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Traditional Knowledge Manual Volume 1 & 2: Literature Review and Evaluation and Using Traditional Knowledge in Impact Assessments

Manuel de connaissance traditionnelle, volumes 1 et 2 : Revue de la littérature et évaluation des connaissances traditionnelles dans les études d'impact

Canada

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TRADITIONAL KNOWLEDGE GUIDE FOR THE INUVIALUIT SETTLEMENT REGION, NORTHWEST TERRITORIES

VOLUME 1: LITERATURE REVIEW AND EVALUATION

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Executive Summary

The objective of the research completed under Phase I of ESRF-04-048 was to provide background information on the current status of traditional knowledge collection and use in impact assessment. Literature review pertaining to current legislation and policy, traditional knowledge guidelines and use in impact assessments was undertaken. This review forms the basis for the traditional knowledge guide to be prepared in Phase II. An annotated bibliography of the literature reviewed was prepared and forms an appendix to this volume. In the analyses, working concepts, terms and definitions were developed specifically for use in the guide.

The past 20 to 30 years have seen a significant change in not only the manner in which traditional knowledge is collected but also in the relative importance given to this information in the assessment process. Starting almost as a disparate collection of information, use and assessment of traditional knowledge, traditional knowledge has come to be recognized as a discipline in its own right. Both legislation and assessment practices indicate that greater Aboriginal involvement in the assessment process is necessary if this process is to accurately account for and reflect the predicted nature of effects associated with proposed projects. As a consequence, Aboriginal values and mores need to be considered and respected when traditional knowledge information is collected and used.

Resume

La recherche effectuee durant la Phase I du FÉE-04-048 avait pour but de recueillir des renseignements de base sur l'état actuel de la collecte et de l'utilisation des connaissances traditionnelles lors des evaluations des repercussions environnementales. On a procede à 1'analyse de documents portant sur les lois et politiques actuelles, sur les lignes directrices et l'utilisation des connaissances traditionnelles lors des evaluations des repercussions environnementales. Cette analyse sert de base au guide des connaissances traditionnelles qui sera elabore durant la Phase II. Une bibliographic annotée des documents analyses a été annexée au présent volume. Dans le cadre de l'analyse, les concepts de travail et les termes ont été definis expressément en fonction du guide.

Au cours des vingt ou trente demieres années, des changements importants sont intervenus non seulement dans la methode de collecte des connaissances traditionnelles, mais aussi dans l'importance relative accordee à ces connaissances lors des evaluations. Au depart, la collecte de renseignements, l'utilisation et 1'evaluation des connaissances traditionnelles se faisaient de fagon plus ou moins improvisee, mais maintenant les connaissances traditionnelles sont devenues une veritable discipline en soi. Les lois et les pratiques devaluation donnent à penser qu'une participation accrue des Autochtones au processus devaluation est necessaire si Ton veut que ce processus reflete correctement la nature des effets eventuels decoulant des projets proposés. C'est pourquoi les valeurs et les moeurs des Autochtones doivent être prises en compte et respectées lors de la collecte et de l'utilisation de 1'information sur les connaissances traditionnelles.

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Table of Contents

Abbreviations

AEPS..... Arctic Environmental Protection Strategy
CEAA .....Canadian Environmental Assessment Agency
CEA Act..... Canadian Environmental Assessment Act
CEAM..... Cumulative Effects Assessment & Management (NWT)
DAP .....Development Assessment Process (Yukon)
EIA.....Environmental Impact Assessment
EIRB .....Environmental Impact Review Board
EISC..... Environmental Impact Screening Committee
ESRF..... Environmental Studies Research Fund
FMA.....FMA Heritage Resources Consultants Inc.
ICRC..... Inuvialuit Cultural Resource Centre
IFA..... Inuvialuit Final Agreement
ISR.....Inuvialuit Settlement Region
Kavik.....Kavik-AXYS Inc.
MVEIRB .....Mackenzie Valley Environmental Impact Review Board
MVRMA..... Mackenzie Valley Resource Management Act
NWT .....Northwest Territories
RA.....responsible authority
RFP .....Request for Proposal
TK..... Traditional Knowledge
UFA .....Umbrella Final Agreement (Yukon)
UN .....United Nations
UNESCO.....United Nations Education, Scientific and Cultural Organization
YESAB ..... Yukon Environmental and Socio-economic Assessment Board

1 Introduction

In the fall of 2004, Environmental Studies Research Fund (ESRF) managers accepted a proposal from Kavik-AXYS Inc. (Kavik) and FMA Heritage Resources Consultants Inc. (FMA) to develop a guide "for the collection, integration, use and assessment of traditional knowledge" in project-specific impact assessments (Solicitation No. ESRF-04-048). The ESRF program "sponsors environmental and social research to assist oil and natural gas exploration companies in making wise decisions about development on frontier lands. Frontier land include those areas where the resources are located in offshore areas of the East and coasts and all lands north of the 60th parallel" (ESRF website 2005).

The guide is meant to provide a management document for consultants, proponents, and responsible authorities (RAs) focused on understanding and considering cultural differences in the conduct and analysis of impact assessment. It may also provide guidance to people conducting traditional knowledge studies, be they community members or outside consultants (traditional knowledge facilitators). It is written from perspective and experience of traditional knowledge facilitators, but may also be useful to Aboriginal communities conducting or managing their own traditional knowledge studies for impact assessments.

1.1 Objectives

The intent of the project is to address perceived deficiencies and lack of standard methods available to guide the collection, use and application of traditional knowledge in project-related impact assessments. As such, the goal is to provide a clearly stated reference guide for traditional knowledge collection, use, application and assessment relative to proposed development projects. Integral to this is the provision of the context and perceptions of Aboriginal peoples regarding the nature, scope and content of such studies.

As outlined in the project RFP, this work was to be carried out in two phases: the first to review existing literature and practice, and the second to create a 'how to' guide. As stated in the RFP:

- The goal of Phase I is to provide background, contextual information on the current practice of traditional knowledge methodology and use that will form the basis for a guide about traditional knowledge collection, integration, use and assessment specifically for project-related impact assessments.
- The goal of Phase II is the development of a traditional knowledge guide incorporating guidelines specific to addressing impact assessment requirements and meeting regulatory filings.

1.2 Scope of Work

The scope of this project includes 'lands north of the 60th parallel', specifically, the Northwest Territories and Yukon. During early scoping meetings with ESRF managers, it was determined that the main focus of the guide would be on providing examples and context relevant to the Inuvialuit Settlement Region (ISR). Where applicable and relevant, literature regarding the national (Canadian) and international context was also

included. Research included relevant government policy, guidelines and legislation; impact assessment studies with some treatment of traditional knowledge; and traditional knowledge research manuals and guidelines.

1.3 Organization of the Guide

The traditional knowledge guide is presented in two volumes. Volume 1 (Phase I work) is comprised of a literature review and evaluation. This volume is 'academic' and represents the research portion of the guide. Volume 2 (Phase **II)** provides direction on how to collect, use and apply traditional knowledge in the impact assessment context.

Volume 1 contains the following:

- Methodology used in the literature review, and working concepts, terms and definitions to be used in the guide (Section 2)
- Review and evaluation and of current legislation and policy, traditional knowledge guidelines and impact assessments using traditional knowledge (Section 3)
- Recommendations and comments on the general direction of traditional knowledge studies (Section 4)
- An annotated bibliography of the following (Appendix A):
  - relevant legislation, policy, policy guidelines and legal decisions
  - current impact assessment studies where traditional knowledge has been used, focusing on the Canadian north
  - existing traditional knowledge manuals, guidelines and general literature pertinent to the study

The references cited throughout Volume 1 are included under Appendix A: Annotated Bibliography.

7

2 Methodology for Literature Review

In-house libraries (Kavik and FMA), online databases and sources (e.g., Mackenzie Valley Impact Review Board (MVEIRB) website, United Nations Educational, Scientific and Cultural Organization's (UNESCO) Best Practices on Indigenous Knowledge database), academic holdings (e.g., University of Calgary, interlibrary loans), government libraries (e.g., National Energy Board, Canadian Environmental Assessment Agency registry), and Aboriginal organization and cultural centre catalogues (e.g., Inuvialuit Cultural Resource Centre, Dene Cultural Centre, Inuit Tapirisat of Canada) were consulted.

The literature review was organized into four categories based on the type or subject matter of the document. A secondary categorization based on geographic focus was applied within each category. Although the main focus of the research was on the northern Canadian context, a representative sample of Canadian and international studies and guidelines was also sought.

The temporal focus of the literature review was the period 2000 to 2004. However, older literature with particular applicability was also included.

2.1 Literature Types

- Legislation and Policy – policies, laws, and court cases relevant to the requirements for traditional knowledge to be considered in impact assessment.
- Impact assessments – refers to impact assessments, including environmental impact assessments conducted under the Canadian Environmental Assessment Act, where traditional knowledge studies have been used.
- Guidelines – broad principles, guidelines and specific pertinent methodologies not presented within the context of an impact assessment or other traditional knowledge study; includes traditional knowledge and traditional land use manuals.
- General – other documents not directly related to study objectives that guide the critical examination and application of the other three categories.[1]

2.2 Geographic Categories

- Northern – literature focused on the Canadian north, specifically the Northwest Territories and Yukon.
- Canadian – literature focused on the southern provinces.
- International – literature with a scope beyond Canada (e.g., Alaska, Greenland).

2.3 Working Concepts

There is much debate in the academic literature regarding the definition of traditional knowledge and traditional environmental knowledge. It is not the intent of this guide to

[1] A great deal has been written on the use and 'incorporation' of traditional knowledge. Much of this literature is not specific to the impact assessment context, but is informative to the impact assessment process. A very broad sample of this literature is provided under this category.

engage in this debate. Rather, the descriptions provided below serve to broadly describe three central 'working' concepts: traditional knowledge, traditional land use and traditional environmental knowledge. Together, these three terms are 'handles' that can be used to describe what and how traditional knowledge may be used in the context of impact assessment.

The distinction between these three terms is largely functional. In cultural terms, and in the everyday life of Aboriginal peoples, this distinction is neither logical nor appropriate. However, in the context of impact assessments, these distinctions enable the collection and application of these different types of information in ways that are appropriate to the regulatory context and the practice of impact assessment. Functionally speaking, the purpose of collecting traditional land use information in the assessment context is to create an assessment of potential impacts to traditional land use (i.e., traditional land use impact assessment). Traditional environmental knowledge, on the other hand, can contribute much valued information to the 'scientific' components of assessments. Additional details and description of these concepts are provided in the following sections.

2.3.1 Traditional Knowledge

The term 'traditional knowledge' is used in this document to include knowledge that is not strictly 'environmental' in nature; it also includes knowledge regarding information about traditional land use. It encompasses *all* categories of traditional knowledge outlined by Usher (2001): factual traditional knowledge, traditional use and management information, values and knowledge systems, as well as the "shared experiences, values, traditions, subsistence lifestyles, social interactions, ideological orientations, and spiritual beliefs unique to Aboriginal communities" described by Stevenson (1996: 281). The Royal Commission on Aboriginal Peoples' definition of traditional knowledge is also applicable:

> …oral culture in the form of stories and myths…coded and organized by knowledge systems for interpreting information and guiding action…a dual purpose to manage lands and resources and to affirm and reinforce one's relationship to the earth and its inhabitants (In Paci et al. 2002: 119).

2.3.2 Traditional Environmental Knowledge

Traditional environmental knowledge may be defined as a shared collection of knowledge, that is, the accumulated collective information in a community regarding the characteristics of the general environment that is equivalent to scientific knowledge. It may be distinguished from scientific knowledge (acquired primarily through academic study; viewed as being independent from culture) in that it is 'cultural science' (acquired through lifetimes of observation and participation; viewed as being inseparable from culture) (Fedirchuk and McCullough 2003, ESRF Annotated Bibliography 2003). It may also be distinguished from the western science practiced in impact assessments in that it is highly contextual, representing extended time periods and intensive, local geographic experience.

Traditional environmental knowledge differs from traditional land use in that it reflects the accumulated collective information in a community regarding the current general environment, i.e., essentially it is comprised of information about traditionally used resources. Specifically, it includes knowledge, both historic and current, about resource distribution and populations, schedules for resource harvesting, and species-specific

habitat and behavior, as well as the corresponding community harvesting patterns. However, it also includes information on things such as weather patterns, flood and fire cycles, effects of snowfall on travel, hunting, and other activities; information about landmarks, navigability of trails, rivers, and ice-packed ocean waters; as well as general environmental conditions.

Traditional environmental knowledge focuses on the specific characteristics of the resource or environmental element rather than on the use of that resource or element. For example, it provides information on the historical movements of a particular caribou herd, herd size, herd composition, and numbers of individuals taken. Traditional environmental knowledge is important to the interpretation of not only traditional land use patterns, but also to other impact assessment components.

2.3.3 Traditional Land Use

Traditional land use information can be defined as information about how a culture used (and uses) the land and its resources through a study of trails, place names, subsistence resource use, sacred and cultural sites, burials, settlements and camps, and other places, uses or knowledge relevant to life on the land (Solicitation No. ESRF-021, Appendix B). It refers to current use associated with some historic time depth, of a particular geographic area, as defined by the particular Aboriginal group.

Traditional land use by Aboriginal communities represents practices, developed in the precontact past, that allow for not only survival, but for cultural growth and development in the regional environment. Many aspects of these practices may have changed through time. Some of the changes were a direct result of prevailing economic conditions whereas others were related to processes of acculturation. Given the nature and magnitude of acculturation through time (e.g., in Canadian context, fur trade and Christian proselytization), it is necessary to review the historical context for cultural change in order to fully understand traditional land use and impact to traditional land use practices by proposed developments.

Because it deals with culture and cultural practices and change, traditional land use work is anthropological in nature. In this context, archaeological, historical and traditional land use sites represent a continuum of the cultural heritage of an Aboriginal community and collectively constitute heritage resources. From a practical and visible perspective, traditional land use reflects all aspects of daily activities including the types of locally used resources, as well as the locations in which the resources were procured, processed and used, the associated observances and ceremonies, and the communication routes used to access the resources. Similarly, social interactions and activities, including ceremonial activities, and their locations, and customs affecting and resulting from resource and landscape use constitute a part of traditional land use. Because of the ephemeral nature of many of these activities, the associated locations may or may not have tangible remains associated with their use.

Physical features or locales and landmarks associated with oral tradition also represent an important facet of traditional land use. These sites may or may not have had any associated cultural remains. Camp sites, cabins, traplines, fish processing areas, and other sites that were occupied or used for more extended periods of time represent aspects of traditional land use and often have structural and other feature remains that are evident. Trails, recognized landmarks, sacred areas, and rendezvous locations may have no visible, tangible cultural associations.

It is important to note that although the sites and locations themselves represent important evidence for traditional land use activities, the perspectives of the Aboriginal people on the meaning of these sites as expressed in oral tradition are also an essential component of traditional land use information. It is often this information, more difficult to obtain, that is most valuable in determining the direction and extent of 'cultural impact' relative to traditional land use. The philosophical context for resource use, site use, and site significance, as well as associated customs is of utmost importance in understanding the Aboriginal perspective of their relationship to the land, the resources and the cultural structure for coping with (appeasing) the forces of nature in daily survival. As such, this connection between culture and environment is one of the key 'relationships' to be addressed in impact assessments.

2.3.4 General Terms and Concepts

Aboriginal versus indigenous: Internationally, the term 'indigenous' is more widely used and accepted in reference to peoples who have inhabited particular landscapes from 'time immemorial'. In this guide, the term Aboriginal will be used to refer to such peoples, as this is generally understood in the Canadian context to refer to people defined as Indian, Metis and Inuit under the Section 35(2) of the Constitution Act.

Consultation and traditional knowledge collection: While traditional knowledge may be collected during consultation with Aboriginal groups for an impact assessment, 'consultation' does not constitute the collection of traditional knowledge. Similarly, while the collection and use of traditional knowledge during a formal traditional knowledge study necessarily involves consultation with Aboriginal peoples, it is not 'consultation' per se, but rather represents Aboriginal participation in the impact assessment.

Environmental versus ecological: The term 'environmental' is used in preference to 'ecological' in the phrase traditional environmental knowledge as the term has broader connotations than the term 'ecological'. The term 'ecological' appears to be more closely associated with the physical sciences, and thus implies an exclusion of socio-cultural concerns. For example, Usher refers specifically to traditional *ecological* knowledge – as opposed to the broader term 'traditional knowledge' – as "the knowledge claims of those who have a lifetime of observation and experience of a particular environment and as a result function very effectively in that environment" (2000: 186).

Incorporation: The terms 'use' and 'application', as opposed to 'incorporation' or 'integration', are used throughout this guide, as the latter are felt to imply a relationship in which traditional science is subsumed within western science. The potential for traditional knowledge to complement western science indicates the need for equivalency in the approach to its application, as opposed to the more narrow, hierarchical interpretation of its 'incorporation' into data verification and issues scoping.

Impact assessment: This term is used in preference to the more commonly used term 'environmental impact assessment' as it encompasses social impact assessment, and other components of impact assessments that may not be explicitly linked to changes in the physical environment.

Impacts versus effects: Many impact assessments use these two terms interchangeably. They are used here to indicate the difference between 'impacts', or residual effects that cannot be mitigated, and 'effects', which are all the consequences or changes associated with a proposed project.

Responsible versus regulatory authority: responsible authorities are federal authorities whose powers include the ability to trigger an impact assessment for a particular project (FNEATWG 2005), and/or who have interest in and decision-making power regarding a particular assessment. Regulatory authorities may have decision-making powers that affect a project application, but may or may have a role in the impact assessment.

Traditional: The term 'traditional' is somewhat problematic. For many it gives the impression that this type of knowledge is not current, and therefore not relevant to current management practices. It is used almost exclusively in current impact assessment practice to refer to the use and knowledge of Aboriginal s with respect to the environment, thereby excluding other local users who may have generations of knowledge about a local landscape.[2]

The primacy given to Aboriginal traditional knowledge in the assessment context seems to be rooted in a 'time immemorial' relationship to traditional territories and Treaty status federally. It is used here to encompass the concept of 'culture as a continuum' because it refers to "social attitudes, beliefs, principles, and conventions of behaviour and practice derived from historical experience", which are also "cumulative and open to change" (Berkes 1999).

