

Literature Review

Local and Traditional Knowledge In the Peel River Watershed

Kristine Wray
University of Alberta
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SUMMARY POINTS

The Hay River Basin has played a vital role in the social, economic, and cultural well-being of many Aboriginal peoples. Given their reliance on and stewardship of its resources, many Aboriginal peoples have developed valuable knowledge about the state of the basin that can contribute to our understanding of historic and contemporary issues of planning, management and monitoring.

The Hay River drainage basin is a part of the Mackenzie River system, which drains into the Arctic Ocean, drawing water from British Columbia, Alberta, Saskatchewan, and the Northwest Territories. “*Kátlo’dehé* is the South Slavey Dene name for the Hay River, or an earlier spelling *Xatlo Dehe*” or from the K’átł’odeeche First Nation report, K’átł’odee ‘willow grass river’, referring to the origins of the river in Hay Lakes, northern Alberta, which is a prairie-like area. In Chipewyan, the Hay River is *Hátl’oresche*. In Cree, it is *Maskosi-Sipi*” (AANDC 2014). The Hay River is named for the abundant hay fields, which were nourished by the floods periodically experienced at the river mouth, which also brings driftwood into the Great Slave Lake (Piper 2009: 261).

The Hay River Basin is considered to have been home to at least six Aboriginal groups: the Sekani, Dane-zaa, Dene Tha’, Dene, Métis, and the Woodland Cree. Each has their own cultural belief systems as well as systems of knowledge and practice that has led to the development of local and traditional knowledge about the Hay River Basin. However, a very limited base of this knowledge has been documented. Specifically, there were no sources of documented local and traditional knowledge related to local observations about changes in water quality, quantity and flow for the Hay River Basin. Only a limited understanding emerges from early anthropological sources as well as land use and occupancy studies about the history and cultural significance of sites in the watershed (e.g., limited place names studies). Some observations have been made about water as it related to the impacts of resource development and climate change. There is also a very limited amount of documented local and traditional knowledge related to local observations about changes in fish species diversity, condition, population dynamics and

distribution as well as other resources harvested for subsistence and commercial use such as ducks/geese, beaver etc.. There is however, a valuable body of work related to fishing practices and use of the Hay River as a travel corridor which stems from research with K'átl'odeeche First Nation.

The limited availability of documented sources of local and traditional knowledge from this region when compared to other regions (e.g., Gwich'in Settlement Area) should not be interpreted as a lack of knowledge but is rather a reflection of the limited resources and institutional insecurity (e.g., no settled land claims, no co-management arrangements) that characterize this area of the Northwest Territories and northern Alberta.

Summary of Knowledge by Indicator Theme

Indicator	LTK	Notable Sources, Programs, Projects
Traditional Land Use - Indigenous		K'átl'odeeche First Nation Soaring Eagle Friendship Centre Dene Tha' First Nations - Dene Tha' First Nation. (1999). Dene Tha' Gohndii' Part 1 of 3 (Film).
Contemporary Use - Indigenous		
Subsistence Values/Historical – Fisheries		
Commercial Values/ Historical – Fisheries		
Subsistence Values/ Contemp. – Fisheries		
Commercial Values/ Contemp. – Fisheries		
Fish Diversity		
Fish Health		
Fish Movements and Migration		
Water Quality		
Water Flow, Levels		
Climate Change Effects		
Effects of Disturbance		
Traditional Stewardship Practices		

INTRODUCTION

The Hay River Basin has played a vital role in the social, economic, and cultural well-being of many Aboriginal peoples. Given their reliance on and stewardship of its resources, many Aboriginal peoples have developed valuable knowledge about the state of the basin that can contribute to our understanding of historic and contemporary issues of planning, management and monitoring. Many of the themes and indicators of ecosystem health identified by elders and land users are synergistic or parallel to those identified by Western Science; others are unique in focus and meaning. In general, Traditional Knowledge offers a holistic and integrated perspective, with a combined focus on both the biophysical and human dimensions of ecosystem health.

The traditional knowledge sources for this report are as follows. The *K'átlo'deeche First Nation Traditional Knowledge Assessment of the Proposed Mackenzie Gas project* (KFN 2006), the Hay River Dene women's study *So that our voices are heard: Forest use and changing gender roles of Dene women in Hay River, Northwest Territories* (Kassam & the Soaring Eagle Friendship Centre 2001), the *Dene Tha' Traditional Land-Use and Occupancy Study* (The Dene Tha' Nation 1997) and a chapter from *Where happiness dwells: A history of the Dane-zaa First Nations* (Ridington & Ridington 2013) to present a short piece from the Dane-zaa, demonstrating their historical presence in the area of the Hay River Basin. The reference list includes many sources on the Dane-zaa, for the most part by Robin Ridington who has been working with the Dane-zaa for many years. These works are strongly anthropological as they focus on cultural aspects significantly more than the ecological and so I have chosen not to draw from these sources in this report despite listing them in the references. I have listed them as they provide an important understanding of the broader context of how people lived with water, and how their lives are centered around it.

Given the limited number of studies I was able to access, the type of information available to this study are of a general nature. That is, the indicator framework for aquatic ecosystem health as presented in the *Traditional Knowledge Overview for the Athabasca River Basin* (Parlee 2011), upon which this report is modeled, is not possible to reproduce here. Instead, a more general introduction to the importance of the Hay River and its tributaries is presented. In part this is because the communities in the Hay River basin, though experiencing different levels of advanced industrial activity for some time, have begun to do traditional knowledge and land use studies relatively recently, and so the focus of those studies is on more general life patterns rather than detailed observations about the waters of the Hay River and its tributaries specifically. In response to this observation, this report strongly recommends that resources be made available for a more comprehensive and regional approach to documenting Traditional Knowledge. However, the information presented still considers broad themes and perspectives on ecological health. These include water quality, quantity and flow, fish, waterfowl, aquatic wildlife and related habitats. In addition the report offers perspectives on Aboriginal access and use of the resources of the Hay River basin particularly pertaining to hunting, trapping, fishing and related traditional practices. Issues of community well-being as related to these access and use patterns are highlighted as well as Aboriginal perspectives on the effects of other human use (including resource development effects) in the basin. The material presented in the Traditional Knowledge

section is arranged according to community group. It is recommended that further, more comprehensive studies be done in the Hay River basin that do conform to the traditional knowledge indicators of Parlee (2011) with the goal of providing much more specific information about the water, as is the request of the funding body.

Given the limits of resources and time established for this project, the report should not be considered a comprehensive overview of all available documented Traditional Knowledge for this basin. It is also important to recognize that definitions, methods and formats of documented Traditional Knowledge vary significantly. While libraries, the internet and scholarly journals house some sources of knowledge - there are many kinds of reports prepared by and for Aboriginal communities that are not available to the public for political, cultural and socio-economic reasons. Other significant pieces of Traditional Knowledge in the Hay River basin I hope to review are the K'atl'odeeche First Nation Traditional Knowledge Assessment of the Mackenzie Gas Pipeline and to further consult with the Treaty 8 Tribal Association (British Columbia) and about existing Traditional Knowledge studies that BC Treaty 8 signatories may have completed. If successful in gaining permission to access, these may be included in a future draft of this report.

There are notable challenges in meaningfully integrating Traditional Knowledge into a scientifically-dominated research initiative. Some of these challenges are technical and can be overcome with thought and effort. Some communities and resource peoples, however, may see the conflicts between Traditional Knowledge and Western Science as more deeply rooted. To address these conflicts, the report recommends that careful attention be paid to the socio-economic inequities that perpetuate the marginalization of Aboriginal voices in decision-making about resources in the Hay River Basin.

METHODS

The overall aim is to understand more about historical and current environmental conditions. Key human activities in the Hay River basin with potential effects on the aquatic ecosystem include (but are not necessarily limited to) industrial developments, municipal waste-water discharges, agricultural practices, patterns of human settlement and land-use change, and climate change. Human uses that depend on the land and water of the region also will be described, particularly including traditional use of lands and waters by Aboriginal people.

The identification, synthesis and reporting on Traditional Knowledge for this region is complex owing to the large number of Aboriginal groups who have documented historical and contemporary land and resource use and interest in the region, the absence of documented Traditional Knowledge research having been carried out in some areas as well as the socio-economic and political inequities and tensions that exist between regional and provincial governments and many Aboriginal communities. Many Aboriginal groups may feel there is little purpose in devoting valued time and resources to sharing their knowledge to a reporting process that is largely structured according to western science parameters and would seem to benefit a public council rather than their own communities.

Traditional Knowledge is generated differently from ‘western science’ and is tied to a unique set of values, perspectives, and historical/contemporary experiences:

- Traditional Knowledge has many meanings; it is generally broader and more holistic of other ecological and socio-cultural variables than conventional scientific definitions of “aquatic ecosystem”;
- Documented and public sources of Traditional Knowledge only recognize a small percentage of existing Traditional Knowledge;
- The collection of Traditional Knowledge should increase the capacity of First Nations and Métis communities to participate in the planning, monitoring and management of the Hay River Basin;

Searching for Secondary Sources of Publicly Available Traditional Knowledge

A search of publically available sources of Traditional Knowledge was carried out between January 2016 and March 2016. This report accounts for 6 different kinds of secondary sources of Traditional Knowledge and related community studies gathered through the Hay River Basin.

The majority of information was found through the following public database searches including:

- Academic Search Elite Database (University of Alberta);
- Google/Google Scholar;
- Alberta NEB/ERCB;
- British Columbia Environmental Assessment Office
- Mackenzie Valley Environmental Impact Review Board
- Personal Communications / Sharing of Reports.

Through this search, the following kinds of documents were found:

Oral Histories

Traditional Knowledge is most closely associated with oral histories about the land, water and wildlife in specific regions. As a consequence, much Traditional Knowledge documented to date

in the region has been focused around understanding the distinct worldview, values and way of life of Aboriginal peoples.

Traditional Land Use Studies

Land and resource use studies are fundamental to our understanding of Traditional Knowledge in the Hay River Basin. For many communities and scholars, traditional land use practices like hunting, fishing, trapping, and plant harvesting are the means by which Aboriginal people have come to know about ecosystems and ecosystem change. In other words, Aboriginal people have come to know about the land, not by some detached method of investigation but by living or dwelling within ecosystems. Any changes or decline in ecosystem health in that sense are not viewed as data but as a threat to the socio economic and cultural well-being of communities. Such dwelling has also created a strong emotional and spiritual connection to the land that may make Traditional Knowledge holders particularly attuned to ecosystem change. As noted by the late Lutsel K'e Dene First Nation elder Maurice Lockhart, "Some people who don't care so much won't notice the changes" (Maurice Lockhart in Parlee et al. 2005). Similarly to oral-history research, accepted methods for land and resource use studies vary across the Hay River Basin.

