men could be loyal)
- Salamanders on the move – kis in ia shuk / Zhiginaagishuk
- Snakes are starting to gather together in the fall
- Muskrats/**Wazhusk** build their lodges high
- If there is an abundance of berries it means a hard winter is coming
- Bees make hives higher on tree – hard winter
- Elk and moose start to call/mate - Knowledge holder say calls are coming later now

- Bird are confused – robins/**Opichiw** not migrating
- Spiritual snakes hide in trees – some are bad snakes – **muchi – ki - na – pik**

Wild food

- There is something wrong with the animals. This is the season to smoke meat, but after we cook or smoke the meat we notice something is not right in how the meat tastes. The meat is harder and more firm. We notice this in ducks and geese.
- We would go around collecting eggs. The insides are supposed to be lighter yellow, now they are dark yellow. The eggs are smaller too. After a bad experience, people don't try and pick them anymore
- This is the time of year we used to hear partridges. Now we don't hear them anymore. They seem to be getting dumber too. They don't move off the road. The birds seem suicidal.
- Meat such as deer is not as good as before.
- People used to make pemmican – not much anymore. One Knowledge holder sees the young people trying to make it again



Transportation

- Highways dig out the ditches and cut the grass. They don't seem to consider the little animals.
- People burn the grass and the swamps on the reserve. Now all the dry grass is all gone for those animals for the winter.

Behavioural changes

- In the fall, the animals go dormant, but humans increase their activity to prepare for winter (old ways – before conveniences like electricity, running water and heat)
- Fall is a time to gather and store medicine and food – animals and humans
- Being thankful around harvest time is a lost value
- We need to connect – **an kwa misik**
- We need to fix now, before we leave this earth. Life is going to be hard
- There are people in the communities who do not want to talk about our ways of life. Residential schools instilled fear into people

Length of the fall season

- Really short now – used to be a lot longer now it almost seems like nature is trying to skip the fall season and jump into winter; weather was much more mild
- There are three moons per phase.

Trees in the fall

- Leaves are falling differently / Tamaracks change colour

Weather

- (Fall) It snowed and thundered at the same time – not normal
- Red sunrise – indicator of fair weather
- With everything changing there is a great need to keep records
- Trappers and hunters would read the way their dog sits/lays - indicator of the weather (group did not get specific to what meaning).



Winter Discussion Notes and Anecdotes

Animals

- The animal hides have different thickness depending on how cold the climate is
- Bear grease changes depending on the weather. Seasonal use of different grease. The old people used to know what kind of winter it would be depending on the type of fat the bears were making that year
- You can look at the winter food to see how fat the birds will be
- The rabbits are moving much faster
- The animals used to be a lot smarter
- There are small trees the rabbits eat and it makes their meat taste bad, but they will eat more of it if their other food is gone
- You don't see birds gathered on powerlines like they used to be. Used to be able to see this for miles.
- The changes animals are going through tell us a story as the climate warms. The animals are not scared anymore of humans. Humans need more understanding of the communication of animals and birds. Humans can study more. Animals are attacking humans and other animals. Why is this?
- Partridges stay in trees until nighttime (don't the hide until daytime??) to hide from predators. You can see holes where the partridge is hiding in the snow because the heat from the partridge leaves holes in the snow. If you see tracks leading up to the hole the partridge is there hiding. If there are tracks leading up to the hole and you see wing marking on the snow (surrounding the hole where the heat was escaping) then the partridge is not there anymore.
- Starting to notice that geese are staying behind
- One group member saw a fox frozen with a fish in its mouth

Weather and snow

- Snow is complex. Elders a long time ago were able to read the snow – hidden messages. That art (reading snow) is lost but snow has changed so much.
- In the springtime sometimes you get a crust of snow that the little children can run and play on. Mikamiingwan(k): crusty snow.
- People remember not too long ago there was a thunderstorm in the winter
- There used to be a good snowfall, but now there is less snow overall. There is less snow now by December. The first snowfall used to be solid. The second wasn't, you couldn't pack it.
- Collecting water – people would cut the hard-frozen snow to get to the bottom layers to get to the snow crystals which was a water source
- Starting to see tornadoes of snow.

Preparing things for winter

- If there is a lot of mud on the **Amik** (beaver) house means cold winter also with the muskrat large house cold winter.
- In the fall you have to think about where you will think the animals will be in the winter. All the eaves are down so this is the time of year to go spotting. Doozhigaa: preparing/ getting ready
- People used to prepare homemade pitch lamps, coil lamps, oil lamps, or candles. We need to prepare with these things now again.
- People always need pails for everything/winter storage, such as collecting lard/tender flakes. Mason jars also come in handy for collecting items.
- Canning was a survival skill for the winter. So was making dry meat or pemmican. People used to stock up on flour (huge sacks of flour).
- People don't share anymore – lost value

Economy

- The fishermen have quotas. They are losing their quotas because of the lakes dying
- Winter activities
- Winter activities - Hockey, snaring, trapping, snowshoeing
- People used to make dream catchers and when the wood cracked meant it served its purpose
- Crafting, beading, sewing happened in the winter – too cold to go outside

Story telling

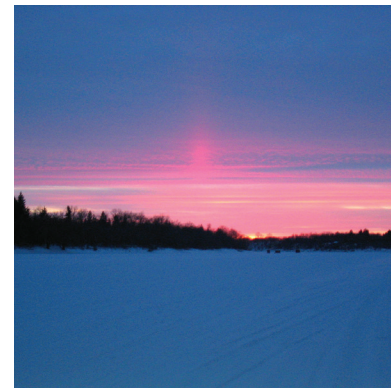
- The quiet time that happens when the snow is on the ground. The beings are sleeping. This is the time we tell stories about these spirit beings. This is teaching time. There always had to be a fire. Bizindan bezaak: listen to the silence it tells you a lot
- Storytelling/**at sco kay** – reason why only story telling in the winter – so the snakes and insects won't hear our secrets. Now we tell summers any time – animals know our secrets now.

Meat being different

- Meat spoils quicker than it used to
- The fat is different
- The meat is darker

Changes in ice thickness/thinness

- There is less ice these days. This makes ice fishing not as safe anymore. This means that people can't ice fish as much as they used to.
- The beaver ponds are not frozen enough for setting traps. If you go to beaver dams in the snow they look ready, but the ice in these areas are not safe
- Beavers are getting trapped in dams and are starving to death. The muskrats are affected too because their house is almost the same as the beaver.
- This happens when there is not enough water



Teaching of sundogs

- When you see sundogs cover up everything including your ears and face.

Concept of the tree cracking noise in the winter

- Telling us it's cold. The tree is living and communicating. The tree is frozen to the point it cracks. Can't hear this much anymore.

Concept of houses cracking in the winter

- Houses are cracking in the winter which affects infrastructure

Winter medicines

- Winter berry – medicines and food
- Red Willow – used for tobacco and an antiseptic which is activated by saliva
- Mushkeg tea – pick at anytime
- Willow used to take away negative energy – not it is correlated with whipping in residential school
- Winter medicine – green berries help with colds, balsam – colds, burns, pain
- People would go outside and dig some up in the snow – Mint

Concept of no word for goodbye (assuming winter is the “end of the cycle”)

- See you later

NOTES

[illegible]

NOTES

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