Traditional land use study: A traditional land use study is a detailed study of traditional land use sites over the regional extent of an Aboriginal group's traditional territory. It is neither practical nor appropriate to conduct this type of traditional land use work in the context of impact assessment. Rather, the focus of traditional knowledge and land use work for assessments should be on determining participants' perspectives on the potential impacts of a proposed project, implying a less detailed and more localized approach.

Traditional (or Aboriginal or 'cultural[5]) science: This is an invented term – it is not used in the literature – and is used in this guide to illustrate how traditional knowledge compares to Western science.

[2] The five-year review of Canada's Environmental Assessment Act (Bill C-9, January 2003) sought to redress this omission somewhat by including clause 16.1, which states that, "*community knowledge* and Aboriginal traditional knowledge may be considered in conducting an environmental assessment."

3 Evaluation of Traditional Knowledge Literature

National and regional legislation and policy, traditional knowledge manuals and guidelines, and traditional knowledge studies conducted for impact assessments were reviewed and analyzed. Some general research regarding the collection and use of traditional knowledge in biophysical studies or resource management was also considered. International literature was included where particularly relevant. Analysis and summary of the literature is presented in the context of professional experience collecting and using traditional knowledge for numerous impact assessments, both north and south of 60. The recommendations and conclusions presented below are as found in the literature.

3.1 Legislation and Policy

Included in this category of the literature review are government cumulative effects assessment and management strategies, umbrella and land claim agreements, resource management and assessment acts, policy statements on traditional knowledge, federal assessment legislation, documentation on the five-year review of the CEA Act, and Canadian court decisions regarding on 'duty to consult' with First Nations. The focus was primarily on northern legislation and policy (i.e., NWT and Yukon), with the inclusion of national and international policies that are applicable to the north.[3]

3.1.1 Legislation and Policy – Northern

In the NWT and the Yukon, several defining documents set the context for impact assessment and review. In the Inuvialuit Settlement Region (ISR), a region of the NWT, the Inuvialuit Final Agreement (IFA) (1988) – the Western Arctic (Inuvialuit) Claims Act – was the departure point for establishing an Inuvialuit impact and review process. In the broader territorial context, the Mackenzie Valley Resource Management Act (MVRMA) (1998), created an integrated co-management regime for land and waters in the Mackenzie Valley, and led to the creation of the Mackenzie Valley Environmental Impact Review Board (MVEIRB). This resulted from the settlement of the Gwich'in Comprehensive Land Claim and the Sahtu Dene and Metis Comprehensive Land Claim Agreements. Aboriginal territories covered by the MVRMA include those of the Gwich'in First Nation, the Sahtu First Nation, or other Dene or Metis of the North Slave, South Slave or Deh Cho region of the Mackenzie Valley.

In the Yukon, impact assessment is dealt with through the Development Assessment Process (DAP), which was established under the Umbrella Final Agreement (UFA) (1993) between the governments of Canada and the Yukon, and the Council for Yukon Indians. Pertinent parts of these various pieces of legislation and/or the guidelines of the resulting management and review organizations are discussed below.

[3] While many pieces of government legislation and policy do not specifically mention traditional knowledge, consultation with Aboriginal peoples is often required before development projects can proceed. Only consultation requirements that provide specific and explicit direction regarding traditional knowledge have been reviewed for this guide.

3.1.1.1 Inuvialuit Final Agreement

Applicable in the ISR, the IFA states in its Principles that:

1) The basic goals expressed by the Inuvialuit and recognized by Canada in concluding this Agreement are (p.1):

(a) to preserve Inuvialuit cultural identity and values within a changing northern society

(b) to enable Inuvialuit to be equal and meaningful participants in the northern and national economy and society

(c) to protect and preserve the Arctic wildlife, environment and biological productivity

These goals and principles are to be carried throughout the co-management bodies and environmental management process established under the IFA. The Environmental Impact and Review Board (EIRB) and the Environmental Impact Screening Committee (EISC) were set up specifically to address environmental impact and review. The EISC screens proposed project and will refer any project that "could have significant negative environmental impact and is subject to an assessment and review process under the IFA" to the EIRB (EISC 2004: 19). The EIRB Guidelines for Impact Assessment (1994) state that both environmental and social effects need to be considered. These Inuvialuit organizations may decide to refer a proposed project application to "an alternative review process [e.g., CEAA]…if it is likely to be as broad, rigorous, independent, open, and sensitive to Inuvialuit concerns as the EIRB process" (EISC 2004: 19). There is no specific mention of either traditional or local knowledge in the IFA, or in the operating guidelines of the EISC and EIRB. However, given that they are Inuvialuit-driven, their very function and application implies the inclusion of Inuvialuit traditional knowledge in the impact assessment process.

3.1.1.2 Mackenzie Valley Resource Management Act

The MVRMA does mention traditional knowledge in its text. Specifically, under Part 6: Environmental Monitoring and Audit, it states that the responsible authority "shall, subject to the regulations, analyze data collected by it, scientific data, traditional knowledge and other pertinent information for the purpose of monitoring the cumulative impact on the environment", clearly establishing the expectation that traditional knowledge will be collected as part of the impact assessment process.

The review board established under the MVRMA, the MVEIRB, provides the most comprehensive and instructive guidelines available on the collection and use of traditional knowledge for impact assessments. Traditional knowledge is included in their Environmental Impact Assessment Guidelines (March 2004), their Generic Terms of reference for the Environmental Assessment of Oil and Gas Developments in the Mackenzie Valley (April 2001) and, most recently, in their Guidelines for Incorporating Traditional Knowledge in Environmental Impact Assessment (July 2005).

The impact assessment guidelines encourage proponents to engage local communities who might be affected by a proposed project "early in the planning stage" (p. 10), and to include traditional knowledge in the formulation of impact predictions. The Generic Terms of reference, though a few years older, include the expectation that proponents explain how they collected and used traditional knowledge. Section 3: Traditional Knowledge explains that developers need to contact "potentially affected First Nations,

Aboriginal groups and communities" and identify potentially affected "traditional use and culturally significant areas" (Section 3.1, p. 13). Developers also need to provide "evidence that TK was used and considered in the development" (Section 3.2, p. 13).

The traditional knowledge guidelines offer further direction in suggesting where in the impact assessment process traditional knowledge should be used. They state that, "The main purpose for incorporating traditional knowledge into the E1A process is to provide participants in an environmental impact assessment greater knowledge and understanding of the environment in which a development is proposed [baseline information], the potential impacts of that development [impact prediction] and the significance [impact prediction] of those impacts" (p. 8). Further, traditional knowledge can be used early in the process in scoping. They explain that the MVEIRB makes use of traditional knowledge to identify issues and determine geographic boundaries of impact [study areas]. The guidelines instruct proponents to describe the following in their assessment report (p. 23):

- the steps taken to "work with" traditional knowledge holders
- how traditional knowledge has "influenced" project design, impact assessment and mitigation
- a plan for future cooperation with traditional knowledge holders to further access traditional knowledge (e.g., monitoring and mitigation)

The MVEIRB may seek to verify that the traditional knowledge information presented in the impact assessment is "reliable and credible" by ensuring that it (p.24):

- "… was collected and peer-reviewed with the Aboriginal community or traditional knowledge holders in accordance with appropriate, community-specific protocols…
- … was approved by the appropriate individuals or organizations for use using the principle of prior informed consent"

The guidelines also assert that Aboriginal organizations may be asked, during the information request process, "to confirm that traditional knowledge was collected and used in an appropriate manner" (p. 24). These statements make the need for informed consent, and follow up and verification of results with the community and participants, implicit. Throughout the guidelines, emphasis is placed on working with Aboriginal communities, and on respecting their protocols.

The guidelines affirm earlier legislation and policy commitments in ensuring that traditional knowledge is collected and used in impact assessments conducted in the Mackenzie Valley, and offer additional details on where and when it should be collected and used in the impact assessment process. However, they are not (nor is it within their scope to do so) very helpful on mechanisms to collect, conduct or apply traditional knowledge in the impact assessment context.

3.1.1.3 Cumulative Effects Assessment and Management Strategy and Framework

The Cumulative Effects Assessment and Management (CEAM) Strategy and Framework is a "collaborative effort to improve environmental management and stewardship in Canada's Northwest Territories". The CEAM vision foresees making recommendations to decision-makers to facilitate (CEAM website 2005):

- the protection of ecological integrity

- the building of sustainable communities, including social and cultural dimensions
- responsible economic development within a sound environmental management framework

The "Blueprint" document for implementing CEAM notes that all components of the framework include:

- traditional knowledge and western science
- community and organization capacity, and capacity-building
- a broad definition of environment, including social, cultural, economic, biological and physical aspects
- adaptive management
- the precautionary principle

CEAM is a collaborative, multi-stakeholder process that stresses the importance of community-based approaches. The 'blueprint' recognizes that there are challenges and gaps to be addressed with respect to traditional knowledge, and feels that it is one of the elements essential for the implementation of the CEAM Strategy and Framework.

3.1.1.4 Yukon Umbrella Final Agreement

Chapter 12 of the UFA established a development assessment process (DAP) that has, among other things, the following objectives (1993: 101):

- to recognize and enhance the "traditional economy of Yukon Indian People and their special relationship with the wilderness environment"
- to guarantee the participation of Yukon Indian People in the DAP, and to make use of the "knowledge and experience" of Yukon Indian People
- to protect and promote the "well-being of Yukon Indian People and of their communities" (and other Yukon residents)

In addition, the Yukon Development Assessment Board and other designated offices are instructed to consider the special relationship of Yukon Indian People to the land, as well as the "need to protect [their] cultures, traditions, health and lifestyles" when carrying out their duties (UFA 1993: 104).

The Yukon Environmental and Socio-economic Assessment Board (YESAB) was established with Bill C-2, the Yukon Environmental and Socio-economic Assessment Act, in May of 2003. The Act reiterates the points made above with regard to Yukon Indian People in clauses pertaining to the assessment process (Section 42(g)) and the conduct of review panels (Section 107(e)). Traditional knowledge is treated under a General Requirement (Section 39) stating that the Board will give "full and fair consideration to scientific information, traditional knowledge and other information provided to it or obtained by it under the Act" (p. 22). Proponents are expected to consult with any First Nation that may be affected by "significant environmental or socio-economic effects" in their territory prior to submitting a proposal to the Board (Section 50(3), p. 29). No specific mention in made in the Act regarding the use and application of traditional knowledge in the impact assessment process.

3.1.2 Legislation and Policy – Canadian

Prior to the five-year review of the CEA Act, federal impact assessment legislation did not contain specific measures for the inclusion of traditional knowledge. The 1992 version of the Act could be broadly interpreted to have addressed Aboriginal concerns and traditional knowledge under its definition of "environmental effect" as "any change that the project may cause in the environment, including any effect…*on the current use of lands and resources for traditional purposes* by Aboriginal persons or on any structure, site or thing that is of historical, archaeological, palaeontological or architectural significance...[emphasis added]" (Section 2(1)).

The five-year review of the CEA Act and the enactment of Bill C-9, led to the addition of the following clause to Section 16.1: "Aboriginal traditional knowledge *may* be considered in conducting an environmental assessment [emphasis added]." Clearly, this is a discretionary clause, a move that was decried by some participants involved in the five-year review (Campbell 2002). CEAA has recently (2004) produced 'Interim Principles' for how traditional knowledge should be considered for impact assessments. These principles are currently very generic and broad. CEAA is working with an Aboriginal Advisory Committee to create more detailed guidelines.

The NEB's Filing Manual (2004) discusses traditional knowledge in both the consultation (s. 3.3) and the Environmental and Socio-economic Assessment (s. A.2) sections. Proponents are instructed to "consider augmenting the application with local and traditional knowledge" and 'integrate' it, "where appropriate" into project design. Opportunities must also be provided for individuals who provide traditional knowledge to "confirm the interpretation of the information and how it was used in the project design."

Court cases such as Sparrow (1990) and Delgamuukw (1997), and the more recent Haida and Taku River Tlingit supreme court decisions (2004) have given new meaning and increased profile to Aboriginal rights and 'meaningful consultation' in Canada. In the narrower context of Canadian impact assessment process, this had led to a heightened awareness of Aboriginal concerns and the importance of including traditional knowledge.

3.1.3 Legislation and Policy – International

The Arctic Environmental Protection Strategy (AEPS) was established in 1991 by a group of nations with circumpolar interests. In 1997, AEPS produced guidelines that, among other things, outlined tasks important to impact assessments conducted in the Arctic, including (p. 6):

- scoping sufficient to include "all potential environmental, socio-cultural and economic impacts, especially impacts on the traditional uses of resources and livelihoods of indigenous peoples"
- baseline information that combines "traditional and scientific knowledge"
- the use of traditional knowledge in the "understanding of possible consequences of predicted impacts and in reducing uncertainties"

The Guidelines state that traditional knowledge needs to be accepted as an "important source of information in assessing potential impacts" (p. 9). The "early and full involvement of indigenous people and other local communities, who hold special knowledge of the Arctic" is considered "one of the most important features in Arctic assessment". Additionally, public participation in scoping is needed for the efficient use of traditional knowledge. Without this critical step, it is "virtually impossible to cover the

full range of diverse and complex values and viewpoints typical of the Arctic inhabitants." This becomes particularly important for "controversial activities", and can be a crucial first step in "building mutual confidence in fair environmental assessment and problem-solving" (AEPS 1997: 15).

The Guidelines also offers suggestions for the determination of impact significance. Both the level of public concern and the impact on social values and quality of life can be used to determine significance. In recognizing the fact that developers, indigenous people and other groups can have "wildly different world views through which they interpret assessment findings", the Guidelines recommend that traditional knowledge be "analyzed and evaluated using suitable methods for determining the significance of impacts" (p. 23).

Also included in the Guidelines are recommendations regarding mitigation and monitoring. In the Arctic, local Aboriginal people and communities are often consulted with respect to mitigation programs, and should be consulted about monitoring programs that may affect them. Traditional knowledge should be used to implement monitoring. In short, "indigenous people should be provided with the opportunity to contribute their traditional knowledge throughout the process" (P. 36).

While the AEPS Guidelines have particular relevance to the conduct of impact assessments in the Arctic, the importance and role of traditional knowledge in environmental conservation, sustainability and management has also been asserted in other international agreements. Through agreements such as Agenda 21 and the Convention on Biological Diversity, United Nations members are called upon to strengthen national measures for including traditional knowledge in environmental management.

3.2 Impact Assessments

Impact assessments, feasibility studies, traditional land use and traditional knowledge reports, workshops and training, research and consultations carried out in Northwest Territories and Yukon for project-specific impact assessments were surveyed. Also included in this category are analyses of project-specific impact assessments and of impact assessment processes. Major impact assessments conducted north of 60 (largely in the Northwest Territories) were reviewed, and, as a considerable body of consultant's reports prepared for impact assessments south of 60 (largely in western provinces) were also available to researchers, these were scanned to gain an understanding of trends in impact assessments with regard to traditional knowledge. A few international references were included for their particular relevance to the Canadian context.

3.2.1 Impact Assessments – Northern

A number of the impact assessments conducted in Canada's north in the mid to late 1990s for large-scale projects have been subject to extensive analysis and critical comment, particularly with respect to the lack of community consultation and/or the inclusion of traditional knowledge (Burnaby 2003, Inkpen 1999, Mulvihill and Baker 2001, Ross 2004, Subcommittee of the Intergovernmental Working Group on the Mineral Industry 1997, Stevenson 1996, Wismer 1996). This has led to greater attention being paid to traditional knowledge in the context of impact assessments by responsible authorities (RAs), proponents and impact assessment practitioners.

As noted in the Legislation and Policy section above, government guidelines are now much more detailed in the direction they provide on expectations regarding the inclusion and use of traditional knowledge in northern assessments. However, there are some who would argue that, in recent years, project terms of reference have actually become narrower in scope with respect to requirements to include traditional knowledge (Burnaby 2003, Inkpen 1999, Mulvihill and Baker 2001). The Berger Inquiry for example, held in the late 1970s, though not a formal impact assessment per se, established a precedent for how community consultation in the north should be done. The terms of reference for the Ekati (1996) and Voisey's Bay (1998) impact assessments both broadly stipulated a 'full and equal consideration' of traditional knowledge.[4] The proponent for the Voisey's Bay project encountered difficulties in addressing this consideration, and, as a result, the assessment panel recommended that the federal authorities develop a policy for the inclusion of traditional knowledge in impact assessment (Voisey's Bay Mine and Mill Environmental Assessment Panel 1998).

The terms of reference for the Diavik mine (1998) were also quite broad with respect to traditional knowledge. They required that traditional knowledge be fully considered "where appropriate when assessing the effects of the project" (1998:12). RAs asked that, "sufficient information" on traditional knowledge "be made available … so that conclusions can be drawn and understood by reviewers" (p.12). Such explanations would include discussions of significance or the lack of significance, and cause-effect relationships.

In two more recent northern impact assessments, the Devon Offshore Exploratory Drilling Program (2004) and the Mackenzie Gas (Pipeline) Project (2004), traditional knowledge was part of the required assessment scope. In the case of the Devon project, which was a coordinated comprehensive study, the National Energy Board (2002) instructed the proponent to conduct an impact assessment that would consider IFA requirements, land and resource use, social cultural patterns, traditional knowledge and Inuvialuit interests and harvesting. The Mackenzie Gas terms of reference stated that traditional knowledge is an important part of project planning and the impact assessment process. The application of traditional knowledge to the impact assessment process was seen as a flexible process in that it 'may' be used to contribute to baseline studies, project design, issue identification, impact and significance evaluation, mitigation and monitoring (Joint Secretariat and CEAA 2003). Sweeping statements such as 'full consideration' or 'full and equal consideration' are not part of the requirements regarding traditional knowledge. However, in both cases, proponents worked closely with local Aboriginal groups to gather traditional knowledge. Devon used a participatory action approach in which local Inuvialuit were engaged and trained to carry out the traditional knowledge study (Devon Canada Corporation 2004). The Mackenzie Gas Project also took a participatory approach; traditional knowledge working groups were formed and local communities were supported in conducting their own studies (Mackenzie Gas 2004).

[4] Two other, 'northern' impact assessments conducted in the early 1990s - the North Central hydroelectric project in northern Manitoba and the Great Whale hydroelectric project on James Bay – were also very broad in scope. The Great Whale assessment was "ambitious" and "precedent-setting" in terms of its "responsiveness to diverse stakeholder input" and for the stress it placed on "intcrcultural considerations" (Mulvihill and Baker 2001: 373-375). In the case of the North Central project, a majority of the Review Panel and the Chairperson were Aboriginal - a Canadian first. A high level of involvement on the part of local communities was an important aspect of the entire impact assessment process, and local people were actively involved in setting the terms of reference (Inkpen 1999).

