

Literature Review

Local and Traditional Knowledge In the Hay 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 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 observations about changes in water quality, quantity, and flow. 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’átł’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 rather a reflection of limited resources and institutional insecurity (e.g., no settled land claim, no co-management arrangement) 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'átł'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/Contemporary—Fisheries		
Commercial Values/Contemporary—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 & CA 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 and Ridington 2013) to present a short piece from the Dane-zaa, demonstrating their historical presence in the Hay River Basin area. 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 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 more specific and detailed observations about the waters of the Hay River and its tributaries. 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 sources, they 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 Publically 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 six 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 searches of public databases, including the following:

- 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 on 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 declines 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 impacts (such as agriculture, oil sands mining, etc.) are uncommon. Considered within this context are studies related to community risk perceptions and those 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 Peoples' Nutrition and the Environment (CINE) provides valuable guidance on documenting risk perception 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 that address some of the following issues:

- i) Did the study involve documenting sources of Traditional Knowledge (i.e., documentation of the values, knowledge, practices and institutions of a particular Aboriginal group?
- ii) Was the study focus defined by Traditional Knowledge (i.e., 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 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 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 & CA 2006:1). In Chipewyan, the Hay River is *Hátl’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 northwestern 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 (GNWT & GC 1984:1). The basin trends to the northeast, with the result that the Northwest Territories receives the surface runoff from Alberta and British Columbia (GNWT & GC 1984:5). 6.5% of the basin is in the NWT, 19.5% in British Columbia, and the remaining 74% lies within Alberta (GNWT & GC 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; 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, runs across the northwest portion of Alberta, into the Northwest Territories, and then into 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 (GNWT & GC 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 rivers, 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 southwest portion of the basin. One of the Chinchaga’s arms comes in from BC, making this basin probe into BC at two points.

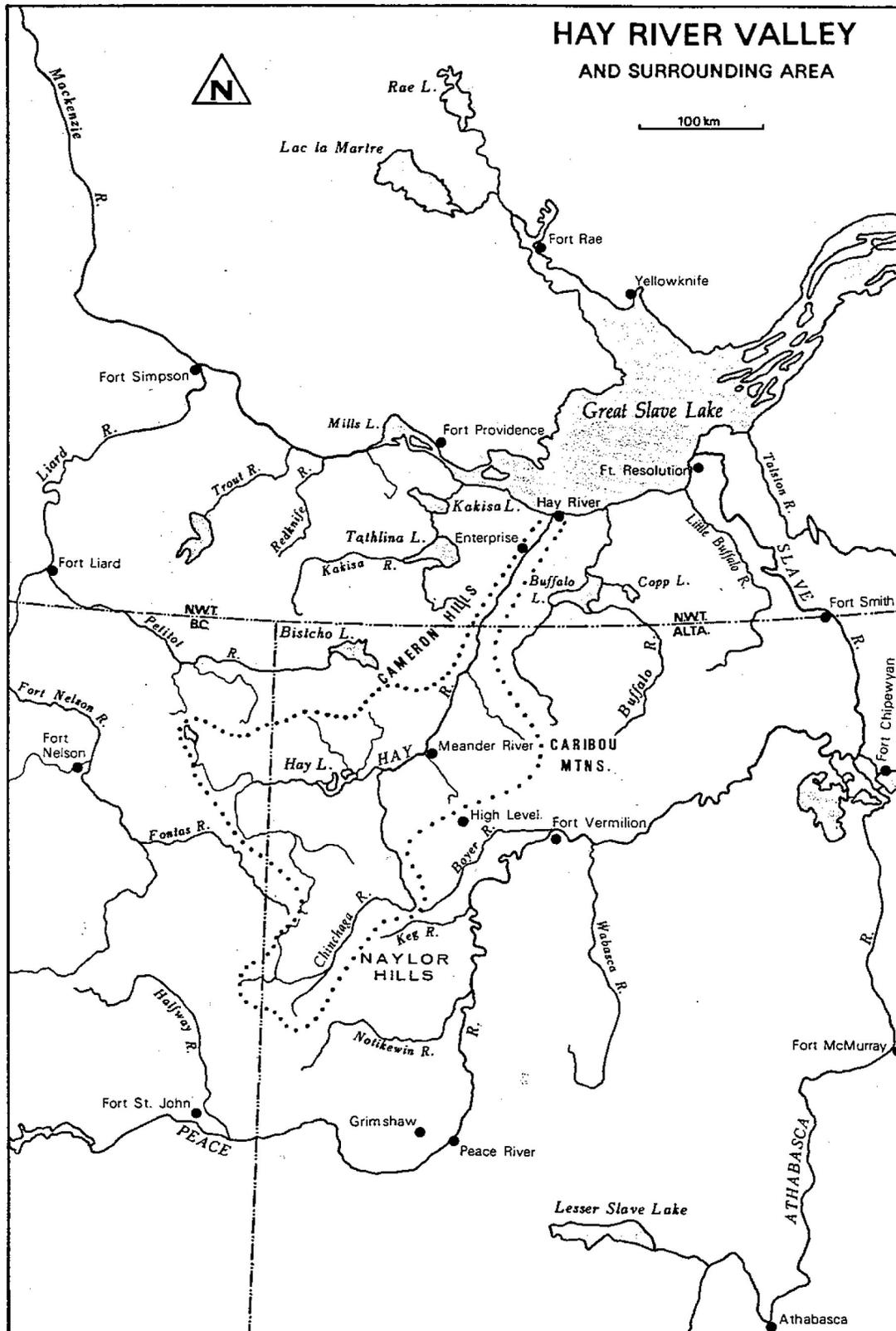


Figure 1. Hay River Valley and Surrounding Area (Harrison 1986).