Ecological Knowledge Studies

Traditional Knowledge is of increasing interest to policy makers and environmental managers in large part because of the potential expertise and insight that can be gained about environment and environmental change. In that context, communities in collaboration with anthropologists, ecologists and others have focused attention on documenting many aspects of ecosystems and ecosystem change. Related to this research is knowledge related to sustainable management including ways of respecting the land, water and wildlife (e.g. rules), practices and tools.

Assessment / Impact Specific Studies

Traditional Knowledge studies conducted in the Hay River Basin that relate to specific human activities or effects (such as agriculture, oil sands mining, etc.) are uncommon. Considered within this context are studies related to community risk perceptions and studies guided by communities that seek to communicate about environmental risks. As noted by scholars such as Usher et al. (1992), perceptions that something is *wrong* with a given resource can be profoundly disturbing to land-based communities whose livelihood depends upon the continued health and sustainability of those resources. The Northern Contaminants Project and well as other work done through agencies like the Centre for Indigenous People Nutrition and the Environment (CINE) provides valuable guidance on documenting risk perceptions in northern communities.

Other

Given there are significant gaps in the availability of Traditional Knowledge, this report has also made room for other kinds of knowledge and information that would be considered outside the definition of 'Traditional Knowledge'. These included studies under the following:

- i) Did the study involve documenting sources of Traditional Knowledge (e.g. documentation of the values, knowledge, practices and institutions of a particular Aboriginal group?)
- ii) Was the study focus defined by Traditional Knowledge (e.g. selection of issues or valued ecosystem components being studied)?
- iii) Was the study led or guided by an Aboriginal community?
- iv) Did the study have some other relevance to Aboriginal communities?

These studies, which were either defined or were guided by Aboriginal organizations or communities, were recognized as important to our understanding of community perspectives on the state of the aquatic ecosystem. This inclusion of other kinds of knowledge and information is important to many communities who see themselves as informed by many sources of knowledge and information.

A complete listing of the sources can be found in the reference section to this report.

BACKGROUND AND AREA

The Hay River drainage basin is a part of the Mackenzie River system, which drains into the Arctic Ocean, drawing water from British Columbia, Alberta, Saskatchewan, and the Northwest Territories. “*Kátlo’dehé* is the South Slavey Dene name for the Hay River, or an earlier spelling *Xatlo Dehe*” (Green 1960), or from the K’átł’odeeche First Nation report, K’átł’odee ‘willow grass river’, referring to the origins of the river in Hay Lakes, northern Alberta, which is a prairie-like area (KFN 2006:1). In Chipewyan, the Hay River is *Hátł’oresche*. In Cree, it is *Maskosī-Sīpiy*” (AANDC 2014). The Hay River is named for the abundant hay fields, which were nourished by the floods periodically experienced at the river mouth, which also brings driftwood into the Great Slave Lake (Piper 2009: 261).

The Hay River basin spans three provinces, lying in the northeastern part of BC, with the majority of the basin in northwest Alberta, and in the NWT south from the Great Slave Lake. The basin is located in the northern section of the Great Central Plain in the Alberta Plateau sub-region. The geological profile of the area consists of sedimentary bedrock (shale, sandstone, limestone, and dolomite). The Basin is covered in boreal forest with a grassland and marsh in the Hay-Zama Lakes region (Government of the Northwest Territories & Government of Canada 1984:1). The Basin trends to the northeast, with the result that the Northwest Territories receives the surface runoff from Alberta and British Columbia (Government of the Northwest Territories & Government of Canada 1984:5). 6.5% of the Basin is in the NWT, 19.5% in British Columbia, and the remaining 74% lies within Alberta (Government of the Northwest Territories & Government of Canada 1984). The basin size is 51,700 km² (AANDC 2014:4). The Town of Hay River is the largest in the basin with approximately 3600 people, and population density throughout the rest of the basin is less than 2 people per square kilometer (AANDC 2014:4).

The Hay River headwaters originate in the Rocky Mountains of British Columbia, running across the northwest portion of Alberta, up into the Northwest Territories and into the Great Slave Lake, which drains to the Arctic Ocean through the Mackenzie River. Some accounts suggest that the Hay River has multiple origin points, one headwater in muskeg country of northwestern Alberta as well as mountain sources in BC (Government of the Northwest Territories & Government of Canada 1984:6).

The headwaters of the Hay River in northwestern Alberta begin near Rainbow Lake, looping into BC where mountain sourced streams such as the Shekilie River and Kyklo Creek and water from Kotcho Lake join the flow. The Hay River curves back into Alberta toward Hay and Zama Lakes, where it is joined by the Mega and the Amber River, to flow by the communities of Habay and Chateh on to its junction with the Chinchaga River, one of the Hay River’s major tributaries in the south west portion of the basin. One of the Chinchaga’s arms comes in from BC, making this Basin probe into BC at two points. The Hay River flows from its confluence with the Chinchaga north-northeast towards the Great Slave Lake (AB Water Portal 2013, Rankly.com) passing through or near to the communities of Meander River, Slavey Creek, Lutose, Steen River, Indian Cabins, and crossing the AB/NWT border to Enterprise, Paradise Gardens, and finally the town of Hay River, the Hay River Dene Reserve (home community of the Kátł’odeeche First Nation), and the West Point First Nation village.

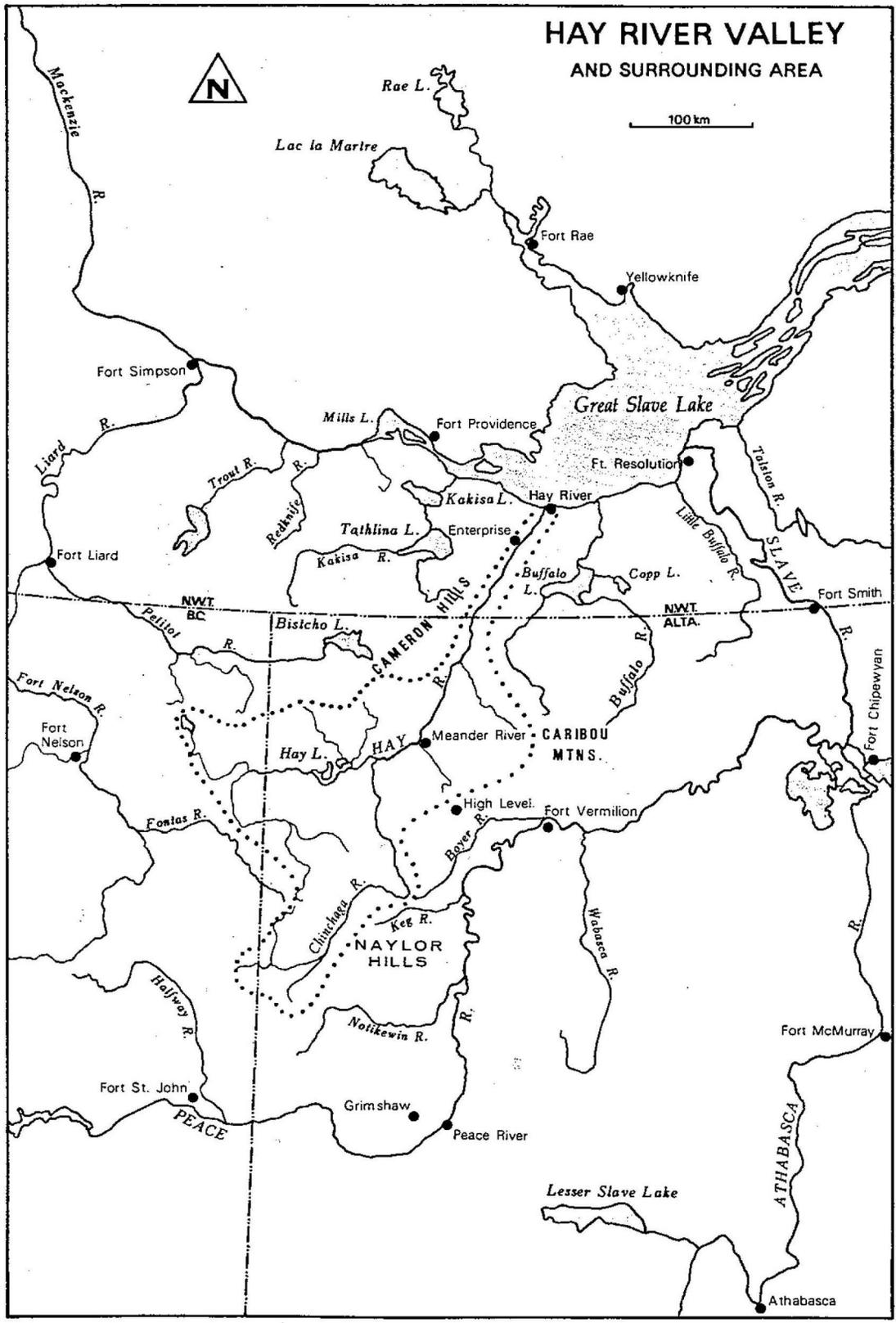


Figure 1. Hay River Valley and Surrounding Area (Harrison 1986).