3.2.2 Impact Assessments – Canadian

At a workshop of Canadian impact assessment practitioners specializing in traditional knowledge held at the Banff Centre for Management participants declared that, "The inclusion of traditional knowledge is handled with very poor effectiveness under the federal CEAA legislation", and there is little or no guidance available from the Agency itself (Emery 2000). Others feel that traditional knowledge is currently "not playing a significant role in environmental assessment" and explain how and why this is the case (Pad et al. 2002: 112, Winds and Voices 2000). Analysis of Canadian impact assessment processes and literature regarding traditional knowledge has identified several areas where progress[5] can be made with respect to the participation of Aboriginal peoples and the collection and application of traditional knowledge[6]:

- *Meaningful consultation*. Due to recent supreme court decisions, many Aboriginal groups are using the term 'meaningful consultation' in their discussions with developers and regulators. Aboriginal peoples want a greater decision-making role in the impact assessment process, which ultimately implies a political shift in power relations and control (BCFNEAWG 2000, Labour 2003a, Paci et al. 2002, Winds and Voices 2000).
- *Participation in overall impact assessment process*. One of the points most frequently stressed in the literature is that local Aboriginal communities potentially affected by a proposed project need to become more involved in *all* aspects of the impact assessment process. They have an "immediate and direct reliance" on the land and "hence a lower tolerance to environmental effects" (Winds and Voices 2000: 22, BCFNEAWG 2000). The literature suggests several areas where the active participation of Aboriginal peoples could be beneficial (Burnaby 2003, CEAA 2004, Emery 1997, FNEATWG 2005, MVEIRB 2005, Paci et al. 2002, Winds and Voices 2000):
  - creation of terms of reference (not just review of draft)
  - definition and determination of assessment scope; this includes not just issue identification and/or the selection of key valued ecosystem or social components, but also the definition of geographic and temporal boundaries and issue matrices
  - design of traditional knowledge study or the setting of requirements for the traditional knowledge study to be conducted
  - selection of impact assessment consultants for the traditional knowledge study, or freedom and support to conduct own studies (including biophysical and socio-economic) if so desired
  - input into project design, not just in terms of moving a well pad or minor re-routing of pipelines, but also contribution to the selection of project alternatives and overall project design
- *Environmental stewardship*. While it is both unrealistic and inaccurate to make generalizations about Aboriginal cultures, one of the fundamental values shared by many is a profound sense of respect for and stewardship of the natural environment.

[5] The approaches presented in Volume 2: Using Traditional Knowledge in Impact Assessments of this guide provide some suggestions and real-world examples of how Aboriginal peoples involvement in impact assessment may be improved.
[6] These categories are equally applicable in Canada's north. They are presented in this section, as comments from the literature reviewed were generally directed at federal processes. Where recommendations put forward in policy documents coincided with those from the impact assessment literature, they have been cited.

As a result many Aboriginal groups see the impact assessment process as a "platform for a larger inclusive mechanism for dealing with a variety of outstanding issues that are largely environmental…a forum requiring participation by project operators or proponents" (Paci et al. 2002: 121). Aboriginal peoples will have a more regional and 'bigger picture' sense of what an impact assessment process is about than most practitioners, proponents or RAs, and these perspectives may be addressed by the inclusion of traditional knowledge.

- *Application and use of traditional knowledge*. The current wording and emphasis on the 'incorporation' or 'integration' of traditional knowledge is not appropriate to the role that Aboriginal communities see themselves as being able to play in the impact assessment process, nor to the cultural context of traditional knowledge. Traditional knowledge is "inseparable from the environment and is rooted in culture" (Burnaby 2003: 12). The impact assessment process needs to accommodate the cultural values represented by traditional knowledge. There is a risk of conflict with Aboriginal values and worldviews when one tries to make traditional knowledge "tangible" by separating it "from the whole" or taking it out of context (Burnaby 2003: 12). Others have observed that it has "proved exceedingly difficult to reformulate scientific method to accommodate cultural values" (Paci et al. 2002: 115). In other words, the "inclusion of…[traditional knowledge] requires adaptation of the general application of the assessment process, allowing for variation that can meet the needs of…[Aboriginal] communities" (Paci et al. 2002: 120). Some feel that legislation to address equity and ecosystem issues is required before traditional knowledge can be applied effectively to the impact assessment process (Paci et al. 2002).
- *Significance Determination.* The need to address the cross-cultural implications of applying traditional knowledge to existing impact assessment methods is especially critical when it comes to determining the significance of impacts. Aboriginal values and perspectives need to be reflected in the assessment of effects to traditional use, and traditional knowledge needs to be used in determining significance (CEAA 2004, MVEIRB 2005, Winds and Voices 2000).
- *Follow-up*. Follow-up (e.g., review of draft results, information verification) with traditional knowledge participants and community representatives is currently one of the weakest aspects of traditional knowledge studies. Impact assessment schedules and community capacity are just two of the factors that may impede follow-up. However, it nonetheless remains a crucial aspect of a traditional knowledge study (CEAA 2004, FNEATWG 2005, MVEIRB 2005).
- *Timing and schedules*. The needs of corporate (proponent) timelines and the regulatory process are one of the most difficult challenges that Aboriginal communities face when participating in the impact assessment process. This difficulty underlines the importance of involving Aboriginal groups early in the process (see below). Many authors recommend that Aboriginal communities have some input into the impact assessment schedule, so that they have adequate time to conduct internal community consultations and meaningful participation in the impact assessment studies (BCFNEAWG 2000, Burnaby 2003, Emery 1997, MVEIRB 2005, Winds and Voices 2000). There is often enough time to allow community participation in the impact assessment if assessment managers and the proponent recognize the need to contact the communities sufficiently early in the field programs to allow them to participate in and contribute to the various discipline data collections.

- *Early consultation.* Consultation with potential affected Aboriginal communities is required *early* in the process (CEAA 2004; MVEIRB 2004, 2005). To some proponents, 'early' is once preliminary engineering plans are in place. To some Aboriginal peoples, consultation at the stage when oil and gas leases are granted is 'early' . Early consultation and sharing of traditional knowledge can provide valuable information for scoping, and the identification of issues.
- *Informed consent.* It is essential that Aboriginal communities and traditional knowledge participants understand the nature of the impact assessment process and of the proposed project that it seeks to address to participate effectively in providing traditional knowledge. Impact assessment managers and practitioners, RAs, proponents and, especially, traditional knowledge facilitators, need to ensure that Aboriginal communities and participants have informed consent. Are the implications of the proposed project fully understood? Do participants know how and where the traditional knowledge they are providing will be used? Will participants (or the larger community) have an opportunity to review and verify the findings of the traditional knowledge study before it is published? Do participants in the traditional knowledge study understand the scope and limitations of the impact assessment? These are all questions that need to be addressed to obtain informed consent and participation (CEAA 2004, FNEATWG 2005, MVEIRB 2005).
- *Mitigation and monitoring.* The participation of Aboriginal people and the need for traditional knowledge in designing mitigation and monitoring programs is widely recognized. However, what is not widely understood is that many Aboriginal communities feel that, without "some authority of enforcement for noncompliance at the community level", their contribution has little or no meaning (Paci et al. 2002: 120).

There has been ongoing, but slow, improvement in the inclusion of Aboriginal peoples and their traditional knowledge in the Canadian impact assessment process over the last decade. Progress is much slower south of 60, where provincial regulations often take precedence. Thanks to the comprehensive land claims and legislative context north of 60, the process itself dictates that it is impossible to conduct impact assessments without consulting Aboriginal people. The ultimate approval for a project application rests with the RAs. And yet the literature indicates that there remains much work to be done in establishing acceptable standards for the collection, use and application of traditional knowledge in the impact assessment process. It is precisely this deficiency that this work is attempting to speak to. Suggestions for how to deal with some of the challenges described above are provided in Volume 2 of this guide.

3.2.3 Impact Assessments – International

The most helpful and revealing comments found in the international impact assessment literature reviewed are perhaps those made by Inupiat mayor Eben Hopson of Alaska's North Slope Borough during hearings associated with the Prudhoe Bay Gas Pipeline proposals (Hopson 1977). While Mr. Hopson's comments were made over 25 years ago, and much progress has been made in addressing similar concerns in Canadian impact assessments, they are still relevant to today's practitioners, and are reflective of perspectives found in today's literature.

The "biggest deficiency in the environmental impact assessment connected with the gas pipeline proposals," Mr. Hopson stated, "is that they fail to take adequate account of the larger ecological context of the proposed corridors. Therefore, they fail to deal adequately

with the relationship between the pipelines and the Beaufort Sea" drilling programs. Mr. Hopson also submitted a testimony to the Berger Inquiry. The Inupiat are closely tied, both culturally and historically, to the Inuvialuit.

The following comments reflect how many northern peoples viewed impact assessment reports at the time:

> They commit information overkill. They reveal nothing by talking about everything. They are usually poorly written and hard to read. They are poorly organized, and over-generalized. They are seldom site-specific, so they seldom make useful reference texts for our land use planners. And, they are often inconclusive about the balance of risk to our people and our land. They constitute an undisciplined discipline, and I feel that our environmental scientists who write them do all of us a disservice.

Mr. Hopson added perspective on what this means:

> Any EIS process that fails to reflect our knowledge [Inupiat] of the Arctic to protect our traditional use values is of no use in the protection of our environmental security.... Successful protection of our national Arctic environmental values depends upon the protection of our Inupiat traditional land use values. Obviously, we need to make an effort at cross cultural environmental impact assessment.... From our point of view, those who are licensed to profitably exploit our land for its subsurface wealth should regard themselves as very privileged, and privilege carries heavy responsibility.

3.3 Guidelines

Literature covered in this category includes any guidelines or literature containing recommendations for the collection and use of traditional knowledge. Of the documents surveyed, only a small number were specifically written in the context of traditional knowledge and impact assessments, and two of these are government 'policy' documents. None of them contain detailed instructions or guidance. (The government-produced documents, the MVEIRB guidelines and CEAA's Interim Principles on traditional knowledge, are both discussed in the Legislation and Policy section.) Most of the guideline-type literature included, then, speaks more to the overall process of impact assessment practice, the 'generic' collection of traditional knowledge, and generic social science and interview techniques.

3.3.1 Guidelines – Northern

The main focus of the literature survey was on collecting instructive material regarding social science and traditional knowledge research in the north. A number of northern organizations have produced guidelines that are helpful and provide direction on community expectations for consultation and research (Arctic Borderlands Ecological Knowledge Co-op 2005, Aurora Research Institute 2004, Clarkson and Andrea 2002, Council of Yukon First Nations 1995, 2000, Dene Cultural Institute 1998, Inuit Circumpolar Conference 1996, Inuit Tapirisat of Canada 1998, Inuit Tapirisat of Canada and NCP Secretariat 2004, Hart 1995, Johnson 1992, Lutsel K'e Dene First Nation 2001, Nakasuk et al. 1999, Nunavut Research Institute and Inuit Tapirisat of Canada 1998, Sherry 1999, West Kitikmeot Slave Study). In the Inuvialuit Settlement Region, consultation of the Community Conservation Plans is a critical step for impact assessment research and project planning.

Consultants working in the north have also written a number of reports addressing the need for both the collection and use of traditional knowledge for environmental management and decision-making in the north; some of these provide guidance on how such work should be conducted (AXYS 2000, Kavik-AXYS 2002 (three reports on cumulative effects assessment), Kavik-AYXS 2003, Usher 2001). Northern government departments have produced guidelines that are instructive to social science research (Government of the Northwest Territories 1990, Smith et al. 2000). Articles by scientists who have shared their experiences working with northern Aboriginal people can also provide insight into protocols for conducting traditional knowledge research in the north (Huntington 1998, Oakes andRiewe 1996, Roberts 1994).

3.3.2 Guidelines – Canadian

The literature survey of guidelines relevant to the national context for impact assessments was less comprehensive than that for northern guidelines. A number of government agencies and departments have produced guidelines that are available to the public (Aboriginal Affairs Branch, B.C. Ministry of Forests 1996, Cadieux 2000, Garvin et al. 2001, Honda-McNeil and Parsons 2003, Parks Canada 2000). There are three very instructive guidebooks published by Aboriginal organizations (Acres International 1995, Tobias 2000, First Nations Environmental Assessment Technical Working Group 2005). Consultants working in the field have also been involved in the creation of guidelines relevant to traditional knowledge and impact assessment (Brascoupe and Mann 2001, Hegmann et al. 1999, Labour 2002). Academic guidelines on conducting community-based research and on working with Aboriginal people are also available (Robinson 1994, Scott and Receveur 1995, Menzies 2001).

3.3.3 Guidelines – International

The Alaska Native Knowledge Network and the MOST/NUFFIC best practices database are two very informative online sources of information on traditional knowledge collection. Organizations that work world-wide, such as the United Nations and the World Bank, have published a great deal of research on the topic of traditional knowledge. Some of these sources were consulted (Daes (n.d.), Emery 2000, Grenier 1998, Johannes 1993, Management of Social Transformations Programme 1999, Secretariat of the Convention on Biological Diversity 2004, World Bank Group 1991). Other international guidelines have provided perspective on how impact assessment and resource management processes in other countries deal with traditional knowledge (Berkes 1999, Dahl 1998, Morin-Labatut 1993, NSW National Parks and Wildlife Service 2003)

3.4 General

The general literature category consists of biophysical research and co-management research that includes traditional knowledge; internal government policies regarding traditional knowledge (e.g., NWT) (not specific to the impact assessment process); intellectual property rights; and discussions regarding the role, nature and importance of traditional knowledge. While not directly relevant to the impact assessment process, they were used to inform thinking on how traditional knowledge can be applied to the scientific studies and research required for impact assessments.

4 Direction for Traditional Knowledge Studies

It was only 20 to 30 years ago that the value and importance of traditional knowledge began to be recognized by Western societies. One of the earliest precedents in Canada was the Berger Inquiry (1974-1976). Internationally, the Brundtland report (WCED 1987) brought the role of Aboriginal peoples in enviromnental matters to the world's attention. The practice of impact assessment in Canada dates from the 1980s, and the consideration of traditional knowledge in the impact assessment context is younger still. Project Terms of reference (i.e., essentially content guidelines for impact assessments) only began making reference to traditional knowledge in the early 1990s. Since that time, there has been a continual evolution and refinement of the use of traditional knowledge, and of the participation of Aboriginal peoples, in impact assessment, and while much has been written on the topic, as yet there currently exists no formal, standard methodology for the use of traditional knowledge in impact assessments in Canada. Volume 2 of this guide attempts to address this deficiency.

4.1 History and Current Trends

The relative importance given to traditional knowledge in impact assessments may be gauged by where and how it appears in an assessment. Early assessments that included Aboriginal issues (mid-1990s) sometimes included a list of related issues in the public consultation section. Aboriginal concerns were often only brought forward 'after-the-fact' by Aboriginal stakeholders at hearings. Once Aboriginal peoples started being actively consulted with regard to their concerns about their traditional use (mid to late 1990s), appendices containing 'traditional land use studies' were added to the larger impact assessment application. These appendices usually contained a record of historical and current traditional resource uses, perhaps some comments regarding traditional environmental knowledge, a list of issues and concerns (frequently), and (infrequently) recommendations or suggested mitigation measures. In more recent years (late 1990s and early 2000s), traditional land use work has moved into the main body of the assessment comprising a separate section of the central volume of the assessment application. Traditional land use has become an assessment component in its own right, and techniques normally used for other assessment components are now being applied to the assessment of impacts to traditional use. 'Traditional Knowledge and Land Use' sections present both baseline and impact assessment findings, include spatial measurements and analyses of impacts, project-specific versus cumulative effects, as well as providing qualitative statements of impact. Baseline information (usually included as an appendix) is normally comprised of an exhaustive list of traditional resources and uses, and a description of study areas and traditional territorial boundaries.

The collection of traditional environmental knowledge for impact assessments has undergone a similar, though more recent, evolution. Until a few years ago, traditional *environmental* knowledge was not collected at all for impact assessments, or if it was, it was collected 'incidentally', by interested field crew members lucky enough to have Aboriginal 'assistants', or by facilitators conducting traditional land use work who happened to be astute enough to recognize the value of what Aboriginal participants were saying about trends in wildlife populations, climate change or the disappearance of particular plant species. Gradually, component leads and impact assessment practitioners, through their own research and experiences, began to realize the value of traditional

environmental knowledge. This was compounded by the experience of Aboriginal communities themselves, who often felt themselves and their knowledge slighted or ignored by developers and regulators. Today, although not all parties are 'converted', assessment scientists and practitioners expect and want to be able to collect and make use of traditional environmental knowledge, and it is a standard requirement in project terms of reference.

In the last couple of years there have been some exciting developments in the collection, use and application of traditional knowledge in impact assessments. In Alberta, for example, university research conducted with an Aboriginal group in the Athabasca oil sands on culturally significant ecosystems (McKillop 2002) provided a promising tool for the analysis of impacts to traditional use in the region. Unfortunately, much more research must be done before the same technique can be applied to traditional use in other regions, or for other Aboriginal groups. (Other approaches may be taken to gain a sense of cultural significance, but they do not normally permit the same degree of quantitative analysis as McKillop's model.)

Some recent assessments have included traditional knowledge 'programs' as part of the traditional environmental knowledge and land use work (Ekwan Pipeline Project, Primrose East Environmental Impact Assessment). These programs normally involve traditional scientists and/or Elders participating in and working with western scientists throughout the biophysical and archaeological field surveys. Facilitators experienced in the collection of traditional knowledge, cross-cultural exchange and impact assessment practice, accompany field crews to assist with the collection of relevant information, and to help generate meaningful dialogue.

4.2 Future Development and Trends

One of the directions that assessments can take to address some of the aforementioned issues is to place greater emphasis on the participation and training of Aboriginal participants. Impact assessment is a complex process, and many people working in the field today do not understand all of its intricacies. How then can Aboriginal peoples who are only seeing the process from the 'outside' understand and contribute meaningfully to impact assessments?

