

Table of International Standards Related to Human Rights at the Marlin Mine

	International Human Right Instruments	International Good Practice Standards and Guidance	GRI (G3 & MMSS) Indicators	DIHR Indicators
Consultation				
Assessment C1: Consultation with indigenous peoples	ILO Convention 169, Articles 6, 7 and 15(2) UN Declaration on the Rights of Indigenous Peoples, Articles 18, 19 and 32(2)	IFC Operational Directive 4.20 on Indigenous Peoples (1991), paragraph 15(d) IFC Performance Standard 7 on Indigenous Peoples (2006), paragraph 9 ICMM Position Statement on Mining and Indigenous Peoples (2008), commitments 3, 7 and 9	Disclosure on Management Approach – Human Rights (Indigenous peoples rights) MM5: Total number of operations taking place in or adjacent to Indigenous Peoples' territories, and number and percentage of operations where there are formal agreements with Indigenous Peoples' communities	DIHR 39, 215, 217, 231
Assessment C2: Ongoing consultation and disclosure of information	International Covenant on Civil and Political Rights, Article 19 American Convention on Human Rights, Article 13	IFC Performance Standard 1 on Social and Environmental Assessment and Management Systems, paragraphs 19 – 22; Performance Standard #4 on Community Health, Safety and Security, paragraph 5, Performance Standard 5 on Land Acquisition and Voluntary Resettlement, paragraph 9 ICMM Sustainable Development Framework, Principles 9 and 10 OECD Guidelines for Multinational Enterprises, Section III	MMSS Standard Disclosures 4.14 – 4.17 SO1: Nature, scope, and effectiveness of programs and practices that assess and manage the impacts of operations on communities (including relevant community engagement processes)	DIHR 25, 26, 28, 29, 35, 36, 38, 39, 53, 59, 119, 165, 167, 168, 217, 219, 229, 230, 231

	International Human Right Instruments	International Good Practice Standards and Guidance	GRI (G3 & MMSS) Indicators	DIHR Indicators
Land Acquisition				
Assessment L1: Fairness, equity and transparency in land acquisition	<p>Universal Declaration of Human Rights (1948), Article 17</p> <p>American Convention on Human Rights, Article 21</p> <p>Convention on the Elimination on All Forms of Discrimination against Women (1979), Articles 15 and 16</p>	<p>IFC Operational Directive 4.30, paragraphs 14-16 and IFC Performance Standard 5, paragraph 8</p> <p>ICMM, "Human Rights in the Mining & Metals Industry: Overview, Management Approach and Issues," p. 20; ICMM Sustainable Development Framework, Principle 3</p>	EC1: Direct economic value generated and distributed, including land use payments	DIHR 24, 36, 119, 213, 214, 217
Assessment L2: Long-term impacts of land sales	<p>Universal Declaration of Human Rights (1948), Article 25</p> <p>International Covenant on Economic, Social and Cultural Rights (1966), Articles 11 and 12</p> <p>ILO Social Policy (Basic Aims and Standards) Convention (C117, 1962), Article 4</p>	<p>IFC Performance Standard 1 on Social and Environmental Assessments; Performance Standard 5 on Land Acquisition and Involuntary Resettlement, paragraph 20 and 21 (and its predecessor, Operational Directive 4.30); and Performance Standard 7 on Indigenous Peoples, paragraph 12 and 13</p>	<p>SO1: Nature, scope, and effectiveness of programs and practices that assess and manage the impacts of operations on communities (including relevant community engagement processes)</p> <p>MM9: Sites where resettlements took place, the number of households resettled in each, and how their livelihoods were affected in the process</p>	DIHR 24, 26, 35, 52
Assessment L3: Collective land rights	<p>ILO Indigenous and Tribal Peoples Convention (C169, 1989), Part II</p> <p>UN Declaration on the Rights of Indigenous Peoples, 25 – 30 and 32</p>	<p>IFC Performance Standard 7 on Indigenous Peoples, paragraphs 12 – 14</p> <p>ICMM Position Statement on Mining and Indigenous Peoples, Recognition Statements 3 and 4, and Commitments 6 and 7</p>	MM6: Number and description of significant disputes relating to land use, customary rights of local communities and Indigenous Peoples	DIHR 52, 119, 131, 213, 214, 215, 216, 217, 229, 230



	International Human Right Instruments	International Good Practice Standards and Guidance	GRI (G3 & MMSS) Indicators	DIHR Indicators
Environment				
Assessment E1: Water	<p>International Covenant on Economic, Social and Cultural Rights, Article 11 and 12</p> <p>American Convention on Human Rights, Article 21 and 26 and Additional Protocol in the Area of Economic, Social and Cultural Rights, Articles 11</p> <p>Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), Article 14(2)(h)</p> <p>Convention on the Rights of the Child, Article 24(2)(c)</p> <p>Committee on Economic, Social and Cultural Rights, General Comment 15</p> <p>UN Declaration on the Rights of Indigenous Peoples, Article 29</p>	<p>IFC Performance Standards 1 on Social and Environmental Assessment and Management Systems, 3 on Pollution Prevention and Abatement, 4 on Community Health, Safety and Security and 6 on Biodiversity Conservation and Sustainable Natural Resource Management</p> <p>IFC General EHS Guidelines and Environmental, Health and Safety Guideline for Mining Industry:</p> <p>Global Compact Principles 7 and 8</p> <p>ICMM Sustainable Development Framework, Principles 4 to 7</p> <p>OECD Guidelines for Multinational Enterprises, Section V</p>	<p>Disclosure of Management Approach – Environmental</p> <p>EN8: Total water withdrawal by source</p> <p>EN9: Water sources significantly affected by withdrawal of water</p> <p>EN10: Percentage and total volume of water recycled and reused</p> <p>EN21: Total water discharge by quality and destination</p> <p>EN22: Total weight of waste by type and disposal method</p> <p>MM3: Total amounts of overburden, rock, tailings and sludges and associated risks</p> <p>EN23: Total number and volume of significant spills</p> <p>EN24: Weight of transported, imported, exported, or treated hazardous waste</p> <p>EN25: Water bodies and related habitats significantly affected by discharges or water and runoff</p> <p>EN28: Fines and sanctions for non-compliance with environmental laws and regulations</p> <p>EN30: Total environmental protection expenditures and investments</p>	<p>DIHR 23, 28, 29, 161, 162, 166, 167, 168, 216</p>

	International Human Right Instruments	International Good Practice Standards and Guidance	GRI (G3 & MMSS) Indicators	DIHR Indicators
Assessment E2: Human Health and Well-being	<p>Universal Declaration of Human Rights, Articles 17 25(1)</p> <p>International Covenant on Economic, Social and Cultural Rights, Articles 11 and 12</p> <p>American Convention on Human Rights, Article 21 and 26 and Additional Protocol in the Area of Economic, Social and Cultural Rights, Articles 10 and 11</p> <p>International Convention on the Elimination of All Forms of Racial Discrimination, Article 5</p> <p>Convention on the Elimination of All Forms of Discrimination against Women, Articles 11, 12 and 14</p> <p>Convention on the Rights of the Child, Article 24 and 27</p> <p>General Comments 4 and 14 of the Committee on Economic, Social and Cultural Rights</p> <p>UN Declaration on the Rights of Indigenous Peoples, Article 29</p>	<p>IFC Performance Standards 1 on Social and Environmental Assessment and Management Systems, 3 on Pollution Prevention and Abatement, 4 on Community Health, Safety and Security and 6 on Biodiversity Conservation and Sustainable Natural Resource Management</p> <p>IFC General EHS Guidelines and Environmental, Health and Safety Guideline for Mining Industry</p> <p>Global Compact Principles 7 and 8</p> <p>ICMM Sustainable Development Framework, Principles 4 to 7</p> <p>OECD Guidelines for Multinational Enterprises, Section V</p>	<p>MM1: Amount of land disturbed or rehabilitated</p> <p>LA8: Education, training, counseling, prevention and risk-control programs to assist family members or community members regarding serious diseases</p>	<p>DIHR 23, 29, 30, 161 – 168, 199, 219</p>
Assessment E3: Post-closure	Same as E1 and E2 above	<p>ICMM, “Planning for Integrated Mine Closure: Toolkit”</p> <p>ICMM, “Financial Assurance for Mine Closure and Reclamation”</p>	<p>Disclosure of Management Approach – Environmental / Society (Closure Planning)</p> <p>MM10: Number and percentage of operations with closure plans</p> <p>MM1: Amount of land disturbed or rehabilitated</p> <p>EN13: Habitats restored</p>	<p>DIHR 37, 219</p>



	International Human Right Instruments	International Good Practice Standards and Guidance	GRI (G3 & MMSS) Indicators	DIHR Indicators
Labour				
Assessment L1: Right to work	<p>Universal Declaration of Human Rights, Article 23(1)</p> <p>ILO Declaration of the Fundamental Principles and Rights at Work</p> <p>Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87); Right to Organise and Collective Bargaining Convention, 1949 (No. 98); Forced Labour Convention, 1930 (No. 29); Abolition of Forced Labour Convention, 1957 (No. 105); Minimum Age Convention, 1973 (No. 138); Worst Forms of Child Labour Convention, 1999 (No. 182); Equal Remuneration Convention, 1951 (No. 100); and Discrimination (Employment and Occupation) Convention, 1958 (No. 111)</p> <p>International Covenant on Economic, Social and Cultural Rights, Article 6</p> <p>American Convention on Human Rights, Article 26 and additional protocol on economic, social and cultural rights, Article 6</p> <p>ILO Convention 169, Articles 15(2), 20(1) and (2)</p> <p>UN Declaration on the Rights of Indigenous Peoples, Article 17</p>	<p>Global Compact, Principles 4, 5 and 6</p> <p>IFC Performance Standard #2 on Labor and Working Conditions, paragraphs 6, 11, 14 and 15</p> <p>OECD Guidelines for Multinational Enterprises, General Policy 4 and Section IV, 1(b)–(d) and 5</p> <p>Global Compact, Principle 2 (non-complicity re: contractors)</p>	<p>Disclosure of Management Approach – Labour / Human Rights</p> <p>LA1: Total workforce by employment type, employment contract and region</p> <p>LA2: Total number and rate of employee turnover by age group, gender and region</p> <p>LA11: Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings</p> <p>LA13: Breakdown of employees according to gender, age group, minority group membership and other indicators of diversity</p> <p>EC7: Procedures for local hiring</p> <p>HR4: Total number of incidents of discrimination and actions taken</p> <p>HR6 and HR7: Operations identified as having significant risk of child or forced labour and measures taken</p> <p>HR2: Percentage of significant contractors that have undergone screening on human rights</p> <p>EC6: Spending on locally-based suppliers</p>	<p>DIHR 56, 75, 83, 85, 86, 88, 90, 92 – 95, 103, 115, 116, 122, 123, 130, 149, 222, 228, 244, 276, 297 – 302, 304 – 308, 333</p>
Assessment L2: Just and favourable conditions of work	<p>Universal Declaration of Human Rights, Article 23(1) – 23(3) and 24</p> <p>ILO Declaration of the Fundamental Principles and Rights at Work</p> <p>International Covenant on Economic, Social and Cultural Rights, Article 7</p> <p>American Convention on Human Rights, Article 26 and additional protocol on economic, social and cultural rights, Article 7</p> <p>ILO Convention 169, Articles 20(2)</p> <p>UN Declaration on the Rights of Indigenous Peoples, Article 17</p>	<p>IFC Performance Standard #2 on Labor and Working Conditions, paragraph 6 – 8</p> <p>OECD Guidelines for Multinational Enterprises, Section IV, paragraph 4(a)</p> <p>Global Compact, Principle 2 (non-complicity re: contractors)</p>	<p>LA3: Benefits to full-time employees that are not provided to temporary and part-time employees</p> <p>LA10: Average hours of training per year per employee</p> <p>LA12: Percentage of employees receiving regular performance reviews</p> <p>LA14: Ratio of basic salary of men to women by employee category</p> <p>EC5: Ratio of entry level wage to local minimum wage</p>	<p>DIHR 13 – 15, 17 – 20, 32, 34, 42 – 51, 66 – 74, 124 – 129, 144, 221, 223 – 227, 275 – 282, 297, 303, 310, 311, 313, 314, 316 – 329</p>

	International Human Right Instruments	International Good Practice Standards and Guidance	GRI (G3 & MMSS) Indicators	DIHR Indicators
Assessment L3: Safe and healthy conditions of work	<p>Universal Declaration of Human Rights, Article 23(1)</p> <p>ILO Declaration of the Fundamental Principles and Rights at Work and ILO Convention 167 on Occupational Health and Safety</p> <p>International Covenant on Economic, Social and Cultural Rights, Article 7</p> <p>American Convention on Human Rights, Article 26 and additional protocol on economic, social and cultural rights, Article 7</p> <p>ILO Convention 169, Article 20(2) and (3)</p> <p>UN Declaration on the Rights of Indigenous Peoples, Article 17</p>	<p>IFC Performance Standard #2 on Labor and Working Conditions, paragraph 16</p> <p>OECD Guidelines for Multinational Enterprises, Section IV, paragraph 4 and Section V, paragraph 7</p>	<p>LA6: Percentage of total workforce represented in formal joint management-worker health and safety committees</p> <p>LA7: Rates of injury, occupational diseases, lost days, absenteeism and number of work-related fatalities</p> <p>LA8: Education, training, counseling, prevention and risk-control programs to assist workforce members regarding serious diseases</p> <p>LA9: Health and safety topics covered in formal agreements with trade unions</p>	<p>DIHR 138, 139, 145, 146, 148, 150 – 160. 296, 331</p>
Assessment L4: Mechanisms to protect workers rights	<p>Universal Declaration of Human Rights, Article 23(4)</p> <p>ILO Declaration of the Fundamental Principles and Rights at Work</p> <p>International Covenant on Economic, Social and Cultural Rights</p> <p>American Convention on Human Rights, Article 26 and additional protocol on economic, social and cultural rights, Article 8</p> <p>ILO Convention 169, Articles 20(2) to (4)</p> <p>UN Declaration on the Rights of Indigenous Peoples, Article 17</p>	<p>Global Compact, Principle 3</p> <p>IFC Performance Standard #2 on Labor and Working Conditions, paragraph 9, 10 and 13</p> <p>OECD Guidelines for Multinational Enterprises, General Policies 9 and Section IV, paragraphs 1(a), 2, 3, 6, 7 and 8</p> <p>Global Compact, Principle 2 (non-complicity re contractors)</p>	<p>LA4: Percentage of employees covered by collective bargaining agreements</p> <p>LA5: Minimum notice periods regarding operational changes</p> <p>MM4: Number of strikes and lock-outs exceeding one week's duration</p> <p>HR5: Operations identified in which freedom of association and collective bargaining may be at significant risk, and actions taken to support these rights</p>	<p>DIHR 84, 128, 149, 152, 153, 244, 245, 246, 247, 296, 299, 302, 330, 332</p>



	International Human Right Instruments	International Good Practice Standards and Guidance	GRI (G3 & MMSS) Indicators	DIHR Indicators
Security				
Assessment S1: Interaction with public security forces	<p>Universal Declaration of Human Rights (1948), Article 3, 5, 20, 23(4)</p> <p>International Covenant on Civil and Political Rights (1966), Article 6, 7, 9, 21 and 22</p> <p>International Covenant on Economic, Social and Cultural Rights (1966), Article 8</p> <p>Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (1984), Articles 2 (1), 4 and 10</p> <p>UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials (1990)</p> <p>UN Code of Conduct for Law Enforcement Officials (1979)</p> <p>UN Declaration on the Rights of Indigenous Peoples, Article 7</p>	<p>Voluntary Principles on Security and Human Rights, Parts 1 and 2</p> <p>IFC Performance Standard #4 on Community Health, Safety and Security, paragraphs 14 and 15</p> <p>Global Compact, Principle 2 (non-complicity re: public security forces)</p>	Disclosure of Management Approach – Human Rights (Security)	DIHR 100, 200, 206, 207, 248

	International Human Right Instruments	International Good Practice Standards and Guidance	GRI (G3 & MMSS) Indicators	DIHR Indicators
Assessment S2: Interaction with private security firms	<p>Universal Declaration of Human Rights (1948), Article 3, 5, 12, 20, 21, 23(4)</p> <p>International Covenant on Civil and Political Rights (1966), Article 6, 7, 9, 17, 21 and 22</p> <p>International Covenant on Economic, Social and Cultural Rights (1966), Article 8</p> <p>Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (1984), Articles 2 (1), 4 and 10</p> <p>UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials (1990)</p> <p>UN Code of Conduct for Law Enforcement Officials (1979)</p> <p>UN Declaration on the Rights of Indigenous Peoples, Article 7</p> <p>ILO Convention 169, Articles 3 and 20(3)</p> <p>ILO Occupational Safety and health Convention (C155, 1981), Articles 4 and 5</p>	<p>Voluntary Principles on Security and Human Rights, Parts 1 and 3</p> <p>IFC Performance Standard #4 on Community Health, Safety and Security, paragraphs 13 and 15</p> <p>Global Compact, Principle 2 (non-complicity re: private security firms)</p>	<p>Disclosure of Management Approach – Human Rights (Security)</p> <p>HR8: Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations</p>	<p>DIHR 83, 99, 102 – 104, 107 – 109, 195 – 197, 201, 204, 205, 208, 209, 254, 258, 259, 269, 270, 285</p>
Social Investment				
Assessment S11: Direct payments to government	<p>International Covenant on Economic, Social and Cultural Rights</p> <p>American Convention on Human Rights, Article 26 and Additional Protocol in the Area of Economic, Social and Cultural Rights</p> <p>ILO Convention 169, Article 15(2)</p>	<p>OECD Guidelines for Multilateral Enterprises, General Policies #1; Section X "Taxation"</p> <p>ICMM Sustainable Development Framework, Principle 9, ICMM Position Statement on Mining and Partnerships for Development and ICMM Position Statement on Mining and Indigenous Peoples, Commitment #7</p> <p>Additional standards for combating corruption and promoting transparency of payments to governments: Global Compact, Principle 10 and ICMM SD Framework, Principle 1, Extractive Industry Transparency Initiative, OECD Guidelines for Multinational Enterprises, Section VI "Combating Bribery".</p>	<p>Disclosure of Management Approach – Economic / Human Rights</p> <p>EC1: Direct economic value generated and distributed</p> <p>EC6: Spending on locally-based suppliers</p> <p>EC8: Development and impact of infrastructure investments and services</p> <p>EC9: Significant indirect economic impacts</p> <p>SO2 – SO6: Anti-corruption and public policy practices</p> <p>HR1: Significant investment agreements that include human rights clauses or that have undergone human rights screening</p>	<p>DIHR 215</p>



	International Human Right Instruments	International Good Practice Standards and Guidance	GRI (G3 & MMSS) Indicators	DIHR Indicators
Assessment SI2: Local development projects	<p>Universal Declaration of Human Rights, Articles 23, 25, 26</p> <p>International Covenant on Economic, Social and Cultural Rights, Articles 6, 11, 12, 13</p> <p>Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights, Articles 6, 10,13</p> <p>ILO Convention 169, Articles 15(2)</p>	<p>OECD Guidelines for Multilateral Enterprises, General Policies #1</p> <p>ICMM Sustainable Development Framework, Principle 9; ICMM Position Statement on Mining and Partnerships for Development; and ICMM Position Statement on Indigenous Peoples, Commitment #7</p> <p>IFC Performance Standard #7 on Indigenous Peoples, paragraph 10</p> <p>UN Global Compact and UNIFEM Women's Empowerment Principles #6</p> <p>UN Common Approach on Human-Rights Based Approaches to Development</p>	<p>Disclosure of Management Approach – Economic / Human Rights</p> <p>EC8: Development and impact of infrastructure investments and services</p>	DIHR 215
Assessment SI3: Social investment to address negative impacts	<p>All the human rights that are at risk of negative impact, as identified above</p> <p>ILO Convention 169, Article 15(2)</p>	<p>IFC Performance Standard 1: Social and Environmental Assessment and Management Systems, paragraph 13-16 and Performance Standard #7 on Indigenous Peoples, paragraph 8</p> <p>ICMM Sustainable Development Framework, Principle 3 and ICMM Position Statement on Mining and Indigenous Peoples, paragraph 6</p>	<p>SO1: Nature, scope, and effectiveness of programs and practices that assess and manage the impacts of operations on communities</p> <p>MM10: Number and percentage of operations with closure plans</p>	DIHR 27, 38, 39, 118, 52, 59, 215, 219, 230, 231

	International Human Right Instruments	International Good Practice Standards and Guidance	GRI (G3 & MMSS) Indicators	DIHR Indicators
Access to Remedy				
AR1: Access to remedy	<p>Universal Declaration of Human Rights, Article 8</p> <p>International Covenant on Civil and Political Rights, Article 2</p> <p>American Convention on Human Rights, Article 25</p> <p>Declaration of Basic Principles of Justice for Victims of Crime and Abuse of Power, General Assembly resolution 40/34</p> <p>Basic Principles and Guidelines on the Right to a Remedy and Reparation for Victims of Gross Violations of International Human Rights Law and Serious Violations of International Humanitarian Law, General Assembly resolution 60/147</p> <p>ILO Convention 169, Article 12</p> <p>UN Declaration on the Rights of Indigenous Peoples, Article 28</p>	<p>ICMM “Human Rights in the Mining & Metals Industry: Handling and Resolving Local Level Concerns & Grievances”</p> <p>IFC Performance Standard #1 on Social and Environmental Assessment and Management System, paragraph 23; Performance Standard 5 on Land Acquisition and Voluntary Resettlement, paragraph 10</p> <p>IFC Practice Note on “Addressing Grievances from Project-Affected Communities”</p>	<p>Disclosure of Management Approach – Human Rights (Grievance Mechanisms)</p> <p>MM7: The extent to which grievance mechanisms were used to resolve dispute relating to land use, customary rights of local communities and Indigenous Peoples, and the outcomes</p> <p>SO8: Fines and sanctions for non-compliance with laws and regulations</p>	DIHR 23, 29, 36, 39, 52, 166, 168, 208, 219
AR2: Use of legal System	<p>Universal Declaration of Human Rights, Articles 9 - 11</p> <p>International Covenant on Civil and Political Rights, Articles 9 and 14</p> <p>American Convention on Human Rights, Article 8</p>	<p>ICMM “Human Rights in the Mining & Metals Industry: Handling and Resolving Local Level Concerns & Grievances”</p> <p>IFC Practice Note on “Addressing Grievances from Project-Affected Communities”</p>	Disclosure of Management Approach – Human Rights (Grievance Mechanisms)	DIHR 1, 2, 3, 4, 7, 8, 10.



Minister
of Canadian Heritage



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Ottawa, Canada K1A 0M5

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Dear Mr. Morin:

I am pleased to advise you that I have recently designated François Beaulieu II a person of national historic significance.

When it met in Ottawa in November 1999, the Historic Sites and Monuments Board of Canada considered the national significance of François Beaulieu II and recommended his designation. Additional information on this matter, including an excerpt from the minutes of that meeting and a copy of the research paper prepared for the Board's consideration, is enclosed for reference.

Although the timing of the plaque unveiling ceremony has not yet been established, Ms. Josie Weninger, Field Unit Superintendent, Southwest Northwest Territories, or her designate will advise you as plans for the event are developed. For further details, you are invited to contact Ms. Weninger at (867) 872-7943.

In view of her interest in this matter, I have forwarded a copy of this letter to the Secretary of State (Children and Youth) and to the Northwest Territories Minister of Education, Culture and Employment.

Please accept my best wishes.

Yours sincerely,

Sheila Copps

Enclosures

c.c.: The Honourable Ethel Blondin-Andrew, P.C., M.P.
The Honourable Jake Ootes, M.L.A.
Mr. Charles Arnold

Canada

HISTORIC SITES AND MONUMENTS BOARD OF CANADA

Excerpt From the Minutes of the November 1999 Meeting

François Beaulieu II (died 1872)

Discussion

On the basis of the information before it, the Board found that François Beaulieu II was one of the founding fathers of the Métis in the Northwest Territories. As head of the Beaulieu family and as a Chipewyan-Métis trading chief, his example established a pattern of Métis leadership that endured beyond his time.

He was also seen to be a dominant figure in the far northwest during the critical period from early European contact with the Dene, through the competitive years of the fur trade, and ultimately to the end of the Hudsons Bay Company monopoly and the birth of Canada. As one of the pre-eminent Métis leaders of his age, Beaulieu's work, both for the fur companies and later as an independent trader, helped to establish the economic and social links between the people of the Mackenzie River Basin and what, in his lifetime, became Canada. His collaboration with the First and Second Franklin Expeditions, and later with Father Émile Petitot, played a critical role in the evolving European understanding of the western Arctic region. Beaulieu's influence as a free trader in the age of the fur trade monopoly was critical in helping to develop an independent economic base for the Métis of the far north.

Beaulieu was a contributing factor to the establishment of the Roman Catholic Church in the western Arctic (the Church played a significant role in the evolution of Métis society); and, his legacy represents an enduring and significant historical presence in northern Alberta and the Northwest Territories.

Recommendations

Designation: The Board recommended

François Beaulieu II (died 1872) for designation as a person of national historic significance.

Commemorative intent: The Board recommended François Beaulieu II for designation because

he was one of the founding fathers of the Métis in the Northwest Territories;

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he was a dominant figure in the far northwest during the critical period from early European contact with the Dene, through the competitive years of the fur trade, and ultimately to the end of the Hudsons Bay Company monopoly and the birth of Canada;

he was a contributing factor to the establishment of the Roman Catholic Church in the western Arctic (the Church played a significant role in the evolution of Métis society); and,

his legacy represents an enduring and significant historical presence in northern Alberta and the Northwest Territories.

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HISTORIC SITES AND MONUMENTS BOARD OF CANADA

FALL 1999 MEETING
OTTAWA, ONTARIO, NOVEMBER 21-22, 1999
NARRATIVE AGENDA
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COMMISSION DES LIEUX ET MONUMENTS HISTORIQUES DU CANADA

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OTTAWA, ONTARIO, DU 21 AU 22 NOVEMBRE 1999
ORDRE DU JOUR DÉTAILLÉ
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La présence des Micmacs en Gaspésie

Picking Up the Threads: Métis History in the Mackenzie Basin

Historic Sites and Monuments Board of Canada

Agenda Paper

Title: François Beaulieu II: Son of the last *coureurs de bois* in the Far Northwest

Source: Chris Hanks
Hanks Heritage Consulting
Yellowknife, Northwest Territories

1999-51

Introduction

Beaulieu

François Beaulieu was one of the founding fathers of the Métis in the Northwest Territories. Métis historian Adrien-Gabriel Morice referred to him as the "...dean of the French Métis in the Canadian Northwest" (1908: 15-16). The significance of François Beaulieu goes beyond the man however, for it was as head of the Beaulieu family and as a Chipewyan-Métis trading chief that his example established a pattern of Métis leadership that endured beyond his time.

Métis history in the Northwest Territories is family history on a grand scale. Given this, there is no more appropriate way to introduce the story of the Métis of the Mackenzie River than to recall the life of François Beaulieu II¹, referred to by the Oblates as "Le patriarche" of the Beaulieu clan. The Beaulieu are one of the great and enduring Métis and Dene families of the far northwest.

To understand why the life of François Beaulieu is potentially of national historic significance, it is necessary to examine how, in life, he stood at a cross road of change in the far northwest. François Beaulieu broke the stereotype of the Métis canoe man who lived his life as a beast of burden for the European traders. He was not a passive man awash in the events of his time. François Beaulieu stood before the storm of change and forged, by will, those around him. Beaulieu was a transitional figure who bridged the old world of the late 18th century independent *coureurs de bois*, from whom he descended, through the years of the Hudson's Bay Company (HBC) monopoly with late 19th century Métis free traders. His struggle against the control of the giants of the fur trade benefitted the people he led. More broadly, Beaulieu helped shape the

¹ Today descendants of François Beaulieu commonly differentiate him from his father, who guided Sir Alexander Mackenzie, by the "II" notation. He is variously referred to in the historic literature as "Le patriarche" and "le vieux", or "old man" Beaulieu.

relations between Europeans and Aboriginal peoples with whom they traded in the Mackenzie River drainage.

He is reputed to have been born near Great Slave Lake in 1771, the year after Samuel Hearne became the first European to visit the lake (Morice 1908: 15-16). Conceived by the union of a Chipewyan mother and a *coureurs de bois* father, François described his father as being of French and Cree origins. He grew up at the cusp of direct European contact with the Athapaskan speaking Dene² people of the Mackenzie River drainage. Beaulieu was, in his time, a *Northwestern*, Hudson's Bay man, free trader, Chipewyan chief and Métis leader.

When François Beaulieu II died in 1872 at Salt River, near modern Fort Smith, Canada had been confederated for five years and his old nemesis the Hudson's Bay Company had given up its rights to Rupert's Land three years earlier. While the far north was a relatively quiet place by the 1870's following the turmoil of European contact and competition in the fur trade, the shadow of those great historic events would continue to shape the future of the Northwest Territories.

François Beaulieu was a key player whose influence spanned the critical century from contact to nationhood. When he was born, the land was primordial, governed by the ancient relationship between the Dene and the animals. By the time he died, the future of the Mackenzie River was destined to fall to the evolving nation-state known as Canada. The Métis, perhaps unwittingly, played a significant role in ensuring the dominance of Canada in the western Arctic. This occurred in significant part as a result of the kinship links formed between the Métis and the Dene, and the ancient link of the northern Métis with their relatives to the south on the prairies and east toward the Great Lakes. While the great fur trade companies supplied an economic tie to Canada, the Métis provided one in kinship.

The Study of Metis History in the Far Northwest

The Historic Sites and Monuments Board of Canada (HSMBC) made a series of recommendations to the National Historic Sites Directorate of Canada (NHSD), after a review of the commemoration of Northern Native History, in February of 1989 (Goldring 1990: 1). Two of these recommendations form the basis of what has been an ongoing collaboration between the NHSD and the Métis Heritage Association (MHA) of the Northwest Territories over the last nine years. The relevant recommendations to NHSD were:

- To commit more resources to research and planning for northern Aboriginal commemorations; and
- To develop thematic frameworks for Subarctic Native history (Goldring 1990: 1).

²

The Dene are comprised of the Chipewyan, Yellowknife, Dogrib, Slavey, Mountain, Sahtu, Hare and Gwich'in.

It was realized that to develop an appropriate framework for the northern Subarctic, NHSD needed to take the time necessary to understand the "heritage" agendas of the Aboriginal peoples of the Northwest Territories and, in several instances, to allow time for land claims to be settled (Goldring and Hanks 1991: 29).

Given the incomplete state of knowledge on Dene and Métis history and the lack of thoughtful historiography on Aboriginal perspectives of the past, it soon became obvious that compiling a comprehensive thematic study, such as Terry Smythe had done in *Thematic Study of the Fur Trade in the Canadian West* (1991), would not be an expedient task. Many western trained anthropologists and historians were, in the early 1990s, still trying to come to grips with the significance of oral history and coping with the alternative perspectives of the past being put forward by Aboriginal people (Trigger 1997: vii - xii, Helm and Gillespie 1981). Aboriginal history at that time was still largely being written based on the perceptions of the dominant Euro-Canadian culture. While that situation has not entirely changed, it is more obvious to scholars today that many Aboriginal people define themselves based on their "historical" relationship to their homelands (Ray 1996:1, Hanks 1998, Andrews and Zoe 1998). The significance of place and landscape, and the lack of emphasis on chronological sequence characteristic of many Aboriginal perspectives of the past, were not so apparent to academics when the first papers on Dene history went to the HSMBC (Hanks 1994, 1996a and 1996b, Heine 1997).

In compiling this paper, the Métis elders suggested that the landscape approach of "the land as a repository of history", that is so critical to understanding Dene perspectives of the past, was not necessarily the correct way to approach Métis history. Métis history is first and foremost family history. An attempt is made in this paper to blend a sense of place with the primacy of family to put François Beaulieu in historical perspective.

The National Historic Sites Directorate (NHSD) opened discussions with the Métis Heritage Association in 1990. One of the first issues raised by, then President, Gary Bohnet was the inappropriateness of treating Dene and Métis history as one. Bohnet's argument was that while many Métis in the Northwest Territories are closely related to the Dene, the two groups are culturally distinct and require separate historical treatments (pers. comm. 1990). After lengthy discussions both with the Métis and within NHSD, it was decided, late in 1990, to split the proposed thematic study into two.

This paper is part of an ongoing collaboration between the Métis Heritage Association and Parks Canada. The relationship has promoted an improved understanding of the significance of the Mackenzie River Basin Métis to the history of Canada. Mackenzie River Basin Métis history is not a topic that has been widely researched, and where a thematic structure was readily evident from the corpus of historical literature. Until recently, the history of the Métis of the Mackenzie River basin was submerged in the ethnology of the Dene and the northern Cree, and the histories of the fur traders and missionaries. It is not that the Métis were not considered important. They were. It is simply that their history was woven into the bigger story and was not fully recognized on its own merits. Collaboration by the Métis Heritage Association and Parks Canada in 1998,

lead to the limited circulation of *Picking up the Threads: Metis History in the Mackenzie Basin* (Métis Heritage Association and Parks Canada 1998). This volume has laid the ground work for the ongoing study of Métis social history in the Mackenzie River Basin.

After further consultation between the Métis community and Parks Canada in 1998, it was decided to send a paper forward to the HSMBC that goes to the heart of some of the themes introduced in *Picking up the Threads*.... A biography of François Beaulieu II was chosen as the topic of the first HSMBC submission on the Mackenzie River Basin Métis because he is a central figure in northern Métis history. The Salt River First Nation and the Fort Smith Metis Local were consulted during the preparation of this paper and both strongly support this submission. Both organizations have large numbers of Beaulieu descendants in their membership rolls.

Métis and Dene people in the north understand the continuing significance François Beaulieu II. He is the subject of research by several avocational historians who are taking the initiative and recording the oral legacy of him as part of their family histories. For many Métis in the Northwest Territories, descending from François Beaulieu is to trace your lineage to a founding father (Allerston 1999: 49-50). Influential in his own time, the true significance of François Beaulieu II is his enduring presence in the Far Northwest 128 years after his death, according to descendant Frank Laviolette (1999 pers. comm.). The HSMBC is being asked to consider a figure who stands on his own historic merits, and who's story embodies many significant themes of Métis history.

