

GÚLÚ AGOT'I T'Á KĚGOTSÚH?A GHA *LEARNING ABOUT CHANGES*

Health Risk and Climate Change in Sahtúot'İnę Stories:
Envisioning Adaptations with Elders and Youth

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LEARNING ABOUT CHANGES

***Health Risk and Climate Change in Sahtúot'íne Stories:
Envisioning Adaptations with Elders and Youth in Délíne, NWT***

Final Report

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Report Summary

The Déline First Nation is a Dene community of about 550 on the shores of Sahtú, Great Bear Lake. Our name for ourselves reflects our relationship with the lake – Sahtúot’íne. Guided by the words of the Déline prophet known as ʔehtséó Ayha, the community has chosen a positive path of renewal and governance following a long history of social and climate change that started with the Port Radium radium-uranium mine on the eastern shore of Great Bear Lake during 1932-1960, and climate change that has been experienced with growing rapidity since 1960. Recent research shows that an area encompassing Sahtú has experienced the largest warming over the past 50 years of any location in the world. Gyakum et al argue that the community of Deline is at “ground zero” of climate change. Moreover, the large size of Sahtú interacts with climate change in significant ways (Gyakum et al 2009). Now close to achieving self-government, the Deline First Nation has taken a deliberate and systematic approach to understanding and planning for the impacts of climate change, especially with respect to impacts on health and well-being. During 2009-2010, the community undertook a major Phase I health-climate change study entitled *Envisioning Adaptations with Elders and Youth* to explore how traditions carried in Dene stories shared between elders and youth are used to identify, analyze and address health risk in the context of climate change.

In the early part of the 1900s, ʔehtséó Ayha warned of drastic environmental and social changes to come in the future, and the community continues to monitor the truth of those predictions. This research explored the renewal of storytelling practices in Déline with a focus on elder-youth exchanges about health and climate change. We addressed *three questions*:

1. How are stories and Dene language use adapted within *elder-youth exchanges* as a tool for understanding and addressing health risks arising from climate change?
2. What are the ways in which *girls/women and boys/men* share stories across generations related to health and climate change?
3. What is the role of *new media* in adapting the stories about health and climate to enhance resilience and adaptiveness?

The goal was to establish the foundation for health programs that proactively address climate change and reflect the holism of Dene stories, more effectively support youth-elder interactions, account for differences in the needs and perspectives young Dene women and men, and thereby strengthen the capacity of the community to address an uncertain future.

The Délıne *Learning About Changes* program in 2009-2010 was just a beginning. The program opened up a space for elders, adults and youth to start a dialogue about the nature of changes being experienced on the land, and the possible health risks that are coming with these changes. Living in an area with one of the most extreme climates in the world in terms of differences between summer and winter temperatures, the Sahtúot’íne have developed a culture that is highly adaptable. For this reason, our stories, language and survival skills are our greatest strength for moving into a changing future. We are finding ways not only to document the stories, but also to keep them alive in the community, in the school and especially on the land so that they remain meaningful to present and future generations. Our next challenge will be to find new ways to understand stories as policy informing self-government, wildlife practices and health programs as a strong foundation for sustaining who we are as Dene.

Máhsı!

This program would not have been possible without the strong support of the elders and harvesters who have been observing the effects of climate change in their traditional territory, and understand well the importance of stories. Elder Leon Modeste was especially generous in sharing his stories and knowledge through the two storytelling cycles at the school. Youth participants are equally to be thanked for their enthusiasm, creativity and great respect in seeking ways to learn the stories and understand their relevance in the present. The contributions of Sahtúot'ı́nē participants have given rise to a treasure house of stories that will help to guide and strengthen present and future generations.

Máhsı cho to our advisors, Walter Bayha and Morris Neyelle, for their wisdom, guidance and leadership in communicating about the program in the community and beyond. Pauline Roche and Peter Bayha of the Délı́nē First Nation office provided crucial administrative support. Contributions by Orlena Modeste were critical to the success of the mapping program. Our partnership with the Délı́nē Renewable Resources Council (DRRC) was strengthened through the program and with the leadership of Paul Modeste; we're privileged to be able to continue our collaboration with the DRRC on climate change issues in 2010-2011. Trent Waterhouse and the teaching staff at ʔehtséo Ayha School made exceptional efforts to support the involvement and learning of students in the school activities – not an easy task given the demands of the standard curriculum. Barbara Cameron of the Prince of Wales Northern Heritage Centre, George Cleary of Indian and Northern Affairs Canada, and Sahtu Region MLA Norman Yakeleya have all been strong champions of the Délı́nē Knowledge Project's research, inspiring us to continue even when the going was difficult.

We were extremely fortunate in developing a strong network of long term and new relationships with a diverse group of resource people who are committed to research and technical tools that benefit the community. Ken Caine and Keren Rice generously made time to discuss issues and challenges in our projects throughout the year. Keren made an important contribution in facilitating the University of Toronto Study Tour, where we were able to reflect upon our experiences with some of the leading scholars in Aboriginal Studies. Ruthann Gal made the extraordinary gesture of making time for our project in the final weeks before her retirement. Her passion for empowering the community to make its own maps is truly remarkable. Mike West volunteered countless hours to collaborative database development for our Language Toolbox. Since her first introduction to Délı́nē in 2008, Dawn Ostrem has remained dedicated to maintaining and developing mentoring relationships with students here, including facilitation of a summer internship for Mahalia Mackeinzo. Dawn and Robert Kershaw of the Centre for Digital Storytelling shared their knowledge and talents with students, and worked night and day to make the stories, and their young authors, shine. PhD students Sarah Gordon and Ingeborg Fink were remarkably dedicated in their patient efforts to develop relationships within the community and to understand how they could assist in exploring research questions of importance to the community. Their contributions to Délı́nē Knowledge Project activities have been invaluable.

Last but not least, the often thankless work of our community researchers and consultants bears special recognition. Edith Mackeinzo and Doris Taneton were the backbone of the program, ensuring that the needs and interests of the community were kept front and centre at all times. They made the Délı́nē Knowledge Project office into welcoming a gathering place for people who wanted to learn more about their stories and language. In leading the research, they maintained the highly professional practices that community members expect for work that is so vitally important to them. Edith and Doris were supported by their more experienced mentors who are truly artists in community research, including Jane Modeste, Fibbie Tatti, and Michael Neyelle.

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Health Risk and Climate Change in Sahtúot'íne Stories

Envisioning Adaptations with Elders and Youth in Délíne, NWT

1. Introduction

This research has focused on the evolving role of Sahtúot'íne stories in identifying, analyzing and addressing health risks in the context of climate change. The project explored traditional and contemporary narratives about safe travelling on the land, ways of surviving in changing or unpredictable ecological conditions, and ways that young Dene and elders interact to learn strategies for survival and good health. The linkages between narratives and experience were explored in relation to how young Dene learn in school and outside of school, within the community and on the land. We learned about the specific ways in which youth use Dene narratives as an adaptive tool. The interactions of elders and high school students, young pre and post-natal parents, and young trappers in exchanging stories and experiences were documented, along with ways that these narratives are shared at cross-community and cross-regional scales.

Since time immemorial, stories have been the vehicle for Dene historical knowledge. As many researchers have pointed out, oral history can be a detailed and stable source of baseline knowledge, at the same time providing tools for interpreting the present and planning for the future. The stories describe the skills and knowledge required to be safe while travelling on the land and maintain good health – including physical disciplines, healthy relationships and healthy eating practices. Climate change poses a new challenge for a society still rooted in oral culture. This project explored the ways in which the ancient stories are adapted so that they can meaningfully address changing practices required to maintain good health and prepare for future impacts of climate change.

The ways in which stories are used by elders and youth to identify, analyse and address climate change and associated health risks is not well understood. The starting research hypothesis for this program was that stories are effective tools for community-based monitoring of climate change and health impacts, for analyzing changing climate and health conditions, and for establishing and communicating effective community health adaptation strategies. The research documented the extent to which stories are themselves resilient, adaptive to change, and in creating a bond of communication among the generations for the community that possesses them. The hope was that the research would lead to community health programs that reflect the holism of Dene stories, more effectively support youth-elder interactions, and thereby strengthen community resilience and adaptive capacity – bridging past, present and an uncertain future.

1.1. *Community Background*

The Délíne First Nation is a Dene community of 550 on the shores of Sahtú, Great Bear Lake. Our name for ourselves reflects our relationship with the lake – Sahtúot'íne. Guided by the words of the Prophet Ayha, the community has chosen a positive path of renewal and governance following a long history of social and climate change that started with the Port Radium radium-uranium mine on the eastern shore of Great Bear Lake during 1932-1960. The Délíne First Nation is a beneficiary of the Sahtu Dene and Métis Comprehensive Land Claim Agreement. In 1999, Délíne embarked upon a collaborative program of multi-disciplinary research to document the environmental, health and socio-economic impacts of the mine, completed in 2005. The community has also undertaken a number of initiatives to renew their role

in governance and address both community and environmental well-being, including self-governance, integrated resource planning, protection of special cultural and ecological landscapes, and a strong healing program following recommendations from the Final Report of the Canada-Déline Uranium Table.

Research has been a strong foundation for community programs and initiatives. The Déline Knowledge Project (DKP) was established in 2006 through a partnership of the Déline First Nation, the Déline Renewable Resources Council (DRRC), and the University of Manitoba. The drawing by Dennis Kenny and Jonas Modeste on the cover of this report represents the vision for this project defined in community strategic planning sessions. The DKP has the dual purpose of researching the role of Dene traditional knowledge in governance and land stewardship, and building community capacity in Dene language, knowledge and land-based cultural practices. During 2006-2009, there were five components to the DKP program: An archive of oral histories that can serve as a baseline for understanding change and adaptation within the community; a traditional medicines project, *Plants for Life!*; a traditional knowledge study to explore the relationship between Dene and caribou; a three year training program in environmental monitoring, including scientific and traditional knowledge components and addressing community capacity to understand climate change; and a preliminary strategic planning process involving hunters and trappers, elders, and youth to understand the requirements for achieving sustainability in an era of climate change. The research to date has provided strong evidence that the people of Déline consider our relationship with the land to be a key aspect of our well-being and health.

It is arguably the strength of the Sahtúot'ine in our traditional land-based culture that renders us unusually vulnerable to climate change. According to 2008 figures from the NWT Bureau of Statistics, 77% of the community reported that half or more of the meat they consume is country food. In 2009, respondents reported that 49.4% hunted or fished, 14.2% trapped (a small increase from 2004), and 84% spoke their indigenous language. While showing a decline over a twenty year period, these figures are often higher than for many other indigenous communities in the NWT. The contrast with figures for the NWT as a whole is higher since it includes communities like Yellowknife, Hay River and Inuvik with high proportions of non-indigenous people.

Now elders, current harvesters and youth alike are looking to the future and questioning how this healthy way of life might be sustained when the ecological conditions for its existence have fundamentally changed. Climate change has been experienced with growing rapidity since 1960. Recent research shows that the largest warming has occurred at Great Bear Lake over the past 50 years of any location in the Northern Hemisphere. Gyakum et al argue that the community of Déline is at “ground zero” of climate change. Moreover, the large size of Great Bear Lake interacts with climate change in significant ways (Gyakum et al 2009). This particularly affects Sahtúot'ine during the winter months, which are a crucial time for subsistence harvesting and trapping. Community members have identified six health risk concerns related to climate change, including reduced fall and spring harvesting times, increasingly unpredictable weather and travel conditions on ice and water; a rapid decline in the Bluenose barren-ground caribou herds that are a core source of subsistence; diseases and epidemics in both humans and animals; impacts on health associated with traditional foods and cultural practices; and impacts on transmission of traditional knowledge about Dene health and well-being, given the disruption of traditional land-based practices.

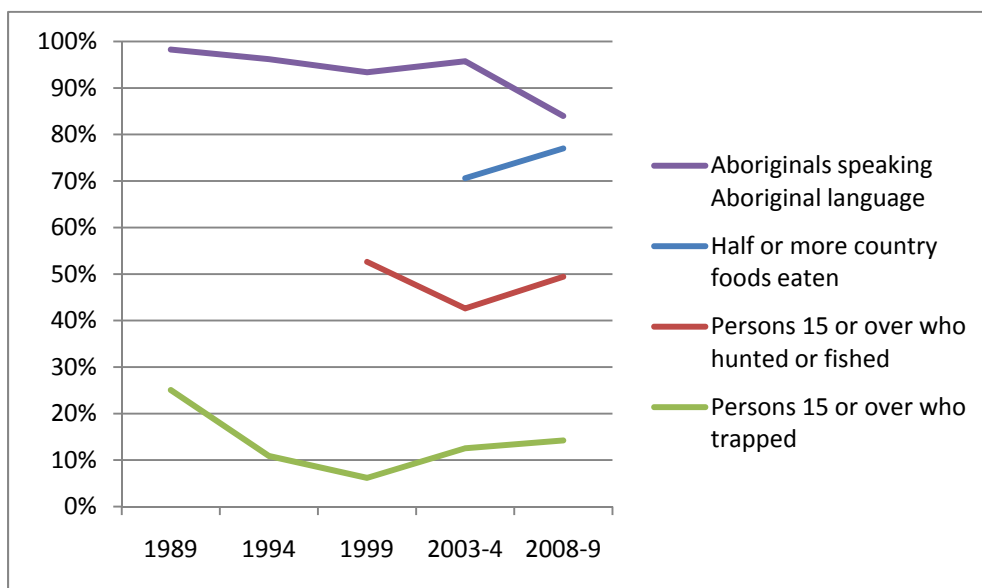


Figure 1: Délı̨ne Way of Life Indicators (NWT Bureau of Statistics)

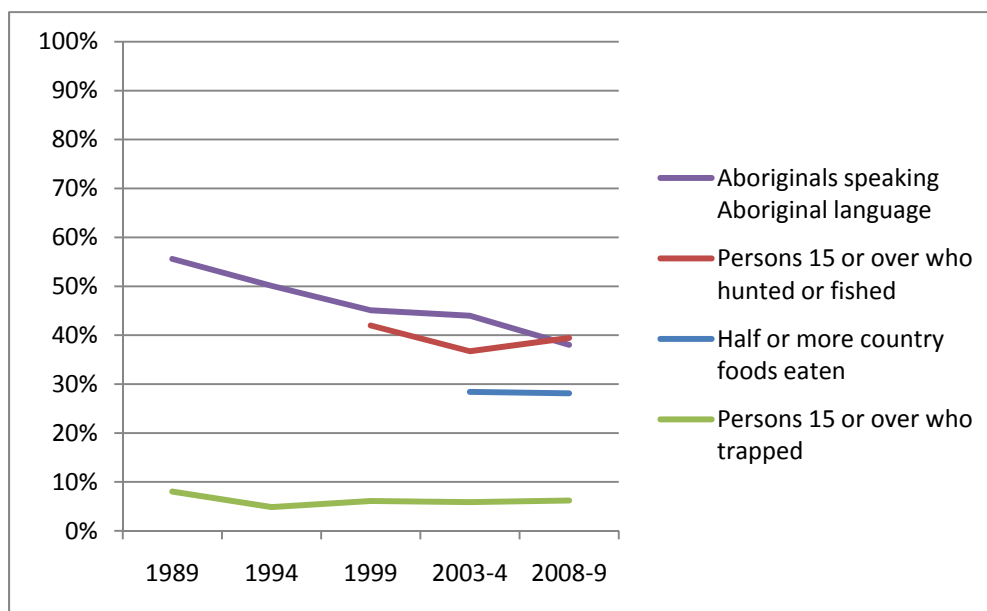


Figure 2: NWT Way of Life Indicators (NWT Bureau of Statistics)

Underlying these experiences of change is a deep concern about the ongoing value and applicability of traditional knowledge and stories in maintaining and enhancing the health of Délı̨nę First Nation citizens. Over the past three years, the Délı̨nę First Nation has prioritized the archiving and recording of elders stories through the DKP. For this reason community has undertaken to explore the role of such stories as a cross-generational tool in identifying and analysing health risks associated with climate change, and enhancing “learning and innovation” (Chapin et al 2004) to strengthen resilience and adaptive capacity. This research will be directly relevant to other Inuit and First Nation communities in exploring a “bottom-up” approach that takes indigenous ways of learning and knowing as a starting point for understanding health risk and climate change, and has direct implications for school curriculum and community harvesting and health programs.

1.2. Purpose

The purpose of this research was to understand *how Sahtúot’ı̨nę stories are used to identify, analyze and address health risk in the context of climate change*. The community aimed to explore the ways in which stories can be used as tool for new generations to navigate into an increasingly hazardous future.

The research asked three questions:

1. How are stories and Dene language use adapted within elder-youth exchanges as a tool for understanding and addressing health risks arising from climate change?
2. What are the distinct ways in which girls/women and boys/men share stories across generations related to health and climate change?
3. What is the role of new media in adapting the stories about health and climate to enhance resilience and adaptiveness?

1.3. Objectives

The original research objectives were slightly modified as a result of community-based program planning, with an element added to Objective 1, and two new objectives incorporated (Objectives 4 and 5). These modifications are indicated in italics below:

1. *Assess the “life” of stories among Sahtúot’ı̨nę, and* identify key elder and youth stories that describe ways of understanding and adapting to climate change and health risks.
2. Document and analyze ways that young girls/women and boys/men interpret stories with a focus on health and climate change, and how the stories are experienced on the land, in the school, and in the community.
3. Examine the role of new media in adapting stories to ensure their applicability to new health risks related to climate change.

4. *Scope out the requirements for effective health adaptation planning and pro-active governance related to key concerns about climate change impacts in the community.*
5. *Develop an understanding of indigenous research methodology and how it might be combined with other methodologies in climate change and health adaptation research.*

1.4. Research Team

The research team for this program was extensive, including a balance of community members, technical consultants, and resource people from a variety of disciplines.

Advisors

Walter Bayha, Self-Government Implementation Director
 Sahtu Renewable Resources Board Chair
 Morris Neyelle, Délı̨ne First Nation Council and Délı̨ne Land Corporation

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 Doris Taneton, Délı̨ne Knowledge Project, Trainee/Schools Program Coordinator
 Dolphus Tutcho, Délı̨ne Knowledge Project, Research Assistant
 Orlena Modeste, Remediation Office, Mapping Project Coordinator
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 Stanley Ferdinand, Délı̨ne First Nation, Research Assistant for Tiarella Hannah

Community Consultants

Michael Neyelle, Fibbie Tatti, Jane Modeste, Bernice Neyelle, Language Specialists/Facilitators

Community Coordination

Edward Reeves, Délı̨ne Renewable Resources Council

Resource People

Deborah Simmons, Native Studies, University of Manitoba/SENES Consultants, Principal Investigator
 Trent Waterhouse, Program Support Teacher (PST), ʔehtséo Ayha School
 Ben Postin, Grades 6/7 Class, ʔehtséo Ayha School
 Yolanda Poyner, Grades 3/4 Class, ʔehtséo Ayha School
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 Ken Caine, Rural Economy, University of Alberta
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Technical Consultants

Dawn Ostrem, Dawn Ostrem Communications/Centre for Digital Storytelling (Youth Radio and Digital Storytelling)
Mike West, Datalaundry (Language Toolbox)
Robert Kershaw, Centre for Digital Storytelling (Digital Storytelling)
Ruthann Gal, GIS Specialist/Manager, Aurora Research Institute (Mapping)

2. Research Background

Ford (2009) and Pielke et al (2007) have expressed a growing consensus among such researchers in arguing that the increasingly “dangerous” nature of climate change for arctic peoples means that a new policy discourse is required focusing on adaptation. Research about human health and climate change in the arctic in recent years would support this perspective, focusing on vulnerabilities and resilience or adaptive capacity with respect to natural hazards, food and water security and climate change (Chan et al 2006; Ford et al 2006a-b; Berkes and Jolly 2001; Pederson 2007; Furgal and Seguin 2006; Furgal et al 2008; Chapin et al 2004; Johansson 2008; Martin et al 2007). A number of publications explore practical adaptive and environmental management strategies and traditional knowledge and community-based scientific approaches to monitoring change. Collections of case studies from the arctic affirming the importance of traditional knowledge in understanding climate change and its implications include *The Earth is Faster Now: Indigenous Observations of Arctic Environmental Change* (Krupnik and Jolly, Eds 2002) and *Breaking ice: renewable resource and ocean management in the Canadian north* (Berkes et al, Eds 2005), and the special issue of the journal *Polar Research* on “Climate Change Impacts, Adaptation and Vulnerability in the Arctic” (2009). Berkes has recently suggested that “co-production of knowledge” involving both traditional knowledge and science should be explored as an approach to climate change research.

At an international scale, a special issue of the journal *Global Environmental Change* (2009) explores the agency of indigenous communities around the world in understanding and addressing climate change impacts. A special issue of *Climatic Change* on “Indigenous knowledge of a changing climate” (2010) draws on a variety of cases studies to make the case for inclusion of traditional knowledge in collective responses to climate change. The *Fourth Assessment Report of the Intergovernmental Panel on Climate Change* includes a special report on “Impacts, Adaptation and Vulnerability” (Parry et al 2007a). Of particular interest is the compilation of “Cross-Chapter Case Studies” (Parry et al 2007b), which includes a section on indigenous peoples with case studies related to both traditional knowledge for adaptation among arctic peoples, and adaptation to health impacts. The report notes that recent socio-political changes in the arctic have already compromised traditional responses to environmental change by eroding knowledge generation and transfer to new generations (866). Readers are pointed to publications related to a series of workshops conducted in 2002 by the Inuit Tapiriit Kantami on

health adaptations to climate change (see Nickels et al 2002 “Putting the human face on climate change through community workshops”). Community workshops occurred over 2 days in each community, and research team members documented Inuit residents’ observations of environmental changes and the reported effects they were experiencing in association with these changes, and began to discuss response strategies. The methodology included Participatory Rural Appraisal and Objectives Oriented Project Planning (ZOPP) (Furgal 2006, Nickels et al, 2002).

Furgal et al have contributed a number of important publications on based on a 2000-2001 project in two communities (Kuujjuak and Nain) entitled *Climate Change and Health in Nunavik and Labrador: What We Know from Science and Inuit Knowledge in Nunavik and Labrador*. The project used a dialogue-focused approach to establish a baseline understanding of climate change related health impacts. Furgal et al (2006) cite Patz et al (2000) who argue that assessment of health impacts of climate change will require a combination of disciplinary approaches. The research in Nunavik and Labrador points to a need for enhanced institutional and program supports for traditional harvesting activities as well as documentation and transmission of traditional knowledge that can support community adaptations (see also Lafortune et al 2004). Among the areas of future research that Furgal et al propose is “enhancement of local capacities to identify, conduct, and analyze data related to climate change and the impacts on health” (2006, 1969). Results of this community-based research are reflected in a number of other reports and publications (Health Canada 2002, Ford et al 2006a; Krupnik and Jolly 2002).

Referring to climate change impacts in Australia, Green et al (2009) highlight the breadth of health impacts that indigenous peoples may experience as ecosystems change: “For many Indigenous people, a connection with ‘country’ — a place of ancestry, identity, language, livelihood and community — is a key determinant of health” (4). They go on to explain that “many traditional owners living in remote areas are likely to face increased physiological, psychological, economic and spiritual stress as it becomes more difficult to ‘look after their country’ (5). Berkes and Jolly (2001) distinguish between short term changes in harvesting practices and long term cultural and ecological adaptations that may be encouraged at various scales in to strengthen resilience in arctic communities. However, in a recent systematic review of literature on climate change vulnerability in the Inuvialuit Settlement that may be indicative of the broader literature in the arctic, Ford and Pearce note that “few publications report on adaptations in health, cultural and education, or economy and business sectors” (2010, 6). This is despite the fact that such factors are often described in the literature as barriers to adaptation. Ford and Pearce and Berkes and Jolly confirm early findings by Glantz (1988) that adaptations are for the most part of the short term (“reactive” or ad hoc, “muddle through”) kind. Pearce et al (2009) note that the role of human systems is usually downplayed in the literature, and little attention has been paid to interactions between climatic and non-climatic factors influencing vulnerability. According to Ford and Pearce (2010), nothing has yet been published that sheds light on future vulnerability and adaptive capacity (though this is addressed at some length in Pearce et al 2009’s publication based on research in Ulukhaktok; Smit and Pilifosova 2003 also incorporate a substantial section on future adaptations).

Effective strategic planning for the future requires a level of research and engagement accounts for human consciousness and agency, mediated by culture. Hulme (2008) argues that the dominant climate discourse is one of fear, framed by words such as “catastrophe,” “terror,” “danger,” “extinction” and “collapse.” The conventional approach to “conquering the climatic

future” is oriented to engineering solutions that require political, ecological and behavioural control and mastery. Hulme proposes rather that climate change be read through culture:

Climate change and the unknown future look very different when seen, for example, through the cultural eyes of dryland pastoralists in Africa, South Pacific islanders or the Canadian Inuit (see Strauss and Orlove 2003); climatic catastrophe may not feature within these frames. (14)

Ford (2008) acknowledges that the cultural implications of climate change have been largely neglected in the literature. In reviewing a broad spectrum of vulnerability literature, Pearce et al (2009) point out that “how climate change is experienced will differ among regions, communities, and individuals as a result of different geographies, economies, traditions, access to resources, and institutional structures” (3). Despite recognizing this diversity of experience, vulnerability theorists tend to assume that universal application of the vulnerability framework is appropriate and unproblematic; and the assessment of vulnerabilities and adaptive strategies, even with respect to “traditions,” is usually narrowly focused on behavioural and skills-based factors rather than the broader cultural factors that might mediate socio-ecological understandings and relationships. Adger (2003) begins to address the social determinants of adaptation through a vulnerability framework using the concept of social capital as a condition of collective action. He concludes that culture and place-specific research is necessary as a means of understanding adaptive capacity (while affirming that such research can be generalized).

A feature issue of the *Journal of Historical Geography* on “Narratives of Climate Change” (2009) provides a series of historical-geographical papers that aim to reconnect culture and climate. Bravo’s contribution analyzes the reception of climate narratives in Nunavut. He points out that the prevalent fables of risk and resilience in Canada’s arctic tend to obscure and homogenize the voices of northern peoples. Bravo asserts that climate change crisis narratives are often used to license the intervention of experts in debates about resource management and conservation,” suggesting that this can reinforce existing disparities in power and undermine community efforts to be self-determining. He goes on to argue that “policy responses across a range of diverse geographical contexts require new narratives that put communities back into the calculus of risk and decision-making” (2009, 1). The Nunavut experience indicates that it may be challenging for the dominant climate change narrative to achieve resonance among the diversity of knowledge and cultures that it aims to address. Through the lens of ecological economics, Leduc (2006) points to specific mechanisms by which Inuit “local knowledge” or ecological observations have been privileged while traditional cultural understandings that don’t fit with Western understandings are marginalized. Leduc cites Cruikshank’s observation that the category “TEK” tends to involve codification and appropriation of indigenous “data,” ignoring the story that is the vehicle for such knowledge “because it confuses rather than confirms familiar categories” (2004, p. 24). In a subsequent paper, Leduc looks at the contrast between the appropriation of the Inuit concept “Sila” in climate research and Inuit understandings of this concept as an example of the difficulties in cross-cultural research (2007).

Anthropologist Susan A. Crate (2008) begins to explore the cultural implications of climate change. Reviewing recommendations listed in key documents including the *Arctic Climate Impact Assessment* (ACIA 2005) and the report of the Intergovernmental Panel on Climate Change (2007), Crate notes that cultural implications are not addressed. She compares potential impacts of climate change to the “the disorientation, alienation, and loss of meaning in life” that were experienced in the historical forced relocations of aboriginal peoples, the difference in this

case being that the climate is “moving” rather than the peoples. Based on research with Viliui Sakha people of northeastern Siberia, Crate proposes an “emic” approach to community-based research, taking the community’s culturally bound understandings, interpretations, and observations as the structuring frame for dialogue. She cites a colleague on the potential difficulty posed by taking the “etic” or externally derived concept “climate change” as a starting point: “Climate change has become such an overused term in Alaskan villages that I avoid it, in order not to lead every discussion in one particular direction” (quoted in Crate 2008, 582). An emic approach would seek to learn how the community’s ancestors have dealt with change, and which of these experiences are relevant in the current context. Crate argues that all generations should be involved in the research, especially the youth who will be the future leaders and decision-makers in addressing climate change. Introduction of “etic” knowledge from the outside that situates local experience within larger global processes can be introduced as a second step in community-based research, once local understandings are fully understood. Crate describes the process of knowledge co-production with Viliui Sakha thus:

For Viliui Sakha, one means to communicate information is to develop elder-knowledge programs focusing on climate change, with youth first documenting elder observations and past climate perturbations and then exchanging Western science information with them.³⁴ It would also serve to document and disseminate within the communities elder knowledge (both life experience and narrative from parents and grandparents) about the way their people adapted in the past to climate perturbations and its relevance to their contemporary climate challenges. Similarly, it would also engage village youth in the community process of grappling with global climate change. (583)

Crate argues that this might be a means by which communities might “reframe and reappropriate cultural worlds and senses of ‘home’” (585). She concludes with a brief reference to the governance implications of the approach that she has described, by way of the recommendation put forward by in the ACIA report to “facilitate local empowerment through the devolution of authority and capacity so that communities can respond more effectively given their specific contexts” (Huntington et al 2005, 95).

Drawing from research with hunter-gatherer Tareumiut and the Nunamiut of northwest Alaska, Minc’s monograph “Scarcity and Survival: The Role of Oral Tradition in Mediating Subsistence Crises” provides some insights into the importance of such work. Recognizing that hunter-gatherer societies have always been subject to periodic crises of scarcity, Minc looks to stories as a vehicle for drawing upon collective memory as a basis for developing long term survival strategies. This is distinct from the descriptions of short term adaptive practices that prevail in ecological models of hunter-gatherer subsistence. Minc looks at three types of stories and their role as carriers of past knowledge into future scenarios. In his view, secular stories are likely to change over time, in contrast to the stability of the sacred or “ritual” performances. What he calls “mythology,” including stories of origin or creation, occupies a middle ground between the two. Sacred narratives are likely to play more of a role in times of significant change. Stories take place within three temporalities: very early days (dating from the time of creation), early days (from the late 1700s), and personal remembrance (within a person’s lifetime). “Mythology” is likely to contain knowledge about harvesting places or species and social networks that may not be currently be part of the life of the community, but might become important in times of change. Secular “folklore” would address more immediate practices that might contribute to survival and wellbeing during short term environmental fluctuations. Finally, ritual practices in harvesting establish community solidarity and ensure that subsistence wildlife are reinscribed as

part of the community. This establishes that basis for cooperation and sharing that is required for survival in times of scarcity. The rituals might thus be understood as a foundation or wellspring for the maintenance of stories and derivation of adaptive strategies.

Beyond Minc's article which is oriented to understanding stories as a tool for addressing food scarcity, there is virtually no literature on the role of indigenous stories in addressing health and climate change (though this is likely to change as results are disseminated of projects supported by Health Canada's *Climate Change and Health Adaptation in Northern First Nations and Inuit Communities Program*). This is despite the extensive literature that does exist on the broader role and significance of narratives in indigenous societies (Cruikshank 1998 and 2006¹; Hanks 1996; Legat 2007; Andrews 1990; Ridington, 1988; Basso 1984). The Délı̨nę research thus addresses an important gap in the recognition and understanding of indigenous knowledge about health and climate change, and the role that self-determining indigenous communities can play in addressing health and climate change issues.

The research is predicated on what might be considered an unusually strong consciousness among Sahtúot'ı̨nę of the role of narratives in addressing present and future change. The Délı̨nę First Nation is well known in the Northwest Territories for its stories and prophecies. Stories have been a tool for teaching young people since time immemorial, and the elders continue to keep these stories alive. In the early part of the 1900s, the Délı̨nę prophet known as ʔehtséó Ayah warned of drastic environmental and social changes to come in the future, and the community continues to renew the prophecies as a monitor the truth of those predictions. The Prophet and his living legacy for new generations has been commemorated in the naming of the ʔehtséó Ayah School. Community efforts to document and share stories in both English and Dene language took on a new form in the 1980s with publication of the two-volume series *Sahtúot'ı̨nę Long Ago* (1991). The late Sahtúot'ı̨nę elder George Blondin is renowned for his series of books and articles in *News/North* newspaper celebrating Dene stories.

The Délı̨nę First Nation has long supported a number of programs to promote the well-being and cultural strength of the community. Elder storytelling has been a feature uniting all the programs. These include on-the-land programs (Justice Program), a Pre/Postnatal Program, a Youth Program, and the Délı̨nę Knowledge Project. The Délı̨nę Renewable Resources Council provides a complementary program to support traditional hunting, fishing and trapping. There are strong linkages between these programs, and staff collaboration is essential for program success. The programs reflect ongoing community priorities in supporting good health and well-being, and all arguably have an important role to play in building resilience and adaptiveness in the context of climate change. In all of the programs, activities with the school are an important priority.

A long term program of Délı̨nę First Nation research in oral narratives began in 2002-2005 with the Port Radium oral history project, sponsored by the Canada-Délı̨nę Uranium Table and

¹ Cruikshank's book *Do Glaciers Listen?* offers an important discussion of stories as "generative sources of meaning that make no sharp separation between changing biophysical worlds and changing social worlds" (2006, 257).

documented in the Délıne First Nation book *Bek'éots'erazhá Nıde/If Only We Had Known* (2005). A follow-up to this was the 2008 Polar Radio project focusing on youth-elder dialogues about Port Radium and its legacy for the community, in partnership with CBC Radio, online at www.cbc.ca/north/features/waterheart. The Port Radium oral history project was also the catalyst for a three year research project funded by the Canadian Institutes of Health Research (CIHR) entitled *Cultural Models, Concepts, and Practices in Dene Health and Healing, Délıne, NWT* (2004-2007). This project in partnership with University of Alberta has resulted in a bilingual poster series and a film *Plants for Life!* (in progress). The Délıne Knowledge Project program entitled *The Words Of Our Ancestors Are Our Path To The Future: Mapping Dene Language, Narrative and Governance in Délıne, NWT* (2006-2009) in partnership with the University of Manitoba, Prince of Wales Northern Heritage Centre and Aurora Research Institute, was funded by the Social Sciences and Humanities Research Council of Canada (SSHRCC). The 2008 *Strength for Our Future* sustainability project was a partnership of the DKP and the Délıne Renewable Resources Council, funded by the Sahtu Renewable Resources Board. An outcome of this project was a plan for a trapper training program, and a series of podcasts created with youth, available on the web at www.Delneradio.ca.

The DKP has established the only digital oral history archive in the Sahtu Region. The archive preserves the voices of the elders, and makes it possible to share the stories. But the living performance of storytelling remains strong as well. There is a weekly gathering of elders to share stories at a building commemorating the Prophet Ayah. The annual Spiritual Gathering in honour of Prophet Ayah is an important forum for sharing stories, bringing together people from across the NWT. The 2009-2010 program built upon previous research, and the strengths of living storytelling traditions. The current research has been enhanced to a great extent by partnerships

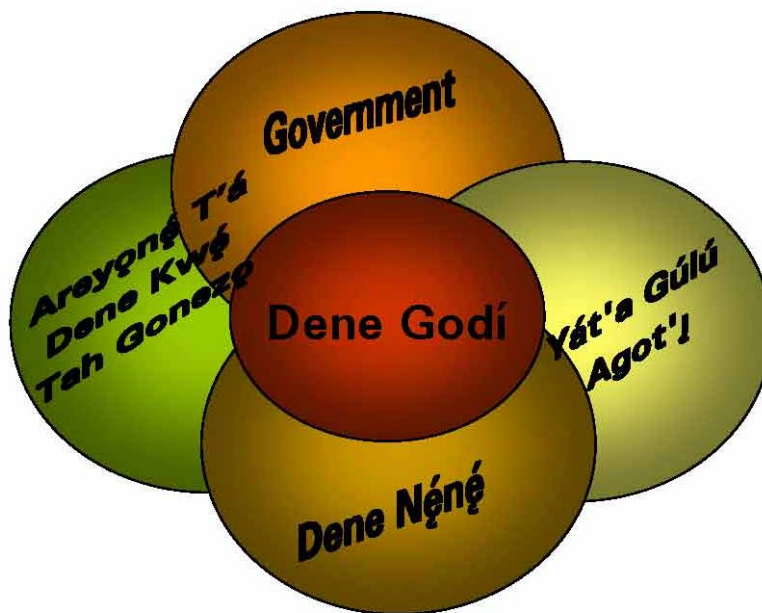


Figure 3: Key Themes - Learning About Changes Program

with a number of linked research activities within Délı̨nę that came to be referred to under the umbrella *Gúlú Agot'i T'á Kə Gotsúhʔa Gha/Learning About Changes*. Figure 3 is a visualization of the general themes contained within the rubric of the *Learning About Changes* program, including Stories (Dene Godi) at the centre, and the intersecting themes Health (Areyoné T'á Dene Kwé Tah Gonezq), Government (referring to the cross-cultural concept of governance that Délı̨nę has decided bears reference in English – in the context of this program, this theme is linked to “adaptation planning”), Climate Change (Yát'a Gúlú Agot'ı) and the land (Dene Néné).

Partnerships have served as vehicles for understanding the role of stories in the context of social and environmental change, and are directly applied to the understanding of health adaptations in the context of climate change impacts that have not yet been experienced.

3. Methodology

The research methodology evolved in discussions with community participants, the research team, and traditional knowledge research practitioners from other communities. The methodology is close to that described by Susan Crate (2008), taking as the starting point an emic approach, or one that comes within the meaning system of the community, while also providing for dialogue with etic or externally derived knowledge. The methodology departs from the Participatory Action Research (PAR) approach originally proposed and described in relation to earlier research in Délı̨nę (Délı̨nę Ethics Committee 2003; Caine, Salomons and Simmons 2007; Délı̨nę Knowledge Centre Action Group 2004a and 2004b). It came to be understood that PAR is not adequately grounded in indigenous ways of knowing, and doesn't go far enough in providing for research to be designed and led by community members. Two of the research collaborators, Walter Bayha and Deborah Simmons, were co-authors of a recent publication synthesizing discussions at a workshop entitled *Research the Indigenous Way* in November 2009; this discussion provided strong peer support (both community and academic) for the approach being taken in Délı̨nę (McGregor, Bayha and Simmons 2010).

The research process involved “meta-research” meetings, workshops and presentations (as distinct from focus groups) bringing together community members and resource people to dialogue and present about the research process, along with activities that combined experimental project-based initiatives and ongoing activities that are part of the seasonal experience of the Sahtúot'ı̨nę. We emphasized research processes and participant-observation contexts (community and on-the-land events) in which knowledge is shared through elder-youth exchanges. We found that this approach gave rise to a remarkably high response rate, and that the knowledge shared was generally higher in quality than had been the case with earlier research projects in the community (it was possible to make such comparisons given that research team members had experience in the community dating back to the 1970s). The vehicle for research was performance, representations of stories orally and through new technologies in various contexts (in the school, in the community, and on the land), and experiential knowledge exchanges. The methodology required that research plans be adaptive to the community context, including other relevant processes taking place. A strong

network of partnerships were established based on existing or new and relevant work to enhance the program and complement the holism of Dene ways of knowing about health and climate change. This added a challenging level of complexity to the program. The workplan was modified to address skills and interests of team members and research participants as well as the schedule of the community, while ensuring that the original objectives remained front and centre in the activities. The meta-research gatherings were especially important in order to strengthen the coherence of a complex program involving a diversity of projects.

The performative stories that were the core of the program have a culturally specific “life” that loses meaning and integrity in an overdetermined or overly structured context. This is why the emic/indigenous approach was critical to the success of the research. Moreover, the research team identified a strong risk that a structured approach would lead community members to default into “group-think” emergent from media hype about climate change issues in the north, thus detracting from the validity of the results. However, an emic/indigenous approach poses another difficulty. The self-generating aspect of stories places in question the systematic aspect of research as it has been defined in scientific research disciplines. The challenge of adopting the approach is in ensuring that indigenous concepts and stories do not remain locked within their own sphere of meaning, where their relevance and contributions to questions posed at a larger scale are made clear.

McGregor, Bayha and Simmons (2010) point out that while indigenous peoples have always been researchers, contemporary indigenous research takes place in a “negotiated space” that must be bridged with state institutions of governance. This means that a rigorous process of cross-cultural interpretation must be a key component of indigenous research methodologies. The approach to analysis that is most appropriate for qualitative results in the context of cross-cultural traditional knowledge study is known as “grounded theory” (Glaser 1992). Grounded theory is robust in conditions where structured process is not possible and participants are communicating complex and holistic concepts. However, it can be bewildering to those who are trained in positivist or quantitative sciences. At the core of grounded theory is the principle that “all is data.” This means that all communications within a dialogic and experiential context are considered to have meaning in relation to the study. A grounded theory approach involves data coding at several levels. Open or substantive coding takes place at the first level of abstraction, working directly with the experience or narrative (transcript). Once the core of the research question is identified through an open coding process, selective coding at a second level of abstraction allows for development of key concepts.

The addition of two projects (climate and caribou harvest/sharing study) that involved more etic/quantitative methods allowed for triangulation of qualitative results. The use of a diversity of qualitative methods along with some quantitative research allowed for a strengthening of the team’s collective confidence in the research results. The meta-research workshops and public presentations provided for a first level of open coding, moving progressively toward selective coding with the community researchers, validated with community members and academic resource people by the end of the research cycle. Our team was privileged to be able to engage in such validation with people coming from a wide variety of experiences in the North (at the *Northern Governance Policy Research* conference and in partnership with Mackenzie Mountain School in Norman Wells) and south (at the University of Toronto Study Tour). Additional analysis and reporting was required to fully to the second level of “selective coding.” When the

material is extensive, the latter process is quite time consuming and is not possible to complete within the scope of the funded program. Moreover, the limited time span of the research meant that it begged follow-up research activities with the community; development of spin-off research proposals based on the research findings become another key aspect of the research methodology.

4. Participation

We were fortunate to be able to include a large proportion of the community as active participants in the program. A total of 133 Déłıne community members participated, or 24% of the Déłıne population, which totalled 595 according to NWT Statistics. The participant list does not include people who attended events as observers. An age analysis shows that the sample was somewhat skewed in favour of male participants. (Figure 4). This is in part because of the strong involvement of hunters and trappers in various projects. The emphasis in the study was on the role of storytelling among elders and youth, so participation is relatively strong for these two groups as a proportion of the Déłıne age demographic in 2009 (Figure 5). There is minor potential error in the identification of the age categories for participants, since it was based on estimates rather than participant report. The definition of the three categories Adult, Elder, Youth, was aligned with NWT Statistics numbers for ages 0-24, 25-59, and 60 years and over. Of the total community participants, 9 were members of the research team and 4 were advisors (Figure 7).

Participant involvement was documented in relation to 12 projects, not including informal participant-observation activities. A strength of the study is that 73 participants or 55% of participants contributed to 2 or more projects (Figure 6). This provides a strong element of validation in results of individual projects. The number of participants per project is charted in Figure 8. The largest participation was charted for “Mapping Our Changing Land.” Interestingly, participation in “Meta-Research Meetings” is a close second, meaning that a relatively large percentage of participants (22%) were engaged in reflective or analytical discussions about past, present and/or forthcoming research in the community. The small number of participants in the “Language of the Land” project is mainly due to the focus on documentation and development of the language toolbox, and is misleading in that language documentation took place related to all the “Harvesting, Sharing and Food Security” project.

Figure 8 shows that the proportion of participation by age groups varies from project to project, often depending on whether the program was coordinated in collaboration with the school. Figure 9 shows the three age groups in relation to the range of projects that each group was involved in. For the most part, all age groups were represented in every project, with the following exceptions: Elders were not involved in the “Language of the Land” project narrowly defined as a technical process (though they were critical to language documentation related in the other projects). The nature of the “Health, Resilience and Land Stewardship” project focussing on the history and experience of the Déłıne Renewable Resources Council meant that youth were not involved. The apparent lack of participation in the Climate History project is misleading – a school class did help to identify locations for the project, but the student’s names were not documented. Youth were underrepresented in the “Harvesting, Sharing and Food Security”

project, storytelling contests, and meta-research meetings, but compensated by higher representation in projects specifically designed to involve them.