Currently, most traditional knowledge studies are conducted by consultants, hired by the proponent, who act as facilitators to Aboriginal participants. These facilitators, often 'outsiders' to the community, conduct interviews and write reports *on behalf of* Aboriginal participants, applying their experience and understanding of impact assessment to the traditional knowledge collected. This consultant-based model can be modified to take the form of a more community-based model. In a community-based assessment, which borrows heavily from the participatory action research approach, community members are trained on impact assessment process and interview techniques (if not already experienced), and have input into every facet of the assessment (e.g., scoping, background research, interviewing, report writing, client interface). In this model, the 'outside' consultant acts as a facilitator to the community facilitators (as opposed to the participants), offering guidance as needed on impact assessment process, report writing and assessment techniques. This approach was used for the traditional knowledge study for Devon Canada Corporation's recent assessment (2004) of a Beaufort Sea Exploration Drilling Program.

If traditional knowledge is going to be effectively used in current assessment practice, there clearly needs to be greater involvement and understanding of local Aboriginal

peoples of the limitations, scope and intent of impact assessment. Aboriginal communities could be offered the option of selecting the consultants they want to work with to conduct the traditional knowledge study, and could instruct and direct these consultants as to how they want information to be collected and used (FNEATWG 2005). In the same manner as 'proponent consultants', these consultants would have to ensure that the information presented met regulatory requirements, information needs and schedule. (There are examples in British Columbia (e.g., Cayoosh Ski Resort) where Aboriginal groups have hired consultants to conduct the cultural and socio-economic studies, and review and comment on other aspects of the assessment (FNEATWG 2005).) Impact assessment training workshops could be offered in Aboriginal communities that are to take part in an assessment. These workshops could be modeled after the current training workshops offered by the Canadian Environmental Assessment Agency, with an emphasis on those aspects of assessment practice that are of most interest and concern to Aboriginal peoples.

Beyond this (or perhaps in addition to) might be a process in which Aboriginal groups conduct independent assessments that approach impact assessment from their point of view. Such an approach may not conform to current assessment practices or paradigms, but it would perhaps more accurately provide "full and equal consideration" of traditional knowledge. (Some forms of this type of approach already exist. The Aboriginal groups who participated in Voisey's Bay impact assessment both decided to collect and present their own traditional knowledge. Both groups contributed to the scoping and panel review for the project, and worked with independent reviewers who submitted statements on the adequacy of the impact assessment (FNEATWG 2005).) The challenge on all sides is to provide defensible information that enable RAs to make an informed decision with respect to the proposed project. Some assessment practitioners question whether traditional knowledge can ever be given its full due within existing frameworks. It may be some time before Aboriginal communities gain the capacity and understanding to conduct independent assessments, but it may also be the best way to address their concerns about the inadequacies of the current assessment process.

4.3 Direction of Guide – Volume 2

The literature review indicates there is a need to provide Aboriginal perspectives regarding the environment and their relationships to it in order to effectively assess project impacts. In addition, the review of traditional knowledge studies to date has indicated that standardized approaches are required for the following:

- parameters and scope of work
- acceptable procedures and assessment
- Aboriginal participation
- culturally appropriate classifications and perspectives

Volume 2 of the Traditional Knowledge Guide addresses some of these deficiencies. In addition, it provides direction on 'how to' address the following:

- cultural and historical context of Aboriginal occupation and use
- synthesis of approaches (consultant-based and community-based models)
- suggestions for dealing with the challenges presented by regulatory deadlines and proponent schedules

- tools and approaches to 'objectively' assess socio-cultural impacts relating to traditional use patterns
- method for collecting, using and applying traditional knowledge (both traditional environmental knowledge and land use information) in an impact assessment context
- assessment of physical impacts (traditional environmental knowledge specifically)
- assessment of culturally-related impacts (traditional land use specifically)
- presentation of mitigation measures in the context of cross-cultural perspectives

Appendix A Annotated Bibliography

A.1 Policy and Legislation

A.1.1 Northern – Policy and Legislation

NWT CEAM Steering Committee (2004). A Blueprint for Implementing the Cumulative Effects Assessment and Management (CEAM) Strategy and Framework. Revised July 2004. Available at: http://www.ceamf.ca. Accessed: 21 March 2005.

The Cumulative Effects Assessment and Management (CEAM) Strategy and Framework is a collaborative effort of a variety of stakeholders to improve environmental management and stewardship in Canada's Northwest Territories. In July of 2004, the CEAM Steering Committee published a revised version of their blueprint for implementing the CEAM strategy and framework. This blueprint document explains that all components of the CEAM framework consider: traditional knowledge and western science, community and organizational capacity building, a broad definition of environment (social, cultural, economic, biological and physical aspects), adaptive management, and the precautionary principle. Traditional knowledge is recognized as one of the gaps and challenges that need to be addressed. Traditional knowledge is also considered one of the elements essential for the implementation of the CEAM Strategy and Framework. The importance of community-based approaches is also stressed.

Council of Yukon First Nations (n.d.). Understanding the Umbrella Final Agreement. Available at: http://www.cyfn.ca. Accessed: 17 January 2005.

This document summarizes the main aspects of the Umbrella Final Agreement. Chapter 12 of the Agreement sets out the principles and assessment bodies involved in the Development Assessment Process (DAP).

Environmental Impact Review Board. (2004). *Environmental Impact Review Board Operating Procedures*. February 5th, 2004. Inuvik, NWT.

The purpose of these Operating Procedures is to provide guidance to developers, responsible authorities and the public regarding the rules of procedure of the EIRB when a development proposal is referred to it for public review. They are not intended to be a legal interpretation of the IFA. The EIRB procedures require a proponent to include the result of consultations with "communities most likely to be affected" and identify and describe "those elements of the communities and environment likely to be affected by the proposed development (p. 12)."

Environmental Impact Review Board. (1994). Guidelines for Impact Assessment Methods to be Used Before the Environmental Impact Review Board. March 1994. Inuvik, NWT.

These guidelines were prepared to "ensure that proponents…use appropriate Impact Assessment Methodologies for evaluating the potential environmental and social effects of their projects. The Board recognizes the need for flexibility and offers these guidelines to provide the elements that are "essential".

Environmental Impact Screening Committee. (1999). *Environmental Impact Screening Committee Operating Guidelines and Procedures*. Inuvik, NWT: Environmental Impact Screening Committee. Inuvik, NWT.

This document provides information on the structure, procedures and requirements of the Environmental Impact Screening Committee (EISC) that was established under the authority of the Inuvialuit Final Agreement to carry out preliminary environmental screening of developments

in the Inuvialuit Settlement Region. "The EISC has the legal obligation to screen all proposed developments inside the ISR which may negatively impact the environment and/or Inuvialuit wildlife harvesting (p. 4)."

Frayne, T. (1997). *An Examination of the Development Assessment Process, Yukon*. Thesis submitted for the Degree of Master of Arts, Faculty of Graduate Studies, University of Guelph, ON.

This thesis determines the barriers to applying the Yukon Development Assessment Process, an impact assessment policy, under the Comprehensive Land Claim Umbrella Final Agreement, which demands the participation of Yukon First Nations in environmental assessments and indirectly requires the use of their knowledge. Based on the results of her study, Frayne suggests that the incorporation of traditional knowledge and the paucity of guidelines regarding its use is a prominent issue. She examines barriers and benefits to the incorporation of traditional knowledge in the Development Assessment Process and illustrates the current methods used to collect and incorporate traditional knowledge.

Government of Canada (1984). The Western Arctic Claim: the Inuvialuit Final Agreement. Indian and Northern Affairs. Available at: http://www.ainc-inac.gc.ca/pr/agr/inu/wesar_e.pdf. Accessed: 7 January 2005.

This copy includes both Bill C-49 (Western Arctic (Inuvialuit) Claims Settlement Act) and amendment Bill C-102. Section 11, under this enactment, requires the screening of developments that are likely to have a negative impact on the environment or on wildlife harvesting (dealt with specifically in Section 13) within the Inuvialuit Settlement Region. This act established the Environmental Impact Screening Committee and the Environmental Impact Review Board, co-management agencies responsible for environmental screening and review.

Government of Canada (1998). Mackenzie Valley Resource Management Act, c. 25. Available at: http://laws.justice.gc.ca. Accessed: 7 January 2005.

This enactment created an integrated co-management regime for land and waters in the Mackenzie Valley between the Federal Government, the Gwichi'in, the Sahtu Dene and the Metis. The act provides for the making of regulations governing land use, developments that are to be included or excluded from environmental impact assessment, and cumulative impact monitoring and auditing. Stipulations regarding traditional knowledge are given in Part 6 of the Act, which deals with environmental monitoring and auditing. Specifically, Section 146 states that traditional knowledge shall be included for monitoring cumulative impacts in the Mackenzie Valley. Under Section 150, regulations may be created with respect to the collection and analysis of traditional knowledge for the purposes of Section 146.

Government of Canada (2003). Yukon Environmental and Socioeconomic Assessment Act, c.7. Available at: http://www.canlii.org. Accessed: 11 January 2004.

This development assessment legislation is a requirement of the Yukon First Nation Final Agreements stipulations for a Development Assessment Process [DAP] and was developed collaboratively by the Federal Government, the Yukon Government and First Nations. This Act guarantees opportunities for the participation of Yukon First Nations in the assessment process both on the Board and in consultation with proponents. The need to protect the special rights of Yukon Indian Persons including cultures, traditions, health, lifestyles and relationships to the wilderness environment is recognized in 42(1)(g). With regards to traditional knowledge, Section 39 states that a designated office (the executive committee or a panel of the Board) shall give full and fair consideration to scientific information, traditional knowledge and other information provided to it or obtained by it under this Act.

Government of Canada, Council of Yukon Indians & the Government of Yukon (1993). Yukon First Nations Umbrella Final Agreement. Available at: http://cms.cyfn.ca. Accessed: 11 January 2004.

The Umbrella Final Agreement (UFA) was reached in 1988 and finalized in 1990. It is a political agreement (not a legal document) made between the Canadian (Federal) Government, the Yukon Government and the Council for Yukon Indians. It represents the overall agreement of the Yukon Land Claims package and provides a framework for each of the 14 Yukon First Nations to conclude their final claims settlement agreements. Chapter 12 refers to the requirements for a Development Assessment Process [DAP], the legislation for which has now been enacted under the Yukon Environmental and Socioeconomic Assessment Act. The objectives of DAP are to guarantee the participation of Yukon Indian People in the assessment, the inclusion of their knowledge, and to recognize and protect their special rights, including their relationship to the Yukon wilderness.

Government of the Northwest Territories. (1993). *Traditional Knowledge Policy Statement,* Policy No. 52.06. Yellowknife, NWT.

This policy states that, the Government of the Northwest Territories recognizes that the Aboriginal peoples of the Northwest Territories have acquired a vast store of traditional knowledge through their experience of centuries of living in close harmony with the land. The Government recognizes their information about the natural environment and its resources, the use of natural resources, and the relationship of people to the land and to each other and will incorporate traditional knowledge into Government decisions where appropriate.

Government of the Northwest Territories. (2001). *Traditional Knowledge Policy Statement*. Yellowknife, NWT: Priorities and Planning Secretariat, Department of Executive, Government of the Northwest Territories.

According to this policy statement, the Government of the Northwest Territories recognizes that Aboriginal traditional knowledge is a valid and essential source of information about the natural environment and its resources and will incorporate traditional knowledge into Government decisions and actions when deemed appropriate.

Mackenzie Valley Environmental Impact Review Board (MVEIRB). (2005). Guidelines for Incorporating Traditional Knowledge in Environmental Impact Assessments. July 2005. Available at: http://www.mveirb.nt.ca. Accessed: 22 August 2005.

This is the first traditional knowledge guidelines document related to environmental impact assessment to be issued in Canada. It provides advice on how traditional knowledge should be incorporated into the Review Board's environmental impact assessment process. There are three elements of traditional knowledge that are considered important for the process: 1) knowledge about the environment, 2) knowledge about use and management of the environment, and 3) values about the environment.

The Guidelines state that traditional knowledge is required in the NWT impact assessment process because of requirements set by the land claims agreements. Incorporating traditional knowledge provides a more complete knowledge and understanding of the environment, of the potential effects of a proposed development, and of the significance of those effects. It is critical to have traditional knowledge in the early stages of the process because it can help identify scoping issues. Traditional knowledge shared by the community may either be included in the Developer's Assessment Report (DAR), or presented to the Review Board during the process of the EIA. Proponents can negotiate agreements with communities for them to conduct their own studies which can be used in the DAR or presented at hearings. Traditional knowledge is proprietary and should be treated as such. The principle of informed consent always applies.

Mackenzie Valley Environmental Impact Review Board. (2004). Environmental Impact Assessment Guidelines. March 2004. Yellowknife, NWT.

Many of the recommendations put forward in the MVEIRB's draft traditional knowledge guidelines in November of 2004 are represented in these guidelines. It is suggested that proponents engage stakeholders "early in the planning stage" (p. 10) and to include traditional knowledge in the formulation of their impact predictions. The EIA guidelines state that the MVEIRB's issue scoping will include consideration of "social, economic and cultural issues in addition to ecological issues" (p.28). During Technical Review traditional knowledge holders may present information to the Review Board, or expert Review Panel members may be appointed when "specific traditional knowledge is required" (p. 39).

Mackenzie Valley Environmental Impact Review Board. (2001). *Generic Terms of Reference for the Environmental Assessment of Oil and Gas Developments in the Mackenzie Valley.* Yellowknife, NWT.

These generic terms of reference were produced to assist oil and gas proponents in determining research focus for creating environmentally sound and sustainable developments and preparing an environmental assessment report. These generic terms of reference are intended to address key information and assessment areas, including traditional knowledge. It is suggested that the proponent must indicate that they have undertaken and/or accessed traditional knowledge studies in the proposed development area, and provide evidence that traditional knowledge was used and considered in the impact assessment.

Reed, M. (1990). *Environmental Assessment and Aboriginal Claims: Implementation of the Inuvialuit Final Agreement*. Ottawa, ON: Canadian Environmental Assessment Research Council.

This paper explores the application of environmental impact screening procedures in the Northwest Territories. A historic review of government development policy in the North shows that native people have been excluded from direct involvement in resource and development decision-making. The report examines the provisions for joint environmental impact screening and review established through the Inuvialuit Final Agreement.

Wagner, Gary W. 1992. *Involving Aboriginal Populations in the Assessment of the Environmental and Social Impacts of Development in Northern Canada: The Inuvialuit Final Agreement.* July 1992. (Available at: http://www.jointsecretariat.ca.) Inuvik, NWT.

The IFA established a unique structure to deal with resource management and environmental issues that incorporates both government and Inuvialuit views. The Inuvialuit Game Council, the Inuvialuit Regional Council, and five cooperative management agencies were formed to provide the Inuvialuit with a tangible way to participate in government decision-making. Of the five management agencies, two were formed to deal specificially with environmental impact review: the Environmental Impact Review Board and the Environmental Impact Screening Committee. Two provisions of this impact and review process make it unique. The first is that, in the case of "inconsistency or conflict", the Settlement Legislations "shall prevail". The second is that no licence or approval can be issued without satisfying the requirements of the Inuvialuit process. This means that, "permission to proceed with any aspect of a proposed development must wait until the Inuvialuit have exercised their right to equal and meaningful participation in development impact assessment (p. 6)."

A.1.2 Canadian – Policy and Legislation

Campbell, Karen. (2002). *Strengthening Bill C-19, An Act to Amend the Canadian Environmental Assessment Act*. Submission to the Committee on Environment and Sustainable Development. February 2002. Vancouver, B.C.

The author submitted this report to Committee on Environment and Sustainable Development during the five-year review of the CEA Act as Staff Counsel for the West Coast Environmental Law Association. This association is a non-profit society that provides legal services for the protection of the environment. The submission includes comments on various clauses of the CEA Act, including the consideration of traditional knowledge and public participation.

Canadian Environmental Assessment Agency (CEAA). (2004). Considering Aboriginal traditional knowledge in environmental assessments conducted under the Canadian Environmental Assessment Act - Interim Principles. Available at: http://www.ceaa-acee.gc.ca. Accessed: 13 December 2004.

This principle document provides a general framework for considering Aboriginal traditional knowledge in environmental assessment and was written specifically for impact assessment practitioners. The introduction discusses the policy on Aboriginal traditional knowledge in Canadian environmental assessment, what Aboriginal traditional knowledge is and when it can be considered in an environmental assessment. Six general guidelines are presented with respect to the use of Aboriginal traditional knowledge in environmental assessments conducted under the Canadian Environmental Assessment Act.

Government of Canada. (1992). *Canadian Environmental Assessment Act, 1992, c. 37.*

The Canadian Environmental Assessment Act (CEAA) and its regulations are the legislative basis for the federal practice of environmental assessment in Canada. The purpose is to ensure that the potential environmental effects of a proposed development are considered in the project's planning stages. Under Section 2(1) of the CEAA, the definition of environmental effect refers to changes that the project may cause to the environment on the lands and resources currently used for traditional purposes by Aboriginal persons. Moreover, with regards to Aboriginal peoples, one of the purposes of the Canadian Environmental Assessment Act is to promote communication and cooperation between responsible authorities and Aboriginal peoples with respect to the environmental assessment process. With regards to traditional ecological knowledge, Section 16.1 of the amended Canadian Environmental Assessment Act (CEAA) gives responsible authorities the opportunity to consider Aboriginal traditional knowledge in an environmental assessment. Community knowledge and Aboriginal traditional knowledge may be considered by conducting an environmental assessment.

Government of Canada (2002). Bill C-9: An Act to Amend the Canadian Environmental Assessment Act, 1992, c. 37. Available at: http://www.ceaa-acee.gc.ca. Accessed: 17 January 2005.

As a result of the Canadian Environmental Assessment Act (CEAA) Five Year Review, Bill C-9 was enacted to amend CEAA. The renewed legislation is meant to provide for more meaningful public participation and greater certainty and efficiency in the environmental assessment process.

Government of Canada (2003). *Sustainable Development and Environmental Assessment: Beyond Bill C-9, Government Response to the Report of the House of Commons Standing Committee on Environment and Sustainable Development, Five Year Review of Canadian Environmental Assessment Act*. Ottawa, ON: Government of Canada.

This discussion paper provides background information on the Canadian Environmental Assessment Act to stimulate public discussion as part of the public consultation portion of the Five Year Review of the Act. It is noted that one of the most challenging issues is the meaningful

involvement of Aboriginal people in the decision-making process. The review raised the issue of the appropriate use of traditional ecological knowledge in order to receive information that could contribute to the design of a traditional ecological knowledge policy.

National Energy Board (2004). Filing Manual. Available at: http://www.neb-one.gc.ca/Acts Regulations/NEBAct/FilingManual. Accessed: 17 June 2005.