This paper provides the Board with the opportunity to consider a different genre of northern Aboriginal historical commemoration from the landscapes and sites of the Gwich'in, Sahtu, and Inuit. Beaulieu offers the chance to address an individual Aboriginal leader within the context of his times. The Beaulieu proposal could, if acceptable to the HSMBC, provide balance and a broader perspective to the growing package of northern Aboriginal commemorations.

Biography of François Beaulieu

The Opening of Great Slave Lake

The European origins of the earliest Métis families at Great Slave Lake in the Mackenzie River Basin of the Northwest Territories, appear to be in the fur trade prior to the defeat of New France in 1763. The *coureurs de bois*, who found their way to Great Slave Lake ahead of the North West Company in the late 18th century, had family and trade ties to Quebec and the mixed-heritage populations of the Great Lakes. *Coureurs de bois* descendants in the Mackenzie River Basin mixed with western Canadian ("Red River") Métis and later Northern Métis families from the Hudson's Bay Company period of Scottish and Dene descent (Devine 1998: 1, Payment 1998: 71-72, Petitot 1875: 18). The Northern Métis of the Mackenzie River Basin are of mixed Aboriginal heritage, but generally they trace their families either to Dene or Cree origins (Devine 1998:1).

While the origins of the Beaulieu family in the Northwest Territories still have some uncertainties, historian Diane Payment has reconstructed a probable chain of events. It is believed that Pierre Hudon dit Beaulieu, who arrived in Canada from Anjou, France in 1665, was the common ancestor. He was a soldier in the Grandfontaine company of the Carignan regiment. He married Marie Gobeil at Québec City in 1676. They had two sons: Jean-Baptiste who married Marie-Angélique Gagnon and François who married Marie-Angélique Emond (Payment 1999 pers. com., Jetté 1983: 271).

François and M.A. Emond had a son named François who was baptized at La Pocatière in 1723. The given surname was now simply Beaulieu rather than Hudon dit Beaulieu. Around 1750, the family moved to the seigneurie of St-Ours along the Richelieu River south-east of Montreal. This region is now known as la Montérégie (Jetté 1983).

François Beaulieu II told Father Emile Petitot in 1863 that his father, also named François Beaulieu, came to the Northwest with the Company of the Sioux (Petitot 1875:18, 1887: 312). In another account he mentioned that his father was descendant from the marriage of a *Coueurs de Bois* and a Cree woman. Whether he spoke of his father or grandfather, the potential for the connection remains valid. The Company of the Sioux was chartered in 1727 and eventually had establishments in present-day northern Saskatchewan before the government of New France closed its western posts in 1760. *Coueurs de bois* who stayed behind were reluctant to go back either because of the new English regime or because they already had families in the northwest (Payment 1999 pers. comm.). While the French fur trade companies do not appear to have penetrated beyond 55° north latitude into what is now Saskatchewan, individual *coueurs de bois* who stayed in the Northwest after the cession of the French company in 1760 did move farther north (Payment 1999 pers. comm., Petitot 1875:18). The key link for the Beaulieu family to this early period is François Beaulieu II's statement to Father Petitot that his father had come north with the La Compagnie des Sioux (1887: 312).

François Beaulieu (I)'s great grandson told George Blanchet in the early 1920's, that "...the father of my grandfather was a Frenchman of the Churchill [English River] brigade..." (Blanchet 1922-1924). François Beaulieu (I) was associated in the late 1780's with English Chief (Nastabek). English Chief had prior to the mid-1780's, traded between Fort Churchill and Lake Athabasca and Great Slave Lake (Rae 1963: 80) (see Figure 1 and Figure 2). This connection would have provided the elder Beaulieu with an introduction to Lake Athabasca and Great Slave Lake. Association with English Chief, who was Sir Alexander Mackenzie's guide, might also explain how François Beaulieu (I) became one of the boatmen on Mackenzie's 1789 journey down the Mackenzie River and his 1793 expedition to the Pacific (Morice 1908: 15-16, Lamb 1970, Breton 1960: 99).

Petitot's account, based on information provided by François Beaulieu II, strongly suggests that a Beaulieu and other *hommes libres* (free men) such as La Camarade de Mandeville, had made their way to Great Slave Lake before 1760 (Petitot 1887: 312, Payment 1998: 70 - 71). According to François Beaulieu II:

Beaulieu, Poitras, Cayen, Le Camarade de Mandeville, Lafleur, Charlois, frères Tourangeau et autres...ne se soucièrent jamais de revendiquer l'honneur et la gloire d'avoir découvert et habité les premiers ces régions reculées et inhospitalières [...these men "never bothered to claim the honour and the glory of having been the first to discover and inhabit these remote and inhospitable regions"] (Petitot 1891: 78, Devine 1998: 16).

During this period François Beaulieu (I) met Ethiba, a woman of Chipewyan and Cree descent, the mother of François Beaulieu II (McCarthy 1998: 109-114). According to Bishop Vital Grandin, while wintering with François Beaulieu II at Salt River in 1856 and learning to speak Chipewyan, Beaulieu was born between 1771 and 1774 (Breton 1960: 99, Petitot 1883, Morice 1908: 15-16). McCarthy, citing Father Alexandre Taché who baptized Beaulieu in 1848, indicated that at that time Beaulieu was 55 years old³.

Some of the *coureurs de bois* who stayed behind in the Northwest after the withdrawal of the Company of the Sioux, seemed to have become part of the "Indian trade" that funneled furs along English River to Fort Churchill in the years after the British regained control of Fort Churchill, following the Treaty of Utrecht in 1713 (Counts 1997: 13-15, Rae 1963: 54). This trade began in 1715-16, when Captain James Knight was guided onto the barrenlands by the Chipewyan woman Thanadelthur (Jumping Martin) who encouraged her people to come to the fort to trade (Van Kirk 1980: 66, Petitot 1976: 14-15) (see accompanying Coutts agenda paper).

By the 1770's the "pedlars from Quebec" had returned to the Northwest, joined by Scottish merchants who now controlled the fur trade. Peter Pond arrived at Lake Athabasca in 1778 (Rae 1963: 75). The Beaulieu family was reported to be living on the Slave River at this time (Coues 1965: 266) (see Figure 6). Cree at Lake Athabasca told Pond about Great Slave Lake during this first visit. He is credited with being the first European to refer to it as Great Slave Lake (Rae 1963: 75). When Samuel Hearne visited Great Slave Lake, traveling with Matonabee and English Chief on his return from the mouth of the Coppermine River in 1771, he referred to it as Great Athapuscow Lake (Hearne 1971: 223, Lamb 1970: 163, Davis 1995: 291, Devine 1998: 24, MacGregor 1974: 16). Pond's informants were Cree.

Pond returned and wintered along the Athabasca River in 1783 (Rae 1963: 80). By that time the hold of the Chipewyan middlemen trading with Fort Churchill may have started to slip due to the

³ The journals of Hudson's Bay Company trader John Clarke indicated Beaulieu was 15 in 1808, and infer Beaulieu was born around 1793 (McCarthy 1995: 110 and 228). This later date does not correlate, however, with Beaulieu's own testimony to either Grandin or Petitot concerning events that he claims to have witnessed early in his life. Further, both Grandin and Petitot knew Beaulieu for longer periods of time than Taché and were, therefore, probably in a better position to evaluate his life history.

intrusion of the Canadian traders. The Dogrib tired of the abuse by Aboriginal middlemen raiding some of the Yellowknife villages in that year for iron (Rae 1963: 77). In 1786 Pond sent Laurent Leroux accompanied by English Chief, representing Gregory, McLeod and Company, down the Slave River to establish a post on Great Slave Lake (Lamb 1970: 15). Ross and Pangman sent Cuthbert Grant the same year to build a post on Great Slave Lake and compete with Leroux (Rae 1963: 83 - 85, Smith 1981: 683). The encroachment of the trade from Canada directly into the Athabasca and Mackenzie Regions began the breakdown of the old Chipewyan "Indian trade" to Hudson Bay (Rae 1963: 76 - 77). Over the winter of 1787 the companies combined into the North West Company and Alexander Mackenzie replaced Peter Pond in 1788 after Ross died under suspicious circumstances at Lake Athabasca in 1787 (Rae 1963: 86).

There has been an on going debate about whether or not Peter Pond actually reached Great Slave Lake himself. While there are no journals of his trip, the detailed information on his map suggests that he probably did reach Great Slave Lake (Rae 1963: 82 - 84). Further, François Beaulieu II narrated to Petitot the following first hand account of the arrival of Peter Pond's men at their camp near Great Slave Lake:

... the French [North West Company] had barely arrived when they came to the cabin of my uncle, Jacques Beaulieu. 'Among you, is there anyone who understands French?' they asked us. 'Without a doubt,' we responded. 'All of us here are French or the sons of Frenchmen' (Petitot 1886: 430).

A longer version of that encounter is found in Petitot's *The Book of Dene* (Petitot 1976: 15 - 16). In this account, Pond had François Beaulieu II's uncle Jacques arrange for an assembly of the tribes around Great Slave Lake and the upper Mackenzie River at his camp on Big Island in the outlet of Great Slave Lake (Petitot 1976: 15, Devine 1995: 7 and 1998: 23-24) (see Figure 6). The draw to the gathering was metal cooking pots (Able 1995: 75). This meeting would of have had to have taken place between 1786 and 1788 when Peter Pond left the country (Rae 1963: 86). This fits with the subsequent observations of trader W.T. Wentzel in correspondence to Roderic MacKenzie. Wentzel noted that Leroux had trouble at first getting the local Aboriginal people to trade at the mouth of the Slave River, as the Chipewyan had pillaged them and gave them little for the fruits of their labour (Mason 1960: 32-33, Rae 1963: 91). This might explain Beaulieu's reference to the use of the metal cooking pots to convince people to trade. English Chief played an important role in Leroux's efforts to develop a local trade (Rae 1963: 98). François Beaulieu II describes himself as a teenager when this meeting took place (Petitot 1886: 430, Bellman and Hanks 1998: 37). This would agree with Grandin's date of birth for François Beaulieu II in 1771. If the statement by François Beaulieu II is accurate, it also implies that Peter Pond had not only seen Great Slave Lake, but had been to the head of the Mackenzie River, which Alexander Mackenzie would descend in 1789.

Historian Martha McCarthy indicates that François Beaulieu (I) left the country, and his wife Ethiba remarried a Chipewyan hunter referred to by the traders as "The Rat" (1995: 110). With the departure of his birth father, François Beaulieu II's early years were apparently spent with

Yellowknife and Dogrib relatives north of Great Slave Lake (McCarthy 1995: 110, Menez Nd: 4-5). It is not known exactly what role François Beaulieu II's uncle, Jacques Beaulieu, continued to play in his upbringing, but François was living in Jacques camp at Big Island when they met Pond's men in the mid-1780's. Jacques Beaulieu is reported to have been an interpreter in the Great Slave Lake Region in 1784 (Morice 1908: 16). Historian A.S. Morton notes that the Beaulieu family had been associated with the Slave River since 1778 (1939: 671, Coues 1965). Further, François Beaulieu II's step-father, the Rat, seems to have had ties to the Salt River (see Figures 1, 2, 6 and 7). Despite trading trips away that often lasted for several years at a time, the Salt River, down the Slave River from modern Fort Smith, was François Beaulieu II's home ground.

François Beaulieu II was born at the time of the first direct contact by European traders with the Chipewyan, Yellowknife, Dogrib and Slavey on their home turf around Great Slave Lake. As a child, he would have witnessed the end of the long distance Mackenzie River Basin "Indian trade" with Fort Churchill that had brought his father north. It was replaced by the growth of a local trade with the Europeans, dispersed among regional fur posts that spread north from Lake Athabasca to Great Slave Lake. This change saw the long distance "Indian" trade control of the Chipewyan to Churchill threatened by direct European access to what had been the hinterland of the Mackenzie. Alexander MacKenzie was reluctant to trust most of the Chipewyan as middlemen for he felt they would carry the greater part of their furs to Hudson's Bay (Lamb 1970: 438). In 1791, Mackenzie commented on the need to have "...an Indian of consequence, chief amongst the Red Knives, even the English Chief, as none of their own people have sufficient authority..." (Lamb 1970: 444). Mackenzie considered the Slavey [Dogrib] not to be of consequence and commented that: "...their trade being entirely in Martens [sic], so that they may either come themselves or allow the Red-Knives to be their carriers..." (Lamb 1970: 444). Mackenzie's actions helped set up reliable Chipewyan (such as English Chief), Yellowknife, and old *coueurs de bois* (like François's uncle Jacques Beaulieu) as the middlemen who facilitated much of the Great Slave Lake trade for the North West Company. The "post hunters" for the new posts often assumed the role of the middleman in the fur trade.

The initial European posts, built by Leroux and Grant in 1786 on Great Slave Lake, were placed on the east side of the Slave River delta to take advantage of the northerly "old Indian" route around Great Slave Lake (Rae 1963: 99) (see Figure 6). This track crossed the east arm of Great Slave Lake to the north shore. From there it proceed north up the Marian and Camsell Rivers to Great Bear Lake, or west through Lac la Martre to the Willowlake River and the Mackenzie River (see Figures 4, 5, and 6). To ease the burdens of travel for the Aboriginal groups north of Great Slave Lake, Leroux moved to Lac la Martre in 1789, north of Great Slave Lake (Lamb 1970: 173, Rae 1963: 98) (see Figure 5). The new post intercepted the trade with Slavey (Martin Lake Dogrib) and Beaver from the fur rich Horn Plateau along the Willowlake River route to the central Mackenzie River, as well as the trail known to the Dogrib as *Ida'a*, to Great Bear Lake (Rae 1963: 123, Andrews and Zoe 1998) (see Figures 4, 5 and 6). Based on an agreement struck with the Yellowknife in 1789 by Alexander Mackenzie, a post known as "Old" Fort Providence was built in 1790, near the modern city of Yellowknife. This post serviced the Yellowknife

people who lived along the north arm of Great Slave Lake and northeast of the lake toward the barrenlands (Rae 1963: 106) (see Figure 6).

Slowly following Mackenzie's journey in 1789, European attention began to shift from the old "Indian" routes north of Great Slave Lake to focus on the Mackenzie River. The North West Company post at Lac la Martre may have been abandoned as early as 1796. The Aboriginal groups from the region shifted and began to trade into "Old" Fort Providence on Yellowknife Bay.

As a youth, François Beaulieu II would have seen the European traders abandon the old "Indian" route to Great Bear Lake, in favour of the more westerly Mackenzie River route north (Rae 1963: 87-11). As a free trader, Beaulieu would exploit European neglect of the traditional route to Great Bear Lake throughout his life.

Post Hunter

Around 1799, François Beaulieu II was a post-hunter for the North West Company at Great Bear Lake when they opened Great Bear Lake "Castle" (Petitot 1893: 63, 1976: 25, Menez Nd: 4, Bellman and Hanks 1998: 38-39). The Great Bear Lake post was placed to divert the flow of furs from Aboriginal middlemen along the *Ida'a* trail to Great Slave Lake, to European fur traders along Mackenzie River route. As a post hunter, Beaulieu would have been in a good position to begin establishing himself as a middleman in the Great Bear Lake fur trade. His years at Great Bear Lake may have been the start of Beaulieu's career as a trading chief.

After 1804, the North West Company increasingly recognized Métis as trading chiefs (Yerbury 1986: 91). Trading chiefs led the bargaining when the furs were exchanged at the posts, and often ran a camp trade "to save the hunters the journey to a post". The middlemen then made a tidy profit when they resold the pelts to the Euro-Canadian fur traders. Anthropologist David Smith traces the development of the trading chiefs among the Chipewyan from head men who had *inkonze*, or medicine, that made them "lucky" at hunting, and therefore were able to guarantee their groups survival (1982: 51)⁴. The Chipewyan and Yellowknife traders, with whom Beaulieu was identified, had a reputation for pillaging or, at best, paying little for the furs of those not aligned with them (Rae 1963: 91). Dr. John Richardson described the trading chiefs

⁴ These men, known as *bekanthdeli* had virtually disappeared by the 1830's, having largely been replaced by trading chiefs who fulfilled the traditional role of a leader as well as being good at dealing with the traders (Smith 1982: 64). Beaulieu's contemporary, Akaitcho (*Gros Pied*), the famous Yellowknife Chief may have been one of the last Yellowknife *bekanthdeli*. *Dene gan kaltherae*, as the trading chiefs were known, were not only great hunters but also gifted talkers (Smith 1982: 65).

as leaders with near absolute authority, who used robust, loyal young men to enforce their will (Smith 1982: 65). Many Aboriginal trappers saw the benefit of following a "trading chief" who was an 'effective' bargainer, got them better prices, threw feasts and helped people in hard times (Helm, Rogers and Smith 1981: 15).

In 1806-07, a young Beaulieu had been appointed to work for John Clarke on Great Bear Lake. In one account, he left service with Clarke after a reprimand and returned to live with the Dene. In another version, North West Company trader W.F. Wentzel wrote that Beaulieu's son, who had deserted from Mr. Clarke below the Old Rocky Mountain Fort, arrived at Fort of the Forks (Fort Simpson) with nine Mountain or Slavey Indians under Chief Grand Chefre. Beaulieu alleged that he had been debauched by some Dogrib belonging to General Montgomery's band. (Wentzel 1807). Wentzel did not provide a first name.

During the next few years, while Beaulieu temporarily dropped out of sight, the Yellowknife Chief Akaitcho and his followers became the post hunters for "old" Fort Providence on Yellowknife Bay. This position allowed Akaitcho to tighten the hold of the Yellowknife over trade with the Dogrib along the route to Great Bear Lake. Between 1812 and 1822, the Yellowknife plundered, bullied and occasionally murdered the Dogrib to extract a tribute in furs (Hanks 1996a, Helm and Gillespie 1981: 14, Back 1825).

As a young man François Beaulieu was known as a powerful man who was feared. He was purported to have made a habit of seizing beautiful and influential women from their husbands and was known to have killed those who tried to stop him (Abel 1993: 86).

Interpreter

François Beaulieu re-emerged in 1816, when he was hired as an interpreter for the North West Company in the Athabasca District. He returned to the North West Company the year after it withdrew its operations along the Mackenzie River. Fort Good Hope, Fort Norman, Great Bear Lake Post, and Fort Simpson (Fort of the Forks) were all abandoned in one year so that the North West Company could concentrate its resources on Lake Athabasca (Bellman and Hanks 1998: 39). This was the height of the struggle with the Hudson's Bay Company in the Athabasca region.

Beaulieu was invited by Nor'Westers to join in a plot to kill his old boss John Clarke, now employed by the Hudson's Bay Company. Clarke had originally come north with the North West Company, but he had changed his allegiance to the Hudson's Bay Company in 1814 (Williams 1975: 167). After establishing Fort Wedderburn, in opposition to Fort Chipewyan, Clarke was taken prisoner by the North West Company (Davis 1995: 1, 10-13). According to John Clarke's journal, he heard on June 16, 1817 that the North West Company planned to place him on an island where Beaulieu would kill him. Two days later he overheard Beaulieu tell James Sutherland that he had been offered Clarke's property as payment to kill him. The trader at Fort Chipewyan had apparently already given Beaulieu a new set of clothes as a down

payment. Later that day, when Clarke gave Beaulieu a glass of spirits, Beaulieu told him that while he had killed Indians he had not yet killed a Whiteman. Clarke reported having told Beaulieu that he hoped that he would not start (HBCA B.39/a/10, fo. 9b, McCarthy 1995: 228). The conspirators had apparently offered Beaulieu Clarke's wife, property and an annuity. Beaulieu refused and seemed to leave the North West Company (McCarthy 1998: 116). Beaulieu's role was part of a larger attempt by the North West Company partners Archibald McLeod and Peter Skene Ogden to use the pretext of the law, to intimidate the Hudson's Bay Company and to influence the Aboriginal groups that traded with them at Ile à la Crosse, Lake Athabasca and Great Slave Lake regions (Bumsted 1999: 168-170).

By the mid-1810's, Beaulieu was reputed to be the North West Company's chief enforcer on Great Slave Lake and had killed at least one man (Devine 1995: 7).

François Beaulieu II's son, Pierre, told Father Duchaussois many years later that his father subsequently joined the Hudson's Bay Company after he killed:

...the trader of the Hudson's Bay Company who was suspected of responsibility for the drowning of the trader of the rival [North West] [C]ompany. Beaulieu was seized and bound before he could reload his gun. His captors advised him to change his defiant attitude and let the past be past, and take service under the Hudson's Bay Company as their bully, and name his own price. He agreed to serve the Company (Menez Nd).

When Sir John Franklin passed through Fort Chipewyan in 1819, Beaulieu and a Chipewyan companion named Black Meat suggested that Franklin travel to the mouth of the Coppermine via the Marion River-Great Bear Lake route (Davis 1995: liii). It appears that Beaulieu's knowledge of the Great Bear Lake region extended north across the divide to the Dismal Lakes which flow into the Coppermine River, and onto the Arctic coast along Coronation Gulf (see Figure 4). One might speculate that Beaulieu's trade on Great Bear Lake extended north to include the Copper Inuit. To maintain his supply line from Great Slave Lake, Franklin ultimately took the advice of another of the trading chiefs of the time, the Yellowknife leader Akaitcho, and went north via the Yellowknife River route (Davis 1995: liii).

In June of 1822, "The Rat" had gone to Salt River to find his step-son François Beaulieu (HBCA, B.30/c/21b, fo. 3, McCarthy 1998: 116) (see Figures 6 and 7). This suggests that Beaulieu may have already been exploiting the commercial value of the salt plains, which Sir John Franklin described as the principal source of salt for the whole of the Athabasca region (Davis 1995: 19). According to Franklin, the salt was collected from three large pits along the creek, where it was concentrated by evaporation (Davis 1995: 19).

Trading Chief

By the early 1820's, the great trading chiefs in the lands around Great Slave Lake included Akaitcho, de Mandeville and Beaulieu. Yellowknife Chief Akaitcho traded up the Yellowknife

River, west to Great Bear Lake and east onto the central barrenlands along the Coppermine and Lockhart rivers. Akaitcho's power had grown significantly after the 1817 post closures along the Mackenzie River, leaving "old" Fort Providence as the only post in the country north of Great Slave Lake. This also appears to be the time when François Beaulieu, now recognized by the Métis and his mother's Chipewyan relatives as a Chief, firmly established himself at Martin Lake (Lac la Martre) and consolidated the trade with the Dogrib and Slavey from Big Island north to Great Bear Lake. The North West Company 1817 establishment of Fort Alexander at the mouth of the Willowlake River may have been in response to traders like Beaulieu (see Figure 5). "The Camarade de Mandeville" (*Catoelthel*), son of another *coureur de bois*, was the chief of a Chipewyan band that traded from Fort Resolution into the Thelon and Lockhart rivers (Smith 1982: 65, Helm and Gillespie 1981: 21-22, Hanks 1996a). These men were recognized as both traders and war chiefs. All three men had taken numerous wives, whom they used to cement their trade relations with local bands. François Beaulieu was reported to have had between three and seven wives (Menez Nd).

Recognition of individuals by the trading companies as Trading Chiefs was a device frequently used to ensure trapper loyalty to specific posts. There was no assurance that the title and privileges would be recognized at another post (Bellman and Hanks 1998: 43). The post closures in the wake of the 1821 amalgamation of the North West Company with the Hudson's Bay Company destabilized the balance of power around Great Slave Lake. When "Old" Fort Providence was closed in 1823, Akaitcho lost a significant element of his power base as he no longer had a point of trade in his territory (Hanks 1996a, Bellman and Hanks 1998). Having lost his position as post hunter, and being forced to expand his supply line to trade at Fort Resolution on the south side of Great Slave Lake, Akaitcho and his followers could no longer exercise as much control over the fur trade north and northeast of Great Slave Lake (Hanks 1996a). Akaitcho's Chipewyan kin already controlled the local trade at Fort Resolution when Fort Providence closed. Perhaps, sensing Akaitcho's apparent vulnerability following the closure of "Old" Fort Providence in 1823, the Dogrib took revenge on Akaitcho's brother, White Capot or "Long Legs", when a party of 34 Yellowknife were murdered by the Dogrib near Hottah Lake, south of Great Bear Lake (Hanks 1996a, Back 1825, Franklin 1971: 10, Gillespie 1981: 286-87). In another battle on Great Bear Lake the same year, Akaitcho's son was killed when the Yellowknife raided a band of Bear Lake Indians at Dog Point on Great Bear Lake (Hanks 1996a)⁵. Hudson's Bay Company traders W.F. Wentzel and J.M. McLeod reported in 1824 that Akaitcho had collected a strong party to make war on the Hare Indians and Dogrib, at the same time the Martin Lake Dogrib and the Fort Norman Slavey were intent upon destroying the Yellowknife (HBCA B.200/a/4, Hanks 1996a). The fighting had subsided by 1825 when the Second Franklin Expedition passed through the country (Back 1825).

⁵ Dog Point is within the Grizzly Bear Mountain and Scented Grass Hills National Historic Site.

François Beaulieu was entangled in the Yellowknife/Dogrib conflict. He told Petitot he had killed 12 of the enemy himself (Petitot 1887: 312-313). The relevant question, however, is just whose side was Beaulieu on at the time. It is hinted that he fought along side the Yellowknife during the conflict, but from a trade perspective it was François Beaulieu, with his connections to the Martin Lake Dogrib, who would have benefitted most from Akaitcho losing his position as a middleman (Bellman and Hanks 1998: 61).

Although an uneasy peace was established in 1829, news arrived in Fort Simpson via messengers from François Beaulieu at Lac la Martre that:

...the S. [Slave] Lake Chipewyans being that direction - with Ekycho Copper Indian Leader between whom the Slaves [term sometimes used to refer to the Martin Lake Dogrib] some words were exchanged not of a very conciliating nature the Chipewyans present became mediation [sic] and they separated with mutual reproaches for the past - and strong language [sic] implying another attack (HBCA, B.200/a/11, fo. 13d, 14, Helm and Gillespie 1981: 22).

Helm and Gillespie suggest that "The Camarade de Mandeville" may have been the Chipewyan-Métis that the Dogrib refer to as *Katehwi*, who mediated the meeting that led to the uneasy peace, which Beaulieu reported in 1829 (1981: 22). It has been suggested that this was the famous truce between Akaitcho and the Dogrib leader Edzo (Helm and Gillespie 1981: 22). Beaulieu was subsequently involved in brokering another peace in 1831, when he discouraged the Lac la Martre Dogrib from retaliating over Yellowknife provocations (Krech 1984: 133). The conflict between the Yellowknife and the Dogrib did not really pass until Akaitcho's death in 1838 (Hanks 1996a).

Exploration of the Arctic

François Beaulieu's role in European exploration of the western Subarctic and Arctic is important at several levels. The most significant was as an advisor and facilitator of exploration. Beaulieu was not, however, unique in his willingness to assist explorers. Anthropologist Richard Slobodin has observed of the Métis that:

When explorers, sportsmen, or functionaries in the nineteenth and early twentieth centuries had occasion to travel into the habitat of an Indian band, they usually went with a party of local Indians, but in their more extensive journeys along the main routes, they were guided, driven and paddled by Métis (Slobodin 1964: 50-55).

The Beaulieu family played an important role in the exploration of the western Subarctic and Arctic from the late 18th century until the early 20th century. *Coureur de bois* François Beaulieu (I) pioneered his own road north following the collapse of the Company of the Sioux in 1760. He subsequently participated in both of Alexander Mackenzie's expeditions as a voyageur. His

son, François Beaulieu II, assisted the first two Franklin expeditions, was one of Father Emile Petitot's principal informants, and provided natural history specimens to the Smithsonian's Robert Kennicott (Bellman and Hanks 1998: 46-50, Lindsay 1993: 172). François Beaulieu II's son, Joseph "King" Beaulieu, guided the adventurer Waburton Pike on the barrenlands northeast of Great Slave Lake. Great grandson, "Souci" (Joseph) Beaulieu, guided Dominion Lands surveyor Guy Blanchet to the Coppermine River in the 1920's (Blanchet 1922/1924, Overvold 1976: 57). Many of the French names on the map northeast of Yellowknife - Lac de Gras, Point du Misery, Lac du Sauvage, and the Beaulieu River are credited to Pike's reports of names provided to him by King Beaulieu (Pike 1892, Randy Freeman 1999 pers. comm.).

It is from the journals of Captain Sir John Franklin (Davis 1998), Admiral Sir George Back (1825), Dr. Sir John Richardson, and Father Emile Petitot, that we learn some of the finer details of François Beaulieu's life. Beaulieu, in particular, was one of Petitot's principal ethnographic and historic informants. It is from the writings of Emile Petitot that we gained our greatest insights into François Beaulieu II the man, for it is to Petitot that Beaulieu told his life history (1875, 1883, 1886, 1887, 1889, 1891, 1893, 1976).⁶

François Beaulieu's role with the first Franklin Expedition was limited to that of advisor.⁷ Midshipman George Back described Lt. John Franklin's first meeting with Beaulieu at Fort Chipewyan in 1819 (Houston 1994: 60). Beaulieu drew a charcoal map on the floor for Franklin

⁶ Petitot wrote that he possessed François Beaulieu's journal (1893). Either Petitot is speaking figuratively of notes he took during his conversations with Beaulieu or, perhaps, François Beaulieu really was literate in either French or English and did keep journals. The question of whether or not Beaulieu was literate is an interesting one that has still not been satisfactorily resolved. He certainly had the opportunity to learn to write during the winter of 1825-1826 when he was at Fort Franklin (now Deline) as Sir John Franklin's interpreter. Franklin and his officers ran a school for the men that winter to help pass the time (Hanks 1996a). Unfortunately, Franklin is silent on whether or not Beaulieu attended, but it would be in character for a man as perceptive as Beaulieu to have taken the opportunity to learn to read and write. Later he sent his daughter Catherine Beaulieu to be educated in Red River by the Grey Nuns (Kermoal 1998: 152). In the mid-1850's when Beaulieu taught Father Grandin Chipewyan, the priest may have reciprocated by teaching him to write.

⁷ Franklin arrived in the Mackenzie district to hire men for his first expedition at the height of the competitive fur trade period (Bellman and Hanks 1998: 47). With the help of Wentzel and Smith, Franklin obtained the assistance of the Yellowknife Chief Akaitcho and his band. The local voyageurs Baptiste de Mandeville and Beaulieu's future father-in-law, Pierre St. Germain, agreed to accompany Franklin's first expedition (Bellman and Hanks 1998: 47).

of the route to the mouth of the Coppermine via Great Bear Lake. Beaulieu advised Franklin to proceed to the lower Coppermine River via the *Ida'a* trail, up the Marion and Camsell rivers to Great Bear Lake, along the east shore to the northeast corner of Dease Arm, where the party would have portaged through Dismal Lake to the Coppermine (see Figures 4 and 6). Beaulieu had descended the Coppermine to its mouth and felt that Franklin would be better to go via the Great Bear Lake route (Menez Nd, Frank Laviolette 1999, pers. comm.). Blackmeat, an old Chipewyan who was present, further described accompanying a war party that had walked 10 days east of the mouth of the Coppermine River (Houston 1994: 60). The Great Bear route was also the one preferred by W. F. Wentzel, the North West Company manager at "Old" Fort Providence (Davis 1995: Lili) (see Figures 4 and 6). Franklin puzzled over the different descriptions of the Arctic coast provided by Beaulieu, Blackmeat and the Yellowknife Chief Akaitcho (Masson 1960: 131). He wrote at the time to Edward Smith, one of the partners of the North West Company who was stationed at Great Slave Lake that:

The route which I should prefer taking would be nearly North from Great Slave Lake, and, from the information Beaulieu has given, I am inclined to hope a passage may be made up a river which falls into the Slave Lake near Mountain Island; from thence, by crossing lakes and portages, into the Coppermine River which communicates directly with the sea; but you will be able to obtain from other men of equal, if not greater experience, positive assurance as to the possibility and practicability of proceeding this way with moderately loaded canoes (Masson 1960: 135).

Franklin was ultimately influenced, however, by Akaitcho's assurance of the bounty of caribou and selected the alternative Yellowknife River route to the Coppermine River (Masson 1960: 131, 135). Franklin concluded that none of the Aboriginal people who were advising him had been more than four days march east of the mouth of the Coppermine River (Davis 1995: 27).

When Sir John Franklin returned to the Northwest in 1825 for his second expedition, Hudson's Bay Company officers strongly urged him to winter on Great Bear Lake to avoid the difficulties of the first expedition. Franklin remembering the trails of his first expedition, viewed the overwintering as perhaps the most daunting part of his first expedition (Hanks 1996a). Franklin commented that: "...residence in the northern parts of America, where the party must depend for subsistence on the daily supply of fish, or on the still more precarious success of Indian hunters..." (1971: xxii) [was an expedition's greatest challenge]. Franklin's words were echoed by Sir George Simpson, Governor of the Hudson's Bay Company, who noted of Sir John Franklin's Second Expedition, that the: "...expedition could explore the Arctic coast without significant Aboriginal assistance, but the people could not survive a winter without Aboriginal cooperation" (Rich 1938: 17).

Shortly after Hudson's Bay Company trader Peter Warren Dease was assigned to provide for Franklin's party on Great Bear Lake, he requested that the expedition hire François Beaulieu as its interpreter. Dease applied to Chief Factor James Keith to release Beaulieu and to send him down from Fort Chipewyan (Davis 1998: 353, 360). Keith hired Beaulieu at the rate of 1400 livres or

the equivalent of £52, despite the 1823 decision by the HBC that interpreters should be paid no more than 25 pounds (Keith 1997: 244). At the time, Beaulieu was known as the leader of the Martin Lake Chipewyan. He had extensive knowledge of the country and Dogrib, Slavey and Hare people of Great Bear Lake (HBCA B.39/b/3, fo. 61). After Akaitcho declined to accompany the expedition, Beaulieu's duties were expanded to include those of post hunter (Franklin 1971: 9-10). For François Beaulieu it was a return to the place where, 25 years earlier as a young man, he had been Alexander McKenzie's⁸ post hunter. By hiring Beaulieu and his band, Franklin continued an exploration tradition of using Chipewyan and/or Yellowknife guides that had begun with Samuel Hearne.

