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**SPOTLIGHT**

# The Turtles of Turtle Island

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# The Turtles of Turtle Island

## Origin Story:

### What Is Turtle Island?

Some Indigenous peoples refer to North America as Turtle Island, others refer to the whole world as Turtle Island. This name originated from one of many Indigenous creation stories and beliefs. Due to the different dialects and Indigenous communities, oftentimes the creation stories differ depending on of who tells it. It is important to be mindful of the different stories due to different spiritual or cultural beliefs of each community. This creation story is most emphasized due to its symbolism of life and Earth, and because it reminds us of the relationship between ourselves and the animals and plants that are all around us. Since time immemorial Indigenous peoples have been practicing conservation which includes sustainable hunting and harvesting. There was a great amount of time spent out on the land that contributes to a balanced biodiversity which instills a greater relationship between the land and Indigenous peoples.

As important and reconciling as it is to share and discuss creation stories, we must do so in a respectful way where we are not retelling the story. These stories can be heard by elders and knowledge keepers and can be a teaching for many. Incorporating these teachings into science helps us to understand with an Indigenous lens, how we can protect and care for those around us. Our relationship with the land cannot heal until we are willing to hear its stories.

### Turtles of Turtle Island

Turtles are good signifiers of healthy wetlands, but our Ontario turtles have been, and still are, at risk. The turtle species in Ontario at-risk are: the Blanding's turtle, snapping turtle, wood turtle, spotted turtle, stinkpot turtle, northern map turtle, and spiny softshell turtle. The biggest threat to turtle species has been the increase of human development, which depletes and pollutes wetland habitats. Many people are not aware that wetlands purify water in watersheds and are also a shelter for many turtle species. They play an important role in the watersheds as they feed on insects and other contaminants from the water, keeping it healthy for themselves and other wetland species in the area.

Although turtles have a role in protecting the wetland ecosystems, they need protection from other wildlife, road mortality, habitat loss, and contamination of those wetlands – some of the dangers which cause them to be at-risk. Female turtles often nest their eggs between June and July, in sand or gravel surfaces where it is warm, to allow the eggs to incubate and develop efficiently. Most turtles lay at least thirty to fifty eggs at a time and need fifty to sixty days to develop, which is a lot of time for potential dangers to occur.

The Lands Department in Magnetawan First Nation, just north of Toronto, works on numerous projects including snake and turtle conservation, roadway and wetland monitoring, and many more. They are especially proud of their turtle incubation program, which allows a greater chance of survival for turtle hatchlings (baby turtles). The incubation program allows them to bring in turtle eggs that are found in potentially dangerous areas and hold them in incubation machines until they hatch. They are then given a couple days to make sure there are no abnormalities with the hatchlings.



# Time for **GENACTION!**

## Try This at Home: **Save Our Turtle Species**

Turtles need your help to protect them from dangers such as road mortality, which is often caused by habitat fragmentation. Habitat fragmentation happens when a habitat has roads built on it, forcing wildlife to make dangerous road crossings to access parts of their habitat. Turtles are always traveling from habitat to habitat to mate, nest, and eat. This often means they have to cross over roads to get to their destination.

- Create an eco-passage for our turtles to safely travel under or above the roads. Road signage is also important to inform drivers to be aware of turtle crossings.
- Include eco-fences to ensure turtles stay on a safe path, and create protected nesting sites near known turtle habitats to prevent them from having to cross over roads.
- Use supplies like paper, cardboard and other materials you may have at home to create a safe journey for our turtle species!

## Climate Action: **Turtle Conservation**

A couple ways in which we can contribute to helping our turtle species include learning about local conservation efforts, reaching out to local community lands departments, and learning about ways in which we can reduce road mortality.

Turtle conservation organizations aim to protect and care for turtle species. Turtles are important to the biodiversity of an ecosystem, particularly wetlands, which are a big part of our water filtration systems. These organizations have volunteer positions available and hotlines open to contact if you come across a turtle in need or a nesting site that may be in danger.

Many lands departments are knowledgeable broadly about animal species and ecosystems in their surrounding areas. Reaching out can allow an opportunity to become involved in your community's land department projects.

Road mortality is one of the highest causes of the decline in turtle species, due to turtles attempting to cross and creating nesting sites dangerously close to busy roads. Ways in which we can keep turtles away from the road include building fencing and underground passages for them; road signage for turtle crossings; building nesting structures away from roads; continued monitoring of nesting sites; and being mindful of turtle sites when developing an area.



# Climate Change

## Past, Present, and Future

Earth is the only planet in the solar system known to support life. What makes our home so special? Earth has an atmosphere, a layer of gases between our planet and space. Some of these gases, like carbon dioxide, are called **greenhouse gases**. They are crucial parts of our atmosphere; they trap in the heat of the sun, similar to how heat is trapped in a greenhouse, or in a car on a hot day. This process, called the **greenhouse effect**, keeps Earth's temperature warm enough for living things to thrive.

The sun's rays hit our round, tilted planet unevenly. This uneven heating of Earth's surface leads to differences in temperature, which drives weather patterns. We call the patterns in temperature and weather over long periods of time **climate**. Different parts of the world have vastly different climates; it depends on how much heat they receive, as well as what landscape features are nearby. Water, mountains, ocean currents, and forests all impact our climate. In turn, living things around the world have adapted to the climate they live in.

Something, though, is changing. Over the past two hundred years, humans have been burning fossil fuels, such as coal and oil, to make energy to power our daily lives. Fossil fuels are made from decomposed plant matter and microscopic life millions of years old. This matter is full of carbon, and, burning it releases, or emits, billions of tonnes of **carbon dioxide** gas into the atmosphere every year. When too much carbon dioxide is emitted, the delicate balance of greenhouse gases maintaining

Earth's climate is upset. More and more heat is trapped, causing the planet to warm. Weather patterns change, water levels rise, storms get worse.

Climate has changed many times throughout Earth's history, from ice ages to periods much hotter than today. So why is this time any different? Scientists agree on two things. One, temperatures are rising faster than they ever have in documented climate history. Two, this climate change is driven by human activities, due primarily to greenhouse gas emissions. Climate change is already impacting people's ways of life all over the world. Powerful storms, droughts, forest fires, and floods are threatening people's access to food, water, and safe homes.

The most important step we can take to prevent serious climate change is to reduce greenhouse gas emissions. Incredibly brave and caring people around the world are finding new ways to reduce emissions and make our communities climate resilient every single day. And you can join them! These Science Spotlights are here to help us learn more about climate change and how you can take action.

## Our Commitment to the Decolonization of Science

Institutions of GenAction initiative respect and affirm the inherent and Treaty Rights of all Indigenous Peoples across what we now know as Canada. We give thanks to the Indigenous Peoples who care for this land since time immemorial and pay respect to their traditions and ways of knowing. We acknowledge their many contributions to innovations in Science, Technology, Engineering, and Mathematics, past and present, and are committed to deepening engagement and collaborating with Indigenous Peoples as partners in order to advance truth and reconciliation and the decolonization of science.