This manual has been developed to provide direction regarding the information the Board would typically expect to see addressed in regulatory filings. It is designed to:

- assist NEB-regulated companies to identify the instances where a filing is necessary, pursuant to the NEB Act and NEB regulations
- outline the Board's responsibilities pursuant to the *Canadian Environmental Assessment Act* (CEA Act)
- outline the filings needed for most applications within the jurisdiction of the NEB
- provide guidance as to the type of information the Board would typically need to make a decision

Consultation with Aboriginal peoples and the inclusion of traditional knowledge is discussed in Section 3.3.3 Implementing a Consultation Program and Guide A.2 Environmental and Socio-economic Assessment.

Supreme Court of Canada (2004a). Haida Nation v. British Columbia (Minister of Forests), SCC 73. Available at: http://www.canlii.org. Accessed: 7 January 2005.

The Haida Nation challenged the issuance of a timber harvesting license from the Province of B.C. to Weyerhaeuser. The basis of the challenge was that the Aboriginal title of the Haida Nation had not been extinguished on Haida Gwaii, and thus the license could not be issued over their objections. Although the Haida's petition was dismissed, the B.C. Court of Appeal held that the Province and Weyerhaeuser both had a duty to consult with and accommodate the Haida with respect to harvesting timber. The Province and Weyerhaeuser appealed to the Supreme Court of Canada, which denied the Province's appeal and allowed Weyerhaeuser's. This Supreme Court Decision confirms that the provincial governmental has the duty to consult with and accommodate the interests of First Nations and will have implications for the participation of First Nations in environmental assessment.

Supreme Court of Canada (2004a). Taku River Tlingit First Nation v. British Columbia (Project Assessment Director), SCC 74. Available at: http://www.canlii.org. Accessed: 7 January 2005.

This Supreme Court Decision affirms Government's duty to consult with First Nations about the use of land, even where it involves unproven land claims. Although the Supreme Court ruled in favor of the development proponent, they also ruled that governments must seek First Nations input and consider concerns about projects that could infringe on land claims. This duty, however, does not extend to project proponents. Although this decision ensures that First Nation's claims must be considered, it does not allow them to veto a project on lands currently under claim. However, this decision will have implications for the inclusion and participation of First Nation's in environmental assessments.

Supreme Court of Canada. (1997). *Delgamuukw* v. *British Columbia.*

This case was brought forward by the Wet'suwet'en people and represented a claim for ownership and jurisdiction over their traditional territory. The Supreme Court could not rule on all the issues brought forward, but did make some statements in its decision regarding the

admissibility of oral history as evidence, and the nature, test for proving, infringement and extinguishment of Aboriginal title, that had broad implications.

Supreme Court of Canada. (1990). *Ronald Edward Sparrow* v. *Her Majesty the Queen*.

Mr. Sparrow was charged with violating the Fisheries Act. The Supreme Court overturned the conviction of the lower courts, stating that Aboriginal rights are not extinguished by the exercise of regulations under the Fisheries Act. The court felt that a generous and liberal interpretation of Section 35(1) of the Canadian Constitution must be applied when considering Aboriginal rights. Section 35 recognizes and affirms "the existing Aboriginal and treaty rights of the Aboriginal peoples of Canada".

A.1.3 International – Policy and Legislation

Arctic Environmental Protection Strategy. (1997). *Guidelines for Environmental Impact Assessment (ElA) in the Arctic*. Helsinki, Finland: Finnish Ministry of the Environment.

The Arctic Environmental Protection Strategy was adopted by Canada, Denmark/Greenland, Finland, Iceland, Norway, Russia, Sweden and the United States through a Ministerial Declaration in 1991. These guidelines for impact assessment formulated under the strategy explore ways of dealing with cumulative impacts, trans-boundary issues, the participation of indigenous people, and the use of traditional knowledge. They apply to all parties involved in environmental assessments for development activities in the northern circumpolar areas. There is a short section on the use of traditional knowledge in Arctic environmental impact assessments.

Convention on Biological Diversity (2001). Article 8(j): Traditional Knowledge, Innovations and Practices. Available at: http://www.biodiv.org/programmes/socio-eco/traditional. Accessed: 6 June 2002.

This document provides information on international directions in the implementation of Article 8(j) of the Convention on Biological Diversity. These include national measures, the Convention Secretariat, and other international initiatives.

United Nations Conference on Environment & Development. (1992). *Agenda 21*. Conches, Switzerland : United Nations Conference on Environment & Development.

Agenda 21 resulted from the 1992 Earth Summit in Rio de Janeiro and it reflects a global consensus and international political commitment to cooperate on integrated developmental and environmental objectives. Chapter 26 of this document recognizes that indigenous peoples have an integral role in environmental management and development because of their traditional knowledge and practices. Objective 26.3.a.iii. calls for the recognition of indigenous people's values, traditional knowledge and resource management practices within the context of promoting environmentally sound sustainable development. Furthermore, Objective 26.3.c. calls for the involvement of indigenous communities in resource management, conservation, and other relevant programs established to support and review development strategies. Moreover, Objective 26.6.a. states that governments should strengthen national arrangements to consult with indigenous peoples and their communities for the purposes of reflecting their needs and incorporating their values and traditional knowledge in national policies and programs in resource management, conservation and other development programs.

A.2 Impact Assessments

A.2.1 Northern – Impact Assessments

AGA Consulting Group. (2001). *Traditional Knowledge Collection Protocols.* Consultant's report prepared for the Alaska Gas Producers Pipeline Feasibility Study, Calgary, AB.

These protocols were prepared as part of a feasibility study for a northern pipeline conducted for the Alaska Gas Producers. They provide sample consent forms, suggested protocols for working with communities, summary of regulatory context and requirements for collecting traditional knowledge, and categories of traditional knowledge that may be collected and used in impact assessments.

Berger, T. (Mr. Justice). (1977). *Northern Frontier, Northern Homeland: The Report of the Mackenzie Valley Pipeline Inquiry, Volume One.* Ottawa, ON: Minister of Supply and Services Canada.

The Mackenzie Valley Pipeline Inquiry resulted from the request for rights-of-way to construct and operate a gas pipeline in the Mackenzie Valley. Mr. Justice Thomas Berger was charged with leading the inquiry that involved hearings in all the communities in the Mackenzie Valley and the western Arctic, and resulted in a 20-year land claim process for northern peoples. Carried out before Canada had a formal impact assessment process, many of the recommendations and comments made in this report are still relevant to oil and gas developers today.

Broken Hill Properties/Diamet. (1996). *NWT Diamonds Project: Environmental Impact Statement Volume 1 (Yellowknife) NWT Diamonds Project.* Vancouver, BC: Broken Hill Properties.

This environmental assessment was conducted for the first open pit diamond mine in the Northwest Territories. Originally referred to as the 'BHP Diamond Project' it is now called the 'Ekati Mine Project'. This assessment was criticized for its limited biophysical database, speedy process, and inadequate impact analysis. Although traditional ecological knowledge was to be considered in the preparation of the environmental impact statement, the impact assessment process was too rushed to allow for its documentation and incorporation. It was not until after the project was approved that traditional ecological knowledge studies commenced.

Canadian Environmental Assessment Agency (1999). Diavik Diamonds Project Comprehensive Study Report. Available at: http://www.diavik.ca/PDF/federalcsrreport.pdf. Accessed: 1 February 2005.

Diavik collected traditional knowledge for incorporation into the EIA through funding traditional knowledge studies and assembling information from elders and other community members that arose in consultation meetings. Diavik sought to incorporate traditional knowledge into project design, the Environmental Management System, mitigation and monitoring programs. The concerns and comments raised by the various Aboriginal groups are presented. The Responsible Authorities concluded that traditional knowledge had been adequately addressed in the comprehensive study process and that follow-up activities would ensure that traditional knowledge was involved in monitoring and adaptive management.

De Beers Canada Mining Ltd. (2004). *Environmental Assessment of De Beers Canada Mining Inc.'s Snap Lake Diamond Project.* Yellowknife, NWT: De Beers Canada Mining Ltd.

This is a recent example of an environmental assessment conducted in the Northwest Territories under the jurisdiction of the Mackenzie Valley Impact Review Board. This assessment incorporated an extensive public consultation program as part of the project planning and assessment process. Traditional knowledge reports were produced by the First Nation(s) involved (West Kitikmeot Slave Study).

Department of Indian and Northern Affairs Canada, Department of Fisheries and Oceans, & Natural Resources Canada (1998). Environmental Assessment Guidelines for the Completion of a Comprehensive Study of Proposed Diavik Diamonds Project. Available at: http://www.carc.org/rndtable/official.htm. Accessed: 5 February 2005.

The guidelines directed Diavik to fully consider traditional knowledge where appropriate for assessing project effects. Furthermore, traditional knowledge is expected to be important in scoping valued ecosystem components (VECs), baseline descriptions, impact predictions, development of mitigation, and significance evaluations. Diavik was to make a reasonable effort to collect and facilitate the collection of traditional knowledge for integration into the environmental assessment report in collaboration with Aboriginal communities and organizations. No specific methodologies are provided.

Devon Canada Corporation. (2004). *Comprehensive Study Report: Devon Beaufort Sea Exploration Drilling Program*. Submitted to the National Energy Board by Devon Canada Corporation, Calgary, AB.

This comprehensive report summarizes the potential biophysical and socio-economic effects of Devon Canada Corporation's proposed Beaufort Sea Exploration Drilling Program. The report outlines Devon's phased public engagement and consultation approach utilized in the progressive planning and assessment of the drilling program. This approach involved traditional knowledge studies as part of the impact assessment process. The consultation activities identified a number of key concerns related to the drilling program and resulted in the identification of valued ecosystem and social components to be addressed during the impact assessment.

Golder Associates Ltd. (2003). Report on Inuit Qaujimajatuqangit Literature Review, Gap Analysis and Workshop Results Related to the Doris North Project Hope Bay Belt, Nunavut. Consultant's report prepared for Miramar Hope Bay Limited, Vancouver, BC. Available at: www.ainc-inac.gc.ca. Accessed: 1 February 2005.

This traditional knowledge study was commissioned for the Doris North Project in Nunavut, subsequent to the draft environmental impact statement (EIS) submitted by Miramar Mining Corporation. A literature review, gap analysis, workshop, interviews, and traditional place names study were conducted. Definitions for Inuit Qaujimajatuqangit (IQ), or Inuit traditional knowledge, are provided. The relevance of IQ for sections of the EIS (e.g. noise, cumulative effects, air and water quality, hydrology, archaeology), baseline information, climate change, and valued ecosystem components are discussed.

Green, N. & Binder, R. (1995). Environmental Impact Assessment under the Western Arctic (Inuvialuit) Land Claim. In J. Bissonette & P. Krausman (Eds.), *Integrating People and Wildlife for a Sustainable Future - Proceedings of the First International Wildlife Management Congress* (pp. 343-345). Bethesda, MD: The Wildlife Society.

This paper describes how the environmental assessment process works in the Inuvialuit Settlement Region. Both the Environmental Impact Screening Committee and the Environmental Impact Review Board are described. The authors state that the process has made the application of Inuvialuit traditional knowledge an important part of the environmental assessment process.

Joint Secretariat and Canadian Environmental Assessment Agency. (2003). *Draft Terms of Reference for the Environmental Impact Statement: Mackenzie Gas Project*. October 23, 2003.

These draft terms of reference were produced by the Joint Secretariat of the Inuvialuit Renewable Resources Committees and Canada's federal assessment agency for a proposed gas pipeline through the Mackenzie River Valley. They state that traditional knowledge is "recognized as an important part of project planning and EIA processes" and that it "in combination with other

information sources, is valuable in achieving a better understanding of potential impacts of projects" (p. 5). Traditional knowledge may contribute to baseline information, understanding of traditional land use, project design, issue identification, impact evaluation, significance determination, mitigation and monitoring.

Kavik-AXYS. (2002). *Research Gaps Associated with Exploration and Development for Natural Gas in the Mackenzie Delta*. Consultant's report prepared for the Environmental Studies Research Fund, Inuvik, NWT.

A quote from Mr. Billy Day, a well-known and well-respected Inuvialuit elder, was used in this report. Mr. Day actively works to ensure the protection and conservation of traditional knowledge. He works with oil and gas companies and with scientists to help them better understand the value and importance of traditional knowledge.

Kavik-AXYS Inc. (2003). *Environmental Impact Assessment and Traditional Knowledge - KA036 Devon Beaufort Sea Exploration Drilling Program*. Internal training workshop, Calgary, AB, October 30, 2003.

This presentation provides information on the inclusion of traditional ecological knowledge in an environmental impact assessment conducted in the Canadian Arctic. The purpose of the study was to optimize the usefulness of traditional knowledge of the environmental assessment for Devon's proposed Beaufort Sea Exploration Drilling Program. The general impact assessment process is outlined with reference to the process under the Inuvialuit Final Agreement and within the regulatory process of Devon. Examples of how traditional knowledge has been utilized in environmental assessments are presented and guidelines for integrating traditional knowledge in environmental impact assessments are discussed.

Kavik-AXYS Inc. (2004). *Devon Canada Corporation Beaufort Sea Exploration Drilling Program Application - Tuktoyaktuk Traditional Knowledge and Land Use Studies*. Consultant's report prepared for Devon Canada Corporation, Calgary, AB.

This report summarizes findings of the Tuktoyaktuk traditional study conducted as part of Devon Canada's assessment of its proposed Beaufort Offshore Exploration Drilling Program. In it the scope and methods used for the study are described. A large part of the traditional knowledge project was organized and conducted by local Inuvialuit, hired to work on the Devon Program. The results and a summary of key issues are presented and interpreted relative to effects of the proposed program on the traditional use patterns in Tuktoyaktuk.

Kavik-AXYS Inc. (2004). *Devon Canada Corporation Beaufort Sea Exploration Drilling Program Application - Technical Assessment Report.* Consultant's report prepared for Devon Canada Corporation, Calgary, AB.

This Technical Report provides detailed information on assessment methods and results, public consultation, and an assessment of effects in the environmental impact assessment of Devon's proposed offshore exploration drilling program in the Beaufort Sea. To ensure that the knowledge of local people was integrated into the comprehensive study, information on traditional knowledge and resource use was gathered, summarized and provided to the impact assessment team to assist in scoping. The methods used during the traditional knowledge studies are described in detail in Section 18 of this report.

Kavik-AXYS Inc. (2004). *Devon Canada Corporation Beaufort Sea Exploration Drilling Program Application - Aklavik Traditional Knowledge and Land Use Studies.* Consultant's report prepared for Devon Canada Corporation, Calgary, AB.

This report summarizes findings of the Aklavik traditional study conducted as part of Devon Canada's assessment of its proposed Beaufort Offshore Exploration Drilling Program. In it the

scope and methods used for the study are described. A large part of the traditional knowledge project was organized and conducted by local Inuvialuit hired to work on the Devon Program. The results and a summary of key issues are presented and interpreted relative to effects of the proposed program on the traditional land use patterns in Aklavik.

Kavik-AXYS Inc. (2004). *Devon Canada Corporation Beaufort Sea Exploration Drilling Program Application – Inuvik Traditional Knowledge and Land Use Studies.* Consultant's report prepared for Devon Canada Corporation, Calgary, AB.

This report summarizes findings of the Inuvik traditional study conducted as part of Devon Canada's assessment of its proposed Beaufort Offshore Exploration Drilling Program. In it the scope and methods used for the study are described. A large part of the traditional knowledge project was organized and conducted by local Inuvialuit hired to work on the Devon Program. The results and a summary of key issues are presented and interpreted relative to effects of the proposed program on the traditional land use patterns in Inuvik.

Kavik-AXYS Inc., FMA Heritage Resources Consultants Inc., & North/South Consultants Inc. (2003). *Chevron Canada Resources Ellice Drilling Program.* Consultant's report prepared for Chevron, Calgary, AB and submitted to the Environmental Impact Screening Committee, Inuvik, NWT.

This report presents an environmental overview assessment on a proposed drilling program within the Inuvialuit Settlement Region. Traditional land uses were identified through references to Community Conservation Plans. Information gathered during formal community consultations supplemented the environmental overview.

Kavik-AXYS Inc., North/South Consultants Inc., & FMA Heritage Resources Consultants Inc. (2003). *Submission to the Inuvialuit Environmental Impact Screening Committee - Chevron Canada Resources Taktuk 3D Seismic Program.* Consultant's report prepared for Chevron, Calgary, AB and submitted to the Environmental Impact Screening Committee, Inuvik, NWT.

This report presents an environmental overview on a proposed seismic program within the Inuvialuit Settlement Region. Traditional land uses were identified through references to Community Conservation Plans. Information gathered during formal community consultations supplemented the environmental overview.

Kavik-AXYS Inc., North/South Consultants Inc., & FMA Heritage Resources Consultants Inc. (2004). *Chevron Canada Resources Proposed Garry 3D Seismic Program Project Description.* Consultant's report prepared for Chevron, Calgary, AB and submitted to the Environmental Impact Screening Committee, Inuvik, NWT.

This report presents an environmental overview of a proposed seismic program within the Inuvialuit Settlement Region. Issues of concern were identified through community consultation. Traditional land uses were identified through references to Community Conservation Plans. Information gathered during formal community consultations supplemented the environmental overview.

Kotchea, J. & Sawicki, O. (1998). Report on Traditional Knowledge of Natural and Cultural Resources in the Fisherman Lake Area, Liard Range, NWT. In *Ranger Oil's P-66 Pipeline Project*, (Appendix VII). Consultant's report prepared by Golder Associates Ltd. for Ranger Oil, Calgary, AB.

This traditional knowledge report is based on work developed to assess the impact of Ranger Oil's proposed gas pipeline route options. It is a summary of information gathered on traditional knowledge of natural and cultural resources in the Fisherman Lake area of the Liard Range (Franklin Mountains), Northwest Territories. The report lists concerns, provides recommendations, and lists results according to various resources used by Aboriginal groups. Appended to the report is an interview guide and map.

Kotchea, J. & Sawicki, O. (1999). *Report on Traditional Knowledge of Natural and Cultural Resources within the Proposed Pipeline Corridor between Fort Liard, NWT and Maxhamish Lake, BC.* Consultant's report prepared by POZitive Results Geographies Inc., for Paramount Resources Ltd., Calgary, AB.

This report summarizes the information gathered on traditional knowledge of natural and cultural resources in and around a pipeline corridor. The purpose of the study was to assess the impact of the pipeline on an area occupied by the Dene people since time immemorial. The study included traditional knowledge interviews and the methodological protocol for their conduct.