Akaitcho's reticence to accompany Franklin stems from ill-will that was still felt by the Dene at Great Bear Lake, after the war with the Dogrib and the Slavey in 1823 and 1824. His perhaps calculated risk of revenge by the Great Bear Lake people, outweighed the renewed prestige he would obtain from working with the expedition (Hanks 1996a). Franklin found the Dogrib hunters were still despondent, as they mourned relatives who had been killed the year before in battles with the Yellowknife (Davis 1998: 157). Given the state of the country, Beaulieu's influence with both the Dogrib and the Yellowknife probably prevented any incidents during the expedition.

Fort Franklin was built on the site of an old North West Company fur trade post that had been located at the northwest corner of the Keith Arm of Great Bear Lake, at the site of the present day community of Deline (see Figure 4). The Deline Fishery, now a National Historic Site was, according to Chief Factor Edward Smith:

...the only place in the Mackenzie River where such a numerous party--equal to all of the Company's Servants in the River--can winter with any appearance or certainty of a full supply [sic] of fresh Provisions for winter consumption...(HBCA B.200/b/2, fo. 1).

Peter Warren Dease, François Beaulieu and his family, 15 Canadiens, and four Chipewyan hunters arrived at the site of Fort Franklin on July 27, 1825 (Franklin 1971: 51). Drift ice in the Mackenzie River had slowed the Dease party's passage down from Big Island House at the outlet of Great Slave Lake (see Figures 3, 4 and 5). A band of 10 Dogrib hunters and their families were waiting for Dease and Beaulieu when they arrived at the fort (Lea 1923/24: 31 - 32). The Martin Lake Dogrib and the Dogrib at Great Bear Lake were, at that time, inseparable groups (Helm 1981: 295). Beaulieu would have been considered a trading chief by both groups. The presence of the Chipewyan and Dogrib hunters must have been a relief for Dease, as Edward Smith had been quite concerned when the Yellowknife had declined to hunt for the expedition (HBCA B.200/b/2, fo. 3).

⁸ This is not "the" Alexander Mackenzie; this gentleman spelled his name without the "a" in Mackenzie.

While the Fort was under construction, a select party of Aboriginal hunters under the direction of François Beaulieu and accompanied by Dr. John Richardson, were sent to hunt caribou along the northeast shore of Great Bear Lake. The party traveled better than 500 kilometers each way by north canoe and long boat around Great Bear Lake to Dease Arm where they intercepted the migration of the Bluenose caribou during late August and early September of 1825 (Franklin 1971: 51, Richardson 1971a: ii, Hanks 1996a).

When the fort was constructed, a separate house was built on the right hand side of the parade ground for Beaulieu and his family (Franklin 1971: 52, Hanks and Hammond 1988). The separate quarters were an indication of Beaulieu's status as interpreter for the expedition.

Throughout the winter of 1825-26, there were references in Franklin's journals to Beaulieu's activities. In February he sprained his ankle after he and his Chipewyan hunters had spent three days running down a moose on snowshoes. The next day Landre and a Dogrib hunter continued the chase. The men ran after the moose for a total of six days before they finally killed it. When the moose arrived at the Fort, Franklin placed the men on half rations as there was no other meat in the stores (Davis 1998: 155-156).

A couple of weeks later the hunters went out after caribou. Beaulieu and his Chipewyan companions went one direction, while the Dogrib went another. Four days later, Beaulieu returned to fetch his family so that they could camp near the caribou. The Dogrib hunters were equally successful. From that time on, the expedition was not short of meat (Davis 1998:156).

March found Beaulieu passing through the Fort on his way to the other side of the lake in pursuit of more caribou with the Chipewyan and Augustus, Franklin's Inuit interpreter. Two days later, a messenger arrived at the Fort to get men to help haul three moose and two caribou (Davis 1998: 164).

Beaulieu moved back into the Fort in May as the caribou moved northwest toward the Bluenose caribou's calving grounds (Davis 1998: 169).

Richardson and Ensign Kendall mapped the Arctic Coast during the summer of 1826, from the mouth of the Mackenzie to the Coppermine River (see Figures 3 and 4). The expedition set off in June and met up with Beaulieu on the Great Bear River where he again provided them with fresh moose meat (Davis 1998: 182). At the request of Dr. Richardson, Beaulieu was instructed to return to the north shore of Great Bear Lake in August 1826 to pick up Richardson's returning party. Before leaving, Dr. Richardson promised François Beaulieu a fowling-piece if he was waiting at the mouth of the Dease River when Richardson's party arrived (Richardson 1971b: 278).

Franklin had Back explain to Beaulieu he was to leave Fort Franklin on August 6th for the trip to the mouth of the Dease River and that if Richardson's party did not appear by September 20th, Beaulieu was to leave the boat stocked with supplies for Richardson and return to the Fort (Davis

1998: 176). Franklin was emphatic that once at the Dease River, Beaulieu and his Canadiens were not to move until the appointed date (Davis 1998: 377).

The Richardson party abandoned their boats at Bloody Falls near the mouth of the Coppermine on August 9, 1826, and walked overland to Great Bear Lake (Richardson 1971b: 270). Richardson's return followed the route from the Coppermine River that Beaulieu had previously recommended to Franklin before his first expedition six years earlier. Richardson, Kendall, nine British seamen, their Inuit interpreter Ooligbuck and a group of Hare Indians they had met, arrived at the Dease River on August 18, 1826 (Richardson, 1971b: 278).

Beaulieu arrived late on August 24 amid gun fire and friendly shouts, with four Canadiens, four Chipewyan hunters, and ten Dogrib hunters with their families. His party numbered nearly 30. He told Richardson that he had indeed left Fort Franklin on the 6th, but bad weather and adverse winds had impeded his progress. Richardson, while proclaiming Beaulieu trustworthy, later suggested to Franklin that Beaulieu was uncertain about the fate of the party, and therefore dallied hunting on his way to what might be a pointless errand. As a result, he missed his appointed rendezvous on the 20th by four days, and lost the fowling-piece (Davis 1998: 382-383, Richardson 1971b: 278). Fearing Beaulieu's late arrival was a sign of misfortune, Richardson had already sent some of his party west toward Haldanes River, by foot with a Hare guide (Richardson 1971b: 282). If Beaulieu had failed to arrive, the 500 kilometer walk around the lake to Fort Franklin would have taken Richardson three weeks through near freezing conditions.

After rendezvousing with Richardson, Peter Warren Dease had told Beaulieu to proceed south to the McTavish Arm of Great Bear Lake to hunt caribou and dry meat for the Fort. Richardson left the Haldanes River on the 28th and after a marathon paddle of over 400 kilometers, arrived back at Fort Franklin on September 1, 1826 (Richardson 1971b: 282 - 283, Davis 1998: 383).

When Franklin returned to the fort in late September, he found it poorly provisioned. The local Dogrib and Chipewyan from Great Slave Lake had apparently been reticent to hunt, because they feared that the Yellowknife were lurking in the woods around Great Bear Lake looking for another fight (Hanks 1996a). Franklin speculated that the lack of meat might also be attributed to the fact that he was low on trade goods (Franklin 1971: 290). François Beaulieu and his party arrived back at Fort Franklin on September 28th, with a supply of dry meat that eased the shortage of supplies at the Fort. His contract at an end, Beaulieu then asked Franklin's leave to depart for Martin Lake (Lac la Martre). Though Franklin described Beaulieu as their best hunter, Dease suggested that because Beaulieu had collected a number of useless followers the Fort would have to feed, it might be well to comply with his request (Franklin 1971: 288). While the HBC might not have considered Beaulieu's largesse a virtue, Métis elder Frank Laviolette indicates that it was François Beaulieu's willingness to take care of the weak, as well as the strong, that made him a great leader (1999, pers. comm.) Before François Beaulieu departed, Franklin furnished him with ammunition from the store to enable his party to hunt on their way to Martin Lake, where they intended to fish until spring (Franklin 1971: 288).

That the importance of Beaulieu's role is not more fully discussed by Franklin and Back may be attributed to the fact that, after the first expedition, they were never particularly comfortable with the Métis in general (Back 1825⁹). While they respected Beaulieu, they do not appear to have developed a personal relationship with him, as they seem to have with Akaitcho (Franklin 1971, Back 1825, 1970). Dr. Richardson, however, appears to have greatly appreciated Beaulieu's talents (Davis 1998: 382).

The supervision of Beaulieu was a task that Franklin had assigned to Lt. George Back (Davis 1998: 176). Beaulieu played an important role along with Back and Dease in the management of the Aboriginal hunters, conducting a local trade, and maintaining relations with the local Dogrib and Slavey in the wake of their recent conflict with the Yellowknife. A great deal of trust was obviously placed in Beaulieu by the senior officers of the expedition. That the overwintering in 1825-1826 occurred with few problems suggests that Beaulieu was successful in his dual roles of interpreter and hunter. Further, it can be assumed that Beaulieu's knowledge of the country north of Great Bear Lake was influential in Richardson's choice of a route from the mouth of the Coppermine River. Finally, it is evident from Franklin's references to other Aboriginal people associated with the expedition, about whom he complained, that he thought well of Beaulieu. Thus despite Back's initial misgivings, it is obvious that they came to rely heavily on Beaulieu. Given Franklin's personality, his lack of critical comment on Beaulieu may be the best compliment Franklin was capable of giving his interpreter and fort hunter. Dr. Richardson in his report to Franklin described François Beaulieu "...as the Most trustworthy man..." (Davis 1998: 382).

Free Trader in an Age of Monopoly

Following the merger of the North West Company with the Hudson's Bay Company in 1821, Governor George Simpson moved quickly to consolidate the trade and end the wanton competition between rival posts that had so eroded profits. By discouraging middlemen, the Company set the stage for a monopoly of the trade in the Mackenzie River Basin that was not seriously challenged until the 1890's (Bellman and Hanks 1998: 52).

Despite the Company's best intentions, trading chiefs like François Beaulieu took advantage of the rivalries between different Hudson's Bay Company posts and districts to get better prices for their furs. The Company's debt system was easily manipulated by taking credit in supplies at one post and selling furs at another. Traders, under pressure to show increased returns, often turned a blind eye to the practice in order to increase post and district profits (Bellman and Hanks 1998: 52).

Before the closure of "Old" Fort Providence and the blunting of Akaitcho's influence in the 1823-24 war between the Dogrib and the Yellowknife, Yellowknife middlemen had largely controlled

⁹ Please note that the Back manuscript does not have page numbers.

the trade at Great Slave Lake (Krech 1984: 132). In the wake of the conflict, Chipewyan-Métis traders from the Athabasca District to the southeast moved in to fill the void. The increased involvement of Chipewyan-Métis in the trade with the Dogrib and the Slavey was motivated by the beaver on Slavey lands. By the mid-1820's, traders described the Slavey and Dogrib as hemmed in by middleman traders from the Athabasca District (HBCA B.200/a/6, fo.4, Krech 1984: 132). Poitras, of Fort Chipewyan, and Mangeur de Lard, of Great Slave Lake, were two of the most prominent of the Athabasca District traders to move into the Trout River and Lac la Martre areas west of Great Slave Lake (Abel 1993: 90). The Chipewyan were motivated to move north by the decline of beaver in the Athabasca district (Krech 1984: 133).

François Beaulieu and his "Martin Lake" Chipewyan traded with the Dogrib and Slavey between the Horn Plateau near Lac la Martre and Great Bear Lake. By visiting the camps, he could offer trappers less and "save" them the long trip into Fort Norman or Fort Simpson. Beaulieu would then carry the furs south to Fort Resolution or Fort Chipewyan where he would receive more in exchange than he would have at a northern post (Bellman and Hanks 1998: 52). Hudson's Bay Company trader Edward Smith commented in the mid-1820's that the Chipewyan-Métis were getting trade goods in the Athabasca District at 50 percent of what they cost the Slavey at posts in Mackenzie River District (HBCA B.200/a/6, fo. 25-26 in Krech 1984: 133).

A group of nine Willowlake River Indians arrived at Fort Simpson in March of 1827 after an eleven day trip from Bedzebethaw's camp on Willowlake River. They reported that Beaulieu and the Chipewyans who had worked for the Franklin Expedition, had wintered there and carried off part of their hunt to the posts in the Athabasca (HBCA B.200/a/8, fo. 37d in Krech 1984:133). In 1828, Beaulieu was hunting with five families around Lac la Martre, including the Dogrib hunters Ehassogha, Hathyaude, and Dinnedah (HBCA B.181/a/7, fo. 10d-11d in Bellman and Hanks 1998: 59).

Under the monopoly, Company officers no longer felt the pressure to respond to the whims of the trading chiefs. Fort Resolution Factor Simon McGillivray noted in 1828 that:

Beaulieu left me in a huff about some imaginary affront, which I could not sift. He told me, before parting, he was not certain of coming here, but might probably go to Fort Simpson. If he is agreeable to Mr. Smith, I wish him an everlasting stay. The man's demands in Powder, is without bounds - he has never enough (HBCA B.181/a/9, fo. Nd, Bellman and Hanks 1998: 61).

Since Willowlake River was part of the Hudson's Bay Company's Mackenzie district, François Beaulieu caused concern when he took his furs south to Fort Chipewyan in the Athabasca district. Beaulieu's boyhood familiarity with the Lac la Martre-Willowlake River region, coupled with the respect people felt for him, gave him a substantial place in local society (McCarthy 1998:117). To try and control the situation, in 1829, the Hudson's Bay Company post in Fort Simpson hired Beaulieu to winter at Lac la Martre and had a verbal agreement with him to provide an annual allotment of goods worth £8 to £10 (HBCA B.200/e/9 fo.2, Krech 1984: 133). During the year

Beaulieu intervened to keep the peace between the Yellowknife and Dogrib (Abel 1993: 94). Edward Smith reported in 1830, that Beaulieu would continue his services, and attempt to keep the trappers on the west side of Lac la Martre where there were good numbers of fur bearing animals (HBCA B.200/a/11, fo. 2d, Krech 1984: 133).

In 1831, Beaulieu intervened again in the last reported fight between the Yellowknife and the Dogrib. A report came into Fort Simpson saying that:

...the Yellowknives had again lifted their arms against the Marten Lake Slaves [Dogrib] - thus far Beaulieu has succeeded in keeping them from Retaliating - without the Copper Indians (Yellowknife) make [sic] advances for a peace with the Slaves more blood will be spilt (HBCA B.200/a/13, fo. 12, Krech 1984: 133).

While an open conflict was again averted, tensions between the Yellowknife and the Dogrib continued until at least the time of Akaitcho's death in 1838 (Gillespie 1981: 287-288, Hanks 1996a). The losses sustained by years of raiding, and the impact of an epidemic, diminished the Yellowknife's ability to continue the conflict (Abel 1993: 95).

In 1833, in order to maintain the fur returns at Fort Simpson and to prevent Beaulieu from taking the trade back south to the Athabasca District, Beaulieu received goods from the post worth 310 Made Beaver, at a price one third below that charged to local Native traders and trappers (Abel 1993: 99). Hudson's Bay Company trader John Stuart was so displeased with the arrangements made by Factor Edward Smith, that he urged the deal be terminated so Beaulieu would no longer have the means to trade. Stuart calculated that Beaulieu was making a profit of between one third and one half on every pelt. He further complained that Beaulieu was not hunting for himself, but was instead hiring the Martin Lake Dogrib to do the work for him. Beaulieu replied to Stuart's threats by stating that he would simply move his trade to Fort Chipewyan, where he could get even better prices (Abel 1993: 99).

By the late 1830's, Beaulieu had expanded and established a meat trade to supply the boat brigades at Portage la Loche (Methye Portage), south of Fort Chipewyan. At Portage la Loche, Beaulieu had access to Métis free traders coming north from Red River. By at least 1854, he had established ties with Métis traders who were circumventing the Hudson's Bay Company and trading with the Americans (Abel 1993: 99-100, Devine 1995: 8). Bishop Grandin remarked on the great authority Beaulieu wielded over the Chipewyan of Ile a la Crosse and Athabasca, and over the various Dene groups of Great Slave Lake and Fort Rae (AASB T3875 - Grandin to Taché, 1866 in McCarthy 1998: 113).

The Hudson's Bay Company, in an attempt to control Beaulieu's independent activities and bring him back into the fold, put him in charge of Fort Resolution in 1848. While in this role he used his family contacts to open up the Dogrib trade for the Company and to improve the route around the Slave River Rapids. His work as one of the factors led to the establishment of Fort Rae in 1852 (Devine 1995: 12) (see Figure 6). The Hudson's Bay Company did not, however, take

Beaulieu's 1851 advice to James Anderson that the post should be located north of Great Slave Lake near the mouth of the Lac la Martre River, at a location known as *L' Ile de la Montagne* (Menez Nd). "Old" Fort Rae was opened in 1852 on an island in the northwest corner of the North Arm of Great Slave Lake. In 1854, Beaulieu showed Chief Factor James Anderson a route through the rapids on the Slave River above Fort Smith that safely avoided the Pelican Rapids (Menez Nd). The new route became known as the Mountain Portage. It remained in use until the portage road from Fort Fitzgerald to Fort Smith eliminated the need to run the rapids in the 20th century.

By 1856, François Beaulieu had again left the Company and moved his family to the mouth of the Salt River (Overvold 1976, Devine 1995: 12). The Beaulieu family established a farm, growing gardens and raising some cattle (McCarthy 1998: 117). François, Joseph "King", and Antoine Beaulieu alarmed the Hudson's Bay Company in 1857 when they made a trip to Red River to trade (Overvold 1976, Goldring 1980: 25). Their foray caused the company to raise prices to try and counter the free trading activities of the Beaulieus (Overvold 1976). François said he went to visit Bishop Taché, but he had also brought out the furs he had collected over the winter of 1856-1857 to trade at Red River. Two free traders, James Todd and Alexander Wentzel accompanied Beaulieu on his return. Beaulieu also brought £300 worth of trade goods north with him (HBCA D5/44, fo. 172-173 in McCarthy 1998: 118). Bernard Ross, the Hudson's Bay Company Factor at Fort Simpson, viewed the trip as an Oblate plot, as Father Vital Grandin had spent the winter of 1856 with Beaulieu at Salt River to "learn the language" (HBCA D5.44, fo. 51-52 in McCarthy 1998: 119). Given Beaulieu's long history of free trading, he probably did not need much encouragement to make the trip (McCarthy 1998: 119). His connections to both the Catholic Church and the Red River traders made the Hudson's Bay traders very nervous (Devine 1995: 12). Following the trip, his old associate Mackenzie River District Manager, Chief Factor James Anderson, suggested in a letter to Robert Campbell that the Company establish a post at Salt River:

For the purpose of watching Beaulieu and of starving him to submission by occupying his fisheries - which are limited - and by employing Indians to kill all of the animals in the vicinity of Salt River (AB 40-An in Goldring 1980).

François Beaulieu announced in the spring of 1858 that he planned to travel to Red River again. While the plan collapsed when his sons and Indian traders rebelled at the effort required to make the trip, the Hudson's Bay Company took notice (Abel 1993: 100). Governor George Simpson wrote to trader Bernard Ross at Fort Simpson that Beaulieu and his family at Salt River must be more closely watched and any attempts at opposition to the company must be stopped (Abel 1993: 100-101).

The Hudson's Bay Company briefly rehired Beaulieu in this period to keep him from competing with them, but he retired again in 1862 (HBCA B.154/z/1, fo. 15). Beaulieu's influence was so pervasive, that the Company finally established a post at Salt River and hired him again in 1863 to take charge of it. The Company also hired his son, François Beaulieu (III), as a middleman on

the York boats (HBCA B.200/b/34, fo. 68 in McCarthy 1998: 119). Beaulieu traveled to Great Bear Lake one last time in 1863 to trade. He apparently met Father Petitot at the lake near the site of Fort Franklin (Petitot 1893). The next year the Company gave Beaulieu a virtual monopoly on the extraction of salt along with the management of the post at Salt River (HBCA B.200/b/35, fo. 89d, 90, 95, 95d, 102, 103, 111-11d in Bellman and Hanks 1998: 62). According to trader W. Cornwallis King, the Hudson's Bay Company gave Beaulieu a grant of land along the Salt River in exchange for Beaulieu supplying salt to the Company (Menez Nd).

In 1866, Beaulieu set out for Red River to ask the Governor of the Hudson's Bay Company for a pension and to confirm his monopoly on the salt supply from Salt River. When he met Father Grandin at Ile à la Crosse, the priest persuaded him to turn back and then promised to speak to the Company for him. Grandin was concerned that the Hudson's Bay Company would suspect the church was encouraging an alliance between Beaulieu and the Red River free traders (AASB T3875 in McCarthy 1998: 119).

Around this time, the Hudson's Bay Company hired François Beaulieu's son, Joseph "King" Beaulieu, to manage a post known as Fond du Lac, or King Post, at the eastern end of Great Slave Lake near present-day Fort Reliance (Menez Nd). This gave the Beaulieu family an exceptional hold on the fur trade in the Mackenzie District (Giraud 1945: 313).

The extent of François Beaulieu's influence was demonstrated when a fur brigade, under the command of W.L. Hardisty, rebelled near Salt River and the young officer sent for Beaulieu:

The old dictator came, pulled his long knife and pretended to shave his tobacco plug. "Get back to your boat and give no more trouble to your chief" he told the rebels who took to their boats. They feared Beaulieu's knife. Hardisty gave the old rascal a suitable present for his trouble (Menez Nd).

In 1866 when American free traders, moving into the Athabasca District, encouraged Beaulieu to collect fur for them, the Hudson's Bay Company quickly rehired him to visit camps and collect furs before the free traders could get to them (McCarthy 1998: 119). Independent to the end, in the winter of 1871-1872 Beaulieu, again a free trader, attempted to obtain furs from Fort Providence and Fort Rae to trade to his son Joseph at Lac la Biche (HBCA B.200/b/ 39, fo. 46). After François Beaulieu's death, the Hudson's Bay Company moved the post up the Slave River to Fort Smith where it was better situated to manage transportation around the rapids (McCarthy 1998: 119).

By the time of his death in 1872, François Beaulieu was head of a family fur trading empire that challenged the Hudson's Bay Company from Great Bear Lake to Lac la Biche in present-day northern Alberta and Ile à la Crosse in present-day northwestern Saskatchewan (Menez Nd). Beyond personal profit, the success of the Beaulieus had two major impacts on the Hudson's Bay Company's grip on the northern fur trade - it encouraged other Métis and Dene to become free traders and it offered employment opportunities outside of the Company (Bellman and Hanks

1998). The combination served to loosen the hold of the Hudson's Bay Company on the people of the Mackenzie Basin River. Political scientist, Marina Devine believes that "...it is largely thanks to Beaulieu that there was an economic place for Métis as a people in the Mackenzie Basin in the 19th century, leading to their survival as a people into the 20th century" (pers. com. 1999).

François Beaulieu and the Roman Catholic Church

François Beaulieu was the most prominent of the 19th century Métis who became an ally of the Oblates in the Lake Athabasca and Mackenzie River Basin regions. Beaulieu was a very successful hunter reputed to possess strong traditional Chipewyan medicine. This tradition was passed on to his son, Johnny Beaulieu, who had a reputation as a healer. According to Johnny's grandson, Angus Beaulieu, traditional medicine and knowledge of healing were passed down in the family well into the 20th century (McCarthy 1998: 117). François Beaulieu's timely embrace of the church mirrored his success in life which was, in part, attributable to his ability to sense change and adapt.

Beaulieu would most certainly have been forced to attend French language New Testament lessons taught by Chief Factor James in 1823-24 at Fort Chipewyan, but they did not appear to have had any lasting effect (Keith 1997: 240). Twenty years later, in 1844, the Métis asked the Oblate Father, Abbé J.B. Thibeault of Red River to come north to preach to the Chipewyan and Métis at Ile à la Crosse (McCarthy 1998: 118). When word spread throughout the Athabasca, that next year Father Thibeault would visit Portage la Loche, François Beaulieu packed up his children and went to see: "That man from the land of his father, who taught men to live well" (McCarthy 1998: 118). François Beaulieu's son, Pierre, later told Father Duchaussois that a young Métis named Dubreuil, who worked for François Beaulieu at the Hudson's Bay Company post of Fort Resolution, so impressed the older man with his daily religious devotions that Beaulieu decided he wanted to learn more about God. According to Pierre Beaulieu, it was Dubreuil who suggested that François go to Portage la Loche to hear Father Thibeault (Menez Nd, Overvold 1976: 101). Beaulieu was apparently greatly impressed by Taché's delivery of mass and respected his spiritual powers (McCarthy 1998: 118). "Beaulieu appeared determined to share in the spiritual power of his father's church, just as he already possessed those of his maternal heritage" (McCarthy 1998: 118). Thibeault baptized several of Beaulieu's children at that time but declined the sacrament for François, explaining that it could not be given to a man with multiple wives. The church insisted on monogamy (McCarthy 1998: 118).

The choice to stay with Catherine St. Germain may also speak to the Chipewyan and *coueurs de bois* roots of François Beaulieu's Métis identity. Catherine was the daughter of Pierre St. Germain, a "Red River Métis" who had come north in 1812 with the North West Company, and his Chipewyan wife, Thakaritthert (Menez Nd). St. Germain switched sides and joined the Hudson's Bay Company in 1819. He was an interpreter for the company at Fort Chipewyan until he joined the first Franklin expedition in 1821. Pierre St. Germain and François Beaulieu were closely associated throughout the 1820's and early 1830's, before St. Germain became a freeman and returned to Red River. Beaulieu married Catherine, according to the custom of the country,

between 1825 and 1827 when Pierre was the interpreter at Fort Norman, near Beaulieu's hunting territory at Great Bear Lake (McCarthy 1998: 116 - 117) (see Figures 2 and 3).

When Beaulieu chose to pension off his other wives to meet the requirements of the church, the women remained a part of the extended Beaulieu family. This was not simply a social decision, but one that potentially had major economic implications for Beaulieu, as wives provided the kin links that helped bind his trading empire together. According to Beaulieu descendants, the other wives who were sent back to their families to be with their children, continued to be taken care of by François Beaulieu.

François Beaulieu was baptized on September 25, 1848. At Christmas that year, Beaulieu's wife Catherine St. Germain was baptized. On December 30, 1848, their marriage was blessed by the Roman Catholic Church (McCarthy 1998: 118). The Beaulieu family became staunch advocates for the Oblates. Beaulieu supported the priests, helped them learn the Aboriginal languages, and acted as a spiritual lay leader.

Thibeault's reception by the Métis and Chipewyan led to regular visits by the Oblate missionary Alexandre Taché to the Athabasca. In 1848, a delegation from Great Slave Lake met with Taché and asked for their own resident priest (Devine 1995: 12). Despite pressure by Beaulieu to establish a permanent mission at Salt River, the best that the priests were able to do was to rename the settlement the St. Isidore Mission, and to visit it as often as possible (McCarthy 1998: 118).

François's eldest daughter by Catherine St. Germain, Catherine Beaulieu, was educated by the Grey Nuns in Red River. She subsequently married Joseph Bouvier, a Red River Métis boatman who eventually lead the Hudson's Bay Company's transportation system on the Mackenzie River (Kermoal 1998: 152). Bouvier used his influence to force Bernard Ross, the strong anti-Catholic Factor at Fort Simpson to allow Father Grollier to visit that community and provide services to his wife and children. Another son, Alexis Beaulieu, refused in 1860 to translate for the Anglican missionary in Fort Simpson contending it was not his job (McCarthy 1998: 123-125).

Beaulieu blended his traditional powers, gained from his mother's people, with those of the church of his father. Ever pragmatic, he used the Church as a tool in his ongoing struggles with the Hudson's Bay Company. His status as a lay leader would have helped consolidate his temporal authority with the strongly Catholic Red River Métis, who were moving into the Athabasca and Mackenzie River Districts in the 1830's and 1840's to work on the Hudson's Bay Company boats brigades (McCarthy 1998: 122).

It has been speculated that, perhaps, his conversion was an affirmation of the stories of the early missionaries to New France, which he heard on the knee of his father and uncle Jacques. If an early 1770's birth date is accepted for François Beaulieu, he was in his 70's by the time of his conversion. Beaulieu was reverently referred to by the priests as "le Patriarche". During the winter of 1872, François Beaulieu II fell ill and died of a fever and cough after five days of sickness (AASB T11274-6 in McCarthy 1998: 123).

The Growth of a Métis Identity in the Mackenzie District

François Beaulieu's famous quote speaks to the core of his perceived identity:

"I am only a Métis and a Métis born and bred in the woods like a pure Indian, without baptism or religion, like a Sybarite, like a desert sultan; but I am also a son of France, and I am filled with tremendous desire to avenge any wrong done a compatriot" (Savoie 1977).

Beaulieu was recognized in his day as a "Chipewyan half-breed." Like his contemporary, le Camarade de Mandeville, the son of a French Canadian trader of Norman descent, he was known in the early to mid-19th century as a Chipewyan trading chief (McCarthy 1998: 116 - 117). Eighty years later in 1900, J.A. Macrae, the Commissioner for Treaty 8, denied the application of the Chipewyans at Fort Resolution to make François's son Pierre, Chief. No one Macrae thought was Métis was allowed to take treaty (McCormack 1998: 186). What had been a common people were arbitrarily made two through the decisions of officials of the young Dominion of Canada. Today some of François Beaulieu's direct descendants are Treaty and some are Métis.

There is more however, if one is to try and place François Beaulieu within the context of Métis identity in the Mackenzie River Basin. First, Beaulieu is a challenge to anthropologist Richard Slobodin's often-cited, but erroneous, description of the Métis of the southern Mackenzie as "Red River Métis" (Slobodin 1966: 14). Based on the history of the Beaulieus and of other early Métis, such as the Poitras, Cayen, le Camarade de Mandeville, Lafleur, Charlois, and frères Tourangeau, the *coureurs de bois* ancestors of the Mackenzie Basin Métis moved north in the wake of the collapse of the French fur trade around 1760 (Petitot 1891: 78, Smith 1981: 685, Smith 1982: 68-70). The oldest Métis families in the Mackenzie developed parallel to the Métis on the prairies in the late 18th century. They originally had few connections to the "Red River Métis" (McCarthy 1998: 112, McCormack 1998: 178). The first Métis families in the Mackenzie River Basin, such as the Beaulieus and the Mandevilles, grew from the union of the *coureurs de bois* with Chipewyan women. By the 1820's outsiders, such as Hudson's Bay Governor George Simpson, viewed the northern Métis as a distinct people (Abel 1993: 86).

Ties with Métis to the south began to increase with the spread of the North West Company in the late 18th and early 19th centuries. The union of François Beaulieu and Catherine St. Germain illustrates the mix of the old North West Company families. The subsequent marriage of their daughter, Catherine, to Joseph Bouvier illustrates a continuation of the practice to marry Métis Hudson's Bay Company men who came north from Red River along the York Boat routes in the 1830's and 1840's. It is correct to infer that by the mid-19th century the Métis of the southern Mackenzie River Basin had inter-married with, and were influenced by, their Red River cousins. As has been seen with the Beaulieus, it was not uncommon for northern Métis families to occasionally winter in the south and for some to retire there after 1821 (Payment 1998: 79).

The original Northern Métis families continued however, in the traditions of their Chipewyan ancestors. McCarthy has compared family leaders of the big distinct late 19th century Métis "tribes" of the Mackenzie to the "captains of the buffalo trade on the prairies" (1998: 121, Slobodin 1966: 153). Perhaps it would be more correct to compare them with the old Chipewyan trading bands of Matonabee and English Chief. During the late 19th century, the Beaulieus from Salt River and the Mandevilles from the Buffalo River would pack up, as had their fore-fathers François Beaulieu and the le Camarade de Mandeville before them, to travel, trap and trade for a number of years before they returned "home" (Slobodin 1966: 153) (see Figure 6).

More than 100 years after their original progenitors wandered north following the fall of New France, the independent streak of these *coureurs de bois* ancestors remained strong among the original Métis families of the Mackenzie River Basin. It is, perhaps, the independent image of his *coureurs de bois* forebearers that best describes François Beaulieu's own identity, for he was certainly never anyone's *voyageur* dutifully hauling trade goods north and furs south for the benefit of a distant Canadian or English merchant.

Conclusion

François Beaulieu was a dominant figure in the Far Northwest during the critical century from the first direct European contact with the Dene, through the competitive years of the fur trade, and ultimately to the end of the Hudson's Bay Company monopoly and the birth of Canada. As one of the pre-eminent Métis leaders of his age, Beaulieu's work, both for the fur companies and later as an independent trader, helped to establish the economic and social links between the people of the Mackenzie River Basin and what, in his lifetime, became Canada. His collaboration with the First and Second Franklin Expeditions, and later with Father Emile Petitot, played a critical role in the evolving European understanding of the western Arctic region. Beaulieu's influence as a free trader in the age of the fur trade monopoly was critical in helping to develop an independent economic base for the Métis of the Far North. His exceptional role in these events clearly suggests he is an individual of potential National Historical Significance.

Beaulieu best represents one of the Métis families that grew in the Far Northwest in the century from the 1770's-1780's. Tracing the history of the Beaulieu family suggests that the birth of the Mackenzie River Basin Métis was independent of, but parallel to, similar Métis developments that occurred on the prairies at the same time. The Beaulieu story has clarified this long puzzling historical question. Perhaps of equal significance was the union by marriage of the Beaulieu with the St. Germain family, which subsequently helped form the enduring links, which still exist between the Métis of the Mackenzie and those of Red River.

Beaulieu's role as champion of the Roman Catholic Church in the Athabasca and Mackenzie districts was certainly a factor in the relatively rapid establishment of the church in the western Arctic. The role of the church in the evolution of Métis society cannot be understated.

While Beaulieu's trade links ran from Great Bear Lake to Lac la Biche and Ile à la Crosse, three locations stand out in Beaulieu's career as particularly prominent - the Beaulieu homestead at Salt River, his trading posts around Lac la Martre, and the interpreter's house at Fort Franklin by Great Bear Lake. The archaeological remains of the Beaulieu home on the Salt River Plains Indian Reserve 195, with its explicit association to the Beaulieu free trade empire, and the ruins of Fort Franklin with his unique role in the Second Franklin Expedition, are meaningfully associated with significant elements of François Beaulieu's life. The Delphine Fishery and Fort Franklin were declared a National Historic Site in 1997. The Salt River First Nation and the Fort Smith Métis Local would like the HSMBC to investigate Salt River when a site is considered for commemoration.