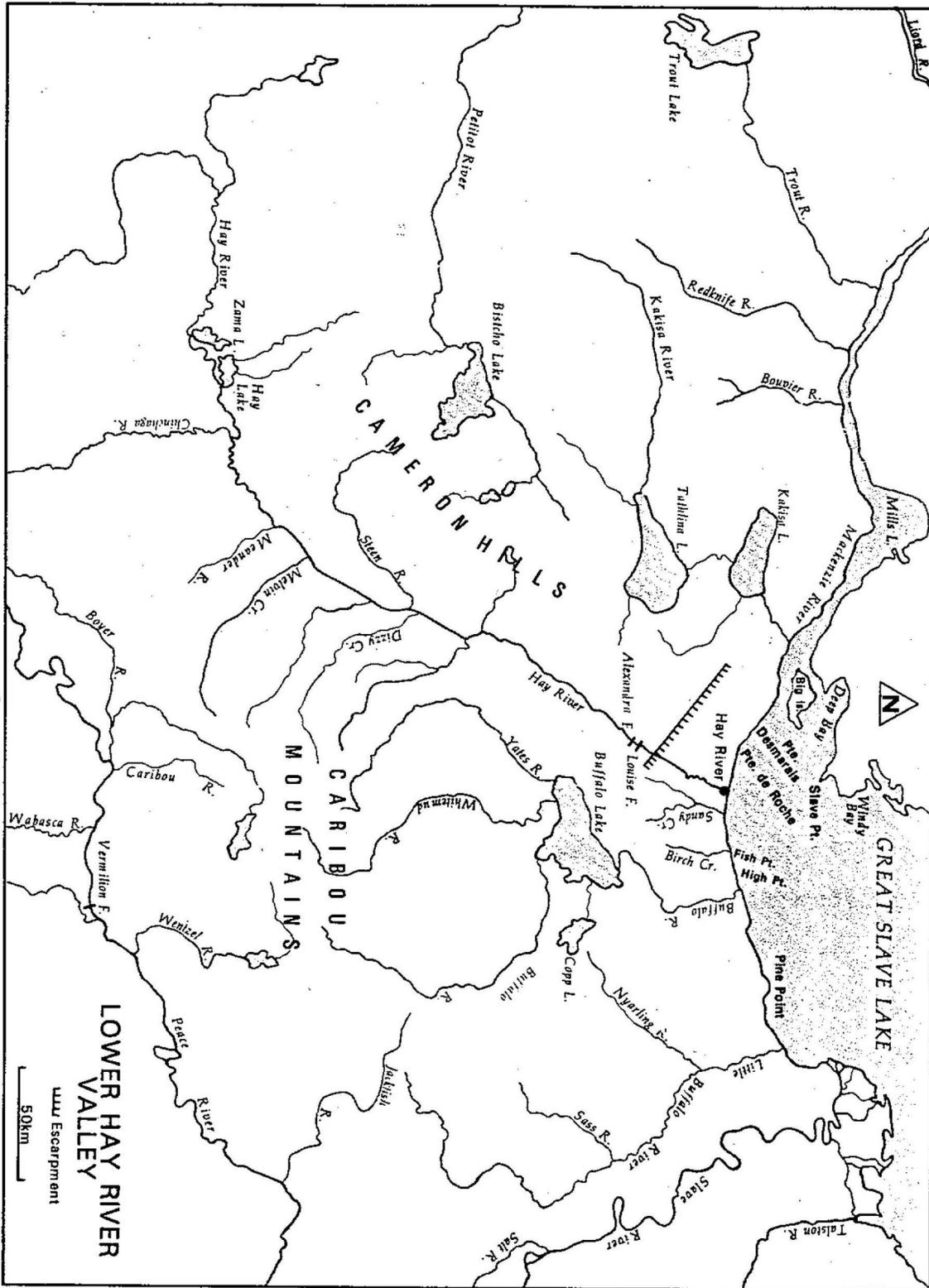


Figure 2. Lower Hay River Valley (Harrison 1986).

which are perched around the outflow of the river into the Great Slave Lake (Reader's Digest/Canadian Geographic 2004, AANDC 2014).

Hay River water is distinguished by its “distinct, tea-like colour”, which results from the presence of humic substances, tannins and lignins in the water (AANDC 2014:15). This likely originates from the marshy areas around the Zama-Hay Lakes region that the river flows through. There are two waterfalls on the river north of Enterprise and south of Paradise Gardens, Alexandra Fall and Louise Falls, both part of the Twin Falls Gorge Territorial Park.

ABORIGINAL PEOPLES OF THE HAY RIVER BASIN

The Hay River Basin is thought to have been home to at least six Aboriginal groups: the Sekani, Dane-zaa, Dene Tha', Dene, Métis, and the Woodland Cree.

Sekani (Tsay Keh Dene) are an Athabaskan people also called Secunnie, Siccanie, Sikani and the French Sékanais. The population is largely represented by the band government of the Tsay Keh Dene First Nation. They currently reside in the Northern Interior of British Columbia and their territories extend within the sub-basins of the Finlay and Parsnip rivers of the Rocky Mountain Trench. Historically their traditional use areas included regions further east within the Hay River Basin and beyond.

The **Dane-zaa**, also known as the Beaver people, are an Athapaskan population who currently reside in British Columbia as part of Doig River First Nation, Blueberry River First Nation, Halfway River First Nation and Prophet River First Nation communities. Although currently these communities reside outside the Hay River basin, prior to 1800 they inhabited lands further east, near the Athabasca River and Clearwater River, and north to Lake Athabasca as well as territory north of the upper Peace River including the Hay River basin.

The **Dene Tha'** or *People Common to the Territory*, are divided into three separate communities located in northwestern Alberta: Bushe River, Meander River and Chateh (formerly known as *Assumption*). Their traditional territory is centered on the Hay-Zama Lakes region and their asserted territory extends to the northwestern section of Alberta, the northeastern part of British Columbia, and the southern sections of the Northwest Territories (The Dene Tha' Nation 1997).

The **Dene** people are the original inhabitants of the area of land stretching east to west from the Hudson Bay to the interior of Alaska, and south to north from central Alberta to the Arctic Ocean. The name Dene means 'the people,' and Denendeh, means 'land of the people' (Hay River Dene Reserve Visitor Resource Centre 1994:4). The Hay River basin is culturally significant for the Ka'a'gee Tu (Fort Providence) and Kátl'odeeche (Hay River) First Nations. The Bistcho and Hay Lakes have also been linked to Dene people from the Kakisa and Talthlina Lake areas (Green 1960). Band members and their ancestors have lived, hunted, trapped and fished in the area for thousands of years.

The **Kátl'odeeche got'ı** ("willow grass river delta people") have been in the Hay River valley and Buffalo Lake areas since time immemorial but began to settle more permanently around the mouth of the Hay River area in the 1890s when Shaatl'e, a leader, established a permanent settlement for his people on the east side of the Hay River mouth. This settlement is now called Old Village, and the current community is placed a not far distance south (KFN 2006).

Métis are represented within many communities throughout the Hay River Basin. Alberta has the single largest provincial population of Métis people (67,000). The Métis people were born from the marriages of Cree, Ojibwa and Salteaux women French and Scottish fur traders, and played a key role in the fur trade beginning in the mid-1600s. Scandinavian, Irish and English stock was

added to the mix as western Canada was explored. Unlike other Métis populations in Canada, some Métis families were given land rights (1 280 000 acres) by the province of Alberta (1936) in the form of Métis Settlements. There are no Métis Settlements within the Hay River Basin, but Métis from a number of areas in Canada and the Northwest Territories now live in the communities along the Hay River.

Woodland Cree comprise the largest Aboriginal population in northern Alberta. They are of Algonquian origin having originated further east of the Hay River. Prior to the 18th century, their territory was around Hudson Bay as far north as Churchill and east of James Bay to Lac Mistassini. Although their western boundary was uncertain, they had ventured into Northern Saskatchewan and Manitoba by the 18th century as middlemen, trading with western tribes. The Woodland Cree were one of the first nations to trade with European fur traders, as early as the 17th century. By 1800, the Cree were well established in Alberta, from the Athabasca-Peace delta in the north, along the Hay, Chinchaga, and Peace Rivers and south as far as the Saskatchewan . Woodland Cree use legends to convey stories throughout time. Many legends are about aspects of the environment, such as "How the raven stole the sun" and "Deawitchita and the fire rock." It is said that those who tell the legends have the most *ikanisha*, which means wisdom in the Cree language.

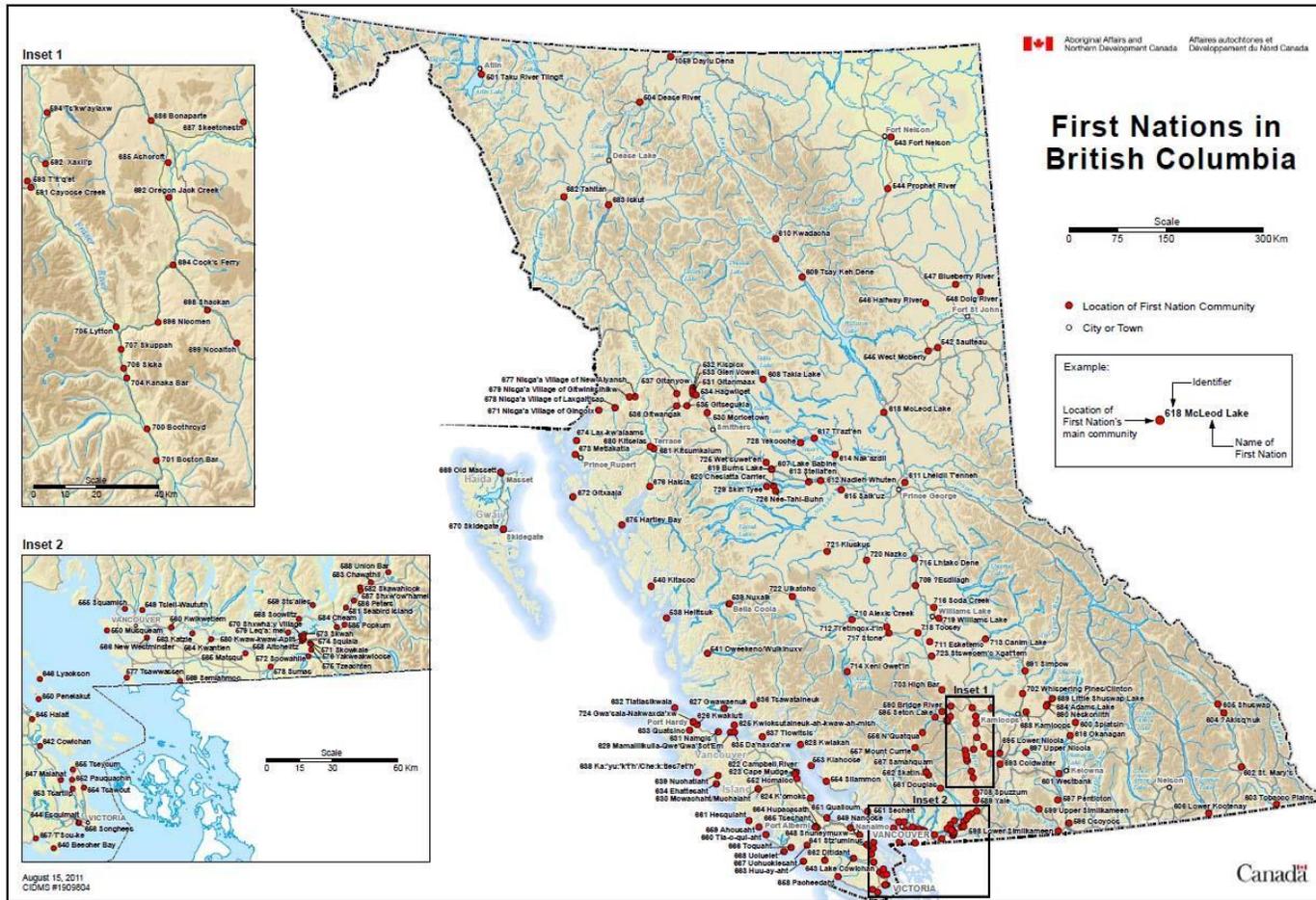


Figure 3. First Nations in British Columbia (Aboriginal Mineral Resource Centre 2016).