Mackenzie Gas (2004). Environmental Impact Statement for Mackenzie Gas. Available at: http://www.mackenziegasproject.com/theProject/regulatoryProcess/applicationSubmission/Applcationscope/EIS.html. Accessed: 15 December 2004.

The environmental impact statement (EIS) for Mackenzie Gas was developed over three years using a community, issue-focused approach and consists of eight volumes. Volume 1, Section 3 describes the methodological process designed to carry out traditional knowledge studies in such a way that the results could be integrated into the EIS. At the time of submission, traditional knowledge activities were not completed. Although most studies were underway, negotiations with some affected communities had not been completed to determine whether they would undertake a regional or community-specific study. Methods focused on a participatory approach where community or regional agencies would undertake the traditional knowledge studies, involving community participation in traditional knowledge working groups.

Miramar Mining Corporation (2003). Draft Environmental Impact Statement Doris North Project (formerly known as the Doris Hinge Project) Nunavut, Canada. Prepared by AMEC Earth and Environmental, Calgary, AB, for Miramar Mining Corporation, Vancouver, BC. Available at: http://www.ainc-inac.gc.ca. Accessed: 1 February 2005.

This draft environmental impact statement, for a proposed mine in Nunavut, was submitted for a conformity and deficiency review in January 2003. No traditional knowledge study was undertaken at the time of draft submission. The proponent instead intended to submit a copy of the traditional knowledge study commissioned by BHP of the study area. This study was not complete at the time of the draft environmental impact statement. However, the proponent indicated that there was an attempt to incorporate traditional knowledge on valued ecosystem components into the draft environmental impact statement.

Mulvihill, P. & Baker, D. (2001). Ambitious and Restrictive Scoping: Case Studies from Northern *Canada. Environmental Impact Assessment Review*, 21, 363-384.

The theory and practice of scoping in remote intercultural communities is discussed. The general history of environmental assessment in northern Canada is then described and analyzed and key challenges for scoping in northern intercultural settings are identified. Scoping needs to be: 1) adapted to local culture and customs, and 2) receptive to diverse knowledge systems and modes of expression. The Berger Inquiry, Great Whale project, Ekati diamond mine, and Diavik diamond mine are analyzed. Approaches to environmental assessment, especially the scoping phase, are shown to have varied across Northern Canada, included ambitious and innovate cases (e.g., Berger Inquiry) and become more restrictive over time.

National Energy Board. (2002). Scope of the Environmental Assessment and Environmental Impact Screening and Review for the Proposed Devon Canada Corporation Beaufort Sea Exploration Drilling Program. August 23, 2002.

This document provides the scope of the assessment required for Devon's Exploration Drilling Program in the Beaufort Sea. The responsible authorities (includes National Energy Board,

Environment Canada, Fisheries and Oceans Canada and Indian and Northern Affairs Canada), the Canadian Environmental Assessment Agency, and the Inuvialuit Game Council and the Joint Secretariat co-management groups all agreed on this scope. The review of the impact assessment for this project was a coordinated effort between the federal and Inuvialuit processes to avoid duplication. Devon was directed to consider environmental effects as addressed under Section 16(1) of the CEA Act, and to also consider IFA requirements, which call for reference to the Inuvialuit Community Conservation Plans and extensive community consultation. The comprehensive study summary noted that, among other things, the following must be considered:

- In the description of socio-economic environment and physical and cultural heritage:
  - land and resource use
  - social cultural patterns
  - traditional knowledge
- As part of the ecosystems components:
  - Inuvialuit interests (traditional knowledge, hunting and traditional fishing, cultural sites)

Nakashima, D. (1990). *Application of Native Knowledge in EIA: Inuit, Elders and Hudson Bay Oil.* Ottawa, ON: Canadian Environmental Assessment Research Council.

The author states that environmental impact assessment (EIA) practitioners have overlooked traditional knowledge as a valuable source of biophysical baseline information and proposes that EIA in Arctic regions can benefit from Inuit environmental knowledge. He advocates the formal integration of Inuit peoples into the EIA process as environmental experts and assesses this position through the examination of environmental data from three Inuit communities.

Nunavut Impact Review Board (2002). Environmental Assessment Guidelines for the Doris Hinge Project. Available at: http://www.ainc-inac.gc.ca. Accessed: 1 February 2005.

Section 4.4 provides guidelines on the presentation and consideration of traditional knowledge for the proposed Doris Hinge (now known as the Doris North) Project in Nunavut. The guidelines require the proponent to present and justify their definition of traditional knowledge and explain the methodology used for collection. The proponent is further required to discuss how traditional knowledge was treated with regards to the environmental assessment process including baseline data collection, impact prediction, significance assessment, mitigation and monitoring. An explanation of how traditional knowledge is integrated with western-based science is required. Traditional knowledge must be further incorporated into an on-going program of data collection for mitigation and monitoring programs involving procedures for community-based monitoring.

Nunavut Impact Review Board (2003). Environmental Impact Statement (EIS) Guidelines for the Meadowbank Project. Available at: http://www.ainc-inac.gc.ca. Accessed: 1 February 2005.

Section 4.4 provides guidelines on the presentation and consideration of traditional knowledge for the proposed Doris Hinge (now known as the Doris North) Project in Nunavut. The guidelines require the proponent to present and justify their definition of traditional knowledge and explain the methodology used to collect it. The proponent is further required to discuss how traditional knowledge was treated with regards to the environmental assessment process including baseline data collection, impact prediction, significance assessment, mitigation and monitoring. An explanation of how traditional knowledge is integrated with western-based science is required. Traditional knowledge must be further incorporated into an on-going program of data collection for mitigation and monitoring programs involving procedures for community-based monitoring.

Roberts, K. (1995). *Circumpolar Aboriginal People and Co-Management Practice: Current Issues in Co-management and Environmental Assessment, Conference Proceedings, Inuvik, November 20-24, 1995*. Inuvik, NWT: Arctic Institute of North America and Joint Secretariat - Inuvialuit Renewable Resource Committees.

This report summarizes the results of a workshop held to examine the experiences of northern co-management regimes, and current issues in northern co-management and environmental assessment practice. There were four issues discussed with regards to environmental assessment: 1) community involvement, 2) traditional knowledge, 3) trans-boundary issues, and 4) linking environmental assessment to other processes. With regards to traditional knowledge, two themes emerged from the working group discussions - concern about the lack of respect for and abuse of traditional knowledge, and suggestions for improving the use of traditional knowledge in environmental assessments. Traditional knowledge must be treated equally with scientific knowledge and must be included early in the project planning process. Barriers to community involvement were identified and requirements for education and information sharing were discussed.

Ross, W. (2004). The Independent Environmental Watchdog: A Canadian Experiment in EIA Follow-up. In A. Morrison-Saunders & J. Arts (Eds.), *Assessing Impact: Handbook of EIA and SEA Follow-up* (pp. 178-195). London, UK: PB- James & James/Earthscan.

A danger in environmental impact assessment (EIA) is that public involvement is merely about informing rather than true public participation. In an innovative experiment to follow-up monitoring and management for the Ekati diamond mine, the Independent Environmental Monitoring Agency was established to oversee the project and the regulators. This Agency is committed to encouraging the integration of traditional knowledge into the mine's environmental plans. Community involvement is integral to follow-up studies.

Stevenson, M. (1996). Indigenous Knowledge in Environmental Assessment. *Arctic*, 49(3), 278-291.

Stevenson critically examines barriers to the full inclusion of traditional knowledge in environmental impact assessment in the North. He suggests that "indigenous knowledge" - a term encompassing traditional and nontraditional, ecological and non-ecological knowledge - is a more appropriate concept that allows Aboriginal people and the full scope of their knowledge to assume integral roles in environmental impact assessment. The case study of the BHP Diamonds Inc. mine (Ekati) at Lac de Gras in the Northwest Territories of Canada, is presented to illustrate a multi-phased, holistic approach to involving Aboriginal people and their knowledge in environmental impact assessment.

TERA Environmental Consultants (Alta.) Ltd. (1997). *Report on Traditional Knowledge of Natural and Cultural Resources in the Kotaneelee River Area, Liard River Basin, NWT*. Consultant's report prepared by TERA Environmental Consultants (Alta.) Ltd., for Husky Oil Operations Ltd., Calgary, AB.

The purpose of the study was to record traditional knowledge of natural and cultural resources in the vicinity of a proposed mineral lease area. The scope of work consisted of discussions and site reconnaissance with a community representative familiar with the project area. Further meetings were held to review and verify the information.

Tahera Corporation (2003). Jericho Project Traditional Knowledge Use. Toronto, ON: Tahera Corporation. Available at: http://www.ainc-inac.gc.ca. Accessed: February 1, 2005.

A formal, traditional knowledge study was not undertaken for this diamond mining project in Nunavut. Rather, the traditional knowledge component was based on existing traditional knowledge studies and comments from elders. Existing traditional knowledge sources included

the West Kitikmeot Slave Study reports and the Naonayaotit Traditional Knowledge Study Database. Elders' comments were obtained during community consultations and during Jericho project site visits. Management and monitoring of the Jericho site will take into account traditional knowledge of caribou behaviour.

Usher, P. (2000). Traditional Ecological Knowledge in Environmental Assessment and Management. *Arctic*, 53(2), 183-193.

Usher discusses problems with the incorporation of traditional ecological knowledge in environmental assessment and resource management in the North. He outlines the different categories of traditional ecological knowledge and the considerations for each in environmental assessment. Certain procedures are recommended for recording, organizing and presenting traditional ecological knowledge. The Voisey's Bay environmental assessment is presented as an example to illustrate the inclusion of traditional ecological knowledge in environmental assessment.

Voisey's Bay Mine and Mill Environmental Assessment Panel. (1998). Voisey's Bay Mine and Mill Environmental Panel Report. Available at: http://www.ceaaacee.gc.ca. Accessed: 16 December 2004.

In 1997, the federal and provincial governments, the Labrador Inuit Association and the Innu Nation signed a memorandum of understanding to set out how the environmental effects of the Voisey's Bay Mine and Mill Project would be reviewed. A five-person panel held two rounds of public meetings. The Voisey's Bay Nickel Company told the panel that they had several difficulties in incorporating Aboriginal knowledge in its environmental impact statement. The panel drew five conclusions regarding the consideration of Aboriginal traditional knowledge in environmental impact assessment. As a result, the panel recommended that the government of Canada develop a policy on the inclusion of traditional knowledge in environmental assessment.

Wismer, S. (1996). The nasty game: how environmental assessment is failing Aboriginal communities in Canada's North. *Alternatives Journal*, 22(4), 10-18.

This article describes the environmental assessment of the BHP Diamond Mine (Ekati) near Lac de Gras, NWT and how it failed the people whose homelands surround Lac de Gras. In public presentations, Aboriginal people commented on how things like diamond mine developments are not useful to them unless they have "a strong say in the pace, scale and timing of resource development, and in how benefits are distributed" (p. 2). The author suggests that the BHP experience raises serious questions about the state of enviromnental assessment in Canada.

A.2.2 Canadian – Impact Assessments

AXYS Environmental Consulting Ltd. (1999). *Surmont Commercial Oil Sands Project Environmental Impact Assessment - Traditional Land Use Study*. Consultant's report prepared for Gulf Canada Resources Limited, Calgary, AB.

The purpose of this traditional land use study was to ensure that potential impacts to traditional land use from the Surmont lease could be effectively minimized. Significant sites were identified and mapped and potential mitigation were suggested. The authors note that attempts were made to integrate knowledge from western science and traditional environmental knowledge.

AXYS Environmental Consulting Ltd. (2000). *JACOS Hangingstone SAGD Demonstration Project - Traditional Land Use Study for the Fort McMurray No. 468 First Nation*. Consultant's report prepared for Japan Canada Oil Sands Co. Ltd., on behalf of the Fort McMurray No. 468 First Nation.

The purpose of this traditional land use study was to ensure that potential impacts from the JACOS Hangingstone project could be reduced or effectively mitigated. The traditional environmental and historical knowledge of the Fort McMurray First Nation was documented, significant sites were identified and mapped, and community concerns were identified about the potential cumulative impacts.

AXYS Environmental Consulting Ltd. (2000). *OPTI Canada Long Lake Project - Traditional Land Use Study.* Consultant's report prepared for OPTI Canada Inc., Calgary, AB.

A traditional land use study was undertaken to assess the potential impacts from the Long Lake project to traditional land use. One objective of the study was to present the traditional ecological knowledge gained as a result, in a way that could be incorporated into environmental impact assessments.

AXYS Environmental Consulting Ltd. (2001). *Corridor Pipeline - Traditional Land Use Study for the Fort McMurray First Nation No. 468.* Consultant's report prepared for Corridor Pipeline on behalf of Fort McMurray First Nation No. 468.

The purpose of this traditional land use study was to document traditional land use in the regional study area of the Corridor Pipeline and to make recommendations for impact prevention and mitigation. Interviews with affected First Nation members and trappers were used to collect information on traditional land use. Traditional ecological knowledge (TEK) is discussed and its strongest value is noted as being the ability it offers to compare current and past environmental conditions, addressing the time limitations in scientific studies in environmental impact assessment.

AXYS Environmental Consulting Ltd. (2002). *BlackRock Orion Enhanced Oil Recovery Project Traditional Land Use Study for the Cold Lake First Nations.* Consultant's report prepared for E2 Environmental Alliance.

This report includes information on community history, important cultural sites and the traditional environmental knowledge of the DenesounTine (Cold Lake First Nations). Methods employed for the traditional land use study are described and include a site visit and interviews.

Alexis First Nation and Alliance Pipeline Limited. (1999) *Traditional Knowledge Study Alexis First Nation - Ecological and Cultural Resources in Proximity to the Mainline and Edson Lateral Pipeline Project.* Prepared for Alliance Pipeline Limited, Calgary, AB.

The objectives of this study were to identify sites of ecological and cultural significance to the Alexis First Nation within the area of a proposed pipeline. The information gathered was at the discretion of the Alexis First Nation representatives. The scope of work consisted of pre-field community consultations and field reconnaissance to locate and document sites of concern.

Berkes, F. (1988). The Intrinsic Difficulty of Predicting Impacts: Lessons from the James Bay Hydro Project. *Environmental Impact Assessment Review,* 8, 201-220.

This article reviews the experience with the James Bay hydroelectric project in northern Quebec to determine the lessons and insights regarding the projection of impacts and the improvement of the process of impact prediction and monitoring. The article focuses on six areas selected on the basis of their importance to the local people (Chisasibi Cree), whose views about impacts differed from those of the government agencies. It was found that the success of impact prediction has been low in Canadian hydroelectric developments. Impacts develop over a period of time depending on decisions made. Moreover, the Environmental Monitoring Program is irrelevant because it does not address problems of social impact and did not involve community consultation in its design. Berkes suggests that involving all affected parties in valued ecosystem

component selection is promising for reducing uncertainty and making sure the impact assessment is relevant.

British Columbia Environmental Assessment Office (1997). Determining the Impact of the Tulsequah Chief Mine Project on the Traditional Land Use of the Taku River Tlingit First Nation. Available at: http://www.eoa.gov.bc.ca. Accessed: November 2001.

This report describes and analyzes the potential effects associated with the proposed Tulsequah Chief Mine Project on the traditional land use of the Taku River Tlingit First Nation. Traditional land use methodology is described, including purpose, significance and history in Canada. Detailed methods are examined with a discussion of their limitations. The methods include: 1) general design, 2) data sources and analysis, 3) household survey, 4) traditional use area mapping, and 5) literature review.

British Columbia First Nation Environmental Assessment Working Group (BCFNEAWG). (2000). Workshop Report for the CEAA Five-Year Review. March 7th, 2000. Prepared by Praxis Pacific and submitted to the Canadian Environmental Assessment Agency. Vancouver, BC. Available at: http://www.acee.gc.ca. Accessed: 10 May 2004.

This workshop report reflects the work of BCFNEAWG during the five-year review of the CEA Act. Recommendations covered a wide variety of topics pertinent to Aboriginal peoples' involvement in impact assessments, and led to the creation of a environmental assessment toolkit for First Nations (included in Guidelines: Canadian). Issues and recommendations from the workshops included: consultation, traditional knowledge, definitions, capacity, jurisdiction, among others. Though this working group report came from British Columbia, many of its recommendations are relevant to Aboriginal people throughout Canada.

Burnaby, N. (2003). Traditional Ecological Knowledge and Environmental Impact Assessment. Undergraduate Honours Project produced for ERS 490, Environment and Resource Studies Department, University of Waterloo, ON. Available at: http://www.fes.uwaterloo.ca/ers/undergraduate_research_information.html. Accessed: 20 December 2004.

This paper uses six case studies to illustrate issues with the way traditional ecological knowledge is used to contribute to environmental impact assessment. Nine fundamental problems that prevent the meaningful contribution of traditional ecological knowledge in environmental assessment were identified and recommendations are made to mitigate these problems.

Doig River First Nation and Alliance Pipeline Limited. (1999). *Traditional Knowledge Study Doig River First Nation: Ecological and Cultural Resources in Proximity to the Boundary Lake Lateral, Alliance Pipeline Project.* Report prepared for the Alliance Pipeline Limited, Calgary, AB.

This cooperative traditional knowledge study focuses on identified sites of ecological and cultural significance to the Doig River First Nation in proximity to the Boundary Lake Lateral Pipeline. The report also proposes mitigative options recommended by the study participants. Methods included: 1) initial consultation to decide on research target areas, and 2) field reconnaissance.

Emery, A. (Lead Facilitator) (2002). Aboriginal Peoples and Traditional Knowledge in Environmental Assessments. Workshop Recommendations. Available at: http://www.ceaa.gc.ca. Accessed: 28 February 2005.

This is the report of a workshop held in March of 2002 in Banff, Alberta entitled "Bridging the Gap: Integrating Traditional Knowledge in Environmental Assessments (EA)". The workshop was held by a group of professionals working in the EA field, and contains recommendations directed at the five-year review of CEAA and EA practice overall. Participants at the workshop included professionals from across southern and northern Canada. Recommendations were signed by all participants.

Participants agreed that the overall problem with the CEA Act is that "the inclusion of traditional knowledge and **indigenous peoples is currently** handled **with very poor effectiveness"**. They also stated that **Aboriginal people should not be** dealt with **at the same level as other** stakeholders; because of the **Canadian Constitution they** "must be **considered before other** stakeholders." Several recommendations were put forward by the group: emphasizing the need to include and consult Aboriginal stakeholders in project-specific EAs; that 'best efforts[5] be made, and proven to be made, to include traditional knowledge, but not 'incorporate[5] it; that CEAA provide extensive, non-bureaucratic guidelines and common terminology; and that funding and capacity-building be provided for Aboriginal participants.