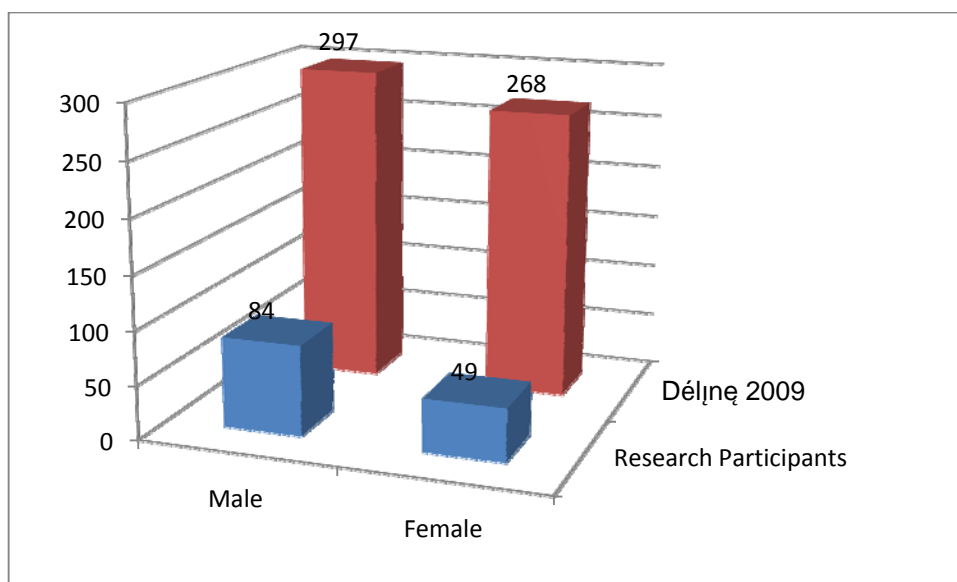


Figure 4: Participation by Gender, Compared with Deline Population 2009 (NWT Statistics).

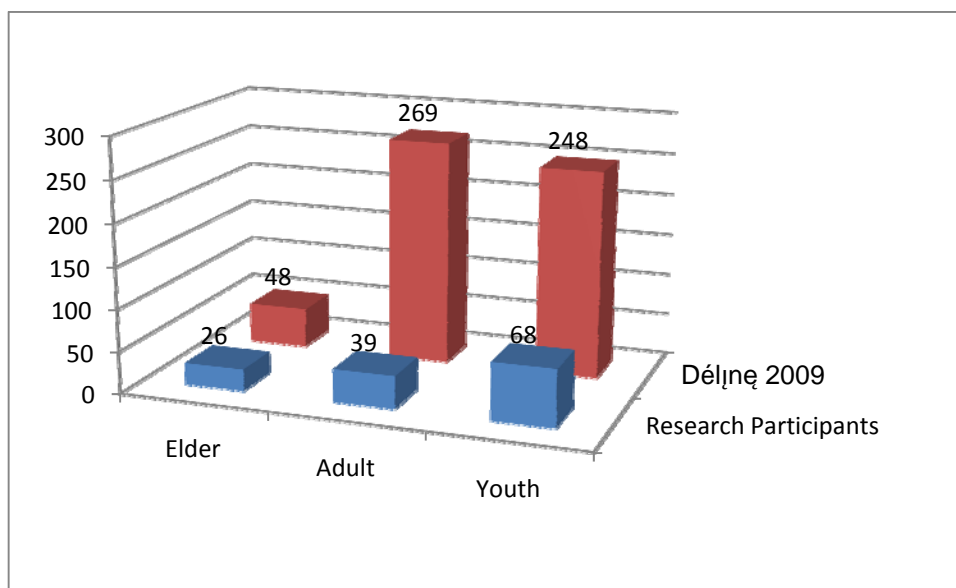


Figure 5: Participation by Age Group, Compared with Deline Population 2009 (NWT Statistics).

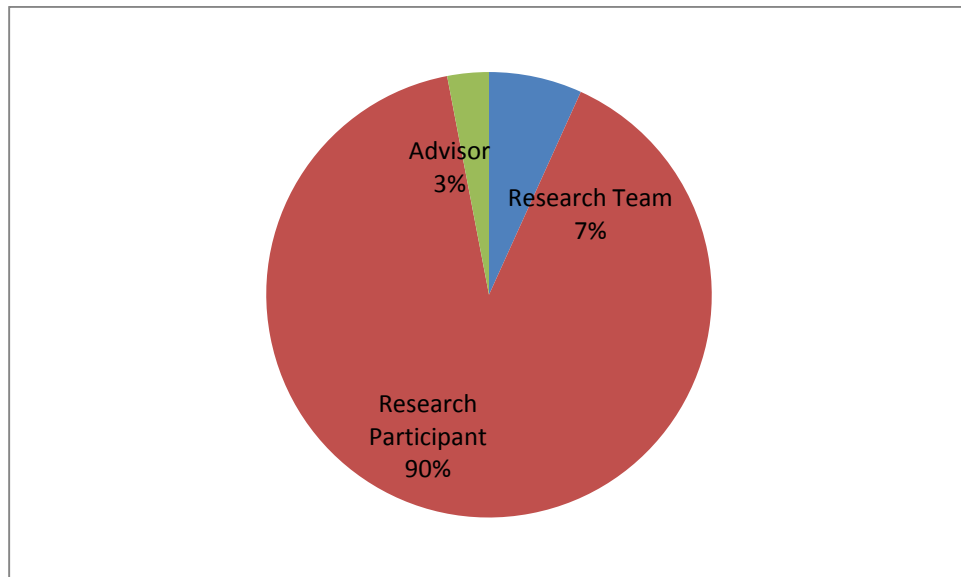


Figure 7: Participant Roles. Total = 133.

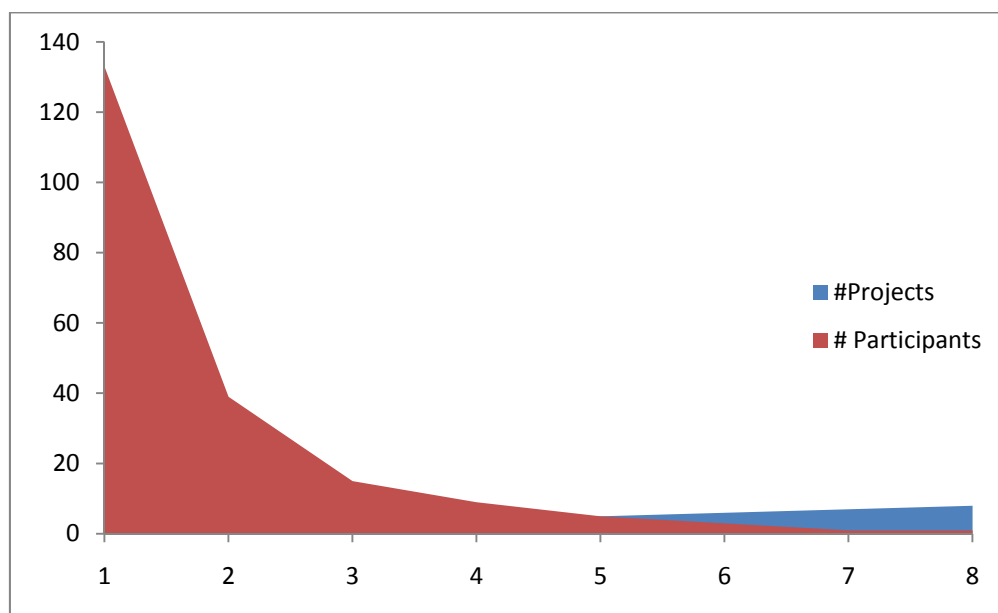


Figure 6: Number of Projects per Participant.

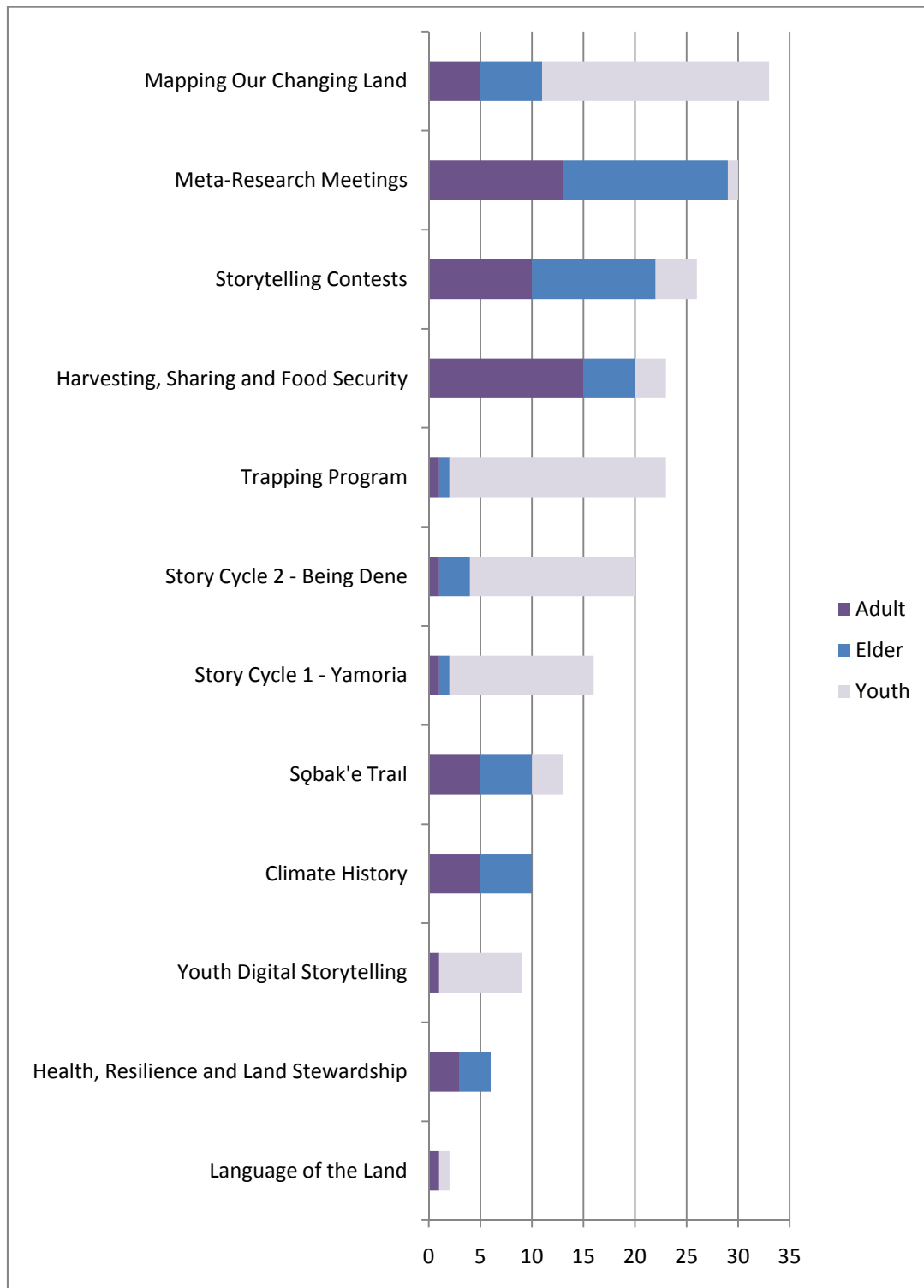


Figure 8: Project Participation by Age Group.

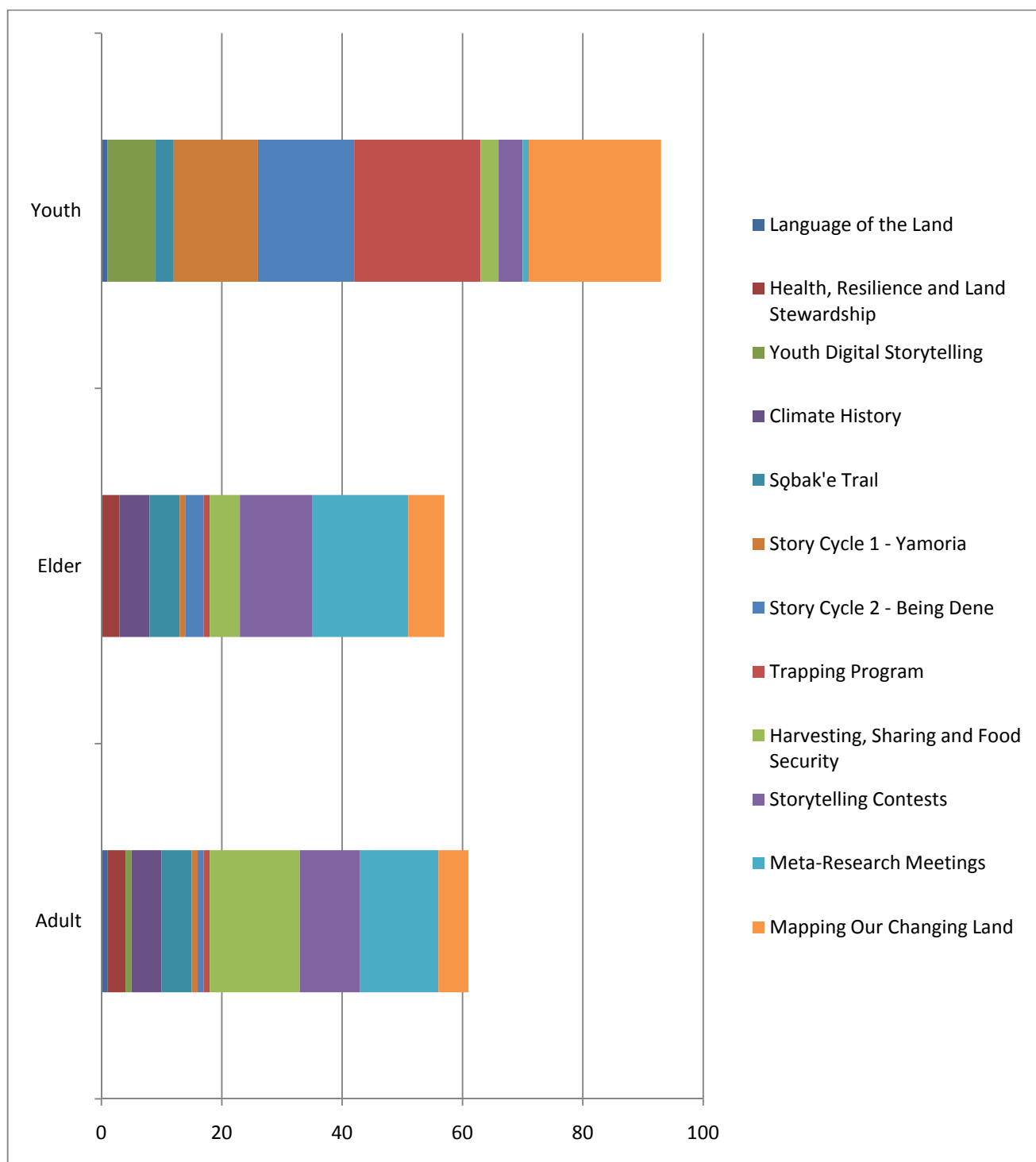


Figure 9: Age Groups by Project Participation.

4.1. Community Participant List

Allen, Timothy	Kenny, Bruce	Taneton, Doris
Arrowmaker, Jarrett	Kenny, Hughie	Taniton, Alfred
Baptiste, George	Kenny, Jenna	Taniton, Brianna
Baton, Austin	Kenny, Jordon	Taniton, Gordon
Baton, Autumn	Kenny, Kenny	Taniton, Hailey
Baton, Cecile	Kenny, Luke	Taniton, Hannah
Baton, Dolphus	Kenny, Russell	Taniton, Raymond
Baton, Douglas	Kenny, Samantha	Tatti, Fbbie
Baton, Ethan	Kenny, Wilfred	Taylor, Kathleen
Baton, George	Kodakin, Irene	Taylor, Kelsi
Baton, Hunter	Mackeinzo, Angel	Taylor, Naoka
Baton, Isaiah	Mackeinzo, Edith	Taylor, Trevor
Baton, Jason	Mackeinzo, Mahalia	Tetso, Betty
Baton, Warren	Mackeinzo, Ted	Tetso, Irene
Bayha, Collin	Menacho, Adrian	Tetso, Joe
Bayha, Joseph	Menacho, Bella	Tetso, Morris
Bayha, Kyle	Menacho, John	Tutcho, Camilla
Bayha, Malerie	Modeste, Amber	Tutcho, Deanna
Bayha, Walter	Modeste, Bobby	Tutcho, Dolphus
Bernarde, Raymond	Modeste, Leon	Tutcho, Isabelle
Bernarde, RJ	Modeste, Marie	Tutcho, Jimmy
Betsidea, Joe	Modeste, Orlena	Tutcho, John
Betsidea, Joseph	Modeste, Roy	Tutcho, Johnny
Beyonnie, Cheyenne	Naedzo, Barbara Anne	Tutcho, Keisha
Beyonnie, Gary	Naedzo, Cecile	Tutcho, Nikki
Beyonnie, Hannah	Naedzo, Mitchell	Tutcho, Preston
Beyonnie, Moise	Neyelle, Bernice	Tutcho, Rodney
Blondin, Dora	Neyelle, Charlie	Tutcho, Sidney
Blondin, Joseph	Neyelle, Lyle	Vital, Dene
Carter, Frederick (Caleb)	Neyelle, Michael	Vital, Dora
Dillon, Jimmy	Neyelle, Morris	Vital, George Gary
Dolphus, Chevone	Quitte, Jane	Vital, Johnny
Dolphus, George	Reeves, Edward	Vital, Jorey
Dolphus, Rex	Robinson, Nicholas	Vital, Joy
Dolphus, Roberta	Roche, Dallas	Yukon, John
Elemie, Brett	Roche, Jake	
Ellton, Arabelle	Roche, John	
Ferdinand, Cal	Roche, Pauline	
Ferdinand, Hughie	Smith, Tyler	
Ferdinand, John	Takazo, Alphonse	
Ferdinand, Joree	Takazo, Amanda	
Ferdinand, Stanley	Takazo, Blake	
Ford, Jordan	Takazo, Charmaine	
Gaudet, Danny	Takazo, Dalton	
Gaudet, Faith	Takazo, Dominic	
Jane Taniton	Takazo, Ray	
Kelly, Allen	Takazo, Rosie	
Kelly, Virgil	Takazo, Tianna	
Kenny, Adrian	Takazo-Modeste, Reyanna	

Table 1: Participants and Attributes

	Role	Age	Gender	Position(s)	Project01	Project02	Project03	Project04	Project05	Project06	Project07	Project08
Allen, Timothy	Participant	Youth	Male	School	Yamoria Story Cycle							
Arrowmaker, Jarrett	Participant	Youth	Male	School	Being Dene Story Cycle							
Baptiste, George	Participant	Elder	Male	Community	Meta-Meetings	Harvesting, Sharing, Security						
Baton, Austin	Participant	Youth	Male	School	Trapping Program	Being Dene Story Cycle						
Baton, Autumn	Participant	Youth	Female	School	Being Dene Story Cycle							
Baton, Cecile	Participant	Elder	Female	Community	Meta-Meetings	Storytelling Contest						
Baton, Dolphus	Participant	Elder	Male	DFN Council	Climate History	Meta-Meetings						
Baton, Douglas	Participant	Adult	Male	Community	Harvesting, Sharing, Security							
Baton, Ethan	Participant	Youth	Male	School	Being Dene Story Cycle							
Baton, George	Participant	Adult	Male	DRR Council	Meta-Meetings	Health, Resilience, Land						
Baton, Hunter	Participant	Youth	Male	School	Mapping							
Baton, Isaiah	Participant	Youth	Male	School	Yamoria Story Cycle							
Baton, Jason	Participant	Adult	Male	Community	Harvesting, Sharing, Security							
Baton, Warren	Participant	Youth	Male	Community	Harvesting, Sharing, Security							
Bayha, Collin	Participant	Adult	Male	DRR Council	Climate History							
Bayha, Joseph	Participant	Youth	Male	School	Trapping Program							

	Role	Age	Gender	Position(s)	Project01	Project02	Project03	Project04	Project05	Project06	Project07	Project08
Bayha, Kyle	Participant	Youth	Male	Community	Harvesting, Sharing, Security							
Bayha, Malerie	Participant	Youth	Female	School	Yamoria Story Cycle							
Bayha, Walter	Advisor	Adult	Male	Governance Team	Meta-Meetings	Health, Resilience, Land	Sq̓bak'e Trail	Harvesting, Sharing, Security				
Bernarde, Raymond	Participant	Youth	Male	School	Being Dene Story Cycle							
Bernarde, RJ	Participant	Youth	Male	School	Trapping Program							
Betsidea, Joe	Participant	Adult	Male	Community	Harvesting, Sharing, Security							
Betsidea, Joseph	Participant	Youth	Male	School	Being Dene Story Cycle							
Beyonnie, Cheyenne	Participant	Youth	Female	School	Youth Digital Storytelling							
Beyonnie, Gary	Participant	Adult	Male	Community	Storytelling Contest							
Beyonnie, Hannah	Participant	Youth	Female	School	Yamoria Story Cycle							
Beyonnie, Moise	Participant	Elder	Male	Community	Harvesting, Sharing, Security							
Blondin, Dora	Participant	Elder	Female	Community	Meta-Meetings							
Blondin, Joseph	Participant	Elder	Male	DRR Council	Meta-Meetings	Storytelling Contest	Health, Resilience, Land					
Carter, Frederick (Caleb)	Participant	Youth	Male	School	Yamoria Story Cycle							
Dillon, Jimmy	Participant	Elder	Male	DRR Council	Meta-Meetings							
Dolphus, Chevone	Participant	Youth	Female	School	Mapping							
Dolphus, George	Participant	Adult	Male	Community	Meta-Meetings							

	Role	Age	Gender	Position(s)	Project01	Project02	Project03	Project04	Project05	Project06	Project07	Project08
Dolphus, Rex	Participant	Youth	Male	School	Trapping Program							
Dolphus, Roberta	Participant	Adult	Female	Community	Storytelling Contest							
Elemie, Brett	Participant	Youth	Male	School	Mapping	Youth Digital Storytelling						
Elton, Arabelle	Participant	Youth	Female	School	Yamoria Story Cycle							
Ferdinand, Cal	Participant	Youth	Male	School	Yamoria Story Cycle							
Ferdinand, Hughie	Participant	Elder	Male	Community	Meta-Meetings	Mapping	Sq̓bak'e Trail					
Ferdinand, John	Participant	Elder	Male	Community	Meta-Meetings							
Ferdinand, Joree	Participant	Youth	Male	School	Mapping							
Ferdinand, Stanley	Participant	Adult	Male	Community	Harvesting, Sharing, Security							
Ford, Jordan	Participant	Youth	Male	School	Yamoria Story Cycle							
Gaudet, Danny	Participant	Adult	Male	Governance Team	Meta-Meetings							
Gaudet, Faith	Participant	Youth	Female	School	Yamoria Story Cycle							
Jane Taniton	Participant	Elder	Female	Community	Storytelling Contest							
Kelly, Allen	Participant	Adult	Male	Community	Harvesting, Sharing, Security							
Kelly, Virgil	Participant	Youth	Male	School	Mapping							
Kenny, Adrian	Participant	Youth	Male	Community	Storytelling Contest							
Kenny, Bruce	Participant	Adult	Male	Community	Harvesting, Sharing, Security							
Kenny, Hughie	Participant	Adult	Male	DLC Board	Harvesting, Sharing, Security							
Kenny, Jenna	Participant	Youth	Female	School	Being Dene Story Cycle							

	Role	Age	Gender	Position(s)	Project01	Project02	Project03	Project04	Project05	Project06	Project07	Project08
Kenny, Jordon	Participant	Youth	Male	School	Trapping Program							
Kenny, Kenny	Participant	Youth	Male	School	Mapping	Trapping Program						
Kenny, Luke	Participant	Youth	Male	School	Mapping							
Kenny, Russell	Participant	Adult	Male	DRR Council	Meta-Meetings	Health, Resilience, Land						
Kenny, Samantha	Participant	Youth	Female	School	Youth Digital Storytelling							
Kenny, Wilfred	Participant	Adult	Male	Community	Harvesting, Sharing, Security							
Kodakin, Irene	Participant	Adult	Female	DFN Staff	Sq̓bak'e Trail							
Mackeinzo, Angel	Participant	Youth	Female	School	Mapping							
Mackeinzo, Edith	Team	Adult	Female	DKP Team	Mapping	Meta-Meetings	Language of the Land	Storytelling Contest	Youth Digital Storytelling			
Mackeinzo, Mahalia	Participant	Youth	Female	School	Mapping	Trapping Program						
Mackeinzo, Ted	Participant	Youth	Female	School	Trapping Program							
Menacho, Adrian	Participant	Elder	Male	Community	Storytelling Contest							
Menacho, Bella	Participant	Elder	Female	Community	Storytelling Contest	Sq̓bak'e Trail	Being Dene Story Cycle					
Menacho, John	Participant	Adult	Male	Community	Harvesting, Sharing, Security							
Modeste, Amber	Participant	Youth	Female	School	Trapping Program	Being Dene Story Cycle						
Modeste, Bobby	Participant	Adult	Male	Community	Harvesting, Sharing, Security							
Modeste, Leon	Participant	Elder	Male	Community	Climate History	Being Dene Story Cycle	Yamoria Story Cycle	Meta-Meetings	Storytelling Contest	Mapping		
Modeste, Marie	Participant	Elder	Female	Community	Harvesting, Sharing, Security							

	Role	Age	Gender	Position(s)	Project01	Project02	Project03	Project04	Project05	Project06	Project07	Project08
Modeste, Orlena	Team	Adult	Female	DFN Staff & DKP Team	Mapping	Meta-Meetings	Sq̓bak'e Trail					
Modeste, Roy	Participant	Youth	Male	School	Mapping							
Naedzo, Barbara Anne	Team	Adult	Female	Community	Storytelling Contest							
Naedzo, Cecile	Participant	Elder	Female	Community	Storytelling Contest	Sq̓bak'e Trail						
Naedzo, Mitchell	Participant	Youth	Male	School	Mapping	Sq̓bak'e Trail	Youth Digital Storytelling	Storytelling Contest				
Neyelle, Bernice	Team	Adult	Female	School	Being Dene Story Cycle	Storytelling Contest	Yamoria Story Cycle					
Neyelle, Charlie	Participant	Elder	Male	DFN Council	Meta-Meetings	Mapping	Storytelling Contest					
Neyelle, Lyle	Participant	Youth	Male	Community	Harvesting, Sharing, Security							
Neyelle, Michael	Team	Adult	Male	Community	Climate History	Harvesting, Sharing, Security	Storytelling Contest	Mapping	Sq̓bak'e Trail			
Neyelle, Morris	Advisor	Adult	Male	DFN Council & DLC Board	Meta-Meetings	Storytelling Contest						
Quitte, Jane	Participant	Elder	Female	Community	Meta-Meetings							
Reeves, Edward	Participant	Adult	Male	DRR Council	Climate History	Meta-Meetings						
Robinson, Nicholas	Participant	Youth	Male	School	Trapping Program							
Roche, Dallas	Participant	Youth	Male	School	Trapping Program	Being Dene Story Cycle						
Roche, Jake	Participant	Youth	Male	School	Mapping	Trapping Program						
Roche, John	Participant	Youth	Male	School	Yamoria Story Cycle							
Roche, Pauline	Advisor	Adult	Female	DFN Staff	Meta-Meetings							
Smith, Tyler	Participant	Youth	Male	School	Yamoria Story Cycle							

	Role	Age	Gender	Position(s)	Project01	Project02	Project03	Project04	Project05	Project06	Project07	Project08
Takazo, Alphonse	Participant	Elder	Male	Community	Climate History	Harvesting, Sharing, Security	Storytelling Contest	Mapping	Sq̓bak'e Trail	Trapping Program		
Takazo, Amanda	Participant	Youth	Female	Community	Mapping							
Takazo, Blake	Participant	Youth	Male	School	Mapping							
Takazo, Charmaine	Participant	Youth	Female	School	Mapping							
Takazo, Dalton	Participant	Youth	Male	School	Being Dene Story Cycle							
Takazo, Dominic	Participant	Youth	Male	School	Mapping							
Takazo, Ray	Participant	Adult	Male	Community	Harvesting, Sharing, Security							
Takazo, Rosie	Participant	Elder	Female	Community	Storytelling Contest							
Takazo, Tianna	Team	Youth	Female	School	Sq̓bak'e Trail							
Takazo-Modeste, Reyanna	Participant	Youth	Female	School	Trapping Program	Being Dene Story Cycle						
Taneton, Doris	Team	Youth	Female	DKP Team	Being Dene Story Cycle	Language of the Land	Meta-Meetings	Sq̓bak'e Trail	Storytelling Contest	Trapping Program	Yamoria Story Cycle	Youth Digital Storytelling
Taniton, Alfred	Participant	Elder	Male	DFN & DRR Council	Climate History	Meta-Meetings	Storytelling Contest	Mapping	Health, Resilience, Land			
Taniton, Brianna	Participant	Youth	Female	School	Mapping							
Taniton, Gordon	Participant	Adult	Male	School	Trapping Program							
Taniton, Hailey	Participant	Youth	Female	School	Mapping							
Taniton, Hannah	Participant	Youth	Female	School	Trapping Program							
Taniton, Raymond	Advisor	Adult	Male	DFN Council	Meta-Meetings							
Tatti, Fibbie	Team	Adult	Female	Community	Mapping	Sq̓bak'e Trail						
Taylor, Kathleen	Participant	Youth	Female	School	Mapping	Trapping Program	Youth Digital Storytelling					

	Role	Age	Gender	Position(s)	Project01	Project02	Project03	Project04	Project05	Project06	Project07	Project08
Taylor, Kelsi	Participant	Youth	Female	School	Being Dene Story Cycle							
Taylor, Naoka	Participant	Youth	Female	School	Yamoria Story Cycle							
Taylor, Trevor	Participant	Adult	Male	Community	Climate History							
Tetso, Betty	Participant	Adult	Female	Dora Gully Health Centre	Meta-Meetings	Storytelling Contest						
Tetso, Irene	Participant	Adult	Female	Community	Storytelling Contest							
Tetso, Joe	Participant	Adult	Male	Community	Storytelling Contest							
Tetso, Morris	Participant	Adult	Male	Community	Harvesting, Sharing, Security							
Tutcho, Camilla	Participant	Elder	Female	Community	Meta-Meetings							
Tutcho, Deanna	Participant	Youth	Female	School	Mapping							
Tutcho, Dolphus	Team	Adult	Male	Community	Mapping	Meta-Meetings						
Tutcho, Isabelle	Participant	Youth	Female	School	Trapping Program							
Tutcho, Jimmy	Participant	Adult	Male	Community	Climate History							
Tutcho, John	Participant	Elder	Male	DRR Council	Meta-Meetings	Health, Resilience, Land						
Tutcho, Johnny	Participant	Elder	Male	Community	Climate History							
Tutcho, Keisha	Participant	Youth	Female	School	Trapping Program	Being Dene Story Cycle						
Tutcho, Nikki	Participant	Youth	Female	School	Trapping Program	Being Dene Story Cycle						
Tutcho, Preston	Participant	Youth	Male	School	Being Dene Story Cycle							
Tutcho, Rodney	Participant	Youth	Male	School	Mapping	Youth Digital Storytelling						
Tutcho, Sidney	Participant	Youth	Male	School	Trapping Program	Youth Digital Storytelling						

	Role	Age	Gender	Position(s)	Project01	Project02	Project03	Project04	Project05	Project06	Project07	Project08
Vital, Dene	Participant	Youth	Male	Community	Storytelling Contest							
Vital, Dora	Participant	Elder	Female	Community	Meta-Meetings	Being Dene Story Cycle	Mapping	Sqbak'e Trail				
Vital, George Gary	Participant	Adult	Male	Community	Harvesting, Sharing, Security							
Vital, Johnny	Participant	Elder	Male	Community	Harvesting, Sharing, Security	Storytelling Contest						
Vital, Jorey	Participant	Youth	Male	School	Mapping	Trapping Program						
Vital, Joy	Participant	Youth	Female	School	Yamoria Story Cycle							
Yukon, John	Participant	Elder	Male	DFN Council	Meta-Meetings							

5. Project Summaries

Projects were defined carefully in discussions with the Délı̨nę First Nation Council, the Délı̨nę Renewable Resources Council, the Délı̨nę Governance Office, and elders and community members participating in meta-research workshops. Although planning began early in April before the funding had been received, the core research activities were delayed to October as a result of a change in the composition of the Délı̨nę First Nation Council during the summer and hiring of a new Band Manager. The turnover in leadership meant that more time was required for the leaders to gain confidence in and a sense of ownership of the program. Notwithstanding the delay, community interests and ambitions for the program expanded to incorporate a variety of facets directly relevant to the research objectives yet not envisioned in the original workplan. This placed a primacy on establishing a strong network of partnerships and collaborations.

There were seven different types of projects that crystallized in the course of the program in three different contexts: in the school, in the community, and on the land (see Table 2). These projects often combined a number of processes, some of which were deliberate research activities, and some of which were community events that shed light on the research through engagement by research team members in participant-observation. As we will see in the subsequent “Preliminary Research Results” section of this report, the projects were complementary and intersecting, addressing to differing extents the five key themes identified in the research planning process: Health, Climate Change, Land, Government, Stories. The intersections were traced and developed through the meta-research workshops and presentations. Community events that bear relevance to the *Learning About Changes* theme are listed in Table 3 and are discussed in the following activity summaries. This section provides summaries of project activities, along with listings of participating research team members and documentation compiled by the Délı̨nę Knowledge Project, including any proposals for future work. As Principal Investigator, Deborah Simmons was involved in design and research in some capacity on all projects.

Table 2: Projects

Projects	School	Community	On-the-Land
1. Meta-research meetings/workshops			
2. Climate History-Monitoring			
3. Language of the Land			
4. Mapping Our Changing Land			
5. Planning for Changing Health			
6. Sharing Our Stories			
7. Subsistence, Health and Governance			

Table 3: Community Events

Events	School	Community	On-the-Land
Epidemics: H1N1 and tuberculosis			
Hand games			
Spiritual Gathering			
Délnę Youth Radio Club			

5.1. Meta-Research Meetings/Workshops

Participants: All research team members, Délnę First Nation Council, Délnę Renewable Resources Council, Délnę Governance Office

The *Learning About Changes* program entailed a complex web of intersecting research partnerships and activities. The program scope was larger and more complex than had been experienced in preceding years. Considerable effort was required to provide for collective discussions every step of the way to ensure that the research was defined, guided and fully owned by the community, and to undertake preliminary analysis linking key learnings to the core research question. This was in addition to numerous smaller meetings that took place throughout the program cycle. The meta-research workshops and meetings were iterative in nature, reflecting on previous research activities and looking forward to next steps. After the initiation meeting bringing together academic research collaborators, community participants increasingly took on leadership roles in these events as presenters of their own perspectives on the research – and the academic resource people took back seats as facilitators. There were two occasions to distil key learnings from the research in a larger public, including a series of three workshops led by the Délnę Knowledge Project team at the *Northern Governance Policy Research Conference* in Yellowknife on November 4-6, and the University of Toronto Study Tour based at the Centre for Aboriginal Initiatives and Department of Aboriginal

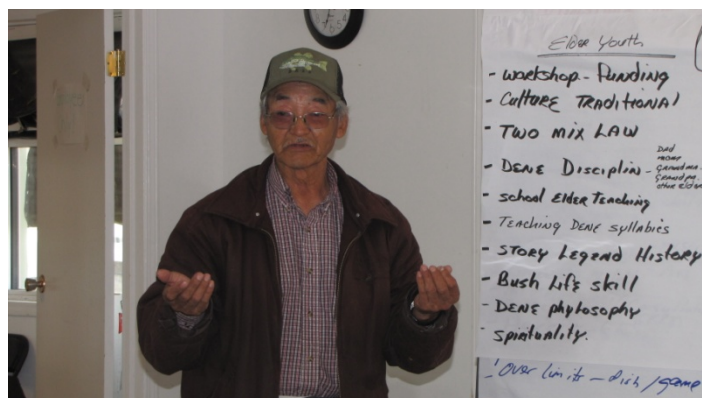


Figure 10: Elder Charlie Neyelle explains how elder youth exchanges contribute to community health.

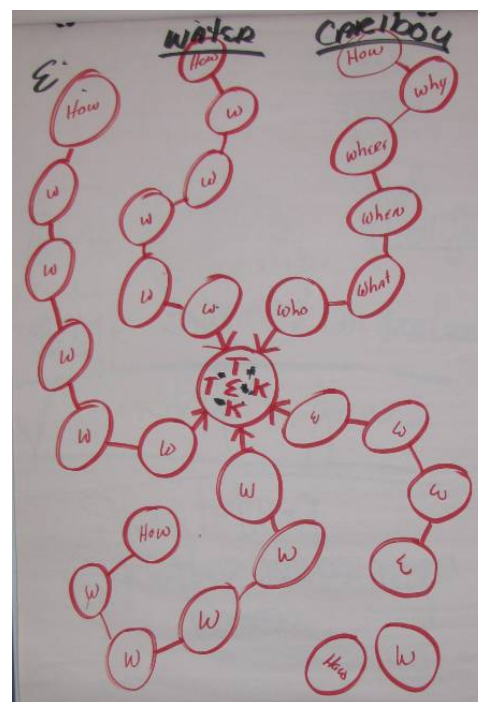


Figure 11: How traditional knowledge explains relationships in the environment. Diagram by Charlie Neyelle.

Studies, where Dene research collaborators Walter Bayha, Morris Neyelle and Doris Taneton were leading presenters and facilitators of an intensive series of workshops and classes as well as a public seminar focused on the various disciplinary facets of the *Learning About Changes* program, working with a number of past, present and current academic collaborators. The challenge of publically presenting the research was a mechanism supporting collective analysis and validation of the research process and results.

Table 4: Schedule of Meta-Research Meetings/Workshops

Note: all activities involved the Déline Knowledge Project as core research team.

Date	Activity	#Partic	Representation/Documentation
April 1	Teleconference: Program initiation meeting, Déline researcher group	9	Academic research collaborators <i>Minutes</i>
April 6	Community research planning workshop	17	Déline First Nation Council Déline Renewable Resources Council Dora Gully Health Centre Sahtu Renewable Resources Board Elders Observers <i>Minutes</i>
May 15	Déline Renewable Resources Council planning meeting	7	Déline Renewable Resources Council <i>Notes</i>
June 24-27	Community Learning About Changes workshop	22	Déline First Nation Council Déline Renewable Resources Council Dora Gully Health Centre Sahtu Renewable Resources Board Elders Observers Academic research collaborators Indiana University McGill University Queen's University University of Alberta Prince of Wales N. Heritage Centre <i>Audio recording, photos, report and transcript</i>
July 7	Déline First Nation Council planning meeting	8	Déline First Nation Council <i>Minutes</i>
Oct 20	Déline First Nation Council planning meeting	5	Déline First Nation Council <i>Minutes</i>
Nov 4-6	Round tables: <i>Learning about Changes: Stories, Governance and the Déline Knowledge Project; Lessons from the Past: Community Governance and Abandoned Mines in Northern Canada; and Research the Indigenous Way</i> , at the Northern Governance Policy Research	50	Déline Governance Office Audience members from across the North <i>Audio recordings, transcripts, photos, one publication (McGregor, Bayha, Simmons 2010)</i>

Date	Activity	#Partic	Representation/Documentation
	<i>Conference</i> (Yellowknife)		
Dec 8-11	<i>Sǫbaká ʔetené</i> planning workshops	37	Déline Remediation Office Sahtu Renewable Resources Board Déline Governance Office Déline First Nation Council Déline Renewable Resources Council Elders High school science class Academic research collaborator – National University of Ireland at Galway
March 8-12	University of Toronto Study Tour	15 plus	Déline First Nation Council Sahtu Renewable Resources Board Déline Governance Office Academic research collaborators Indiana University University of Alberta Université du Qué. à Montréal Memorial University Natl Univ. of Ireland Galway Cologne University Plus 60 students approx. in 4 classes Audience of 50 approx in public seminar <i>Study tour package, photos, notes</i>

5.2. Climate History-Monitoring

Project Team: Michael Neyelle, Edward Reeves, John Gyakum

The Déline Renewable Resources Council in partnership with the Déline Knowledge Project was successful in obtaining funding for a three year International Polar Year program entitled *Building local capacity to address climate change in the Great Bear Lake Watershed - Yát'a gúlúu agot'í agújá sǫ benáoweré há gots'ę goghq keots'eruhshá gogha dúhdá kǫtah káyúrǫla gohá areyǫné t'á sénégots'úrǫ.* The DKP provided project coordination and research support. The focus during 2009-2010 was on climate history and monitoring. This was an important opportunity to exchange traditional knowledge and scientific knowledge about climate. The core discussion about the implications of climate history/monitoring for community health (safety and survival on the land) took place during a workshop led by Dr. John Gyakum during the June 24-27 meta-research workshop. There was an interesting connection drawn between the climate history and mapping projects, in that an elders focus group (held in March) was asked to identify key areas around Great Bear Lake for the climate history. A science-based weather monitoring station was set up in Déline and a system for maintaining the station and data was established.

Documentation provided: GoogleEarth map, climate history and monitoring reports, proposal for 2010-2011 work.

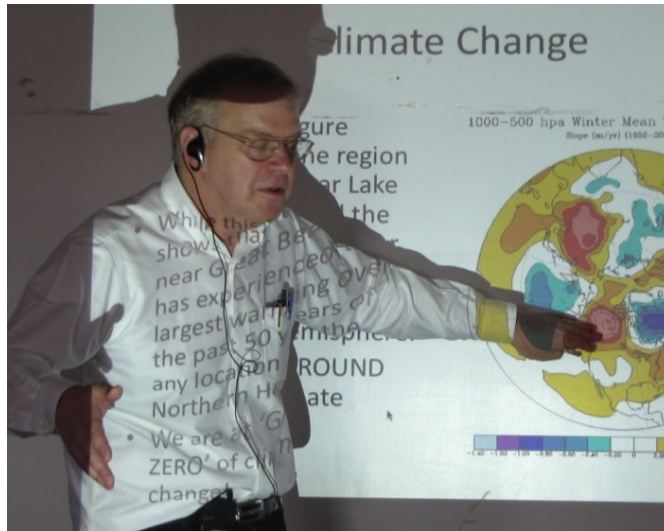


Figure 13: John Gyakum explains climate change in the Great Bear Lake area from a scientific perspective.



Figure 12: Charlie Neyelle explains his understanding of climate change while Walter Bayha records and John Gyakum listens.

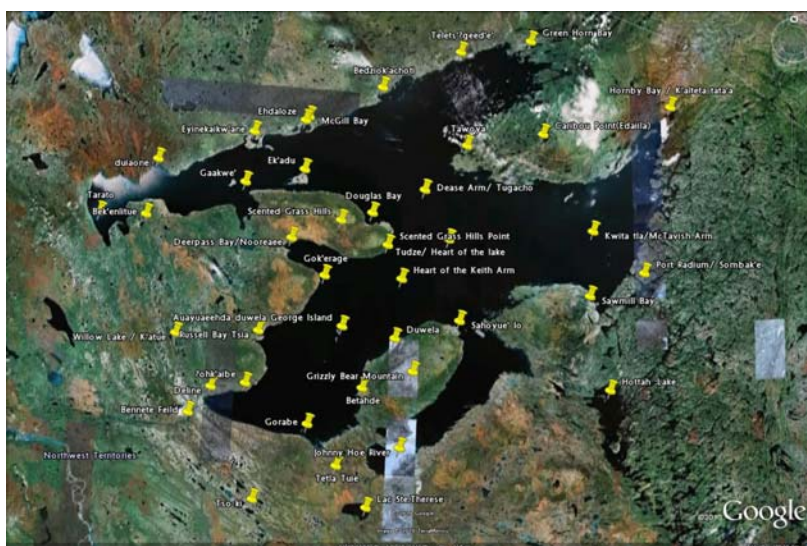


Figure 14: Climate History Locations Map, March 2010.