Finally, and perhaps most important is his legacy, not the considerable influence he wielded during his life, but the lasting influence he has had on the people of the Mackenzie. François Beaulieu continues, to this day, as a significant historical presence in northern Alberta and the Northwest Territories. He is an outstanding representative of the Mackenzie River Basin Métis. His life illustrates the contribution that the Métis in the Far Northwest made in establishing the social links that helped bring Canada north. For many people in the Mackenzie region, to trace one's ancestry to François Beaulieu is much like a Scot tracing his ancestry to Robert the Bruce. You descend from a founding father.

The Historic Sites and Monuments Board of Canada is being asked to consider declaring François Beaulieu a figure of national historical significance for his complex life and role as an outstanding early Métis leader in the Mackenzie River Basin. Beaulieu is a historic figure who stands on his own merits and whose story embodies important elements of many larger themes of Métis history.

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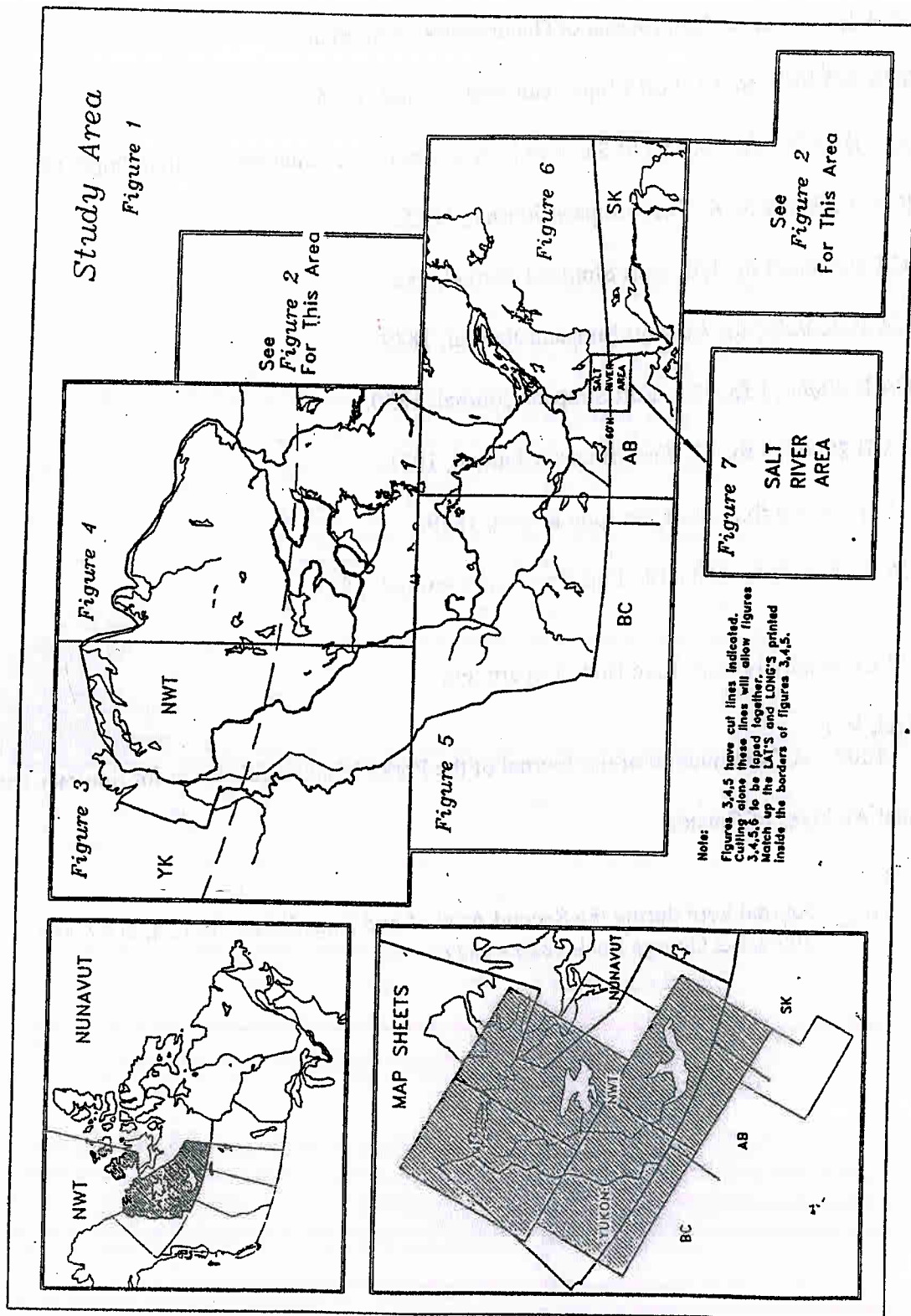
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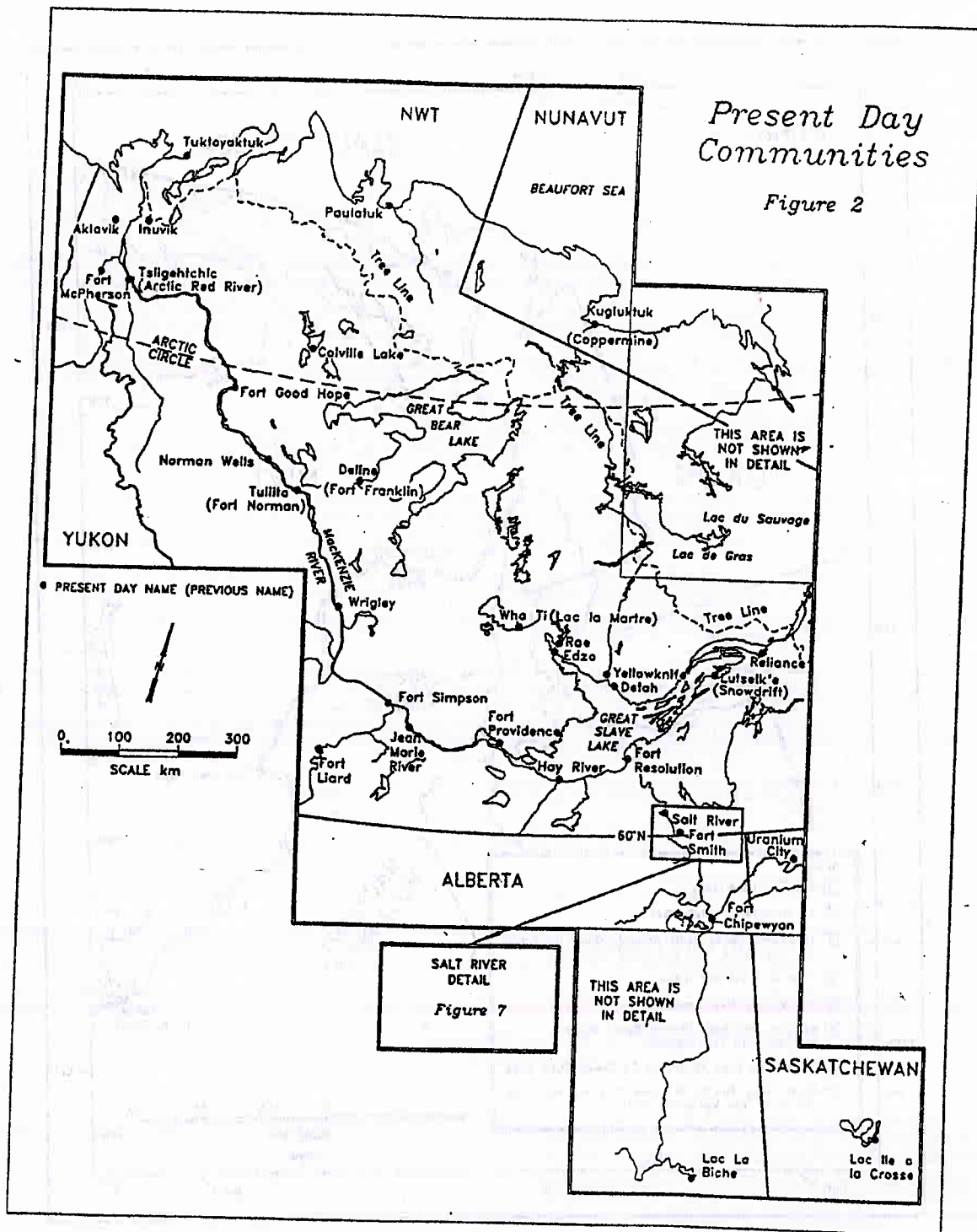
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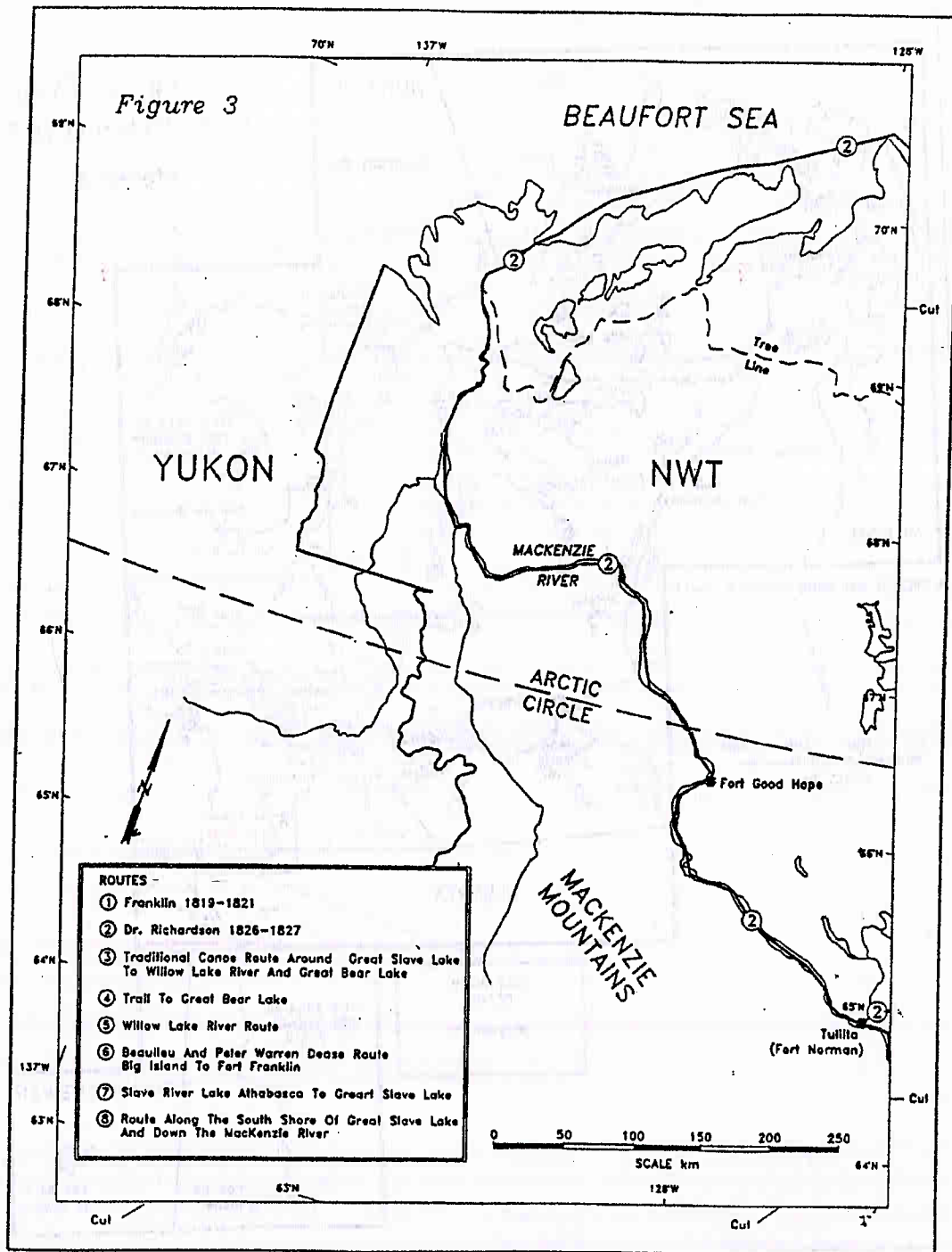
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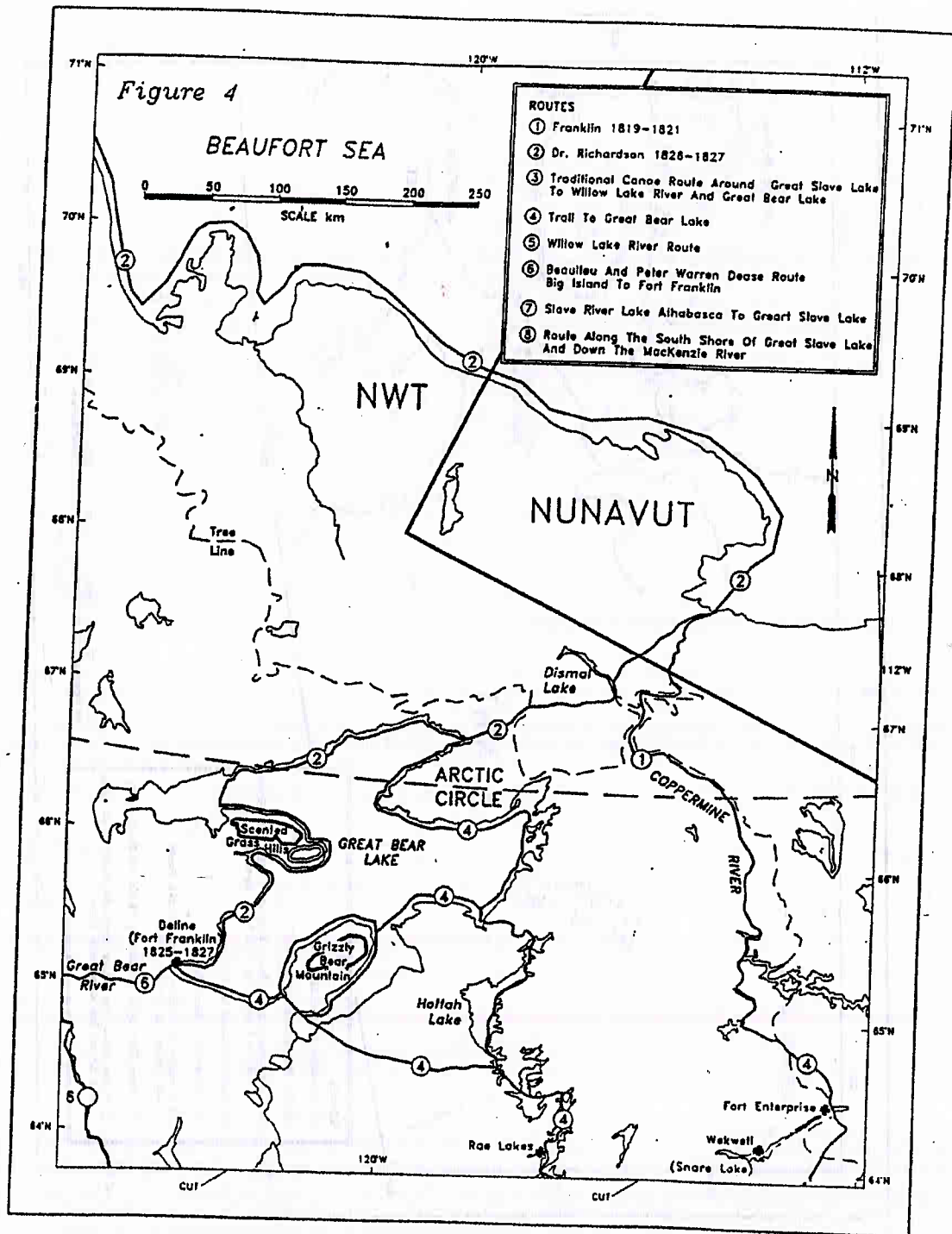
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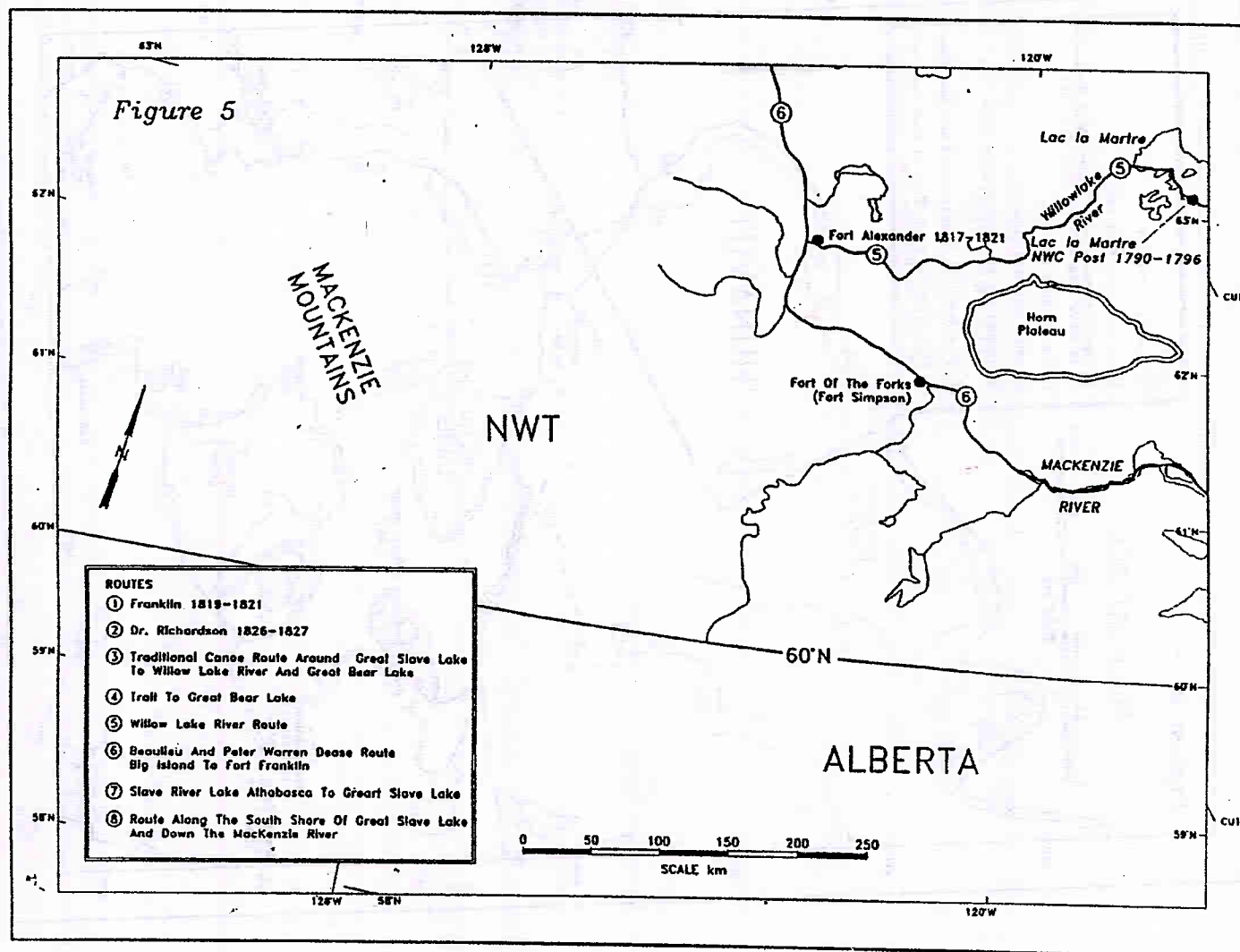
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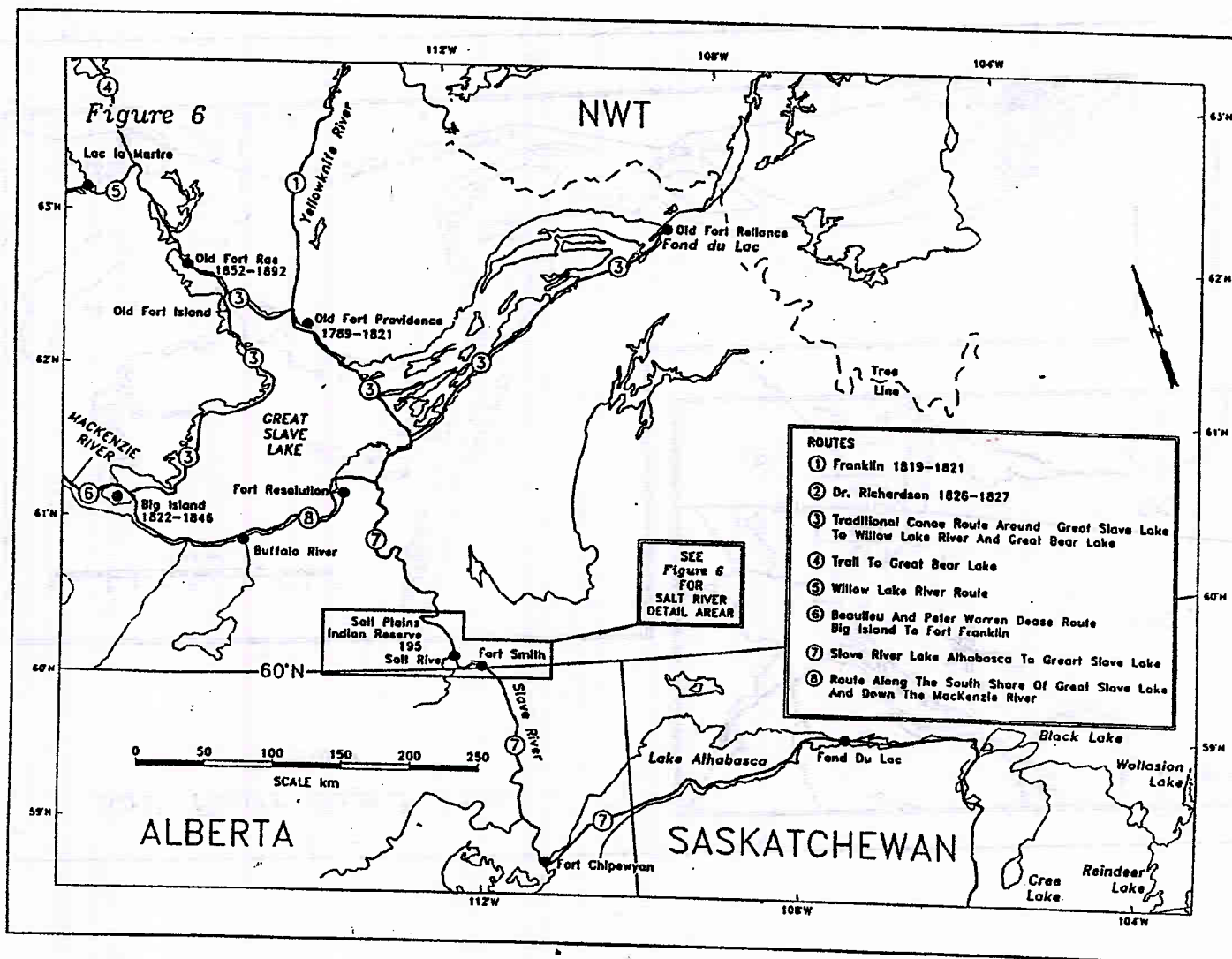






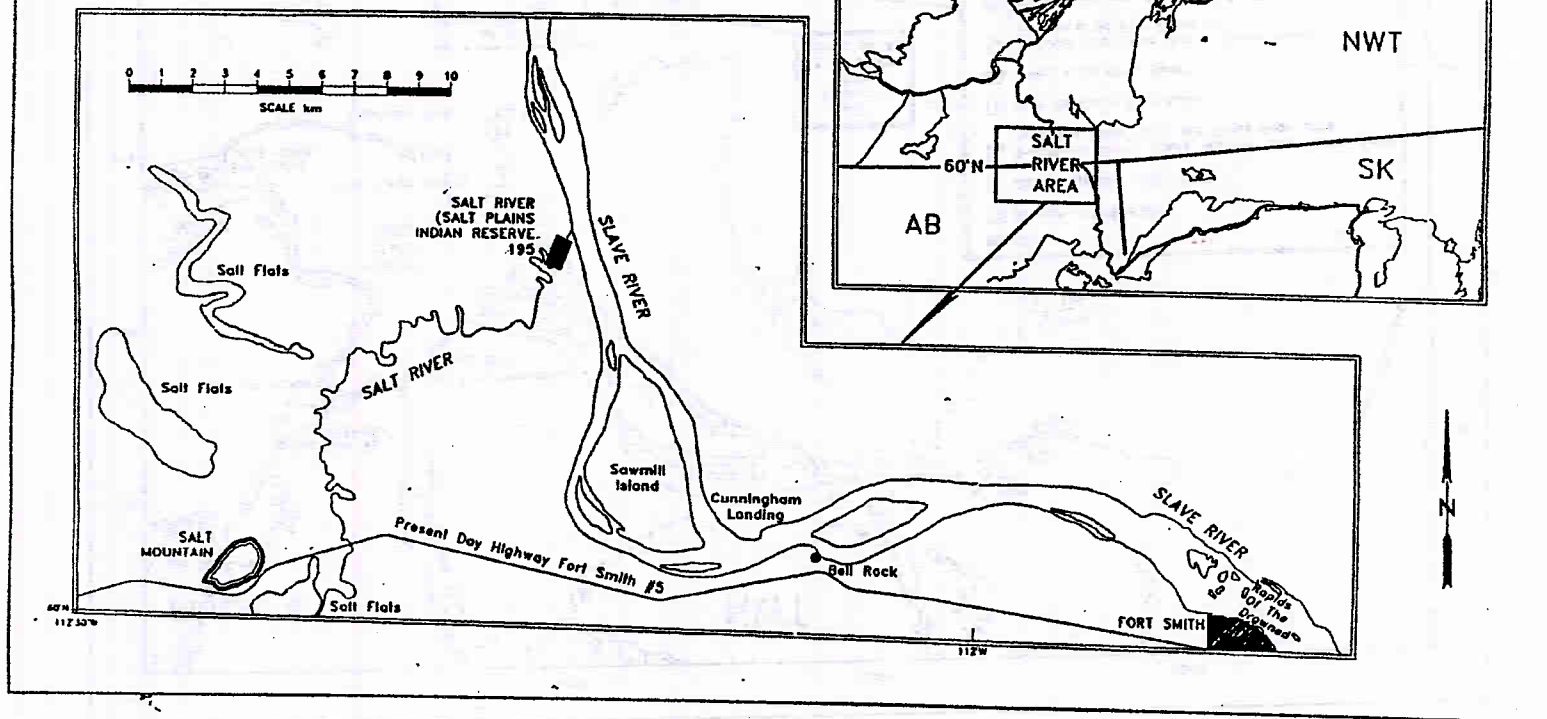






Salt River Detail Area

Figure 7



To Great Slave and Great Bear:
P.G. Downes's Journal
of Travels North from Ile à la Crosse in 1938
[Part V]

Edited and Introduced by R.H. COCKBURN¹

ABSTRACT. This is the final installment of the narrative of P.G. Downes's trip by canoe, boat, and plane from Ile à la Crosse to Great Bear and Great Slave lakes in 1938, in which he presents a detailed account of his feelings, thoughts, and experiences, as well as his observations on individual men and women, northern lore, and geographic characteristics of the region.

Key words: Ile à la Crosse, Lac La Loche, Swan Lake Portage, Clearwater River, Athabaska River, Slave River, Fort Smith, Great Slave Lake, Mackenzie River, Great Bear Lake, Eldorado, Cameron Bay, Yellowknife, Chipewyan, John Hornby, George M. Douglas, Paul "King" Beaulieu

RÉSUMÉ. Voici le dernier épisode du récit du voyage par canoë, bateau et avion de P.G. Downes à partir de l'Ile à la Crosse jusqu'aux Grand Lacs de l'Ours et des Esclaves en 1938, décrivant en détail ses sentiments, ses pensées et ses expériences, ainsi que ses observations sur des hommes et des femmes particuliers, le folklore du nord et les caractéristiques géographiques de la région.

Mots clés: Ile à la Crosse, lac La Loche, lac du Cygne Portage, rivière à l'Eau-Claire, rivière Athabasca, rivière des Esclaves, Fort Smith, Grand Lac des Esclaves, fleuve Mackenzie, Grand Lac de l'Ours, Eldorado, baie Cameron, Yellowknife, Chipewyan, John Hornby, George M. Douglas, Paul "King" Beaulieu

Traduit pour le journal par Maurice Guibord.

September 1st Fort Resolution, N.W.T.

Beautiful, warm, clear day, slight E + S breeze. Such a magnificent day as I have not experienced for many, many weeks! We got away in the morning about 6:00 a.m. from the Con. and have run all day, 16 hours in a brilliant, hot perfectness with a light easterly, and are now at Resolution. What a lovely, perfect day to cross Great Slave Lake — one in a thousand! We kept fairly off the northeast shore and chain of islands which most of the day were a smoky low outline of infinite and strange variety as they shifted into odd, inverted mirage patterns. As the various inhabitants of the boat emerged into the daylight, one particularly striking person was immediately obvious. A very tall gentleman, with snow-white hair and moustache, tanned a leathery brown, with extraordinarily bright blue eyes under shaggy white eyebrows. A jutting chin, and beak of a nose. I recognised him immediately from a portrait painted 28 years ago — George Douglas, the hero and author of *Lands Forlorn* [1914], his account of his trip across Great Bear Lake to the Coppermine and the Arctic coast so many years ago [1911-12], an account which I prize among my northern books [Figs. 36, 37]. He was washing a pair of khaki pants, some underwear and socks, and had the biggest wrists and the kindest smile of anyone I have ever met. It was not long before we were chatting, a mutual friend, Dick Finnie, being an opening wedge. I followed him about from washtub to clothes-line, which he had strung away at the forward end of the forward barge, like a dog, and must have been a perfect nuisance. Our talk was of course all North. Curiously, Douglas absolutely shut up when I asked about Hornby. Earlier this summer he had been on the south shore of Slave in the Chi-chi lake country, prospecting. He must have been a very powerful man — a very large-boned man today but somewhat stooped with age, though very light on his feet and extremely active. He had one rig that was especially practical and neat. He had all his maps in small notebook-size photostatted reductions, and in sections, with descriptive notes alongside each. A news flash of the moment

from the skipper: N.T. has been taken over. MacKinnon of the *King* has sunk another barge, making 4 his total for the last two seasons. The new manager (HBC Mackenzie River Transport), Chesshire, is out and a chap named [D.] Hutchinson is in — from the States. All day Douglas has been climbing about, training his glasses on the islands, identifying this one and that with all the zest of a youngster. Talked with, or rather had my ears talked off by, a young, pleasant-voiced chap [Larry Alexander] who is editor of the Yellowknife "newspaper," a tidy little mimeographed sheet. Circulation has been as many as 800 copies and it has been sent everywhere. Facts on Yellowknife. One doctor, resident at the Con. 50% of residents typhoid inoculated. But one eating place boils its water. Total lack of

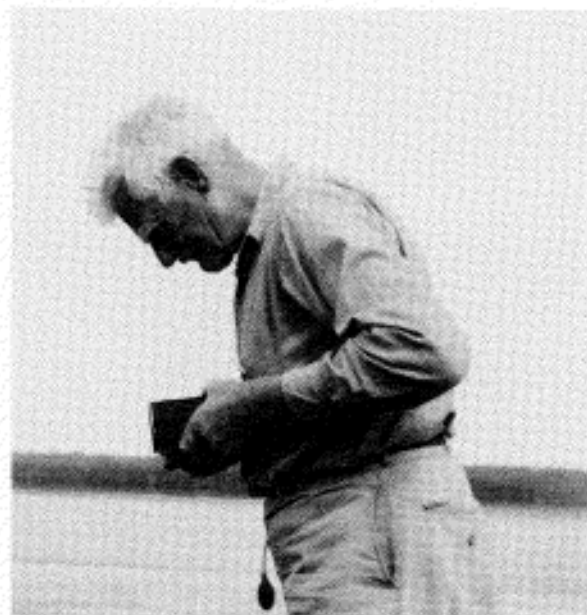


FIG. 36. George M. Douglas.

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gov't control. Whole works admittedly speculative. No building or fire hazard regulations. No N.W.T. codes applicable to situation. Vic Ingraham (*Speed* disaster at Bear Lake) runs the Yellowknife Hotel and is unofficial bootlegger — \$10 a bottle. Douglas says [David] Hanbury [author of *Sport and Travel in the Northland of Canada* (1904)] was so painstakingly conservative as to very frequently underestimate distance. Holds out [Guy H.] Blanchet [of the Topographical Survey of Canada] very highly. Spoke with a gleam of savour in his eye of both the Hare River & Lac la Martre ventures. Spoke of two chaps starting a private school in the Seigneury Club area — check on this. So warm; a "tropical" contrast. In here at Resolution I was greeted by some of the boys on the Brown Construction job — the chaps building the new radio station — but I had so forgotten all about them that I didn't recognise them. A comment from G.M.D. on the Con. — a typical money job in that though the various "brains" have everything of convenience, there are no adequate docks, derricks, unloading, handling of freight, or storage facilities — a "cream puff" job. As we approached the south shore the water was covered with the greenish-yellow pollen of the spruces. Sometime after 2 a.m. it began to blow and we moved off behind some islands and anchored. They say the eastern channels of the delta — like the Nagle — are blocked up. [Dr. J.H.] Riopel is the Indian Agent here now after the Amisk [Lake?] row.



FIG. 37. Douglas — "a very tall gentleman . . ."

September 2nd

Clear, wind NW. Blowing, so we lay behind the island until well into the early afternoon. We rolled and pitched so last night, and the timbers made such a racket screeching and groaning — not to mention the empty oil drums which rolled and clanged about — that we had little sleep, and so we slept in until noon. The cook is a most generous fellow; he gave us a bowl of soup which tasted fine. Later the two barges were put on tow as we crossed to the opening of the channel. Our barge was the tail one, so we were quite exiled all afternoon. However, it was very pleasant and we did not roll and pitch anything like the other barge or, particularly, the *Dease Lake*. We made the flag buoy late in the afternoon and shifted the barges from tow to push, so John's and my period of exile was over. It was fine and warm on the placid waters of the Slave. Douglas indicated various channels as we progressed upstream. Both the Nagle and Jean Marie are almost blind openings coming downstream unless one is on the alert. The Nagle is particularly small and swings back behind an alluvial cutbank. We got in to the sawmill about nine and my good travelling companion John Paulson got off to work there this winter. They decided to leave

a barge here, so the night was made hideous with the clang of the empty steel drums being shifted into this barge and with the roar and rattle of the hoist. The barge got so filled with drums that I was forced to move out and took up quarters on the roof. For a long time I watched a brilliant display of the Aurora. Very spiral-nebulae in effect, twisting & untwisting and with a sheath of light which seemed to shift like blown smoke. I played a game of chess with D. and lost. He carries a small pocket set with him and works out chess problems. We scared up a small flock of geese on a mud flat at sunset and they went swinging away — already the geese are moving south. A gorgeous sunset. Sorry to see John Paulson leave. He has been an excellent, generous, good-hearted companion.

