

SCIENCE SPOTLIGHT



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(I CAME TO KNOW)

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Origin Story: **BUILDING THE RELATIONSHIPS**

The relationship between The Exploration Place and Lheidli T'enneh First Nation (*Lheidli – the confluence of the two rivers; T'enneh – the people of*) has been long forged through the friendships that have been formed. Over three decades of understanding and trusting one another has brought these relationships to where they are today. The approach to building the relationship is as unique as the relationship itself; The Exploration Place learning, understanding, and respecting the Lheidli T'enneh protocols and customs and accepting their Indigenous ways of knowing. The Lheidli T'enneh have placed their trust in The Exploration Place to watch over the shreds of their material culture that remain. Little survived against time and the purge of Indigenous artifacts as the church expanded into the Lheidli T'enneh territory. As a true ally in reconciliation, The Exploration Place has been key in the reconciliation movement, highlighted by their commitment to working in partnership with the Lheidli T'enneh.

Lheidli T'enneh Meaning

The Dakelh (*meaning people who travel by water*) creation story follows Stas (trickster), whose touch transforms anything into something magical. One such item is his water bladder, which once filled from the great lake that Dakelh people lived on for his journey across the Dakelh territory. The bladder became endless with the amount of water it carried. As Stas began his journey, a small leak occurred in the water bladder, creating the Nechako River in his path. When he stopped to rest, the waters continued to leak and formed the lakes across the Dakelh peoples' territories. This continued until Stas reached the Lhatakoh (Fraser) River in the area known by the Dakelh people as the Lheidli T'enneh territory.

Waning Waters

As Dakelh people, the rivers that run through their territory are just as important to them as the blood that runs through their veins. They knew exactly when to fish, hunt, and harvest berries and building materials based on the changing seasons. One of the most important times for the Dakelh people to know was when the salmon would arrive, as they are an essential food source to survive the long and harsh winter months.

Salmon is a staple food amongst the Lheidli T'enneh territory, as it is a main economic generator pre- and post-contact. They would smoke their salmon to preserve it through the long and harsh BC winters. It was traded with other First Nations who did not have access to salmon, providing the Lheidli T'enneh with tools and furs not found within their territory.

With less rainfall and snowfall, and the much warmer temperatures, the melting cycle of the mountain ice packs is shifting earlier than what is normal. The rivers that the salmon once swam up have changed over the years. What was once a powerful and swift river cutting through the bedrock below now has the lowest water levels ever observed, with the bedrock exposed to the air above. Where the Lheidli T'enneh people would once fish is now dry land, many feet from the water's edge.

An exceptionally dry year throughout the Lheidli T'enneh territory has led to the level 3 drought we witnessed in both the Nechako and Lhatakoh, which has the potential to impact the ecosystem.¹ 2018 had seen the lowest water levels in the Lhatakoh, whereas in June of 2022 the same river was placed on a flood watch due to the snowpacks melting earlier and more rapidly than usual. With the changing ecological stressors in the rivers, struggling salmon populations remain low in numbers without any signs of strong improvements.



COLLECTIVE EFFORT FOR WATER AND SALMON RESTORATION

We can help restore the waters to their former glory by living in balance with our ecosystem. Lheidli T'enneh fisheries team have been actively restoring the river to its natural state by planting indigenous species along the Tsalakoh (Beaver Paw River) which is known as "Mud River". Planting indigenous species along the river's edge will help slow the erosion of the riverbanks and lower the amount of sediment that flows into the Tsalakoh. Allowing the rivers to recover from the previous erosion will change the river's ecosystem, as the sediment levels in the river lower and the pH balance could be restored to an optimal level for salmon who utilize the rivers for swimming or spawning. To achieve the resurgence of the fish stocks of the Lhatakoh, a collaborative approach is needed by all people who live along the Lhatakoh river.

With the river's water levels being at all time low, the Xwisten Nation has been working on an emergency fish salvage, where they are carrying salmon up the salmon ladder. They are also focusing on ways to increase the water flow into the salmon ladders to allow fish to pass through them to reach their spawning grounds and continue their life cycle. The Nations upriver of the salmon ladder also rely on the fish spawning to harvest the salmon as well. The actions of the Xwisten Nation are ensuring that many Nations upriver can continue to harvest salmon. By understanding how our actions impact the water, we can reduce the harm that we cause to our ecosystems. If we all make changes in our daily lives, no matter how small, it can have a huge impact on our future. Our actions today will return our water systems to the greatness of yesterday.

Try This at Home: LEARN STORIES OF THE LAND YOU ARE ON

Learn which Nation's territory you are on, learn of their history and stories. Understand how that Nation had lived in balance with the environment for thousands of years and find ways to apply those ideas to your life. See the stories shared by your host Nation as a way of understanding the world around you. Realize that everything in the Natural world is alive - from the trees that give us the air we breathe, to the rivers and lakes that give us the water we drink. If we treat trees, rivers, and lakes as living entities, it will encourage us to ensure they stay healthy, which in return, will give us clean air and pure water.



Climate Action: SAVE WATER

We all have the power to help reduce the amount of water we waste daily. Here are a few actions that you can implement in your daily lives:

- Add a weighted plastic bottle to your toilet tank to reduce the amount of water used for flushing.
- Take shorter showers or even try installing water-saving shower heads or flow restrictors that can lower your water use to about three gallons a minute (compared to the average of five to ten gallons!).
- Only use the dishwasher and washing machine when you have full loads to maximize the use of water.
- Check for any leaky faucets in your house, even small drops of water add up to a lot of waste overtime.
- Water your lawn during the cool parts of the day (early morning is best to prevent fungus).
- Use a broom to clear walkways, sidewalks, and driveways instead of the garden hose.

No matter how small the change is, every action adds up to make a bigger impact.

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.