Figure 4. Alberta First Nations (Health Co-management Secretariat 2010, Indian and Northern Affairs Canada 2009). See #5, Dene Tha' First Nation reserves.

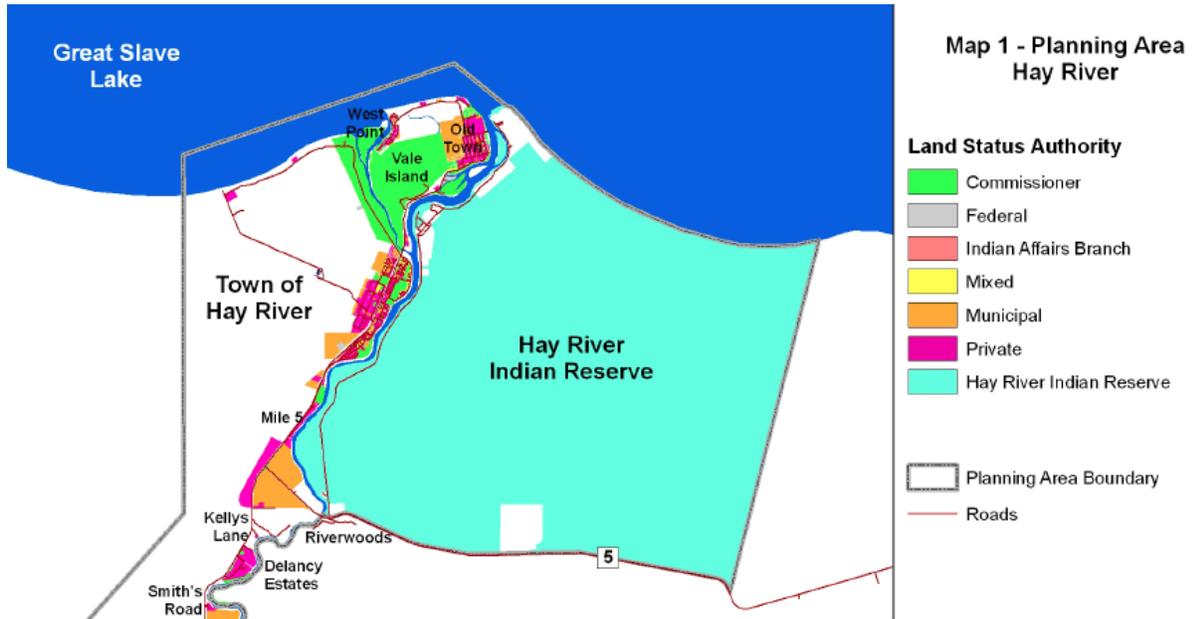


Figure 5. Hay River Indian Reserve (Walkinsaw 2011).

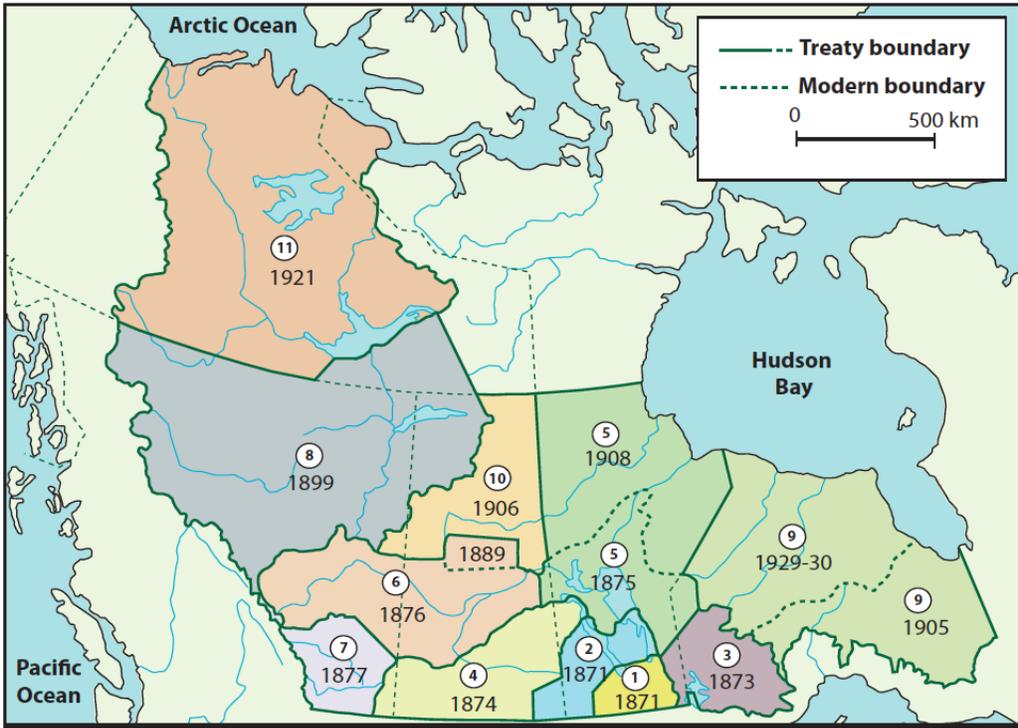


Figure 6. The Numbered Treaties, 1871-1921 (GNWT Education Culture and Employment 2016).

PLACE AND THE SPIRITUAL SIGNIFICANCE OF THE HAY RIVER BASIN

“The Dene have a strong spiritual relationship with the land, everything on the land, including the land itself, has a spirit, and nothing can be taken without giving thanks. People understand that the land’s resources are a gift, and that if one abuses a gift, it can be taken away. Respect for the land is the key to our culture and survival. A place on the land that served as a reminder of human mortality was considered a sacred site. Each site has two spirits, a Grandfather and a Grandmother spirit, and offerings were made to them when passing by. The two falls on the Hay River just south of the Reserve are considered sacred sites, and Dene still make offerings of tobacco there” (Hay River Dene Reserve Visitor Resource Centre 1991:11).

In the area where the falls are, they’ve made it touristy now and it’s a show. These areas, where the falls are, are sacred sites. In the legend it was said that waterfalls are sacred ground. So when you go to a waterfall, if you ever go anywhere and there is a waterfall, you always talk back to the waterfalls and ask them for help and tell them thank you for being here and give tobacco. Or if you don’t have tobacco, or if you have money in your pocket, you give it to the waterfall. Now you can’t do that because there are too many tourists, Everybody’s taking pictures, and it’s a real show (Kassam and Soaring Eagle Friendship Centre 2001:39).

There are also important sacred sites in the basin which have been documented to a limited extent. The Alexandra Falls (36 metres) and Louise Falls (16 metres) are along the Hay River corridor between Enterprise and the Town of Hay River. The falls have “tremendous spiritual significance” (36). They are 400 million years old, of unique limestone and sandstone formations from the Devonian period (GNWT 1992 in KFN:36). When travelling, people portaged past the falls.

“At the sites are the spirits of an old woman and an old man who care for the falls. It is important to the K’átl’odeeche got’ı to pay respect to the spirits of the falls. Traditionally respect is given by saying a prayer of thanks and by rapping an offering (such as tobacco) on a branch and throwing the branch into the current and over the falls” (GNWT 1992 in KFN:36).

“When a rainbow forms over the falls when you are looking at them this means that the Grandfather and Grandmother spirits are looking at you kindly. All people should pay their respect” (BD in GNWT 1992 in KFN 36).

Even today if you go travelling down someplace, I always put tobacco at the falls. That’s what I do, so I’m pretty sure that’s what they did back then when they would portage their boat. They would do a ceremony to feed the water or the falls (JS 2005, KFN 37).

In addition to these sacred places, there are other place of noted economic and cultural significance e to local livelihoods. For example, there are noted fishing lakes which contributed to livelihoods and well-being of families at different times of the year:

- **Habay** -(in traditional lands) a very important place historically and currently for the Dene Tha'. People go duck hunting, fishing, ice fishing, camping, organize summer sports (e.g., canoeing competitions). Many families go in summer for weeks and get together and socialize more than in community. Before the Reserve was founded some people used to live there, but after the floods occurred, everybody moved into Chateh. Community members say that everybody "moves" to Habay in summer (Harvey-Trigoso 1999: 176).
- **Bistcho Lake**- (in traditional lands) People in the community go ice fishing there. There are cabins and traplines of community members. And there is a retreat that belongs to the community where High School students are taught by their Dene teacher and a few adult volunteers from the community about Dene Tha' tradition (e.g., ice fishing and winter survival skills). (Harvey-Trigoso 1999: 175).

Many more sites have been documented through the Dene Tha' Traditional Land-Use and Occupancy Study (The Dene Tha' Nation 1997)

You were born to be a real person, to be Dene, long ago by learning the hard way of life (Emma Metchooyeah, 18).

The Dene Tha have used this land and this water since the first human beings roamed this planet (Adrian Tecomba, 5).

There are many creeks and rivers that run into the Hay River and the Chinchaga River. There are too many to name them all (Willie Ahnassay Sr., 80).

These place names are extensive and suggest the Dene Tha' traditional territory extended from northwest Alberta to northeast British Columbia and into the southern regions of the Northwest Territories (NWT).

We didn't live in one spot... (David Providence, 18).

“They travelled to every corner of their traditional territory in a constant search for food. Dene Tha' babies were born in winter camps and on summer trails. People were buried wherever they traveled. Every corner of the traditional territory was important to their way of life. Every animal was vital to their survival, as was the animal's habitat” (18).

There were no boundaries; we were free to roam anywhere (Louison Ahkimnatchie, 18).

I'm very happy that I found out where my great-grandparents' graves are. They are laid beside each other on Chi Koanh river bank overlooking the beautiful water (Adrian Tecomba, 14).

The Dene Tha' are buried everywhere. One can view a gravesite at Old Man River. My father and my child are buried there, by the beaver pond. My mother's grave is

at Willow River. Across that river lays Tecomba. There are graves of children on both sides of the river. The infant graves at Old Man River are the siblings of my family. The mother of Paul Chissakay was also buried there. My oldest sister's grave is at the old Habay cemetery. There are six of us boys, but I am the last one alive today. This spring, my only sister died. Where the big fork at Habay is, on the peak of the bank, lay the bones of our ancestors. On the river bend at Habay, along the trail that leads to the bison's corral, there are many graves there on the bank of the Hay River (Willie Ahnassay Sr., 79-80).