Fedirchuk, G. (1996). *Cultural Properties Cardinal River Coals Ltd. Cheviot Mine Project.* Consultant's report prepared by Fedirchuk McCullough & Associates Ltd. for Cardinal River Coals Ltd., Hinton, AB.

In keeping with the Terms of Reference for the environmental impact assessment for the proposed Cheviot Mine, a cultural properties study was undertaken with selected First Nations in the region of the development. One of the objectives of the study was to provide the perspective of the First Nations on historical development and relationship to the land in the project area. The author recognized that an accurate historical account is incomplete without the addition of oral history information.

Fedirchuk, G. (1999). *Suncor Energy Inc. Blackstone Pipeline: Mountain Cree Camp Plant Harvesting Concerns*. Consultant's report prepared by Fedirchuk McCullough & Associates Ltd. for Suncor Energy Inc., Calgary, AB

Discussions with Mountain Cree Camp were held regarding concerns about impact to plant harvesting areas from the construction of the Blackstone Pipeline Project. Specific plant harvesting areas of concern were visited and plants were identified and photographed.

Great Whale Public Review Office. (1992). *Guidelines for the Environmental Impact Statement for the Proposed Great Whale River Hydroelectric Project - Technical Notes on the Guidelines and the Environmental Assessment Process*. Montreal, QC: Great Whale Public Review Support Office.

This document describes the scope of the Guidelines that were developed for the environmental impact assessment of the Great Whale Hydroelectric Project in Quebec. The Guidelines required Hydro-Quebec to "characterize Native knowledge with respect to the biophysical and social environment." Moreover, the Guidelines stressed that the description of different environments to be carried out during the assessment must "take into account the knowledge of, and attitudes toward, the environment specific to the Cree and Inuit cultures." The Guidelines were developed and issued after joint public hearings, focusing on the issues to be addressed in the Guidelines, took place in the affected Inuit and Cree communities. The transcribed commentaries from these public consultations were taken into account when drafting the Guidelines.

Golder Associated Ltd. (2001). Volume 3, Part 2, Environmental Impact Assessment. In *Application for the Approval of the Meadow Creek Project, Environmental Impact Assessment Report*. Prepared for Petro-Canada and submitted to the Energy and Utilities Board, Calgary, AB.

Section G - Traditional Land Use Assessment, provides information on Traditional Land Use as required by the Terms of Reference for the Meadow Creek Project Environment Impact Assessment (EIA). The purposes of the traditional knowledge and land use component for the Meadow Creek Project EIA did not include the use and incorporation of the information for other studies in the EIA. An assessment of the effects of the project on traditional land use is presented and is based on the documented concerns of traditional land users obtained through community consultations. A cumulative effect assessment of the effects of the Meadow Creek Project

combined with other regional developments was also conducted based on concerns identified by regional traditional land users during consultations and traditional land use studies.

Golder Associates Ltd. (2003). *Traditional Land Use Culturally Significant Ecosystems Analysis Jackpine Mine - Phase 1 Final Report*. Consultant's report submitted to the Fort McKay First Nation on behalf of Shell Canada Limited, Calgary, AB.

This report was prepared in response to requests from the Fort McKay First Nation regarding the Traditional Land Use Component of the Shell Canada Limited Jackpine Mine - Phase 1 Environmental Impact Assessment. A Culturally Significant Ecosystems (CSE) analysis was completed for large game and plants of traditional importance in the regional study area. The methods employed for calculating the CSE are presented and the percent of CSE within the regional study area is determined.

Health Canada (1999). Canadian Handbook on Health Impact Assessment: The Basics. Available at: http://www.hc-sc.gc.ca/hecs-sesc/ehas/publications/canadian_handbook/volume1/toc.htm. Accessed: 15 December 2004.

Section 5: Aboriginal Health and Traditional Knowledge discusses issues relevant to understanding the responsibilities of those conducting environmental assessments to Aboriginal people and the possible roles of Aboriginal people in environmental assessment. Federal legislation and policy is discussed, with regards to environmental assessment on Aboriginal lands including reserves and traditional territories. Traditional knowledge is discussed with regards to health systems and assessment.

Hrychuk, B. (1998). *ANG Gathering & Processing Ltd. South Cutbank Project Aseniwuche Winewak Nation Consultation.* Consultant's report prepared by Fedirchuk McCullough & Associates Ltd. for ANG Gathering & Processing Ltd., Calgary, AB.

The report summarizes the results of consultation with the Aseniwuche Winewak Nation regarding a pipeline project near Grande Cache, Alberta. During a helicopter overflight, the development area was surveyed for traditional land use sites and/or areas of cultural significance. No traditional land use sites were identified to be in potential conflict with the proposed development.

Inkpen, T. (1999). *Healthy People, Healthy World: Preserving Aspects of Traditional Knowledge and Improving its Application to Environmental Assessment*. Thesis/Practicum submitted for the degree of Master of Natural Resource Management, Faculty of Graduate Studies, University of Manitoba, Winnipeg, MB.

This thesis documents the knowledge of bush medicine among the Innu of Labrador, and considers how this and other forms of traditional knowledge may be used in decision-making processes such as environmental impact assessment. The environmental impact assessment process is examined and steps for improving the inclusion of Aboriginal knowledge in the process are discussed. The author participated in the traditional knowledge survey for the Voisey's Bay Nickel Mine Assessment known as the Innu Ecological Knowledge Project, and includes an evaluation of four previous panels that attempted to include traditional knowledge: the Berger Inquiry, the Assessment of Military Flying Activities in Labrador and Quebec, the North Central Project, and the Northwest Territories diamond mine (Ekati) assessment. The strengths and weaknesses of these processes are examined and recommendations for improving the inclusion of the Innu people and their knowledge in future assessments are identified.

Kotchea, J. & Sawicki O. (1998). *Report on Traditional Knowledge of Natural and Cultural Resources in the Maxhamish Lake Area, British Columbia.* Consultant's report prepared by POZitive Results Geographies Inc., for Paramount Resources Limited, Calgary, AB.

This report summarizes information on traditional knowledge of natural and cultural resources in the Maxhamish Lake area of northeastern British Columbia. The purpose of the study was to assess the impact of a pipeline in the Maxhamish Lake area. An interview guideline was developed to provide a consistent interview process.

Labour, S. (2003a). *Ekwan Pipeline Project: Dene Tha' First Nation Field Survey Report*. Consultant's report prepared by FMA Heritage Resources Ltd., for EnCana Ekwan Pipeline Inc., Calgary, AB.

This report presents the results of a field survey of a proposed pipeline development by the Dene Tha' First Nation. The assessment methodology included consultations with the Dene Tha' First Nation and field surveys involving an elder and field technicians from the Dene Tha'. The report results are organized according to: traditional land use, traditional knowledge, and traditional use issues and concerns.

Labour, S. (2003b). *Ekwan Pipeline Project: Fort Nelson First Nation Field Survey Report*. Calgary, AB: FMA Heritage Resource Consultants Inc.

This report presents the results of a field survey of a proposed pipeline development by Fort Nelson First Nation. The assessment methodology included consultations with the Fort Nelson First Nation and field surveys involving an elder and field technicians from Fort Nelson. The report results are organized according to: traditional land use, traditional knowledge, and traditional use issues and concerns.

Landsong Heritage Consulting Ltd. (2002). *Traditional Land Use Assessment of the Proposed Western Canadian Coal Corp. Wolverine Mine Project*. Consultant's report prepared for Western Canadian Coal Corporation, Vancouver, BC.

The report presents the results of a collaborate traditional land use site assessment undertaken by Kelly Lake First Nations, Kelly Lake Cree Nation, West Moberly First Nations, McLeod Lake Indian Band, and Landsong Heritage Consulting Ltd. of a proposed coal mine development in northern British Columbia. The objective of the study was to collect site-specific traditional land use information. The traditional land use methodology included an archaeological site file search, initial consultations with the Aboriginal communities, and field reconnaissance. Traditional land use sites were considered to fall under nine categories or types. Cultural landscape level concerns were also elicited.

Mailhot, J. (1994). *Traditional Ecological Knowledge: The Diversity of Knowledge Systems and Their Study (2nd ed.)*. Great Whale Environmental Assessment, Background Paper No. 4. Montreal, QC: Great Whale Public Review Support Office.

This book covers the history and definition of traditional ecological knowledge and discusses areas for its practical application. The application of traditional ecological knowledge in environmental impact studies is included. Examples of studies in northern Canada are provided. There is a short section on methodological considerations.

McKillop, J. (1999). *Chevron Canada Resources Gregg Lake Pipeline Project Aseniwuche Winewak Nation Consultation*. Consultant's report prepared by Fedirchuk McCullough & Associates for Chevron Canada Resources, Calgary, AB.

Two overflights of a proposed pipeline project were conducted with representatives of the Aseniwuche Winewak Nation as part of the consultation process, and this report documents the results. The methods section is brief but explains the field reconnaissance process. As a result of the overflights, 19 traditional land use sites were identified by Aseniwuche Winewak elders.

McKillop, J. (1999). *Fort Nelson First Nation Traditional Land Use Consultation - Paramount Resources Ltd. Shiha Energy Transmission Ltd. Pipeline Project, Maxhamish Gas Plant Project,*

Maxhamish Pipeline Project. Consultant's report prepared for Salmo Consulting Inc. on behalf of Paramount Resources Ltd., Calgary, AB.

This traditional land use consultation with the Fort Nelson First Nation was conducted for the purpose of identifying any traditional land use sites which may be in conflict with three proposed oil and gas developments in northern British Columbia. Methods included locating sites relative to the proposed development(s) during an overflight and documenting them with photography and global positioning system (GPS) readings .

McKillop, J. (2000). *Scoping Document, Traditional Land Use Component: Appraisal Phase Environmental Feasibility Assessment for the Northern Gas Pipeline Study - Canadian Segment.* Prepared by FMA Heritage Resource Consultants Inc. for TERA Environmental Consultants (Alta.) Ltd. on behalf of BP Amoco Gas and Power Canada, Calgary, AB.

This is a confidential report prepared for a feasibility study on potential northern pipeline routes. Critical constraints regarding traditional land use in the area are identified.

McKillop, J. (2002). *Toward Culturally Appropriate Consultation: An Approach for Fort McKay First Nation.* Master's Degree Project for the degree of Master of Environmental Design, Faculty of Environmental Design, University of Calgary, Alberta.

McKillop develops a quantitative approach - Culturally Significant Ecosystems (CSE) - for defining patterns of traditional land use according to intensity of use. The CSE approach utilizes kernel home range analysis - an ecological modeling method - in a geographic information mapping system to determine areas of low, moderate and significant traditional land use for a community. The CSE for the Fort McKay First Nation are calculated and mapped and compared to the traditional land use study areas used in two oil sands environmental impact assessments to illustrate how this approach more effectively incorporates community knowledge and concerns into the impact assessment process.

McKillop, J., Glaholt, R., & Barclay, R. (1999). *Traditional Knowledge Study Kelly Lake First Nation - Ecological and Cultural Resources in Proximity to the Boundary Lake Lateral and the Fort St. John Lateral Alliance Pipeline Project.* Consultant's report prepared by Fedirchuk McCullough & Associates Ltd. and TERA Environmental Consultants (Alta.) Ltd. for the Alliance Pipeline Ltd., Calgary, AB.

The objectives of the study were to identify sites of ecological and cultural significance to the Kelly Lake First Nation relative to the proposed Alliance Pipeline Project. Methods consisted of: 1) consultation, 2) helicopter reconnaissance, and 3) ground reconnaissance. The identification of study areas was based on the collective traditional knowledge of the Kelly Lake First Nation participants. This report includes mitigative options recommended by representatives of Kelly Lake First Nation.

McKillop, J. & Lewis, W. (2000). *Cold Lake First Nations Consultation: Traditional Knowledge, Land Use and Occupancy - Imperial Oil Resources Limited Cold Lake Expansion Project Mahkeses Block.* Consultant's report prepared by Fedirchuk McCullough & Associates Ltd., for Imperial Oil Resources Limited, Calgary, AB.

This traditional knowledge, land use and occupancy study was conducted in consultation with the Cold Lake First Nations with regards to a proposed oil and gas development. Methods included interviews and field reconnaissance.

Melton, D. (2003). *Traditional Land Use Update CNRL PAW Project – 2003*. Consultant's report prepared by Golder Associates Ltd., for Canadian Natural Resources Limited, Calgary, AB.

This report presents the results of fieldwork and interviews conducted on revised locations for a proposed oil and gas development that had previously been subject to a traditional land use study.

The fieldwork and interviews were community-driven, although facilitated by Golder on behalf ofCNRL.

Meredith, T. (2000). Community Participation in Environmental Information Management: Exploring Tools for Developing an Impact Assessment Preparedness Program. Report prepared for the Research and Development Monograph Series, Canadian Environmental Assessment Agency. Available at: http://www.ceaa-acee.gc.ca. Accessed: 12 December 2004.

The author states that research on better decision making is essential for ensuring better forms of environmental protection. This research is based on two objectives: 1) "to learn to make better use of existing information sources (both scientific and traditional), and 2) to increase the potential for "environmental protection by people most familiar with and affected by local environmental problems." To this end, the research explores ways for improving community-based management of environmental information and improving the local capacity for environmental stewardship. The author suggests that environmental impact assessment provides the greatest opportunity for capacity-building and local environmental stewardship.

Mulvihill, P. (2003). Expanding the Scoping Community. *Environmental Impact Assessment Review,* 23, 39-49.

This article examines the possibility that "scoping community" could be expanded and improved through the use of scenario-based input and communications technology. Mulvihill argues that Canadian environmental assessment (EA) only engages a small community of regular participants (proponents, agencies, researchers, consultants, NGOs). These regular participants are joined on a case-by-case basis by stakeholders who otherwise are not interested or involved in EA. Unlocking the potential of EA requires finding new ways to include input from informal processes surrounding EA, in particular by expanding the scoping community. The Mackenzie Valley Pipeline and the development in the Hudson Bay are two examples discussing how expanding scoping, using scenario techniques, would assist in improving cumulative effects assessment.

North Central Transmission Line Environmental Assessment Review Panel. (1992). *North Central Transmission Line Environmental Assessment Review Panel Appendix of Written Presentations to Community Meetings: An Appendix to EIS Guidelines.* North Central Transmission Lines Public Registry 3117.0 to July 31, 1992 Folio #5. Manitoba Hydro.

This document provides the views of the affected communities on the possible impacts of the North Central Transmission Line project. Numerous concerns were expressed about the impacts of the project on the land and to the communities. Concerns were articulated at the lack of opportunity for public participation in the planning process and in the development of compensation and mitigation members.

Paci, C., Tobin, A. & Robb, P. (2002). Reconsidering the Canadian Environmental Impact Assessment Act: A place for traditional environmental knowledge. *Environmental Impact Assessment Review,* 22, 111-127.

This paper examines the implications, under Canadian environmental policy, of the recognition of indigenous title, rights and cosmologies. The ethical issues of "integrating" traditional knowledge and the practical problems of "implementing" traditional environmental knowledge into legal and regulatory environmental regimes, practices and policies are discussed. The authors suggest that a new way to examine these questions is through an Aboriginal resource planning approach. They assert that the traditional knowledge of First Nations is being increasingly formalized in British Columbia as the two levels of Canadian government are negotiating a balance between indigenous and state aspirations to find complementary and suitable mechanisms for environmental assessments.

Roue, M. & Nakashima, D. (2002). Knowledge and foresight: the predictive capacity of traditional knowledge applied to environmental assessment. *International Social Science Journal,* 54, 173.

This paper illustrates the depth of the relationship between land and personal and cultural experience and knowledge of place. The authors present excerpts from an interview with a Cree hunter who, out of his own accord and concern, provided an assessment of the specific impacts of a proposed hydro-electric dam, based on his environmental knowledge. This presentation of Cree ecological knowledge is intended to illustrate the application of indigenous knowledge in environmental assessment and the predictive power and dynamic character of such knowledge.

Sallenave, J. (1994). Traditional Ecological Knowledge: Its Rightful Place in Environmental Impact Assessment. *Northern Perspectives,* 22, Spring.

Impact assessments have two fundamental limitations. The first is the lack of adequate baseline data, and the second is the lack of an adequate framework to link ecological and social components of the environment. These limitations can be overcome by providing significant roles for Aboriginal peoples in the process. The author identifies three barriers to the integration of traditional ecological knowledge in assessments: 1) different perceptions of significance, 2) skepticism within the scientific community, and 3) hurtles within the political impact assessment decision-making process. These challenges can only be overcome if Aboriginal peoples control the application and research of traditional knowledge, and have decision-making authority regarding the use of research results.

Sub-committee of the Intergovernmental Working Group on the Mineral Industry. (1997). Aboriginal Participation in Mining- Eighth Annual Report: "Increasing Knowledge". Available at: http://www.ainc-inac.gc.ca. Accessed: 1 February 2005.

This report deals with the use and opportunities for inclusion of traditional knowledge in Canadian mining projects. Two guidelines are included in Appendix A-1: one for Aboriginal peoples in dealing with projects that have an impact on their environment and way of life, the other for managers of environmental assessment and development planning projects to ensure the inclusion of Aboriginal peoples and their traditional knowledge as part of environmental assessments or development planning processes. Various case studies and examples, including the BHP diamond mine, are discussed.

True North Energy. (2001). Traditional Land Use and Environmental Knowledge (Section 13) Application for Approval of the Fort Hills Oil Sand Project - Volume 2: Environmental Baseline Study. *Fort Hills Oil Sands Project Environmental Impact Assessment*. Submitted to the Energy and Utilities Board, Calgary, AB, by True North Energy on behalf of the Fort Hills Oil Sands Project.

This report presents the traditional land use and environmental knowledge baseline study for the Fort Hills Oil Sands environmental impact assessment. The methods used included: 1) literature review, 2) interviews with trappers and elders who will be directly affected by the project, 3) consultations with the Fort McKay Industry Relations Corporation and 4) field visits to trapping areas with local trappers. The majority of traditional ecological knowledge was gathered from individuals with registered trapline rights in Registered Fur Management Areas in the proposed project Leases. The report notes that the traditional ecological knowledge acquired was "incorporated into all aspects of the EIA" (p. 13-4).