September 3rd

Bright & fair. A marvellous day. Light westerly breeze. Slept until late on the roof of the barge. In the afternoon played chess with D. and won one game, lost two; he is a deliberate, careful player. Later we talked a bit on many things. It developed, to my surprise, that contrary to the book [Waldron, 1931], Hornby was no monk. When Douglas was at Dease Bay Hornby was living with the woman now D'Arcy Arden's wife. [For as accurate details as we shall ever have concerning Douglas's association with Hornby and other points about Hornby raised by Downes, see Whalley, 1962.] On his trip down the year he was to winter with [J.C.] Critchell-Bullock, he came down the Peace with [Malcolm] Stewart & [Matt] Murphy, the trappers who saved Bullock and Hornby that year [1924-25], and wrote D. a long, doleful letter about how he was sick of the North (because of an affair with a girl in Edmonton [Olwen Nowell]). Hornby & Bullock never hit it off at all. Bullock's diary was read by Douglas and is full of invective against Hornby. However, Hornby never said a word against Bullock outside. D. thinks that after the war H's eccentricities were definitely on the decline. Douglas and Boblett, a friend and intimate of Hornby's, were at Snowdrift some time back and [Helge] Ingstad was there also (the year he went in with the Caribou Eaters [1928]). D. & B. were talking of Hornby and the book he had planned to write (at one time all of Hornby's notes were left with Douglas). Douglas thought Ingstad was some sort of anthropologist. But anyway, there he was, drinking it all in, and of course stole the title outright for his own book [*Land of Feast and Famine*, 1933]. When one reads Ingstad's book one is again and again reminded of his huge size — attention is drawn by him to this repeatedly. Actually, says Douglas, and oddly enough, he was a small man about my size [5'7"], and smaller than the band he was with, which was a group of big men. That band is almost dead to a man today from the "flu." Douglas's views are very refreshing — frank and extremely humorous. The story of Hornby, D'Arcy Arden and "What the hell are you doing with my wife?" is an excellent one. Again and again as we moved on up river we started up flocks of geese, which would rise and wheel away, honking and crying. Occasionally I saw a thin line of ducks hurrying south. Most of the birches are tinged with yellow. [Major L.T.] Burwash is not the discoverer of Yellowknife, nor is his mine producing a thing; as Douglas says, the North is an extraordinary place for money to be made without a thing actually coming out of the country. The fact remains that tremendous sums of money have been poured into mining ventures here by the investing public, & to save its face the Con. had to find something or lose out. If precedent is followed, the values will

not increase in depth in this northern area. The year H. & Bullock went in they had a falling-out, and Hornby went down the Peace R. to avoid him. They hitched up somehow at Smith. D. says Hornby's brother was a proper son of a bitch. Hornby's mother died and left £50,000 to H., which reverted to the brother and sister, as [Edgar] Christian's diary established his prior death. As I have observed elsewhere, the diary [Christian, 1937] was very poorly edited. No mention of [H.S.] Wilson & his party at all. [Dr. Wilson and his three companions discovered the bodies of Hornby, Adlard, and Christian in a cabin on the Thelon River in June 1928: see Dewar, 1978.] Wilson started from Resolution and went right through, passing Douglas, who was also eastbound, by going through a series of lakes to Snowdrift. Douglas is a great one for camp gadgets and such. Designs his tents, sleeping bags, food bags. His grub supply numbers all manner of selected things such as hominy grits, Demerara sugar, various dehydrated vegetables, a special breed of hardtack, erbwurst, and such. D. was asked to write a life of Hornby at the height of the excitement but turned it down for lack of data. It is now 7 pm. There is a beauty and a peace at this time here which passes all human understanding. A golden sunset; the birches just touched with yellow; this broad silent river; the tall, straight, sombre spruces; the golden, golden light; somewhere a wild goose calling; the deepening purple of the horizon: one might well wait all summer for a day like this. Later: a beautiful clear night with aurora and many shooting stars. I lay for hours on my back watching the heavens. Every time I see a shooting star I send a message to someone. It was so warm I could not sleep, though toward morning I finally managed to drop off. Temp. 72°.

September 4th

Bright & fair, warm, slight breeze. We ran all last night and got in here to Fort Smith about 3 pm [Fig. 38]. One could not ask for a more pleasant trip; cloudless skies, hot, brilliant sun, and excellent company. Douglas — I must remember the address: George M. Douglas, Lakefield, Ontario — is a most extraordinary man, active as a cricket, always on the move, and so keen. He told me of the first time he met Hornby. They were going downriver on the *Distributor* (?) [no: on the *Mackenzie River*, in 1911] and were having breakfast when Hornby and his companion, [Cosmo Dobrée] Melvill, an Englishman, adventurer, and big-game hunter, came aboard. Douglas says it was impossible to get Hornby to talk consecutively on anything. Melvill was very reserved, the typical British big-game hunter, but, says Douglas, Hornby was just like a monkey, and as he chattered he kept digging filthy fingers into the sugar bowl, much to the growing annoyance of the captain, Mills. Hornby never had any really concrete objective. His notes, such as they were, were absolutely incoherent and without sequence. Once he undertook the mission to write up something on the caribou, but it finally amounted to but a page and a half (typewritten) of material already well known. Hornby's mother told D. that he had been pointed for the diplomatic corps, had indeed had one job as aide of some sort, but receiving no further post turned to the North. With his faults, says D. — the impossibility of living with him — he had great qualities of extreme generosity and was a perfect gentleman. (Note: Jim Cornwall — Labyrinth Lake — the Grease River route and the unknown headwaters of the Thelon.) In here now, I went up to see if I had any mail from



FIG. 38. P.G. Downes, 1938, at Fort Smith.

E.G., but there was nothing. I was bitterly disappointed, and cannot understand why none was ever sent. You imagine all sorts of things. It is particularly upsetting when one is on the way back after the long trail, and particularly too, after the tenor of the letters on the outside; disappointments of nature are enough, without the complicating human element. One rather amusing thing re the mail. When I left Prince Albert, Keith [HBC] sent my clothes to the District Office at Edmonton. The Edmonton office of course did not know me. They, with usual thoroughness, sent word up north to notify me that a "brown zipper-bag bearing the name P.G. Downes, Belmont Hill School, Belmont, Mass." was in their office. Meanwhile, I had left in *Sequoia*, while they assumed I was on the *Distributor*. Here at Fort Smith I slipped through unknown and went down on the *Radium King*, of course — an entirely different outfit. The question all summer has been, where was P.G. Downes and how to get hold of him — further, what to do about the mysterious brown zipper bag. To the HBC I had disappeared off the face of the Globe. All this I discovered when I went in to the Transport Office to see about mail. Douglas, who was at one time a great pistol & rifle enthusiast, approves highly of the Mannlicher 6.5 for the Barrens. A variety of trips presents possibilities for another year. The names of the chaps starting the school [Sedbergh School, Montebello, P.Q.] are Messrs [Frank] Duxbury & [Tom] Wood. Both are northern travellers, Duxbury having done the Porcupine-Yukon route, Upper Finlay, and Albany. These chaps might prove of value sometime. Here is all the damnable vagueness about boats. Theoretically, the *Beaver Lake* should leave Fitzgerald tomorrow, but no one knows where she is. If I do not get off tomorrow I will be put back a whole week and be late. This I shall not countenance, to the extent of paying \$65 and flying to Edmonton. I am particularly determined to get to Milwaukee and find out what the situation is. We stopped at Bell Rock to take on some stove wood. Bell Rock, named after Doctor [Robert] Bell [G.S.C.], is one of the few exposures (3) of Devonian limestone on this lower river; there is no other exposed rock over the whole course. The rapids here are caused by granite ledges. I chatted with a fellow in a scow bound for Reliance to trade. He was forced to jettison 500 lbs of flour owing to low water and wind at the delta of the Athabaska. Here is an example of the extraordinary spry activity of D. We stopped at the mouth of the Slave to take on stove wood. The crew, of course, undertook this task; when up the narrow board walk slowly comes D. lugging a huge log on his shoulder. An amazing old gentleman, and absolutely no one's fool. Still no word on the *Beaver Lake*, which is assumed to have hung itself up on some sand bar (it has not reached Chipewyan). Later went calling with Mr. Douglas. We were going to the Conibears', but detoured to visit Billy Cook, an old timer who used to be at Norman and now runs a store here. Chatted for hours, particularly on the MacAlpine affair and the heroic part played by Geoffrey [no: Walter] Gilbert. [In September 1929 Col. C.D.H. MacAlpine and his Dominion Explorers party were lost when their aircraft went down near Dease Point. The aerial search that followed was the most famous of the pre-war years. MacAlpine and his group survived. See Blanchet, 1930.] Douglas said one thing which stuck in my mind because of its concurrence with my own view. He had been at Reliance when the trappers were going in to their camps. There is a small group who all pool in and charter the big Bellanca to fly in. Said Douglas: "The real aristocracy of the North, the only ones who really bring something out of the

country." Millions have been spent on mining, but a gold brick has yet to be brought out. For 10-12 years now, the money has been poured in, with nothing coming out except profit on speculation. Steffanie [sic] is, according to these two competent judges, an extraordinary man. One year he went in with 50 lbs of flour, 3 lbs of hardtack, a pound of tea, and plenty of ammunition. The flour was used by being scattered from the plane to see which way the wind was blowing; the next spring the hardtack was eaten, but he still had the tea. He is the chap I talked with at Yellowknife. It was from him that Matt Berry got the most accurate and productive hypothesis as to the location of the MacAlpine party. Later I went back to the boat to get my outfit and make a camp. As I went down from the dock I saw an Indian girl — so dark I could not distinguish well — but I looked, and she said, "Oh, are you back again so soon?" I could not for the life of me recall who she was. I went back after making my camp to find her, but she was gone. Camped in the same spot in the spruce overlooking the water. The river is extremely low and rocks are exposed far below the rapids — right in line with my camp. Some important information: for lone travelling, D. says [fish] net 35', 4½" mesh. Also, Indian method of floats is superior, as the net does not tangle so badly. I examined some floats, and they use wedges, or at least pieces of wood which bob up vertically and are tied by a short line to the net. Furthermore, stones or leads attached by lines are much superior.

September 5th

Clear. Bright & Fair. A day of great annoyance. Theoretically, and expectantly, I was scheduled to go over to Fitz. and take the *Beaver Lake* back to Waterways. Along with two carpenters from Vancouver I waited impatiently all forenoon for word of the boat's arrival. Getting word, I packed up (rolled my sleeping robe) and got ready to go over. At the last minute I was informed that no passengers were allowed on the boat (she is strictly freight). This unusual edict simply spoils my chances entirely. I argued in vain. They were very prim and prissy here, and I could not get over to Fitz. to see them over there. So here I am. It looks as if I will be forced to fly out, for no boats are due in for some time, the end of the week at least, and this would make me far too late. I was quite annoyed and upset about the whole matter. However, there seemed nothing I could do about it. Examined Douglas's flotilla. He has two gigantic canoes, 20'-21' Peterboroughs. Really enormous affairs. Two smaller, varnished canoes, one 16' basswood, one 15' cedar & canvas. All of them are in beautiful shape, glistening and unmarred. He is shipping out the two wooden ones. He has a great store of miscellaneous foodstuffs, etc. stored in the HBC warehouse. What an amazing man. What vitality. All the wrangling and what-not about the boat took up most of the day. Finally, in disgust and high dudgeon I grabbed my stuff and went down the river a piece and made a camp. Later I went up to visit the Conibears and had a pleasant time. Coming back, I ran into Douglas, who was out walking. We repaired to the porch of the hotel and passed a pleasant hour chatting. Several interesting facts developed. My map of Dease Arm (Great Bear Lake sheet) shows no major islands; other editions show a very large island. It appears that this "island" was on the [aerial] photo plates. D. was sure there was no island there and informed them of such in Ottawa. Examination of the plates established that there was something, and though the pictures were made well on in

August, the "island" was in fact a large field of floating ice. Later a flight by D. over Dease Arm established conclusively the fact that there was no island there. Curiously enough, Jack Raymond, who wintered at Caribou Point, claimed to me that there was an island there. ["The Great Bear Lake country is for the most part still unknown, unexplored, and unmapped. The lake itself, though one of the great fresh water lakes of the world, has not been fully delineated; the northwestern arm has not even been penetrated to its full limits" (Camsell, 1937).] Douglas says he certainly would have liked to have more excerpts from Bullock's diary. Apparently it was not until reaching the portage [Pike's Portage from McLeod Bay, Great Slave Lake to Artillery Lake, September 1924] that Bullock realised what he was in for, as up to that time they had been travelling with trappers. There he began to run into a few of H's eccentricities — and the latter's refusal to take or have various things [Bullock's scientific gear] taken over the portage. Outstanding error in Ingstad's job is the quite erroneous geographical and directional data. He insists on talking of travelling north (for in a book on the north one must always be travelling north), where in reality he was travelling southwest. This is obvious if one checks his locations on the map. The meeting with Douglas has certainly been the high point of the return and an extraordinary break of fortune for me. Retired to my bower and was considerably occupied by mice or a mouse. First the mouse, one of the microtas probably, ran across the top of my sleeping robe to my chest, then jumped off in surprise when I shook in protest. Then he attacked the grub bag. Not getting anywhere, he or she suddenly jumped onto my head, much to the surprise of both of us. This last act was his or her final act of the evening. I wish I had kept some record of my dreams; lately they have been most unusual and revert back to people of so many years ago.

September 6th

Bright & fair in a.m. Up and about at a reasonable hour. Curious fact of these regions: the Indians differentiate between a "white man" and a Frenchman, always distinguishing the two. For instance, a chap was trapping on Hay River and the Indians at Resolution were asked by someone, "Was he a whiteman?" "No, not a whiteman, a Frenchman." I talked for hours this morning with a very old man who, amazing to say, turned out to be Old King Beaulieu of Resolution [Fig. 39]. [His grandfather, Francois Beaulieux, was one of the *voyageurs* who accom-



FIG. 39. Paul "King" Beaulieu.

panied Alexander Mackenzie on his voyage across the Rocky Mountains to the Pacific in 1793. In 1820, when a North West Company interpreter at Fort Chipewyan, he provided John Franklin with "some satisfactory information which we afterwards found tolerably correct, respecting the mode of reaching the Copper-Mine River. . . . He sketched on the floor a representation of the river, and a line of coast according to his idea of it" (Franklin, 1924).] He took great pains to tell me he is 84 years old and has had 19 children. He speaks an extremely garbled English, though he tells me he is fluent in Dogrib, Chipewyan, Cree, Slavey, Yellowknife. He says he cannot speak Loucheaux or Husky. I shall deal with him anon. As Old King — or, as his name really is, Paul "King" Beaulieu — and I were talking, Douglas paddled down in his canoe. This was a striking picture — the bright, varnished canoe and the erect, white-haired Douglas. King wanted to know his age, which is 61 years. Afterward King said to me, "He is just a boy." D. invited me down to his old camp where he was going in order to do some washing. He paddled down, and I went up to the Post Office to mail off Volume III of the summer's diaries. I do hope Mr. Rand has received the other two all right and has them stored in a safe place. I worry more about my diaries than anything else. With the years they will become increasingly precious. They are packed with small details interesting to no one, I suppose, except myself. After this I walked down along the shore for about two miles to D's camp [Fig. 40]. This was an interesting walk. The shore is covered with driftwood; it is



FIG. 40. George Douglas's camp below Fort Smith.

frequently clay which, packed and bedded, projects out into the river from beneath the sand, and these tongues of clay are beds for the most perfect specimens of concretions I have ever seen — hundreds and hundreds of them; they are mostly of a flat-bottomed knob-like form. I had a nice lunch with Douglas and then we paddled up again. He handles the canoe very skilfully. Later he went up on the hill to dry his clothes. He is remarkably clean and neat and puts me and my Indian habits to shame. Back to Paul "King" Beaulieu. It was very difficult to get what he said except when his son interpreted for him. He said that the trouble with the doctors today is that the medicine they use is too old. In the old days the medicine men would go out and get *fresh* medicine each summer. Now they leave it in bottles and it loses its power. He said that in the old days when a man had something wrong with a particular part of his body, the "doctor" (medicine man) would treat that part to cure it. He would bleed (he described the quartz flake lancet on a stick) that part where the pain was and cure it. Now, he says, You have a pain in the chest, in the head, anywhere — the doctor gives you something to put, not on the pain, but in your mouth, and you

"have lots shits" which "is no good, only make you weak." He says when they rowed down river [in the 1880s] with Bishop [William C.] Bompas (whom he commends highly) they never worked on Sunday — because Jesus said to work only six days. The road here (a government job) collapsed because they worked all the time on it and Jesus did not like it. He says [Warburton] Pike was a bad one — a liar. He says Pike claimed he shot the five musk-oxen when actually it was the Indians who did. [See Pike's *The Barren Ground of Northern Canada* (1892/1917). Pike had reciprocated Paul's dislike: "It was now that I made the acquaintance of King Beaulieu's sons, Francois, José [Sousi], and Paul, each of them married and father of such a big family that it makes one tremble for the future of the Great Slave Lake country when the next generation has grown up. . . . In character a Beaulieu [exhibits] a sort of low cunning more like that of an animal than a human being. . . . The only way to treat him is as you would treat a dog; if you are kind to him he takes it as a sign that you are afraid of him, and acts accordingly." George Simpson might have concurred: some seventy years earlier, in his Athabaska journal, he implicated Paul's grandfather (one of the N.W. Co. "Bullies" who caused him so much trouble at Fort Wedderburn during the winter of 1820-21) in a murder plot (see Rich, 1938). Ernest Thompson Seton, who travelled with two of Paul's brothers, Francois and Sousi, in the Great Slave country in 1907, was moved to exclaim, "Oh, why did I not heed Pike's warning to shun all Beaulieus; they rarely fail to breed trouble" (Seton, 1911). The family traits seem not to have diminished noticeably with age. When Sousi, by then an old man, accompanied Guy Blanchet on his survey of the headwaters of the Coppermine and Back rivers in 1923, Blanchet detected "a certain truculence" in his behaviour (Blanchet, 1964.) Paul made the observation that his grandfather, the original Beaulieu, had 7 wives until he travelled far south and met the priest at Portage La Loche, who told him it was wrong, that Jesus did not approve, and that he should give them all up for Jesus except one. He said his grandfather gave up all of them except the oldest one, who had no teeth, for, said King, his grandfather did not think Jesus would want an old woman without teeth. Beaulieu observed that his grandfather having seven women, his father having many halfbreeds, and he himself having nineteen halfbreeds (from 3 wives), the Beaulieus had filled the country with halfbreeds to work for the Hudson's Bay Company, yet he could not get one cent of debt from the Company. He says the priest and the Bishop are bad because they say Jesus was a poor man, yet they are always asking for money, money, money for him. He says they travelled 67 days for muskox one time. Says they got 15 & had to pack the bones as well as the skins, for which he got the equivalent of 25¢ a skin. (Was this for Pike? — although paid for it by the HBC?) [See Pike, 1917:121, 139, 147.] He described a sort of muskox pound for me along these lines: When a muskox was sighted, men would take up positions and set up stones with a shirt or bit of clothing on them, and at the end of the corridor would be a small lake into which they would drive the animal. Once in the lake, they would not let it get to shore, and eventually it would drown. I could not make out one part of the recital — something about one man who would call or direct the muskox. (Among the Dogribs it was a common belief that these animals understood an Indian's language.) [Among the Yellowknives, too: see Pike, 1917:183-184.] On the Pike expedition [1889] he was accompanied by his brother [sic] Manville and 4 Indians. [Mosie Mandeville was the brother of

Michael Mandeville, the interpreter at Fort Resolution; Pike admired him as a canoe man. Presumably, these brothers were descended from Francois Mandeville, who served the HBC as an interpreter from 1818 to 1820 at Great Slave Lake and in the Athabaska district (see Rich, 1938:113). Pike, a hardbitten, idiosyncratic Englishman, was known as "Dirty Pike" by his closest acquaintances (McTavish, 1963.) The old gentleman called on me again in the evening. He was in a great rage against the world in general and his wife in particular, who wishes to stay at Smith while he wishes and intends to go to Rocher River. He is also very much in a religious fervor. He says that at Smith "The Devil is the boss; in the bush, Jesus the boss." The old man is most remarkable, considering the misadventures he must have had. One finger on his right hand is twisted almost in reverse from being caught in a flywheel. One wrist has been broken and is badly misshapen. He was shot through the groin, yet he gets about in good shape with the aid of a cane. He wears spectacles. He went to great pains to explain that the name "King" was bestowed by the Queen on his father (who went to England?), who also received a medal. [One doubts that King Beaulieu visited England, let alone his Queen. The medal would almost certainly have been one of those awarded by the HBC for loyal service.] There was also some incoherent business about someone being lost and his father travelling all over to look for him (Franklin?). It was late when he finally scrambled off and I turned in. More dreams, and still earlier premonitions in my life.

September 7th

Very clear, wind strong easterly, cold — like a fall day. Douglas has the most complete outfit one could imagine. He is an authority on and connoisseur of camping outfits. He has a set of copper kettles he obtained some years ago at one of the old posts. They are quite superior because of their high degree of heat conductivity. The Indians at Rae were all kicking that they could no longer get copper kettles, which melt snow so much faster. D. says his idea of the perfect kettle would be one of solid silver — high conductivity, no rust, no danger of the tin melting off, infinite wear. Douglas unpacking, packing various maps, photographs, etc. He has a bewildering array of maps, plans, aerial photographs; knapsacks, haversacks, packsacks, sacks. He told me Charles Camsell (I forget just what his official position is — one of the big bugs on the N.W.T. Commission — Head of Dept. of Mines & Resources?) [Deputy Minister] was in town and that he had spoken to him on my wanderings. Later Camsell himself came down to fly south in his C.A. charter plane, and D. introduced me with: "Dr. Camsell, I wish to introduce Mr. Downes; he knows more of the history of the north country than J.B. himself." (J.B. Tyrrell) Incidentally, J.B. is in the North for the first time since his last trip of 1894. Dr. Camsell told me he studied physiography under [W.M.] Davis & [Isiah] Bowman at Harvard. He suggested that I drop in to see him when I come to Ottawa. The Camsells are an interesting lot and intimately bound with the Mackenzie District. The old Camsell [Julian Stewart] was Chief Factor at Simpson and married an Indian woman. Dr. Camsell is the son who turned out most successfully — there are brothers at Resolution and Rae. The old man, from accounts, was an autocrat of the old order. When the Indians brought in their fur at Christmas & Easter, so the tale goes, he sat on a sort of pedestal and each Indian deposited his bundle of fur before him. No price

was asked or given. He approved the catch by silence, and disapproved in no uncertain terms. Eventually I went up to the HBC to buy a pound of hardtack and to telephone [A.A.] Holliday at Fitz. *not* to sell my canoe. He says Sid Porter has a deal on with a guy at Yellowknife, but I told him to call it off unless he had committed himself. To anyone interested in camp menus: since the day of my arrival at Yellowknife I have been living on straight hardtack and tea, with occasional jam. A one lb. can of jam costs 40¢. The dialogue between Old King Beaulieu (he pulled out today) and Douglas was most amusing. Said D. to B. (indicating me), "This fellow is a great traveller. He is like Diogenes, who travelled only with a cup and who, when he saw a man drinking from a river, threw away the cup." The Old King looked rather mystified, but grinned a snaggle-toothed grin anyway. Well, my days of the North for 1938 are almost over. While this extraordinary fine weather lasts I cannot bear to leave — but the geese are moving on and so must I. I truly dread the long train ride. Someday, if I should ever have a son, or if someone should ever read these pages, I suppose they would be struck by a vein of conceit — but it is a curious thing, and one needs to experience this type of wandering to understand it. One *needs* it in the face of the world about him. It does him good. Hornby, after reading D.'s book, *Lands Forlorn*, allowed that it was a pretty good account but that D. had made one grave mistake. Where D. had said he had packed in 120 lbs of meat, D. was wrong, for he (Hornby) had packed in 220 lbs! This is an exaggerated case of something one feels very intimately [see Whalley, 1962:331]. I have been happy as a bird in my little camp here. For just these few short days the North has been at its very best — clear, warm, no flies. Someday, shackled down somewhere, how I will think longingly of this little camp on the Slave at the 60th parallel [Fig. 41]. The fishing is becoming good, with conies, jacks, and whitefish daily in the nets off the little points below my camp.

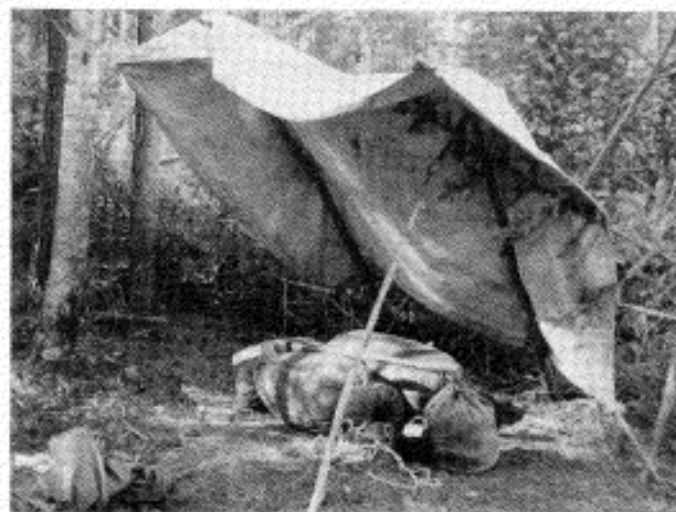


FIG. 41. "Last camp — 1938."

September 8th

Overcast, wind E. Appropriately enough, this entry, and I expect it to be my last in the Northwest Territories this year, is made in the firelight of what I expect is my last camp. I have every expectation of flying out tomorrow — the summer of 1938 is over. I roamed around all day, but mostly spent my time right here in my camp. It has been very grey and overcast, and I

expect the brief loveliness of the last of summer is over. The birches are all yellow, and here and there are bright bits of red foliage of some bush or other. Douglas is packing too. He says Blanchet and I would hit it off fine, the way we both travel. He says January is a good time to visit him. Both he and his wife [Frances] are very fond of skating. What a remarkable, fine man he is! Late in the afternoon the one-legged Indian lad I have seen hopping about with a single crutch dropped in on me and I shared the last of my grub with him. Then we paddled across the river to his net — one large "cony" (*inconnu*), the first of that species I have seen — and visited his family. We had a supper of excellent dried moose meat. They have a tipi put up, the first I have seen in this country. It was a fitting farewell to my stay in the North. After this we took down his own tent, gathered up his dogs, piled them into the canoe, and paddled back across the river in the darkness amidst the rocks at the foot of the rapids. I intend to pull out tomorrow. I shall stop over at McMurray to see if I can buy a pair of white caribou moccasins I saw there. E.G. said that is what she would like, and though I have scoured the North I cannot find any. However, I remember a pair a trader had at Waterways, so I shall see if I can pick them up. If nothing happens to alter my plans, it is away to the south, then, tomorrow. I have one brown book left, cached at Edmonton, and may use that for a general summary. The firelight is flickering out. The south wind is in the trees and all that can be heard is the thundering roar of the "Rapids of the Drowned."

September 9th

[Downes made topographical and geographical notes of what he could see below during the flight.] Reflections at McMurray (we can go no further because of bad weather to the south). This summer like no other has passed like a dream. Back here in civilisation I cannot believe that it is all over, that it was all over when I stepped into the plane at Smith. Last year I tried to make adjustments, to center my living outside. But I know now it is no use. This is my life — the wandering and tough living of the north country. I ask for no understanding, no companion, no reason. I hope I do a good job at school and earn enough to get back soon. I do not fit.

September 10th

Overcast, variable southerly winds. A day of great annoyance and indecision. No one seemed to be able to make up their minds about the weather. I sat around restlessly for hours waiting to be notified and at length was. Halker did not send over the white caribou slippers as he had promised me he would, so I could not get them for E.G. I went down to the M.A.S. dock and squatted there, waiting. Ran into Eric, the carpenter who sold me "Sequoizi." He said it was built by a chap at Chipewyan. The Canadian Airways fellows flew off. Stan McMillan brought in the Beechcraft, a very fast-looking, trig little job. At length, Al Brown, our pilot, had orders to go north, and Archie Van Hec brought in the big Bellanca — "Radium Express" from Edmonton. We all piled into this, eight of us, as our number had been augmented by Goldfields arrivals. We finally were up and away about 2 p.m. The windows were very dirty, so it was difficult to see much or get any pictures. Over the prairie — marvellous carpet of squares & quadrangles and unbelievably straight roads. Country approaching Edmonton more forested and irregular. Landed at Cooking Lake. As we landed, thousands of ducks rose and fled before us. I am "outside." It is all pretty unreal — sudden, and I feel as if I am in a dream. As I rode into Edmonton

(23 miles) from the Air Base, I had a deep feeling of sadness and a longing to go back. Other years I haven't minded coming out and looked forward to it, wanted love & a flagon — but I have not the slightest wish that way — only a wish to go back again. Soon we were in Edmonton, and I rescued my clothes. I went to the King Edward Hotel, and now I have a ticket in my pocket which has "Boston" stamped on one end.

SEQUEL

Preserved between the pages of Downes's journal is the following piece of correspondence: "Fort Norman Wells, N.W.T. August 8th/39. Mr. P.G. Downes, Kind sir I'm sorry I didn't have any time to answer to your lovely letter. but now I have a couple hours to write to all my friends I'll give you the first answer to thy kind letter. you ask me about the Hottah Lake country Behold the news about it, it was sure a lovely trip, the most I enjoyed was sailing on that Lake going threw the Rocky hills for three days and half. the summer travelling in that country is sure lovely, try to come back sometimes again. good night good Luck From Målo A. Beueulé."

On the day Målo wrote, Downes was waiting to be rescued from South Knife Lake, Manitoba, where the plane in which he was flying from Windy Lake, N.W.T., to Churchill had landed after the pilot became lost and ran out of fuel. Downes never returned to the Great Bear country. In the years that followed, he and George Douglas became close friends. They corresponded regularly — always about the North — until Downes's death in 1959.

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ABSTRACT

We report on recent geoscience data collected by the Geological Survey of Canada in collaboration with Northwest Territories Geoscience Office and Carleton University. Fifty sediment-water interface samples from 19 lakes were collected between July and August 2009 along a 90 km east-west transect and analyzed for grain size, organic matter, nutrients, and metals. The work was undertaken to establish a dataset to contribute to the determination of natural variability of arsenic in freshwater sediments in the Yellowknife area, Northwest Territories. Geochemistry results of lake sediments are compared to previous work, bedrock geochemistry where available, and the Canadian Council of Ministers of the Environment Interim Sediment Quality Guidelines and Probable Effects Levels for the Protection of Aquatic Life. Concentrations of arsenic in bulk lake sediment samples are elevated above Interim Sediment Quality Guidelines and Probable Effects Levels in lakes located west of the City of Yellowknife. These lakes occur on granitoid bedrock, which contain low arsenic relative to other bedrock types in the study region. The spatial pattern of arsenic in lake sediments is consistent with aerial dispersion of emitted particulates from mine smelting point sources and transportation by prevailing winds west of the City of Yellowknife.

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1. INTRODUCTION

Particles and elements emitted from anthropogenic sources may be deposited close to their origin or transported large distances. Their spatial distribution in the environment is affected by prevailing wind, humidity, fog, precipitation, temperature, and landscape morphology (Schroeder et al. 1987; Schroeder and Lane 1988). Metals deposited in lakes may be scavenged from the water column to surface sediments by various geochemical processes (Murray 1975; Tessier et al. 1996). Lake sediments can also behave as a source of metals to the water column under certain redox conditions (Andrade et al. 2010). Thus, while concentrations of dissolved metal-species in sediment porewater and surface water are a measure of mobility, and potential accessibility to biota, total metal concentration of lake sediments can represent a source of metals to aqueous phases (Walker et al. 2005). Geochemical characterization of lacustrine sediments is therefore a useful tool for monitoring concentrations of elements of concern in the environment and assessing the potential for interaction with biota (Sanei et al. 2010). The spatial distribution of metals in lake sediments can also provide information on the source and transport mechanisms of elements of concern to lakes and provides a means to survey geochemical distributions in a region (Sanei et al. 2010).

Arsenic is a metalloid that is toxic to both plants and animals due to its affinity for proteins, lipids, and other cellular components (Harrington et al., 1980; Spehar et al. 1980). Adverse health effects to humans associated with chronic exposure to arsenic include cardiovascular and neurological effects and neoplasms. Arsenic is an element of concern near the City of Yellowknife, Northwest Territories (N.W.T.), due to historical release of thousands of kilograms of arsenic trioxide particulates to the atmosphere by

nearly a century of gold mining activities (MacDonald 1997; SRK Consulting 2002). The concentration of arsenic in lake sediments near the City of Yellowknife is elevated relative to the rest of Canada due to bedrock geology (Webster, 1999; Ollson, 1999) and the anthropogenic releases of this element to the environment. Consequently, numerous studies have measured the concentration of arsenic and other metals in a variety of substrates, including water, lake sediments, soil, snow, trees, fungi, garden produce, and animals, in the Yellowknife region (Wageman et al., 1978; Hutchinson et al., 1982; Murdoch et al., 1989; Bright et al., 1996; Jackson et al., 1996; Koch et al., 2000; Risklogic, 2002; Andrade et al., 2010). However, only limited attention has been placed on sites outside of mine lease areas or known mine discharge pathways and consequently, little data on baseline sediment and water quality exists for the region surrounding the City of Yellowknife (Murdoch et al., 1989; Bright et al., 1996; Risklogic, 2002; Andrade et al., 2010). The objective of this study is to investigate the spatial pattern of arsenic in lake sediments in the Yellowknife area to contribute to an understanding of baseline geochemistry for the region and to provide data that may be used to define a zone of anthropogenic impact.