“Starting in the early 1900's, semi-permanent settlements, based on family groups, or ‘clans’ were established around major waterways within the traditional territory” (Elise Kolay, 18).

“...there were approximately nine major settlements surrounding the Hay-Zama lakes area, several more surrounding the Bistcho Lake area, and some along the Hay River heading towards the NWT border. Cabins, camps, and settlement sites were always located near a fresh water supply, either by a lake, river, or smaller tributary. The clustering of sites around the Hay-Zama Lakes signifies their importance in the lives of the Dene Tha', as a fresh water supply was vital to a nomadic lifestyle. Today, ‘if you want to go out into the bush, you have to pack in your water. The water out there [on the land] isn't fit to drink’” (Victor Chonkolay, 29).

Long ago, people used to live at Duck House, End of the Water, Willow River, Old Man River, Twig River and Bistcho Lake. Myself and my family used to live on the Chinchaga River. Back then the people who used to live at Willow River didn't have any horses. The other people who lived at Duck Lake, End of the Water and Twig River had lots of horses, so when the spring came, they would look for duck eggs to help feed the families. When the duck doesn't have any wings, they would hunt them; women would hunt them too. Some would go on canoes and even the dogs that are smart would hunt ducks too. They would corner ducks and kill them. Whatever duck eggs and duck meat they would find, they would put all the meat in canoes and head back to their destination (Alphonse Scha-Sees:81).

“Throughout the early 1950's, most people moved to Habay from the outlying, smaller settlements of *Tu Lonh* (End of the Water), *Chi Koanh* (Duck House), *Kola Zaghe* (Old Man River), *K'e Zaghe* (Willow River), *Detthi Zaghe* (Twig River) and *Tlin Kin Diahii* (Where the Horses Go Down the Bank), and to Meander River from Indian Cabins and Bistcho Lake” (18). Timber for log houses were cut at *Tu Lonh* from spruce groves there and floated down the river to Habay for building (26). “Then in 1962, most Dene Tha' abandoned the settlement of Habay to permanently settle in Chateh. A major flood devastated the settlement of Habay...” (19).

“A large part of the Dene Tha' diet is taken directly from the bush economy – moose and duck are staples. Many people still get their tea water from melted snow in the winter and from rivers and creeks in the summer” (19). “Moose is probably the most important animal in the lives of the Dene Tha'” (50).

Cows calve near water and islands (Charlie Lefou, 50).

“Years ago, duck populations were very high around Hay Lake. Since the oil companies drilled for oil on the lakes, there aren’t that many. Helicopters scare them away (Louisson Ahkimnatchie & Pauliss Metchooyeah, 52). In the spring, people would gather duck eggs to help feed their families. They would also gather ‘ducks without wings’, or molting ducks in the spring. Women, children and even dogs gathered ducks, using canoes to transport the meat back to their homes” (52).

Chinchaga is prime geese nesting area. People would go to Chinchaga when goslings were big enough to eat, in July and August. When there is no moose to eat, people relied on geese and goslings to survive (Pierre Ahnassy, 52).

Where there are creeks and fireweed, there are porcupine. If there is driftwood or a fallen tree and brokenoff fireweed, there will be a porcupine underneath. Under driftwood and sometimes, if it discovers a beavers den, it will use the den. It will do this usually in an old abandoned beaver pond when the water is gone out of it (Louisson Ahkimnatchie, 57).

Wild onions are found near Fish Lake, near the Chinchaga River (57). Grizzly bears eat these onions and wild parsnips found growing by the Chinchaga River as well as in British Columbia. Bear habitat is along riverbanks, where fish and berries are plentiful. “Black bears can be hunted almost everywhere around lakes and high ground” (57).

In those days, bears were plentiful. It’s meat was tender and it didn’t spoil easily. Bears are harvested during the late summer, when the berries are ripe. Bear fat is used to fry fast during times when we had to move from place to place very quickly before the cold months set in, as the fat doesn’t freeze. The hides are scrapped free of all fat. It is stretched to dry in the sun and it is used to cover the ground to sleep on. Bear grease is stored in a moose stomach for easy carrying (Frank Yatchotay, 58).

But nowadays we don’t eat them anymore due to the fact that today’s bears live on garbage that the oil companies disposed of in the winter (Jean Marie Hooka Nooza, 58).

“Eagles establish their nests along riverbanks and lakes, to feed their young on ducklings and fish. Eagles are found everywhere there are lots of fish and ducks” (58).

There is one nest in Detthi Zaghe that has been there since I was sixteen years old. Hey, that’s a long time. Last year, we went duck hunting and we camped nearby it. I told my grandson to look under the nest to see what eagles kill. There were lots of bones, baby beaver bones and piles of all sorts of bones. The nest is still there. It was there when I was sixteen years old and I am 72 years old now. I guess its home never breaks (Louisson Ahkimnatchie, 58).

“Caribou live along riverbanks. Caribou roam wherever there is muskeg. Caribou land is called ‘Mbe Dzih’” (58).

When you hunt beaver in the winter, it is very hard, because first you have to find a lake. Then you use a long stick to find a beaver's den by shoving away the snow and you gather around and surround the beaver's den. We used to use a hook to kill the beavers, as we didn't have any beaver snares back then. People were very poor (Alphonse Scha-sees, 64).

While trapping for beaver or muskrats in those days, you didn't need a licence to kill how much you wanted or needed because there were lots and lots of fur-bearing animals. We start to hunt them before the lake or river melts. People used stick trap or 22 rifle to kill them (Frank Yatchotay, 64).

The primary modes of travel were by 'horse teams or riding horses.

In winter we would use dog teams pulling long sleds. We used boats and rafts to travel on rivers and lakes in search for food. Traveling down rivers is easier than pushing the raft against the current (Peter Ahnassay, 70).

"The Hay River was used as the summer and winter trail from Indian Cabins to Meander and beyond. People would leave their homes in March to go trapping and hunting. They would leave the Hay-Zama area and loop north to Bistcho Lake, then head west to Petitot and south along the Shekile River to Tsa Zaghe (Beaver River). They would continue east along the Hay River back to Zama. They would return home 'when the leaves are big', which is approximately June, explained Daniel Providence" (70).

"Dene Tha' elders saw a significant difference in the ability of people to get from place to place. 'In terms of travel, in the old days we depended on canoes, and horses to get around. Nowadays, those who have vehicles get around better than the ones who have no vehicles,' said Frank Yatchotay (71)."

Still, there were some elders who prefer the sedentary lifestyle.

I used to dislike the moving, but I know it's the only way to follow the moose in order to have enough to eat all winter. If you don't hunt, you don't eat (Louise Hooka Nooza, 71).

"Places within the Dene Tha' traditional territory also have Dene names. One difficulty in identifying these Dene placenames, is that different family groups have their own names for places. As a result, there may be more than one name for a particular place. 'The names of lakes, rivers, and ground have been with the Dene people for many generations,'" (Louisson Ahkimmatchie, 74).

People used to live at End of the Water, Duck House and Horses Go Down the Bank. That is where all the ducks lived in summer. In the summer when people hardly moved around, you started making hay for the upcoming winter for the horses. If you

had lots of horses, you select two horses to help you work around the house, and the rest of the horses just wander until you need more horses (Emma Metchooyeah, 83).

From Habay, people used to travel towards End of the Water, on the other side of Duck Lake. To get there, there was another trail through Rock Blind. People mostly hunted there for ducks and geese. Around that time, one could cross the big river at almost anyplace, at anytime. Now you can't, there is too much water these days (Mary Beaulieu, 85).

I have been aware of Zama Lake since I was a teenager. That lake was dry for years until not long ago. The river started to overflow into the lake (Willie Ahnassay Sr., 80).

Nowadays, there are hardly enough moose to go around. Back then, there were a lot of moose. Today, there are too many oil wells everywhere, so that there are hardly any wild animals left. Long ago it wasn't like that (Emma Metchooyeah, 82).

WATER QUALITY, QUANTITY AND FLOW

There were no sources of documented local and traditional knowledge related to local observations about changes in water quality, quantity and flow for the Hay River Basin. Some observations have been made about water as it related to the impacts of resource development and climate change. (See section in this report on Resource Development in the Hay River Basin).

KÁTL'ODEECHE FIRST NATION – FISHING LIVELIHOODS¹

There is a limited amount of documented local and traditional knowledge related to local observations about changes in species diversity, condition, population dynamics and distribution. There is a larger body of documented knowledge related to fishing practices and use of the Hay River as a travel corridor.

It is theorized that big game, mostly moose provided the majority of subsistence with fishing being of secondary importance. People relied heavily on fish and fish lakes however when “big game failed” (Goddard 1916).

Could the exploitation of a fish resource be seasonal in nature? Beaver Indians were known to resort to fish lakes during the winter in times of hardship (Goddard 1916:216). Both lake whitefish and laketrout spawn in shallow lake waters during the fall, and this fact could provide some seasonal orientation for the occupation of fishing.... Since late winter and early spring can be regarded as a critical subsistence time for boreal forest peoples, the occupation of [key fishing sites] might be closely related to the exploitation of spring fish runs (Ives 1985).

As in other regions of the Peace and Slave river systems, it is thought that people employed a variety of fishing technologies to manage their harvest including fish weirs.

In the spring when certain varieties of fish were migrating, walls of stone were built out from each shore of the smaller streams converging in the centre where a trap was placed made of poles placed lengthwise of the stream. The water falling between the poles left the fish helpless (Goddard 1916).

¹ This first section draws from the *K'átl'odeeche FirstNation Traditional Knowledge Assessment of the Proposed Mackenzie Gas Project* and was completed in 2006 (KFN 2006). Numbers in brackets denote page numbers in the report. Quotation marks are used to distinguish direct quotes from the discussion prepared by the report author, and italics used specifically to mark quotes from Elders presented in the report. Elders' names are presented as initials, as in the original report; currently there is no list of full names.

Although some anthropologists have detailed the seasonality of fishing activities at key sites, a more general view is that fish was a year round activity (Kassam and Soaring Eagle Friendship Centre 2001:30).