5.3. Language of the Land

Project Team: Edith Mackeinzo, Jane Modeste, Mike West, Ruthann Gal, Keren Rice, Ingeborg Fink

At all the meta-research meetings and workshops, people talked about the importance of language as a vehicle for understanding nuances of how the land was in the past, and how it has been changing. Dene language includes special concepts and technical descriptions of the land and weather that are not easily translated into English. The language is an important vehicle for the stories. Study participants, talking to English-speaking researchers, often would say that the stories are “not as good” in English as they are in their original language. Placenames have been shown to be important carriers of baseline information about the land, against which changes can be measured. Similarly, language about health can provide a sense of how people’s experience of health has evolved over the years.

Language documentation about the weather, placenames and health took place opportunistically during storytelling sessions, meetings and workshops, in addition to collection and assessment of relevant existing lists (see Table 9 and

Table 10). However, part of the research involved exploring changes in language use as an indicator of social and environmental change. Related to Objective 3 of this project, researchers were strongly supported by community participants to explore the role of new technologies in documenting and maintaining vocabularies of place and weather over the years. Development of multi-media databases were seen as critical means of developing a cumulative topical vocabulary. The focus was on development of the web-based database grounded in the ideas and needs of community researchers, but also drawing from the experience of specialists in



Figure 15: Morris Neyelle talks with Keren Rice and Mike West about language change and documentation.

linguistics. The research team came to call this a “Language Toolbox.” A Geographic Information System (GIS) database was also tested for placenames documentation. The hypothesis was that these databases might serve as mechanisms for adaptation in providing new means of promoting and utilizing the language.

An unexpected amount of labour was required to design the Language Toolbox and clean up map data for the GIS database. It was discovered that the prevalent font for writing in Dene language is outdated, and as a condition of setting up robust databases it would be necessary to make a transition to Unicode fonts, which had not yet been fully tested and verified with linguists in the NWT. Team members coordinated a Language Toolbox workshop associated with the NWT Languages Symposium. NWT Education, Culture and Employment as well as Indian and Northern Affairs Canada provided support for the project.

In Délı̨nę, linguistics student Ingeborg Fink collaborated with Mike West and community researchers in developing the Language Toolbox design. Professional Development workshops were held with school staff (October 23), and staff at the Délı̨nę Land Corporation office (March 24). Workshops on use of the Language Toolbox and in digital mapping were combined with storytelling sessions at the school over a period of 8 days in March, working with Ruthann Gal, Mike West, and community researchers Fibbi Tatti and Doris Taneton. Unfortunately one of the high school students died in a tragic accident during the last part of the planned two week workshop, and it was necessary to cancel several days of the school workshop. However, some of the students were able to complete their Special Projects course by correspondence.

Documentation: School workshop assessments (confidential); Aurora College Certificates; photos; vocabulary lists, including placenames; preliminary databases; language/placenames documentation proposal.

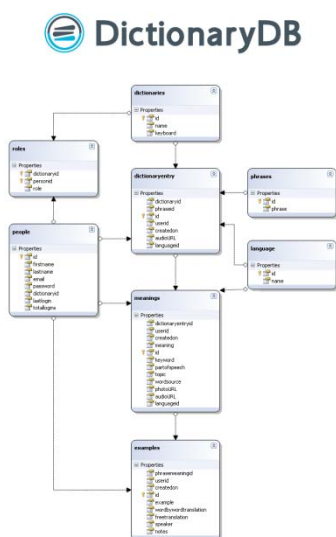


Figure 16: Preliminary Map of Language Toolbox Database. Credit: Mike West.

5.4. Mapping Our Changing Land

Project Team: Edith Mackeinzo, Michael Neyelle, Dolphus Tutcho, Orlena Modeste, Ruthann Gal, Anna Stanley, John Gyakum

The high level of interest in our mapping project was an indicator of its importance to the community as an aspect of understanding ecological change, as well as people's changing relationship with the land. The project was extensive and multi-faceted, including placenames documentation, examining the local and global historical geographies of climate/environmental change and health impacts, and exploring new technologies for mapping changing ecologies and land use practices.

Activities included compilation of existing documented placenames (January-March), 5 days of new placenames research with 8 elders (October and March), a one day workshop with 8 elders on the geography of weather around Great Bear Lake (weather history), a family area mapping project (February), an 8 day workshop in digital mapping and stories at the school with 25 students, linked with the Language Toolbox workshop (March), and a ten day workshop with human geographer Dr. Anna Stanley involving 3 youth, and 2 Dene language specialists mapping the larger historical geography of anthropogenic environmental change and health impacts in the modern era, starting with Great Bear Lake mining history and drawing comparisons with experiences in other aboriginal communities in Canada. Support for this project came from the Remediation Office (Orlena Modeste) and Memorial University.

Documentation: Placenames database; four family area maps; mining history and changing land use map; language/placenames documentation proposal.



Figure 18: Digital mapping with elders Alfred Taneton, Leon Modeste and Dora Vital. Ruthann Gal, GIS specialist and Fbbie Tatti, linguist. Credit: Edith Mackeinzo.

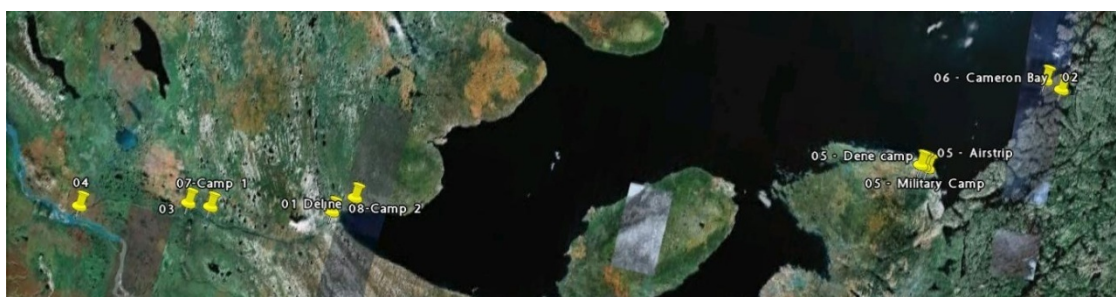


Figure 17: Mine History and Changing Land Use Map (*Sq̓ba K'e Eht̓eṇ̓e* Youth Workshop, March)

5.5. Planning for Changing Health

Project Team: Betty Tetso, Wendy Flood, Chris Fletcher

This project was dramatically modified over the course of the year as a result of the impacts of two epidemics in the community: the H1N1 pandemic and a local outbreak of tuberculosis. This was a case in which research itself had to adapt changing conditions of community health. Our health practitioner collaborators, Wendy Flood and Betty Tetso, were required to devote full time to epidemic preparedness and prevention, so collaboration with respect to this project was reduced to informal meetings during times when they were available, and contributions to our meta-research workshops. Our research team members were also able to engage in participant-observation during community forums in which the epidemics were discussed (H1N1 in September, and tuberculosis in March). Literature review indicates that climate change will bring new infectious diseases to the arctic (see for example Parkinson and Butler 2005, Parkinson and Evengard 2009), and recommendations have been made that public health monitoring and intervention strategies be developed. The two epidemics over the course of 2009-2010 have led Délı̨nę to experience both monitoring and prevention practices imported from decision-making centres elsewhere. The research team observed changes in community responses to monitoring and intervention strategies, as well as the emergence of narratives of historical epidemics among the Sahtúot'ı̨nę. An interview with Wendy Flood and longtime northern nurse Laurie Davidson near the conclusion of this study (March 26) gave rise to recommendations for future work.

An important contribution to this project was the presentation by Dr. Chris Fletcher at the *Learning About Changes* workshop about the relevance of the earlier *Plants for Life!* traditional healing project to community understandings of health and wellbeing in times of change. Betty Tetso participated in this session and there was an engaging discussion.

Documentation: Participant-observation field notes; proposal for follow-up workshop has been planned for submission to Sahtu Regional Health Authority.



Figure 19: Chris Fletcher talks about *Plants for Life!* traditional healing project. Edith Mackeinzo, interpreter.

5.6. Sharing Our Stories

Project Team: Doris Taneton, Edith Mackeinzo, Walter Bayha, Jane Modeste, Leon Modeste, Dora Vital, Alphonse Takazo, Trent Waterhouse, Robert Kershaw, Anna Stanley, Dawn Ostrem

This project was very ambitious since it addresses the core of the research program. The aim was to explore how men and women of different ages share stories, and how stories are used to identify, analyze and address health risk in the context of climate change. Stories were shared through all the projects in this program; however this project systematically sought to understand the life of the story form in the community as an element of resilience and adaptiveness. Given that so little literature exists on the role of this form in aboriginal communities, and given that this was the first such project in the community of Délı̨nę, it was necessary to take a very preliminary and baseline approach to the research questions. Two key methods were used: on the one hand, deliberately open and indirect tools were used in relation to the health-climate change subject matter in order to scope out keystone stories and to better understand the organic or spontaneous life of stories in the present community among youth and older generations (separately and in cross-generational exchanges); on the other hand, structured, thematic and analytical elder-youth exchanges were design to understand how learning towards strengthened adaptiveness and resilience takes place in more strategically designed (or pedagogical) storytelling contexts. The latter method provided opportunities for learning about the larger context of health and climate change adaptations beyond Great Bear Lake and beyond the Northwest Territories. Both methods supported intensive explorations of relatively new technologies (digital storytelling, radio, digital mapping) as tools for youth to take ownership of stories and share them within the community and beyond. The aim was to compare results of the two methods as a basis for developing a vital and effective adaptive health-climate change strategy.

Ongoing research on the Délı̨nę oral history archive by the Délı̨nę Knowledge Project team was an important component of this project. Edith Mackeinzo reviewed and annotated the audio archive, documented “hard words” for inclusion in the Language Toolbox, collected recordings from community members, and shared copies of recordings with community members upon request. Sarah Gordon provided important assistance in updating the oral history database so that all the annotations are fully searchable.

Another aspect of this project involved conscious capacity-building, in which teaching staff at the school, elders, students themselves, and health care staff (through analysis discussions that took place during meta-research workshops) gained greater understanding and skills in representation and facilitation of stories and their applications in the context of change. It should be stressed that this was the first attempt to initiate such cross-generational research in Délı̨nę – previous traditional knowledge projects had been structured and “data” oriented, with a sole focus on work with elders and adults.

Table 5 lists storytelling events throughout the study cycle. This list focuses on storytelling situations planned as part of this program, and does not include informal storytelling sessions that took place during on-the-land experiences, in public forums related to health issues, or at the Spiritual Gathering. The in-service at the school as well as storytelling contests and the youth storytelling workshop were scoping exercises aimed at identifying keystone stories from the past

and present among elder and youth – the life of stories in the community. In contrast, the storytelling cycles, *Sóbaká ʔetené* Radio Documentary Workshop, and Mapping the Stories workshop were very specifically structured as learning opportunities in exchanges between elders and youth.

Summaries of deliberately planned research activities are provided below. Discussions of key learnings from these activities as well as other informal storytelling contexts on the land and in the community can be found in the “Preliminary Research Results” section.

Documentation: Audio recordings, transcripts, maps, photographs.

Table 5: Sharing Our Stories Activity Summary

Activity	Sphere	Participants	Dates
In-Service	School	10 teaching staff; 2 elders	October 23
Storytelling Cycle 1: <i>Yamoria and Creation</i>	School	Grades 6-7 (20)	October-November
Storytelling Cycle 2: <i>Being Dene</i>	School	Grades 4-5 (15)	January-February
Storytelling Contest 1	Community	Elders-Adults-Youth (12)	June 25
Storytelling Contest 2	Community	Elders-Adults-Youth (6)	November 26
Storytelling Contest 3	Community	Elders-Adults (18)	December 8
Youth Digital Storytelling Workshop: <i>Being Dene</i>	School/Community	Youth (8), Adult (1)	February 1-5
<i>Sóbaká ʔetené</i> Radio Documentary Workshop	School/Community	Youth (3), Adults (3), Elders (3)	March 1-12
Mapping the Stories Workshop	School/Community	Youth (25), Elders (8)	March 15-24
Community Elicitations	School/Community	Déłıne Knowledge Project team, Adult (1), Youth (1) Graduate students (2)	Ongoing

School In-Service

In preparation for the school storytelling activities, the research team and the school Principal (Brian Wishart) and Program Support person (Trent Waterhouse) determined that teaching staff should be given some understanding of the context for the project and its importance to the community and students. The one day fall in-service was thus entirely devoted to presentations and workshops on Dene stories and language, and their role in

Figure 20: Elders Charlie Neyelle and Alfred Taniton explained to teachers the importance of the Yamoria story symbolized in the Dene Nation logo in the creation of Dene territory and laws for healthy living.



the past and present. This was an opportunity to scope out with elders and researchers the kinds of stories and language tools to be shared, as well as the design of the school program so that the learning process would be as successful as possible for students and teaching staff were able to be effective supports. Two elders told old time stories that for them exemplified the kinds of teachings that can benefit students in a changing world; this was followed by discussion.

Storytelling Cycles 1 and 2

This project was carefully designed with an innovative structure aimed to address the cross-cultural context of the school, building capacity for teaching staff and elders, and maximizing student learning. Each Story Cycle involved five parts, spread over 4-6 weeks. An effort was made to maintain continuity with the same elder involved over the life of the Story Cycle, so that the elder would gain specific expertise in working with youth in the school. The elder and teaching staff were involved in developing the thematic and design for each cycle, as well as debriefing sessions to assess the program as it evolved. Three Story Cycles were originally planned on three themes, with three different classes: *Yamoria and Creation*; *Being Dene*; and *Surviving on a Changing Land*. However, due to various circumstances it was only possible to complete two of the Story Cycles (*Yamoria and Creation*, and *Being Dene*).

The program leads were Doris Taneton and Trent Waterhouse, along with the teachers in participating classes. Participants in the Story Cycles included one or two elders, a language specialist, the program coordinator, the teacher, and a full class of students. The extended Story Cycle format allowed students and elders to gain depth of understanding, context for the stories

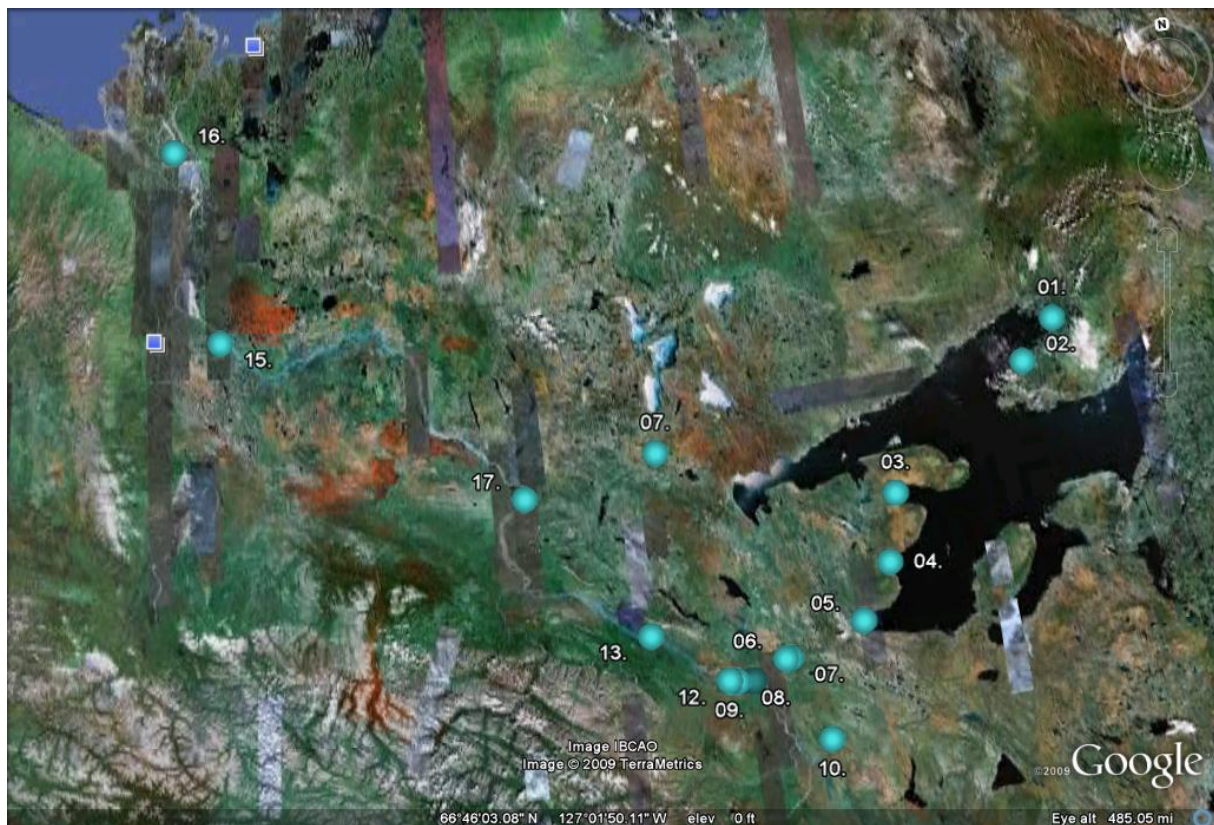


Figure 21: Yamoria Chases the Beaver Map. Credit: Leon Modeste

in the present, and emergent student ownership of the stories. With some variation, sessions typically took place on Friday mornings at 10:30 am-noon, with students doing preparation through the weeks after the first session. Often the elder would be inspired to tell additional stories throughout the cycle. The five parts of the cycle were as follows:

1. Introduction and performance of the story
2. Students research the story, asking the elder prepared questions about the story
3. Students prepare their own representations of the story and present these to the elder
4. Students and elder present the story to another class
5. On-the-land experience celebrating the story

The two themes selected in discussions with elder Leon Modeste in keeping with the *Learning About Changes* theme were *Yamoria* and *Creation*, and *Being Dene*. *Yamoria* and *Creation* provides insight into a suite of stories demonstrating how the land was created, and the laws governing people's relationship with the land. The stories show the relationship between cultural landscape, natural ecology, and community survival and well-being. The *Being Dene* cycle was the one activity in which it was possible to explore gender aspects of



Figure 22: *Being Dene* Story Cycle. Dora Vital tells a story, and Bernice Neyelle interprets.



Figure 24: *Being Dene* Story Cycle. Student presentation to the elders. Leon Modeste listening, Doris Taneton recording.



Figure 25: Students present their illustrations of the Yamoria story.



Figure 23: Student presentation - *Being Dene*. February 20, 2010.

Dene relationships with the land. The cycle involved separate groups of boys working with an elder man, and girls working with an elder woman. Students were encouraged to explore how traditional gender roles apply in the context of a changing environment and society.

Storytelling Contests 1-3

Three evening storytelling contests provided a venue for identifying key stories that are meaningful in the community, and for understanding the role of stories in the community as vehicles for knowledge transmission about health adaptations in changing social and ecological contexts. These contests explored both the organic “life” of stories in the community and the kinds of stories that gain resonance at different times of year in cross-gender and cross-generational contexts. All contests involved small prizes for Elder-Adult Men and Women in order ensure contributions from both women and men, as well as a prize for youth. These prizes were based on participation and not merit, and were selected by a draw. The first contest took place during the meta-research workshop on June 24-27, and thus clearly established the contests within the *Learning About Changes* theme. Two youth participated in the first contest. The second contest took place after initiation of the storytelling cycle at the school; four stories were shared by youth during that contest. The third contest was inadvertently scheduled during a youth sports event, so there were no youth participants. The first two contests were advertised



Figure 28: Dene Neyelle and Alfred Taniton, Prizewinners Younger and Elder.



Figure 28: Jacob Betsidea presents an award to Cecile Naedzo, our oldest storyteller at 92!



Figure 28: The elders listen while Adrian Kenny tells his story.

with a defining theme of “Old Time” stories; in talking with contest participants, the research team decided that the third contest, taking place prior to the Christmas holiday season, should be on the theme of “Funny Stories.” All performances were audio recorded by permission of participants.

Youth Digital Storytelling Workshop: *Being Dene*

This workshop was conducted at the school by Robert Kershaw and Dawn Ostrem of the Centre for Digital Storytelling with 8 youth along with Edith Mackeinzo. The project was supported by the Sahtu Renewable Resources Board and NWT Cumulative Impact Monitoring Program. The project brought youth stories into a cross-community sphere, since it was coordinated in partnership with Mackenzie Mountain School in Norman Wells where a similar workshop took place. Moreover, the project can be compared with a similar digital storytelling workshop on the theme of Health and Climate Change that took place in Rigolet, Labrador during 2009-2010. The approach taken with the Délı̨ne-Norman Wells workshops was somewhat distinct in that the research team decided to take a relatively open approach to defining stories with youth, in order to identify baseline issues, themes and solutions resonant for youth in developing health-climate change strategies without overdetermining how students “should” think. The theme was *Being Dene*, following from the Story Cycle that had been determined with elders for Grades 4-5 during January-February. Over four and a half days (36 hours), youth participants were to reflect on what it means to maintain health and well-being as Dene in the context of social and environmental change. The objectives were to gain a deeper understanding of story development by young women and men about their understandings of both their heritage and their future, using new technologies. The intention was to triangulate results of this workshop with outcomes of storytelling sessions with elders to understand how youth learn when they have relative



Figure 29: Digital Storytelling Workshops Délı̨ne and Norman Wells. Credit: Centre for Digital Storytelling.

autonomy in comparison with youth learning in storytelling contexts involving their elders.

High school students were selected for the course based on high achievement. The workshop included welcoming and orientation exercises, a story-sharing circle, script writing, hands-on computer software tutorials, production and editing time and one-on-one support from the facilitators. To start off participants in both workshops talked as a group about how to make a digital story, how to choose what story to tell, and how to start writing. At the core of the workshop was a story-sharing circle that framed the research question.

In the story circle participants as a group, after establishing their own ground rules about how to be respectful, shared their story ideas with each other and used the group feedback to focus their ideas into a story. After the story circle participants took the feedback and began writing their 250-350 word script. The group reconvened and shared what they had written again to get supportive feedback from the group. Once each storyteller was happy with what they had written they were recorded reading their completed script. Images were also collected and scanned: photos, original artwork. Students were then given a digital video editing tutorial using Sony Vegas software. Participants, using their recorded script and selection of images, then worked on a storyboard for their video.

The remainder of the workshop was spent putting all the parts of their story together on the computer using Sony Vegas. Storytellers explored the use of special effects and compositing techniques to broaden their experience as film editors. Often students were faced with creative problems to solve such as finding an appropriate image or video clip to help illustrate their narration.

At the end of the workshop there was public screening to show off everyone's work and a brief group discussion about the experience.

Sóbaká ʔetené Project

This workshop was in deliberate contrast to the digital storytelling workshop in developing a clearly defined thematic framework for use of new media in storytelling about a key historical experience of Sahtúot'ı̨nę in anthropogenic environmental change involving health impacts. The experience of impacts from the Port Radium uranium mine was identified as the focus of the youth workshop, since elders defined this during the initial *Learning About Changes* meta-research workshop as a keystone story conveying unique meaning about Dene adaptivity in maintaining community health and well-being, with a focus on using a historical story and its global context as a basis for strategic decisions for the future.

Youth had begun to explore the Port Radium story during the Polar Radio project in 2008, but that iteration was oriented sharing stories about cultural change, rather than linkages between environmental change and health adaptations in the present and future; moreover, the focus was narrowly on the Sahtúot'ı̨nę experience. Also, the stories were packaged for the most part by the project facilitators rather than the youth themselves. This radio documentary workshop was an important progression in exploring how youth can take ownership of stories by taking a broader contextual view. Planning for the workshop

The workshop took place over two weeks, allowing for more expansive research, including mapping of the stories. The language component of this project was very strong, with the participation of two Dene language specialists. As well, for the first time participating youth were given the opportunity to learn the technical and narrative skills required to structure their documentary and edit their materials, thus fully taking ownership of the story from conception to research, analysis, and execution in the final documentary.



Figure 32.1: Checking out the *Sq̓ba K'e Eht̓en̓e* display. Note "TB strikes Dél̓n̓e" headline in *News/North* newspaper, bottom left.



Figure 32.2: *Sq̓ba K'e Eht̓en̓e* public presentation. Left to right: Tianna Takazo, Orlena Modeste, Mitchell Naedzo, Doris Taneton.



Figure 32.3: *Sq̓ba K'e Eht̓en̓e* public presentation. Michael Neyelle interpreting at back, standing.

At the end of the program, the youth prepared a presentation to accompany broadcast of their documentary to the community, accompanied by projections of the “Mine History and Changing Land Use Map,” archival photos and video, and wall displays showing the work that had been done.

Community Elicitations

A number of community activities took place during the period of the program were not core to the structured research but nevertheless were very important in informing perspectives about stories in relation to climate change and health adaptation. These included requests to the Délı̨nę Knowledge Project for stories and song to address perceived community needs; the unforeseen impacts two epidemics (H1N1 and tuberculosis); two cross-community and cross-regional events, the annual Spiritual Gathering and a major handgames tournament; and the Délı̨nę Youth Radio show.

The Délı̨nę Knowledge Project team made and distributed approximately 30 copies of the oral history collection from the Délı̨nę archive during the period of this program, and copied the collection on several MP3 players. The copies were made upon request only, demonstrating the

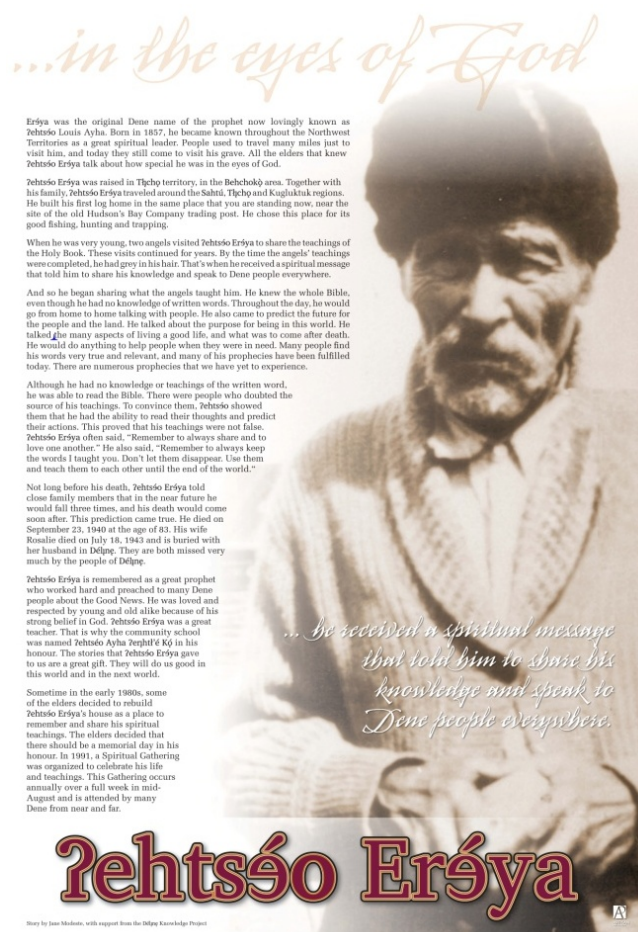


Figure 34.1: ?ehtsáo Eróya Poster. Credits: Jane Modeste and Deline Knowledge Project. Design: Artesan Press.

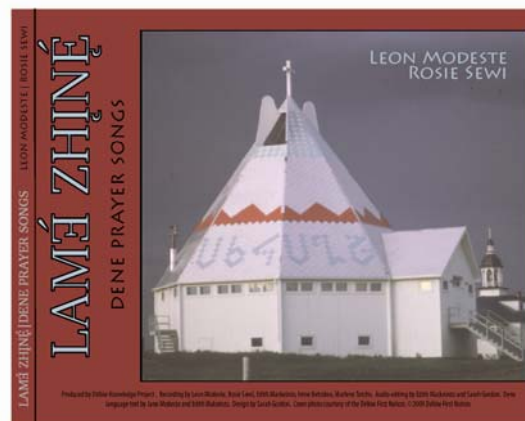


Figure 34.2: Dene Prayer Songs CD Cover. Designed by Sarah Gordon.

strong community interest in the stories of the elders. As time went on, community members began requesting collections of stories by specific individuals. As well, community feedback led to production of a 2-CD set of Dene language hymns and prayers along with a Dene language script for the prayers, and a collection of ?ets'ulah (known in English as love songs). Both CDs included new recordings as well as archival materials. The hymns/prayers CD was in honour of Rosie Sewi, a respected elder who passed away the previous year. This CD was distributed at Christmas, and during the Spiritual Gathering. The Délı̄ne Knowledge Project also produced poster in collaboration with Jane Modeste with the story of the local Prophet ?ehtsáo Eróya (Louis Ayha) to be posted at the “Prophet Ayha’s house.” These community-directed projects were important in identifying the kinds of narratives that are considered to community health and well-being in the context of change. It also demonstrated a significant intersection of story and song in people’s cultural toolkit, and provided insight into spiritual discourse as a key resource for the community.

Community forums organised to discuss epidemic responses became occasions for storytelling about responses to past epidemics (such as the 1918 flu epidemic and TB epidemics in the 1950s



Figure 36.1: Deline Youth Radio Poster.
Credit: Mahalia Mackeinzo.

The Deline First Nation would like to thank you for contributing financially and volunteering for the 18th Annual Deline Spiritual Gathering.

The Deline Spiritual Gathering was a huge success and it was, in no small measure, due to your hard work. Volunteers played an integral role in ensuring that Gathering goals were reached. Your time, talents, and efforts were very much needed and are much appreciated.

Once again thank you and we look forward to working with you again in the future and Thank You to Leslie Baton.

Company Sponsors

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Volunteers and Deline First Nation Workers

Alfred Betsidea	Diane Andre	Louie Nitsiza	Darrel Betsidea
Alfred Sewi Jr.	Don Aubrey	Marie Kenny-Lennie	
Angus Kodakin	Donna Takazo	Marilyn Vital	
Antoine Mountain	Dora Blondin	Martynann Kenny	
Archie Vital	Doris Taniton	Maryann Vital	
Arsene Betsidea	Edith Mackeinzo	Maryose Yukon	
Ashley Modeste	Esther Sewi	Michael Neyelle	
Augustine Kenny	George Dolphas	Morris Neyelle	
Austin Kenny	Gordon Taniton	Nicholas Taniton	
Barbara Yukon	Hazel Andre	Norman Betsina	
Betty Quitte	Hilary Andre	Oriena Modeste	
Bruce Kenny	Irene Kodakin	Patricia Modeste	
Caroline Lafortaine	Irene Lafferty	Pauline Roche	
Charlie Neyelle	Irene Tetso	Peter Bayha	
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Christian Tetso	Jake Roche	Rita Webb	
Christina Gaudet	Jamie Takazo	Roseanne Taniton	
Connie Modeste	Jane Modeste	Shirley Baton-Modeste	
Corey Betsidea	Jimmy Dillon	Thomas Neyelle	
Dalton Takazo	Joe Blondin	Travis Dugas	
Daniel Takazo	John Tutchio	Trevor Blondin	
Danny Gaudet	Kevin Roche	Verna Mae Firth	
Dave Taniton	Kim Tocher	Walter Bayha	
David Modeste	Kristian Tutchio	Wilfred Kenny	
Michelle Betsidea	Raymond Taniton	Gabriel Mackeinzo	
Deline Sewi	Leonard Kenny	Jeffrey Etemie	
Dennis Thompson	Les Baton	Arsene Ayha	

Figure 36.2: Thank you advertisement, Deline Spiritual Gathering. Credit: Deline First Nation.

and 1960s), as well as the kinds of preparedness required for future infectious diseases that may impact the community in the context of climate change. An interview with

The annual Spiritual Gathering and Youth Workshop (August 14-16), and a major hand games tournament (February 18-22) involved participation from across the Northwest Territories. These events were instructive in demonstrating how cross-community and cross-regional gatherings involving the cross-generational sharing of stories and song strengthen community well-being resilience both as a medium for renewing traditional knowledge and practices, and for renewing relationships within and beyond the community that may be critical to knowledge sharing as future climate change impacts are experienced. Délı̨ne Knowledge Project team members contributed to the Spiritual Gathering by supplying archival audio recordings for story sessions. In collaboration with the Délı̨ne Knowledge Project, the Délı̨ne First Nation commissioned a video of the handgames tournament that has become very popular in the community, and explains the social and cultural significance of the games.

The Youth Radio Club was initiated by ʔehtseo Ayha School in partnership with the Délı̨ne Knowledge Project. Unlike the other youth story projects, this program was led entirely by students, with DKP (Doris Taneton) and teaching staff (Trent Waterhouse) playing only supporting roles. The Youth Radio show took place on a weekly basis during October to December. The program contents provided a sampling of the kinds of communication and education that youth think are important, representing the nature of their aspirations and relationships within the community. One significant element of the program was the “Dene Word a Week” series conceived and broadcast by the students.

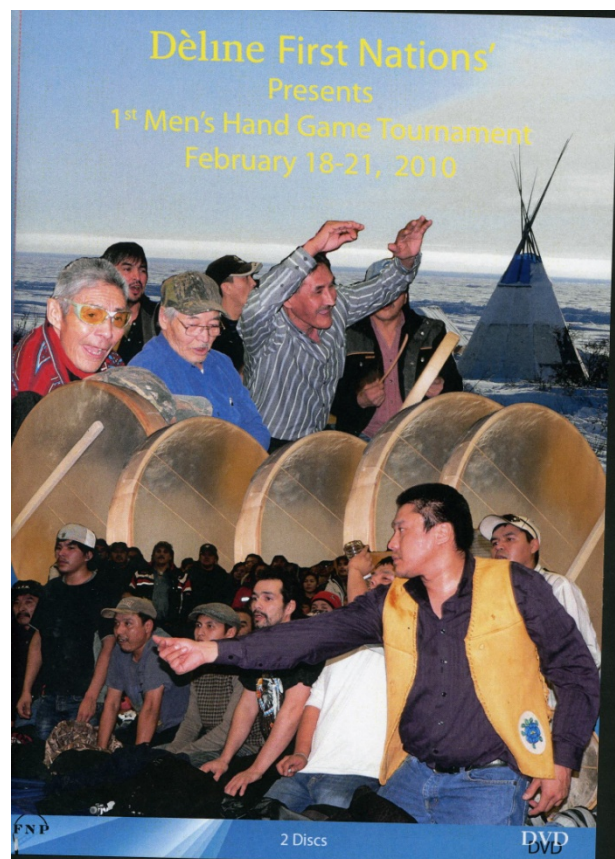


Figure 37: Deline 1st Hand Games Tournament Video Cover. First North Productions.

5.7. Subsistence, Health and Adaptation Planning

This project incorporated activities with the objective of exploring how stories translate into and out of land-based practices as a way of maintaining the knowledge system required as the basis for healthy adaptations to climate change. The experiential aspect of the program was critical as a way of showing practical implications of the story-based knowledge system in the community and in the school, and in understanding the contextual aspects of the old stories as a basis for survival, good health and well-being. The on-the-land activities provided a baseline for understanding current applied skills and knowledge that might need to be supported and strengthened in an adaptation program in order to mitigate climate change impacts. The project included a school trapping program; participant-observation by the three collaborating graduate students in several on-the-land trips, a quantitative study of harvesting and sharing adaptations led by Masters student Tiarella Hanna, and a study of the changing role of the Délı̨ne Renewable Resources Council in caribou stewardship by Ken Caine. The Mapping Our Changing Land project supported discussions about historical and evolving subsistence practices and adaptation planning, particularly through the family area mapping that allowed for understanding of how land stewardship is structured.

Documentation: Audio recordings, transcripts, field notes, quantitative survey data, student logs, photographs, PhD research proposals.



Figure 38: On-the-Land Student Log excerpt: “We only saw one chicken on the way and I shot it.” Credit: Jake Roche.

School Trapping Program

The school trapping program involved three separate trips to set and check traps. Nine students participated. Conversations on the land were audio recorded and photographs were taken. Student logs were structured by a standardized outline to encourage documentation of observations on the land, including art work recording a “mental image” of the experience. The intent was to gauge the knowledge base of the students and the extent to which they value gaining traditional knowledge and survival skills on the land, and the extent to which they feel this is an aspect of their health and well-being. This aspect of the project provided the experiential counterpart to the digital storytelling workshop, where students were asked to share a story about what it means to be Dene. Participating students also were involved in aspects of the *Sharing Our Stories* and *Mapping Our Changing Land* projects, so it was possible to gain understanding of the relationship between experiential knowledge and representations of knowledge in stories.



Figure 40.1: School Trapping Program - Caught a Rabbit!



Figure 40.2: School Trapping Program - Travelling the Old Way.

Community Harvesting – Participant-Observation

Three graduate students participated in participant-observation with community members on the land during key moments in the annual community cycle, studying three different aspects of these activities: storytelling and health (Sarah Gordon); harvesting decisions and food security (Tiarella Hanna); and language of space in a changing environment (Ingeborg Fink). Sarah Gordon participated in the trip to the Saoyú (Grizzly Bear Mountain) cultural landscape and a fall caribou hunt in August. Tiarella Hanna participated in the spring whitefish run and caribou hunt with harvesters at Nôreʔó (Deerpass Bay) in May, as well as a moose hunt on Great Bear River in August and a caribou hunt in February. Ingeborg Fink participated in the fall whitefish run and moose hunt in September. These experiences gave rise to research proposals by Gordon and Fink, and served as experiential context for Hanna's quantitative survey, discussed below.



Figure 41: Andrew John Kenny butchering a moose.
Credit: Tiarella Hanna.

Harvesting, Sharing and Food Security

Masters student Tiarella Hanna worked with the Dêlînę Knowledge Project to conduct a series of interviews aimed at understanding how Sahtúot'înę have adapted to changing caribou populations, including decisions about hunting trips (using a travel-cost model), sharing, and harvesting of alternate species. Interviews took place on the land and in the community. This research was supported by University of Alberta program *Community Perspectives on Changing Caribou Populations* with guidance from Professors Peter Boxall and Brenda Parlee. The study



Figure 42: Sahtúot'înę Caribou Hunt 2009.
Credit: Tiarella Hanna.

looked at results of an earlier harvesting student and conducted new surveys to compare harvesting and sharing practices when the caribou populations were high and located close to the community (2004) with practices when the caribou had moved away (as they had during 2009-2010). The study contrasted with the stories orientation of the core *Learning About Changes* program in taking a quantitative approach – the research remains incomplete, but we are able to derive preliminary results for work to date. Hanna presented her work at the June 24-27 meta-

research workshop, and met with the Délı̨nę Knowledge Project research team several times to discuss her research design and the theoretical underpinnings of her project as it relates to health (food security, good nutrition and social well-being) and responses to environmental change.

Health, Resilience and Land Stewardship

Ken Caine worked with the Délı̨nę Renewable Resources Council (DRRC) to develop research addressing the question “how will Arctic Aboriginal communities continue to be resilient and healthy in relation to the social and environmental changes?” The Délı̨nę Knowledge Project provided support for this project which was sponsored by the University of Alberta-International Polar Year program *Arctic Peoples: Culture, Resilience and Caribou* (ACRC). Through a series of interviews and focus groups, Caine explored how the DRRC can play a more active, stronger, and positive role in adaptation planning when it comes to the land, as a basis for supporting community health resilience.



Figure 43: Small group discussion on health and the changing land, *Learning About Changes Workshop*. Clockwise from front left: Johnny Vital, Jonas Modeste, Archie Vital (back), Leon Modeste, Chris Fletcher, Gloria Manuel (back), Ken Caine.

6. Preliminary Research Results

The data generated through this one year program is extensive; it will take at least one year to fully analyse the narratives and activities documented as the basis for health adaptation planning within the community. Moreover, certain aspects of the research involved identifying knowledge gaps and priorities for future research. Preliminary results can be tentatively put forward that can serve as a starting point for structuring in-depth analysis. Variations in the form and depth of the results presented here are reflective of the differing methods used. The results are structured primarily by the list of objectives that framed the original research proposal, with the addition of two new objectives related to adaptation planning and methodology. The implications of these results for the originally proposed research questions will be considered in a subsequent “Conclusions” section.

6.1. *The Life of Sahtúot’ı̨nę Stories*

Assess the “life” of stories among Sahtúot’ı̨nę, and identify key elder and youth stories that describe ways of understanding and adapting to climate change and health risks.

This objective centred elder stories, and was explored through both open and structured methods allowing for both breadth (scoping) and depth (interpretation of story meanings). The role of

Sahtúot'íne language in stories became important to addressing this objective. Storytelling contests were quite openly defined to provide forums for “old time stories” (Contests 1 and 2) and “funny stories” (Contest 3) as a way of assessing the “life” of stories in the community, building broad awareness of the program, and scoping out the *kinds* of stories that provide a foundation for people to navigate through their present lives. The placenames mapping project aimed to scope out key stories for a baseline understanding of socio-ecological relationships supporting survival on the land, and for understanding the importance of language as a vehicle for research and monitoring. Elicited topics planned through community meta-research meetings and workshops include *Yamoria and Creation* and *Sóbaká ?etené*. Key Dene language terminology related to health and sickness, weather, and harvesting were compiled and coded as a glossary for the research, and as a baseline for understanding future language documentation needs. Finally, specific narratives were elicited by community demand, emergent from the overall Health-Climate Change program as well as as a specific “canon” considered to be core to the knowledge set required for guiding healthy living in the community. In addition, stories about responses to past epidemics were elicited in the context of the two epidemics that affected the community during the study period.

The combination of open and structured approaches thus meant that “elicitation” became a two way process, where the posing of a research question to the community via specific stories (what is the role of stories in understanding and adapting to climate change and health risks?) along with the creation of open spaces for storytelling was a catalyst for the posing of a demand from the community for specific stories that could be applied in the immediate context. Note that rather than impose on the “life” of the stories externally derived concepts and narratives such as those found extensively in the climate change literature, the indigenous research methodology took Sahtúot'íne stories and concepts as the starting point with the idea of bridging these into understandings of health adaptation planning (new Objective 4). Narratives about health and climate change as developed in the domain of science were not excluded from the program; on the contrary, wherever possible they were deliberately made present in presentations and discussions at meta-research workshops so that they became an important part of the present meaning context of keystone Sahtúot'íne stories. Results discussed below incorporate key messages from meta-research workshops. Specific applications of the stories in adaptation planning are discussed in relation to Objective 4.

Sahtúot'íne Life of Stories: Storytelling Contests

Dene elders have repeatedly complained that “people don’t visit each other” any more, and that there are few opportunities for storytelling with youth. “Visiting” is an informal or organic practice that involves storytelling and knowledge both within and across generations and genders. The research team was told that elders would circulate among households to become updated on new stories about experiences on the land, and to share old time stories. Youth would often be listening to the exchanges of stories, whether in their own family homes or while visiting friends at other homes. This is an expanded version of the kinds of visiting that would take place between tents within family groups during harvesting trips on the land. Now people blame television, school, the reduced time spent on the land, and declines in Dene language use for a reduction in storytelling opportunities.

While the venues for story performances are restricted in some ways, other less recognised venues have been occasions for sharing stories. Story sharing takes place when people gather in the reception areas of the two office complexes in town, where free coffee is offered. Women's sewing circles, meetings on various issues of concern (such as epidemics), and storytelling sessions at ʔehtsáó Eróya's house on Sunday afternoons provide other informal venues for storytelling of various types. Storytelling related to practices required for community physical, mental and spiritual health and wellbeing is central to the Annual Spiritual Gathering in mid-August. Other means of story sharing involve new technologies (discussed in relation to Objective 3). The storytelling contests were designed to provide a relatively open research context mimicking organic storytelling processes in the community, with the exception that permission had been obtained to record and transcribe the stories for the study. This would allow the research team to assess the organic life of stories in the community, and tease out the different *kinds* of stories that are maintained within community life, or that might be seen as important to share among generations and genders. The contests also provided an opportunity for learning about the kind of strategic programming that might support storytelling as a medium for health adaptation in the context of climate change. Specific non-competitive (by draw) prizes encouraged storytelling by women and youth, who normally might remain silent in a cross-gender and cross-generational context where public forums are normally reserved for the discourse of adult/elder men.