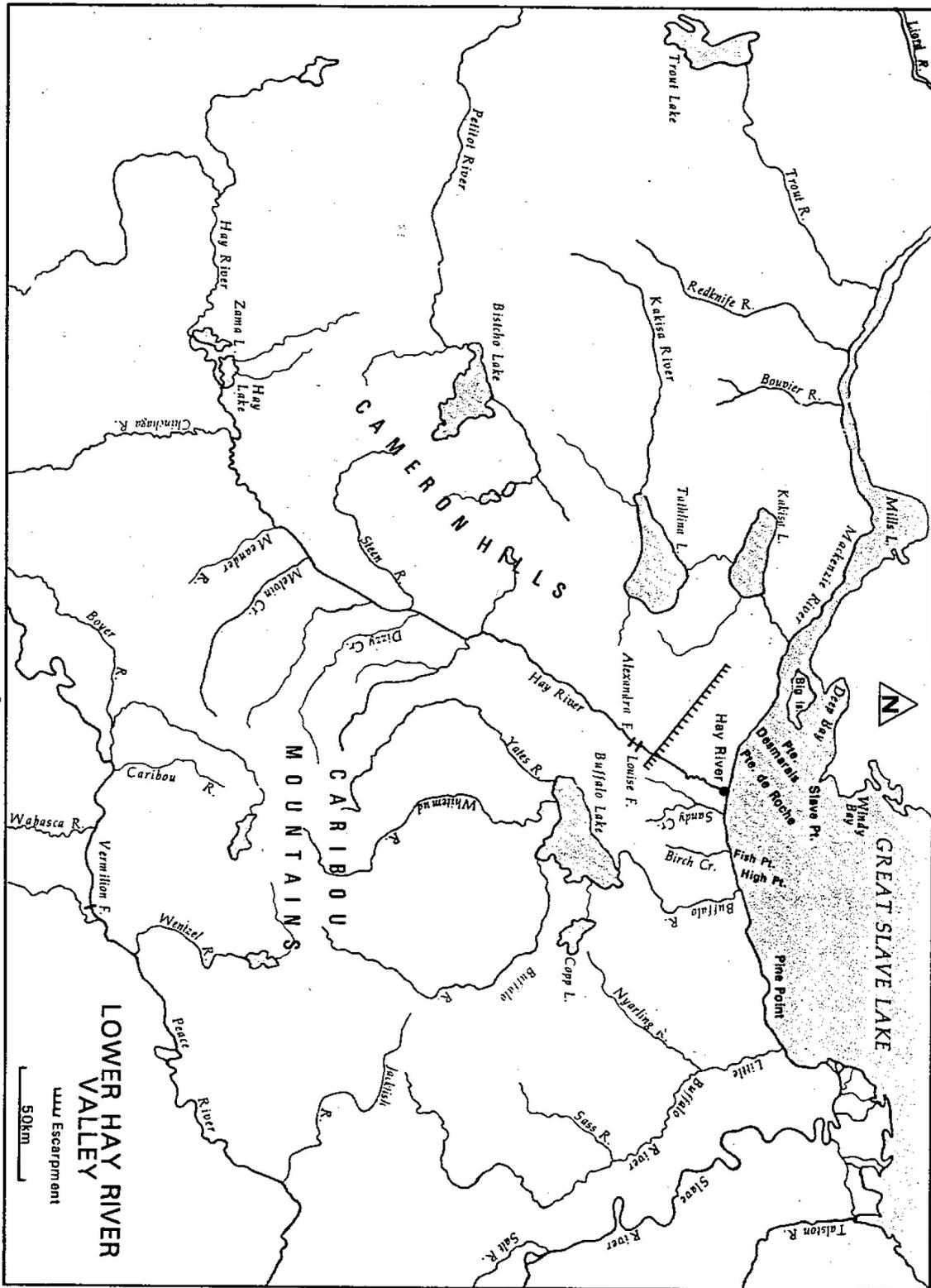


Figure 2. Lower Hay River Valley (Harrison 1986).

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 the 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 Kátł’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 **Kátł’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 in the area around the mouth of the Hay River in the 1890s when Shaatl’e, a leader, established a permanent settlement for his people on the east side of the mouth of the Hay River. This settlement is now called Old Village, and the current community is a short distance south (KFN & CA 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 to 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 in the Hay River Basin, but Métis from a number of areas in Canada and the Northwest Territories now live in 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 Peace-Athabasca Delta in the north, along the Hay, Chinchaga, and Peace rivers and south as far as Saskatchewan. Woodland Cree use legends to convey stories through 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.