2. STUDY AREA

The City of Yellowknife and surrounding area is located in the southwestern Slave Geological province, District of Mackenzie. Elevation of the region ranges from 157 m above mean sea level (Great Slave Lake) and rises gradually to 350 to 400 m north of 63° ([Fig. 1](#)). Much of the terrain near Yellowknife is low relief and consists of rocky outcrops with glacial and glaciolacustrine sediments in topographic lows. The

Yellowknife River is the main component of the drainage system for the area. Its southern outlet flows into Yellowknife Bay, Great Slave Lake. Many lakes east of Yellowknife lie within the Cameron River-Prelude Lake drainage system. Drainage in the region is influenced by bedrock structure; numerous small elongate lakes have formed along fault and joints in the bedrock.

The study area occurs south of the treeline and within the Taiga Shield Ecozone (TSE). The climate of the TSE is continental. Mean annual precipitation is low (175 mm to 200 mm) and May to September is the period of maximum rainfall. Winter temperatures are cold (mean daily January temperature -17.5 °C to -27.5 °C). Mean daily July temperatures range from 7.5 °C to 17.5 °C (unknown observation period; Wiken, 1986). Prevailing wind direction changes seasonally. It is predominantly from the NW from January to March and from the SE from May to September (observation period 1971-2000; Environment Canada 2010). Vegetation in the study region consists of lichen woodlands dominated by black spruce (*Picea mariana* (P. Mill.) B.S.P.) with alder (*Alnus* P. Mill.), willow (*Salix* L.), and larch (*Larix* P. Mill.) in fens and bogs. Open mixed associations of white spruce (*Picea glauca* Moench), balsam fir (*Abies balsamea* (L.) P. Mill.), and trembling aspen (*Populus tremuloides* Michx.) also occur (Wiken, 1986).

The bedrock of the study area is composed of components of the southern Slave structural province of the Canadian Shield. In general, the bedrock consists of Archean felsic to mafic meta-volcanics of the Yellowknife Supergroup that include basalt, andesite, and pillowed flows that trend north-south through the central area of the study region. East of Yellowknife, Archean meta-sedimentary rocks predominate and consist

of greywacke, slate, schist, and phyllite. Yellowknife Supergroup meta-volcanics and meta-sedimentary rocks are intruded by younger granitoid rocks in isolated areas. West of Yellowknife, granitoid intrusions, consisting of granite, granodiorite, and tonalite, compose the majority of the bedrock. The region is crosscut by early Proterozoic diabase and gabbro dykes and several major fault lines, such as the Kam Lake Fault and the West Bay Fault that run through the city of Yellowknife, separating the volcanic rocks from younger granitoids (Yamashita and Creaser, 1999; Yamashita et al., 1999; Cousens, 2000; Cousens et al., 2002).

The surficial geology consists of a mosaic of Glacial Lake McConnell sediments and glacial tills that infill the topographic lows of the abundant bedrock outcrops. Till consists of matrix-supported diamicton (Kerr and Wilson, 2000). Clasts consist of various lithologies and range in size from small pebbles to large boulders. Till in the Yellowknife area may be composed of up to 60% clasts, but most exposures contain approximately 20% to 40% (Kerr and Wilson, 2000). Till exposures are generally eroded, less than 2 m thick, and form a discontinuous cover in topographic lows or on bedrock outcrops. Glaciofluvial sediments are relatively uncommon in the study region, and where present consist of fine sand to cobbles in the forms of eskers, kames, and outwash (Kerr and Wilson, 2000). A number of surficial sedimentary deposits may be attributed to Glacial Lake McConnell, which formed in Great Slave Lake, Great Bear Lake, and Athabasca Lake basins during deglaciation between 11,800 and 8,300 years ago (Dyke and Prest, 1989; Smith, 1994; Kerr and Wilson, 2000). Sedimentary deposits of Glacial Lake McConnell consist of poorly to moderately sorted coarse to fine sand, silt, and clay that can be up to 20 m thick in some topographic lows (Kerr and Wilson,

2000). These sediments may overlie till, outwash, or bedrock and finer grained sediments deposited in deep water environments, and may be overlain by sand and gravel deposited in regressive fluvial or littoral successions.

Abundant gold mineralization in the Yellowknife Supergroup of the Slave Geological province led to the establishment of at least three major gold mines in the immediate vicinity of the City of Yellowknife: The Discovery Mine, Con Mine, and Giant Mine, that collectively operated from 1938 until 2004. The Discovery Mine, located approximately 81 km northeast of Yellowknife, operated between 1950 and 1969 and produced one million ounces of gold. Con Mine began operation in 1938, processed largely free milling ore on site from 1941 until the mine was closed in 2003. The refractory component of Con Mine ore was roasted until 1970 when it was suspended. Production from the refractory ore was resumed in 1992, when the construction of an autoclave was completed. Giant Mine began gold production in 1948 and roasting of ore commenced on site in January, 1949. Giant Mine produced 7.6 million ounces of gold until 1999 when the mine owner went into receivership and ownership was transferred to the Government of Canada. Mining continued until mid-2004 but ore processing was shifted to the Con Minesite. Due to the complex refractory mineralogy of ores in the Yellowknife Greenstone Belt, processing involved roasting of sulphide minerals, dominantly pyrite and arsenopyrite, to volatilize As and Sb and transform sulphide minerals into porous iron oxides of maghemite and hematite that are amenable to cyanidation. An Au-rich calcine, generally high in As, Sb, Cu, Pb, and Fe, was also produced. Roaster generated iron oxides produced at Giant Mine contain as much as 68.5 wt. % As that includes both As (III) and As (V) (Clark and Raven 2005). Roasting

of ores at Giant and Con Mines released arsenic (predominantly As_2O_3) particulates and SO_x vapours directly to the atmosphere until gas cleaning technologies were applied at Giant Mine in 1951. However, during the first decade of ore processing at Giant Mine, millions of kgs of As_2O_3 were nonetheless emitted to the atmosphere (2.6 million kg/year; MacDonald 1997; SRK Consulting 2002). More stringent emission controls developed and implemented after 1958 decreased aerial emissions substantially, reducing release of arsenic to approximately 5700 kg/year and leading to the storage of 237,176 tonnes of arsenic trioxide by-product at Giant Mine (MacDonald 1997; SRK Consulting 2002). Overall, Giant Mine released approximately 19 million kg of As_2O_3 as aerial emissions since 1949; approximately 1 million kg was released from ore processing at Con Mine.

3. STUDY SITES

Nineteen lakes along a 90 km east-west transect through the City of Yellowknife were accessed from roadways for sediment collection ([Fig. 1](#); Galloway et al., 2010). Sampling locations that had a vegetation buffer between the sampling site and the highway were preferentially selected and sample sites that were greater than 20 feet from shore were targeted to reduce effects of runoff on sedimentary variables. As the sample sites were also being used for a study on the occurrence and distribution thecamoebians (arcellaceans) in Yellowknife area lakes as part of a larger study, relatively shallow sample sites were targeted to reduce the influence of thermal stratification that can result in summer bottom water dysoxia or anoxia. One to three sites were sampled within each lake to assess inter-basin variability in study variables as part of a larger, ongoing study.

Fourteen study lakes (South Tibbitt and Prosperous lakes, and lakes 3 through 14) occur on meta-sedimentary rocks of the Yellowknife Supergroup. Study lake 15 occurs on meta-volcanic rocks of the Yellowknife Supergroup and study lakes 17, 18, and 19 occur on granitoid bedrock west of the City of Yellowknife.

4. METHODS

Surface sediments were collected between July and August 2009 from a small boat using an Ekman Grab sampler. The top 2 to 5 cm of sediment retrieved with the Ekman grab were sub-sampled for grain size, organic geochemical, element geochemical, and biological analyses. Water quality variables (dissolved oxygen, temperature, and conductivity) were measured at one metre intervals using a YSI multi-metre probe. Surface water pH was measured with a hand-held pH metre. All equipment was calibrated according to the manufacturer's instructions (see Galloway et al. (2010) for additional information on sampling).

Grain size was determined using a Beckman Coulter LS 13 320 Single Wavelength laser diffraction particle size analyzer with a measurement range between 0.4 and 2000 μm . Samples were pretreated with diluted hydrochloric acid, hydrogen peroxide and Calgon solution. The particle size analyzer automatically yields the percentages of size fractions in a sample and the median and mean grain size diameter (the 50th percentile of the grain size distribution).

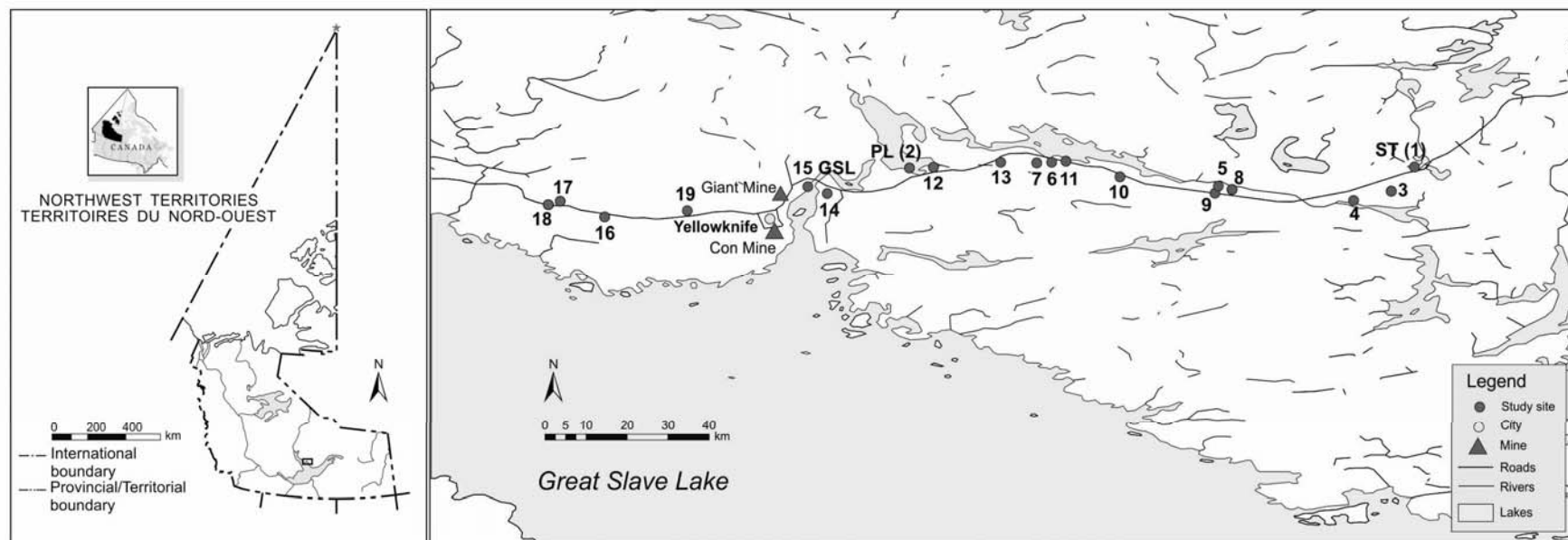
The type and quantity of organic matter in lake sediments was determined by thermal volatilization of the organic constituents using Rock-EvalTM 6 pyrolysis (Vinci Technologies, Rueil-Malmaison, France; Lafargue et al., 1998). Twenty milligram

freeze-dried bulk samples were pyrolyzed and oxidized in an inert Helium atmosphere to determine the amount, in milligrams hydrocarbons per grams bulk sample (mg HC/g), of free hydrocarbons (S1), released at 300°C; kerogen-derived hydrocarbons (S2), released near 650°C; the amount of carbon dioxide released during pyrolysis of kerogen (S3); and, residual carbon (RC). The S2 carbon is generally derived from the highly aliphatic biomacromolecule structure of algal cell walls (Sanei et al., 2005). The temperature at which S2 reaches its maximum depends on the nature and maturity of kerogen, and is called T_{max} . S3 is an indication of the amount of oxygen in the kerogen. Following the pyrolysis stage, the sample is transferred to a second oven where residual carbon is oxidized. Total organic carbon (TOC), in weight percent (wt %), is determined from the sum of all organic carbon released during pyrolysis and oxidation. Analyses of standard reference material show that the accuracy and precision of Rock-Eval™ results to be greater than 5% relative standard deviation (IFP 160000, Institut Français du Pétrole and internal 9107 shale standard, Geological Survey of Canada, Calgary).

Concentrations of nutrients and metals in lake sediment samples were determined using an ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometer) with an aqua regia digestion at Caduceon Laboratories, Ottawa. Aqua regia digestion was selected to determine concentrations of elements that are bioavailable (e.g., are not in silicate mineral matrices).

The spatial distribution of arsenic was mapped in ArcGIS® 9.3.1 using the Inverse Distance Weighting (IDW) algorithm with a squared distance term for interpolating values between measurements. In IDW each interpolated value is a weighted average of surrounding data points and weights are computed as the inverse distance between a data

location and the location being estimated (Burrough and McDonnell, 1998). Inverse distance weighting with a squared distance term produces results that are more consistent with original data than other similar methods (Burrough and McDonnell, 1998).



**Fig. 1. Map showing the location of the study area in the Northwest Territories and the locations of the study lakes.
PL – Prosperous Lake; ST – South Tibbitt Lake**

4. RESULTS

Fifty lake sediment-water interface sediment samples were collected from 19 lakes near Yellowknife. Study sites ranged from N 62°33.124' to N 62°28.007' in latitude and from W 113°21.522' to W 114° 43.603' in longitude ([Fig. 1](#); [Table 1a](#)). Field information and physical limnological characteristics are presented in Galloway et al. (2010), but also included here ([Tables 1a](#) and [b](#)). All lakes were near neutral in pH, and ranged from 6.55 to 8.65. Lake depth at sampling sites ranged from <1 m to 7 m.

Table 1a. Metadata and physical limnological characteristics of lake sample sites in the Yellowknife area

Site name	GPS co-ordinates	Surface water pH	Ecosite characterization	Bedrock geology ^a	Distance from Giant Mine (km) ^b	Lake depth (m)	Substrate
Prosperous Site 1	N 62° 32.420' W 114° 08.737'	6.55	wetland, spruce forest	metasedimentary (ABa)	12.00	0.75	gyttja
Prosperous Site 2	N 62° 32.300' W 114° 09.444'	6.84	spruce forest	metasedimentary (ABa)	11.37	5	gyttja
South Tibbitt Site 1	N 62° 32.396', W 113° 21.755'	7.06	wetland, birch woodland, spruce forest	metasedimentary (Aa)	51.61	2	sand
South Tibbitt Site 2	N 62° 32.449' W 113° 21.522'	8.46	wetland, birch woodland, spruce forest	metasedimentary (Aa)	51.72	1.5	gyttja
Lake 3 Site 1	N 62° 30.143' W 113° 24.080'	8.24	wetland, spruce forest	metasedimentary (ABa)	49.44	4	gyttja
Lake 3 Site 2	N 62° 30.104' W 113° 23.942'	8.02	wetland, spruce forest	metasedimentary (ABa)	49.56	2	gyttja
Lake 4 Site 1 (Reid Lake)	N 62° 29.397' W 113° 27.334'	7.97	wetland, jackpine woodland	metasedimentary (ABa)	46.66	5	gyttja
Lake 5 Site 1	N 62° 30.483' W 113° 40.359'	7.66	wetland	metasedimentary (ABa)	35.47	1	gyttja
Lake 5 Site 2	N 62° 30.466' W 113° 40.531'	7.82	wetland	metasedimentary (ABa)	35.32	3	gyttja
Lake 6 site 1	N 62° 32.866' W 113° 57.681'	8.60	wetland, spruce forest	metasedimentary (ABa)	21.28	2	gyttja
Lake 6 Site 2	N 62° 32.783' W 113° 57.709'	8.65	wetland, spruce forest	metasedimentary (ABa)	21.22	2	gyttja
Lake 6 Site 3	N 62° 32.781' W 113° 57.432'	8.63	wetland, spruce forest	metasedimentary (ABa)	21.45	2	gyttja
Lake 7 Site 1	N 62° 32.836' W 113° 56.013'	8.12	wetland, spruce forest	metasedimentary (ABa)	21.65	1	gyttja with plant remains
Lake 7 Site 2	N 62° 32.990' W 113° 56.424'	7.81	wetland, spruce forest	metasedimentary (ABa)	22.38	4	gyttja

Table 1a: continued

Site name	GPS co-ordinates	Surface water pH	Ecosite characterization	Bedrock geology ^a	Distance from Giant Mine (km) ^b	Lake depth (m)	Substrate
Lake 7 Site 3	N 62° 32.910' W 113° 56.204'	7.75	wetland, spruce forest	metasedimentary (ABa)	22.53	2	gyttja
Lake 8 Site 1	N 62° 30.25' W 113° 38.984'	7.73	wetland, birch woodland, spruce forest	metasedimentary (ABa)	36.64	3	gyttja
Lake 8 Site 2	N 62° 30.314' W 113° 39.041'	7.77	wetland, birch woodland, spruce forest	metasedimentary (ABa)	36.59	3	gyttja
Lake 8 Site 3	N 62° 30.269' W 113° 38.980'	7.82	wetland, birch woodland, spruce forest	metasedimentary (ABa)	36.64	2	gyttja
Lake 9 dock	N 62° 31.352' W 113° 49.625'	8.07	wetland, spruce forest	metasedimentary (ABa)	27.62	1	gyttja
Lake 10 Site 1	N 62° 31.468' W 113° 49.573'	7.58	wetland, spruce forest	metasedimentary (ABa)	27.68	3	gyttja
Lake 10 Site 2	N 62° 31.483' W 113° 49.594'	7.46	wetland, spruce forest	metasedimentary (ABa)	27.67	2	gyttja
Lake 10 Site 3	N 62° 31.470' W 113° 49.544'	7.32	wetland, spruce forest	metasedimentary (ABa)	27.71	5	gyttja
Lake 11 Site 1	N 62° 32.898' W 113° 54.608'	7.65	wetland, spruce forest	metasedimentary (ABa)	23.85	7	gyttja
Lake 11 Site 2	N 62° 32.773' W 113° 54.276'	7.60	wetland, spruce forest	metasedimentary (ABa)	24.08	2	gyttja
Lake 11 Site 3	N 62° 32.946' W 113° 54.658'	7.38	wetland, spruce forest	metasedimentary (ABa)	23.83	2	gyttja
Lake 12 Site 1	N 62° 32.335' W 114° 07.283'	7.74	wetland, spruce forest	metasedimentary (ABa)	13.12	2	gyttja with plant remains
Lake 12 Site 2	N 62° 32.367' W 114° 07.420'	7.82	wetland, spruce forest	metasedimentary (ABa)	13.03	3	gyttja
Lake 12 Site 3	N 62° 32.379' W 114° 07.180'	7.70	wetland, spruce forest	metasedimentary (ABa)	12.23	4	gyttja

Table 1a: continued

Site name	GPS co-ordinates	Surface water pH	Ecosite characterization	Bedrock geology ^a	Distance from Giant Mine (km) ^b	Lake depth (m)	Substrate
Lake 13 (Pontoon Lake) Site 1	N 62° 33.124' W 114° 01.608'	7.44	willow, spruce forest	metasedimentary (ABa)	18.20	4	clay with shell hash
Lake 13 (Pontoon Lake) Site 2	N 62° 32.995' W 114° 01.336'	7.84	willow, spruce forest	metasedimentary (ABa)	18.34	3	clay with plant remains
Lake 13 (Pontoon Lake) Site 3	N 62° 32.837' W 114° 00.829'	8.23	willow, spruce forest	metasedimentary (ABa)	18.67	5	gyttja
Lake 14 Site 1	N 62° 29.837' W 114° 17.289'	7.96	spruce forest	metasedimentary (ABg)	3.74	3	gyttja
Lake 14 Site 2	N 62° 29.781' W 114° 17.352'	7.97	wetland, spruce forest	metasedimentary (ABg)	3.69	1	gyttja
Lake 14 Site 3	N 62° 29.781' W 114° 17.277'	7.90	wetland, spruce forest	metasedimentary (ABg)	3.75	2	gyttja
Lake 15 (Great Slave Lake) Site 1	N 62° 31.054' W 114° 19.490'	8.30	wetland, spruce forest	volcanic (Aa)	2.81	1	clay
Lake 15 (Great Slave Lake) Site 2	N 62° 30.879' W 114° 19.479'	7.85	wetland, spruce forest	volcanic (Aa)	2.58	1	clay
Lake 15 (Great Slave Lake) Site 3	N 62° 30.871' W 114° 19.474'	7.86	wetland, spruce forest	volcanic (Aa)	2.58	1	clay
Lake 16 Site 1	N 62° 27.600' W 114° 38.069'	7.88	wetland, spruce forest	granitoid (Ad)	-14.76	2	gyttja
Lake 16 Site 2	N 62° 27.668' W 114° 38.227'	7.77	wetland, spruce forest	granitoid (Ad)	-14.86	3	gyttja
Lake 16 Site 3	N 62° 27.866' W 114° 38.111'	7.75	wetland, spruce forest	granitoid (Ad)	-14.66	1	gyttja
Lake 17 Site 1	N 62° 29.182' W 114° 42.412'	7.72	wetland, willow, spruce forest	granitoid (Ad)	-17.9	1	gyttja
Lake 17 Site 2	N 62° 29.160' W 114° 42.434'	7.75	wetland, willow, spruce forest	granitoid (Ad)	-17.92	1	gyttja

Table 1a: continued

Site name	GPS co-ordinates	Surface water pH	Ecosite characterization	Bedrock geology ^a	Distance from Giant Mine (km) ^b	Lake depth (m)	Substrate
Lake 17 Site 3	N 62° 29.144' W 114° 42.199'	7.81	wetland, willow, spruce forest	granitoid (Ad)	-17.85	1	gyttja
Lake 18 Site 1	N 62° 28.827' W 114° 43.672'	7.54	wetland, spruce forest	granitoid (Ad)	-19.42	6	sandy mud
Lake 18 Site 2	N 62° 28.840' W 114° 43.603'	7.44	wetland, spruce forest	granitoid (Ad)	-18.98	7	sandy mud
Lake 18 Site 3	N 62° 28.826' W 114° 43.548'	7.34	wetland, spruce forest	granitoid (Ad)	-18.94	7	sandy mud
Lake 19 Site 1	N 62° 28.007' W 114° 30.338'	7.75	willow, jackpine woodland	granitoid (Ad)	-8.27	2	sandy mud
Lake 19 Site 2	N 62° 28.211' W 114° 30.273'	7.68	willow, jackpine woodland	granitoid (Ad)	-8.07	3	sandy mud
Lake 19 Site 3	N 62° 28.263' W 114° 30.430'	7.88	willow, jackpine woodland	granitoid (Ad)	-8.15	4	sandy mud
Lake 19 Site 4	N 62° 28.228' W 114° 30.748'	7.80	willow, jackpine woodland	granitoid (Ad)	-8.43	5	sand

^a Henderson (1985) ABa: Archean Yellowknife Supergroup – Burwash Formation; Aa: Archean amphibolite; Ad: Archean Putonic Suite; ABg: Archean Yellowknife Supergroup – Duncan Lake Group

^b Positive = east; Negative = west
km – kilometer; m - metre

Table 1b. Physical limnological characteristics of lakes sampled

Site name	Profile				
	Depth (m)	Dissolved oxygen (%)	Dissolved oxygen (mg/L)	Temperature (°C)	Conductivity (µS)
Prosperous Site 1	0	74.0	n/a	15.0	n/a
	1 (bottom)	76.0	n/a	14.4	n/a
Prosperous Site 2	0	105.7	n/a	13.3	n/a
	1	105.5	n/a	12.7	n/a
	2	106.2	n/a	10.9	n/a
	3	107.1	n/a	10.5	n/a
	4	104.2	n/a	8.9	n/a
	5	101.8	n/a	8.2	n/a
South Tibbitt Site 1	0	114.8	11.05	17.2	257.7
	1	113.1	10.86	17.1	257.7
	2	113.2	10.75	17.6	257.1
South Tibbitt Site 2	0	116.4	11.23	17.3	260.0
	1	116.5	10.90	17.5	260.7
	2	113.3	10.66	17.2	259.3
Lake 3 Site 1	0	107.6	10.29	18.3	235.0
	1	106.1	10.28	18.1	234.0
	2	114.0	10.67	18.0	234.4
	3	116.0	9.66	17.7	235.9
	4	35.7	2.32	16.3	245.9
Lake 3 Site 2	0	105.8	9.99	18.5	237.6
	1	105.1	9.98	18.4	236.4
	2	92.7	8.29	18.3	236.4
Lake 4 Site 1 (Reid Lake)	0	98.9	9.83	16.1	109.6
	1	101.9	10.21	15.7	109.5
	2	101.4	10.04	15.5	109.7
	3	101.1	10.16	15.2	134.1
	4	101.5	10.26	15.1	108.8
	5	101.3	10.43	15.0	108.4
Lake 5 Site 1	0	87.1	7.95	20.2	254.3
	1	88.5	8.32	19.4	247.2
Lake 5 Site 2	0	90.6	8.43	18.8	246.0
	1	89.0	8.38	18.3	243.8
	2	89.1	8.40	18.3	242.5
	3	87.6	n/a	17.3	235.8
Lake 6 site 1	0	106.9	9.96	18.8	266.6
	1	107.7	9.98	18.7	266.5
	2	109.7	10.59	18.6	267.8
Lake 6 Site 2	0	105.8	9.52	18.5	267.8
	1	108.2	10.13	18.5	268.0
	2	108.8	10.22	18.5	268.3

Table 1b: continued

Site name	Profile				
	Depth (m)	Dissolved oxygen (%)	Dissolved oxygen (mg/L)	Temperature (°C)	Conductivity (µS)
Lake 6 Site 3	0	109.5	10.17	19.2	200.1
	1	113.7	10.39	19.0	271.5
	2	105.6	9.86	18.7	269.3
Lake 7 Site 1	0	104.8	9.78	18.8	205.6
	1	111.0	10.24	18.9	206.4
Lake 7 Site 2	0	103.7	9.80	18.9	203.4
	1	105.4	9.79	18.1	204.1
	2	101.3	9.74	17.8	200.8
	3	103.7	9.80	17.2	202.7
	4	74.8	n/a	15.8	n/a
Lake 7 Site 3	0	106.0	9.75	18.9	209.9
	1	103.8	9.64	18.9	209.8
	2	104.9	9.69	18.6	208.7
Lake 8 Site 1	0	78.0	7.10	19.6	351.2
	1	77.4	7.06	19.4	350.8
	2	75.1	7.06	18.3	342.1
	3	56.3	5.12	17.9	345.4
Lake 8 Site 2	0	86.1	7.90	20.5	361.3
	1	85.5	7.62	19.9	360.4
	2	82.7	7.48	19.8	353.0
	3	41.4	2.20	18.1	339.4
Lake 8 Site 3	0	84.8	7.55	20.4	357.0
	1	79.7	7.31	19.9	356.0
	2	77.0	7.31	19.7	351.0
Lake 9 dock	0	114.1	10.66	19.2	107.4
	1	116.2	10.66	17.8	106.8
Lake 10 Site 1	0	91.6	7.98	21.8	111.4
	1	50.0	4.81	17.5	104.2
	2	12.8	1.50	13.9	92.7
	3	11.7	1.25	13.6	94.1
Lake 10 Site 2	0	88.5	7.76	21.8	117.2
	1	82.2	7.44	20.4	105.0
	2	15.5	1.19	13.2	90.0
Lake 10 Site 3	0	90.1	7.72	22.7	106.6
	1	21.3	2.17	16.6	104.6
	2	5.5	0.57	12.8	116.1
	3	2.1	0.21	10.8	98.7
	4	2.2	0.25	6.8	211.2
	5	1.4	0.17	5.7	213.2

Table 1b: continued

Site name	Profile				
	Depth (m)	Dissolved oxygen (%)	Dissolved oxygen (mg/L)	Temperature (°C)	Conductivity (µS)
Lake 11 Site 1	0	90.3	8.31	20.3	179.0
	1	97.5	8.85	19.6	178.4
	2	82.4	8.04	19.2	175.3
	3	62.7	6.12	17.4	166.6
	4	8.0	0.98	14.8	162.1
	5	2.1	0.22	14.3	174.2
	6	1.7	0.17	12.9	174.6
	7	1.0	0.10	12.6	196.8
Lake 11 Site 2	0	91.9	8.26	20.6	200.0
	1	95.1	8.70	19.4	200.0
	2	90.8	8.82	19.4	200.0
Lake 11 Site 3	0	90.1	8.14	20.4	200.0
	1	100.1	9.02	19.4	200.0
	2	99.6	9.19	18.9	200.0
Lake 12 Site 1	0	79.1	7.01	21.1	323.5
	1	80.0	7.40	20.9	322.8
	2	85.8	7.73	20.9	322.5
Lake 12 Site 2	0	80.2	7.09	21.2	336.0
	1	78.5	6.96	21.1	366.2
	2	80.1	7.19	20.4	330.0
	3	82.2	7.64	19.4	327.3
Lake 12 Site 3	0	80.1	7.23	20.7	331.5
	1	78.7	7.08	20.4	330.8
	2	78.2	7.08	20.2	329.6
	3	72.9	6.52	19.0	322.7
	4	45.6	4.61	18.4	316.0
Lake 13 (Pontoon Lake) Site 1	0	84.7	7.70	20.0	351.4
	1	85.0	7.67	20.0	351.5
	2	86.1	7.82	19.9	350.8
	3	85.3	7.77	19.9	350.5
	4	85.0	7.76	19.8	350.7
Lake 13 (Pontoon Lake) Site 2	0	93.1	8.45	20.0	351.4
	1	92.3	8.36	20.0	352.1
	2	91.6	8.36	19.8	351.3
	3	88.9	8.20	19.7	350.9
Lake 13 (Pontoon Lake) Site 3	0	94.0	8.54	19.9	352.3
	1	92.6	8.46	19.9	350.8
	2	92.2	8.40	19.6	350.3
	3	92.2	8.44	19.7	350.2
	4	93.0	8.46	19.6	350.0
	5	94.0	8.54	19.6	349.9

Table 1b: continued

Site name	Profile				
	Depth (m)	Dissolved oxygen (%)	Dissolved oxygen (mg/L)	Temperature (°C)	Conductivity (µS)
Lake 14 Site 1	0	64.9	5.69	21.4	283.7
	1	65.1	5.89	19.9	273.8
	2	63.2	5.79	19.5	273.5
Lake 14 Site 2	0	78.6	6.84	20.9	279.6
	1	83.2	7.60	19.1	255.3
Lake 14 Site 3	0	74.5	6.65	20.9	263.9
	1	71.3	6.42	20.4	273.1
	2	75.8	6.99	19.6	265.4
Lake 15 (Great Slave Lake) Site 1	0	57.2	5.39	18.0	50.6
	1	57.2	4.43	17.8	50.6
Lake 15 (Great Slave Lake) Site 2	0	78.1	7.37	18.6	51.1
	1	78.1	7.35	18.2	51.1
Lake 15 (Great Slave Lake) Site 3	0	66.6	6.14	19.3	28.7
	1	66.1	6.15	19.1	51.8
Lake 16 Site 1	0	57.6	5.21	20.1	129.2
	1	57.6	5.21	20.1	129.0
Lake 16 Site 2	0	61.2*	5.5	20.3	130.6
	1	60.8*	5.49	20.3	130.6
	2	60.7*	5.49	20.2	129.0
Lake 16 Site 3	0	66.6	6.01	20.2	143.7
	1	65.5	5.74	20.8	142.4
Lake 17 Site 1	0	46.2	4.36	18.1	66.3
	1	45.7	4.31	18.0	66.3
Lake 17 Site 2	0	20.1	1.88	18.5	67.2
	1	20.3	1.90	18.6	67.2
Lake 17 Site 3	0	23.2	2.16	18.5	37.1
	1	23.2	2.19	18.4	66.8
Lake 18 Site 1	0	18.1	1.67	19.5	123.5
	1	18.5	1.72	18.6	120.9
	2	10.2	1.01	18.0	121.9
	3	3.6	0.34	14.3	129.9
	4	2.2	0.21	12.8	122.8
	5	1.8	0.18	12.5	124.6
	6	2.4	0.22	14.5	135.3
Lake 18 Site 2	0	30.0	2.74	19.3	123.1
	1	28.6	2.66	18.8	120.9
	2	3.2	0.28	17.0	123.9
	3	1.6	0.16	14.3	127.1
	4	1.2	0.13	11.5	112.0
	5	1.1	0.12	9.3	98.0
	6	1.0	0.11	7.6	102.2
	7	1.3	0.16	6.5	168.1

Table 1b: continued

Site name	Profile				
	Depth (m)	Dissolved oxygen (%)	Dissolved oxygen (mg/L)	Temperature (°C)	Conductivity (µS)
Lake 18 Site 3	0	36.2	3.57	19.0	121.3
	1	34.1	3.17	18.7	121.2
	2	24.1	2.11	17.8	127.2
	3	1.8	0.17	13.6	127.7
	4	1.1	0.13	11.0	112.5
	5	1.2	0.13	11.5	114.2
	6	1.1	0.12	11.7	114.8
	7	1.2	0.14	11.7	116
Lake 19 Site 1	0	57.3	5.28	19.2	121.4
	1	57.4	5.29	19.2	124.8
	2	56.6	5.23	19.3	124.8
Lake 19 Site 2	0	58.3	5.39	19.0	127.9
	1	58.4	5.42	19.0	127.6
	2	58.8	5.46	18.9	127.2
	3	58.6	5.44	18.9	127.2
Lake 19 Site 3	0	59.5	5.48	19.3	128.6
	1	60.0	5.55	19.1	127.8
	2	59.8	5.54	19.0	127.5
	3	59.7	5.53	18.9	127.3
	4	55.2	5.03	18.9	127.0
Lake 19 Site 4	0	61.7	5.71	19.0	128.1
	2	61.8	5.70	19.1	128.1
	3	61.9	5.74	19.1	127.8
	4	61.9	5.73	19.0	127.8
	5	61.9	5.73	19.1	127.7

m – metre; % - percent; mg/L – milligram/litre; °C – degree Celsius; µS – microSiemens; n/a – not applicable

4.1 Grain size

Mean grain size of lake sediment samples ranged from 16.90 µm (Lake 14 Site 3) to 447.78 µm (Lake 19 Site 3) ([Table 2](#)). In general, the grain size is coarse; an average of 14.43% ± 8.49 standard deviation (SD) of the samples ($n=50$) fall within the clay size fraction (<4 µm), an average of 56.00% ± 18.40 SD of the samples fall within the silt size fraction (>4 µm, <63 µm), and an average of 29.58% ± 23.02 SD of samples fall within the sand size fraction (>63 µm).