Full analysis of contest transcripts has yet to be completed. However, it is possible to identify the following preliminary results from the three contests related to Objective 1:

1. There were three key kinds of stories shared by elders included old time stories, stories about experiences on the land from living memory (including funny stories), and in the presence of youth, stories about the disciplines required to live well as Dene in the context of change.
2. Women rarely have opportunities to share stories in public forums. Their stories tended to be shorter, and more oriented to the experiential than those of adult/elder men.
3. Elders have not had occasion to perform "old time" stories (creation stories and stories about the origins of social and ecological relationships and laws) in a community context in recent times. It is possible that this is because such stories have historically been seen as illegitimate by the Catholic Church and unrecognized as vehicles for teaching at the school. Therefore, special efforts were required to stimulate sharing of old time stories.
4. Elders were especially animated in telling stories in the presence of youth. Old time stories were followed by linked narratives about changes in the present, and challenges that youth face in living healthy lives in the context of change.
5. Several youth prepared story scripts and read the scripts for their performances. Their stories were primarily experiential or drawn from mainstream popular culture (especially movies). This indicates that youth do not have a strong foundation in Sahtúot'íne stories.
6. Storytelling contests appeared to be gaining momentum over time, with growing adult/elder participation although the attraction provided by prizes remained the same. This result is weakly supported and would require further verification in that there were only three contests possible over the program period.
7. Youth participation was minimal with only two participants in the first contest, and four in the second contest. This was a clear message that special measures are required to elicit youth storytelling performances (per Objective 3).

8. Only young men participated in the youth storytelling contests, suggesting that gender divisions in public discursive practices are being maintained.
9. In the public forum, elders uniformly performed their stories in Dene language, whereas adults and youth told stories in English. This supports NWT statistics about language decline in the community. However, elders and adults both consistently observed that the stories are not as meaningful in English.

Mapping Our Changing Land

This project became a major priority for the community as a way of structuring stories about community health and changes in the ecology of the land, and understanding the role of Sahtúot'íne language in monitoring changes. The mapping project intersected with almost all of the projects in some way, including the *Yamoria and Creation* (Figure 21) and *Being Dene* Story Cycles at the school, the *Sóbaká ?etené* workshop which expanded the mapping of historical social and ecological change to a national and even global scope (see Figure 17 for the regional portion of this map), the Climate History and Monitoring project, the Language of the Land project, and the Subsistence, Health and Adaptation Planning project. As well, digital mapping was one an important aspect of Objective 3.

The mapping project included collection and compilation of existing data, documentation of placenames with elders including areas prioritized for the climate history project and a “mapping around the lake” focus identified by five zones, mapping of Family Group areas, a digital mapping/Language Toolbox workshop with students at the school (discussed in more detail related to Objective 3).

The research team learned several important things about mapping methods through these activities: First, we learned that mapping is most meaningful when structured by family biographies (or group areas) and old time stories that give meaning to the placenames. This is the reverse of the approach initially taken which involved a systematic “data collection” approach documenting placenames clockwise going around Great Bear Lake (showing our own incomplete understanding of the stories based premise of this program). Second, we learned that pronunciations and spellings are the top priorities for community researchers at this time, as a result of historical problems with orthography that have led to repeated errors in published placenames. This placed a primacy on development of the Language Toolbox including audio and text as a means of fully documenting placenames research. While old time stories, family biographies and climate history were highly spatial and mapping placenames relevant to these was seen to be important, community researchers were less concerned to document spatial locations when engaged in “pure” placenames documentation. The third key learning was the immense scope of the work to be done, especially since so little metadata is available for previous mapping projects, and since previous projects had been oriented to specific land management objectives (land use planning or traditional knowledge studies related to development permits) rather than comprehensive placenames research. Technical challenges were another factor, discussed under Objective 3. The current project effectively turned out to be a scoping and methods effort. For this reason, the community decided to develop funding proposals to support follow-up work. A fourth learning was that some placenames research will require collaboration with peoples in surrounding regions, since the boundaries of the Délıne District now governed by Sahtúot'íne do not necessarily reflect historical land use patterns.

A major effort involving countless hours was required to compile existing placenames along with newly documented placenames, ensuring that repeated names were cross-referenced without any loss of original data. There was added complexity given different spellings of the names by different researchers. The original list of compiled placenames included 890 listings – additional collections still remain to be incorporated, notably the toponymy work by Father Émile Petitot from the late 1800s. Cross-referencing reduced the list to 477. Of these, language specialists Fbbie Tatti and Jane Modeste had verified 331, defined within five zones. Of the verified names, 233 were spatially documented (mapped). Only 87 placenames included translations in English. A preliminary coding shows that are a minimum of 5 *kinds* of placenames: landform descriptions, references to wildlife ecology/hunting, spiritual placenames (only one was coded), relational placenames defining travel itineraries, and historical placenames (including references to gravesites). The coding is helpful in providing a framework for understanding placenames in relation to socio-ecological changes.

The research team determined that it would also be important to include a field for the type of landform and/or spiritual aspect referred to for each placename, so as to gain a better understanding of how people cognitively map the landscape. This task was barely begun. Another challenge not yet addressed was correlation of family zones with zones defined by Fbbie Tatti and Jane Modeste so as to gain a better understanding of knowledge sources and stewardship roles related to each placename.

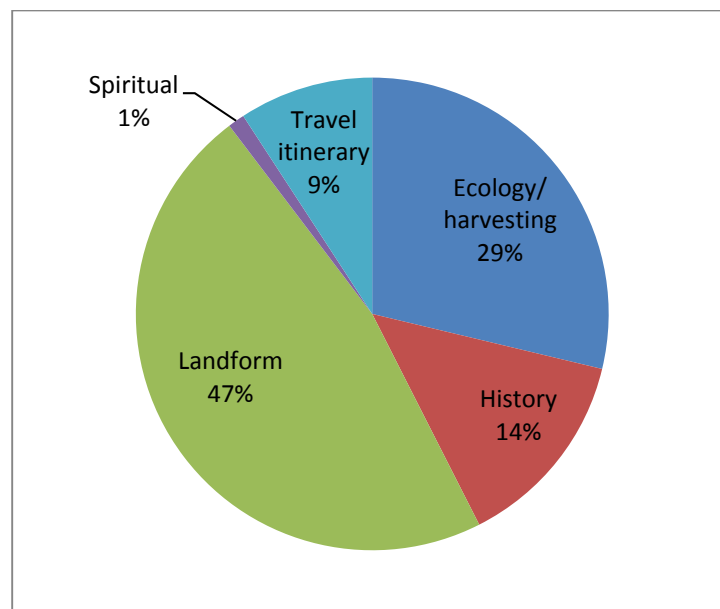


Figure 44: Placenames Coded by Type (Total coded = 87)

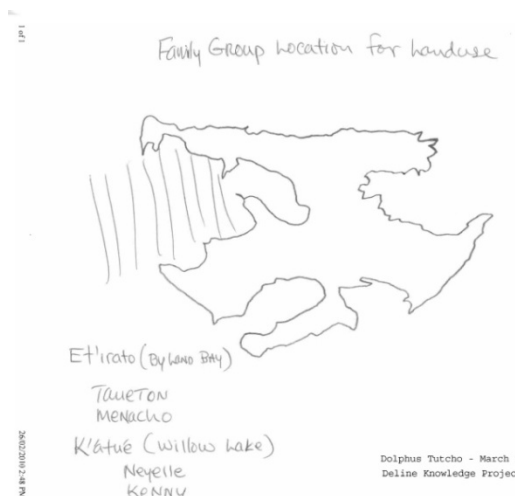


Figure 49.2: ʔetiratq Family Region. Credit: Dolphus Tutcho.



Figure 49.3: Saoyú-Turŋli Family Region. Credit: Dolphus Tutcho.

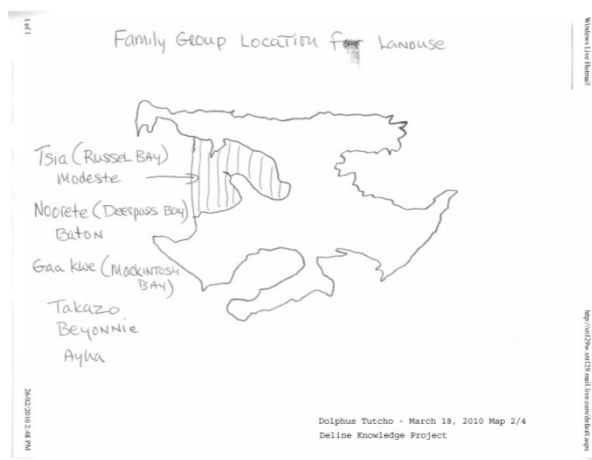


Figure 49.1: Tsia Family Region. Credit: Dolphus Tutcho.



Figure 48: Sqba K'e Family Region. Credit: Dolphus Tutcho

Table 6: Preliminary Placenames Coding

	ID	DeneName 1	Zone	Translation	TranslCode	English Name
Ecology/harvesting	V011	Bedzimj ʔehda	Turɫij	Bull caribou corral point	JM502	
	V013	Bedziok'áchotj ʔehda	NA	Bull caribou sleeping in the willows	JM504	Clearwater Bay
	V030	Betáh Dé	NA	River where fish spawn	JM514	
	V034	Ch'qónáhdé	NA	Ch'aq = Porcupine, náhdé=living	JM518	Porcupine River
	V081	ʔehda k'e	NA	Little Bear River	SLUPB304	
	V106	Ek'adu	NA	ek'a=fat, du=lots of Island	JM570	Ekka Island
	V107	Ek'adutsele	Dárelj	small fat island	JM571	Kroeger Island
	V122	ʔeyirát'o	Dárelj	young caribou cannot kill	FT053	
	V123	Gaakwé	NA	gah=rabbit, jkwé=out from shore	JM587	Mackintosh Bay
	V125	Gahodúé	DáreliTurɫij	Arctic hare island	JM589	
	V153	K'á Túé	NA	K'ae = willow, tu = lake	JM607	Willow Lake
	V154	K'áhbatsese Túé	NA	small ptarmigan lake	JM608	
	V156	k'áléʔehda	Turɫij	grouse point	JM610	
	V186	Kwedzéhkw'é	NA	sticky rock sinew	JM626	Ford Bay
	V205	kwi'ji	NA	Mosquito Berry Mountain	SLUPB462	
	V213	Łéts'ik'é	Turɫij	place where fish stir up the bottom of the lake	JM641	
	V216	Łuayúʔehda Duwela	NA	island past point of fish belongings	JM645	George Island
	V232	Nágáts'jdé	Kwata	White eagle fall	JM656	terra mine
	V254	Nohkweje Tue	NA	loche berry lake	JM669	White Loche lake
	V260	ʔqhk'aebá	Dárelj	whiskeyjack knife	JM675	Whiskey Jack Point
	V290	Saoyú	NA	grizzly bear belongings	JM684	Grizzly Bear Mountain
	V304	T'aotúé	NA	(t'ai=grayling, tu=lake	JM691	Greyling lake
	V321	Tehk'áeho		Big muskrat (tehk'ae=muskrat, cho=big (?))	JM702	
	V325	Tehwáche	NA	Mink tail (tehwá=mink, che=tail	JM705	
	V326	Telets'égéedé	NA	speared them in the water	JM706	Bloody River
	V342	tł'jehdá	Turɫij	big dog point (tłjcho=big dog, ʔehda=point)	JM717	

	ID	DeneName1	Zone	Translation	TranslCode	English Name
	V147	ʔit̚rat̚	NA	broken bow?		
History	V006	Bedahzé	Kwəta	grave ʔehtsə́ Dahdi- dogrib	FT114	
	V130	goch'ayí	Kwəta	Jimmy Mackeinzo' s dad, Bek'erizo	FT115	
	V147	ʔit̚rat̚	NA	broken bow?		
	V161	k'ázoʔehdá	Dárel̚	ʔehtsə́ Bodq̄a's cabin	FT042	
	V177	Kw'átérat̚	Turil̚	Broken Plate Creek	JM619	
	V295	Saoyúl̚ garík'ón̚ch̚n̚ náeʔa	Turil̚	light house	FT162	
	V296	Saoyúl̚ kw'ən̚ weʔ̚	Turil̚	light house	FT162	
	V299	S̚bak'é	Kwəta	Place of money	JM689	Port Radium
	V342	t̚'j̚ehdá	Turil̚	big dog point (t̚j̚cho=big dog, ʔehda=point)	JM717	
	V346	T̚eg̚h̚	NA	where there is oil	NA	Norman Wells
Landform	V017	Bek'ejl̚t̚úé	NA	River going by the lake	JM508	
	V039	Dárel̚	Sahtúd̚	flowing down the river	JM523	Head of the river
	V047	Dehocha	NA	The river bending behind	JM528	St. Charles Rapids
	V051	Dél̚n̚	Dárel̚	where the water flows	JM531	formerly Fort Franklin
	V056	Deoy̚i	NA	Down the river	JM533	
	V061	Dughataniʔa	NA	Channel by the island	JM537	Richardson Island
	V062	Du̚l̚t̚ne	NA	lots of islands	JM538	Good Hope Bay
	V066	duod̚	Tugacho (Tegacho) / Kwəta	duod̚ (limestone island)	FT078	Plummers lodge
	V071	Duwela	Turil̚	islands existing there	JM544	Lionel/George Islands
	V074	ʔechega ʔehda	NA	Big Lake	SLUPB216	
	V075	ʔedad Tue	NA	Windy Island	SLUPB023	

	ID	DeneName1	Zone	Translation	TranslCode	English Name
	V078	ʔededudə	Turílį	Rock Goes Into The Water	SLUPB217	
	V080	ʔegdacho lo	NA	Fall Stone Mountain	SLUPB464	
	V084	ʔehdacho	NA	ʔehda = point, cho=big	JM554	Scented Grass Hills
	V101	ʔehdalqzé	NA	end of the point is crooked	JM565	McGill Bay
	V105	ʔehdaredelé Túé	Turílį	Barren point lake	JM566	
	V108	Ek’ati	NA	Fat lake (refers to white quartz rock found in the area)	NA - See note	
	V113	ʔenákəts’eedú	Kwəta	two islands north and south that area	JM575	Superstition Islands
	V117	ʔewak’e Du	Turílį	Sandy beach point	JM582	
	V121	Eyinekáįkw’ane	NA	Underground stream	JM586	Katseyedie River
	V136	Gole Du	Dárelį	ice island	JM601	Ikanyo Island
	V150	ʔįts’ék’ódə	Dárelį	no river	FT056	
	V151	įts’ere Túé	NA	įts’e = moose túé = lake (Tįįchq name)	Walter Bayha-Morris Modeste 10-04-11	Hottah Lake
	V179	kw’ęnęweʔq	Dárelį	(ice) ʔek’adu (island)	FT038	
	V184	Kwedederela ʔehda	Dárelį	point	FT021	
	V233	náįlį	Tugacho (Tegacho)	Waterfall-naili	SLUPB454	
	V242	Neréghá	NA	Long stretch of high land		
	V261	Pedzéh Kį	NA	clay place	NA	Wrigley
	V284	Sahtú	NA	sah=bear, tu=water	JM681	Great Bear Lake
	V285	Sahtú airport	NA	sah=bear, tu=water	JM681	Great Bear Lake
	V298	shalétúwédə	Dárelį	coals	FT068	
	V316	Tawoya	Tugacho (Tegacho)	Small open water	JM698	
	V343	Tįáado gotəkéorįʔá	NA	portash	FT147	

	ID	DeneName1	Zone	Translation	TranslCode	English Name
	V344	tłədlıŋə	Dárelj	valley (land form)	MN16124	Douglas Bay
	V349	tochocho tł'á	Tugacho (Tegacho)	side by side	FT080	
	V372	Ts'o Kǐ	NA	palsa? (muskeg land form)	MN10307	
	V391	Tuetah	NA	lake among the lakes	JM731	Tuitatui Lake
	V394	Tulats'ehgho Tue	NA	Lake that has a fork shape on both ends	JM733	
	V395	Tulít'a	NA	where the waters meet	NA	formerly Fort Norman
	V399	Turǐlj	Turǐlj	river flowing into the lake	JM736	Johnny Hoe River
	V422	yak'ao du	NA	Limestone Point	JM643	Green Horn Bay/Prospect Island
Spirituality	V390	Tudzə	Sahtú tuk'áyíi	heart of Great Bear Lake	MN15730	
Travel itinerary	V196	kwátəreht'ia	Dárelj	(boat harbour)(mǒla náegwə)	FT159	Fox Point
	V332	Tł'áado	NA	Ahead of the bay	JM711	Sawmill Bay
	V133	Gok'éragé Daili	NA	Before the next point	JM594	
	V202	Kwewhenatúé	NA	lake by itself farther down	JM632	Kekwinatui Lake
	V127	Goch'a túé	NA	sheltered lake	NA	Lake St. Therese
	V128	Goch'a túé Dareli	NA	sheltered lake	NA	Lake St. Therese
	V063	Dunǐǔǔ	Turǐlj	the last island	JM541	
	V115	Etene táǔǔǔa	Turǐlj	Traditional trail	JM579	

Yamoria and Creation

Elder Leon Modeste proposed that the story of Yamoria chasing the beaver be the starting point for the school Story Cycle. Yamoria is referred to as creator of Dene ʔeʔah, law. He is a mystical figure that features in the narrative traditions of Dene nations throughout the Northwest Territories and possibly beyond, but many of his exploits are centred in the Sahtu Region, establishing ecological systems through travels that link the Sahtu to a much larger regional landscape. For this reason, the image of the giant beaver pelts pinned to Kwōtenīʔa (Bear Rock) was selected as the symbol of the Dene Nation (Figure 20). Leon’s story begins on Great Bear Lake, crossing the lake and travelling down the Great Bear River to Kwōtenīʔa (Bear Rock) and Dehcho (Mackenzie River), then down the river to the arctic ocean. All along the way this epic chase led to creation of new landforms and ecological systems; everything was “put into its rightful place.” Yamoria’s ʔeʔah ensured that the land and animals were offered to people as their source of survival and wellbeing; Yamoria ensured that Dene relationships with animals and the land were founded in respect, reciprocity and balance. The land was formed in a way that people could travel on it, and this would be their source of knowledge. The Yamoria story itself is a navigational map providing a scoping of the distances that might be travelled for survival if there is no wildlife nearby. The story provides an ecological baseline and guidance to people about relational practices for healthy living. Leon explained that there are many Yamoria stories. He showed his appreciation for the work done by youth in studying and representing the first story told by telling additional stories during the third session of the Story Cycle.

Table 7 and Table 8 provide an outline of story documentation used for with students in developing an understanding of the linguistic, spatial and ecological aspects of the story.

Yamoria Story Glossary and Map Legend

Story told to Grade 4-5 Class
ʔehtsé Ayah School
by Elder Leon Modeste
1:00-2:10 pm, November 20, 2009

Michael Neyelle, Interpreter
Doris Taneton, Researcher Trainee
Deborah Simmons, Researcher

Table 7: Yamoria Chases the Beaver Glossary

Term	Meaning
1. Yámoríyá	Man who travelled around the world
2. Tsá	Beaver
3. Tsádo	Giant beaver
4. ʔeʔélé	Beaver dam
5. Tsáwó	Beaver skin
6. Deo	Big river
7. Shú	Mountain
8. Náiriłı	Creek

Term	Meaning
9. Tłe	Oil
10. ʔek'a	Fat
11. ɪk'q	Special spiritual gift ("medicine power")

Table 8: Yamoria Chases the Beaver Map Legend

	Dene Name	English Transl.	English Name	Notes
1.	Tek'ácho	Big river		Where Yámoriyá started out. Refers to Dease River (Tek'ácho Dóh)
2.	Duderéla	Beaver's lodge broken up.		Yámoriyá walked on the shore all the way to these islands. He knew that the giant beavers were there. The islands are the pieces of the beaver's lodge that Yámoriyá broke up.
3.	Noreʔó	Animals swimming across.	Deerpass Bay	Yámoriyá sat in the water at Deerpass Bay that is why the water is deep. Refers to the short cut taken by animals instead of following the shoreline around the deep bay.
4.	Tsia	Can't be smelled.	Russell Bay	Yámoriyá was chasing the beaver and he went under the water so the beaver couldn't smell him.
5.	Techiʔq	An animal was there before.		Drop-off. Beaver's plan was to make a big river there, so he was resting in that area. It's a really deep place, fish like it there.
6.	Deocha	Water going back and forth in one place (rapids)	Bennett Field	The river was very narrow, so beaver widened it.
7.	Tunadlīñitúé	Fish spawning lake		A fish lake
8.	Tulít'a	Where the two rivers meet	Formerly Fort Norman	
9.	Kwətenīʔa	The rocks go down to the river	Bear Rock	Bear Rock is the English name and is unrelated to the Dene story about this mountain. This is the mountain that the three beaver skins are pinned to (map code #12).
10.	Behdoc	Hole in the rocks		Yamoria was on top of that mountain. He was using the bow and arrow to kill the two beavers from there. There's a hole in the mountain where Yamoria sat.
11.	Dék'onq	Grease fire		Where Yamoria cooked the two beavers – there's still smoke coming out from the

	Dene Name	English Transl.	English Name	Notes
				beaver fat. That the reason that we have oil everywhere today. He made that fire for the people for the future. If they see that smoke, they will live long.
12.	Tsáwó hekeríʔa	Three beaver pinned to the rock		Three beaver skins. If somebody sleeps under that rock, they can get power (ʔíkʔ) from it. This is the symbol of the Dene Nation.
13.	Tłegqłı	Place of oil	Norman Wells	
14.	Nárıłı Tsele	Small creek		The beaver was going to make more dams there, but Yamoria chased him away because he didn't want him to make more dams. There just a small bit of a dam there, so the creek is small.
15.	Chiahchi	Tsiighehtchic	Formerly Arctic Red River	From Tsiighehtchic the beaver slapped the water with his tail so it all splashed out to make the arctic ocean, and all the ponds, lakes and creeks in the delta region. That area is good for muskrat, beaver, ducks, swans, fish and other wildlife, and it's for everyone to use.
16.	Mackenzie Delta			
17.	Nárıłı Kq	Home where the creek is	Fort Good Hope	
18.	Nárıłı Cho	Big creek		There are rapids here where the beaver tried to make another big dam, but Yamoria broke up the dam on one side of the river so people can pass through by boat.

Sóbaká ʔetené

There is broad consensus among Sahtúot'ı̨nē that the story of Sóbaká (the Port Radium uranium mine) is a keystone story about the health implications of anthropogenic environmental change. This has been reinforced by prophecies of ʔehtsáo Eróya as discussed earlier, as well as health research conducted by the Canada-Déline Uranium Table during 2000-2005. For this reason, exploration of this story's meanings and applications in the present context of climate change through elder-youth exchanges and by exploring the broader scope of the story including the national and international ʔehtēnē (trail or highway) of the atom was seen to be an important component of the current program. The hypothesis explored through the youth radio workshop was that story remains a meaningful framework for Sahtúot'ı̨nē in considering potential socio-ecological changes caused by climate change. For the purpose of Objective 1, the focus here is on results related to the instructional aspects of the story in relation to health impacts of climate change.

The *Sóbaká ʔetené* workshop provided youth with tools for understanding the intersections between local/regional and global aspects of anthropogenic change. This was important in providing an understanding of the specific contributions of traditional knowledge and knowledge from other sources. The students were thus provided with tools needed to weave together the two sets of knowledge (this aspect will be discussed in relation to Objective 2), while centering the stories of their own elders. The focus of the workshop was on place-based knowledge, including Dene language required to fully understand and interpret the story in dialogue with elders. The team developed the an interview guide to use in recorded discussions with the elders, providing elders with opportunities to reflect on place-based stories that could shed light on ecological change in relation to health impacts/adaptations. Consistent with the indigenous research methodology, questions do not specifically focus on the introduced concept “health,” but rather allow meanings related to health impacts/adaptations to emerge through narratives about people's relationships with the land, and an open question about how youth can “keep/use” the knowledge conveyed in the story. This approach was developed through considerable discussion led by community researchers Fibbie Tatti and Michael Neyelle with the youth team and academic researchers.

For the purpose of Objective 1, the focus here is on results related to the instructional aspects of the story in relation to health impacts of climate change – specifically elder responses to the fourth question in the interview guide. Further discussion about youth interpretations, use of radio in story representation, and health adaptations related to this workshop are treated in relation to Objectives 2, 3, and 4 respectively.

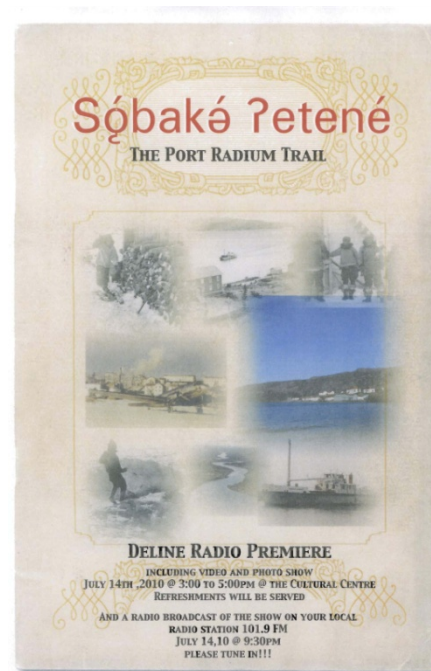


Figure 50: Sóbaká ʔetené Delne Radio Premier Poster

Learning About the Mines Interview Guide

Youth Radio Producers Doris Taneton Orlena Modeste Mitchell Naedzo Tianna Takazo	Resource People Fibbie Tatti, Délıne First Nation Michael Neyelle, Délıne First Nation Dr. Anna Stanley, University of Ireland at Galway Dr. Deborah Simmons, Délıne Knowledge Project
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Purpose

We are working with the Délıne Knowledge Project to make a radio show for the community as part of the community's *Learning About Changes* program. Our project is called *Learning About the Mines*. We want to learn more about the places that were part of the history of the mine, including the Dene placenames and the stories about those places before and during the mine. We especially want to know about how this story can be used to guide us toward a healthy future.

QUESTIONS:

1. *Tell me about some of these areas? (taking turns talking about locations on map elders wish to talk about)*
 - a) Ası́ dúle ségode?
Ası́ dúle Sóbak'ə, ghq
Cameron Bay (Dene godı?)
ʔıwı Tı'áodo (Sawmill Bay)
Dárelı (NTCL dock), Camp 1, Camp 2
Deocha (Bennett Field)
2. *Tell me about this place during uranium ore mining?*
Ası́ dúle [Dárelı] kweh hegogı́hʔq/hegút'q ekúu ghq ségode.
3. *Tell me about this place during the time before there was mining?*
Ası́ dúle [Dárelı] kweh hegogı́hʔq/hegút'q were ghq ségode.
4. *As youth, how are we going to keep/make use of this information?*
Ts'ódane ts'ı́ı sı́ı, edire godı ayı́ bek'ets'edı/bet'aots'erı́hʔá gha?

The following transcript excerpts provide a glimpse into the implication of the narrative for health-climate change research from the perspectives of elder participants. The text is a transcription of simultaneous translation done by Michael Neyelle from the audio recorded original, so uses the third person. Shorter excerpts were used for the radio documentary. Note that the transcripts strongly support results presented in summary form from the Storytelling Contest scoping exercises.

Transcript Excerpts – Sóbakó ʔetené Youth Radio Interviews

Dora Vital

Her father had said to her when she was young that in the future there's going to be more and more non-Dene coming into our lands. They would take over our lands and work our lands. Eventually we would suffer.

Her father predicted that in the future, because these non-Dene would take over, that we would eventually lose the use of that area. These are the days when her father was talking. Today that land is very useful, but in the future it wouldn't be useful for us anymore. He told his people and Dora heard this. Her father predicted that Sóbakó, lots of white people would go there and that in the future we would not benefit from that area anymore. Further on she said, look at it today. Can't use that area anymore.

Unlike the old days when they really had a lot of good things over there. They had caribou. They had fish. They had everything. It was a really good life. And he was right. In the future that life would disappear and that's what happened today.

Her father had also said to her that the white man will lie to you. They will sidetrack you.

Dora was also saying, look at the treaty, Treaty 11. How many days our people said no? Our elders said no? They didn't want to settle the treaty. But after, how many days later they settled treaty and look at it today. They lied to us. They broke their treaty. The white man, they broke their treaty and this is what my father predicted. Not only my father but other elders too. They would break, they said the white man will break their treaty and we would end up suffering, us Dene people. And that's what's happening today. Dora was saying herself, too, we had a real good life at Somba K'e and we lived really well. A lot of good fish we ate. But today all that fish is spoiled in that area. That's how much we're suffering.

When I was young I used to travel lots with my father. We would travel on land, on water. My father would tell me, this is where we did this. This is where we did that. I can still remember what he said to me.

Yet the elders, including my father, said to us in the future we would suffer. And they were right. They even said that in the future the children would suffer. They would be lost. And look at it today. Today children, they don't know what to do. They're lost.

As elders we're very concerned about the youth because pretty soon there will be no more elders. Who is going to help the young children today?

I'm concerned about our children today. What is going to be there for them in the future? I think about that. Sometimes I remember the stories my father had told me in those old days. A lot of those old people I can remember. None of them are with us today and today when I think about it tears would come to my eyes when I remember those days.

I worry about it. I think about it. I think about those good old days when we used to travel around the land.

Today we're not even out there on the land. Such beautiful land that we're leaving alone. The land that we survived on. The land that gave us plenty. The land where we lived really good.

These are the lands that our elders had worked on and lived on. Now it seems no more.

This is why I worry about the children today. What's going to happen to them in the future? This is why it's so important to sit with them and tell them stories.

As elders, we're slowly disappearing. The youth, it's a big concern to us. Today they're having lots of problems. No, it's hard to find employment. If you don't have work then you don't have money. If you live in housing and you don't pay your rent they're going to evict you. And it's coming to that age. It's coming to that time.

She was talking about Somba K'e area. In the old days before Sóbakó, in that area, the people used to go into that area, the tundra (inaudible). In that area there's probably a big, long area where there's nothing but sand (inaudible). In the north shore area, I think. This is where they spent most of their time, the Dene people. This is what they're calling Sóbakó today.

....

As a young child, I can remember everything my father told me. After my mom passed away my father would tell us stories every night, every day. Keep talking to us. He would tell us stories about his travels all over, around Somba K'e area. Today I can still remember his stories. I can remember not only my father's stories, but a lot of other elders told us many stories that I can remember a lot of them.

Dora was saying that today youth, children, don't know any stories about the old days, what happened in the old days.

If we can tell these young people today the stories of what happened in the past they would really enjoy it. They would like that. If we can talk to them really good, tell them some stories, it would be really good for them. Today they don't seem to want to listen. They only want to listen to what's said in English. So it would be really good if we can sit down with them and tell them stories in our language.

You need, it's important that you need a real good interpreter when an elder is speaking in their language. You need somebody to interpret it for the youth today that don't understand. So it's very important to teach the young people today. Just keep on teaching them. Make them learn. Continue making them try and learn. It would be good for them.

Maybe a few of them would pick up the stories, will pick up what they heard. Maybe they'll listen and they can pick up that knowledge. It can happen. Today young girls will come and visit

me and I will tell them stories about those old days. They would sit there and they would listen to me. They would really enjoy my stories. They enjoy it so much they don't want to leave my home.

Today's youth don't know nothing that happened at Somba K'e. She said that today young kids only know how to speak English. They don't know how to speak their language, Slavey. She also talked about the days when they used to walk on the land, on the shore. They didn't have rubber boots or anything. They used mukluks. Lots of times their feet would be sore from walking on the land. I can remember in those days when walking on the shore, when the ice would come up on the shore we had to go around it on the land. I can still remember those days.

None of those old people are around anymore. Sometimes I wonder how our future is going to look. Many times elders spoke to us. Many, many times they tell us this is how their life was in the past. Many times they told us stories. They would tell us the places where they travelled, what they did, this is how it looks. Many times at night before we go to bed we would sit around and they would be telling us stories. My father told me once, in the future after I'm gone you would be the ones that will be telling my story to the young people. He said that to us. And you would be saying, my father told us, in the future when you're old you will say this is what my father told me. You would be saying that to the children in the future. That's what is happening.

When elders say things it's true. They always tell the truth. They were right. That's what I'm doing today. That's why it's so important when elders talk to you that you listen.

Her father always said to her, as elder I'm not going to be around with you that long. That's why it's so important to talk to the youth, he said to me. That's what you have to do in the future. That's what I'm doing. Still today elders, we don't know how long we're going to be with you. That's why it's good to share the stories like this from the past with young people. My father told me, you really got to try hard because these young people in the future are going to get side tracked. They're not going to listen to you. They're not going to take the time to sit with you. So just try hard in the future to help the young people.

My father also told them that in the future the kids will not listen to you anymore. They don't want to listen. But if you tell them the stories of the past, what happened to the people in the past, the way they used to live, what happened to them when they were living in the past a long time ago, if you tell these young people today the stories then they would listen.

My father had told us, start talking to these young people as soon as they can start listening. When they're very young. Keep talking to them while they're growing up. Eventually they will listen and listen to your story and keep it. That's how you tell stories to the young people. How elders in the past were raised. How they were raised. Tell them that in the past we were raised by getting wood, getting firewood. So you tell them the story about the past. Some of them would get the message and they might be the ones that are going to be important in the future.

Today there's a lot of problems. A lot of distractions. A lot of negative distractions. Bad things are going to be presented to the young people. Because of that they get distracted. This distraction will grow. More and more children will get distracted.

Not only that, in the future it was predicted that young people would have these headphones or earphones, things that are plugged in their ears. That's what's happening today, she said. They've got these things on their ears and they don't want to listen no more. This has been predicted by the elders in the past. They have these things in their ears and when you talk to them they won't even know what you're saying.

Today those predictions are true. What the elders said in the past, they weren't lying. They were telling the truth. Today that's what's happening.

....

If we can tell the stories like this to the young people today maybe they will listen. They will listen and do what we tell them to do in the future. These young people today need to grasp, they need to grab what the elders are saying to them. They need to learn. They need to keep it. Know what's being said to them.

We need to continue teaching, talking to our young people at the school and maybe at gatherings. Gather all the young people and put them in a place and tell them stories. That's what we need to do.

I'm really concerned about the young people today. We really need to talk to them, to take them out on the land, to teach them. To really talk to them. They would really enjoy that, the young people. It's so important to teach them about the land. About the things that you can do out there on the land. If we teach them that it would be very good for them. Especially to tell them stories about how the people lived out on the land in the past.

Dora was saying that when you were young and you lose your mother then life becomes really hard for you. Like you don't know what to do. Like you're lost when you lose your mother. This is why it's always been said that you must take care of your elders. Take really good care of your elders. Don't talk back to the elders. Listen to them.

.....

So today young people, maybe it's because we don't talk to them anymore, that's why they're getting sidetracked. They're lost. Getting lost. Today's young people don't know what to do because there's no jobs around. It would be good if they could go and maybe cut wood or get wood, but times have changed. Not like the old days anymore.

In the old days when it comes close to Christmas time people used to travel to Tulita, Fort Norman, to go to church over there. They used to do that all the time. Many times they would do prayers in their tents. That's how they used to live.

In the old days you never see young people walking around past 6:00 or 7:00. Every day, every day these young people would be in their homes by that time. So what happens in the old days, young people used to get up early in the morning and go and do their chores, like getting wood.

So Dora was saying that today young people don't want to listen any more. We've come to that time.

Irene Kodakin

.... If only our people knew that the danger they were involved with nobody would have been involved with that operation. Because of that, a lot of our people passed away because they got sick from living in those dangerous areas.

The danger, nobody knew. That's from the mining operation there was a lot of tailings. And a lot of it maybe was, a lot of it was in the buildings too, or close to the buildings. And we would be walking around and walking into these buildings, not realizing that there was this danger around.

One of the problems we also had to living in Port Radium/Salmo Bay is that a lot of us did not understand English. A lot of us couldn't speak or understand English that well. Only one elder that was with us, Malu Bewelleh, he knew a little bit of English. And Malu I think is uncle. Irene's uncle. Even though Malu knew a little bit of English nobody ever told him of the dangers of mining for uranium. That's why still to this day a lot of our people have either passed away or are probably sick or are probably going to get sick in the future. A lot of our people passed away because of this sickness that was created from the mine operation.

As children, when we were living there, we have a really good idea and memory of what happened over there. And for today's youth it is so important for them to know what happened at Port Radium/Salmo Bay in the past.

Hughie Ferdinand

It is so important to share information with the young people today and in the future, to know what happened in the Port Radium area. Not only that, the caribou too. In the old days this Port Radium area, there was lots of caribou that used to migrate past, through that area. Not anymore. During the mining operation that disappeared. Not sure about today if those caribou are still going by, migrating past that area. Because of all those different activities with mining things have changed. Today they're saying that the caribou is no longer around. That the caribou has disappeared. But that's not true. Caribou are not supposed to disappear, according to the elders. Our elders, they lived in this area for hundreds of years and never said that they ran out of caribou. Because of development, mining, they're interfering with the wildlife, with the migration routes. This is why today caribou is going somewhere else, travelling somewhere else, like they're lost because of the interference by development.

Bella/Bernadette Menacho

Bella said, in the old days people have to look for animals. They have to look for something in order to survive. In the old days you have to do something. You can't just sit around and do nothing. In those days there used to be no houses around here in Déljñę. The way people lived was by trapping. People in the old days, it wasn't only Somba K'e they would go to. They would also go to areas north of Somba K'e, way in the tundra. In Slavey Bella called it (inaudible). (Inaudible) would be tundra or the Barren Land. She also mentioned another name place in that same area. I don't know where that would be. She called it *d'eh che do*. Like, Wood Island or, there's an island called *D'eh Che*. Those two places are the areas where great men, Dene people, great men in those old days used to come around. They used to say that. They used to come around in this area to mainly trap.

Once they are finished trapping they would come down from the land to the shore in spring time, when the ice is still there but it's thin. ... That's the time when the men would come out of the land and come to the lake shore.

Once they come to the shore, the ice is still there on the shore line, they would fish, do fishing while waiting for the ice to move out. It's really good area for fishing, too. In the old days fishing, when you make dry fish, it's just like money when you make dry fish. It's just like money for the Dene people. They would make dry fish in bales. They would measure these dry fish bales by stick measurement. If a woman does really good work, does some good hard work, a good woman would make six to 10 bales of this dry fish in one day.

In those days children would be travelling with the families. In those days it was really good for the children because they were learning, they were on the land. So it was a really good life for the children in those old days. Today it's a different type of world for our young people. They don't go out on the land. They don't do things like they did in the old days. Because the children today are not as active as in the old days. Today's kids it's easier for them to get sick, to catch cold. Not like in the old days when young children were out there on the land playing and working hard. Young kids in the old days would eat very good from the land. They never seemed to get sick.

Once the ice disappears then they start using boats, canoes. In those days there was no motors, outboard motors. They just used paddles. When I was young, this one time I can remember seeing this one boat coming. It looked different. ... What I think that means is it's a moose skin that's made into a sail on a canoe or a boat. That's what they called a sail boat, a moose skin sail boat. It was more than one they would use. It depends on how many canoes, I guess, they would be using this moose skin sail. Sail boats. It was the first time Bernadette [sic] seen this kind of boat. So she asked her mother, what is that? ... They use this in the old days because they didn't have outboard motors. They used it whenever there's a wind. The wind powers it to go faster.

So these boats which and only be used with oars or paddles, whenever they use this ... this sail, there's one person that usually sits in the back and steers the boat in the wind. At times this sail boat would be faster than a boat with a motor.

Bernadette [sic] is talking about the time when she heard that there was a discovery of this rock and lots of white people came around. This was the time when she heard that war had started out there in the world somewhere.

As children we have to learn to listen. We have to learn to listen to our elders, our fathers, our mothers, our uncles, aunties. Any elderly women and men. So as children this is the kind of information you collect so you can keep that information. In the old days we had to live that way because we never had schooling. We never learned in class. Not like today. In the old days they never had that kind of education like they're getting today. This is why it's so important when you listen to your elders. They're the ones that are teaching us. They're the ones that are making us learn. They were like our teachers. They were teachers to us. The elders taught us everything. They taught us how to live off the land. They taught us how to pray. They taught us everything, the elders.

They also would not tell us things that are no good. If something is bad they'll never tell us about it. They always tell us, don't do this, don't do that, don't go there. They're always trying to make us avoid bad things. They always say don't touch that, don't touch this. When they say you gotta have permission to do anything. That's to all the kids in the old days. In the old days every kid got the same type of teaching from the elders. Today it's so different. Today kids do whatever they want to do, touch whatever they want to touch. Break into warehouses or break into homes. In the old days you just don't go to somebody's home. Like, if there's an old lady staying by herself you just don't go and barge into her home. Unless this old lady is talking to you and wanted to get your attention. Then you can go to this elder.

You don't go touching somebody else's property. If an elder has something that's sitting outside their home you don't just go over there and grab whatever you want to grab or touch whatever you want to touch. You don't do that. That's how we've been taught by our elders when we were young. If we did something bad or we touched something wrong or we did something wrong our parents would discipline us. They would spank us. So that's the life that we've had in the past and it was a good life.

Whenever as young people in the old days we were asked to do something we never said no. We always enjoyed doing something. Especially if we were cutting wood or chopping wood. If somebody asked us to chop wood and we chopped one wood we feel really good about it. When we were cutting wood we really enjoyed cutting wood. Not only that, when they asked us to get some spruce bough, spine, pine from pine trees, spruce trees, we would do it. If elders asked us to do anything for them we really enjoyed doing things for them. That's how we were in the old days as young people.

Today it's so different with our young people. They go to school but they don't really know that much about the way that Dene people used to live. Like today, let's say you go out camping and

you want to make bedding and you want to cut some spruce bough. Young people today probably don't know how to do that. When you make bedding for spruce bough there's a certain way to make these beddings. Today young people don't know how to do it.

Young girls, none of them, maybe hardly any of them know how to start working on a hide. How to start working on a hide. Today's kids, Bernadette [sic] was saying they really don't know anything. The only thing they probably know is how to play. How to have fun or play games. Just like guitar. They know how to play guitars. In the old days young children had lots of fun because they were out on the land. They were out in the bush. They never seemed to run out of things to do. If they decided to go sliding down in the winter time they would cut a big tree or a tree stump or something and cut it in half and they would make a sled out of a tree. They would fix it up and put water on it so it would go faster. Sometimes to make sleds it takes about two to three days. We had to use axe. The elders would really, didn't want the young people, the young kids to handle axe because it was dangerous. But that's how, that's what we did in the old days was to get a big tree and cut it in half and make sleds out of it. In those days young kids had lots of fun. Many times they don't know what's going around them sometimes. Like, what the men are doing or the women are doing out there.

I can remember when I was young my family would be out there, way out on the land, trapping. I can remember once they finished trapping that we would head home, journey back from the trap lines. I can remember those days. Today it's really different for the young people, young children. We need to teach them about the history of their people. Not only that, to also teach them about how to live off the land.

Another problem that we have with today's youth is that they only understand the English ways. They don't, they can't speak their language or understand their language that well. So what is our option? What can we do to help them? When we were young it was okay because everybody understood their language, how to speak their Dene language and listen to it. In those days it was a different world. The Dene had their own Dene world and the English, the Mola, had their own world. So we weren't from the same world. We were two different worlds we were living in. They didn't understand English, but that didn't matter to them.

There are some Dene people that understand English and they only use English when they're talking to a white person. But they would never, a Dene person that understand or speaks English never speaks English to a Dene elder. Never. Today it's so different than the old days. Everything is different. It's all in the English speaking world.