Fishing was another primary subsistence activity that provided large quantities of food. Both men and women would set nets in the lakes and rivers year-round. In the winter the nets would be set underneath the ice – a hazardous undertaking at times, as one woman noted: *“When the wind blew inward, the ice was not stable there. If there was ice there, it would crack, so we would have to wait until it was solid to set the nets. The fish would be found out on the lake, not towards the creeks”* (Kassam and Soaring Eagle Friendship Centre 2001:29).

Fishing activities were socially organized; as noted in this quote, it was a collective effort to harvest.

“Fish was an especially valuable food source for the Slavey, but required a more collective effort to harvest. Over the course of the summer, fish and meat from moose, caribou, beaver, fowl, and other animals were dried in preparation for the long winter. Some of these meats were combined with berries and grease to make pemmican, which did not spoil” (Hay River Dene Reserve Visitor Resource Centre 1994:9).

“Hay River Dene women travelled to Buffalo Lake at fall freeze up and Meander area by canoe” (Kassam and Soaring Eagle Friendship Centre 2001:20).

Before K’átł’odeeche got’i (“our people”) settled into the permanent communities, they lived all around the traditional territory (KFN 2006:1). In the late spring, the people would move to K’átł’odeeche from inland hunting and trapping areas. Families spent the winter at Buffalo Lake (Ejje Túé), and go to K’átł’odeeche by river in a spruce bark canoe or walking with dogs on trails. Hunting and fishing activities occurred regularly along the way. Some people stayed at Fish Point (Łue Ehda), where they hunted migratory birds and set fish nets until the ice melted off the lake. People then moved to K’átł’odeeche in May and June, after the spring hunt. From here, during the summer, people came and went down the Hay River corridor, to Pointe de Roche (Tthechíla), to the Cameron Hills (Nagháh Zhíe), and other places.

“K’átł’odeeche itself had dry-fish stages set up all along its banks. The mouth of the K’átł’odeeche was particularly important for fishing because it provided shelter when weather was bad on the lake” (10).

Fall was a time for fishing, winter preparations, and the return to (Ejje Túé Dehé, Łue Ehda, False Point) to set nets and dry fish so there was a cache for the winter.

In the fall time from here they walked right from Hay River to Buffalo Lake....when I was really small, I can remember walking through the bushes, with my mom, dad and a whole bunch of people (EM 2005 in KFN:11).

In the winter, most people returned to (Ejje Túé) or inland camps, though some stayed at the K'átł'odeeche harbour area. People living away from the river mouth would travel back to Hay River for Christmas and New Years, and would move back and forth all winter long between K'átł'odeeche and these other place. Trapping, hunting, and fishing activities occurred all winter. People were born on the land, and spent their lives moving around it. The Hay River is an important transport corridor. People in Hay River and upstream Meander River are related to each other.

“Several KFN members have a grandparent or great grandparent originally from the Meander River or Assumption areas. Many elders recall relatives from these places arriving by canoe or, later, by horse and wagon, on trails used for trading and visiting” (13).

In those times, the people from the Meander River area came down river with boats. They came to this area because the Hudson's Bay or the fur buyers bring in supplies from the south with the barges....they come up here and the stores used to have a lot of supplies here, so people from Indian Cabins/Meander River area used to come over here when they're short of supplies... (PB 2005, KFN:13).

Horses were often used as transportation. The Mackenzie Highway was originally a horse and wagon trail (Harrison 1984), and before that a walking and dog trail (KFN).

Fishing for the Anglican Mission is the earliest form of commercial fishery at Hay River. In 1905, '11,000 fish caught' is marked in mission food supply records (Harrison 1984). A major fish camp was located at Łue Ehda, “...where they put up hundreds and hundreds of fish, 10 fish on one stick and then they hang it up” (CL 2005, KFN:15). In the 1920's small commercial fisheries along the lakeshore at the river mouth begin to sell fish within the community to organizations such as the RCMP, postal service, the HBC and the Anglican Church (Harrison 1984). The Non-Dene commercial fishery began at this time. An airstrip was built in 1941 and the first cat train track was pushed through to Hay River from Grimshaw, Alberta. This track eventually became the Mackenzie Highway. Once the highway was open, the first resource to be exploited was fish, and the Great Slave Lake fishery was initially very successful.

“The commercial fishery originally included the sale of both whitefish (tu) and lake trout (saamba). It took just 10 years of over-harvesting before the commercial lake trout fishery collapsed (Day and Low 1992, KFN:17). Since then, elders have witnessed a decrease in trout stocks and an overall decrease in the size of fish. Elders have also noticed a sharp decline in inconnu (megh'uli)” (17).

“...Used to be a lot of fish, used to get a sled full of fish, we get trout. Now there's hardly any trout, you're lucky to get two. The fisherman said that they take all the

fish out, we don't see one cent of it, and then they make a lot of money on it. They sell the fish for a quite a bit of money" (SS-V 2005, KFN:17).

(There) used to be big trout out on the lake, lots and lots of them. Now, no more eh.... my dad used to put hook in the water look, as part of our living there, we owned the trout eh. Dad put hooks in the water... not only that but a lot of people do. They go out two or three nights and take trout out of the lake (FT 2005, KFN:18).

Increasing development of industry in and around Hay River and commercial fishing has resulted in water contamination. With the Northern Transportation Company Ltd. (NTCL) in operation since the 1940's on Vale Island, "increased barging activities at the mouth of the river have generated ongoing concerns about water contamination" (KFN: 18).

...Right out to the mouth of the river and you got a net there and you caught fish and you tried to eat fish, well they taste only of fuel. Even just some places here where they used to spill water overboard, they used to pump fuel out of barges and they used to dump it in the river. For two years it has been like that, he says, but now they're watching it, but if it ever happens again the fish are going to be the same again (PB 1975).

Today Vale Island splits the Hay River into the east and west channel. The west channel flows past Vale Island and 2 smaller islands, but originally there were 4 other islands. These islands were joined to Vale Island with infill for use as storage space and to run the Mackenzie Highway across (KFN 2006, Harrison 1986).

"...landfills that have been put in to access storage and off-loading sites on the smaller islands. These landfills have blocked historic channels and affected migratory bird habitat. Elders see the loss of these small islands as the cause of increased erosion on the east side of the East Channel, where most of the K'átł'odeeche got'ı live" (18-19).

There used to be about five islands around here and they're all connected now because of landfill, that's where there used to be a lot of ducks and geese (PB 2005, KFN: 19).

Industrial development has occurred in the Hay River area since the 1920's, consisting mainly of mining and oil and gas development. Also in the 1920s, drilling occurred near the present golf course, and contaminants remain. Exploration and drilling continued through the 1950-60's.

Long ago at the time when we did some work we worked for an oil and gas company. One night around 10 o'clock at night there was a warning saying no smoking, no smoking. And there was oil/gas that came up onto the ground, something came out of the ground that was just dark. That was the end of it, they were done. I don't know what they were doing but they were done. Since then, at the time when I was still able to hunt around 60....maybe are 1959, somewhere around there, maybe around '59 or '58, when I was hunting along the river back then that substance was coming out of the ground and flowing into the river. It was during the winter, you can see the dark

substance on the ground, there wasn't any snow where the black substance was. Something must have been going into the river from that. That should be looked at. We can show you where it was. If you can see it from an airplane you can check it out... At the time I saw it was 1959 or '58 when I was following a moose, even the moose walked around it and went the other direction (DS 2005, KFN:21).

“...Elders have always been aware of problems elsewhere” (21)

“...They're hauling fuel with barges through McMurray, he heard about a barge being bust and there was a lot of oil spilled there one time, and they river was flowing with nothing but fuel...all the rats got killed with it and even ducks and geese and quite a few other things that died on account of that...one little cup for the pipeline; but it sure spoiled a lot of things with it (JM 1975, KFN:22).

It's because all this gas...it doing a lot of damage and I was down the road. Us right now, our grandchildren, maybe their kids that's when it's going to be real tough. Even now what's going on in B.C....a lot of birds are sick. They're killing a lot of birds and with this gas pipeline I know in between Indian Cabins and Steen River there's a pipeline going right under they Hay River. I've been to Hay Lakes, I've been hunting geese over there and they got oil tracks right in the middle of the lake and one year, I don't know if the people know over here that tons of birds die in that Hay Lakes. And even that the birds they don't go there... that was their spot. The real place where the birds they rest and feed. I went over there...And I never shot one geese. Boy there's a lot of change (RL 2005, KFN:22).

People lived along the banks of the river; a few people had cabins and seasonal fishing camps on Vale Island.

K'at'odeeche, all this river, I remember when I was a little kid except for the people that lived out there, the Sabourins, all this was just beautiful green all the way up the river before the white people come and start building construction. All that came, before that came, it was beautiful and people enjoyed it. Even by the hospital, that little ravine, that's where my uncle used to trap and used to hunt. So it's really changed (FT 2005, KFN: 27).

When I was born there wasn't any house on that side [Vale Island] (SS 2005, KFN:27).

...We used to live across the river. I used to have a lot of relatives who lived over there my late husband and his relatives, my dad and my mother's dad and my husband's dad and his brother and his older...all of them I remember. When that big flu came here...now there's nobody from that bunch only me, we lived over there and I'm the only one who survived out of the whole bunch (MRS-V 2005, KFN:27).

There is a significant fishing area at Pointe de Roche (Tthechɫa), once a camp for several families, and there trails from this place to the Cameron Hills (Nagháh zhíe). Today, fishing occurs here and several family cabins.

“Because the K’átł’odeeche travelled seasonally throughout the land, there are burial sites located all along the river and traditional trails” (28).

“The K’átł’odeeche delta is shallow and wide with small protected channels that once provided excellent habitat for migratory birds. Today, there are still areas that offer good habitat for birds, but extensive development has undermined the ability of the land to support bird populations as it once did” (29-30).

A long time ago before the town, people used to hunt in this area for ducks, near where the airport is...they hunt birds in that area until people started coming in, now there is hardly anything (JS 2005, KFN:30).

Fishing has been important historically, culturally, and currently is an important food source. People (K’átł’odeeche got’ɫ) were drawn to the K’átł’odeeche area for fishing. “...*Being a Dene person, it is kind of hard to go without fish*” (FT 2005 in KFM 2006). When weather was bad on the Great Slave Lake (Tucho), the K’átł’odeeche harbour provided shelter and protected areas for fishing. Important places for fishing are and were Fish Point (Łue Ehda) and False Point. People note changes to the amount of fish available. “Fish harvesters from the K’átł’odeeche First Nation have all noticed a decrease in trout stocks over their lifetime and some feel there have been changes in the size of the whitefish populations” (32).

There used to be fish stages for hung fish (at the ice crossing), for winter, for the dogs. The fish stages that they talk about at Fish Point where they put hundreds and hundreds of fish. 10 fish on one stick and then they hang it up (CL 2005, KFN:31).