Table 2. Grain size distribution and descriptive statistics of the sediments collected from lakes in the Yellowknife area

Site	Mean (µm)	Median (µm)	Mean /Median	Mode	SD	Variance	Skew-ness	Kurtosis	%Clay (<4µm)	%Silt (<63µm)	%Sand (>63µm)
Prosperous Site 1	22.72	10.83	2.10	18.00	32.64	1065.64	2.80	8.78	26.63	64.68	8.69
Prosperous Site 2	53.32	39.44	1.35	66.45	50.06	2506.19	1.20	0.97	11.51	55.35	33.14
South Tibbitt Site 1	29.46	14.63	2.01	16.40	41.38	1712.53	2.81	8.82	17.43	70.71	13.25
South Tibbitt Site 2	32.93	20.69	1.59	23.82	37.83	1431.13	2.49	7.07	10.15	77.17	12.68
Lake 3 Site 1	30.73	17.01	1.81	18.00	37.48	1404.38	2.23	5.33	16.67	69.93	13.40
Lake 3 Site 2	28.60	15.76	1.81	18.00	36.60	1339.24	2.53	7.09	17.39	71.20	11.40
Lake 4 Site 1 (Reid Lake)	155.80	117.20	1.33	127.65	142.05	20178.00	1.64	2.54	4.31	20.10	75.59
Lake 5 Site 1	64.80	50.31	1.29	96.50	55.58	3089.23	0.83	-0.19	8.55	48.97	42.47
Lake 5 Site 2	52.39	33.42	1.57	45.76	52.00	2703.73	1.29	1.00	9.18	59.78	28.26
Lake 6 Site 1	29.50	17.56	1.68	41.68	33.53	1124.01	1.96	4.31	19.97	67.47	12.57
Lake 6 Site 2	33.28	21.27	1.57	37.97	34.69	1203.65	1.72	2.99	13.94	70.39	15.67
Lake 6 Site 3	35.84	21.55	1.66	37.97	39.16	1533.58	1.73	1.16	15.44	66.63	17.93
Lake 7 Site 1	35.88	15.85	2.26	16.40	49.77	2477.13	2.23	2.84	16.66	66.56	16.77
Lake 7 Site 2	50.27	31.27	1.61	37.97	50.13	2513.29	1.36	1.16	9.05	62.36	28.59
Lake 7 Site 3	38.47	15.69	2.45	74.49	4.54	5548.72	0.54	24.91	16.30	70.28	13.42
Lake 8 Site 1	38.70	19.96	1.94	18.00	45.57	2076.53	1.76	2.58	15.51	64.27	20.22
Lake 8 Site 2	49.89	22.35	2.23	18.00	73.65	5424.98	3.84	22.33	11.70	64.84	23.46
Lake 8 Site 3	34.60	22.70	1.52	28.70	37.82	1430.59	2.32	5.92	8.51	78.24	13.25
Lake 9 dock	31.55	17.80	1.77	18.00	37.68	1420.05	2.30	5.66	11.83	74.59	13.58
Lake 10 Site 1	39.94	17.18	2.23	19.76	55.04	3830.00	2.17	4.57	19.16	61.49	19.35
Lake 10 Site 2	57.82	34.24	1.69	45.76	61.67	3803.41	1.35	1.04	12.83	54.43	32.73
Lake 10 Site 3	122.50	67.75	1.81	185.00	141.42	21178.00	1.62	2.21	8.86	39.78	51.36
Lake 11 Site 1	37.19	19.05	1.95	18.00	44.89	2015.11	1.85	3.03	16.20	64.96	18.84
Lake 11 Site 2	85.16	50.53	1.69	168.90	101.50	10302.00	2.50	7.96	7.98	48.28	43.74
Lake 11 Site 3	46.56	28.20	1.65	37.97	49.07	2407.52	1.57	2.04	10.50	63.90	25.60
Lake 12 Site 1	79.72	60.31	1.31	168.87	69.57	4840.60	0.66	-0.68	9.75	41.36	48.89
Lake 12 Site 2	108.17	37.32	2.90	203.51	150.42	22625.70	2.14	4.90	18.40	38.90	42.69
Lake 12 Site 3	61.85	45.71	1.35	127.65	53.31	2841.87	0.91	-0.06	4.47	53.96	39.57
Lake 13 Site 1 (Pontoon L)	80.33	50.18	1.60	87.90	96.94	9396.00	2.88	10.65	6.33	51.10	42.57
Lake 13 Site 2 (Pontoon L)	98.55	48.82	2.02	185.40	124.10	15408.00	2.08	4.43	8.41	47.47	44.13
Lake 13 Site 3 (Pontoon L)	68.52	98.06	1.43	153.80	62.10	3857.00	0.96	0.00	7.59	50.37	42.04
Lake 14 Site 1	26.87	17.85	1.51	34.59	28.48	811.21	2.02	5.10	17.36	73.08	9.56
Lake 14 Site 2	44.45	30.00	1.48	41.68	44.69	1996.84	1.48	1.96	12.00	65.68	22.32
Lake 14 Site 3	16.90	7.11	2.38	4.88	24.39	595.08	2.94	2.94	37.48	57.91	4.62
Lake 15 Site 1 (Great Slave)	32.41	21.99	1.47	31.51	35.00	1225.26	2.19	5.58	33.03	54.25	12.73
Lake 15 Site 2 (Great Slave)	36.76	24.43	1.50	37.97	37.48	1404.68	1.65	2.67	31.77	49.99	18.24

Table 2: continued

Site	Mean (µm)	Median (µm)	Mean/Median	Mode	SD	Variance	Skewness	Kurtosis	%Clay (<4µm)	%Silt (<63µm)	%Sand (>63µm)
Lake 15 Site 3 (Great Slave)	54.52	36.78	1.48	37.97	52.80	2787.37	1.44	1.67	8.56	60.51	30.93
Lake 16 Site 1	27.08	22.03	1.23	34.59	24.33	592.14	2.36	8.57	10.21	84.30	5.49
Lake 16 Site 2	36.93	22.19	1.66	45.76	40.26	1620.70	1.70	2.85	15.31	65.56	19.12
Lake 16 Site 3	28.42	11.19	2.54	18.00	39.04	1524.11	1.90	2.90	29.91	55.31	14.78
Lake 17 Site 1	65.68	20.86	3.15	37.97	111.72	12481.00	2.81	8.12	18.24	56.73	25.01
Lake 17 Site 2	88.65	70.09	1.26	96.50	94.58	8946.29	2.26	7.64	13.67	33.21	53.12
Lake 17 Site 3	38.48	15.69	2.45	19.76	74.49	5548.72	4.54	24.92	16.30	70.28	13.42
Lake 18 Site 1	20.53	7.66	2.68	7.08	34.68	1202.63	3.10	10.26	33.73	58.14	8.13
Lake 18 Site 2	21.77	10.75	2.03	11.29	33.05	1092.10	3.22	11.62	22.34	69.86	7.80
Lake 18 Site 3	24.24	12.17	1.99	14.94	32.93	1084.41	2.58	7.17	22.76	68.08	9.16
Lake 19 Site 1	136.58	137.58	0.99	153.83	48.71	2372.98	-0.32	0.21	1.40	4.92	93.68
Lake 19 Site 2	83.57	83.01	1.01	105.93	52.39	2744.23	0.25	-0.67	4.54	32.16	63.30
Lake 19 Site 3	447.78	407.39	1.10	567.76	309.90	96035.30	0.70	-0.07	0.97	5.40	93.63
Lake 19 Site 4	388.96	376.27	1.33	471.14	176.60	31186.30	0.41	-0.08	0.49	1.30	98.08

µm – micron; % – percent; SD – standard deviation

4.2 Organic geochemistry (Rock Eval™ analysis)

Lake sediment samples have, on average, a high TOC content (mean 16.91% \pm 11.57 SD, $n=50$; [Table 3](#)). The majority of organic carbon in the samples consists of labile, predominantly algal-derived S2 kerogen (mean 56.56 mg HC/g \pm 41.81 SD, $n=50$). Residual carbon composes, on average, 9.92 mg HC/g \pm 6.78 SD of the TOC of the samples.

Table 3. Organic carbon parameters of sediments collected from lakes in the Yellowknife area

Site	S1 (mg HC/g)	S2 (mg HC/g)	S3 (mg HC/g)	T _{max} (°C)	TOC (%)	RC (%)
Prosperous Site 1	1.06	6.80	4.12	422	2.57	1.71
Prosperous Site 2	0.71	4.43	4.19	419	2.11	1.49
South Tibbitt Site 1	37.06	86.68	33.45	423	22.28	10.60
South Tibbitt Site 2	40.37	110.78	35.87	424	27.79	13.67
Lake 3 Site 1	43.47	112.23	36.86	419	28.25	13.72
Lake 3 Site 2	41.00	119.26	37.70	421	29.16	14.21
Lake 4 Site 1 (Reid Lake)	1.32	4.08	2.41	324	1.23	0.67
Lake 5 Site 1	17.68	89.20	33.14	416	26.40	16.00
Lake 5 Site 2	17.55	84.68	33.37	417	24.17	14.20
Lake 6 Site #1	47.92	77.92	36.65	421	24.27	12.26
Lake 6 Site #2	43.05	109.89	32.78	426	25.84	11.72
Lake 6 Site #3	40.23	110.65	30.47	425	25.77	11.90
Lake 7 Site #1	25.20	113.11	40.50	331	32.89	19.56
Lake 7 Site #2	25.30	104.12	37.97	326	29.44	17.00
Lake 7 Site #3	20.79	109.62	43.38	416	33.58	20.76
Lake 8 Site #1	23.73	117.45	38.50	341	33.11	19.52
Lake 8 Site 2	23.21	116.42	40.92	408	34.58	21.15
Lake 8 Site 3	18.59	106.59	40.50	411	33.39	21.16
Lake 9 dock	9.04	43.13	15.55	421	12.38	7.30
Lake 10 Site 1	1.49	10.98	7.82	421	5.06	3.65
Lake 10 Site 2	0.89	6.22	5.09	417	3.00	2.17
Lake 10 Site 3	3.10	14.96	8.88	407	5.98	4.04
Lake 11 Site 1	16.08	75.58	29.65	420	23.40	14.42
Lake 11 Site 2	18.43	96.69	34.92	421	28.66	17.48
Lake 11 Site 3	21.00	90.06	46.60	326	32.57	21.18
Lake 12 Site 1	7.39	16.91	8.79	310	5.58	3.16
Lake 12 Site 2	12.76	23.47	11.79	297	6.99	3.46
Lake 12 Site 3	37.90	71.61	27.51	327	19.97	9.69
Lake 13 Site 1 (Pontoon L)	17.13	78.55	32.14	329	24.23	14.80
Lake 13 Site 2 (Pontoon L)	15.41	79.19	34.46	420	25.74	16.27
Lake 13 Site 3 (Pontoon L)	16.66	78.50	32.95	417	24.86	15.40
Lake 14 Site 1	1.21	7.76	5.58	410	3.37	2.36
Lake 14 Site 2	7.65	35.36	15.72	329	11.99	7.65
Lake 14 Site 3	4.05	21.61	10.16	416	7.51	4.88
Lake 15 Site 1 (Great Slave)	0.76	3.86	3.36	416	1.70	1.15
Lake 15 Site 2 (Great Slave)	0.17	1.09	1.70	415	0.70	0.51
Lake 15 Site 3 (Great Slave)	0.55	2.45	2.37	412	1.03	0.67
Lake 16 Site 1	10.35	47.40	20.17	421	15.56	9.79
Lake 16 Site 2	7.12	36.27	14.15	424	10.75	6.47
Lake 16 Site 3	13.68	58.02	25.79	324	18.79	11.63
Lake 17 Site 1	16.78	84.14	35.76	416	27.05	17.00
Lake 17 Site 2	12.88	64.30	23.89	423	18.76	11.23
Lake 17 Site 3	13.19	73.27	32.90	419	25.56	16.84
Lake 18 Site 1	6.06	34.88	23.28	318	15.13	10.59
Lake 18 Site 2	2.10	16.45	11.05	422	6.86	4.79
Lake 18 Site 3	12.46	42.33	24.28	316	16.26	10.53
Lake 19 Site 1	1.90	3.60	2.02	316	1.15	0.59
Lake 19 Site 2	5.33	21.36	8.87	420	6.80	4.15
Lake 19 Site 3	0.80	2.65	2.11	311	1.00	0.61
Lake 19 Site 4	0.39	1.41	1.34	302	0.52	0.31

mg/g HC - milligram per gram hydrocarbon; % - percent; TOC – total organic carbon; RC – residual carbon

4.3 Inorganic geochemistry

The inorganic geochemistry results are presented in [Table 4 \(Appendix\)](#) and are compared with the Canadian Council of Ministers of the Environment Interim Sediment Quality Guidelines (ISQG) and Probable Effects Levels (PEL; CCME 2002; [Table 5](#)). Arsenic exceeds the ISQG in 78% of samples ($n=39/50$) and in 74% of lakes ($n=14/19$), but exceeds the PEL in only 44% of samples ($n=22/50$) and in 47% of lakes ($n=9/19$). Cadmium exceeds the ISQG in 24% of samples ($n=12/50$) and in 32% of lakes ($n=6/19$), but does not exceed the PEL in any samples. Chromium exceeds the ISQG in 8% of samples ($n=4/50$) and in 21% of lakes ($n=4/19$). Copper exceeds the ISQG in 4% of samples ($n=2/50$) and in 5% of lakes ($n=1/19$). Zinc exceeds the ISQG in 6% of samples ($n=3/50$) and in 11% of lakes ($n=2/19$). Lead does not exceed the ISQG in any samples. Chromium, copper, lead, and zinc do not exceed the PEL in any samples.

Table 5. Comparison of metal concentrations in Yellowknife lake sediment samples with CCME (2002) Interim Sediment Quality Guidelines (ISQG) and Probable Effects Level (PEL) for the Protection of Aquatic Life

Metal	ISQG (mg/kg or µg/g)	Number of samples in exceedance ($n=50$)	Number of lakes with samples in exceedance ($n=19$)	PEL (mg/kg or µg/g)	Number of samples in exceedance ($n=50$)	Number of lakes with samples in exceedance ($n=19$)
Arsenic	5.9	39	14	17	22	9
Cadmium	0.6	12	6	3.5	0	0
Chromium	37.3	4	4	90	0	0
Copper	37.3	2	1	197	0	0
Lead	35	0	0	91.3	0	0
Mercury	0.17	na	na	0.486	0	0
Zinc	123	3	2	315	0	0

mg/kg – milligram/kilogram; µg/g – microgram/gram

5. DISCUSSION

Arsenic concentrations in the Yellowknife lake sediment samples (mean 27.66 $\mu\text{g/g} \pm 35.19$ SD; median 13.00 $\mu\text{g/g}$, range <5.00 $\mu\text{g/g}$ to 155.00 $\mu\text{g/g}$ in Lake 16, Site 3; [Appendix – Table 4](#)) are broadly comparable to the concentrations found in the regional geology (2-100 $\mu\text{g/g}$; Boyle, 1960; Ootes et al., 2006), and are therefore expected to exceed CCME (2002) ISQG (5.9 $\mu\text{g/g}$) and PEL (17 $\mu\text{g/g}$) due to weathering of bedrock. Arsenic concentrations in Yellowknife lake sediments are also comparable to Canadian averages for this element in uncontaminated soils (4 to 150 $\mu\text{g/g}$; Wang and Mulligan, 2006) and are within the range of arsenic concentrations in soils in the communities of N'Dilo and Dettah (2.5-900 $\mu\text{g/g}$; Risklogic, 2002). However, it may not be appropriate to compare lake sediment arsenic concentrations to surface soils or bedrock because complex geochemical processes occur during transport and sedimentation of arsenic in lacustrine systems that can result in sequestration of arsenic from aqueous solution by sorption or precipitation (Murray 1975; Tessier et al. 1996; Andrade et al. 2010). Arsenic concentrations in Yellowknife lake sediments are elevated compared to “background” arsenic concentrations in lake sediments outside of the city of Yellowknife or in known control lakes (20-38 $\mu\text{g/g}$; Wageman et al., 1978; 115 $\mu\text{g/g}$ Risklogic, 2002) and pre-1947 sediments in Back Bay, Great Slave Lake (15-25 $\mu\text{g/g}$; Murdoch et al., 1989; [Table 6](#)).

Table 6. Arsenic concentrations in soils and sediments of the Yellowknife area

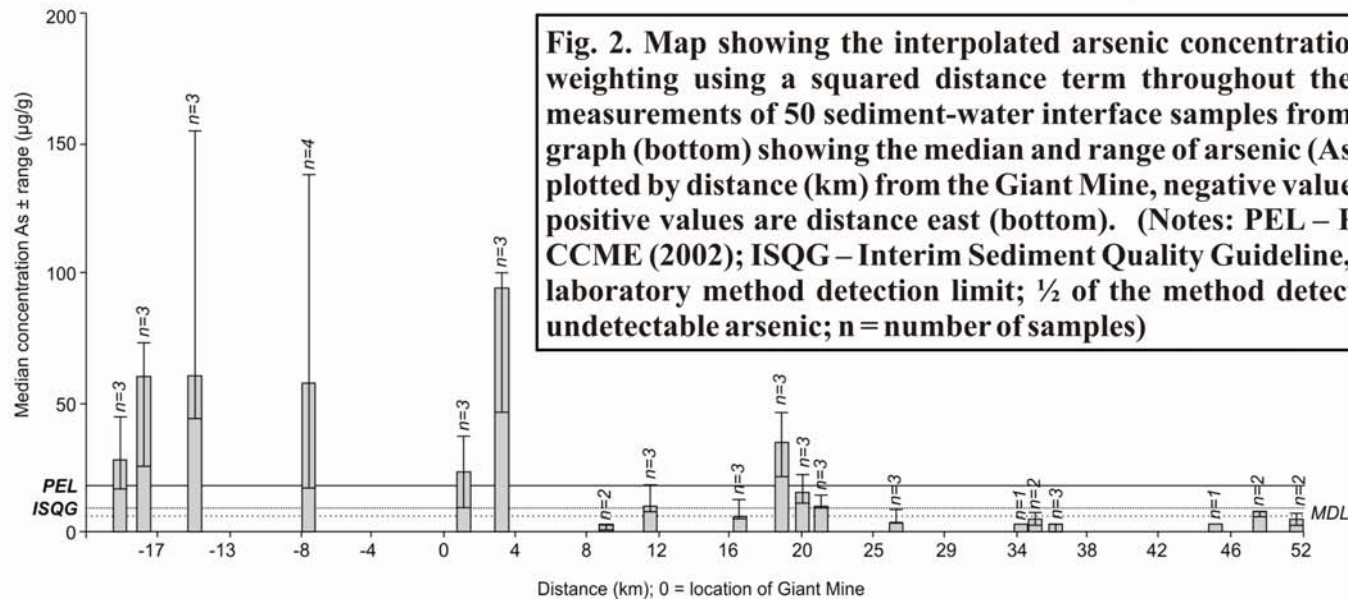
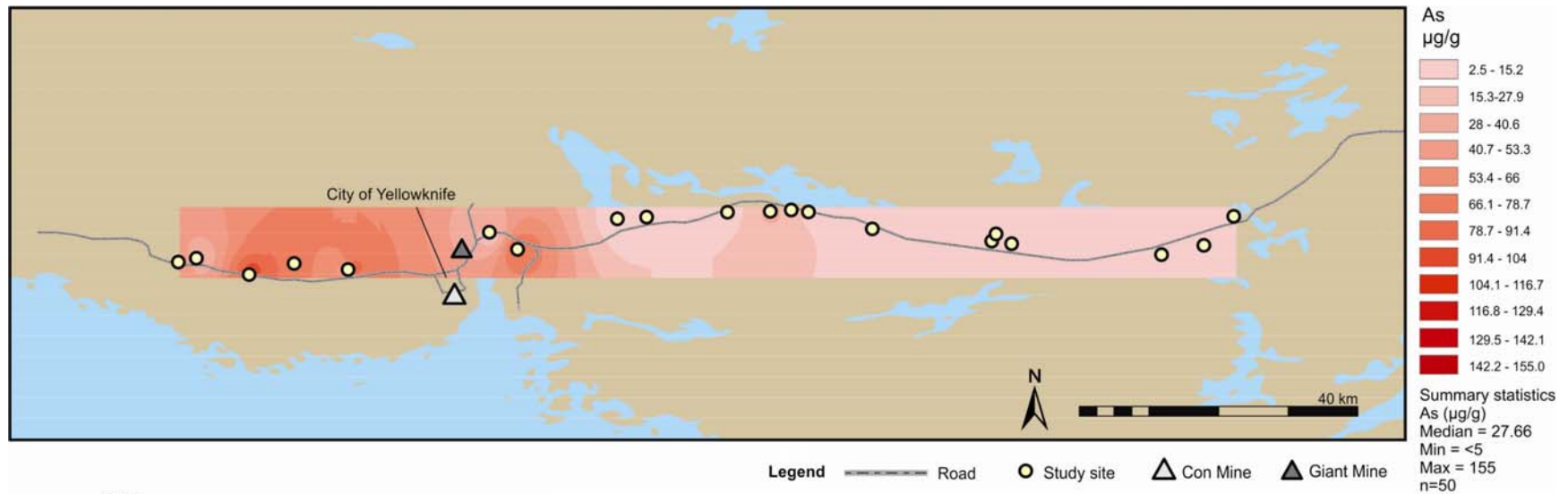
Location	Mean µg/g	Range µg/g	<i>n</i>	Date sampled	Source
Regional geology	-	2-100			Boyle 1960; Ootes et al. 2006
Sediment pre-1947 Back Bay		15-25	2		Murdoch et al. 1989
Lake sediments outside of Yellowknife	-	20-38		-	Wagemann et al. 1978
Soil outside Yellowknife city limit (N'dilo, Dettah)	115	2.5-900	928	1987-2001	Risklogic 2002
Soil inside Yellowknife city limit	122	3.5-1570	401	1987-2001	Risklogic 2002
Con Trailer Court soil	404	4-4950	70	1987-2001	Risklogic 2002
	275.5	2-2550	39	1992-1993	Jackson et al. 1996
Back Bay sediment	-	650-1100	1	2003-2005	Andrade et al. 2010

µg/g – microgram/gram

The atmospheric emissions of arsenic from the Giant Mine ore roaster resulted in widespread distribution of this element to the surrounding region (CPHA, 1977; Hocking et al., 1978). However, a zone of influence has not been defined. Previous sampling surveys for arsenic have been focused on sites with a known discharge of mine effluent (e.g., Back Bay, Great Slave Lake, Andrade et al., 2010), or areas of human inhabitation (e.g., the Giant Mine Townsite, the Con Mine Trailer Court; Hutchinson et al., 1982; the City of Yellowknife, references summarized in Risklogic, 2002). Thus, it appears that the City of Yellowknife represents a general zone of impact (Risklogic, 2002) but this delineation may be a function of sampling intensity.

This study shows that lake sediment arsenic concentrations tend to be higher in sites located near and west of the city of Yellowknife ([Fig. 2](#)) despite the fact that these lakes occur on granitoid bedrock with lower arsenic concentrations relative to the metavolcanics and metasedimentary rocks that underlie the eastern portions of the City of Yellowknife and lakes east of the city (Boyle, 1960; Ootes et al., 2006). The spatial pattern of arsenic in lake sediment samples is consistent with aerial dispersion of emitted matter from smelting and mining sources and transportation by prevailing winds west of the City of Yellowknife. Climate normals show that predominant wind direction in late

spring and summer months (May to September) is from the southeast to the northwest. Alternatively, arsenic may be relatively high in Glacial Lake McConnell sediments that occur to the west of the City of Yellowknife. However, the spatial extent of Glacial Lake McConnell sediments has not been fully mapped, nor are we aware of a detailed geochemical study of them. This, and detailed geochemical analysis of granitoid bedrock west of the City of Yellowknife using modern analytical methods, are areas identified for future research.



6. CONCLUSIONS

Fifty sediment-water interface samples were collected from 19 lakes along an east to west transect, spanning 90 km through the City of Yellowknife. Cadmium, chromium, copper, lead, and zinc are mostly below CCME (2002) ISQG and PEL for sediments of freshwater lakes. Arsenic exceeds ISQG in 39 of 50 samples (in 14 lakes) and exceeds the PEL in 22 samples (in 9 lakes). In lakes west of the City of Yellowknife, arsenic is elevated relative to local bedrock geology and “background” levels defined as concentrations of arsenic in lake sediments outside of the City of Yellowknife and in pre-1947 sediments of Back Bay, Great Slave Lake. The spatial distribution of arsenic along a 90 km east-west transect is consistent with aerial emission from mining activities near the City of Yellowknife and dispersion with prevailing winds. Additional research is required to constrain the source of arsenic in lakes west of Yellowknife.

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APPENDIX

Table 4: Total bulk concentrations of nutrients and major, minor, and trace elements in sediments collected from lakes in the Yellowknife area

Element	Nitrate	Nitrite	TP	Al	Sb	As	Ba	Be	Bi
Unit	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g
MDL	1	1	0.01	10	5	5	1	0.2	5
Reference method	EPA 300.0	EPA 300.0	EPA 365.4	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Prosperous Site 1	< 1	1	713	10200	< 5	< 5	115	0.5	< 5
Prosperous Site 2	< 1	5	601	9240	< 5	7	98	0.5	< 5
South of Tibbitt Site 1	< 10	< 10	1040	4970	< 5	7	109	0.3	< 5
South of Tibbitt Site 2	< 10	< 10	1100	4950	< 5	< 5	113	0.3	< 5
Lake 3 Site 1	< 20	< 20	810	2810	< 5	8	95	< 0.2	< 5
Lake 3 Site 2	< 20	30	856	3030	< 5	6	84	< 0.2	< 5
Lake 4 Site 1 (Reid Lake)	< 3	5	465	4230	< 5	< 5	44	< 0.2	< 5
Lake 5 Site 1	< 8	10	856	3270	< 5	< 5	61	< 0.2	< 5
Lake 5 Site 2	< 10	< 10	1100	3800	< 5	7	72	< 0.2	< 5
Lake 6 Site 1	< 40	< 40	1230	4780	< 5	21	81	0.3	< 5
Lake 6 Site 2	< 30	< 30	926	4970	< 5	34	72	0.3	< 5
Lake 6 Site 3	< 20	< 20	852	4800	< 5	46	82	0.3	< 5
Lake 7 Site 1	< 30	< 30	876	3920	< 5	22	70	< 0.2	< 5
Lake 7 Site 2	< 30	30	1270	4030	< 5	15	70	< 0.2	< 5
Lake 7 Site 3	< 10	< 10	760	3470	< 5	11	67	< 0.2	< 5
Lake 8 Site 1	< 10	< 10	887	2900	< 5	< 5	64	< 0.2	< 5
Lake 8 Site 2	< 80	< 80	1170	2850	< 5	< 5	69	< 0.2	< 5
Lake 8 Site 3	< 400	< 400	715	2690	< 5	< 5	61	< 0.2	< 5
Lake 9 dock	< 10	< 10	655	8430	< 5	< 5	112	0.5	< 5
Lake 10 Site 1	< 5	< 5	727	12200	< 5	< 5	186	0.7	< 5
Lake 10 Site 2	< 7	< 7	679	12200	< 5	< 5	199	0.7	< 5
Lake 10 Site 3	< 8	8	868	13000	< 5	6	191	0.7	< 5
Lake 11 Site 1	< 20	40	1080	5570	< 5	14	84	0.3	< 5
Lake 11 Site 2	< 30	< 30	845	4670	< 5	9	71	0.2	< 5
Lake 11 Site 3	< 10	< 10	743	3540	< 5	10	80	< 0.2	< 5
Lake 12 Site 1	< 30	< 30	1410	5070	< 5	10	111	0.3	< 5

Table 4: continued

Element	Nitrate	Nitrite	TP	Al	Sb	As	Ba	Be	Bi
Lake 11 Site 2	< 30	< 30	845	4670	< 5	9	71	0.2	< 5
Lake 11 Site 3	< 10	< 10	743	3540	< 5	10	80	< 0.2	< 5
Lake 12 Site 1	< 30	< 30	1410	5070	< 5	10	111	0.3	< 5
Lake 12 Site 2	< 20	< 20	850	4280	< 5	8	96	0.2	< 5
Lake 12 Site 3	< 60	< 60	1040	6550	< 5	18	152	0.4	< 5
Lake 13 Site 1 (Pontoon L)	1	< 1	547	6730	< 5	6	98	0.3	< 5
Lake 13 Site 2 (Pontoon L)	2	< 1	510	8070	< 5	6	162	0.3	< 5
Lake 13 Site 3 (Pontoon L)	1	< 1	841	5060	< 5	12	87	0.3	< 5
Lake 14 Site 1	< 1	< 1	660	12600	< 5	46	172	0.5	< 5
Lake 14 Site 2	< 1	< 1	937	13600	5	94	189	0.6	< 5
Lake 14 Site 3	< 1	< 1	953	15400	< 5	100	197	0.6	< 5
Lake 15 Site 1 (Great Slave)	< 1	< 1	740	9770	6	36	77	0.4	< 5
Lake 15 Site 2 (Great Slave)	< 1	< 1	535	8130	5	23	68	0.3	< 5
Lake 15 Site 3 (Great Slave)	< 1	< 1	561	7080	< 5	10	55	0.3	< 5
Lake 16 Site 1	1	< 1	714	8870	< 5	60	114	0.4	< 5
Lake 16 Site 2	< 1	< 1	611	15300	< 5	43	191	0.6	< 5
Lake 16 Site 3	< 1	< 1	942	5880	< 5	155	96	0.3	< 5
Lake 17 Site 1	< 1	< 1	768	2790	< 5	44	70	< 0.2	< 5
Lake 17 Site 2	< 1	< 1	628	3610	< 5	28	72	< 0.2	< 5
Lake 17 Site 3	< 1	< 1	606	3780	< 5	16	85	0.2	< 5
Lake 18 Site 1	1	2	752	6940	< 5	25	97	0.3	< 5
Lake 18 Site 2	< 1	< 1	635	15000	< 5	60	159	0.5	< 5
Lake 18 Site 3	2	27	992	6110	< 5	73	89	0.2	< 5
Lake 19 Site 1	1	< 1	297	1660	< 5	23	25	< 0.2	< 5
Lake 19 Site 2	< 1	< 1	556	3790	< 5	138	61	0.3	< 5
Lake 19 Site 3	< 1	< 1	291	2940	< 5	91	39	< 0.2	< 5
Lake 19 Site 4	< 1	< 1	224	1280	< 5	17	11	< 0.2	< 5

µg/g - microgram/gram; MDL - method detection limit; TP - total Phosphorous

Table 4: continued

Element	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo
Unit	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g
MDL	0.5	10	1	1	1	10	5	10	1	1
Reference method	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Prosperous Site 1	< 0.5	3180	37	10	17	18700	13	6810	232	< 1
Prosperous Site 2	< 0.5	3520	33	13	19	19000	12	6080	547	< 1
South of Tibbitt Site 1	< 0.5	19300	13	8	24	12600	7	3940	429	1
South of Tibbitt Site 2	< 0.5	13000	15	8	21	9240	< 5	4400	299	< 1
Lake 3 Site 1	< 0.5	12200	12	6	26	3580	6	3070	216	1
Lake 3 Site 2	< 0.5	12400	12	5	25	3270	7	3250	194	< 1
Lake 4 Site 1 (Reid Lake)	< 0.5	1570	14	5	7	8090	< 5	2680	192	< 1
Lake 5 Site 1	< 0.5	7970	9	4	15	6090	< 5	3000	136	< 1
Lake 5 Site 2	< 0.5	10600	11	5	18	8820	5	3980	262	1
Lake 6 Site 1	< 0.5	11900	18	6	31	6040	7	4860	208	1
Lake 6 Site 2	0.8	9740	16	5	28	6770	8	3720	165	1
Lake 6 Site 3	0.9	10400	15	6	30	7480	7	3370	175	1
Lake 7 Site 1	< 0.5	11500	12	4	22	4950	< 5	3170	190	< 1
Lake 7 Site 2	< 0.5	10900	12	3	22	4790	< 5	3340	162	< 1
Lake 7 Site 3	< 0.5	14800	12	4	18	6140	< 5	2680	186	< 1
Lake 8 Site 1	< 0.5	11800	9	3	14	5960	< 5	3070	282	< 1
Lake 8 Site 2	< 0.5	13700	9	3	15	4210	< 5	3640	252	< 1
Lake 8 Site 3	< 0.5	12300	8	3	16	4320	< 5	2780	220	< 1
Lake 9 dock	< 0.5	5220	26	7	19	13100	9	4740	503	< 1
Lake 10 Site 1	< 0.5	4670	35	13	26	18800	11	6590	201	< 1
Lake 10 Site 2	< 0.5	4190	37	13	25	22000	11	7500	251	< 1
Lake 10 Site 3	< 0.5	4830	39	11	32	22400	12	8000	224	< 1
Lake 11 Site 1	< 0.5	10500	17	7	34	10300	< 5	3770	141	< 1