Bernadette [sic] was saying, for the future we can't depend on modern ways to survive. You can't depend on the way it's happening today. I think she's saying that we have to learn our ways, the Dene today, like, to survive in the future as Dene people. Today it's a totally different life we have. It's unlike in the old days. Today everything depends on money. Money, you need money to live in housing.

So in the future we're going to face some really hard times. If people today, young people today, they think that life is easy today, it's going to get harder in the future. Life is not going to

be easy in the future. It's going to eventually change and get worse, having more hard times. Because in the future we're going to be facing some hard times. It has been said that we would be keeping things with us even though these things are very old. They're from long time ago. We keep them because we might use them in the future. That's what's going to happen has been said in the past that in the future that all things that we keep are probably going to become useful again.

It has been said too in the future that things are going to get expensive. You go to the store with a five-dollar bill and you probably won't even be able to buy anything with it in the future. So in the future, whoever learns to keep things for a long time, those people are the ones who are going to live okay. They're going to have a good life in the future.

So if you don't learn to keep old things, you don't save things from the past for your future, then you're going to have a really hard time in the future. Sometimes Bernadette [sic] was saying that when she was in Yellowknife, when she was driving around or someone was driving her around she noticed that there was a lot of homeless people. A lot of young people out in the bushes sleeping out there on the side of the road or in the bushes. She noticed that. So this is for the young people in the future. In the future, sometime in the future.

With this one young person says, remember what my elders said to me way back in the past, what she said to me, I can remember what she told me. I still keep her teachings with me this long. If that child can do that in the future then that child will survive. So whoever this young people in the future, they say they've heard what their grandfather or grandmother have said, what their parents have said to them, they keep those words with them in the future then in the future those young people will lead a good life. If they don't grasp or you don't hold those teachings that your elders have taught you then in the future you're going to have a hard time.

All this has been taught to the young people in the past. Their grandfathers, grandparents taught them. Their parents taught them. When an elder talks to you, elder's trying to teach you, whatever they're trying to teach you is true. Listening to your elder is like listening to the Creator, like God. They're teachings. Religion. It's the same thing when the elder speaks to you, you have to respect them just like you respect the Creator.

Elders in the past have made a lot of predictions about what's going to happen in the future. And their predictions are happening today. You can't do anything about it. You can't turn it back. You can't turn those predictions backwards because it's already here.

Today's children don't know how to pray. So as children, the youth today, think about it. Think about your future. How is my future going to look? Think about how you're life is going to be in the future. And also think about the Creator. It's very important. You think about the Creator, you pray to him. You pray to the Creator to take care of you. To help you. You pray to the Creator and the Creator will help you. You pray to the Virgin Mary, she will help you. That's youth in the future when they get older and you lose your relatives or your parents. Once you lose your family then life will get harder and harder for you. Remember that.

You cannot lose your identity. You have to hold on to who you are as a person, as a Dene. It's so important to hold on to your identity of who you are. So as young people you are the new generation, so make sure that you hold on to your identity of who you are. It will be so important for you in the future.

Alphonse Takazo

Alphonse Takazo, he's talking about these are messages they're giving to the young people. Alphonse was saying that as elders there's not too many of them alive today. So it's so important for the young people to listen and to learn what the elders are saying today and what they've said in the past. So when a young person listens to elders make sure those recordings are on tape and you can use these recordings on the local radios so they can listen to it. Also put that information that the elders have told you on paper because it will last longer in the future.

Alphonse Takazo?

From transcript of public open house, post-presentation discussion

You did really good work, you guys. In the future ... we don't know what it's going to look like in the future how our future's going to look like around us. But it's really good to talk about it and it's good that the elders are talking about it and you kids are working on it because everybody needs to know in the world what happened here. ... it's so important because we have to protect ourselves, we have to protect the animals, we have to protect everything around us. So when you talk about culture, traditions, all that ... there are actually two sides to that story. There's ... Dene law; ...stuff like to love one another, to pray together. ... As Dene people we're fishermen, we're hunters. We set nets, we go on the land. ... That's the way, that's what it means. ... Mahsi.

Language of the Land

Elder and adult participants in this program made it clear that Dene language is an important vehicle for stories and knowledge about health, climate, and survival on the land. For this reason, the research team compiled and did a preliminary coding of 369 documented words related to weather, health and sickness, harvesting, and land and water (see Tables 4-11, including charts showing coding results). Interestingly, the most extensive documentation among the three categories is related to harvesting (a category which includes travelling and camping), at 43%. Although no detailed analysis was done on the history of the words, it is safe to say that the weather and harvesting categories contain the highest percentage of "old words" based in ancient knowledge and practices.

Especially when people live in the bush, and when they're reliant on their own senses to assess the weather, they require a very detailed vocabulary about the weather. As Walter Bayha put it, "People talk about the weather from the time they first wake up in the morning and poke their heads outside their tents." This is because the state of the weather is critical to daily plans about where people will travel and what they will harvest. The observations are much more complex

than the indicators provided by Environment Canada nowadays, including not only relative temperature and wind speed, but also visibility and the quality of light in the sky, the nature of the clouds, the quality of the snow and ice (in fall and winter), and the nature of the waves on the water (in spring and summer). This explains the sophistication of Dene terminology about weather, of which Table 9 provides only a small indicator. The importance of travelling and hunting safely and the complexity of knowledge required for decision-making in winter conditions is indicated in the high percentage of documented words about ice and snow (31%).

The majority of the words included in the harvesting list are about Hunting, Fishing and Travelling (Table 11 and Figure 53). It is interesting to note that Travelling is included in the harvesting category, indicating that harvesting and travel are not considered as separate activities, and that the considerable knowledge and skill required for travel on the land should not be underestimated. However, much of the vocabulary related to land and water (Table 12 and Figure 54) also contains information that is used for navigation on the land. It is notable that 26% of the terms in the Land and Water category are related to ice, since understanding ice conditions is critical for fall and winter travel.

The health category (Table 10 and Figure 52) is likely skewed toward contemporary medical terminology in part because of the urgent practical need for health care professionals to be able to communicate with patients. Thus a total of 43% of words documented are related to Symptoms and Diagnosis. The other possible reason is that the medical concept of “health” does not fit well with Sahtúot’íne concepts, which are more oriented to the whole being of a person including not only mental and physical health, land-based skills and knowledge for survival, discipline in work, and spirituality.

Table 9: 59 Words about Weather. Credit: Délıne Language Team, with Chuck Bloomquist.

Type	Dene K’e	English
Environment	dayi	air
	ꞛéhzhiné	shadow
	goecha	shade
	kare	outside
	tich’a	outside
Ice and snow	daoyá	snowpatch on branches
	guluka	snow (glazed)
	ilu	hail
	izi	snow (first melting on top)
	náegá	snow (powdery)
	ꞛóhk’aechoré	snowflakes (large, soft)
	soh	frost
	táhtsi	snowdrift (hard packed)
	táhtsi dezhíle	snowdrift (soft)
	tę retq	thick ice
	tęrebele	thin ice

Type	Dene K'e	English
	zha	snow
	zha denele	snowing
	zha táretł'é	snowslide
	zha tarík'q	snow (melting)
	zha tarítłe	snow (melting)
	zhahzhólé	snow (soft new-fallen)
	zhatselé	wet snow
Precipitation	ʔáhtselé	mist
	chq denele	raining
	chq denele zq	raining constantly
	chqh	rain
	k'énaqhti	drizzle
Temperature	elígu	cold (weather)
	elígu agodarade	cold (becoming)
	elíguch'iré	temperature
	gók'á agújá	cooled off
	satú heda	warm weather
Weather condition	ʔá	fog
	ʔá łq	foggy
	dzene gonezq	nice day
	dzene yát'a gonezqle	dull, cloudy day
	gonezq kéorat'íle	poor visibility
	k'oh	cloud
	nágohtene	thunder
	nágohtenekqné	lightning
	nihts'i hé náchqíwe	windstorm
	sadé kénidi	sunshine
	teetsi	bad weather
	tutselé	fog over water
	yázia gonezq agodarade	moderating weather
	yázq adarade	clouds clearing away
	zha hé náchqíwe	snowstorm
	zha t'á nezqkéorat'íle	whiteout
Wind	chik'ée nihts'i	northwind
	dąq nihtsi	westwind
	hikwíi nihts'i	southwind
	k'áhbatsq nihts'i	east wind
	nihts'i	wind
	nihts'i k'éte	crosswind

Type	Dene K'e	English
	nihts'i nátse	wind (strong)
	nihts'i reghelé	whirlwind
	nihts'iwelé	chinook wind
	yáziq nihts'i	breeze

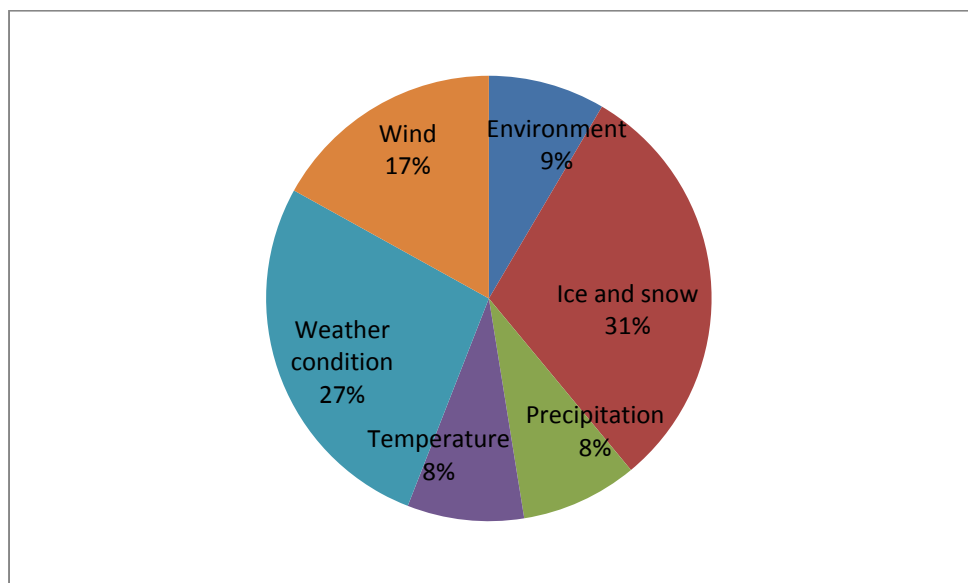


Figure 51: Documented Words about Weather by Type. Total = 59.

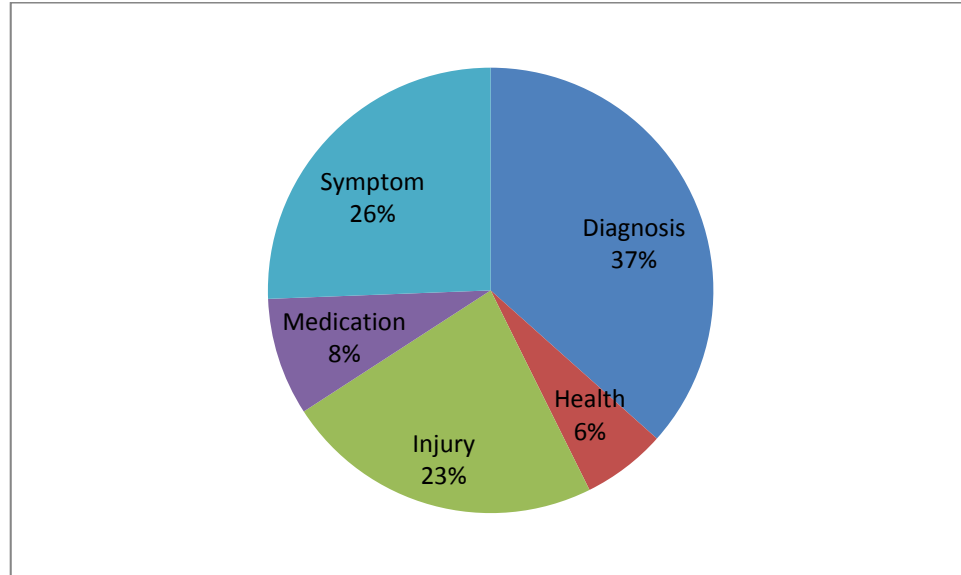
Table 10: 96 Words About Sickness and Medicine. Credit: Déḻṉ Language Team, with Chuck Bloomquist.

Type	Dene K'e	English
Addiction	denedelé kótú hili	alcoholic
Dene healing	ik'ó	dene medicine
Diagnosis	bebí nawesha	miscarriage
	bech'iré at'í	epilepsy
	dadzits'eratla	shock
	dene heríhk'a	pneumonia
	dene k'e kázehá	small pox
	dene k'e tsederek'ó	rash
	denebé yíi tségowi	ulcer
	denech'iré at'i	seizure
	denedá eyáa	eye ailment
	denedá yíi akw'e	sty
	denedelé edet'é	bloodclot

Type	Dene K'e	English
	denedelé súga hili	diabetic
	denedelé tah náidíłtine	blood poisoning
	denedzé náekw'e	heart attack
	deneghú hihji	cavity
	denenats'élé	cataract
	deneyi akw'e	boil
	elígu deneyírewé	hypothermia
	eyáa	disease
	eyáa bet'á dene k'e gozhe	rash
	eyáa denekwé heʔá	cancer
	eyáa nátse	sickness - very bad
	eyáa ts'ihdé	socially transmitted disease
	eyáłtine najúle	AIDS
	gole	cold sore
	hehké	sprain
	nahwhi	snow blindness
	ts'éku hili	menstruation
	tu ayíhwhe	diarrhea
Disability	dene godéle	dumb (not able to speak)
	denedá goúle	blind
	denedzí goúle	deaf
Health	bekwétah gonezq	healthy
	dene eyáa tsíyehwhi	poor health
	ets'ewéhk'w'ę	hearing
	naejú	heal
	nezq anaderade	improving
Injury	asáq agújá	accident
	dene k'e káodenéht'ę	bruise
	dene k'e t'uúdlá	skin oneself
	dene łét'á	cut
	denedelé denele	bleeding
	denekw'ené hehtq	fracture
	denekw'ené łaghqike	bone out of joint
	denekw'ené łérewé	broken leg
	denekwé hetę	frostbite
	denighq edelé	bloody nose
	kw'i dene híłta	mosquito bite
	kwícho k'é góla	gunshot wound
	łéet'a (k'é)	cut

Type	Dene K'e	English
	łure	scab
	nachidanawé	muscle cramp
	tłighú k'é	dog bite
	tuʔłhło	blister
	xadze	scar
	xewe	pus
Medical equipment	bet'á dene eyáa héełıdzá	body thermometer
	bet'á łerıdzé	bandage
	bet'á denewılé erıhtł'échu	X-ray
	dene ghaʔekwi	vaccination
	dene nát'á	operation
	deneghú yłı dánéhʔqagehʔı	tooth filling
Medication	dehko náıdı	cough medicine
	dene ghaʔekwi náıdı	penicillin
	denekwı eyáa náıdı	aspirin
	gole náıdı	ointment
	náıdı	medicine
	náıdı enehxo	Eno
	náıdıréhtł'é	Vicks
Mental health	benayi k'énaʔoke	hallucinating (not all there)
	denekwı ʔqzhqle	mentally ill
Risk	eyáatsené	germs
	náıdıłıne	poison
Symptom	dehko	cough
Symptom	dene k'e eʔq	lump
	dene łats'egha	shivering
	dene yłı kuréʔq	nausea
	denecho eyáa	stomachache
	denedzí ghak'areka	earache
	denegha eyáa	pain
	deneghú eyá	toothache
	denegóné eyáa	sore arm
	denek'á eyáa	sore throat
	denekwı eyáa	headache
	denekwı láadenehtł'é	blackout
	denekwı láadenehxé	faint
	denekwı nímoné	dizzy
	deneteret'á	heartburn
	denewılé eyáa	chest pain

Type	Dene K'e	English
	derágha	swelling
	híxq̃	numb
	k'énachizəzah	limping
	nats'ereku	vomiting
	wekq̃ dene ʔahʔi	fever



Types with less than 5 words: Addiction, Dene healing, Disability, Medical equipment, Medical procedure, Mental health, Risk

**Figure 52: Words about Sickness and Medicine by Type (with 5 or more words).
Total = 82.**

Table 11: 116 Words about Hunting, Fishing and Trapping. Credit: Déḻnę Language Team, with Chuck Bloomquist.

Type	Dene K'e	English
Basic tools	behya	pocket knife
	daréchare	funnel
	gohkwi énaréhk'á	doubleblade axe
	kw'i náidí	mosquito dope
	tł'u	rope
	tłehtene	gas can
Camp	deghq̃ne ts'ééré	caribou skin blanket
	ek'arík'q̃ne	candle
	kare bek'e békáets'et'é	grill
	kw'átene	grub box

Type	Dene K'e	English
	kw'ihwé	mosquito net
	łehgha kágóíhá	smokehole
	nánats'edé k'é góla	camp
	nqhbále	tent
	nqhbálewá	teepee
	to k'énats'eza	flashlight
	wha	rack
	xahkwí	stovepipe elbow
Fishing	bet'á ts'erełú	starter rope
	dahza	fishhook
	dahza tene	tackle box
	dahzachiné	fishing rod
	dahzé	net stick
	dailure	floats
	ze	fish trap
	edaíghoné	fishhook string (short)
	emq't'u	net string
	etsené	bait for hooks
	jú	hooks (with bait)
	jú yíiríkwi	bait setter
	júhtł'u	fishhook strings (long)
	k'áetúmíne	willow bark net
	kweret'u	string to tie rocks to net
	łuebeká	fish spear
	łuegqá	fish club
	łukw'á	ice scoop
	łuwé	fish scoup
	mí	fish net
	míhkwé	sinkers
	míhkwélé	net thread
	tępedé	ice chisel
	tehgho	net stick (forked)
	tehtł'u	net rope
	terechi	jigger
	yedóle	net marker
Hides	bek'e ewé nats'enéhgé	stick hook for hide
	tł'uhq	babiche
Hunting	bet'á yíirí't'í	binoculars
	bet'ąłi	gunsight (front)
	edéxá	club (made of horn)

Type	Dene K'e	English
	egániᑦá	doublebarreled gun
	erihᑦt'ᑦ bet'á náts'ezé	hunting license
	ᑦihtᑦ	bow
	ᑦihtᑦt'ulé	bowstring
	k'álage	gunsight (rear)
	k'ᑦ	arrow
	k'ᑦlage	arrow notch
	k'ᑦlᑦ weᑦᑦ	arrowhead
	k'ᑦt'alé	arrow feather
	kweredlú	slingshot
	kwewakwik'í	shotgun
	kwíicho	bullets
	kwíichowé	bulletbag
	kwik'í	gun
	kwik'í bet'á naats'ele	muzzle loader
	kwik'íkehtá	gunstock
	ᑦáᑦerehk'ᑦ	single barreled gun
	lakwik'í	pistol
	t'ᑦehzelé	trigger
	xá	club
Trapping	bet'á dachurít'í	stick snare
	dechíᑦehdzó	deadfall trap
	ᑦehdzo	trap
	ᑦehdzobéré	trap bait
	ᑦehdzowá	leghold trap
	gohzé	gaffhook
Trapping	tsábehdené	beaver pelt stretcher
	tsáwé	fur
	tsáwérechiné	pelt stretcher
	xóe	snare
Travelling	ᑦah	snowshoes
	ᑦah hehga	snowshoe (netting)
	ᑦah iᑦálé	snowshoe (foot straps)
	ᑦahcho	snowshoes (large hunting)
	ᑦahkw'ené	snowshoe (frame)
	ᑦahkwí	snowshoe (front part)
	ᑦaht'ákw'a	snowshoe (back crosspiece)
	ᑦaht'ákw'a tsele	snowshoe (back section)
	behchiné	sled
	dahkware	dogwhip

Type	Dene K'e	English
	dechitah bet'á gots'ede	bush radio
	Dérechjné	cache
	zehdzotł'u	chain
	ekełę	snowshoe (middle)
	ekw'adewé	snowshoe (2nd. crosspiece)
	elá nqkw'ené	keel
	enahtekw'a	snowshoe (front crosspiece)
	jqhtéʔah	snowshoes (roundnose)
	káats'erék'q	picnic
	kełeehga	snowshoe (middle netting)
	lí gareyqné	tobaggan
	néht'a	sled (halfheaded)
	satsqné behchiné	box sled
	satsqné behchinétł'a wela	sled runners
	t'oe	paddle
	tehmí	packsack
	tłesatsqné	kicker
	tłi got'árjla	dogteam
	tłighelé	dogpack
	tłitł'ulé	harness
	ts'qñqbále	sail
	ts'óotéwé	poles for boat
	tse behchiné	wood sled
	tsebehchiné ełelq wela	two-piece wood sled
	zha behchinéwé	canvas skidoo cover
	zhabehchinéwé	snowmobile cover

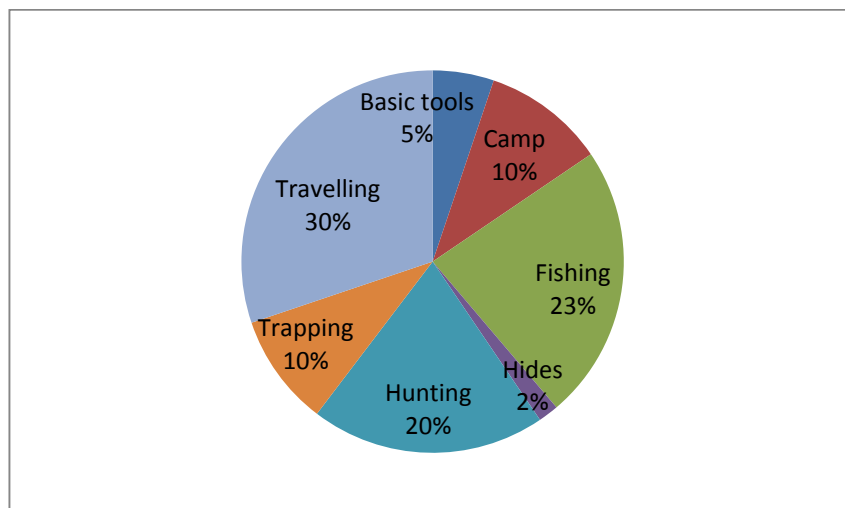


Figure 53: Words about Hunting, Fishing and Trapping by Type. Total = 116.

Table 12: 98 Words about Land and Water. Credit: Deline Language Team, with Chuck Bloomquist.

Type	Dene K'e	English
Ice	bet'á łunedé	icepack (along shore)
	dałuréwhé	ice jam
	déhtę	frozen up
	deratę	freezing up
	gulu	ice
	gulu táanéhtę	icicle
	kírkw'ené	ice (overflow on land)
	kó goka gulu	icicle
	łueghá	pressure ridge
	nę k'e kw'ené	glacier
	nę yíi góhtę	permafrost
	shú k'e tę	mountain ice
	takw'i	open water in winter
	tawo	open water in winter
	tę	ice
	tę káreghále	ice (sharp pointed)
	tę nezóle	rough ice
	tę reyí	ice (hard or thick)
	tę tádarawé	ice (breaking up)
	tę tárató	broken ice
	tę ts'idla	ice crack
	tędlare k'é	open crack in ice
	tęhzha	ice (in falltime-running)
	tękatú	overflow
	tękw'ine	ice(clear)
Land	dahnéné	hill ridge
	duh	island
	edire néné, dirinéné	earth
	zehda	point
	zehť'é	dirt
	zehť'ét'óré	sticky mud
	godénigé	ditch
	gokw'ishú	treeless hill
	góǝǝ	meadow
	hídlée	cliff
	kwe	rock
	kwe hé etť'é łetah	gravel
	kwe yíi góǝǝ	cave

Type	Dene K'e	English
	kwegwí	pebbles
	łáté	flat place
	nẹ	land
	nẹ hit'ale	field
	nẹ yíi górl'a	valley
	shíghóo	valley
	shú	mountain
	shú nɪʔa	mountain ridge
	tarekwé	dried lake bed
	whagweshú	hill
	whatéduh	sand bar
	whatłó	quicksand
Mineral	kwerekwoi déti	gold
	satsóné dekwo	copper
Region	dechila	treeline
	edirenéné, dirinéné	world
	elígu néné	arctic
Travelling	etene	path
	goteh	portage
	nẹlare	horizon
Water	behda	river bank
	dahtú	dripping
	dárl'li	head of river
	déghe	calm water
	deh	river
	deh nɔkw'ené nɪʔá	channel
	deh tɬ'a	river bottom
	dehgá tahde	shallow river
	dehtsele	creek
	ɤehtɬ'étú	muddy water
	k'élú k'e tu	puddle
	łak'eili	forks of river
	łíidli	tributary
	łuk'é	spring
	náili	waterfall
	nẹ ts'ę tu	spring of water
	nẹ yíi káili	spring of water
	nẹk'e réhzo	dew
	ɤóo	eddy
	taghú	whitecaps

Type	Dene K'e	English
Water	tahde teríli	rapids
	tahłq	water (deep)
	tarechó	wave
	tatselé	steam from open water
	tł'áa	bay
	tł'áni	lakeshore
	tu	water
	tu dar[tł'i	flood
	tu dawetq	lake
	tu náłta	swift water
	tu nátse	rapids
	tu netsília dawetq	pond
	tu redéwe	clear water
	tu tł'a	under water
	tu xatsélé	steam
	tubáe	water's edge
	yebáehtúé	ocean
Wetland	dlah	swamp
	nę wehtse	wet ground
	ts'oo	muskeg

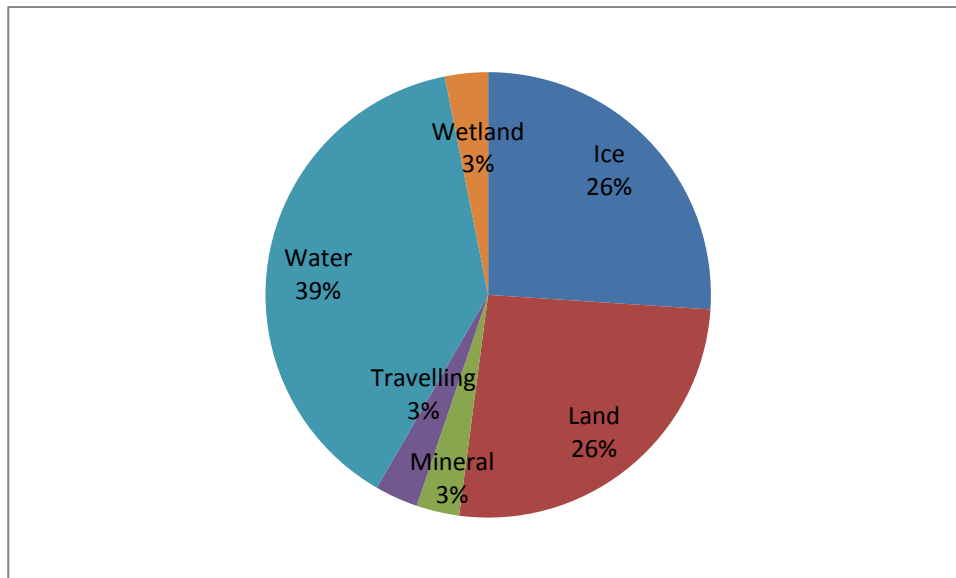


Figure 54: Words about Land and Water, by Type. Total = 98.

Community Elicitations

Through the Health Risk and Climate Change program, the Délı̨nę Knowledge Project became known in the community for supporting the collection, recording and dissemination of stories to community members and as contributions to community events. In the process, both as a response to the program and due to other conjunctural events, community members began to define their own specific interests in both existing recorded stories and in live storytelling occasions that would address community needs. Much was learned from these community elicitations about specific stories that are applicable to community health and well-being in times of change. The hymn/prayer and ʔets'ulah (“love song”) CD projects, the ʔehtsáo Eróya poster, performances of stories at the Spiritual Gathering and at meetings associated with the H1N1 and tuberculosis epidemics, and the professional video documentary about a local handgames tournament all provide insight into the role of stories in Délı̨nę - and beyond, given that all but the stories of epidemics were shared with visitors from other communities.

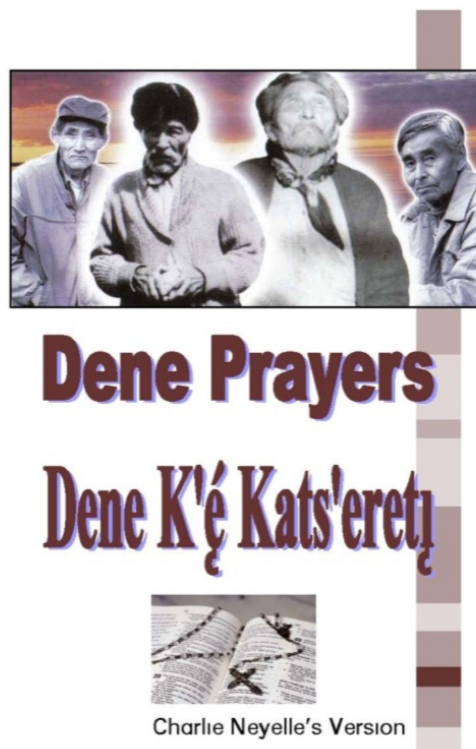


Figure 55: Front cover of Dene Prayers Pamphlet with photocollage of the four prophets. Left to right: Old Joseph Bayha, ʔehtsáo Eróya, Old Naedzo, and Old Andre. Credit: Narration by Charlie Neyelle; transcription and pamphlet design by Jane Modeste and the Deline Knowledge Project.

ʔehtsáo Eráya

Story by Jane Modeste, with support from the Délı̨nę Knowledge Project

Eráya was the original Dene name of the prophet now lovingly known as ʔehtsáo Louis Ayha. Born in 1857, he became known throughout the Northwest Territories as a great spiritual leader. People used to travel many miles just to visit him, and today they still come to visit his grave. All the elders that knew ʔehtsáo Eráya talk about how special he was in the eyes of God.

ʔehtsáo Eráya was raised in Tłı̨chʔ territory, in the Behchokʔ area. Together with his family, ʔehtsáo Eráya traveled around the Sahtú, Tłı̨chʔ and Kugluktuk regions. He built his first log home in the same place that you are standing now, near the site of the old Hudson's Bay Company trading post. He chose this place for its good fishing, hunting and trapping.

When he was very young, two angels visited ʔehtsáo Eráya to share the teachings of the Holy Book. These visits continued for years. By the time the angels' teachings were completed, he had grey in his hair. That's when he received a spiritual message that told him to share his knowledge and speak to Dene people everywhere.

And so he began sharing what the angels taught him. He knew the whole Bible, even though he had no knowledge of written words. Throughout the day, he would go from home to home talking with people. He also came to predict the future for the people and the land. He talked about the purpose for being in this world. He talked the many aspects of living a good life, and what was to come after death. He would do anything to help people when they were in need. Many people find his words very true and relevant, and many of his prophecies have been fulfilled today. There are numerous prophecies that we have yet to experience.

Although he had no knowledge or teachings of the written word, he was able to read the Bible. There were people who doubted the source of his teachings. To convince them, ʔehtsáo showed them that he had

the ability to read their thoughts and predict their actions. This proved that his teachings were not false. ʔehtsáo Eráya often said, "Remember to always share and to love one another." He also said, "Remember to always keep the words I taught you. Don't let them disappear. Use them and teach them to each other until the end of the world."

Not long before his death, ʔehtsáo Eráya told close family members that in the near future he would fall three times, and his death would come soon after. This prediction came true. He died on September 23, 1940 at the age of 83. His wife Rosalie died on July 18, 1943 and is buried with her husband in Délı̨nę. They are both missed very much by the people of Délı̨nę.

ʔehtsáo Eráya is remembered as a great prophet who worked hard and preached to many Dene people about the Good News. He was loved and respected by young and old alike because of his strong belief in God. ʔehtsáo Eráya was a great teacher. That is why the community school was named ʔehtsáo Ayha ʔerı̨htł'é Kʔ in his honour. The stories that ʔehtsáo Eráya gave to us are a great gift. They will do us good in this world and in the next world.

Sometime in the early 1980s, some of the elders decided to rebuild ʔehtsáo Eráya's house as a place to remember and share his spiritual teachings. The elders decided that there should be a memorial day in his honour. In 1991, a Spiritual Gathering was organized to celebrate his life and teachings. This Gathering occurs annually over a full week in mid-August and is attended by many Dene from near and far.

A preliminary summary of key messages emergent from community elicitations is as follows:

1. The life of stories is closely intertwined with musical practices that bind people together in a meaningful communicative space. Both narratives and musical practices including drum dances, and handgames, and the Spiritual Gathering (which incorporates storytelling, drum dances and handgames) are essential to relationship-building within the community, and with other communities in the North.
2. The prophecies and teachings of ?ehtsáo Eróya and the three other prophets revered in Délı̨nę (Old Joseph Bayha, Old Naedzo, and Old Andre) remain a central foundation for understanding socio-ecological changes in the future, and for guiding healthy practices in the present.
3. Stories and song are closely intertwined with spiritual teachings in Sahtúot'ı̨nę culture. Sahtúot'ı̨nę spirituality contains a strong element adopted from the missionaries, but is also based on the spiritual being inherent in the land. Any health adaptation strategy in the community would necessarily be informed by this spiritual dimension, as maintained in stories within the Délı̨nę Knowledge Project archive as well as in the narratives of living elders and spiritual leaders.
4. Sahtúot'ı̨nę are careful to ensure that stories and songs – especially those of a spiritual nature – are shared in appropriate context, and only by those with authority to share the knowledge. There is a clear differentiation of Sahtúot'ı̨nę stories from those of other communities, and of stories held by different family groupings within the community.
5. Dene language is considered to be the main vehicle for transmission of meaning Sahtúot'ı̨nę stories and songs, especially with respect to spiritual teachings.
6. Key historical moments of change affecting the environment and health of the community such as the Port Radium uranium mine and earlier epidemics maintain a strong life in the community beyond deliberate research activities, and thus are resonant starting points for discussions about present and future impacts of climate change. For example, ?ehtsáo Eróya's prophecies were forged during the period when social and environmental impacts of Port Radium were pointing the way to important changes in the future. These prophecies are especially relevant to this study in that they provide guidance for living a healthy life and building relationships that could mitigate the impacts of future change.
7. Storytelling in Délı̨nę is strongly contextual and responsive to immediate experiences of environmental change and health risks. However, the organic nature of story performances means that deliberate interpretive tools are required to recontextualize “old time stories” and prophecies in relation to future, unforeseen risks.
8. Because of the crisis context in which Health Centre staff were compelled to work, and because of the community sensitivities surrounding the two epidemics during the program period, it was not possible to hold the kinds of leisurely and fully documented dialogues that would have been ideal in a research context. However in an interview, Head Nurse Wendy Flood and Laurie Davidson, both of whom have many years of experience working in Délı̨nę, spoke about the need for more dialogue so that they could learn about Sahtúot'ı̨nę ways of understanding and addressing new health risks. Such a workshop would lead to a better understanding of how the medical system can better support and complement healthy Sahtúot'ı̨nę practices.

6.2. Youth Contexts and Interpretations

Document and analyze ways that young girls/women and boys/men interpret stories with a focus on health and climate change, and how the stories are experienced on the land, in the school, and in the community.

This program objective created opportunities for an important innovation in the life of stories in Délı̨ne: young girls/women and boys/men were given opportunities to study, interpret and represent both their own stories and keystone stories determined and performed by their own elders (rather than through an externally established curriculum, or popular media). This aspect of the program was defined in the original plan through direction given by elders and community advisors during meta-research meetings, and received expanded and strengthened community support as the program evolved. The youth themselves were enthusiastic participants, and requested follow-up programming that would allow them to continue developing their skills and confidence. The program directly addressed the messages repeatedly expressed by Sahtúot'ı̨ne elders (for example in the *Sóbaká ʔetené* interviews), that youth no longer listen to elders, and thus that elders' stories would soon be reduced to mere lifeless archival material.

The challenge was to bridge the stories of the elders and youth with concepts of health risk, climate change, and adaptation, given that these abstractions are not immediately encompassed in local stories and experiences. The research team felt that to have initiated activities by imposing these concepts as a frame within which stories and experience had to be constrained would have contradicted the governing methodology of the program; our hypothesis was that such an imposition would also have meant the loss of a certain level of vitality and authenticity in the stories. This being said, the research team was also committed to ensuring that youth activities would lead to greater understanding of the contributions of stories in understanding health issues related to climate change, so that youth might be well positioned to provide leadership in designing and implementing health adaptation plans.

As with Objective 1, activities related to this objective combined open and structured approaches to understand the organic “life” of stories among youth and their own conceptions of health and wellbeing, and to assess how youth learn about health risk and adaptations in the context of change. The experiential aspects of learning and interpretation were explored by deliberately engaging youth on the land (through the school trapping program and final session of the Story Cycles), in the school (through the Story Cycle, mapping project, *Sóbaká ʔetené* radio workshop, and digital storytelling workshop), and in the community (through the storytelling contests, and other cross-generational community events observed by research team members). Added to the mix in order to strengthen linkages with health risk and climate change were educational components broadening the knowledge base to external sources, including a science-based climate history workshop held at the school, and the more global and scientific scope of narratives about environmental change and indigenous health risks incorporated into the *Sóbaká ʔetené* workshop.

Words of ancestors alight path to future

Northern News Services
Deline/Fort Franklin

Two storytelling contests in Deline on Nov. 26 and Dec. 8 marked the revival of an ancient Dene tradition.

In November, elders and youth told new and old stories to spellbound audiences. The December contest featured funny stories to celebrate the coming holiday season and prizes were awarded by draw.

Monthly storytelling contests are part of a study by the Deline Knowledge Project exploring the role of Dene stories and language in maintaining community health during times of change. Activities include storytelling exchanges between elders and youth in the community, in the school, and on the land.

The project is funded by Health Canada's Northern Climate Change and Health Adaptation Program, based on the elders' strong belief that "the words of our ancestors are our path to the future."

The Deline Knowledge Project participants hope that documenting exchanges of stories between elders and youth will give rise to a community-owned plan to address health and social issues arising from climate change.



Leon Modeste shares teachings for young men — Mitchell Naedzo is recording and Roy Modeste listens keenly.

STORYTELLING Feature

by Deborah Simmons

Left: Jacob Betsidea presents an award to 92-year-old Cecile Naedzo, the oldest storyteller.



Below: Dene Neyelle and Alfred Taniton, prizewinners younger and elder.



Alphonse Takazo makes everyone laugh.



Figure 56: News/North article Celebrating Deline Storytelling Contests, December 21, 2009.

Storytelling contest in Deline

Friends, I have read with some interest all about the storytelling contests in the Sahtu community of Deline.

I have found it to definitely be one of the most traditional of our Dene communities in the North, perhaps, because this place is relatively isolated.

The elders there make it a point to get involved with the youth, whatever it is they are doing. And the youth are kept busy doing jobs for the village, to make them feel a part of things. I have yet to see a more well-balanced community in the North.

I did a couple of larger paintings there last summer as part of our "Sahtu In the Arts" and hope to do more along these lines this coming season, and with the help of the local artists and maybe even some of the storytellers mentioned, including 92 year old Cecile Modeste.

It is heartening, too, Friends, to note that this storytelling initiative is being funded by Health Canada.

A MOUNTAIN View

Antoine Mountain is a Dene artist and writer originally from Radlith Koe// Fort Good Hope. He can be reached at www.amountainarts.com.



What better way to promote community well-being, really, than a story well told or a funny one from the likes of Alphonse Takaza?

One of the things we have to keep in mind in our modern age is that our elders

need all of the attention, recognition and honour we have to give them.

I recall, while I was still a child, that my late-grandmother used to tell

me and my sister Judy all of these old-time legends every night before going to sleep in our fish-camp tent. She even allowed us a few puffs on her pipe, creating a comical cloud of smoke in the mosquito net!

It is a shame, too, some

people today still claim that we the Dene don't know anything of our own history. In fact, these kinds of storytelling contests in Deline can only help to preserve what we have for our future generations.

The Legends of Yamoria, the cultural hero of past eons, is a particular poignant one, relating as it does to a time when giants walked these lands and the animals spoke directly with our human ancestors. One of these legends begins in a giant beaver-ledge in Artillery Lake, northeast of Inuvik and follows Yamoria ("Across the Universe") chasing the harmful giant beavers all the way to the Arctic Coast!

I have always pushed to have at least one elder in each of our schools, as an elder in residence, for the simple reason that children, especially the younger ones, need someone to go to when they are being bullied or are confused by the institution itself. Our elders are like walking libraries of our culture, able to educate us on how to be true human beings.

I do hope that we can continue to hear from the likes of the well-respected Leon Modeste and Alfred Taniton, too. Lord only knows that they will not be with us forever and we need to continue their tales of our splendour.

Mahsi Cho'

"What better way to promote community well-being."



**North Slave Metis Alliance/
De Beers Canada Inc.
2009/2010
Scholarship Program**

Figure 57: "Storytelling Contest in Deline," Column by Antoine Mountain in *News/North*, February 8, 2010.

A summary of results as they apply to health risk/adaptations and climate change is as follows:

1. The experience of the storytelling contests made it clear that youth do not have a strong foundation in the kinds Sahtúot'íne “old time stories” that their elders believe are the foundation for their survival, health and well-being into the future (even though the contest posters specified that the focus of the contests was old time stories).
2. Negative perspectives on lack of youth knowledge are counterbalanced by the results of activities taking an open approach to shedding light on youth perspectives – the organic “life” of their own stories. The value of this work for the program theme would be derivative, in understanding the nature of health risk given youth values, knowledge and concerns about their relationship with the land and the status of their culture and social relationships, and how these youth perspectives might be appropriately addressed in a health adaptation program.
3. The storytelling contests, Story Cycles and *Sóbaká ʔetené* workshop showed that youth are strongly interested in hearing their elders’ stories; they were remarkably attentive when elders spoke during these sessions. This contradicts perspectives expressed by the elders about youth apathy. These storytelling occasions remain a meaningful and authoritative vehicle for conveying messages about health risks of environmental change, and adaptations required to maintain a healthy way of life.
4. The research team observed a significant increase in the quality of elder narrations when there was evident interest expressed by the youth.
5. Youth interest in the elders’ stories resulted in part from their orientation to understanding the stories with the aim of applying them to their own visions of the future in creating their own representations.
6. Youth story circles conducted through the digital storytelling workshop gave rise to a series of stories that contained important insights into the ways that Sahtúot'íne youth envision negotiating their way to a healthy future. The program was expanded in scope, including a workshop in Norman Wells that Délíne youth Doris Taneton participated in. In Délíne there were nine digital stories created. The following is a breakdown of story themes: Five stories were about going out on the land – individual experience and insight, community and cultural awareness; one story was about the importance of knowing and speaking Dene language for self-awareness and cultural revitalization; two stories were about leadership values, personal goal setting and achievement; one story was about

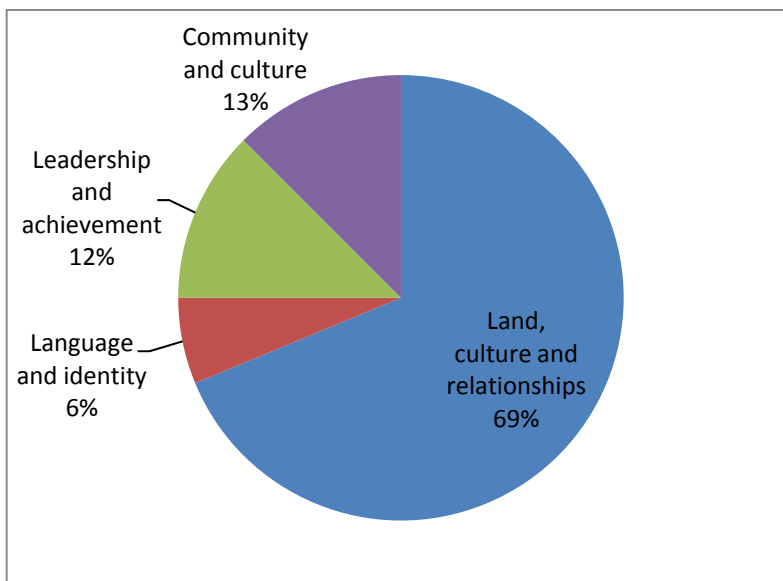


Figure 58: Délíne and Norman Wells Digital Story Themes. Total = 16.

relocating to the north and finding community through cultural experience and friendship. Stories produced in the Norman Wells workshop included six stories about going out on the land – connecting with family, hunting, fishing, learning skills, wildlife experiences, individual insights; and one story about relocating to the north and finding community through friendship and cultural adaptation. The interrelated importance of social relationships and a sense of identity in relation to Dene culture and the land are strongly indicated in the digital stories.