We would set nets out in the lake, I would wonder where he got nets from, but at that time they would knit their own nets, they used to have little short nets. They used to be lots of fish like trout, and that time the fisherman started fishing around here... I still do fishing out on the lake and I hang fish and I don’t want to give that stuff up (FT-V 2005, KFN:31-32).

There is not as much fish as I seen when my dad was fishing on the lake. There are a lot of changes in the fish. My dad said they used to run a line under the ice with hooks and bait and drop it under the ice, the next day he would pull out trout and stuff like that. Now you barely catch any trout maybe one or two a summer. I fish out there in the summer for my own use, not too often you’d get a trout. A lot of changes, people say that the fish stock is still good, but I know there not as big and healthy as years ago (PM 2005, KFN:32).

Travel on the Hay River

The Hay River is an important travel corridor. people would historically move along it by river, dog team, and recently by snowmobile. Moose and bear were hunted during summer when people were gathered at the river mouth. People have noted general decreases in animals along the river, in mink, fox, rabbit, and especially muskrat populations.

They hunt and harvest bears and they also have moose along this river. This river route has always been used by our elders for hunting (FT 2008, KFN:28).

People used this river, even my dad used to come down here and set snares for bears, everybody used this river right up to the falls. Beyond that in olden days they would portage the falls, and how far past that I don't know (EM 2005, KFN:38).

There are a lot of people that go hunting on the highway, even me I take my boat and put it in by the border and you can go either way, as long as you have your general hunting licence and treaty card. We would go up to Indian Cabins and down this way. A lot of people still use that area, for fall hunt (PM 2005, KFN:39).

I remember the geese would just cover the ice and you can hear sounds all night, my dad use to kill lots. My mom and sister would make drymeat out of geese meat; they'd do all kinds of stuff with it. My mom one time made a coat for my sister, Mary Alice, the head of the geese the black part she skinned those and dried it and sewed them together. For birds right now, if I go to Buffalo Lake this spring I wouldn't see half as much geese, as I have years ago...By the border you can go in the river and see a few ducks there flying on the river, but here they don't do that anymore (PM 2005, KFN:41).

This next section draws mainly on *So that our voices are heard: Forest use and changing gender roles of Dene women in Hay River, Northwest Territories* (Kassam and Soaring Eagle Friendship Centre 2001). This project specifically looks at Dene women's experiences of their ongoing relationship to the land. With its exclusive focus on women's perspectives, this study is a unique contribution to the Traditional Knowledge literature as more often the voices of male traditional knowledge holders are featured. This study is a part of the *Women's Empowerment Project*, led by Dr. R. Indira, Head of the Department of Sociology at the University of Mysore, India, together with Professor Karin-Aly Kassam from the University of Calgary. The CIDA-Shastri Partnership Programme and the Soaring Eagle Friendship Centre in Hay River supported the project. Note that the following statements are not attributed to particular study participants, following the original text. This section also contains some quotes from the Hay River Dene Reserve Visitor Resource Centre (1994).

“Hunting, trapping and fishing are interconnected activities, in that they occur together, in combination when people are on the land” (Kassam and Soaring Eagle Friendship Centre 2001:23).

In addition of fish and ducks, other valued resources from the Hay River Basin included medicinal plants. Some plants found in riverine/riparian areas like rat root, featured here, very important to these people and others in other places.

The knowledge regarding medicinal plants has remained fairly intact throughout the last several generations in Hay River. Many women today continue to collect and use the 'Indian medicine' passed on to them by their mothers and grandmothers. The women in Hay River are a repository of this indigenous knowledge. Rat root is one of the most common and popular medicinal plants. It is found in swampy areas, usually along riverbanks, and is used to battle a variety of ailments, such as heartburn, sore throats, and headaches. It is prepared by removing the skin, then drying and boiling the remaining portion of the root. One woman remembers her father chewing rat root to relieve the pain caused by a toothache (Kassam and Soaring Eagle Friendship Centre 2001:33).

DENE THA' FIRST NATIONS FISHING LIVELIHOODS²

There were no sources of documented local traditional knowledge from the Dene Tha' related to fish, fishing livelihoods water quality, water flow nor other aspects of aquatic ecosystem change in the Hay River Basin.

Dene Tha' Gohndii'

I cannot talk about those things I did not see.

I will not talk of things that I did not see happen.

It may not be right for me to make up statements about things that I did not see.

I might not be able to say things that were told to me in the manner that it was told.

I could avoid telling lies.

I can only speak for myself about how I was raised by my father and how my own truth is all I know.

I talk about my story.

Sophie Chalifoux (Dene Tha' First Nation 1999, Part 1, 3:35-4:10).

² The sources making up this section include a film, a masters thesis focusing on Dene Tha' youth perspectives, and the *Dene Tha' Traditional Land-Use and Occupancy Study* (The Dene Tha' Nation 1997), which provides the bulk of the information in this report. First, *Dene Tha' Gohndii'* (Part 1 of 3) is a film made by the Dene Tha' First Nation (1999) about themselves, their elders and their land and it is available on Youtube. The following excerpt is the words of Elder Sophie Chalifoux as she speaks in the film (Dene Tha' First Nation 1999). This Elder talks about the personal and individual nature of her perspective and the truth-value of the knowledge she offers. The next section presents excerpts from Tera Spycy's (2009) masters thesis: *Disruption in place attachment: Insights of young Aboriginal adults on the social and cultural impacts of industrial development in northern Alberta*. This work is a valuable contribution to this report as it presents the perspective of Dene Tha' youth on life and industrial development in the Hay-Zama lakes area. In addition to women's traditional knowledge being limited, so too are youth-focused perspectives rare. As larger blocks of text with embedded quotes from Spycy's thesis are reproduced below, I will minimize the use of quotes by italicizing the words of respondents in Spycy's (2009) text, as well I leave in the respondent notations that Spycy used (for example R.1). The final section presents information about the Hay River basin from the *Dene Tha' Traditional Land-Use and Occupancy Study* (The Dene Tha' Nation 1997). For ease of reading the references following the quotes in this section exclude the *Study* author and date, and note only the name of the Traditional Knowledge holder or speaker and the page number where the quote is found within the *Study*.

DANE-ZAA FISHING LIVELHOODS

There were no sources of documented local traditional knowledge from the Dane-Zaa related to fish, fishing livelihoods water quality, water flow nor other aspects of aquatic ecosystem change in the Hay River Basin.

We can gain some insights into Dane Zaa culture and belief systems about the land and water resources from anthropologists such as Ridington (2013). The following story by Nachę (Mary Pouce Coupe) in Robin Ridington and Jillian Ridington's *Where happiness dwells: A history of the Dane-zaa First Nations* (2013:234-237), demonstrates the historical presence of the Dane-zaa in the Hay River basin as well as the difficulties of life.

*When we go to trap beaver, we started out from here, right up to Hay River.
There are two rivers over there.
When we get back to the rivers, we get on a raft.
We get on a raft, and we raft all the way down to here.
After we get back here with our pack bags, we go to Petersen's Crossing.*

*We are not very wealthy people...if we didn't come from surviving people, we wouldn't be alive now, and you guys, too.
If we came from people who weren't good hunters, we wouldn't be alive today.
People really try hard to live.
All this time, we were starving.
We had nothing to eat all the time.
That's how we lived.
In the springtime, too, when the people had nothing to eat, we turned to fish.
We lived by fish. We moved to where there are fish.
We camped by the fish.
They packed all the packhorses with dried fish.
And then they moved camp to where there is moose, that's when the people eat meat.
People moved all the time.
All summer, they don't stay in one place.
And they come back in the fall time.
Sometime in the spring, we miss the winter.
We move to Alberta in spring.
In the springtime, we move to Hay Lakes [Thugae].
We all stayed down there.
We went that far to get a moose and make dry meat.
Even if you make a lot of dry meat, people still go starving in the wintertime.
We come from hard-working people, my ancestors, my generation, and my grandchildren.
My aunt told us they don't eat for ten days.
It's not hard.
We told her, "it can't be ten days without food."
My aunt told us, "that's nothing – ten days without food."*

*Sq̄ge [my mother's sister – father's brother's wife] told me they went through really hard times.
When my grandpa [Yehlhézh̄eh] was alive, we used to move over to that hill, to Clear Hills.
They had heavy packs and packhorses.
They moved ahead to where we were going to camp.
Even they made a lot of meat, the old-timers said, "you don't make enough meat."
After they came back from Clear Hills, they moved back to here.
When we moved back over here, we set a big cache from four trees and put all our stuff on top.
After the snow started, we moved somewhere else.
We moved all winter, all over.*

*When March time came and the snow got hard, we moved back to our cache to get our dry meat.
We came back and ate our dry meat.
We only ate straight meat. No bannock. No flour.
When we only ate meat, sometimes we ran out.
After we finished all the meat, we were starving again.
We moved all over to kill something.
When we killed something, we had meat and would keep going, moving place to place.
When we had bannock, after you kill one moose, you still have food.*

*Now, when you have something to eat like bannock, it feels good, but that time, we only ate straight meat.
We went through some very hard times.
Us, we are still alive. I am still alive.
Those old people, long time ago, they all moved one way.
When we moved a long way, we would all split up into smaller camps, maybe four or five groups.
We moved to Tsiih Kwâh (Fort Vermilion).
When we left Tsiih Kwâh, we have to move all the way back here to the Doig area.*

*Right now, it's nothing hard for people.
When we leave that place, High Level area in the fall time, we moved all the way back up here.
We come from not very wealthy people.
We were always hungry, nothing to eat.*

*Right now, people don't have a hard time when they buy something.
When we leave that place, High Level area in the fall time, we moved all the way back up here.
When you have bannock, you got something to eat.
You feel good, live good.
When you have bannock, when it's gone, you still have something to eat from white man's groceries.
Before that, when your groceries are gone, you are starving again.
That is what I know. What do you think about it?
My mom never raised me, and nobody told me stories.
Nobody told me a story. I didn't even know my mom.
I didn't even know my mom.
My grandma used to say that.*

(Nache in Ridington & Ridington 2013:234-237; Ridington/Dane-zaa-Archive [RDA], NA-1).