Table 4: continued

Element	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo
Lake 11 Site 2	< 0.5	11000	16	6	25	7950	< 5	3260	174	< 1
Lake 11 Site 3	< 0.5	14500	11	5	25	6270	< 5	3330	202	< 1
Lake 12 Site 1	< 0.5	7650	14	5	15	10900	5	4260	471	< 1
Lake 12 Site 2	< 0.5	7280	12	4	12	9050	< 5	3570	192	< 1
Lake 12 Site 3	< 0.5	9910	19	7	21	18400	6	5800	574	1
Lake 13 Site 1 (Pontoon L)	< 0.5	9960	19	6	13	11700	< 5	4470	283	< 1
Lake 13 Site 2 (Pontoon L)	< 0.5	62200	21	6	10	13100	6	6360	503	< 1
Lake 13 Site 3 (Pontoon L)	< 0.5	10100	16	5	15	8690	< 5	3820	284	< 1
Lake 14 Site 1	0.7	3990	36	10	23	22400	9	7410	233	< 1
Lake 14 Site 2	1.3	6500	35	12	29	22900	11	8040	306	1
Lake 14 Site 3	1.4	6230	40	13	29	25600	13	9330	274	1
Lake 15 Site 1 (Great Slave)	< 0.5	2890	30	8	37	18000	10	5900	316	< 1
Lake 15 Site 2 (Great Slave)	< 0.5	2290	26	7	44	14700	9	4890	174	< 1
Lake 15 Site 3 (Great Slave)	< 0.5	2280	23	6	10	13300	7	4310	226	< 1
Lake 16 Site 1	0.8	8120	26	8	18	13200	7	5330	314	< 1
Lake 16 Site 2	< 0.5	5900	42	12	21	21200	10	8690	303	< 1
Lake 16 Site 3	1.8	6960	17	6	15	11500	< 5	4010	387	1
Lake 17 Site 1	0.7	8770	8	4	11	6480	< 5	1910	319	< 1
Lake 17 Site 2	< 0.5	6670	10	4	10	5930	< 5	2300	171	< 1
Lake 17 Site 3	< 0.5	10600	10	4	14	6550	< 5	2680	316	< 1
Lake 18 Site 1	< 0.5	18600	18	6	18	11200	< 5	11600	211	< 1
Lake 18 Site 2	0.7	16100	40	12	24	22400	11	16100	279	< 1
Lake 18 Site 3	1.1	8130	15	5	20	8890	< 5	4760	199	1
Lake 19 Site 1	< 0.5	1070	6	2	4	3900	< 5	1000	68	< 1
Lake 19 Site 2	1.6	3400	19	8	12	13600	< 5	1860	241	5
Lake 19 Site 3	1	1940	10	6	8	11800	< 5	1820	312	2
Lake 19 Site 4	< 0.5	910	4	1	2	3920	< 5	910	71	< 1

µg/g - microgram/gram; MDL - method detection limit; TP - total Phosphorous

Table 4: continued

Element	P	K	Si	Ag	Na	Sr	Tin	Sn	W
Unit	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g
MDL	5	30	1	0.2	20	1	10	1	200
Reference method	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Prosperous Site 1	26	2080	127	< 0.2	360	21	< 10	604	< 200
Prosperous Site 2	25	2370	140	< 0.2	320	22	< 10	562	< 200
South of Tibbitt Site 1	72	1320	70	< 0.2	900	64	< 10	120	< 200
South of Tibbitt Site 2	90	1270	279	< 0.2	730	58	< 10	142	< 200
Lake 3 Site 1	53	640	77	< 0.2	420	54	< 10	75	< 200
Lake 3 Site 2	79	730	99	< 0.2	580	54	< 10	80	< 200
Lake 4 Site 1 (Reid Lake)	22	900	82	< 0.2	200	8	< 10	223	< 200
Lake 5 Site 1	30	850	98	< 0.2	520	39	< 10	126	< 200
Lake 5 Site 2	83	1090	71	< 0.2	510	48	< 10	124	< 200
Lake 6 Site 1	101	1590	145	< 0.2	860	48	< 10	143	< 200
Lake 6 Site 2	96	1180	87	< 0.2	580	42	< 10	131	< 200
Lake 6 Site 3	44	940	99	< 0.2	530	44	< 10	112	< 200
Lake 7 Site 1	110	860	93	< 0.2	480	57	< 10	103	< 200
Lake 7 Site 2	194	1060	126	< 0.2	660	52	< 10	107	< 200
Lake 7 Site 3	57	590	138	< 0.2	280	58	< 10	84	< 200
Lake 8 Site 1	100	610	120	< 0.2	400	56	< 10	89	< 200
Lake 8 Site 2	161	810	177	< 0.2	1190	69	< 10	64	< 200
Lake 8 Site 3	47	500	122	< 0.2	1160	56	< 10	70	< 200
Lake 9 dock	35	1860	189	< 0.2	220	29	< 10	422	< 200
Lake 10 Site 1	30	2440	241	< 0.2	520	38	< 10	488	< 200
Lake 10 Site 2	13	3130	263	< 0.2	410	37	< 10	653	< 200
Lake 10 Site 3	45	3570	282	< 0.2	610	44	< 10	598	< 200
Lake 11 Site 1	66	970	133	< 0.2	320	48	< 10	174	< 200

Table 4: continued

Element	P	K	Si	Ag	Na	Sr	Tin	Sn	W
Lake 11 Site 2	55	750	149	< 0.2	230	47	< 10	131	< 200
Lake 11 Site 3	101	660	184	< 0.2	520	66	< 10	79	< 200
Lake 12 Site 1	55	1620	162	< 0.2	990	53	< 10	192	< 200
Lake 12 Site 2	36	1210	153	< 0.2	640	44	< 10	166	< 200
Lake 12 Site 3	56	2760	207	< 0.2	950	63	< 10	293	< 200
Lake 13 Site 1 (Pontoon L)	441	1850	276	< 0.2	1020	28	< 10	380	< 200
Lake 13 Site 2 (Pontoon L)	460	2080	208	< 0.2	560	112	< 10	395	< 200
Lake 13 Site 3 (Pontoon L)	619	1430	224	< 0.2	1800	37	< 10	212	< 200
Lake 14 Site 1	950	2640	263	< 0.2	570	26	< 10	613	< 200
Lake 14 Site 2	829	3400	259	< 0.2	720	44	< 10	596	< 200
Lake 14 Site 3	750	3550	341	< 0.2	550	40	< 10	641	< 200
Lake 15 Site 1 (Great Slave)	671	2200	265	0.2	1200	16	< 10	498	< 200
Lake 15 Site 2 (Great Slave)	487	1520	289	< 0.2	930	12	< 10	442	< 200
Lake 15 Site 3 (Great Slave)	528	1430	328	< 0.2	810	11	< 10	395	< 200
Lake 16 Site 1	541	1850	217	< 0.2	450	39	< 10	406	< 200
Lake 16 Site 2	535	3420	442	< 0.2	330	33	< 10	661	< 200
Lake 16 Site 3	665	1640	163	0.4	540	31	< 10	242	< 200
Lake 17 Site 1	406	550	133	< 0.2	430	42	< 10	111	< 200
Lake 17 Site 2	324	680	177	< 0.2	430	34	< 10	167	< 200
Lake 17 Site 3	349	680	149	< 0.2	470	52	< 10	156	< 200
Lake 18 Site 1	468	1420	154	< 0.2	560	40	< 10	280	< 200
Lake 18 Site 2	595	3430	228	< 0.2	600	35	< 10	652	< 200
Lake 18 Site 3	660	1270	173	< 0.2	530	36	< 10	204	< 200
Lake 19 Site 1	271	140	188	< 0.2	120	3	< 10	67	< 200
Lake 19 Site 2	498	370	175	< 0.2	360	11	< 10	152	< 200
Lake 19 Site 3	411	270	200	< 0.2	950	6	< 10	101	< 200
Lake 19 Site 4	264	90	132	< 0.2	180	2	< 10	56	< 200

µg/g - microgram/gram; MDL - method detection limit; TP - total Phosphorous

Table 4: continued

Element	V	Yt	Zn	Zi
Unit	µg/g	µg/g	µg/g	µg/g
MDL	1	0.5	1	0.1
Reference method	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Prosperous Site 1	36	8.3	68	3
Prosperous Site 2	35	8.9	50	1.6
South of Tibbitt Site 1	14	3.9	72	0.7
South of Tibbitt Site 2	14	4.1	75	2.5
Lake 3 Site 1	7	1.8	124	< 0.1
Lake 3 Site 2	7	2.1	131	0.6
Lake 4 Site 1 (Reid Lake)	13	3.4	22	0.7
Lake 5 Site 1	9	2.5	43	2
Lake 5 Site 2	13	2.9	67	1.7
Lake 6 Site 1	15	2.8	88	0.4
Lake 6 Site 2	14	3.1	109	< 0.1
Lake 6 Site 3	13	3.1	95	0.5
Lake 7 Site 1	11	2.3	73	1
Lake 7 Site 2	12	2.3	59	1.1
Lake 7 Site 3	8	2.6	44	2.3
Lake 8 Site 1	7	2.5	36	1.2
Lake 8 Site 2	7	2	48	1.1
Lake 8 Site 3	6	2.4	31	1
Lake 9 dock	21	6.9	45	2.4
Lake 10 Site 1	37	9.6	56	1.8
Lake 10 Site 2	41	10.2	57	6.6
Lake 10 Site 3	42	8.9	69	1.9
Lake 11 Site 1	15	4.1	45	0.4

Table 4: continued

Element	V	Yt	Zn	Zi
Lake 11 Site 2	12	3.7	40	1
Lake 11 Site 3	10	2.7	38	0.2
Lake 12 Site 1	15	3.6	57	3.1
Lake 12 Site 2	12	3.3	40	3.3
Lake 12 Site 3	23	4.7	72	4.3
Lake 13 Site 1 (Pontoon L)	21	4.8	42	3.6
Lake 13 Site 2 (Pontoon L)	23	4.8	36	1.7
Lake 13 Site 3 (Pontoon L)	16	3.3	53	1
Lake 14 Site 1	37	6.8	62	6
Lake 14 Site 2	40	7.6	69	3.9
Lake 14 Site 3	44	8.1	74	5.8
Lake 15 Site 1 (Great Slave)	30	6.9	71	0.7
Lake 15 Site 2 (Great Slave)	26	6.3	51	2.5
Lake 15 Site 3 (Great Slave)	23	5.3	35	1.4
Lake 16 Site 1	24	6.1	69	4.1
Lake 16 Site 2	40	7.8	90	3.6
Lake 16 Site 3	18	4.1	95	2
Lake 17 Site 1	7	2.3	42	1.8
Lake 17 Site 2	9	2.9	42	1.9
Lake 17 Site 3	9	3.6	51	2.3
Lake 18 Site 1	20	5	112	0.7
Lake 18 Site 2	43	7.5	121	3.7
Lake 18 Site 3	18	4.4	215	0.6
Lake 19 Site 1	6	2.6	10	0.3
Lake 19 Site 2	19	6.5	34	2
Lake 19 Site 3	11	3.6	27	0.4
Lake 19 Site 4	5	1.5	11	< 0.1

µg/g - microgram/gram; MDL - method detection limit; TP - total Phosphorous

Research Report

**The Ethnogenesis of the Northern Métis
of the Great Slave Lake Area**

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28 December 2011

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where many Métis have historically spoken the Algonquian language of Cree.

2. Summary Responses

2.1 Whether the historical record demonstrates the ethnogenesis of a distinct Métis community in the Northwest Territories and when that ethnogenesis may have occurred.

The information that is available from documentary evidence from the late 18th and 19th centuries indicates clearly that a distinct Métis social community developed in the Northwest Territories, with a range that extended from Fort Chipewyan to the south, included the entire Great Slave Lake area, and extended down the Mackenzie River. The community began to develop when outsiders married with local Aboriginal women, especially Dene women but also some Cree women, and their children began to intermarry with one another. The first generation of such outsider-“Indian” marriages began to occur even before the European fur trade reached this broad region directly, which occurred in 1778 and the following years. The number of these marriages expanded greatly after the fur trade became established at multiple posts along all the waterways that served as travel routes into the heart of the Dene lands. It was the children of many of these marriages who became the first generation of a developing Métis population. It is true that some of the children were assimilated completely into First Nations cultures and identities, but over time a core population of mixed-ancestry men and women emerged who tended to marry within this population. This pattern of on-going endogamy strengthened this new identity as “Half-breeds” or “Métis” throughout the 19th century. The families were

identified by a number of "patronymic" surnames that included Beaulieu, Mandeville, Lafferty, and Bouvier. The emergence of the Métis of the Mackenzie Basin, including the Great Slave Lake area, was based on this new pattern of social interaction, which paralleled the emergence of the same pattern of intermarriage in northern Alberta and northern Saskatchewan. In each region, a distinctive Métis population emerged independent of the other regions, although similarities among them exist because they all emerged in the context of a similar, evolving fur trade.

2.2 In the alternative, whether the historical record demonstrates the presence of a Métis community in the Northwest Territories and when that presence was established.

This question is really asking whether or not the Métis population of the NWT could have developed or originated elsewhere. Today, there are strong representations by Métis political organizations about the existence of a "Métis Nation" that extended from Red River across the prairie provinces and into the adjacent northern United States and the Northwest Territories (NWT). In this scenario, the Métis at Red River are seen as fundamental to the development of other Métis populations in the Canadian Northwest. However, the documentary evidence does not support the premise that the development of northern Métis was predicated on the migration into the north of southern Métis from any area. Instead, this report presents a picture of intermarriages between Indians and Europeans, especially French-Canadians and Scots/Orcadians (some of whom may have been mixed-ancestry people, but not necessarily distinctively "Métis), and then among the descendants of these early marriages, that began to

generate the northern Métis long before the Red River Settlement existed and before the events there that produced a distinctive Métis political awareness and consciousness in the Red River area. That does not mean that northern Métis today consider themselves to be separate or different from Métis elsewhere, thanks to similar fur trade processes, similar French and Scottish/Orcadian ancestries, and the similar forms of marginalization they all experienced after the treaties were negotiated in their respective areas.

2.3 When the historical record suggests that Canada asserted effective control (legally, politically, *de facto*) over the Northwest Territories, and specifically over the Great Slave Lake area.

Although Canada acquired legal ownership of the Northwest Territories in 1870, it concentrated most of its efforts in the more southerly areas that could support farming and ranching. The authority of the new nation over lands not ceded by treaty was openly questioned in Alberta in the late 19th century, and NWMP officers were not sent into the Lake Athabasca-Great Slave Lake region until 1897, shortly before Treaty No. 8 was negotiated and the first northern Half-breed scrip was issued in 1899 and 2000. In theory, concluding this treaty meant that Canada now enjoyed sovereignty over the lands given up through the treaty, but it was not yet able to exercise true control. The expansion of the institutions and personnel of the state had just begun, and Dominion/Indian Agents were not installed in the Northwest Territories until 1911. The Canadian police and the few other officials of the state located in the north were unable to provide much surveillance of the northern population, which was mostly located in the bush, often far away from the fur trade settlements. As a result, government officials found it

difficult to enforce Canadian laws, especially those relating to wildlife, which means that Canada did not enjoy "effective control" at this time.

Effective control likely began after World War I, or about 50 years after Confederation. At this time, the north was flooded by outsiders, especially White trappers and prospectors, and the number of people involved in local government increased considerably. An important step in this direction was the negotiation of Treaty No. 11 in 1921, along with issuance of Half-breed scrip, in the Mackenzie River and Fort Rae areas.

2.4 Whether the historical record demonstrates that the Métis community of the Northwest Territories remained intact, whether visible or not, from its ethnogenesis (or its establishment, as the case may be) through to the post-war period after the Second World War.

There is no evidence that suggests the Métis community became fragmented, although it may have become less obviously visible as Métis men were displaced from many of their occupations by the outsiders who entered the NWT after World War I and by the diminished need for workers at fur trade posts, as improvements in the transport system led to many items being imported that had formerly been produced locally. There are continued, often casual references to Métis in the historical literature that talks about Aboriginal people of the NWT throughout the 20th century. The very fact that scholars such as Richard Slobodin (1966) and David Smith (1982) were able to interview Métis from many of the historic Métis families when they did their fieldwork in the 1960s demonstrates the continuity in those families and their contemporary visibility. The Métis families I know from Fort Chipewyan have certainly

remained intact, and some of them are highly visible in that community. The protection that Métis now enjoy because they are included in the *Constitution Act, 1982*, has encouraged the development of Métis associations and groups in the NWT and elsewhere, which in turn is fostering a heightened sense of awareness of northern Métis distinctiveness. Métis are themselves writing about their heritage and identity as a unique Aboriginal people in northern Canada.



7. Conclusion

The evidence from multiple sources shows that northern Métis developed independently in the Mackenzie Basin, including the Great Slave Lake area, albeit with close and go-going relationships of kinship and economic and political cooperation with their First Nations Dene and Cree neighbors. They enjoyed considerable control over the operations of the fur trade and over the conduct of their own activities until the years that followed World War I. It was at this time that the Government of Canada and its subsidiary Northwest Territories Government were finally able to assert relatively effective control over people, lands, and resources. While First Nations frequently protested government wildlife policies as violations of the promises made in Treaties No. 8 and No. 11, they usually supported their Métis relatives in their efforts for both to continue enjoying access to the critical means of production. However, over time the northern Métis, despite the strong parallels and even overlap between their way of life and that of the related First Nations, have been progressively dispossessed from the land and its resources, with little recourse until the land claims era that began in the 1970s.

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United Nations Declaration on the Rights of Indigenous Peoples

Adopted by General Assembly Resolution 61/295 on 13 September 2007

The General Assembly,

Guided by the purposes and principles of the Charter of the United Nations, and good faith in the fulfilment of the obligations assumed by States in accordance with the Charter,

Affirming that indigenous peoples are equal to all other peoples, while recognizing the right of all peoples to be different, to consider themselves different, and to be respected as such,

Affirming also that all peoples contribute to the diversity and richness of civilizations and cultures, which constitute the common heritage of humankind,

Affirming further that all doctrines, policies and practices based on or advocating superiority of peoples or individuals on the basis of national origin or racial, religious, ethnic or cultural differences are racist, scientifically false, legally invalid, morally condemnable and socially unjust,

Reaffirming that indigenous peoples, in the exercise of their rights, should be free from discrimination of any kind,

Concerned that indigenous peoples have suffered from historic injustices as a result of, inter alia, their colonization and dispossession of their lands, territories and resources, thus preventing them from exercising, in particular, their right to development in accordance with their own needs and interests,

Recognizing the urgent need to respect and promote the inherent rights of indigenous peoples which derive from their political, economic and social structures and from their cultures, spiritual traditions, histories and philosophies, especially their rights to their lands, territories and resources,

Recognizing also the urgent need to respect and promote the rights of indigenous peoples affirmed in treaties, agreements and other constructive arrangements with States,

Welcoming the fact that indigenous peoples are organizing themselves for political, economic, social

and cultural enhancement and in order to bring to an end all forms of discrimination and oppression wherever they occur,

Convinced that control by indigenous peoples over developments affecting them and their lands, territories and resources will enable them to maintain and strengthen their institutions, cultures and traditions, and to promote their development in accordance with their aspirations and needs,

Recognizing that respect for indigenous knowledge, cultures and traditional practices contributes to sustainable and equitable development and proper management of the environment,

Emphasizing the contribution of the demilitarization of the lands and territories of indigenous peoples to peace, economic and social progress and development, understanding and friendly relations among nations and peoples of the world,

Recognizing in particular the right of indigenous families and communities to retain shared responsibility for the upbringing, training, education and well-being of their children, consistent with the rights of the child,

Considering that the rights affirmed in treaties, agreements and other constructive arrangements between States and indigenous peoples are, in some situations, matters of international concern, interest, responsibility and character,

Considering also that treaties, agreements and other constructive arrangements, and the relationship they represent, are the basis for a strengthened partnership between indigenous peoples and States,

Acknowledging that the Charter of the United Nations, the International Covenant on Economic, Social and Cultural Rights (2) and the International Covenant on Civil and Political Rights,2 as well as the Vienna Declaration and Programme of Action,(3) affirm the fundamental importance of the right to self-determination of all peoples, by virtue of which they freely determine their political status and freely pursue their economic, social and cultural development,

Bearing in mind that nothing in this Declaration may be used to deny any peoples their right to self-determination, exercised in conformity with international law,

Convinced that the recognition of the rights of indigenous peoples in this Declaration will enhance harmonious and cooperative relations between the State and indigenous peoples, based on principles of justice, democracy, respect for human rights, non-discrimination and good faith,

Encouraging States to comply with and effectively implement all their obligations as they apply to indigenous peoples under international instruments, in particular those related to human rights, in consultation and cooperation with the peoples concerned,

Emphasizing that the United Nations has an important and continuing role to play in promoting and protecting the rights of indigenous peoples,

Believing that this Declaration is a further important step forward for the recognition, promotion and protection of the rights and freedoms of indigenous peoples and in the development of relevant activities of the United Nations system in this field,

Recognizing and reaffirming that indigenous individuals are entitled without discrimination to all human rights recognized in international law, and that indigenous peoples possess collective rights

which are indispensable for their existence, well-being and integral development as peoples,

Recognizing that the situation of indigenous peoples varies from region to region and from country to country and that the significance of national and regional particularities and various historical and cultural backgrounds should be taken into consideration,

Solemnly proclaims the following United Nations Declaration on the Rights of Indigenous Peoples as a standard of achievement to be pursued in a spirit of partnership and mutual respect:

Article 1

Indigenous peoples have the right to the full enjoyment, as a collective or as individuals, of all human rights and fundamental freedoms as recognized in the Charter of the United Nations, the Universal Declaration of Human Rights⁽⁴⁾ and international human rights law.

Article 2

Indigenous peoples and individuals are free and equal to all other peoples and individuals and have the right to be free from any kind of discrimination, in the exercise of their rights, in particular that based on their indigenous origin or identity.

Article 3

Indigenous peoples have the right to self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development.

Article 4

Indigenous peoples, in exercising their right to self-determination, have the right to autonomy or self-government in matters relating to their internal and local affairs, as well as ways and means for financing their autonomous functions.

Article 5

Indigenous peoples have the right to maintain and strengthen their distinct political, legal, economic, social and cultural institutions, while retaining their right to participate fully, if they so choose, in the political, economic, social and cultural life of the State.

Article 6

Every indigenous individual has the right to a nationality.

Article 7

1. Indigenous individuals have the rights to life, physical and mental integrity, liberty and security of person.
2. Indigenous peoples have the collective right to live in freedom, peace and security as distinct peoples and shall not be subjected to any act of genocide or any other act of violence, including forcibly removing children of the group to another group.

Article 8

1. Indigenous peoples and individuals have the right not to be subjected to forced assimilation or destruction of their culture.
2. States shall provide effective mechanisms for prevention of, and redress for:
 - (a) Any action which has the aim or effect of depriving them of their integrity as distinct peoples, or of their cultural values or ethnic identities;
 - (b) Any action which has the aim or effect of dispossessing them of their lands, territories or resources;
 - (c) Any form of forced population transfer which has the aim or effect of violating or undermining

any of their rights;

(d) Any form of forced assimilation or integration;

(e) Any form of propaganda designed to promote or incite racial or ethnic discrimination directed against them.

Article 9

Indigenous peoples and individuals have the right to belong to an indigenous community or nation, in accordance with the traditions and customs of the community or nation concerned. No discrimination of any kind may arise from the exercise of such a right.

Article 10

Indigenous peoples shall not be forcibly removed from their lands or territories. No relocation shall take place without the free, prior and informed consent of the indigenous peoples concerned and after agreement on just and fair compensation and, where possible, with the option of return.

Article 11

1. Indigenous peoples have the right to practise and revitalize their cultural traditions and customs.

This includes the right to maintain, protect and develop the past, present and future manifestations of their cultures, such as archaeological and historical sites, artefacts, designs, ceremonies, technologies and visual and performing arts and literature.

2. States shall provide redress through effective mechanisms, which may include restitution, developed in conjunction with indigenous peoples, with respect to their cultural, intellectual, religious and spiritual property taken without their free, prior and informed consent or in violation of their laws, traditions and customs.

Article 12

1. Indigenous peoples have the right to manifest, practise, develop and teach their spiritual and religious traditions, customs and ceremonies; the right to maintain, protect, and have access in privacy to their religious and cultural sites; the right to the use and control of their ceremonial objects; and the right to the repatriation of their human remains.

2. States shall seek to enable the access and/or repatriation of ceremonial objects and human remains in their possession through fair, transparent and effective mechanisms developed in conjunction with indigenous peoples concerned.

Article 13

1. Indigenous peoples have the right to revitalize, use, develop and transmit to future generations their histories, languages, oral traditions, philosophies, writing systems and literatures, and to designate and retain their own names for communities, places and persons.

2. States shall take effective measures to ensure that this right is protected and also to ensure that indigenous peoples can understand and be understood in political, legal and administrative proceedings, where necessary through the provision of interpretation or by other appropriate means.

Article 14

1. Indigenous peoples have the right to establish and control their educational systems and institutions providing education in their own languages, in a manner appropriate to their cultural methods of teaching and learning.

2. Indigenous individuals, particularly children, have the right to all levels and forms of education of the State without discrimination.

3. States shall, in conjunction with indigenous peoples, take effective measures, in order for indigenous individuals, particularly children, including those living outside their communities, to have access, when possible, to an education in their own culture and provided in their own language.

Article 15

1. Indigenous peoples have the right to the dignity and diversity of their cultures, traditions, histories and aspirations which shall be appropriately reflected in education and public information.
2. States shall take effective measures, in consultation and cooperation with the indigenous peoples concerned, to combat prejudice and eliminate discrimination and to promote tolerance, understanding and good relations among indigenous peoples and all other segments of society.

Article 16

1. Indigenous peoples have the right to establish their own media in their own languages and to have access to all forms of non-indigenous media without discrimination.
2. States shall take effective measures to ensure that State-owned media duly reflect indigenous cultural diversity. States, without prejudice to ensuring full freedom of expression, should encourage privately owned media to adequately reflect indigenous cultural diversity.

Article 17

1. Indigenous individuals and peoples have the right to enjoy fully all rights established under applicable international and domestic labour law.
2. States shall in consultation and cooperation with indigenous peoples take specific measures to protect indigenous children from economic exploitation and from performing any work that is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral or social development, taking into account their special vulnerability and the importance of education for their empowerment.
3. Indigenous individuals have the right not to be subjected to any discriminatory conditions of labour and, inter alia, employment or salary.

Article 18

Indigenous peoples have the right to participate in decision-making in matters which would affect their rights, through representatives chosen by themselves in accordance with their own procedures, as well as to maintain and develop their own indigenous decision-making institutions.

Article 19

States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free, prior and informed consent before adopting and implementing legislative or administrative measures that may affect them.

Article 20

1. Indigenous peoples have the right to maintain and develop their political, economic and social systems or institutions, to be secure in the enjoyment of their own means of subsistence and development, and to engage freely in all their traditional and other economic activities.
2. Indigenous peoples deprived of their means of subsistence and development are entitled to just and fair redress.

Article 21

1. Indigenous peoples have the right, without discrimination, to the improvement of their economic and social conditions, including, inter alia, in the areas of education, employment, vocational training and retraining, housing, sanitation, health and social security.
2. States shall take effective measures and, where appropriate, special measures to ensure continuing improvement of their economic and social conditions. Particular attention shall be paid to the rights and special needs of indigenous elders, women, youth, children and persons with disabilities.

Article 22

1. Particular attention shall be paid to the rights and special needs of indigenous elders, women,

youth, children and persons with disabilities in the implementation of this Declaration.

2. States shall take measures, in conjunction with indigenous peoples, to ensure that indigenous women and children enjoy the full protection and guarantees against all forms of violence and discrimination.

Article 23

Indigenous peoples have the right to determine and develop priorities and strategies for exercising their right to development. In particular, indigenous peoples have the right to be actively involved in developing and determining health, housing and other economic and social programmes affecting them and, as far as possible, to administer such programmes through their own institutions.

Article 24

1. Indigenous peoples have the right to their traditional medicines and to maintain their health practices, including the conservation of their vital medicinal plants, animals and minerals. Indigenous individuals also have the right to access, without any discrimination, to all social and health services.

2. Indigenous individuals have an equal right to the enjoyment of the highest attainable standard of physical and mental health. States shall take the necessary steps with a view to achieving progressively the full realization of this right.

Article 25

Indigenous peoples have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied and used lands, territories, waters and coastal seas and other resources and to uphold their responsibilities to future generations in this regard.

Article 26

1. Indigenous peoples have the right to the lands, territories and resources which they have traditionally owned, occupied or otherwise used or acquired.

2. Indigenous peoples have the right to own, use, develop and control the lands, territories and resources that they possess by reason of traditional ownership or other traditional occupation or use, as well as those which they have otherwise acquired.

3. States shall give legal recognition and protection to these lands, territories and resources. Such recognition shall be conducted with due respect to the customs, traditions and land tenure systems of the indigenous peoples concerned.

Article 27

States shall establish and implement, in conjunction with indigenous peoples concerned, a fair, independent, impartial, open and transparent process, giving due recognition to indigenous peoples' laws, traditions, customs and land tenure systems, to recognize and adjudicate the rights of indigenous peoples pertaining to their lands, territories and resources, including those which were traditionally owned or otherwise occupied or used. Indigenous peoples shall have the right to participate in this process.

Article 28

1. Indigenous peoples have the right to redress, by means that can include restitution or, when this is not possible, just, fair and equitable compensation, for the lands, territories and resources which they have traditionally owned or otherwise occupied or used, and which have been confiscated, taken, occupied, used or damaged without their free, prior and informed consent.

2. Unless otherwise freely agreed upon by the peoples concerned, compensation shall take the form of lands, territories and resources equal in quality, size and legal status or of monetary compensation or other appropriate redress.

Article 29

1. Indigenous peoples have the right to the conservation and protection of the environment and the productive capacity of their lands or territories and resources. States shall establish and implement assistance programmes for indigenous peoples for such conservation and protection, without discrimination.
2. States shall take effective measures to ensure that no storage or disposal of hazardous materials shall take place in the lands or territories of indigenous peoples without their free, prior and informed consent.
3. States shall also take effective measures to ensure, as needed, that programmes for monitoring, maintaining and restoring the health of indigenous peoples, as developed and implemented by the peoples affected by such materials, are duly implemented.

Article 30

1. Military activities shall not take place in the lands or territories of indigenous peoples, unless justified by a relevant public interest or otherwise freely agreed with or requested by the indigenous peoples concerned.
2. States shall undertake effective consultations with the indigenous peoples concerned, through appropriate procedures and in particular through their representative institutions, prior to using their lands or territories for military activities.

Article 31

1. Indigenous peoples have the right to maintain, control, protect and develop their cultural heritage, traditional knowledge and traditional cultural expressions, as well as the manifestations of their sciences, technologies and cultures, including human and genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literatures, designs, sports and traditional games and visual and performing arts. They also have the right to maintain, control, protect and develop their intellectual property over such cultural heritage, traditional knowledge, and traditional cultural expressions.
2. In conjunction with indigenous peoples, States shall take effective measures to recognize and protect the exercise of these rights.

Article 32

1. Indigenous peoples have the right to determine and develop priorities and strategies for the development or use of their lands or territories and other resources.
2. States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free and informed consent prior to the approval of any project affecting their lands or territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources.
3. States shall provide effective mechanisms for just and fair redress for any such activities, and appropriate measures shall be taken to mitigate adverse environmental, economic, social, cultural or spiritual impact.

Article 33

1. Indigenous peoples have the right to determine their own identity or membership in accordance with their customs and traditions. This does not impair the right of indigenous individuals to obtain citizenship of the States in which they live.
2. Indigenous peoples have the right to determine the structures and to select the membership of their institutions in accordance with their own procedures.

Article 34

Indigenous peoples have the right to promote, develop and maintain their institutional structures and

their distinctive customs, spirituality, traditions, procedures, practices and, in the cases where they exist, juridical systems or customs, in accordance with international human rights standards.

Article 35

Indigenous peoples have the right to determine the responsibilities of individuals to their communities.

Article 36

1. Indigenous peoples, in particular those divided by international borders, have the right to maintain and develop contacts, relations and cooperation, including activities for spiritual, cultural, political, economic and social purposes, with their own members as well as other peoples across borders.
2. States, in consultation and cooperation with indigenous peoples, shall take effective measures to facilitate the exercise and ensure the implementation of this right.

Article 37

1. Indigenous peoples have the right to the recognition, observance and enforcement of treaties, agreements and other constructive arrangements concluded with States or their successors and to have States honour and respect such treaties, agreements and other constructive arrangements.
2. Nothing in this Declaration may be interpreted as diminishing or eliminating the rights of indigenous peoples contained in treaties, agreements and other constructive arrangements.

Article 38

States in consultation and cooperation with indigenous peoples, shall take the appropriate measures, including legislative measures, to achieve the ends of this Declaration.

Article 39

Indigenous peoples have the right to have access to financial and technical assistance from States and through international cooperation, for the enjoyment of the rights contained in this Declaration.

Article 40

Indigenous peoples have the right to access to and prompt decision through just and fair procedures for the resolution of conflicts and disputes with States or other parties, as well as to effective remedies for all infringements of their individual and collective rights. Such a decision shall give due consideration to the customs, traditions, rules and legal systems of the indigenous peoples concerned and international human rights.

Article 41

The organs and specialized agencies of the United Nations system and other intergovernmental organizations shall contribute to the full realization of the provisions of this Declaration through the mobilization, inter alia, of financial cooperation and technical assistance. Ways and means of ensuring participation of indigenous peoples on issues affecting them shall be established.

Article 42

The United Nations, its bodies, including the Permanent Forum on Indigenous Issues, and specialized agencies, including at the country level, and States shall promote respect for and full application of the provisions of this Declaration and follow up the effectiveness of this Declaration.

Article 43

The rights recognized herein constitute the minimum standards for the survival, dignity and well-being of the indigenous peoples of the world.

Article 44

All the rights and freedoms recognized herein are equally guaranteed to male and female indigenous individuals.

Article 45

Nothing in this Declaration may be construed as diminishing or extinguishing the rights indigenous peoples have now or may acquire in the future.

Article 46

1. Nothing in this Declaration may be interpreted as implying for any State, people, group or person any right to engage in any activity or to perform any act contrary to the Charter of the United Nations or construed as authorizing or encouraging any action which would dismember or impair, totally or in part, the territorial integrity or political unity of sovereign and independent States.
2. In the exercise of the rights enunciated in the present Declaration, human rights and fundamental freedoms of all shall be respected. The exercise of the rights set forth in this Declaration shall be subject only to such limitations as are determined by law and in accordance with international human rights obligations. Any such limitations shall be non-discriminatory and strictly necessary solely for the purpose of securing due recognition and respect for the rights and freedoms of others and for meeting the just and most compelling requirements of a democratic society.
3. The provisions set forth in this Declaration shall be interpreted in accordance with the principles of justice, democracy, respect for human rights, equality, non-discrimination, good governance and good faith.

- (2) See resolution 2200 A (XXI), annex.
- (3) A/CONF.157/24 (Part I), chap. III.
- (4) Resolution 217 A (III).