7. Elders and youth both emphasized the lack of opportunities for youth experiences on the land, and the need to connect the stories, concepts and placenames with land-based experiences so that they become more meaningful as guides for safety, food security and physically, mentally and spiritually healthy living.
8. The concept of being on the land is very different in these stores than in stories by elders. For the youth, being on the land is a novelty, a getaway. It is no longer seen by youth as a necessity for food or shelter or other material necessities of life. Rather, youth stories, especially as represented in the digital stories, reveal that the notion of being on the land tends to be more for spiritual and emotional health.
9. The main language of communication for youth was English, but many understood much of the Dene language narratives by elders, likely more so than the elders believe. Through the *Sq̓baká ʔetené*, placenames mapping and digital storytelling workshops we learned that given space and support, youth are strongly motivated to develop confidence and conceptual vocabulary in Dene language, and to learn the specific meanings carried in the language.
10. In their logs from the trapping program and in a number of the digital stories, youth repeatedly expressed both their own challenges in making the transition from town to bush, and the sense of wellbeing that could be achieved in spending time on the land. The overall consensus in the trapping program logs was crystallized by Jake Roche: “I felt really good on the trip it was fun and a good experience.” The youth made it clear that the full experience of being on the land comes with extended overnight stays. Unfortunately, this was not possible to coordinate with the school schedule, so our only insight into this is through the student’s digital stories about trips on the land with family, and the desire for extended trips expressed in the trapping program logs.



Figure 60.1: Yamoria Story Cycle On-the-Land Trip, Grades 3-4 Class – Travelling by Boggin.



Figure 60.2: Yamoria Story Cycle On-the-Land Trip – Caught a fish!

11. Including the science-based climate history workshop and social science perspectives on environmental change and indigenous health impacts and adaptations elsewhere provided an important bridge between local traditional knowledge and challenges faced by youth in the present and future.
12. The digital stories and science-based discussions demonstrate that youth are truly cross-cultural in their local and global understandings, and that learning is considerably enhanced when it bridges cultures, knowledge systems, and media for representing stories.
13. Previous generations used to learn by listening to stories and watching their elders, but now learning needs to take place in a way that combines traditional approaches with a structured curriculum. This hybrid approach contributed to the strengths of the Story Cycles and *Sóbaká ʔetené* workshop as learning processes.



Figure 61: School Trapping Program - Living on the Land.

Selected Digital Story Scripts

First Camp Trip

Brett Elemie

When I was twelve years old I went on my first camping trip.
I didn't want to go, because I didn't want to leave town.
My parents said "you've got to go on the land sometime."

I got in the boat and put on my life jacket on fast
Because I was scared of the water.
As we paddled away from shore I looked down
And watched the water get deeper and deeper.
I moved to the middle of the boat to be safe.
The wind was making waves and the ride started getting bumpy.
little blue hat.

An hour later we got to the campsite.
I jumped out of the boat and ran in circles shouting
"Land! We are on land!"

We stayed at my uncle's cabin while my dad built ours.
I stayed inside most of the time worried about bears and wolves.
My dad came in one afternoon.
He had just seen three wolves down by the river.
So I stayed inside even more, reading lots of comic books.
Five days later I was still worrying about those three wolves

Finally I read all the comic books and was getting bored.
So I went outside.
I threw empty shotgun shells into the river to see if they would float.
Then I saw a canoe and ask if I could try it by myself.
My parents said no but my dad said he would take me.
We paddled around for a bit.
After we pulled the canoe up and went in to eat meat and rice.

Then it was time to leave.
Dad said we would come back to finish the cabin in four weeks.
As we were packing up I said I will miss it being out here
Where it is so quiet and peaceful and fun!

Back in Deline I told my friends about the trip
To my first camp out on the land with my mom and dad.



Figure 62: Still from digital story *First Camp Trip*. Credit: Brett Elemie.

Happy

Samantha Kenny

I didn't like camp at first. I stepped out of the boat onto the grass. I just wanted to go back to town, where my friends were. It was boring here. There was nothing to do...

A couple of days passed and I came to appreciate even the little things.

Maybe all the modern technology was getting to me; I didn't realize there were another life other than your house, friends and school.

It was just me, my grandma and grandpa; I could've brought my iPod, but instead I took with me, pen, papers and a few clothes.



**Figure 63: Still from digital story *Happy*.
Credit: Samantha Kenny**

At night I would stay outside the tent, and watch the lights of Deline across the lake. I wondered... why is it so different out here. why am I so happy... all the things that were in my mind all the time just seemed to melt away... like I didn't have worries at all.

I'm pretty sure being out on the land had something to do with it. The air is so clean, the sky so bright and sunny...I loved the water hitting the rocks, the warm wind each day. I took off my shoes, the moss from the ground felt soft and comfortable.

The creek was the most wonderful thing about the camp site. Everyday I would go swimming by myself. I loved this. I'd put my head half way in the water and look up in the blue sky and just float away. It felt like flying, I just floated away to the point where I was far away without even knowing it.

When I'm back in Deline, school, friends and work are all that are on my mind. I try hard to find my special qualities. It is a challenge to focus on what I like. But at camp things come clear... like I now know what my favorite movie is.

The last morning came, I opened the zipper to the tent, the sun hit my face, the rain from the night made the air so crisp, and a flush of warm wind flew right pass me. If I could wake up like this everyday, I would be happier.

Our Culture, Our Language

Mitchell Naedzo

I learned Slavey when I was only 3 and a half years old.
I was in a family where everyone spoke our language.

Some words mean many connected things... like Sahtu means our lake, Great Bear Lake. Sahtu also means bear water. But, Sahtu also means our people.

Back in the day when the elders were younger every one of them spoke Slavey. Then residential school came to Deline in the 1920's. The teachers were really strict and they didn't let our elders speak slavey. They hated our language.

After the elders stopped going to school they started speaking Slavey again. They passed it on.
But, now parents aren't doing that. But, mine did.
And I know I'm special because of that.

>>start tape, fade under<<

I still have the tape when I was speaking slavey to my auntie Barbara Ann Naedzo. I am really proud of speaking my language, especially at that age.

>>bring up slavey tape, run under credits. Photo <<

Because my family taught me my language I feel I have been given an honour. Now It's also a responsibility for me to teach my friends and others.

There are about four teenagers in Deline who speak Slavey. But there are about a hundred teenagers who live here. They need to try harder to learn, and parents need to try harder to teach them.



Figure 64: Still from digital story *Our Culture, Our Language*. Credit: Mitchell Naedzo.

Bringing the youth to the land in 1996

Edith Mackeinzo

As we arrive we all help each other. The boys are getting wood. We hear the sound of the power saw going.

It's so good to see how the boys enjoy working and laugh with each other.

As for the young girls they were helping me clean and getting fresh water from the lake.

I'm also teaching them how to cook and do sewing.

The next day they all left to go back to town.

I was all alone. But I just love it.

So peaceful and quiet.. the sound from the wood stove.

I can hear the birds are singing, the raven calling,

I can see the wind is gently moving the trees.

I felt so alive sitting by the window, the beauty of Great Bear Lake making me feel at home.

I was quietly sewing. Thinking about all the worry we have when we are in town.

It's different when we are in the bush.

The day I was sitting by myself I felt so good about everything around me.

Then I prepared for supper.

As I was cutting meat I looked out the window I could see the ski doo lights coming toward camp.

After supper we setup elder story telling. I put on an old tape of the prophet story told by Cecile Modeste.

(bring up audio of actual recording)

As I was lying down on the wooden bed and looking at 13 youth lying on the floor, listening to the tape and our Dene language... the night I will never forget.

So quiet and peaceful, the moonlight from outside was like a blanket over all the kids. There crackle from the wood stove. Relaxed.

(bring up audio and out)

The next the kids have to leave and they didn't want to go.

My family was with me later that night. All of a sudden, I can see the ski doo light again and I was thinking what are they doing coming back again??

They came back to bring me a box of pop, chips, bread and cinnamon rolls.

They were thanking me.

I'm thankful for them because I know they appreciate that time we spent together. The lake, the moon, the sounds of birds, ravens, fire. We shared it all.

Being the youth to the land, east from Whiskey Jack Point where my parents have their Cabin there.



Figure 66: Edith Mackeinzo in action.

6.3. Adapting Stories through New Media

Examine the role of new media in adapting stories to ensure their applicability to new health risks related to climate change.

This program took a very ambitious approach to research and development in the use of new media as tools for strengthening community resilience in the context of change. The research team learned about the importance of traditional knowledge and living oral narratives through the storytelling contest, school Story Cycles, and interviews with elders in the *Soba K'á ?etené* workshop. But we also hypothesized that new media would be required to adequately maintain and harness stories and the associated language, spatial knowledge and experience in an evolving cross-cultural context complicated by ecological change, especially in situations of knowledge sharing between elders and youth.

Relatively new communication technologies have been an important part of community knowledge sharing and maintenance of social relationships for a number of generations. Early Oblate missionaries adapted syllabics orthography for writing in Dene languages, and people would write letters to each other in the days before phones became common. Two-way radios have been an important medium for communicating news, logistical information and at times alerts about medical emergencies for many years, only recently being replaced by satellite phones with people possessing radios throughout the community. A community radio station had about a decade ago been a vital way of sharing stories and events, though when our program started it had fallen into disuse.

People have also come to use phones extensively within the community, and with friends and relatives elsewhere. The importance of phones as a communication medium is indicated in the fact that many people know almost the entire community phone list (121 home numbers plus 62 business numbers) by memory. As soon as a harvester returns from a trip, his phone starts ringing and he is invited to share the story of his trip, including details about travel conditions and wildlife seen and harvested. These stories are compared in relation to the experiences of their interlocutors, whether past or present. Similarly, news is shared about health and social relationships among people in the community in this way. Now, the Délı̨ne internet network and increasingly Facebook have become popular media for maintaining extensive informational networks, including news about hunting and fishing trips.

Many people have acquired still and video cameras over the past decade. Morris Neyelle has become known for his unique photography which is displayed on the Deline.ca website, and a number of others post photos extensively on Facebook, and videos on Youtube. At virtually every drum dance and handgames tournament, there is one person who videotapes the event. Copies of these videos are copied for friends and family, and they are viewed repeatedly. Young musicians have begun to home-produce their own music CDs.

There were four distinct media that were selected as the focus of this program: digital storytelling, audio (including CD compilations and a radio documentary), digital mapping, and the web-based Language Toolbox. However, in planning activities related to each of these

media, the research team became aware that the processes engaging people, stories and media were equally as important as the media themselves in story adaptations. Each of the four media were adopted as vehicles for documenting and representing qualitatively distinct kinds of narratives, and thus for exploring different aspects of the “life” of stories among Sahtúot’ıne (as discussed with respect to Objectives 1 and 2). For the purpose of this objective, the applicability of each medium to health risk and adaptations associated with climate change was analysed with respect to the following criteria:

- The process of engaging stories and people on the subject of health risk and climate change.
- The skills and capacities required for working with the medium.
- The robustness of the medium for long term documentation (baseline research and monitoring).
- The accessibility of the medium as a communications and educational tool in health adaptation programs.

Digital Storytelling

Process

Digital storytelling has evolved into an important participatory media production method used in a variety of community, educational, arts, and academic settings. Drawing from well-established traditions in the fields of popular education, oral history, participatory communications, community photography, and, most recently, what has been called citizen journalism, practitioners of digital storytelling in localized contexts around the world have refined their methods for working with small groups of people to facilitate the production of short, first-person video pieces that document a wide range of culturally and historically embedded lived



Figure 67: Robert Kershaw working with Mitchell Naedzo on his digital story.

experiences (Lambert, 2002; Burgess, 2007).

While the term “digital storytelling” has been used to refer to a variety of media production processes and products, its roots can be traced to the pioneering work of the Berkeley, California based Center for Digital Storytelling which in the early 1990s began to develop and refine a model for assisting people in sharing important moments from their lives in video format. The practice was initiated as a way of harnessing the power of new media technologies for individuals and groups located outside of existing “formal” communities of documentary filmmakers, oral historians, digital media artists and information communication technology specialists. In this way, digital storytelling draws explicitly on longstanding traditions of community arts and community-based learning, challenging dominant assumptions about what stories were worth telling and who was telling them, thereby democratizing cultural and media production.

The digital storytelling method brings small groups of people (typically eight to ten) together in a workshop taking place over the course of three to five days to construct short, first-person digital videos. In these workshops, participants share aspects of their own life experiences in a group “story circle”; write and record voiceover narration that becomes the “foundation” of their stories; select and/or generate still photos and short video clips to use in illustrating the stories; and learn, through hands-on computer tutorials covering the basics of digital imaging and editing software, how to assemble these materials into finished digital videos, or “digital stories.” The emphasis was on personal voice and the use of a facilitative collaborative teaching method to encourage and support each participant as writer, photographer, videographer, sound engineer, editor, and producer.

In Délı̨nę as in Norman Wells, the digital storytelling workshop facilitators emphasized an open approach to story circles that would strengthen youth ownership of their stories. This exercise was based on the idea that whichever story a student chooses to tell must remain his or her own story. Facilitators worked as associates to the students and were directed on the story and production choices determined by the participant.

While this was an important research tool in establishing a baseline assessment of youth values, knowledge, and concerns, it did not provide for introduction of new knowledge.

Skills and Capacities

The process of developing the digital stories created a sense of collective identity and confidence among the youth. Along the way to finding their voice and producing their digital stories, participants use and improve on other essential skills: reading text, document use, writing, numeracy, finding information, oral communication, task planning and organizing, critical thinking and problem-solving, working with others, and computer use. A crucial moment of the workshop comes at the end, when participants’ work is screened, thereby providing opportunity for celebration, collective support and validation, and a tangible sense of accomplishment and self-efficacy.

However, the level of skills required along with the brevity of the program meant that considerable work had to be done by facilitators to render the final product, and students were

not capable of producing additional digital stories upon completion of the workshop. Youth participants requested follow-up training so that they could become confident in independently developing digital stories.

Documentation

Digital storytelling is effective for assessments, where it is important to learn about the perspectives of people (such as youth) whose voices are rarely heard in community processes. In comparison to film-making, digital storytelling is extremely cost effective since the amount of material to be edited is tightly controlled, with an emphasis on manipulating still images in combination with audio). However, because of the intensive labour required to produce each story and the limits of story length, the number of participants and topics covered must be limited and it is not possible to gain a comprehensive sampling.

Communication

A strong point of the process of developing the digital stories was the space created for safe dialogue among students. The product was something that the youth were clearly proud of, as were the community members who attended the public showing. The digital stories themselves contributed in important ways to building cross-generational understanding and communicating a current sense of the nature of youth health and well-being in a changing world. People very much enjoyed the audio-visual medium. However, dissemination of the videos over the long term poses a challenge. The research team is exploring the possibility of posting the videos on the community cable channel and/or the web (ie. Youtube, or possibly the Délı̨ne.ca website), though currently internet accessibility is limited. Future digital stories would be produced during an adaptation planning/governance phase, and would thus involve a broader knowledge base as well as a stronger learning objective.

Audio

Process

There were two processes that harnessed the audio medium: the creation of compilation CDs from existing and new materials, and development of the youth radio documentary *Sóbaká ʔetené*.

The compilation CDs (Hymns and Prayers, ʔets'ulah, and compilations of stories by specific individuals) were created in response to community elicitations. The process was a collaborative one within the Délı̨ne Knowledge Project team, where graduate students Sarah Gordon and Ingeborg Fink worked closely with community researchers Edith Mackeinzo and Doris Taneton in recording new material, selecting archival material, editing recordings and creating the compilations, and designing CD labels (in the case of the Hymns and Prayers and ʔets'ulah CDs). Community researchers gained increased confidence in developing their own CD packages.

The radio documentary involved a more expansive collaborative process with language experts, elders and youth, and is the primary focus of this discussion. This workshop aimed to further develop initial experiences in previous youth radio workshops. During Polar Radio workshop in the spring of 2008, youth began to develop storytelling skills relating to their generation in their own home and unique community sub-culture. It also was the first step in learning radio-programming skills for that type of content. Students learned different formats of production, such as interviews for broadcast, narrated documentary production, miniature soundscape documentaries and the lining up of a full show including music breaks, stings (or musical or verbal break between subjects) and hosting. The show was aired live to tape (pre-recorded as if it was live) as well as actually live with guests and on-the-spot interviews. A second “Sustainability” workshop in fall 2008, sponsored by the Délı̨nę Renewable Resources Council, focused further on community radio production and building skills to eventually be able to take part in community radio programming independently. Students learned different formats of production, such as interviews for broadcast, narrated documentary production, miniature soundscape documentaries and the lining up of a full show including music breaks, stings (or musical or verbal break between subjects) and hosting. The show was aired live to tape (pre-recorded as if it was live) as well as actually live with guests and on-the-spot interviews.

The purpose of the 2010 radio workshop, more than any of the others, was for the generation of research material on the role of place-based stories about the Port Radium uranium mine as a medium for understanding health adaptation and climate change. However, the community radio component was a good exercise in how to take information collected while doing research and using it to create informative material for presentation to the community audience. The collection of information for this broadcast involved collection of stories from elders. At the same time the process, which was three weeks in length, allowed for background research by youth including terminology and placenames work with two Dene language specialists, and participatory



Figure 68: Mitchell Naedzo interviews Fibbie Tatti.

comparative analysis of elders stories in the context of a more global story.

The radio portion of the three week workshop consisted of different daily components with an emphasis on computer editing skills and story development.

The first day consisted of a basic tutorial on Audacity, free audio editing software. Participants learned to edit and discard portions of unwanted audio, do simple fades and add a music bed. This tutorial was the basis for simple editing throughout the project. The participants quickly grasped computer editing skills. The main challenge was to keep track of the all the audio content and the editing that took place as well as the time to complete the editing.

Day two consisted of quickly establishing our focus and line of questioning in order to allow enough time in the workshop to do the editing and production work. We spent a good amount of time talking about focus and the importance of gathering only matter that fit that focus. Our main objective was to hear stories about certain places along the Soba K'e trail before, during and after mining. We also added a youth focus, which is for the interviewees to offer their advice on the importance of youth hearing these stories. On this day as well we set out to capture these interviews with about four or five specific questions.

The following day we continued to gather audio material from interviews. Participants downloaded the audio from the digital recorders and were shown a filing system in order to keep all audio in a cohesive structure determined by the focus on stories of places and youth advice. The progress was slowed somewhat due to the interviews being done in Dene language; therefore the facilitator had to rely on interpreters to outline the basic elements of what was being said. We did rough transcripts for each interview, using interpreters of varying levels to offer a sense of each interview.

The following day was an important exercise in team cohesiveness and collective editing. We went through each transcript to decide what information was useable for production purposes and what could be edited out of the program. This seemed a like a difficult task as it is not a natural response to discard elders' information for either researchers or community members. For the production of a radio show it is vital and necessary in order to stick to a focus that makes sense to listeners as well as keep the program a length that listeners can absorb. On this day we started the second editing process, editing on the computer. We broke into teams, one person (a youth) to do the manual computer editing and another person with the relevant skills in interpretation to help make judgments on redundancies, off-focus comments and other elements that could be edited and discarded. This was a slow process and the facilitator along with one of the language specialists, Michael Neyelle, spent part of the evening getting these audio interviews up to speed. We also spent time blocking portions of the interviews into place themes and eventually created audio files consisting of a number of interviewees speaking about one particular place.

By the final day of the radio workshop we had our place audio files laid out in a rough sequence. Some final editing was done on these files and eventually they were merged together into one continuous audio track about a certain place. We then scripted introductions to these places to separate these place components of our radio production. Each participant narrated one of the introductions in either Slavey or English, as was their choice. We collaboratively chose music to

bookend the program, meaning to introduce the program as well as conclude the show. After all of these extra elements were recorded and filed the facilitator was able to merge them all together into one final show file.

The final few days of the workshop involved preparations for the community Open House to present the show. The youth worked with language specialists to develop a Dene language script for presenting the show, which included a showing of archival photographs and video, poster displays (including Dene terminology and placenames), and use of Google Earth maps to complement the radio documentary.

Skills and Capacities

One of the most important outcomes of this community radio documentary workshop component of the Health Risk and Climate Change program, aside from using it as a tool to inform the public, is the creation of a single tangible product for the community. The objective of creating a product benefits not only the community audience but also the community research team. The participation of community members for the entire research project can be somewhat abstract. Many members of the community realize the importance of gathering information as knowledge to be stored and applied to daily life, but working toward a concrete goal adds an element of distinct substance, adding momentum and meaning to the work. The common goal of delivering the product forged strong team cohesiveness, including academic and technical resource people, youth, and language specialists. The very idea of story and storytelling is concrete, especially verbal storytelling within the Dene cultures. For the workshop element of the entire program several community members naturally worked to form a team to create a product that was a radio show, which brought the concepts of previous work to a tangible resolution.

This was the participants' first opportunity to do hands-on technical work in radio production. A strong emphasis was placed on computer editing skills and familiarity with software. In this way, the team members were able to really take ownership of the production. The youth that participated in this workshop, encouraged by their older mentors, were very focused. They adapted easily to the computer skills needed to complete their portions of the project. The ideas of finding focus within a large information base and story development are life-long learning processes.

The participation of those involved in the workshop represented a cross-section of elders, adults and youth along with academic and technical resource people. The dynamic created was one in which the three groups were learning from each other. Each had their areas of expertise. The elders are knowledgeable about history and values related to healthy living in the context of historical environmental change, the interpreters' expertise lies in language, and the expertise of youth is in digital technologies.

By understanding editing for focus, students became more familiar with basic research techniques. By leaning the background of subject material and then building a presentation about specific elements of that research, students were better able to understand the complexities of information gathering and information gathering for set purposes.

The interpretation and language expertise brought by some members of the team were invaluable. The content for the radio show was almost entirely in Slavey. But rather than taking on the authority of teachers the interpreters and language specialists worked at an equal standing with the students, as equal team members working toward a project in which all participants were learners, creating a cohesive working in an environment. In this case facilitators took on helping roles as well, which also added to the teamwork dynamic that resulted in a very warm, friendly, non-intimidating environment that was likely one of the most successful elements of the workshop.

Because of the amount of work necessary to produce a radio show, participants had to adapt quickly to the idea of editing for time and focus in ways that may have been uncomfortable. Neither students nor elders are intimately familiar with speaking for a particular focus, so the body of raw information collected was large. Therefore, again, the editing and discarding of large chunks of information was necessary to produce a radio show with distinct focus and of a length an audience could tolerate. This is one area where research and production for broadcast are somewhat at odds. The amount of information gathered for broadcast production must be minimal in order to make the process smooth and as simple as possible. With more time, or with less extraneous information, students could have individually worked through all the processes of computer editing and language interpretation with other participants more thoroughly. Students also would have had a more hands-on role in the final mix of the radio show. This is important to realize in a future workshop since the full participation of those involved in a project from start to finish is important to build confidence and skill sets. However, the skills learned and used in this workshop were very apparently those of the participants, as were many of the ideas and concepts, and especially the conceptual understanding in order to sanction and approve editorial direction.

Documentation

This experience in radio documentary research gave rise to a substantial body of audio recorded materials from elders. The involvement of youth as researchers was very important in setting the stage for ongoing research in the community in future years, ensuring that research is owned and defined to address community questions and interests. Moreover, the collaboration of linguists in the program ensured that language and placenames documentation would be incorporated. However, as mentioned above, orientation to development of a coherent product necessarily limits the scope of documentation. This points to a need to strike a balance between expansive documentation for future use, and development of products for present use.

Communication

The process of producing the radio documentary created an important communicative space in itself, bringing together a cross-section of three generations in the community. The product, once completed and disseminated, expands the circle to the broader community. The fact that the documentary is in Dene language supports the community strategy for language revitalization. However, it may be that a bilingual approach might more effectively engage youth as audience. In addition to the Open House, the documentary has been broadcast on the community radio station more than once. It might enhance the meaning of the documentary in changing circumstances if it were situated in the context of a radio call-in show or additional live

interviews allowing community members to reflect on lessons or add more stories that resonate with those told in the documentary.

Production of CDs from archival sources for community distribution on specific themes is another important form of communication, and relatively simple to do. However, such CDs will not include contextual bridges educating the audience about specific applications of the stories in a health and climate change context. Again, a radio show (or texts) would be most effective in adding a strategic educational component to community stories.

Digital Mapping: *GIS, TK and Me*

We learned through this program that the majority of Sahtúot'íne stories relevant to health and climate change are place-based. Thus mapping was an important part of a number of activities, including the climate history project, the Yamoria story cycle, and the *Sóbaká ?etené* workshop. Mapping has been an important activity in Délne since the Dene Nation mapping project of the mid-1980s. However, much of the data that has been mapped remains locked either on hard copy maps in archives, or lost in GIS databases without proper filing systems or metadata. GIS specialists in the NWT tend to come and go, and little priority has been placed on proper maintenance of community data. An indicator of the problem is that Délne has for some years been unable to acquire maps with comprehensive placenames data using the proper aboriginal fonts. This means that it is difficult to verify and build on existing data that is crucial to the community in developing an ecological and cultural baseline in relation to the impacts of climate change.

Acquiring GIS expertise is unsustainably expensive, and it is difficult to maintain continuity in developing a long term mapping program using externally-based experts. Our research team has determined that only solution for developing a strong community-owned cultural landscape mapping program is development of a strong foundation in basic GIS skills within the community, recognizing that external expertise may be necessary for some functions including technical aspects of analysis.

This project is a progression from earlier efforts to develop GIS capacity among adults. Instructor Ruthann Gal of the Aurora Research Institute learned through these earlier efforts that it is difficult for the current generation of adults to adequately absorb GIS skills to the point that they are able to work independently, since adults are for the most part uncomfortable with all but the most basic computer functions. For this reason, this year's program emphasized work with youth.

The digital mapping program built upon a curriculum that was initiated with Tulita students in 2009, and included significant innovations. Although the course had to be terminated early due to a death in the community, it was an important accomplishment as only the second of its kind in the Northwest Territories. Additional training and mapping work was done with Délne Knowledge Project team members Orlena Modeste and Doris Taneton to further skills development and make progress on mapping objectives.

Participation

The GIS course, entitled *GIS, TK and Me*, was offered as an option for voluntary participation. The success of the program is indicated in the participation more than 50% of the time. Of 19 students, 18 were in grades 9 to 11 and one was an adult trainee. However, 32 students participated at various times throughout the course. Students worked with instructors to define course objectives and the grading scheme, with the promise that upon successful completion they would be eligible for 2 course credits ("Special Projects") plus a Certificate of Participation from Aurora College. A learning contract was negotiated between the students and the instructor.

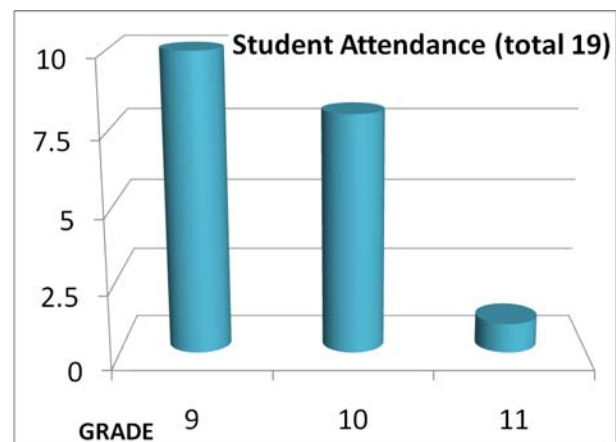


Figure 69: GIS, TK and Me Student Attendance.

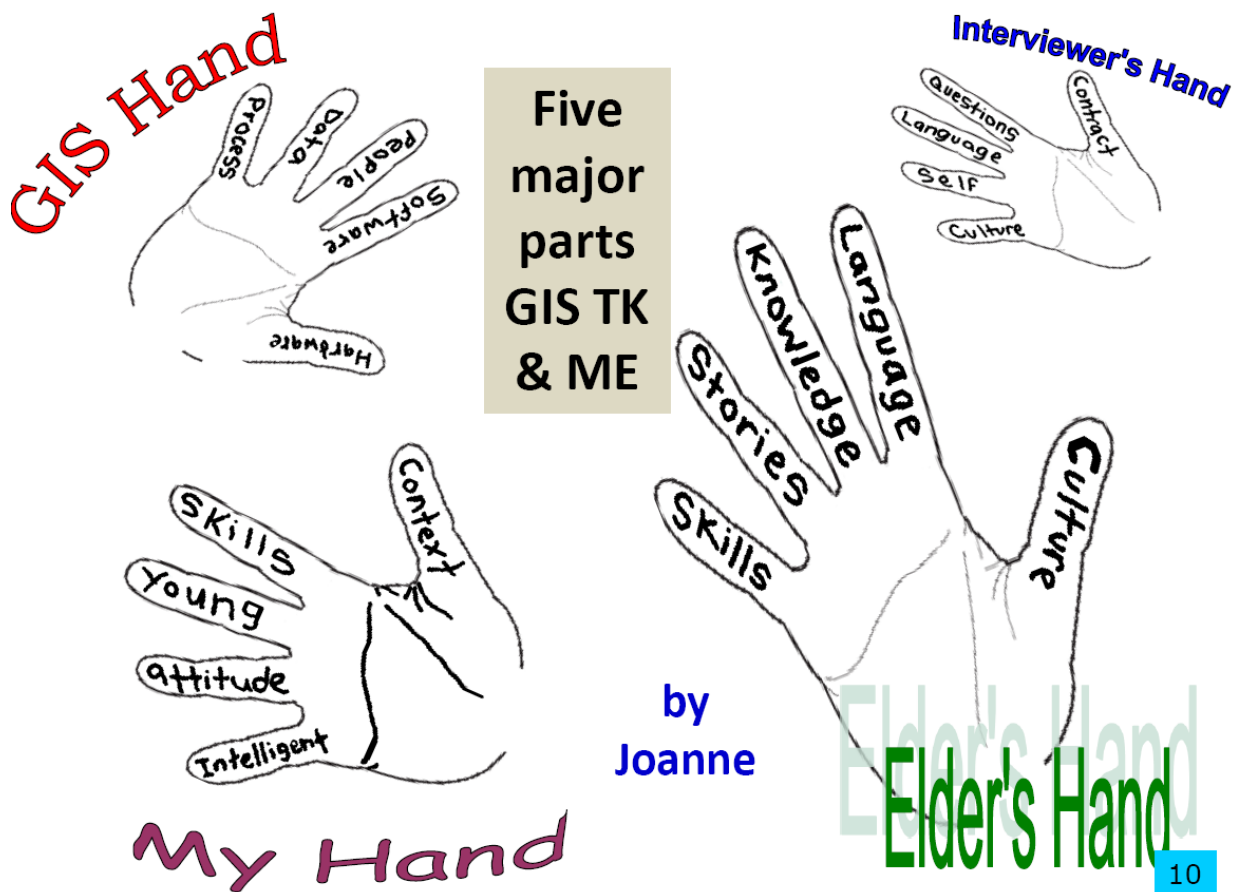


Figure 70: Powerpoint Representation of four "GIS Hands" in placenames research - GIS Hand, Interviewer's Hand, Elder's Hand, My Hand. Credit: Joanne.

Process

The course was innovative in incorporating Dene map data, storytelling and Dene language literacy components, through the contributions of language specialist Fbbie Tatti. This was framed as preparation for mapping research with elders, though it might also be seen as complementary to the *Being Dene* portions of the Health and Climate Change program. Mornings were devoted to learning concepts, protocols and methods in placenames research, and afternoons were focused on learning standard social science geographical concepts and mapping principles and skills. The third, “Me” portion of the course provided students with space to use both GIS and traditional knowledge in development of map biographies.

Students were required to fill out a workbook during class. This included comments made by the instructor, notes taken from the whiteboard, and documentation of interviews. All students filled out a minimum of 20 pages. Students were required to save all of their work in various file formats. All files were then backed up and marked as the course progressed. The majority of these files were GIS related. There were also numerous audio and video files, and the 1,600 image files (in jpg format) which the students were required to download at the end of each session if they were responsible for that specific task. For samples of community projects, see Appendix A.

Skills and Capacities

Like the *Sq̓baká ʔetené* workshop, the *GIS, TK and Me* course combined both storytelling/traditional knowledge and social science elements to allow students the full array of tools for understanding their cultural landscape past and present. Students learned both scientific and traditional knowledge research skills in geography, and discussed the linguistic and ecological aspects of placenames. Supporting the research aspect of the course were the technical skills that students were introduced to: use of digital audio recorders and cameras; a variety of computer skills including file management, use of spreadsheets, database, Google Earth, OziExplorer, and graphic design skills including MS Paint and use of Powerpoint to present mapping process and results.

The 35 hour Special Project resulted in 18 students completing the course. The course was to have been 50 hours. The large size of the class along with technical problems with slow internet (for Google Earth) and old computer equipment made it more difficult for students to be successful in learning the technical skills. The fact that the course was terminated early also meant that learning objectives were only part way achieved; students did not complete the last 3 days which included creating a PowerPoint presentation and completing a final exam. However, there was a high rate of success in credit completion.

Table 13: Grades for GIS, TK and Me Course

Marks	1	12	7	7	16	10	11	10	100
Grade	Intro	Workbook	Q1	Q2	Language	Story	Computer	Attendance	Final Mark
9	1	5			8	0	5	5	50
10	0	8			6	3	5	6	50
10	0	2	6		6	3	4	6	50
11	1	5	1		12	0	5	5	50
10	0	7			16	3	6	6	51
10	1	10		5	7	3	6	6	51
10	1	7	3		8	8	4	8	51
9	0	9	3	3	12	3	4	6	53
9	1	8			3	10	6	6	55
10	0	7	1	3	11	5	8	9	57
9	1	10	5		9	10	7	6	65
9	1	11	4	7	7	3	8	10	69
10	1	8	6		15	5	7	9	69
9	1	11		6	7	10	9	9	72
10	1	10	7	6	11	3	9	9	76
9	1	11	6	7	8	10	8	6	77
9	1	10	6	6	14	10	10	10	90
9	1	12	7	7	13	10	11	10	95

Follow-up work with Orlena Modeste and Doris Taneton included development of skills in cleaning up “messy” data from a variety of sources; and more advanced GIS skills in managing data and preparing maps using the Délı̨nę First Nation’s ArcView software. Unfortunately the team hit a major obstacle in realizing that Aboriginal fonts do not work in the old software, nor do they function in Google Earth. So it was not possible to create map layouts with placenames during the period of this program.

Documentation

There is no doubt that GIS mapping is an essential tool for the Délı̨nę community in documenting knowledge of the cultural landscape and monitoring present and future changes in land use and ecology. Google Earth has become an important element in the mapping toolbox; this has made it possible for knowledge holders to view details in the landscape that could not be seen on the old NTS maps with which they had previously worked. Also, the huge area covered by Sahtúot’ı̨nę traditional territory once meant that at least 13 1:250,000 map sheets were required to document a trip around the lake. Now it is possible to zoom in and out easily so as to see both close detail of sites, and the entire scope of the Sahtúot’ı̨nę cultural landscape. This renders documentation both easier and more accurate. However, it will be necessary to establish a database in the new ArcGIS software in order to create the placenames map that Délı̨nę community members have long been requesting. In future years it will be possible to map changes in the landscape, and conduct comparative analysis using earlier data.

Communication

GIS is not a medium that is broadly accessible, but once placenames are verified and Unicode fonts are fully available in Google Earth, it will be possible to share data more widely on the web. Another possible venue for spatial data will be the web-based Language Toolbox (on the list for future development using Bing maps). The aim will also be to use the Dëłıne First Nation plotter to produce poster-size maps for households, on-the-land cabins, the community college, the school, offices, and for people to fold and carry while travelling on the land. The hope is that in this way digital mapping technology can contribute to strengthening the resilience of Sahtúot'ıne language and knowledge of the land, and support safety, subsistence, and survival on the land.

6.4. Adaptation Planning and Governance

Scope out the requirements for effective health adaptation planning and pro-active governance related to key concerns about climate change impacts in the community.

This objective was added in the course of the program as an outcome of meta-research meetings and other community processes, and particularly through the contributions of program advisors Walter Bayha, Morris Neyelle and the Dëłıne Renewable Resources Council. The combination of self-government transition processes and efforts by the DRRC to strengthen their role in land stewardship led many of the meta-research discussions in the direction of planning and governance in the context of social, cultural and ecological change. The *Learning About Changes* program helped to focus attention on the health aspects of adaptation planning, and the research and monitoring tools and capacities required as a basis for governance in an era of change. This was reflected in the seachange that took place in the role of external “resource people” in the program, where the work was focused on supporting the community to develop technical and research capacity to conduct its own research, rather than doing the work for the community. This led to a much stronger understanding of what is involved in harnessing indigenous knowledge as a foundation for policy and governance. This past year’s *Learning About Changes* activities led to crystallization of the concept that “stories are policy.” Walter Bayha worked with the DRRC to analyze the policy meaning of one recorded old time story by late elder William Sewi and retold by Alfred Taniton about the meeting between the wolves and the caribou in which the law governing their relationship was established.

Ken Caine’s research with the DRRC was complementary in seeking to understand institutional mechanisms that serve to strengthen the resilience of land-based harvesting practices as a key factor in community health and well-being. This research is still in progress, and preliminary results are not yet available. A series of proposals for future research were developed that would allow the community to continue exploring how this concept can be meaningfully applied.

Another addition to the program that supported the planning and governance objective was an experiment in quantifying indigenous responses to changes in caribou populations in the “Harvesting, Sharing and Food Security” project led by Tiarella Hannah. Analysis of research results was delegated to the Dëłıne Knowledge Project Team as a contribution to the *Learning About Changes* program, including an assessment of its value as an input into policy development.

Story As Policy: The Meeting of Díga and ʔekwə

Told by Alfred Taniton; transcribed with notes by Michael Neyelle

This is the story told by William Sewi about the meeting between Díga [Wolf] and ʔekwə [Caribou], where they made an agreement. This is why stories told to us elders is very important and it is also very important for us to continue to share those stories. Díga told ʔekwə never to come on my land again. So Díga ʔódá [Elder] and the ʔekwə ʔódá met. This was what ʔekwə said: “You are not right, because we are here for the wellbeing of our children in the future. Why are you saying that? We should have a meeting”.

So, they gathered all their chilikwéké [young ones], deyáké [children], from Díga and ʔekwə, then they had their meeting. Díga spoke his mind to the fullest, then ʔekwə said, “You are right but you are not here alone to eat by yourself, we travel many miles to come here for nakebere [our food], only and for the Dene nakewó shéjé [eat us] and you too, nakewó shenitj [eat off us]. We do not come here to destroy anything and we are also food for you, therefore you cannot say that we cannot come here. We will continue to come back here for the future generations and will continue till the end of time. Nobody will listen to your law.”

So a law or an agreement was made to allow ʔekwə to roam around wherever they want. This is the story of “How ʔekwə made

a good agreement” and this is the way we should approach other meetings.

ʔehtséó [the Prophet Ayha] said, “In the future, you will see things happening in the mólá néné [white man’s land]”, and look at the south now. It makes us think, that the world we live in today, will not be the same in the future, something sounds wrong, according to ʔehtséó. Today, we do not listen to what other people are saying and we don’t give thanks to people who speak and thank them for telling the truth. Nobody does that today, this is why we are having a hard time.

As Elders, we have stories and we were taught by our Elders, they taught us about the wildlife and what is happening around us, all this we are aware of. We do not need paper to say what we want to say. All the things that ʔehtséó said will happen is happening, he predicted that there will be forces that will be strong and there will be forces that will do damages, all this ʔehtséó talked about. This is what we are facing today and because of that we are not agreeing with each other.

In the future, food will be really scarce in the south. The only food that will be available in the future will come from Dárelj [the mouth

of the Great Bear River]. At the end, those who still make prayers on the table they eat, will be spared. There many ʔehtséó stories, so by right, things will disappear but we are not the boss of it, it is up to the Creator, who made all things, like the many different types of dechj [trees], the different species of wildlife, water, rocks and with rocks, we are getting concern. ...Today, even though a lot of our Elders have passed on, their stories will never die. It's the same with the Creator's teachings.

What ʔehtséó predicted is happening today, for example: whatever we say, we will be talking lots and we will be talking about each

other and that is happening today, also, the youth, they are doing things today that were predicted in the past. We must continue to fight for our rights for what we believe is right and we must support each other.

Talking about the animals, when we go to other meetings to talk about them, we cannot allow them to restrict us from practicing our way of life and let us pray for them, when they go to meetings on our behalf that they do not make it hard for us. We must rely on ʔehtséó godi [words], we know that we are in the middle of major developments and that was predicted, we cannot change what has happen already.

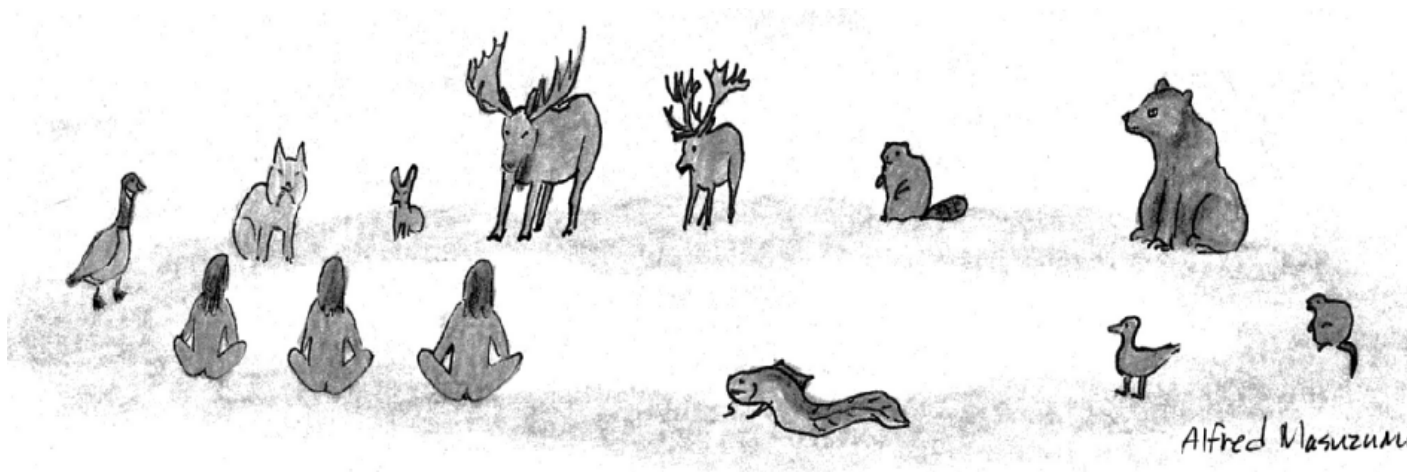


Figure 71: The Meeting of Díga and ʔekwę. Drawing by Alfred Masuzumi.

Using Indigenous Stories in Caribou Stewardship

Walter Bayha, Chair, Sahtu Renewable Resources Board

Sometimes people think co-management boards [co-operative resource management boards like the Sahtu Renewable Resources Board] really are the answers. And yes, they have powers. They're something that was developed through the land claims in the territories. They have powers that are there that are protected by the Constitution.

