Climate change is increasingly affecting northern boreal landscapes. This change is apparent in altered weather patterns that are threatening the resilience and survival of many species, including woodland caribou (*Rangifer tarandus caribou*) in Canada and reindeer (*Rangifer tarandus tarandus*) in Sweden. While there has been considerable research done on caribou and reindeer, there is also a vast pool of traditional knowledge within Indigenous communities, particularly among the Elders. Elders are not defined by age or gender, but by the respect they have earned in their communities. Elders are deeply committed to sharing their knowledge, providing guidance and teaching others to respect the natural world and to learn, listen and feel the rhythms of the elements and seasons.
Through oral tradition, the Elders of the Cree people in Canada and the Sami in Sweden have been maintaining historical records of changing weather patterns, landscape alterations and how these variations have affected local reindeer and caribou herds for generations. In Canada, observations from Indigenous hunters suggest changes in vegetation growth, insect life cycles and fish migration. In addition, while some species are being lost, others are migrating into territory they have never occupied before. In Sweden, reindeer herders have observed an increased variability in weather resulting in changes in snow and snow crust conditions, weak ice and open streams which affect migration routes. They also noticed an increase in the abundance of insects that can affect the health of their animals. “One of the challenges for the future for us is climate change since the reindeer are sensitive to changes in temperature, snow and wind” says Anna-Maria Fjellström, Sami indigenous reindeer herder.

At the same time, many indigenous youth are not as connected to the land as their Elders once were and struggle to stay in tune with their culture in a rapidly-changing world that prioritizes technology over tradition. Indigenous languages are at risk in both countries, with Sami and Cree disappearing with the passing of successive generations. As that knowledge disappears, so does a rich multigenerational history of the land and its seasons. “When we speak in our language, we speak with what we truly know and how our ancestors have passed on the knowledge to us and how we still use it,” said Clifford Carrière, Cumberland House Cree Nation Elder, “You lose quite a bit of that when you relate it back to English. You’re losing a lot when you lose a language. You lose that identity and culture.”

Finding a solution

Starting in 2009, students in the Prince Albert (Canada) and Vilhelmina (Sweden) Model Forests participated in a research project called “Learning from our Elders”. Through this project, students worked with their respective Elders to gather knowledge about woodland caribou and reindeer seasonal migration routes, calving grounds, grazing areas, and behavioural changes they have observed over time. This information is important to help preserve and adapt their way of life in a changing climate and to record Elders’ knowledge before it is too late.

For Naomi Carrière, Aboriginal researcher and trainer, “It’s really important to have youth and Elders interacting in their communities and through activities that they’re most comfortable doing, like fishing and trapping, and reindeer husbandry.” This is also important because knowledge is more easily shared with others who are not one’s own parents or children.
Results and impacts

More than 10 Cree communities, two Sami communities, and close to 200 people have been involved with the project. The research has had a significant social impact, including reconnecting students with the traditional languages and cultures of their Elders. “It was challenging in the beginning because I’m not a fluent Cree speaker,” said Mika Carrière, a youth participant in the project. “[However] there are resourceful people in our community that I know are willing to help me learn, and they want to see youth continue to preserve their language, their culture and their beliefs.”

The program’s inclusion of traditional language has also done much to bring together other members of the community in support of the project, and united the Sami and Cree peoples. Elders from both communities concurred on the experienced sadness of losing words as well as the language itself. For them, changes in traditional practices and community social structures has reduced opportunities to share their knowledge across members of the community, including to the younger generations. However, through the project, some of the Elders have expressed that they feel they have been given a voice and a renewed sense of purpose in their role in the community.

Throughout the four years of the project, the youth have been touched by the deaths of many of their Elders, bearing witness to the gradual erosion of this vast library of knowledge and experience. According to Susan Carr, General Manager, Prince Albert Model Forest, it has been an emotional journey instilling the sense of urgency to connect youth with the Elders.

In a message to her Elders, Carrière said, “Whatever you tell us, no matter what it is, it’s of value, it has meaning. We want to do something with what you’re telling us, and we’ll continue to build that relationship with you, we’ll continue to come back and visit you.”

The next step

Participants in the project are producing a learning module that will be shared with universities across the circumboreal region and could be used as a tool to help land use planners understand the necessity and value of using traditional knowledge.

For further information

• International Model Forest Network: imfn.net
• Prince Albert Model Forest: pamodelforest.sk.ca
• Vilhelmina Model Forest: modelforest.se
• Video:youtu.be/BFnsgEEMGzc

The International Model Forest Network brings people together to test and apply innovative approaches to the sustainable management and use of the world’s landscapes and natural resources.