RESOURCE DEVELOPMENT IN THE HAY RIVER BASIN

Hay River is the largest community in the Hay River Basin. It is a major transportation hub for the Territories and is one of Canada's largest inland ports. Hay River is also home to the only rail connection in the NWT. Historically, Hay River was not a major fur producing area, rather it was important because it provided a safe harbor between Slave and Mackenzie Rivers. This aspect is still important to the town economy (Hay River Dene Reserve Visitor Resource Centre 1994:16). There is one major highway or transport corridor in the Hay River basin, The Mackenzie Hwy (AB HWY #35 /NWT Hwy #1), which enters the Basin near Hutch Lake, paralleling the river main stem from Meander River settlement to the Town of Hay River (Government of the Northwest Territories & Government of Canada, 1984). Current resource development in the Hay River basin is primarily oil and gas and forestry (AANDC 2013), and historically (since the 1920's) consisted mainly of mining and oil and gas development (KFN 2006). The Pine Point mine, though lying just outside the Hay River watershed boundary, was in operation from 1965 to 1987, and was a significant open pit mining operation that occurred near K'átl'odeeche got'ı traditional use areas of Buffalo Lake (Ejje Túé) and Buffalo River (Ejje Túé Dehé). Oil and gas development potential in the NWT South Slave Region is considered significant (GNWT Industry Tourism and Development n.d.) and currently there are producing oil and gas fields on the northwest slope of the Caribou mountains as well as in the southeast Cameron Hills. Five natural gas wells and six oil wells were producing as of 2013 (AANDC 2014:32). These are important headwater areas for Hay River tributaries (AANDC 2014:7).

In Alberta, in the Hay-Zama Lakes region of the Hay River basin lies the Zama oilfield, potentially the largest producing oilfield in the province in Alberta and discovered between 1965 and 1969. "There are over 12,000 wellsites in the Hay-Zama lakes region and within the Dene Tha' traditional territory" (The Dene Tha' Nation 1997:5). The Zama oilfield is connected by pipeline to Norman Wells, NWT, transporting crude oil into Zama City, AB, and further connects to a Northern Alberta wide network of operating oil and gas pipelines (AANDC 2014:7). Some forestry operations are occurring around the Chinchaga River area, but there are no operating sawmills in the Basin; also minor coal and mineral reserves exist in the Basin, but there are no active coal or mineral mines (AANDC 2014:7). Agricultural activity remains low in the basin, with the market garden of the Paradise Gardens, NWT. Other industries include tourism, transportation, manufacturing, commercial fishing, trapping and arts and crafts (GNWT Industry Tourism and Development n.d.).

From an environmental perspective, "...hyper-growth in population and economic activities is putting unprecedented pressure on Alberta's landscapes. There are competing demands for oil, gas, forestry, agriculture, industrial development, housing, recreation and conservation – often on the same lands" (Spyce 2009:29). Regarding cumulative effects, "the biodiversity of the province is threatened by the degradation, fragmentation, and loss of habitat. Riparian and basin areas are under increasing pressure and the population and distribution of wildlife and fish species in the province are being altered due to habitat destruction and changing precipitation and weather patterns resulting from industrial activities and climate change" (Spyce 2009:29).

Today there are too many oil wells everywhere; there are hardly any wild animals left. Long ago it wasn't like that (Emma Metchooyeah, 15).

There are over 12,000 wellsites on our traditional territory. No benefits from that industrial activity are felt by our people.... Our people need to be out on the land, but the industrial activity makes it nearly impossible (Charlie Chissakay, 5).

“There has been tremendous oil and gas activity within the Dene Tha’ traditional territory over the past thirty years. Large-scale forestry activities are only now starting, and are anticipated to be widely felt within the traditional territory. Both of these industries have had major impacts on trapping and hunting for the Dene Tha’, yet the promises made during treaty negotiations to prevent significant impacts to hunting and trapping have yet to be kept. This is of extreme concern to the Dene Tha’ elders” (23).

“Trappers who spoke about the present trapping situation, also expressed grave concerns about clearcutting and herbicide spraying by the forestry companies. ‘If you take the large spruce away, the squirrels have no place to live. Then the martens disappear. Then the fox. Then the lynx. Then the moose have no cover for the winter,’ said Jean Pastion. ‘We have to stop this,’ he said” (64).

Today, there is a lot of logging going on, even on our lands and reserves. When we complain about it, they tell us that they have the right to do it. Then they shut us off there. Last year, I went to my cabin with a skidoo. I went to see if there were any animals, but there were hardly any. There has been too much logging on my land and the animals don't have any forest left. There were about 70 lakes on my land, where we used to trap for muskrats and beaver, but now there are no lakes. Now all the water is gone, due to the logging. You people today have to do something about that logging on our lands for future generations to come (Alphonse Scha-Sees, 81).

CHANGES DUE TO DEVELOPMENT AND/OR CLIMATE CHANGE

These comments below mention decreases in animal populations and changes in animal distribution on the land. This affects many kinds of animals. The animals affected are deer, birds, ducks, martens, beavers, fish and caribou. “Deer had been around but have left the area and moved south to the Alberta border” (Kassam and Soaring Eagle Friendship Centre 2001:23). The changes are directly linked to industrial activity and development, forestry, oil spills. “Caribou herds once populated the area but logging and industrial development have displaced them” (Kassam and Soaring Eagle Friendship Centre 2001:23). Industrial activity removes, changes, and destroys animal habitats. “Moose is a staple for Hay River Dene” (Kassam and Soaring Eagle Friendship Centre 2001:21). People’s trapping patterns and frequency that they trap have changed due to changes in animal presence.

In the past five years, I've noticed that in the springtime, I don't hear birds very much. Even ducks: we used to go out to a pond, out to see if we could find any ducks or new baby chicks. Not anymore. I know that some years my husband, oh, three years ago, he went trapping, and the martens were just steady. He brought in his trap and he'd be catching a lot of martens. The following year, nothing! Environmental change, like they say, forestry and industry, are destroying a lot of good stuff out there. For example, there used to be beavers. [Now] the ponds are slowly drying out, so even the beaver is hardly around any more. The oil spills in the water kill the fish, and sometimes it's really unbelievable (Kassam and Soaring Eagle Friendship Centre 2001:38).

Industries come into our trapping areas and they tear down the trees and forests in places where the animals live. Animals are no longer living there because of industry (Kassam and Soaring Eagle Friendship Centre 2001:38).

Well, with the logging, they have really disturbed the way people trap, like where they can trap...? I know where my husband used to hunt and trap, the animals are pretty much gone now (Kassam and Soaring Eagle Friendship Centre 2001:39).

“Areas around the community and Sandy Creek are currently used for trapping activities. One resident...has noticed that logging activity in the area has negatively affected animal populations and ‘has really disturbed the way people trap, like where they can trap’” (Kassam and Soaring Eagle Friendship Centre 2001:26).

“It's our land, and that's where we get our strength from – and it is being destroyed” (Kassam and Soaring Eagle Friendship Centre 2001:39).

When I was young, going out in the bush, it was very open. I knew the land was there for me, and I could do what I wanted. I would set traps, go fishing, set snares, and go hunting. Everything was in abundance. But now, because of all the land issues regarding government, I feel like the land doesn't belong to me anymore. Now I am reluctant to do these things because I might break the law, or I might walk onto someone else' territory. Now it doesn't seem like it's very open for me, to go out on the land (Kassam and Soaring Eagle Friendship Centre 2001:39).

Dene Tha' First Nation Youth Perspectives on Change (Excerpt from Spyce 2009:99-101).

These 18 to 25 year olds talked about the place they knew as children as being “*beautiful*” (R. 4) but that changes started to occur “*about 10 to 15 years ago*” (R. 3; R. 5; R. 15), and many say that things are different now. Although forestry and oil and gas activities, were taking place in the area on a small scale when they were children, now these industries dominate the landscape. There is “*a lot of forestry going on so there's lots of trees missing*” (R. 5). One participant described how the increased logging was altering the habitat and changing the biodiversity in the forest:

They are cutting down all the trees and that's the main thing because all the animals, they disappear once the trees are gone. If there are no trees there are no animals. There is hardly any fish, there is hardly any deer, or moose, or ducks, or geese. There is hardly any birds – usually you see eagles flying around and there is none. There is less beavers and all these wild animals - you hardly see any of them any more (R. 10).

The young people said that now "*there's a lot more oil wells*" (R. 12) and "*on our land there is pipelines, pump jacks, oil wells, [and] gas plants*" (R. 5). They talked about seeing oil on the water and discarded pipes and equipment. They mentioned being concerned about hydrogen sulfide gas (H₂S) exposure and the smell that you get when they burn off gas from the wells. They described oil spills left behind by drilling companies and they worry that the oil is leaking into the ponds and rivers. Now, as one young woman said "*there are fewer places to go hunting or fishing because people worry if there is any leakage in the oil that got into the water around the place or even that it affects the animals because the animals wander anywhere*" (R. 20).

Now, trappers have to go and check their traplines regularly to "*see what's going on*" (R. 14) in case oil companies have started drilling there. Some of the familiar places where the young adults had camped and hunted when they were children no longer exist. Instead, these places have been fenced off and are replaced by "danger" signs, pump jacks, and oil wells.

They do know, however, that the oil companies are drilling closer to the community now and as a result the young people are growing concerned about what will happen next, as this participant asks: "*They are starting to come on the reserve. You can go for a ride outside of Assumption. The pump jacks are just right over there and there. What if they come closer? What if they move right near the houses?*" (R. 12). The young adults are also worried now about the safety of their food supply and the possible contamination of the birds, fish, and animals that they eat.

Some young people, for example, stated that ducks "*just go and die by themselves – they just die*" (R. 3). The ducks, as a participant said, "*seem to be getting sick and I think they don't really taste good anymore*" (R. 5). Another young adult explained that:

Some people are worried that if they eat the ducks and stuff, because a lot of people in the summer hunt ducks, and they fear maybe that the ducks are affected with the oil. One Elder brought it to my attention that when he went hunting the duck looked like it had oil on it. So a lot of people are afraid – afraid of eating something that was contaminated (R. 20).

It is more than just the ducks that are affected – fish and other animals seem unhealthy too and it has changed how people feel about eating wild game as this young adult describes:

It is not right to the Dene Tha' people because in the olden days they used to hunt for stuff and survive off wild meat and now-a-days you can't even do that. You have to go to High Level and buy groceries and come back. It is not like a long time ago. They'd just go out and kill moose and then they would share with each other. It is not like that

now. If they kill something there is always something wrong with it . . . This one guy killed a moose and he was cutting it up and found there was a patch – it looked like puss on the inside of the moose . . . He buried it there because he didn't want to expose it to animals to eat. So he never went hunting ever again and up to this day he doesn't go hunting (R. 10).

Some young people mentioned that the land itself is not that "*healthy*" (R.15) anymore and it has changed since they were young (Spyce 2009:99-101).

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