The ultimate powers of wildlife are not in the hands of the co-management boards. Although the co-management boards are structured so that they are the main body that would make the decisions on wildlife in the Sahtu. We make decisions, but they're subject to change or modifications or maybe even rejected in some places. It hasn't happened up until now with all the decisions we've made, but our decisions are subject to that.

In the past as a manager of wildlife, we used to deal with wastage a lot. So I asked myself, "How did they deal with that in the past? How did they do that before contact? So I did a project one summer doing cleanup and trying to understand how my people, the people of the Sahtu, Sahtúgot'ıneq is what we call ourselves, how they dealt with wastage. By the time my project was over I learned that they didn't have any waste. All the waste we found was cans, things that didn't deteriorate. With Aboriginal people prior to contact they didn't have any waste. They used everything. Whatever was left was scattered by animals and disappeared.

All the history of our people is written on the land. All names of lands direct us and give us the information if you can get rationale for all names. Most things that are named have to do with the land and have to do with the wildlife and certainly have to do with the universe. That's where our history is, it's the source of our stories.



Figure 72: Walter Bayha Explains the Land Governance Framework in the Sahtu Region, NWT.

The story I'm telling you here was told by an elder named William Sewi, probably about 10 years ago. It's recorded. It's so important to record or at least to have these stories available. One of my projects is to try to come to use these stories – and we have a lot of them, we have hundreds. We have hundreds of Raven stories. Raven stories are more to do with being anti-social, the things that you're not supposed to do, everything to do with not being a human being. That's the raven stories with my people.

William is quite a storyteller. I remember him as a young boy because he spent a lot of time with my grandfather. I listened to this story. I used to listen to these stories many, many, many years ago but when I went to school, when I started going to college and spending a lot of time in the South I really didn't think about these stories anymore because it really didn't, I wasn't thinking like that. As a Dene person I'm taught to listen, to respect people, especially in learning centres because those are like my grandfather. I was taught never to ask questions. But I'm beginning to understand there's many things that I still have to learn, but these stories, if I can at least keep them and understand them, or tell them the way they were originally told, I can hang onto the knowledge. To learn things from caribou you have to observe. There's no other way. I can't go up to a caribou and ask him, you know, how do you feel today or what do you think about all this development? It's just from behaviour. You watch, observe, note behaviour. Our people have been doing that for thousands of years. And where do you find them? In the stories.

Anyway, in preparing for this presentation I listened to the recording of William's story and then I said to myself, well, gee, I'd better go check with some of my elders. At least get them to listen to the story and tell me, this is the way I'm going to tell the story, the way I'm doing it right now;



Figure 73: Bayha Family Camp. NWT Archives.

am I doing something wrong? I wanted to go over this story very carefully, translate it with a

group of elders, maybe come out with policies. Maybe some action items that would help us in caribou management.

The story is basically about caribou and wolves, when the world was new. They had some sort of gathering because there was an issue. When the caribou came to the land the wolves didn't appreciate that. They wanted to stop the caribou from coming to this land. They wanted the caribou to leave the earth. So they went on for a while. The story goes on for half an hour.

After the wolves had their say, they expected the caribou to respond. The caribou kindly said, yes, that's the way you want it. The caribou also go on to say, we live on this earth. We come to this earth for really nothing except for food. You got good food on this earth. Very good food source. And then they say, is there an issue for us? Is there an issue somebody doesn't want us here?

Eventually one of the one of the wolves, the family member, spoke out and supported the caribou. He said, "What they are saying is true. They tell the truth. They're food for us. They're food for us in the future." He stood up and all the other wolves stood up and supported him. And they all said, "The caribou tells the truth. Food for Dene, and the animals that feed on them."

One of the laws that comes out of this story is that the Dene have the greatest respect for harvesters. Especially for food. No one is allowed to tell another Dene how to eat or what to eat or what to harvest. That is so important. The caribou is saying that they're food for the future for man and animals. In ancient times, the amount of fat, prime meat, fish, would determine how rich a Dene person is. How well off he is.

The story itself, the way William tells it, goes back thousands of years. He says that very well when he authenticates it. He said this is the truth. I must tell it that way. It is real. It happened when the world was new. He spends a couple of minutes just making it clear that the story he tells is the absolute truth that he knows. I think that gives you an idea about oral translation of knowledge. This is how they do it. He tells where the gathering took place. You actually know because he tells you. This is very important to aboriginal people, like I said. Place names are important. That's our history.

Then he relates the story all to the earth and the universe. Also where in the ecosystem the story fits. This is very important. With Aboriginal people, all things have a relationship. It's very important to understand that because otherwise the story doesn't seem to be useful in management of wildlife or useful in any management plans.

You start relationships with everything from the day you're born. Even prior to that, while you're still in your mother you start relationships with things. You learn. You begin to see what happens. You begin to see things that are talking to you. Whenever you want to meet something, whenever you want to build a relation or start one you say "Hi, hello." The Dene people do it by giving something. I think that's so important. I learned that very well as a child.

At the first meeting the wolves didn't want anything to do with the caribou. You see that so often today. The new initiative. Or maybe something that's different. New knowledge systems. People hesitate. They dismiss things. If it's not in the learning systems that we have, the universities and all of the learning systems that we have, we dismiss them. I did that. I'm talking about myself. I

used to dismiss a lot of these things and not think very much about it because I never really, I guess the knowledge system that I was involved in did that. It took me about 32 years to understand what my grandfather was talking about. You know, when I was a young man I know my grandfather said, “You’re not going to listen to me in the future, you’re not going to use these things in the future.” And he’s right. I didn’t. It’s only when I turned about 50 when I asked the question, “Who is a Dene? What is a Dene?”

I don’t know how many people were there or how many animals were at that meeting, but all stakeholders would have had a fair share of input before final decisions are made. The co-management board strives to do that. We have hearings to make decisions today in the territories. We have land claims that provide for co-management boards that make decisions. They call that consensus. I think more and more we begin to realize today that we need to do that.

Harvesting, Sharing and Food Security

Interview design by Tiarella Hannah; Stanley Ferdinand, interpreter; Deborah Simmons and Ken Caine, analysis; Peter Boxall and Brenda Parlee, academic advisors.

This quantitative survey was conducted during the winter of 2009-2010. The core of the survey was a series of questions about harvesting and meat sharing choices during the winters of 2004-2005 and 2005-2006, and the winter immediately preceding the study (2008-2009). The year 2004-2005 was a year when barren-ground caribou came very close to the community. Starting in 2005-2006, caribou started to move away and biologist were beginning to raise alarms about declining barren-ground caribou populations. Caribou remained relatively distant from the community in 2008-2009. Thus these years provide a snapshot of harvester decision-making in response to changes in the herd.

The study involved a total of 24 participants. Six individuals (20% of the 30 invited) declined to participate, a relatively high rate of refusal in comparison to other projects in the overall *Learning About Changes* program. In consultation with community advisors, the analysis team determined that data for 9 of individuals should be excluded from the statistics in order to better reflect choices of experienced hunters. One additional individual was interviewed by Deborah Simmons as a way of gaining insight into the quantitative results, giving a total sample size of 16. The study is not considered to be complete or statistically viable, and a high rate of non-response to a number of questions reduces certainty in the numbers. Nevertheless the preliminary analysis can be a useful basis for discussion with the Délı̨nę Renewable Resources Council, including validation of results and assessment of the questions and approach. The plan is to continue the study in early 2011, potentially with a redesign based on community feedback.

The study had two parts: Part A provided basic demographic data and is not discussed here. Quantitative results for the choice questions in Part B are presented in a series of visual graphs. There is one predictive question for 2010-2011.

Choice to Hunt

The first question sheds light on choices made by hunters about whether or not to hunt when the caribou were close or far away. All participants hunted in 2004-2005 when the caribou were close, but fewer people hunted as the caribou moved away (Figure 74). Non-response (coded NA) might be considered as a “no” in this case. There were no questions about changing economic context for decision-making, such as variability in individual income or in the community economy. However, NWT Statistics shows that total personal income in Délı̄nę increased by 20% from 2004-2007. It is not clear that this increase would have affected the individuals interviewed.

Note that two individuals gave “not sure” in response to the predictive question. One of the individuals added that *it’s bad to talk about the future, one shouldn’t think about it*.

The most substantial qualitative responses were recorded by the interviewer for the predictive question, and it is worth quoting the entire question here along with the notes on responses. Note that generally reduced hunting was quantitatively predicted, and referred to in the qualitative responses. However, 4 people felt that ways could be found to travel the distance to the caribou, and 2 of these mentioned that this would be possible through cooperation with others. Four participants mentioned harvesting alternate subsistence species. Only one person mentioned that they would have to buy more food from the store. One person noted that reduced access to caribou would mean increased sharing. These comments do correlate with quantitative results to retrospective questions.

Predictive Question

What **would** you do if in the winter of 2009-2010, the closest a herd (i.e. large group) of caribou comes to Deline is Hottah Lake and the DRRC had to spend a lot on trapper assistance this year and gas is expensive so they can only offer just **15 gallons** of fuel to travel to this area (*this scenario is completely hypothetical, the DRRC may not be short on money but it is predicted that caribou will be more difficult to harvest in future years*).

Qualitative Responses

- Make 2 other trips to area and bring lots of people.
- Also hunt moose around cabin at Ekadu and make more caribou hunting trips with money from family.
- Not enough money, would go for rabbits instead
- It is too far, gas too expensive and long travel. Buy more meat from store.
- Just go on the one trip.
- Make another trip and get gas money from others.
- Too far, go catch more fish instead
- Go on just the one trip.
- Ask friends and relatives for meat
- Make 2 other trips to find moose or woodland caribou.
- And take 2 other trips to Hottah Lake without gas assistance.

- Make 2-3 more trips to Hottah Lake if successful.

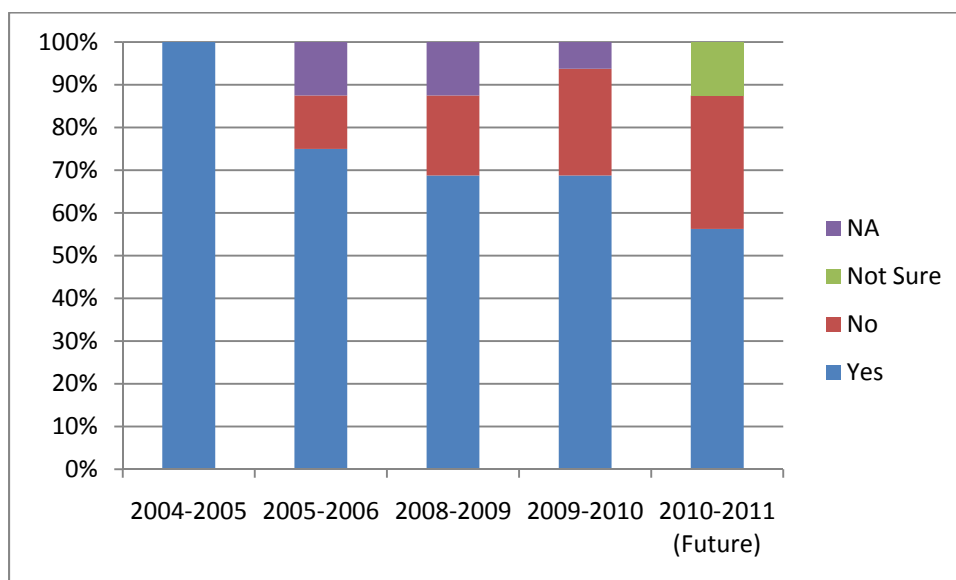


Figure 74: Decision to Hunt, including prediction for 2010-2011 if caribou far away.

Distance and Gas Subsidy

This question explored whether gas subsidies make a difference in the decision to hunt. There was a low response rate to the query about where people decided to travel when a gas subsidy was available. It is arguable that this is because people do not consider a gas subsidy to be critical to the decision about where to hunt caribou, since as one respondent noted, “You have to go where the caribou are.” Barren-ground caribou are a herd animal, and thus require a different hunting approach than other subsistence species including moose, woodland caribou and fish where choices can be made about where to hunt. This being said, the result for 2009-2010 does

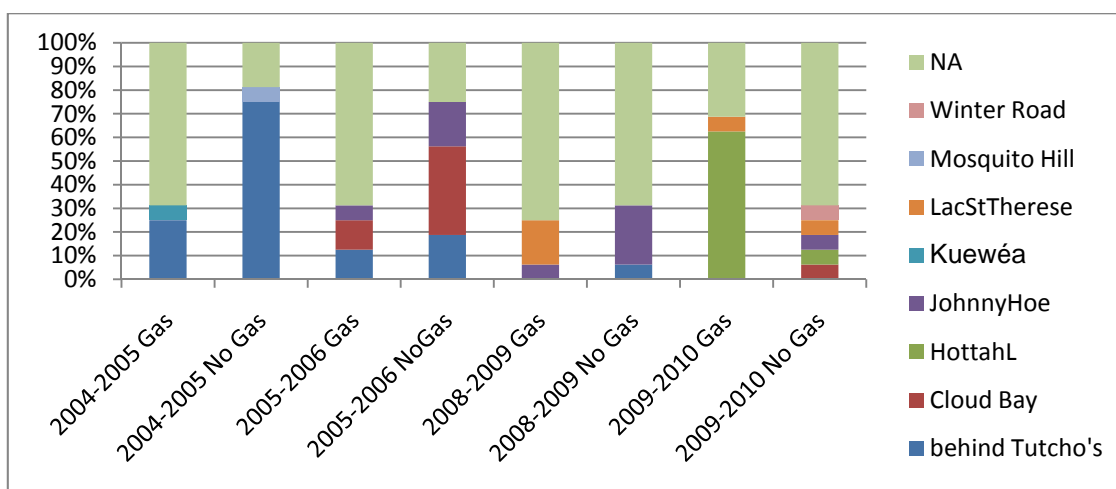


Figure 75: Distance Travelled With or Without Gas Subsidy.

show a greater spread of locations with no gas subsidy, indicating that the cost of the trip to Hottah Lake was prohibitive and people hoped to find caribou on the fringes of the herd.

Trips, Gas Subsidy and Harvest Numbers

There was a decline in the number of hunting trips generally, although this appears to have taken place gradually rather than abruptly in 2005-2006, indicating that family income or subsidies may have served as a buffer. The analysis team was not provided with data about the amount of funding available for gas to support hunters. However, according to survey responses the number of trips subsidized remained relatively constant (though it is not clear whether the longer trips required in 2005-2006 and 2008-2009 were fully or only partially subsidized; if the former were the case, this would have required an increase in the subsidy). When caribou were close, subsidy was a minimal factor in the number of trips. The following year trips were further away, so a proportionally higher personal investment was required for trips; most trips were not subsidized. By 2008-2009 the number of trips had fallen to a long term low. Interestingly, the number of caribou harvested on remained the same in 2005-2006 despite the fact that the caribou had moved further away, confirming that people were buffering the impacts of the increased distance and cost of travel. In 2005-2006 and 2008-2009, one person specifically noted that they harvested moose.

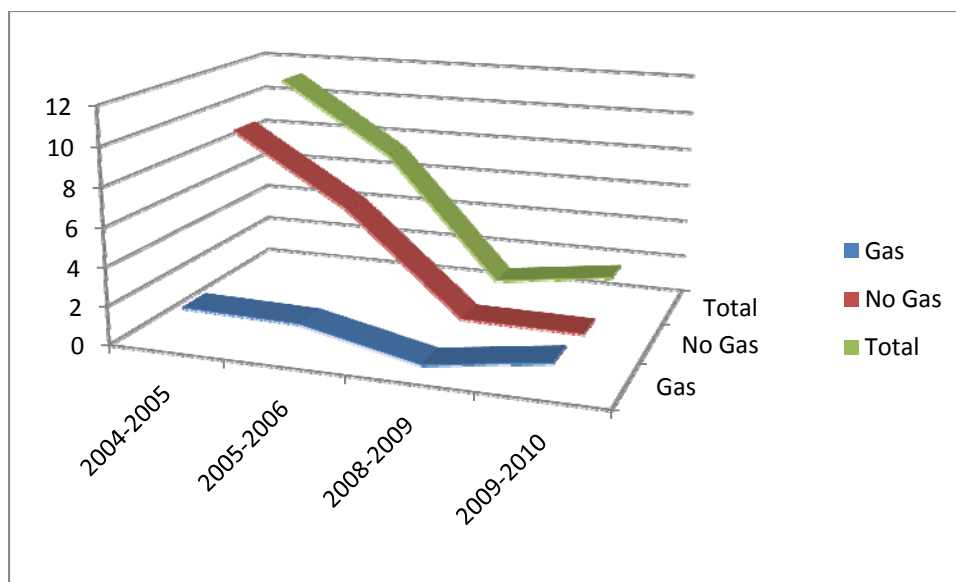


Figure 76: Number of Trips With and Without Gas Subsidy.

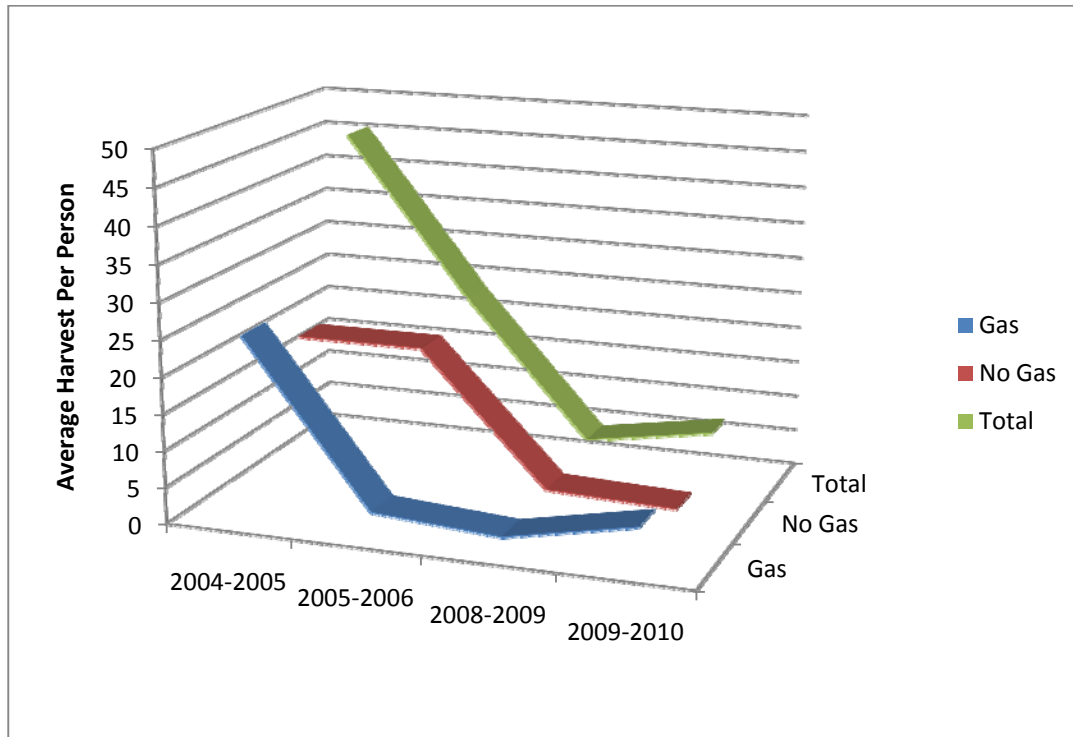


Figure 77: Average Caribou Harvest Per Person.

Sharing Meat

Results on the subject of meat sharing are subtle, but show a marginal increase in sharing as availability of caribou meat declines. This subject would bear much further discussion with harvesters to fully understand context. Research in Fort Good Hope by Masters student Roger McMillan, also under the supervision of Brenda Parlee, explores the question in more detail. Note that non-responses here (coded NA) should likely be considered as “no.” Sharing takes place among hunters and hunting families both during the hunt (evenly distributing the number of animals harvested) and after the hunt. Harvesting families will receive meat from others when

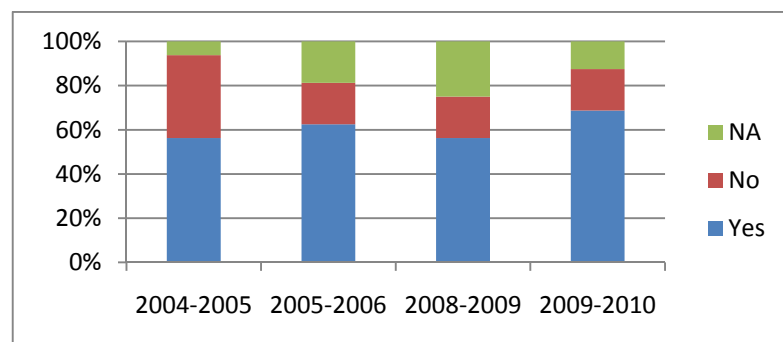


Figure 78: Meat Sharing Practices.

they are running low.

Other Harvesting Activities

As mentioned earlier, 2 study participants mentioned harvesting moose during 2004-2005 and 2008-2009. Other harvesting activities discussed explicitly asked about were fishing and trapping. Other traditionally harvested species such as rabbit, waterfowl, and game birds were not asked about.

The questions about fishing activities would bear much more detailed discussion, since they do not provide a clear picture of fish harvesting practices. However, the results here show that for the majority, the amount of fish obtained remained stable through the years. Several respondents reported obtaining less fish during the early years when there was more caribou meat harvested. Two people said they obtained more fish during the later years, registering a weak relationship between amount of caribou harvested and reliance on fish. Similarly, the number of people who mentioned putting in fishnets remained generally stable, including 2 people who mentioned sharing fishnets (it is likely that this figure should be higher, but the way the question was phrased as a yes/no option does not lead to a nuanced response). Generally, the results show a reduction in the number of fishnets during later years, especially when non-responses (NA) are considered as a “no.” This result is inconclusive in that it does not correlate with the marginally increased number of fish obtained. It would have been interesting to learn more about specific fishing practices, including those who obtained whitefish during the spring and fall seasons.

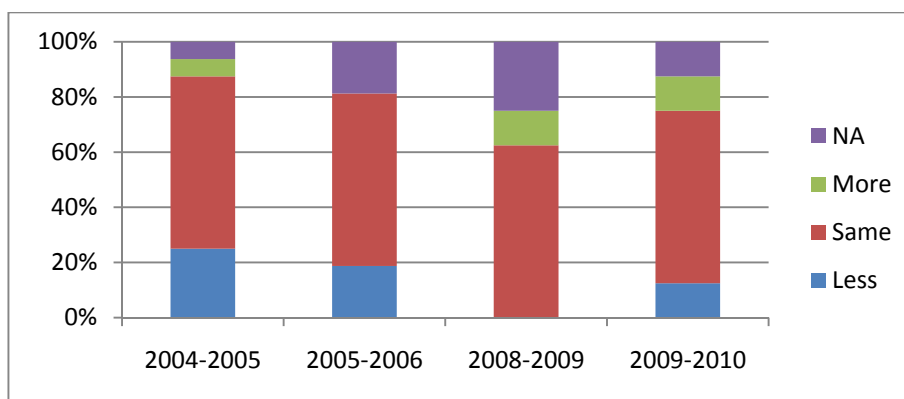


Figure 80: Quantity of Fish Obtained.

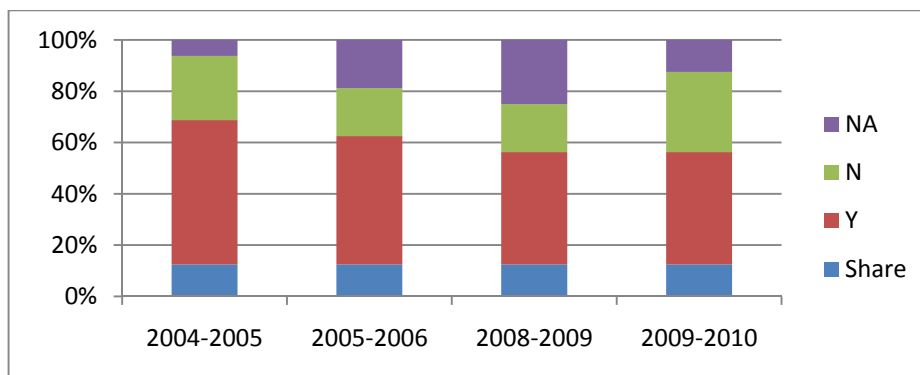


Figure 79: Participants Reporting Fishnet Use.

Trapping results would need to be correlated with fur prices in order to be fully understood. According to respondents, the number of hunters who also trapped remained relatively stable, with a marginal decrease over the years. Non-responses are considered as “no.”



Figure 81: Participants Who Checked Traps.

6.5. Indigenous Research Methodology

Develop an understanding of indigenous research methodology and how it might be combined with other methodologies in climate change and health adaptation research.

The diversity and intensity of the program in the space of a year was an opportunity to explore and develop research methodology adapted to the specific culture and knowledge processes of the Sahtúot’íne. The research team learned much about the value of cross-generational processes that animate knowledge creation, as well as the richness of story and language as vehicles for researching health risks and factors strengthening Sahtúot’íne resilience in the context of climate change. New technologies were adapted as tools to support documentation and representation of Sahtúot’íne. The focus on Dene knowledge creation addressed a perceived imbalance where science-based research was understood to be the central basis for planning and decision-making. Increased confidence in the indigenous methodology created a renewed interest in the possible contributions of scientific processes to community knowledge, as well as knowledge exchanges in external forums. Délíne team members developed new research relationships with specialists in a variety of disciplines to support further development of community-led research. Methodological lessons learned are outlined in several proposals for research in 2010-2011 and beyond. Considerable methodological discussion took place during meta-research meetings throughout the year. To validate and situate in broader context the local methodology, the Délíne Knowledge Project team coordinated a “Research the Indigenous Way” workshop involving researchers from communities throughout the North discussions (see Appendix B).

7. Outcomes

The *Learning About Changes* program was a first step for the Sahtúot'íne in developing an understanding of health risk and climate change, and the tools and capacities required to move proactively into a radically changing social and ecological future. Several completed products resulted from the program. The program also revealed gaps and questions that led to the development of a number of research proposals, and a new program.

7.1. Products

- *Sq̓baká ʔetené* radio documentary
- Dél̓n̓e Youth Digital Stories collection
- ʔehts'ulah CD
- Placenames database
- Dictionary database
- Oral history database

7.2. Projects and Research Proposals

Listed alphabetically.

- *Building local capacity to address climate change in the Great Bear Lake Watershed - Yát'a gúlúu agot'í agújá s̓í benáoweré há gots'ę goghq̓ keots'eruhshá gogha dúhdá kq̓tah káyúr̓íla gohá areyq̓né t'á s̓énégots'úr̓á.* 2010-2011 workplan submitted by Dél̓n̓e Renewable Resources Council to International Polar Year program. Approved for 2010-2011.
- *Caribou and Communities in the Sahtu Region.* Regional workshop proposal submitted to Sahtu Renewable Resources Board (SRRB) and NWT Environment and Natural Resources. Approved by SRRB for 2010-2011.
- *CBQO Radio Revitalization Project.* Dél̓n̓e First Nation proposal to the HRSDC's Targeted Initiative for Older Workers. Provisionally approved for 2011.
- *Climate Change Youth Tour.* Tour by youth to Tuktoyaktuk sponsored by Dél̓n̓e Remediation Program and ʔehts̓eo Ayha School. Approved for 2010.
- *Dél̓n̓e Community CBQO Radio Show.* Sponsored by Dél̓n̓e First Nation, with Michael Neyelle as anchor and weekly Youth Radio program. Provisionally approved for 2011.
- *Dél̓n̓e Elder-Health Care Workers Dialogue.* Proposal to Sahtu Regional Health and Social Services Board by Dél̓n̓e Governance office. Forthcoming.
- *Dél̓n̓e Remediation Zone Mapping Project.* Proposal sponsored by Dél̓n̓e Remediation Office to support ongoing traditional knowledge mapping. Approved for 2010-2011.
- *Dene Text Collection with a Special Focus on the Relationship between the Language and the Land.* Proposal by Ingeborg Fink for PhD research funding to Endangered Languages Documentation Program (EDLP). Approved for 2011.

- *Health, Healing, and the Stories of the Sahtúot'ine*. PhD research proposal defended by Sarah Gordon, Folklore, Indiana University. Approved.
- *Language, Music and Place: Building a Foundation for Governance in Délı̨ne, Northwest Territories, Canada*. Three year proposal submitted to the Volkswagen Funding Initiative “Documentation of Endangered Languages.” Dr. Keren Rice, Principal Investigator. Approval February 2011.
- *Planning for Climate Change Impacts on the Aquatic Ecosystems of Great Bear Lake and its Watershed*. Délı̨ne Renewable Resources Council proposal to INAC Climate Change Impacts and Adaptation program. Approved for 2010-2011.

8. Communication

Communication with partnering organisations took place on a regular basis. Broader communication within the Délı̨ne community included presentations at two public Open Houses, posters and Délı̨ne Network emails informing community members about research activities, and two major meta-research workshops. As well, the research team presented about the program at several regional and national venues. A full page photo spread was published in the NWT newspaper *News/North* (Figure 56). Research team members were interviewed several times on the Native Communications Society radio station CKLB about project activities regarding: the “Language of the Land” and “Mapping Our Changing Land” projects, as well as the youth radio workshop. Finally, research team members presented at two Northwest Territories forums and at two university-based forums, as follows:

- *Learning About Changes: Stories, Governance and the Déline Knowledge Project*. Workshop at the *Northern Governance Policy Research Conference*, November 5, Yellowknife.
- Presentation on the Délı̨ne Language Toolbox, NWT Languages Symposium, March 27, Yellowknife.
- “Deline Knowledge Project: Indigenous Language, Land and Governance in Deline, NWT,” Group on Indigenous Governance Seminar, March 12, University of Toronto.

Abstracts approved and accepted for future presentations by research team members include:

- “Using Indigenous Stories in Caribou Stewardship.” Plenary presentation, Walter Bayha. *North American Caribou Workshop*. Winnipeg, October 25-29.
- “Stories, Harvesting, and Relationships: Renewing Indigenous Wildlife Stewardship,” Walter Bayha and Deborah Simmons. *People in Places* conference. Halifax, June 26-29. Sponsored by the Coastal Community-University Research Alliance.
- “Language Documentation in Times of Change,” Poster presentation by Edith Mackeinzo, Morris Neyelle and Ingeborg Fink. *Strategies for Moving Forward - Second Annual Conference on Language Documentation and Conservation*. University of Hawaii at Manoa, February 11-13.

A webpage about climate change and weather forecasting including health risk issues is planned for launch early in 2011, and will be part of the www.Deline.ca website. Also planned is a booklet including key messages from stories told in this project.

9. Evaluation

Evaluation was an ongoing part of the program, and was in particular salient during meta-research meetings. The “results” section of this report enumerates the extent of participation and data collected in addressing program objectives. The program was responsive both to community input in meta-research meetings, and to the research process itself, and as a result two additional objectives were added to the original list.

The program achieved remarkably strong community participation both in terms of numbers and quality of the inputs. Participants included significant numbers for both genders and three generations. It was possible to document experiences of story in the three contexts of the school, the community and the land.

The research was successful in documenting the role of stories in understanding and addressing environmental change and health risk. In addition, story-based knowledge and learning was situated in the context of quantitative scientific approaches. However, we learned that while there might be a role for quantitative research, this must be undertaken with great care given the alien cultural grounding of this approach. Another challenge specific to our objectives was the learning that the concepts “climate change” and “health” are not easily translatable into Dene discourse, and more specific experiential aspects of interactions between the land and community are necessary to appropriately represent community perspectives. This presents a predicament in a cross-cultural context, where non-Dene concepts are the acceptable currency and linkages of the stories to policy in this domain are not always clear. The second phase of the community’s climate change work during 2010 and 2011 is to collaborate more closely with climate scientists to develop the cross-cultural dialogue that will allow Sahtúot’íneq to interpret scientific data and concepts and crystallize their own perspectives more clearly in the context of health policy development within the community (as an aspect of self-governance), and beyond (as inputs into broader health policy discussions).

The program has already had a significant positive impact in the community as catalyst for a number of linked programs and activities oriented to strengthening governance and the culture of stories in the context of change. The Délíne Renewable Resources Council has taken the lead in climate change activities with a project on water and another on weather monitoring in 2010-2011. In addition, the community will be hosting a regional caribou workshop to discuss stewardship and changing populations. The program has helped to crystallize the efforts of the Délíne Governance Office to understand the nature of governance as “being Dene,” and to understand the applications of Dene stories as policy, including the domain of health as it intersects with Sahtúot’íneq culture and way of life. The Remediation Office has embarked upon a more in-depth placenames, ecological knowledge, and GIS training project in collaboration with the Délíne Knowledge Project. ?ehtséo Ayha School has renewed its on-the-land and story cycle programs (the latter continuing the focus on climate change). Elder Leon Modeste who worked

with the Health-Climate Change program has achieved recognition for his experience as a teacher/mentor, and will be one of the two elders in the 2010-2011 program. A new partnership has emerged with the D  l  n   Adult Learning Centre (Aurora College) with similar learning objectives to those that drove the school projects. Inspired by the S  bak     eten   project, the D  l  n   First Nation has reinstated community radio programming after more than a decade off the air. A point of special pride for the community was the initiative taken by D  l  n   youth to establish a Youth Radio show. Mahalia Mackeinzo's leadership with D  l  n   Youth Radio led to a summer internship at the Native Communication Society's Yellowknife-based radio station, CKLB. Finally, the community has invited two PhD students to pursue research related to health, stories, and language of place. Edith Mackeinzo, her daughter Angel, and Jane Modeste participated in the Community Linguist Certificate Summer Program of the Canadian Indigenous Languages and Literacies Development (CILLDI) program at University of Alberta. Doris Taneton in turn was one of two Sahtu representatives in the University of Victoria's Aboriginal Language Revitalization Certificate Program held in Yellowknife for the first time in the summer of 2010. Doris also applied for admission to the Dechinta Bush University's winter term.

The one year scope of the program was a significant challenge, and it was necessary to spend considerable time preparing funding proposals for future work to ensure that research questions generated through the 2009-2010 phase could be followed up on in a timely way. The proposals were greatly informed by questions and knowledge generated by the Health Risk and Climate Change program, and this is doubtless a factor in the nine linked proposals approved for 2010-2011. The community is now aware of its unique positioning in a zone of most rapidly accelerating climate change in the world, and has initiated an ambitious program that includes both research specific to climate change, and research that explores factors strengthening community resilience and good health in conditions of ever faster changes. However, there is awareness that this will be a long term process that has only just begun with this program.



Figure 82: Learning About Changes Workshop. June 24, 2009.

10. Conclusions

“A long time ago it was really cold. The earth was happy and the animals were happy, and everything was good. When the earth is happy, everybody is happy. And the animals that live on the earth are happy, the water that depends on the land is happy, everybody’s happy. In the springtime when it’s nice and warm and the ducks are coming and they make lots of noise and everything comes to life, us Dene we come to life too. Everything is happy.

Us old timers we grew up in very warm places. We grew up in tents. Even though we had harsh weather, we were happy. The earth was providing us with food and shelter, it was a good life. When people live off the land and they eat straight country food, and they would drink animal blood for juice. In those days, lots of old timers were still strong, hauling wood and hunting, because they lived off their country food.

We’re talking about about changes. Us too, the people are changing, and the weather is changing. That’s part of the reason that all kinds of sickness are going around now. We don’t want it to change, but the change is here. We recognize it already. The prophet and the elders spoke to us a long time ago. You guys are going to be living in a different world. There will be different ways of living, different kinds of sickness, different kinds of people.

The old people they always give us the message that nobody’s the boss of whatever’s on the earth. Whatever’s on it, accept it, and don’t talk too much about it. The earth will take care of itself, and whatever is on the earth will take care of itself to survive. We all know that changes are coming, but we have to survive, we have to get ideas from each other and help each other in order to survive.” *Elder Alfred Taniton, interpreted by Dolphus Tutcho.*

“In the olden days it was cold, and nowadays it’s getting colder. I’ve learned that from the elders. With all these changes, ʔehtséó Ayha’s words should be kept really strong. The Dene language, Dene traditional knowledge, the Dene way of life should always be on top. As students, we don’t know what’s going to happen. We need to be able to use the elder’s stories.” *Youth Clyde Sewi, interpreted by Dolphus Tutcho.*

The Délı̨nę *Learning About Changes* program in 2009-2010 was just a beginning. The program opened up a space for elders, adults and youth to start a dialogue about the nature of changes being experienced on the land, and the possible impacts that will be experienced. Living in an area with one of the most extreme climates in the world in terms of differences between summer and winter temperatures, the Sahtúot’ı̨nę have developed a culture that is highly adaptable. For this reason, our stories, language and survival skills are our greatest strength for moving into a changing future. Our Prophet has spoken about many of the changes that are predicted to take place in our traditional territory, so we know we need to be prepared. We have begun to develop the new tools we’ll need to keep and use our knowledge and stories, including an archive, placenames mapping, and a dictionary. We have also learned that the stories will not remain

meaningful unless the youth take ownership of them. So we have explored new ways that youth can learn, use and represent the stories in the school, in the community and on the land. They will be the ones to inherit the self-government system that we are now building, and we need to train them as strong leaders. We also need to find new ways to understand our stories as policy informing self-government. All this work will take a long time.

An important focus must be the maintenance of our relationships with the land and animals even when the populations are changing. We are starting to use our stories to teach how to maintain the old practices of respect and sharing, and renew our knowledge about harvesting different animals so that there is always a source of food for the community. The Délı̨nę Renewable Resources Council needs to play a strong governance role in supporting our harvesting practices.

We experienced two epidemics during the program period and began to prepare ourselves for future epidemics that might come with climate change. We are also seeing the health problems that come when we don't continue to harvest and eat our country food, including diabetes, obesity and addictions. Our stories contain a lot of knowledge about how to live a healthy life. We need to spend more time talking with staff at the health centre about our history of dealing with epidemics in the past, and how our traditional ways of keeping healthy can be supported.

In 2010-2011 we are beginning a dialogue with scientists to interpret their stories. This is important because it allows us to learn more about the meaning of our own experiences. Scientists can also help us to understand how what is happening in our traditional territory fits into global processes. We are also discovering that scientists need to work with us to learn about the specific ecological and social impacts of climate change – their numbers and models don't tell them these things.

We need to continue working together both to document our language, stories and knowledge and to keep these alive in the community, in the school, and especially out on the land so that we will survive as Dene in the future.

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Appendix A

GIS, TK and Me Project Samples



Introduction:

The Deline Knowledge Project and Deline Remediation Program established a partnership with Aurora Research Institute in a GIS Placenames Project. The venture had a threefold purpose: to collect all existing placenames and land use data in the Deline District; to verify existing placenames spellings and conduct new placenames research; and to train community members in digital mapping so that the community can maintain a GIS database with its own data. There were a total of 19 students, grades 9 to 11 and one adult trainee who participated from Délıne more than 50% of the time in March of 2010. At various times throughout the course, 32 students participated.

Purpose and Objectives

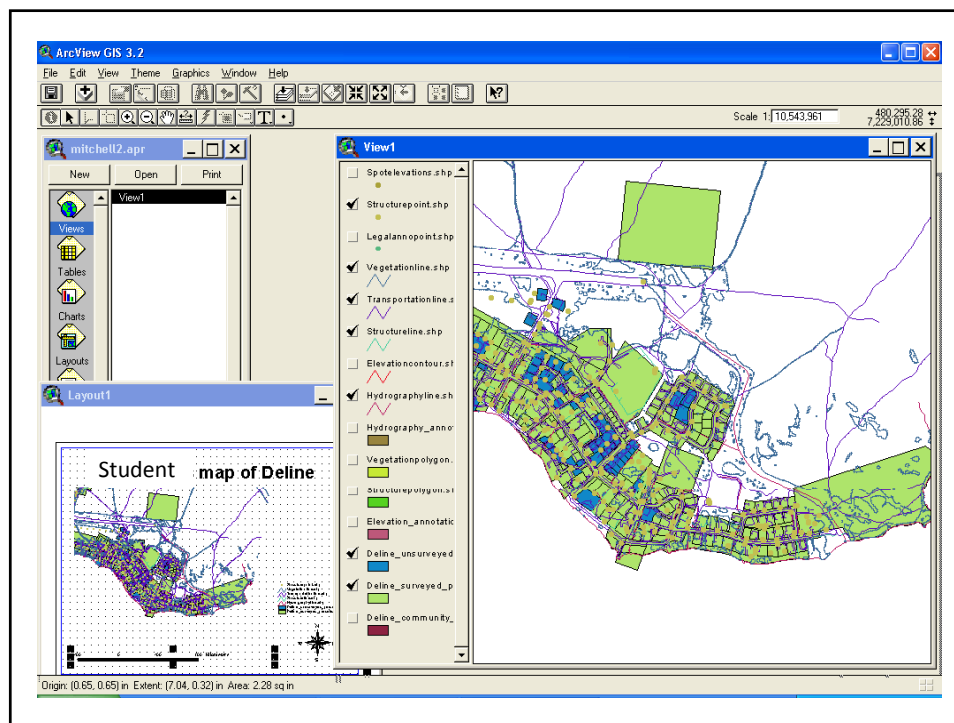
- Conduct a two credit course in digital placenames mapping with students at 7ehtséo Ayah School.
- train youth in the use of mapping software to geographically acquire documented sites
- To give youth the skills required to carry out interviews and capture the information electronically.
- To give youth the opportunity to express their results in a creative manner.

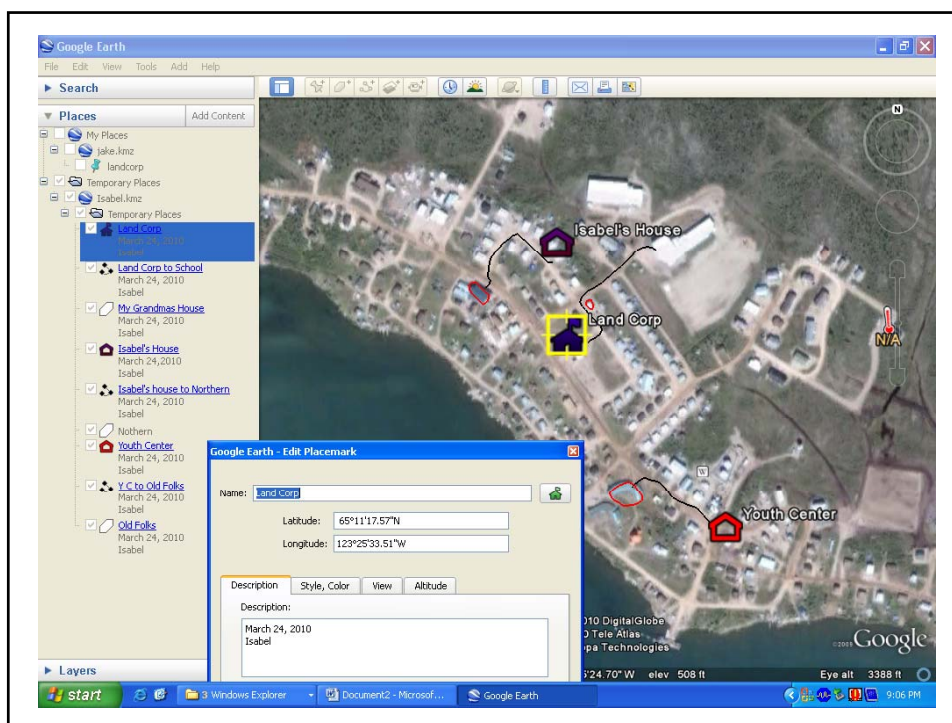
Examples of work:

tsu cho cho txi gha/xah
 tsu dlaa kwā amā gah
 zha weda
 shehti zōnda/zōhda
 weti



Hand drawing of Great Bear Lake





Protocol for Interviewing Elders

Tuesday 23, 2010

- Show Respect
- stay quiet / listening
- Sit close
- Know how to serve - Give him / her tea w/ cloth
(NOT right on the floor.)
- How: Explain that we're recording
- Explain why are we doing this
↳ for future generation
- Protocol
- heze nod head > show you're listening
- Permission - Informed consent
- Interview Protocol
- Think Beyond
Deline
Travel the world

Student Story

March 23 2010

Checking nets

It was winter time and my uncle Chris and I went out to visit the nets, ~~we~~ we went by skidoo and the sled was attached to it. We went to visit the trout net. My uncle Chris checked the nets and I pulled the nets out. We caught five trout. I felt good going out and helping. I felt good because it was a good feeling going on the land.

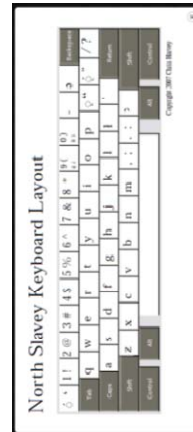
Out On the Land

One day, me and my family went to ?ohkaibe, there was me, my sister, my three brothers and parents. My parents went by truck and all of us used 2 ski-doo's. It was a fun week there, my relatives went as well. I and my cousins always played outside, go ski-dooing and we mainly use to climb trees. Climbing the trees was the most fun of all; there were a lot of big trees to climb so that was my favorite place to go with my family. We go there every Easter, I love going Easter hunting with my cousins, that's the best part of it. Déljine Student

<http://nwtlanguages.ca/literacy/default.aspx>

My Dictionary Notepad Add a Word		
Dene Word		English Meaning
ʔehke		boy
Ŧŕtł̥a		go away
dleá		squirrel
dlóon̥wę		smile
dloo'whe		funny
dlóowhę		funny
Déł̥ne		where the water flows
Dene Ke		people
ekúu		then
elígu		cold
et̥ tsaríł̥a		turn around
Eh'kwa		caribou

130 student entries



results:

firstname	lastname	FINAL	Credit
Jake	Roche	95	2
Kenny	Kenny	90	2
Kathleen	Taylor	77	2
Luke	Kenny	76	2
Jorey	Vital	72	2
Brianna	Taniton	69	2
Dominic	Takazo	69	2
Angel	Mackeinzo	65	2
Blake	Takazo	57	2
Deanna	Tutcho	55	2
Joree	Ferdinand	53	2
Mitchell	Naedzo	51	2
Rodney	Tutcho	51	2
Roy	Modeste	51	2
Brett	Elemie	50	2
Chevone	Dolphus	50	2
Mahalia	Mackeinzo	50	2
Virgil	Kelly	50	2
Charmaine	Takazo	50	1
Hailey	Taniton	50	1
Hunter	Baton	50	1



MS Paint drawing by Déljné student 30 Mar 2010

Appendix B

“Our Responsibility to Keep the Land Alive”:
Voices of Northern Indigenous Researchers
(McGregor, Bayha and Simmons 2010).

“OUR RESPONSIBILITY TO KEEP THE LAND ALIVE”: VOICES OF NORTHERN INDIGENOUS RESEARCHERS

Deborah McGregor

Walter Bayha

Deborah Simmons¹

ABSTRACT

This paper is based on experiences, views, and stories shared by the 22 participants who spoke at the *Research the Indigenous Way* workshop at the Northern Governance Policy Research Conference in November 2009. The paper does not address all the issues raised, but rather focuses specifically on how the workshop sheds new light on the nature of alternative Indigenous research that would support Indigenous governance. The sharing circle format of the workshop is considered as a model reflecting the research paradigm being talked about. This paradigm requires a critique of past northern “Indigenous” research that perpetuates colonial concepts of governance. Key messages from the groundbreaking work of the Traditional Knowledge Practitioners Group in 2008–2009 are combined with narratives from the

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1. This paper would not be possible without the contributions of participants in the *Research the Indigenous Way* workshop at the Northern Governance and Policy Research Conference (NGPRC), November 5, 2009. The large number of participants that chose to participate in the workshop was a surprise to the coordinators — approximately 30 people were in attendance, and 22 of these shared a story. Verbal permission to record and transcribe the workshop proceedings was obtained at the inception of the workshop. Highlights from the workshop were aired numerous times on the Native Communication Society’s radio station CKLB. The entire transcript was reviewed as the basis for this paper, but only the nine individuals directly quoted in this paper were given an opportunity to review drafts. Each of these has given express consent for use of their quotes, and has provided feedback on the paper as a whole. Special thanks to Alestine Andre, Lia Ruttan, and Celine Mackenzie Vukson who provided detailed input. Thanks also to the two anonymous reviewers whose suggestions helped us to strengthen the paper.

workshop to provide a picture of current thinking about Indigenous research in the North, and practical considerations in applying this paradigm. Indigenous people have always been engaged in research processes as part of their ethical “responsibility to keep the land alive.”

Keywords: governance, research methodologies, northern studies, traditional knowledge, colonialism

INTRODUCTION

The *Research the Indigenous Way* workshop held at the Northern Governance and Policy Research Conference (NGPRC) in November 2009 marks a watershed in the collective validation of Indigenous research methodologies. This workshop provided a space for dialogue about the ways in which research can support contemporary Indigenous governance processes in the North. Participants were encouraged to come prepared to talk about examples of research from their own experience and perspectives. The stories shared by the workshop participants challenged a number of assumptions about how research has been (and continues to be) conducted in the North. Participants pointed out that colonial research approaches are still practiced. They argued that until northern Indigenous peoples begin to take control of their own research agenda, achieving Indigenous governance will remain elusive. To enact research that is rooted in the values and traditions of Indigenous peoples in the North, a dramatically different research paradigm is required.

This paper explores how the experiences, views, and stories shared by workshop participants shed new light on the nature of an alternative Indigenous research paradigm to inform Indigenous governance. The paper explores implications of the recommendations put forward at the NGPRC that the “contributions and experience of Elders and Indigenous research experts” should be recognized, and that governance research should “honour local knowledge and customs” (NGPRC, 2009, 1, 4). This requires a critique of past northern “Indigenous” research that perpetuated colonial concepts of governance. A brief review of the literature demonstrates the need for Indigenous research in governance, and situates the northern methodologies that are the focus of this paper in relation to more broadly based methodological discussions amongst scholars working with Indigenous communities. This workshop is not the first initiative to address the question of northern Indigenous research. Challenges to conventional research methodologies have been simmering for some time, as demonstrated by

the groundbreaking work of the ad hoc Traditional Knowledge Practitioners Group in 2008 and 2009 that served as the catalyst for the *Research the Indigenous Way* workshop. The Practitioners Group adopted the slogan that serves as the title of this paper, referring to the ethical responsibility "to keep the land alive" inherent in Indigenous research.

Finally the paper highlights the sharing circle format of the workshop as well as narratives shared in order to unfold the specific meaning of northern Indigenous research as it has been experienced by workshop participants. In this context, a key message from the workshop is perhaps not only that Indigenous research can shed light on governance, but that it is in itself an enactment of governance. The three-hour workshop was extraordinarily rich, and it is not possible to fully address its implications within this paper. It is intended that this paper be followed by two additional papers addressing themes that emerged from the *Research the Indigenous Way* workshop, including reflections on the nature of Indigenous governance, and on experiences in traditional knowledge research.

CONTEXT

Indigenous peoples in the North have strong traditions in decision making and governance based on the best knowledge available to them. Indigenous governance has been grounded in deep understandings of the people and the land, including ancient knowledge passed down orally through the generations, measured against and responsive to more recent experiences. Over time, traders, missionaries, and RCMP attempted to compel the adoption of their own practices as normative. The imposition of colonial governance systems in the 20th century involved the forcible marginalization, fragmentation and even systematic destruction of Indigenous knowledge processes by a variety of means, not the least of which were the residential school system and the band governance regulations enforced through the Indian Act. Nevertheless, insofar as Indigenous peoples have maintained their own languages, connections with the land, and knowledge systems, they also continue to govern themselves in the old way. It was in response to the first proposal for a pipeline in the Mackenzie Valley in the 1970s that Dene, Métis, and Inuit leaders began to harness research as a means of challenging colonial policy. Indigenous peoples initiated major research programs as the basis for defending their land rights, formulating comprehensive land claims and intervening in resource management decisions. Aware that they were required to legitimate their research in a terrain not of their own mak-

ing, Indigenous leaders established collaborations with non-Indigenous academic researchers and consultants, and adopted methodologies that could be validated on the basis of conventional academic standards while remaining grounded in respect for the knowledge of elders and relationships with the land.

Since that period, some literature has been published about the evolution of “participatory” research methodology through the history of such collaborations between “outsiders” and Indigenous researchers in the North (Ryan and Robinson, 1990; Robinson, 1996; Caine et al., 2007). However, Indigenous researchers scattered across the vast northern regions have had little opportunity to share and document their perspectives on the nature of Indigenous research and its implications for governance. The *Research the Indigenous Way* workshop provided a unique opportunity for such collective reflection, involving a broad range of Indigenous researchers and a handful of non-Indigenous researchers with a strong interest in community-based knowledge processes. The workshop shed light on the current state of Indigenous research nearly forty years after its inception as a deliberate strategic tool, both by modelling a variant of Indigenous research in the workshop itself, and through the accumulation of stories from a wide variety of experiences. The workshop reaffirmed and deepened the message that northern Indigenous governance research must continue to glean knowledge from people’s ancient and ongoing relationships with each other and with the land, and from the old and new stories that describe and analyze these relationships.

Indigenous research coexists uncomfortably with externally driven social scientific questions and approaches that have gained renewed legitimacy in recent years as the basis for self-government negotiations and cooperative resource management. A comparison of Indigenous research with other approaches is outside the scope of this paper; here we focus more narrowly on the nature and value of northern Indigenous research.

DECOLONIZING RESEARCH: A CRITIQUE OF “INDIGENOUS” RESEARCH

The report of the Royal Commission on Aboriginal Peoples (RCAP) notes that “most research about the North — and indeed, most written knowledge about it — has been collected by southerners and held in southern institutions” (RCAP, 1993, 19). Frances Abele (2006) makes a similar point

in her discussion paper on northern policy development. The NGPRC recommendations document concurs:

In the past, Northerners in small communities have been the subject of scientific inquiry that has not always directly benefited them, has not always incorporated their ways of knowing or been aligned with community goals for development of problem solving. (2009, 4)

The disjuncture between externally driven research and local questions and ways of knowing is arguably felt most acutely by Indigenous peoples. Indigenous peoples represent one of the most researched cultural groups in the world ("studied to death" as it were) (RCAP, 1993; Smith, 1999), and certainly this is true of Aboriginal peoples in the North. It is increasingly recognized that many current research approaches and methods serve to perpetuate colonization processes. RCAP argues that prevailing research approaches have historically mitigated against Indigenous questions and interests being addressed.

In the past, research concerning Aboriginal peoples has usually been initiated outside the Aboriginal community and carried out by non-Aboriginal personnel. Aboriginal Peoples have had almost no opportunity to correct misinformation or to change ethnocentric and racist interpretations. Consequently, the existing body of research, which normally provides a reference point for new research, must be open to reassessment. (RCAP, 1996, 29)

Conversely, as Mohawk scholar Marlene Brant Castellano asserts, "fundamental to the exercise of self-determination is the right of peoples to construct knowledge in accordance with self-determined definitions of what is real and what is valuable" (2004, 102). Decolonizing and self-determining research approaches are called for that affirm Indigenous worldviews, philosophies, knowledge, and values (Wilson, 2008; Steinhauer, 2002; Absolon and Willet, 2004). The emerging Indigenous research paradigm in Canada calls for conducting research *by* and *with* (as opposed to *on*) Indigenous people. This necessitates in-depth knowledge and experience with colonizing and subsequent decolonizing processes (McNaughton and Rock, 2003). It is imperative that theoretical research frameworks are developed to reflect this contradictory reality.

Indigenous theoretical frameworks, methods, and applications will be necessarily diverse, reflecting the diversity, context, and traditions of Indigenous peoples in Canada. The fundamental commonality in Indigenous research approaches and methods is the need to reflect Indigenous rela-

tionships to the environment, the land, and the ancestors (Cardinal, 2001; Peltier Sinclair, 2003). There is a sacred basis to research grounded in the natural world (Colorado 1988, 5). Indigenous research is premised on natural law which is tied to Indigenous peoples' responsibilities to the natural world and thus encompasses a range of codes of conducts and canons of behaviour (Peltier Sinclair, 2003, 128). Indigenous researchers are not required to "separate" themselves from the research; they must rather approach it holistically and maintain responsibilities to family, communities, the environment, and the spirit world (Wilson, 2001). Indigenous research involves learning about ways of sustaining proper relationships "with all of Creation" (McGregor, 2004). It goes beyond the objectified research topics privileged in scientific approaches, encompassing relationships between the researcher and the researched. In this research paradigm, knowledge is shared, not extracted or owned. For the most part, purely traditional modalities of Indigenous research described here are not possible in the contemporary context. Most Indigenous research now takes place in a negotiated cross-cultural space involving a hybrid of externally imposed questions, objectives, and methods with questions, objectives, and methods emergent from Indigenous communities — a reflection of the hybrid reality that is the experience of contemporary indigeneity.²

RESEARCH THE INDIGENOUS WAY: A NEW MODEL FOR NORTHERN RESEARCH

In the Northwest Territories, the concept of Indigenous research has been largely channeled within the negotiated discourse of "traditional knowledge" (Ellis, 2005; Legat, 1991; Ruttan, 2005). Traditional knowledge (TK) was defined and its role recognized in the first comprehensive land claims agreements in the Western Arctic (Inuvialuit, 1984; Gwich'in, 1992; Sahtu, 1993), and in the Mackenzie Valley Resource Management Act (Canada, 1998). The role of Indigenous research was first systematically explored by the TK Working Group chaired by Alice Legat, which had its roots in an informal group that began meeting in Yellowknife in 1986. The group was mandated as a Ministerial Committee in 1988 to define TK, assess its current institutional use in the NWT (which then included Nunavut), and develop policy recommendations toward increasing its use and application.

2. For a theoretical discussion of hybridity, see Bhabha (1997; 1998).

Elders from across the NWT participated in the discussions, which led to the publication of a final report in 1991.

The TK Working Group report made a series of recommendations toward strengthening support for Indigenous research, which in that document was conflated with TK research. The NWT TK Policy established in 1993 did recognize the need to support TK initiatives within communities. However, for the most part the NWT policy framework tended to lead toward objectification of TK as something that needed to be "preserved" and "considered." Indigenous research processes remained marginalized and poorly understood; the prevailing tendency was to privilege use of standard social science approaches to documenting TK and validating it through integration or incorporation within scientific research processes (as observed by Nadasdy in the Yukon, 2003) while framing the research as "participatory" (Caine et al., 2007).

The Government of the NWT's Science Agenda issued in November 2009 recognizes TK as a "knowledge framework" with specific applications in the domain of cultural sustainability. A priority identified within this domain is "effective community-driven and community-based research and methodologies in cultural and traditional knowledge topics" (NWT, 2009b, 7). This creates an important opening for Indigenous research, while limiting its scope to culture and TK. To be sure, TK is considered to be one of the three cross-cutting themes in the NWT Science Agenda. However, as with the NWT traditional knowledge policy, the theme's broader interest is mainly with respect to its "incorporation and use," linked to the need for methodological innovation in incorporating both TK and conventional science (2009a, 18). In calling for innovation, the Agenda implicitly acknowledges ongoing failures of such integrative approaches since the inception of TK policy. Critiques of knowledge integration (for example Cruikshank, 1981; Nadasdy, 2003; Ellis, 2005) have yet to be addressed by policymakers in the NWT.

As the NWT Science Agenda was being developed, a grouping of TK practitioners was working to develop a deeper understanding of Indigenous research and its role in governance and resource management. Sponsored by the Yamózhá Kúé Society (formerly the Dene Cultural Institute), an ad hoc network of people from the five regions of the NWT came together in 2008 to share experiences in preserving and revitalizing Indigenous knowledge, with a focus on how this knowledge is used in monitoring and decision

making.³ Most of the people in the group possess decades of experience in TK research dating back to the 1970s and 1980s when the first round of debates about pipeline development in the Mackenzie Valley were waged through the medium of the Berger Inquiry, and Indigenous peoples of the North came to realize that it would be necessary to reclaim their homelands in order to prevent complete dispossession (Abel, 1993).

TK research emerged as the discipline that established the basis and legitimacy of Dene, Inuvialuit, and Métis land rights and nationhood. Major oral history, mapping, and translation projects were undertaken in collaboration with non-Aboriginal allies (for a sampling, see Watkins, 1977). The Dene Nation was born, and the Inuvialuit and Denendeh Land Claim Agreements were forged. There are many examples of collaborative TK research involving both Indigenous and non-Indigenous researchers during and since that time that has, in the words of Alestine Andre, “empowered and instilled a sense of well-being, mental, physical, emotional, spiritual good health in their Elders, youth and community people”⁴ Nearly four decades later however, legislation and policy supporting the preservation and use of TK in governance is recognized for its failures in implementation.⁵ Undaunted by the enduring struggle to maintain TK processes in the communities and regions, the TK Practitioners Group has been largely pre-occupied with the challenges of translating renewed understandings of traditional governance principles into decision making, policy, and programs.

The first meeting of the Practitioners Group in 2008 gave rise to a series of key messages and related narratives about Indigenous goals, principles, and modalities of governance. At the core of these messages was the concept that “everything is interconnected.” This concept underpins the traditional principles of respect and reciprocal obligation with the land, within the communities, and among the communities. Although such principles are considered to be quite normal in Indigenous communities, they are radical

3. The catalyst for the meeting was a discussion paper in traditional knowledge monitoring prepared for the NWT Cumulative Impact Monitoring Program (SENES Consultants, 2007).

4. Alestine Andre notes a number of examples of long term TK research in the Tłı̨chǫ, Sahtu, Gwich'in, Inuvialuit, Akaıtcho Treaty 8, and Dehcho regions that highlight its many benefits. These projects involve research in narratives, place names, and language. As mentioned in the introduction to this article, discussion of the nature and role of TK research are not within the scope of this paper. The authors envision this as the focus of future work based on the *Research the Indigenous Way* workshop.

5. To address these failures, the NWT Department of Environment and Natural Resources tabled a TK Implementation Framework at the NWT Legislative Assembly on March 3, 2009. The two-page Framework document indicates that the government will promote and support “traditional knowledge initiatives,” but does not define what such initiatives would look like.

in the context of a governance system built to protect principles of productivity, competition, and private property. Governance founded in reciprocal obligation requires that leaders spend significant time learning from the land and listening to the people. Leadership is based on a person's ability to harness the knowledge that comes from the land and the people to address changing circumstances. This is the essence of research-based governance.

The Practitioners Group considers governance within the communities and on the land to be both a goal and a principle inherent in TK processes. The consensus is that from a TK perspective, it is "our responsibility to keep the land alive." The stories told by practitioners make it clear that keeping the land alive is the condition for the survival of Indigenous peoples. This is the reason that people are so concerned about recent news that the caribou herds are in rapid decline. A threat to the caribou herds marks a true crisis for Indigenous survival, identity, and well-being in the North. Members of the TK Practitioners Group have shared some of the stories about how relationships between people and caribou were first established "when the world was new," what the protocols are for ensuring the continuity of these relationships, and what might be learned now about old and new approaches in caribou stewardship.

The second meeting of the Practitioners Group, held in March 2009, focused on exploring how TK processes could be strengthened in the current context. Key themes were the importance of maintaining these processes on the land, and the centrality of youth as the community members who must take ownership of TK and remake it to survive in the present and into the future. The group observed that communication lines with younger generations have been broken. There seemed to be no clear solutions for renewing the relationships with youth that would support their development as strong leaders accountable to their elders and through them their ancestors and their traditional territories. Nevertheless, it was agreed that much has been learned about the conditions for successful Indigenous research in the contemporary context, including the need for a strong vision from the elders, and an accountable process that includes planning, rigorous documentation and interpretation, analysis, verification, and effective ways of returning research to the community.

The NGPRC *Research the Indigenous Way* workshop in November 2009 was the third Practitioners Group event. Because it involved a much broader gathering of people from within and beyond the NWT, it allowed the group to assess their understanding of Indigenous research and governance

in relation to other experiences and stories, both through the format of the workshop and the concerns that were articulated. The enthusiasm of participants about their experience of the workshop shows the value of providing such forums for knowledge sharing in an Indigenous research context.

ENACTING INDIGENOUS RESEARCH: THE TALKING CIRCLE

As participants were gathering, facilitators Walter Bayha and Deborah McGregor sought assistance to reorganize the room in a talking circle format, derived from Indigenous collective knowledge sharing methods.⁶ This opened up a space where participants from diverse communities and experiences could feel at home, and thus could feel comfortable speaking. In the circle, participants introduced themselves and usually shared a brief story or spoke of profound experiences that for them shed light on the theme of Indigenous governance. They often referred with great respect to messages shared by others in the circle or at other conference sessions. The dialogic nature of peoples' contributions allowed for a rich process of synthesis and consensus-building as the circle progressed. Notwithstanding the limits of a meeting situated in an urban context and with few youth and elders present, the combined process of relationship building (through introductions), storytelling, and knowledge gathering around the circle was truly an enactment of "research the Indigenous way." In the talking circle, the facilitators were also "participants" in the process and shared knowledge and experiences with the circle participants. This process alleviated the power imbalances often found between researchers and the researched. The talking circle ensured that the contributions of all participants were equally recognized.

An agenda was circulated to the participants providing three key topics and questions to guide the circle, of which the third topic is the focus of this paper:

1. Traditional governance research: What do Indigenous governance systems look like? How have these systems been impacted by colonization? What is the vision for contemporary governance systems?
2. Working with current governance systems: How has traditional governance been addressed in current governance systems? What are the strengths and weaknesses in these systems?

6. As Lia Ruttan notes, "The use of sharing circles for a variety of purposes has been common in NWT for a lengthy period and most people are familiar with the process."

3. Futures for Indigenous Research/Indigenous Governance: What are the next steps for research to support strong Indigenous governance?

True to the spirit of the talking circle, the participants used narratives to deepen and expand upon the predetermined topics of inquiry, posing questions such as: What is Indigenous research? Who are Indigenous researchers? What do they do? Do we need Indigenous research to support Indigenous governance? If so, what does this type of research look like?

By permission of workshop participants, their narratives were audio-recorded and transcribed so as to provide a documented snapshot of the current "state of knowledge" on Indigenous research and governance, and a ground-truthing of perspectives discussed at the earlier TK Practitioners workshops. Participants were also informed that contributions from the workshop would be developed as part of the conference proceedings.

The stories and experiences shared by the participants seemed at times to be so diverse as to be unrelated. But careful listening (or reading of the transcripts) highlighted the common message that Indigenous governance research is not something that can be reduced to a static compilation of documented "traditional knowledge" compiled through social scientific procedures. Rather, it is the deliberate process of addressing questions and problems using Indigenous methods of learning the meaning of stories and renewing the stories through land-based practices that clearly reveal the nature of leadership and the basis for new decisions that need to be made⁷. Indigenous governance is not about "representation," or decision-making by leaders "for" the people and the land based on objectified research. On the contrary, it is a form of highly accountable decision-making derived from the coming together of all the experiences and stories that people can bring to bear on issues of survival and well-being. Insofar as individual stories and experiences resonate with those of the ancestors, are derived from the land as a source of knowledge, and are pieces of a larger collective narrative, they are deeply spiritual. The talking circle was an enactment of both Indigenous research and Indigenous governance insofar as perspectives were being collectively forged. It was limited in being situated in an urban context and circumscribed in time. Given funding constraints and other practical challenges, these are perhaps necessary compromises required for at least some governance processes in the contemporary context, especially those that are cross-community and cross-regional.

7. This point was cogently made by Jackie Price in her NGPRC presentation on Inuit Governance.

NARRATIVES OF INDIGENOUS RESEARCH

The literature based on NWT research experiences, along with narratives shared in the talking circle at the NGPRC, indicate that the concept of Indigenous research has not gained common currency as it has in some circles elsewhere in Canada. However, in introducing the concept at the beginning of the talking circle, it is possible that Deborah McGregor and Walter Bayha provided a catalyst for a shift in thinking as the circle progressed. Walter set the stage using the example of Dene research methods for understanding caribou through stories based on relationships with caribou spanning countless generations:

You hear about all the studies we do on caribou today and there's many people that don't believe in these studies and how these studies are done. The Dene people have knowledge in stories. The Dene people have lived with caribou for 10,000 years. How do we learn about caribou? We observe them. The caribou is not going to sit there and say, well, this is the way I feel today. The Dene people have put it in stories. So the caribou stories, and especially you'll see a lot of stories about Raven, those are biology. The Dene people pass on stories by putting all this information in the stories they pass on. There's thousands of stories like that all across our continent here.

Barney Masuzumi reaffirmed the importance of Indigenous stories as a foundation of Indigenous research and the diverse disciplines of knowledge carried by various elders, depending on their particular experience and expertise. In an Indigenous research context, stories are deliberately and systematically used in problem-solving, by listening well and interpreting "hints and clues." The stakes are high for being able to draw upon the knowledge of the elders; it's often a matter of survival.

We have different grandfathers, and that's true, for different spheres of knowledge. I relied on the old stories to pull me through. There's examples of how to react to a really extreme situation. The old stories have got hints and clues. If you don't listen to them you won't survive."

Alestine Andre was most eloquent in talking about the role of stories in governing people's individual life paths, their relationships with each other, and their relationships with the land. In her view, the stories in themselves are governance; in an Indigenous context it is not necessary to distil these into abstract policy statements. Rather, the laws embedded within the stories can be directly interpreted and reinforced in the daily practice of each individual.

The stories, they are just priceless. They are about life on the land. They're about our ancestors. They're about the names of places on the land. Those are the things that make us who we are as a people and therefore is our governanceEverything in our stories, everything in the way that we are, might not be written down in such straightforward patterns, guidelines and policies. But some of those rules are fairly rigid and implanted in us so that we carry them around with us.

The role of leaders is limited in a regime where the lessons in the stories remain open for individual interpretation, where each individual is self-governing. In Alestine's words, “We are our own set of governance. Each of us as individuals knows exactly where we fit into the whole pattern of our own governance.”

Whereas much TK research involving oral narratives is conducted according to conventional social science methods (semi-structured interviews and focus groups), Indigenous research is much more strongly rooted in traditional forums for sharing stories and experiences. Jonas Antoine stressed the importance of culturally appropriate practices for working with elders in the community. Rather than coming armed with questions, tape recorders, timelines and impatience, it is important to adapt to the pace of a visit, share food, and learn the stories by experiencing the relationships with the land.

The experience of being on the land with family and learning about one's responsibilities is central to Indigenous ways of knowing. This is why so often Indigenous people call for governance activities to take place on the land. As Jessica Simpson related, “People want decisions to be made on the land. Not necessarily in our offices or in meetings or anything like that, but doing things, doing activities on the land and coming to conclusions there because often times the outcomes are quite a bit different.” The lessons, rules and natural laws we learn from being on the land are invaluable. This type of embodied research becomes extremely important for research on governance. Alestine Andre spoke of living on the land and learning valuable lessons about “how we conduct ourselves” and “how we treat the land we depend on to survive.” Alestine related the one of the lessons learned in resource stewardship from her experience harvesting Labrador tea:

We were out picking blueberries and instead of picking blueberries I went to pick up Labrador tea. ... My mother came up and said, look, you better be careful. Don't pick it all. You're going to want some next year. From that time on to this day I've been very careful with my harvesting and collecting. So I think

that was a good lesson in resource management in the truest form of the way that we conduct ourselves, like if we talk about governance. So I think that is a very important rule that stays with me to this day. And it not only applies to Labrador tea, it applies to other resources, be it caribou or moose or anything on the land. Only take what you need.

The meaning of an elder's stories is not always immediately apparent, no matter how carefully the researcher listens. Often the meanings are only accessible as the researcher gains the experience necessary to understand them. Walter Bayha illustrated this point with a story about how his grandfather explained the meaning of what it is to be a true human being and a true Dene. His grandfather talked about someone who was always in jail, and said, "He's not a Dene, that's why he's doing that." Walter's response, just coming out of high school, was incomprehension. It was not until years later that the story took hold in his mind.

I forgot about it all these years and then eventually I started thinking about it. It started bugging me a little bit. What exactly was he talking about? Why did he say he's not a Dene? And why is it bothering me? I realized that I didn't ask the right question. I didn't ask a Dene question, the way a Dene would ask the question. It's not exactly a question. I would have said, Grandfather, what is a Dene? Who is a Dene? Then it started to make sense. All the things that I learned over the years when I was with him with all his prayers and all the things that I did with him trapping and hunting were about being Dene. I said, "Okay, a Dene to my grandfather is a person that tries to be a true human being by balancing the universe with himself and the Creator. The more he keeps things in balance, the truer he is as a human being.

Walter's experience demonstrates that to really understand Indigenous knowledge, values and perspective it is necessary to have an Indigenous mindset, learning to ask the right questions and coming to self-understanding in the process.

Jessica Simpson captured her experience in research with elders with the observation that "a lot of our elders are actually academics. When I go to scoping sessions and listen to them they have so much to say. They talk a lot about their experiences with the land." Jessica went on to acknowledge the difficulties of participating in Indigenous research in a cross-cultural context: "As somebody who doesn't speak my language I think I'm missing a lot of it because a lot of the knowledge is actually tied to their language." This difficulty for those schooled in scientific research and in non-Indigenous concepts and modes of thinking is important to recognize, since it poses a challenge to those who wish to make an easy correlation between natural

sciences and Indigenous research. Lia Ruttan pointed to the contested nature of stories in current governance contexts: "I learned that the truth was in the stories and that sometimes the nature of truth is contested between western researchers and Indigenous researchers. But if you listen to the stories the truth is there."

It becomes necessary to communicate in English both in cross-cultural forums like the NGPRC, and within the communities as Indigenous language use declines. Indigenous languages are considered to be an important vehicle for Indigenous research, and a means of renewing relationships with and knowledge about the land. Nevertheless, workshop participants were strong in the belief that Indigenous research must involve working with Indigenous language and interpreting the meaning of Indigenous terms, placenames and concepts. In the words of Jonas Antoine, "Language is really, really important. That is when you start thinking in Dene. You don't think in English anymore. You just start thinking in Dene. You start dreaming in Dene. That tells you something. It's a spiritual thing that happens to you."

Many of the talking circle participants spoke about the experience of leaving their communities for residential school, for work, or to make a home elsewhere and how that impacts current community well-being and governance. But they also talked with great feeling about their ties with their identity and their homeland, and their need to continually return home. Jonas Antoine, who lived for many years in the United States, talked about this experience.

I returned to the land and started talking about the land because one day, one of my people came up to me because I was going someplace for a conference. He says to me, "Who talks for the land? Who talks for the water and the animals?" I started thinking, "Boy. This is what it's all about."

At times this returning home is experienced in a sensation of resonance with a past experience, as when Jonas thought about moose hunting as he left a city night club, or when Barney Masuzumi applied K'asho Got'ine skills to survival on the land in Inuvialuit territory. This dispersal and returning by a diversity of paths continues to be experienced by new generations. Parents and elders feel their responsibilities to these youth acutely. In the words of Josephine Mackenzie,

My whole goal and one of the things that I taught my kids was the importance of coming back. Go to school, come back, work here. Bring that knowledge back

because we need you here..... As a parent I think that's part of governing your kids, governing the generations to come. The importance of passing on knowledge that's going to better the next generation.

Contemporary Indigenous research is driven by a dual desire to redeem knowledge that has been lost and to affirm knowledge that is still present. Young Jessica Simpson, who acknowledged that she may be missing out because she doesn't speak her Tłıchq language, works to approximate an Indigenous knowledge process through the traditional discipline of listening: "I think it's important that we all put our Dene ears on." The listening may take place in a broad-based forum like the NGPRC, but most importantly it must happen at home. Indigenous people need to be rooted in the stories and practices of their people and their homeland so that they can speak knowledgeably and govern themselves well. Celine Mackenzie Vukson, a student at Trent University originally from Behchokq̓ in Tłıchq territory, cogently described the importance of returning home to her understanding of research. The deliberate effort to learn about one's heritage necessitates systematic efforts in research:

I thought I must do something to hang on to my language. I must come home. And in my studies I have found one of the most enduring themes of Indigenous studies for Indigenous people all over the world is the idea of coming home. The idea of relearning your language and your people and your land and all that goes with it.

Each community will find its own way to governance. This message was conveyed in the talking circle through a variety of stories about how people learned from their own elders. The diversity in governance processes that results from research rooted in homeland was most clearly conveyed in the example of parka making practices described by Inuit participant Jackie Price: "You could give five women exactly the same material and they would all make different parkas." Jackie argued that the diversity in stories, cultures and relationships with the land should be regarded as strengths. Externally imposed homogenizing governance processes are designed to be recognizable and accountable to the colonial state, rather than to the people on the land: "Sometimes I feel it's like we all have to wear the same parka. Which is too bad because we have really nice parkas and the more different the better because that's just the way it is. I think this respect for diversity is really inherent in Inuit methodology, how Inuit lived."

While returning is a critical aspect of contemporary Indigenous research, it is not always possible to stay at home. Some research must ne-

cessarily take place far away through processes of remembering. As Celine Mackenzie Vukson put it, “When I’m working in my home I remember those stories, and I have many stories.” This aspect of Indigenous research is not new for northern Indigenous people, who were often nomadic, following wildlife in the annual harvesting cycle, often settling in new territories to seek relationships outside the community or in response to changing wildlife populations, or later travelling great distances to transport furs to market (Abel 1993). Such travelling required, and continues to require, that people were always able to apply and develop their knowledge in changing and unforeseen circumstances.

ENACTING RESEARCH THE INDIGENOUS WAY

The NGPRC conference prepared a report comprised of a number of recommendations that set out a northern research agenda, several of which have already been referred to in this paper. Some of the recommendations from the conference overall were also echoed by workshop participants, in particular calls for “Improving Research Methodologies” and “Promoting Community-Based Research Protocols” (NGPRC, 2009). Although such recommendations are a step in the right direction toward improving the current research paradigm for “Indigenous research” in the north, they fall short in failing to explicitly recognize that Indigenous peoples have their own research methodologies. There are systemic challenges for enacting Indigenous research paradigms as articulated by NGPRC participants, especially in relation to research funding support. *Research the Indigenous Way* participants offered far more fundamental challenges by questioning what is considered “research” and who is considered a researcher.

One of the defining characteristics of Indigenous research as articulated by *Research the Indigenous Way* participants is its continuity over time. The methods remain as valid today as they did a thousand years ago. Application of this research meant that people could survive on the land and support their families and communities. This research methodology did not require funding from granting agencies or need approval from people geographically located far away. The challenge is for northern Indigenous research to find expression in the context of contemporary interactions in the northern land claims and self government.

This model for Indigenous research in the north can have application at a number of scales. The work of the TK Practitioners Group and the *Research the Indigenous Way* participants points to the need for large scale research on

governance. However, one of the intriguing characteristics of the Indigenous research as articulated in this paper is that the methods also apply at the local level. Participants in the *Research the Indigenous Way* workshop affirmed that Indigenous research is occurring on the ground, but is often not recognized as such. Indigenous research occurred in the past and has persisted as people continue to enact governance in families, on the land and in the communities. The challenge is not so much in the continued enactment of Indigenous research, but rather in understanding how can it be recognized and respected as a credible and necessary pre-requisite for Indigenous governance and self determination in the north. Such research is arguably most effective at the local scale, as this does not necessarily require funding from external agencies.

CONCLUSION

The role of Indigenous knowledge in governance has been formally recognized by the Government of the NWT over nearly two decades. Yet the oft-repeated refrain at the three TK Practitioners workshops since 2008 has been “they’re not listening.” Practitioners feel that the people’s voices are not being heard and accounted for in meaningful ways. Conversely, they recognize that there is often a deep suspicion of “research” in communities that might be a vehicle for such voices, usually because it has been experienced as form of mining where knowledge is paid for and taken elsewhere (who knows where?) by outsiders affiliated with external institutions. Even newer, more accountable research approaches are obliged to fulfil objectives and “deliverables” defined in offices and meeting rooms geographically and culturally far away from the communities that are the targeted Indigenous beneficiaries, whether they be in Yellowknife or Ottawa.⁸ Often this disjuncture between community interests and the research agendas offered to them is despite the best intentions of program developers.

It is possible that the lack of recognition of what Indigenous communities consider to be research (though they may not always use the term except for funding purposes) is the outcome of a policy framework that effectively detaches Indigenous knowledge from the processes and people that are its source. The *Research the Indigenous Way* workshop marks a watershed in creating space for collective validation of Indigenous research methodologies as distinct from (but not exclusive of) TK and participatory methodologies.

8. A problem addressed by the NGPRC recommendation for a “Northern Funding Foundation” (2009, 1).

The concept of Indigenous methodologies places in question the common commodification of “Elders,” the assumption that their knowledge can be easily mined and incorporated directly into non-Indigenous knowledge systems. True purposeful Indigenous research in the colonial context must be conducted by Indigenous researchers, who bear unique skills for working in the negotiated space that bridges into and from scientific and bureaucratic ways of knowing. Arguably, few if any non-Indigenous researchers are able to achieve this level of sophistication in the marshalling of cross-cultural and cross-disciplinary tools. Like non-Indigenous communities, Indigenous peoples require their own researchers with extensive training and recognition within their discipline to assist them in the search for new knowledge to address new and ongoing problems and questions. Certainly there is a role for supportive and knowledgeable non-Indigenous researchers, but in the context of Indigenous research these would be considered “resource people” whose imported research interests and methods are supplementary to the core questions and approach.

The narratives shared at the *Research the Indigenous Way* workshop add nuance and life to NGPRC recommendations about the role of elders and Indigenous research experts in governance research, and the importance of honouring “local knowledge and customs.” Indigenous methodologies go further to place in question the validity of common assumptions about the value of scientific methods in Indigenous communities and in TK processes. Much remains to be done to develop the conception of Indigenous methodologies based on actual experiences of Indigenous research (whether or not it is conceived as such), and following from further dialogue among Indigenous researchers.

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Walter Bayha

Most of Walter's early years on Mother Earth were out on the land with his grandfathers, travelling and learning the Dene traditions of Sahtú (Great Bear Lake). After 32 years in the resource development fields with both governments of the day, he switched to the private sector for a few more years, mainly with First Nation governments. He is currently Implementation

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Deborah is a social scientist specializing in social and environmental issues relating to indigenous peoples. She joined the SENES Yellowknife office in 2006, and maintains affiliations in Native Studies and the Natural Resources Institute, University of Manitoba. She was raised in the Northwest Territories, and received her doctorate in the field of Native Studies at York University. Over the past ten years, Deborah has worked on a number of community-based projects in the Northwest Territories with a focus on indigenous knowledge research and policy development, especially in the Sahtu Region.

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Appendix C

Budget Variance

HC Contributns Budget	Actual HC Expenditure	HC Variance	Partnership Contributions - HC statement	Total HC Statement	Partnership Contributions - Other	Total Amount	Overall Budget Variance	Notes/Partnering Organisation
51,240	59,401.65	-8,161.65	0.00	59401.65	0.00	59,401.65	4,438.35	
21,000	6,850.00	14,150.00	0.00	6850	29,150.00	36,000.00	-15,000.00	Remediation Program; Self-Government Office; DRRC-International Polar Year; Ehtseo Ayha School; DRRC-International Polar Year
5,796	4,511.32	1,284.68	0.00	4511.32	0.00	4,511.32	7,080.68	Includes EI/PPP for honoraria
0	0.00	0.00		0.00	10,000.00	10,000.00	-10,000.00	University of Alberta (not in DFN statement); includes travel/accommodations
0	0.00	0.00	0.00	0.00	20,000.00	20,000.00	-20,000.00	University of Alberta (not in DFN statement); includes travel/accommodations
0	0.00	0.00	0	0.00	12,000.00	12,000.00	0.00	University of Manitoba (not in DFN statement); Indiana University
23,400	23,427.92	-27.92	2,000.00	25427.92	25,427.92	50,855.84	-21,605.84	University of Manitoba and SENES Consultants Ltd (in-kind, not in DFN statement); Prince of Wales Northern Heritage Centre
5,000	5,000.00	0.00	20,000.00	25000	0.00	25,000.00	-15,000.00	Prince of Wales Northern Heritage Centre/ Remediation Program (includes travel)
0	6,600.00	-6,600.00	0	6600	10,000.00	16,600.00	-12,850.00	Memorial University, University of Ireland-Galway (not in DFN statement) - includes travel
0	0.00	0.00	0	0	10,010.00	10,010.00	-6,260.00	Remediation Program - includes travel
0	7,000.00	-7,000.00	5,000.00	12000	69,000.00	81,000.00	-81,000.00	YK Dene First Nation (not in DFN statement), Sahtu Renewable Resources Board
0	0.00	0.00	0.00	0	48,600.00	48,600.00	-48,600.00	DRRC-International Polar Year (includes travel)
5,959	0.00	5,959.00	0.00	0	5,959.00	5,959.00	0.00	Memorial University

HC Contributns Budget	Actual HC Expenditure	HC Variance	Partnership Contributions - HC statement	Total HC Statement	Partnership Contributions - Other	Total Amount	Overall Budget Variance	Notes/Partnering Organisation
9,732	11,749.54	-2,017.54	0.00	11,749.54	29,250.00	40,999.54	-28,145.54	Memorial University, University of Manitoba, Northern Governance Policy Research Conference, McGill University, University of Ireland-Galway, University of Alberta, DRRC-International Polar Year (not in DFN statement); various travel costs advanced by Deborah Simmons (Visa card).
0	0.00	0.00	0.00	0.00	4,000.00	4,000.00	0.00	University of Manitoba (not in DFN statement)
1,000	0.00	1,000.00	0.00	0.00	0.00	0.00	1,000.00	Included in professional services
0	0.00	0.00	0.00	0.00	0.00	0.00	1,000.00	Included in professional services
37,200	18,835.09	18,364.91	0.00	18,835.09	22,564.91	41,400.00	0.00	HC contribution includes Learning About Changes Workshop expense; plus separate Learning About Changes, TK Pilot Project, DRRC-International Polar Year and Remediation Program, UAlberta contributions
0	1,461.50	-1,461.50	0.00	1,461.50				
6,000	3,581.85	2,418.15	0.00	3,581.85	20,418.15	24,000.00	0.00	Deline Renewable Resources Council, Ehtseo Ayha School (not in DFN statement), Remediation Program
0	0	0.00	0.00	0.00	70,000.00	70,000.00	-70,000.00	DRRC-International Polar Year
1,200	0.00	1,200.00	0.00	0.00	1,200.00	1,200.00	0.00	University of Manitoba (not in DFN statement)
1,200	0.00	1,200.00	0.00	0.00	1,200.00	1,200.00	0.00	Ehtseo Ayha School (not in DFN statement), Remediation Program
6,000	12,000.00	-6,000.00	0.00	12,000.00	0.00	12,000.00	0.00	
0	350.00	-350.00	0.00	350.00	0.00	350.00	-350.00	
0	1,500.00	-1,500.00	0.00	1,500.00	0.00	1,500.00	-1,500.00	
174,727.00	162,268.87	12,458.13	27,000.00	189,268.87	388,779.98	576,587.35	-316,792.35	

HC Contributns Budget	Actual HC Expenditure	HC Variance	Partnership Contributions - HC statement	Total HC Statement	Partnership Contributions - Other	Total Amount	Overall Budget Variance	Notes/Partnering Organisation
3,000	4,430.47	-1,430.47	0.00	4,430.47	0.00	4,430.47	-1,430.47	
2,400	4,013.27	-1,613.27	0.00	4,013.27	0.00	4,013.27		
2,400	6,917.39	-4,517.39	0.00	6,917.39	0.00	6,917.39	-4,517.39	
0	0	0.00	0.00	0.00	6,000.00	6,000.00	0.00	Deline First Nation/Ehtseo Ayha School
17,473.00	22,380.00	-4,907.00	3,000.00	25,380.00	0.00	25,380.00	599.50	
25,273	37,741	-12,468	3,000	40,741	6,000	46,741	-5,348	
200,000	200,010	-10	30,000	230,010	394,780	623,328	-322,141	