True North Energy. (2001). Traditional Land Use and Environmental Knowledge (Section 13) Application for Approval of the Fort Hills Oil Sands - Project Volume 3: Environmental Impact Assessment. *Fort Hills Oil Sands Project Environmental Impact Assessment*. Submitted to the Energy and Utilities Board, Calgary, AB, by True North Energy on behalf of the Fort Hills Oil Sands Project.

This report comprises the impact assessment for traditional land use and traditional environmental knowledge for the environmental impact assessment of the Fort Hills Oil Sands project. An overview of baseline conditions and the analytical approaches for key impacts and results are presented. The cumulative effects on traditional land use resources are quantified.

True North Energy. (2002). *True North Energy\s Response to Industry Relations Corporation's Review of the Fort Hills Oil Sands Project Environmental Impact Assessment*. Submitted to the Energy and Utilities Board, Calgary, AB, by True North Energy on behalf of the Fort Hills Oil Sands Project.

In this document the responses to the Fort McKay Industry Relations Corporation's concerns about the Fort Hills Oil Sands Project are given. Section 12 presents the Fort McKay Industry Relations Corporation concern that the study area defined in the Fort Hills environmental impact assessment did not take into account the areas most valued by the community for resource harvesting and other traditional pursuits and they requested a quantitative analysis be completed. In response, True North Energy had a quantitative analysis of the Fort McKay traditional territory completed to measure direct cumulative impacts to areas of concentrated traditional use.

West Moberly First Nations & Fedirchuk McCullough & Associates Ltd. (1997). *A Co-operative Study Undertaken by West Moberly First Nations and Fedirchuk McCullough & Associates Ltd. of the Proposed Pine Valley Coal Ltd. Development Property at Willow Flats in the Pine River Valley, British Columbia.* Consultant's report prepared by Fedirchuk McCullough & Associates Ltd., for Norecol, Dames & Moore Inc., Vancouver, BC.

The objective of the study was to identify and assess the potential impacts on West Moberly First Nations critical community use areas and heritage resources within the Pine Valley Coal Ltd. development area. Methodology consisted of: 1) an initial meeting to define the terms of reference, and 2) four field trips to the study area. Discussions and interviews were recorded on cassette tape and later transcribed. The objective of the report was to facilitate later discussions between the project proponent and West Moberly First Nations.

Winds and Voices Environmental Services Inc. (2000). Determining Significance of Environmental Effects: An Aboriginal Perspective. Canadian Environmental Assessment Agency Research and Development Monograph Series. Available at: http://www.ceaa-acee.gc.ca. Accessed: 4 April 2004.

The two key objectives of this research project were: 1) "to develop draft criteria for consideration when determining significance of environmental effects" and 2) "to recommend "better practices" for evaluating the significance of environmental effects when the interests and rights of Aboriginal people are involved." Three environmental assessment case studies - Voisey's Bay Mine and Mill Project, the BHP diamond mine (Ekati), and the Diavik diamond mine - were analyzed to determine the existing criteria and procedures used within federal environmental assessments to meet the needs and concerns of Aboriginal peoples. As a result of the study, better practices for determining the significance of environmental effects for Aboriginal people are recommended based on the issues raised by Aboriginal peoples about the environmental assessment process. These recommendations focus on "interfacing Aboriginal people's involvement, views, values and knowledge to improve the approach and quality of determining significance and [environmental assessment] practice."

Wondrasek, R. (1998). *Alliance Pipeline Ltd. Kelly Lake Cree Nation Consultation.* Consultant's report prepared by Fedirchuk McCullough and Associates for the Alliance Pipeline Ltd., Calgary, AB.

Consultation was undertaken with the Kelly Lake First Nation as part of the historical resources impact assessment for the Alliance Pipeline project. Elders participated in field reconnaissance and interviews regarding traditional land use sites along the proposed right-of-way.

A.2.3 International – Impact Assessments

Appiah-Opoku, S. (1993). Theoretical Orientations of Environmental Assessment in Canada: Application to the Third World. *Environments,* 22(3), 103-110.

This paper critically examines the theoretical bases of the Canadian environmental assessment process and explores whether applying the Canadian process to the Third World is appropriate. The need to integrate indigenous ecological knowledge and institutions in the assessment process is discussed as well as the structural and conceptual changes this requirement would entail in Third World governments.

Hopson, E. (1977). Hopson's Testimony: the Environmental Impact Assessments Associated with Prudhoe Bay Gas Pipeline Proposals. Available at: http://www.ebenhopson.com/papers/1997/ImpactAssess.html.

Inupiat Mayor of North Slope Borough's presentation regarding the inadequacy of the EIS (environmental impact statement, term used in U.S. for impact assessments and reports) process. Mr. Hopson criticizes oil and gas developers for not directly contacting North Slope Borough, involving them in planning, research or writing of EIS, and for not involving them in the planning and execution of impact assessments in their jurisdiction. In his testimony, Mr. Hopson explains that the North Slope Borough is instituting their own impact assessment programs.

Kwiatkowski, R. & Ooi, M. (2003). Integrated environmental impact assessment: a Canadian example. *Bulletin of the World Health Organization,* 81, 434-438.

The authors describe an integrated approach to environmental assessment, drawing upon the BHP Billiton diamond (Ekati) mine environmental assessment as a case study.

MAKIVIK/Hydro-Quebec. (1998). Participation Models of Impact Assessment: Indigenous Peoples Session. *Indigenous People and the Effectiveness of Environmental Assessment- Proceedings of the IAIA 98 Conference of the Indigenous Peoples Section of the International Association for Impact Assessment's 1998 Annual Conference, April 19-23, 1998, Christchurch, NZ.* International Association for Impact Assessment.

The "Participation Models of Impact Assessment" session brought together representatives of the Maori, Inuit, Mohawk, Creek, American Tulalip and Peruvian Amazonians, as well as industry representatives, and others to draft a mission statement for the indigenous people's section of the International Association for Impact Assessment. The conference proceedings of this session provide information on models for indigenous participation in impact assessment, on guidelines for environmental assessments and traditional knowledge, and on collaboration between indigenous peoples and industry. Case studies where Indigenous peoples were involved in impact assessment as environmental assessment practitioners are also presented.

Braund, S. & Associates. (2004). Appendix A - Technical Report Public Testimony/Traditional Knowledge by Resource. In *Alpine Satellite Development Plan Final Environmental Impact Statement.* Anchorage, AK: U.S. Department of the Interior Bureau of Land Management. Available at: www.alpine-satellite-eis.com. Accessed: 15 December 2004.

This technical report provides selected extracts from relevant public testimony recorded in North Slope, Alaska at scoping meetings and public hearings conducted between 1976 and 2003. The extracts are organized by environmental impact statement resource topic. The methods that were used to identify and extract traditional knowledge and local knowledge excerpts from the public testimony are described. Traditional knowledge and local knowledge are defined, as are the criteria used to distinguish them from issues and concerns presented in the public testimony. This technical study was completed so that the various other Alpine Satellite environmental impact statement authors could incorporate this material into their technical reports

U.S. Department of the Interior Bureau of Land Management. (2004). Alpine Satellite Development Plan Final Environmental Impact Statement, September 2004. Produced by the U.S. Department of the Interior Bureau of Land Management in cooperation with the State of Alaska, the U.S. Army Corps of Engineers, the U.S. Coast Guard, and the Environmental Protection Agency. Available at: http://www.alpine-satellites-eis.com. Accessed: 16 December 2004.

The Bureau of Land Management (BLM) Alaska State Office prepared an Environmental Impact Statement (EIS) on the impacts associated with the ConocoPhillips proposed development of five satellite oil accumulations in the Northeast National Petroleum Reserve-Alaska and the Colville River Delta. The EIS was prepared in fulfillment of obligations under the U.S. National Environmental Policy Act (NEPA). The project had the potential to affect local Inupiat traditional use. The EIS discussed the cultural history and values, traditional economy and lifeways, community health and welfare, as well as potential impacts to harvesting, cultural resources and social systems. Impacts in the context of 'environmental justice' are also discussed. No traditional knowledge study was conducted per se. Rather, traditional knowledge was extracted from public testimony and organized by resource (Appendix A).

A.3 Guidelines

A.3.1 Northern - Guidelines

Arctic Borderlands Ecological Knowledge (ABEK) Co-op. (2005). Draft Training Workbook for Community Ecosystem Monitors/Interviewers. March 24, 2005. (ABEK is online at: www.taiga.net/coop.)

These draft guidelines were developed to aid in training community members to conduct interviews with monitors collecting information for ABEK's Community Monitoring Program. It steps trainees through the interview process, including: how to ask permission for an interview, materials needed during an interview, interview tips and techniques, instructions on how to mark-up maps with interviewees, audio taping, how to end interviews, take and record notes, and summarize interview results.

Aurora Research Institute. (2004). *Doing Research in the Northwest Territories: A Guide for Researchers*. Inuvik, NT: Aurora Research Institute.

This guidebook provides information on conducting scientific research in the Northwest Territories, including information on obtaining a research license. Community consultation is a vital part of the licensing procedures. Researchers are expected to follow ethical principles; references for documents that provide such guidelines are listed.

AXYS Environmental Consulting Ltd. (2000). *Regional Approaches to Managing Cumulative Effects in Canada's North*. Consultant's report prepared for the Department of the Environment Government of Canada, Yellowknife, NWT.

A coordinated regional framework approach is recommended to assist decision-making about cumulative effects on the environment, communities, and human health in the north. This report describes how to build such a framework based on principles, building blocks, focus and tools, combined to approach effects management from different perspectives. Scientific and knowledge-based systems, including the incorporation of traditional knowledge, are recognized as tools in the framework. Federal and provincial requirements relevant to cumulative effects assessment are covered. Twenty-two Canadian case studies were evaluated based on key attributes and reviewed for key lessons learned.

Clarkson, P. & Andre, D. (2002). Communities, Their Knowledge and Participation: Cumulative Effects Assessment Management Framework and Mackenzie Valley Cumulative Impacts Monitoring Program: Role of Traditional Knowledge, Elders and the Communities: Task 9/6. Prepared for the Gwich'in Renewable Resource Board and Gwich'in Tribal Council. Available at: http://www.ceamf.ca/ceam_documents. Accessed 5 March 2004.

This report addresses how to use and incorporate traditional knowledge into cumulative effects assessment and cumulative impacts management. It examines current practices and policies. Community members (including elders) were asked how to best incorporate their knowledge. The project also addressed community capacity concerns, ways to collect and use traditional knowledge, concerns about intellectual property rights and ways to integrate traditional knowledge with other knowledge.

Community of Aklavik, Wildlife Management Advisory Council (NWT), & Joint Secretariat. (2000). *Aklavik Inuvialuit Community Conservation Plan: A Plan for the Conservation and Management of Renewable Resources and Lands Within the Inuvialuit Settlement Region in the Vicinity of Aklavik, Northwest Territories.* Inuvik, NWT: Wildlife Management Advisory Council (NWT).

This plan expresses the Inuvialuit community's specific goals and objectives with respect to conservation of lands, waters and living resources in the Inuvialuit Settlement Region, in particular in the Aklavik conservation planning area. It makes recommendations and describes activities to be undertaken by individuals and organizations at the local, regional and national level. This plan was developed to help protect the environment in the Delta area and onshore and offshore areas to ensure cultural survival of the Inuvialuit community. Development of the plan was coordinated by representatives of the Aklavik and Hunters and Trappers Committees, Community Corporation, elders and other community representatives. In addition, considerable effort was made to obtain opinion and advice from Inuvialuit and Gwich'in members of the Community as well as government agencies. The plan includes descriptions of the importance of certain sites to the community of Aklavik, harvest seasons and areas, and the traditional use of various species.

Community of Inuvik, Wildlife Management Advisory Council (NWT), & Joint Secretariat. (2000). *Inuvik Inuvialuit Community Conservation Plan: A Plan to Provide Guidance Regarding the Conservation and Management of Renewable Resources and Lands within the Inuvialuit Settlement Region in the Vicinity of Inuvik, NWT.* Inuvik, NWT: Wildlife Management Advisory Council (NWT).

This community-based planning document briefly describes the current conservation and resource management system in the Inuvialuit Settlement Region, in particular within the Inuvik sub region. Five goals for community-based renewable resource management and decision-making are detailed. One of the goals described is the requirement for a community-based process for land use decisions and cumulative impact management that will "protect community values and the resources on which priority lifestyles depend." Another of the goals is to define a wildlife management system using community knowledge. The community values of the Inuvialuit with respect to conservation and resource management in the planning area are described. In keeping with these values, the Inuvialuit community has designated land management categories based on priority land uses and areas of special ecological and cultural importance. Processes to assist with the management of cumulative impacts (Section 4.2), recommendations for environmental screening (Section 4.4), and review of development proposals are also presented (Section 4.3).

Community of Tuktoyaktuk, Wildlife Management Advisory Council (NWT) & Joint Secretariat. (2000). *Tuktoyaktuk Community Conservation Plan: A Plan for the Conservation and Management of Renewable Resources and Lands within the Inuvialuit Settlement Region in the Vicinity of*

Tuktoyaktuk, Northwest Territories. Inuvik, NWT: Wildlife Management Advisory Council (NWT).

This plan expresses the Inuvialuit community's specific goals and objectives with respect to conservation of lands, waters and living resources in the Inuvialuit Settlement Region, in particular in the Tuktoyaktuk conservation planning area. It makes recommendations and describes activities to be undertaken by individuals and organizations at the local, regional and national level. This plan was developed to help protect the environment in the Delta area and onshore and offshore areas to ensure cultural survival of the Inuvialuit Community. Development of the plan was coordinated by representatives of the Tuktoyaktuk Hunters and Trappers Committee, Community Corporation, elders and other community representatives. The plan includes descriptions of the importance of certain sites to the community of Tuktoyaktuk, seasonal harvesting area, and the traditional use of various species.

Council of Yukon First Nations. (2000). *Traditional Knowledge Research Guidelines: A Guide for Researchers in the Yukon*. Whitehorse, YK: Council of Yukon First Nations.

Following the implementation of the Yukon Umbrella Final Agreement, the Council of Yukon First Nations felt the need to develop guidelines to ensure the ethical and appropriate treatment of traditional knowledge and its holders. These guidelines were written by a local Aboriginal organization dealing with development issues and discuss access to, as well as the collection, storage and use of, traditional knowledge.

Council for Yukon Indians. (1995). *Guide to the Elders Documentation Project*. Whitehorse, YK: Council for Yukon Indians, Curriculum Development Program.

Approximately 150 elders of the Yukon have shared their wisdom, knowledge and skills of a lifetime experience through the Elders Documentation Project. Their stories, skills of living off the land, language, knowledge of the traditional way of living and wisdom for making a better future are recorded on tape, transcribed into text and indexed through this guide. The purpose of this guide is to put the wealth of information into a more useful form, in a way that could show the breadth and depth of the collection and that could be made available to curriculum developers, researchers, educators and students. The guide includes an introduction to the staff of the elders documentation project, a description of the tape and transcript collection, where to access this collection, uses for the collection, profiles of some elders, the interview topics and an index to the interview topics.

Dene Cultural Institute (1998). Guidelines for the conduct of participatory community research to document traditional ecological knowledge for the purpose of environmental assessment and environmental management. Appendix 1: Sample Guidelines. In L. Grenier (ed.), *Working with Indigenous Knowledge*. Available at: http://web.idrc.ca. Accessed: 7 January 2005.

These detailed guidelines provide procedures for community-managed, community-controlled, participatory research projects. Intellectual property rights are addressed.

Government of the Northwest Territories. (1990). *Oral Tradition Research Guide*. Yellowknife, NWT: Cultural Affairs Division, Department of Culture & Communications, Government of the Northwest Territories.

This guide is a reference for researchers outlining the basic procedures involved in recording and documenting oral traditions. The information was compiled from seminars delivered by representatives of the Department of Culture and Communications, Government of the Northwest Territories, at the second annual Oral Traditions Research Workshop in Yellowknife, June 1990. The guide covers basic information about oral traditions, developing an oral traditions project,

preliminary research and preparation, interviewing methods, techniques for transcribing and translating taped interviews, and procedures for cataloguing and storing archival recordings.

Gwich'in Social and Cultural Institute. (2002) *Working with Gwich'in Traditional Knowledge in the Gwich'in Settlement Region.* Draft Policy Passed in Principle at Gwich'in Tribal Council Meeting, Spring 2002, 1-14. Whitehorse, YK.

The draft policy statement identifies the scope of the policy and defines the terms of ownership, rights, responsibilities, and management issues associated with Gwich'in traditional knowledge. Guiding principles include: education, informed consent, control of traditional knowledge, cultural and heritage resources, sharing, participation, respect and ethical use in research, equality in research evaluation, use and preservation, and ethical use and application in resource management. Attached Schedule A is a "Research Agreement Framework" which spells out the terms for conducting research in the Gwich'in Settlement Region.

Hart, Elisa (1995). *Getting Started in Oral Traditions Research.* Prince of Wales Northern Heritage Centre. Yellowknife, NT.

This report is meant for adults and students in the Northwest Territories who want to do oral history research. It deals with: 1) definitions of terminology (e.g., "traditional knowledge), 2) project planning, 3) interview development, 4) conducting interviews, 5) translating and transcribing, and, 6) writing and presenting the report.

Huntington, H. (2000). Using Traditional Ecological Knowledge in Science: Methods and Applications. *Ecological Applications*, 10(5), 1270-1274.

This paper examines case studies to describe the benefits of using traditional ecological knowledge in scientific and management contexts and the methods used to do so. Methods that are described are: semi-directive interviews, questionnaires, facilitated workshops, and collaborative field projects. The author says that these methods are not mutually exclusive but are starting points for the development of better methods that meet the needs of the researchers and the communities involved (p. 1270). The author also notes that participant selection should be by the identification of key informants, rather than by random sampling (p. 1271).

Huntington, H. (1998.) Observations on the Utility of the Semi-directive Interview for Documenting Traditional Ecological Knowledge. *Arctic* 51(3), 237-242.

This paper describes the author's experience using the semi-directive interview to document traditional ecological knowledge about beluga whales in Alaska. This method allows the participants as well as the researcher to guide the interview so that associations made by the participant, and not just those anticipated by the researcher, are discussed. Using maps as the starting point for discussions with individuals or groups, the interviews covered expected topics as well as unanticipated topics. The author found the semi-directive interview to be an effective and powerful method for accurate and comprehensive documentation of traditional ecological knowledge. It worked especially well in group interviews, which allowed participants to stimulate and validate each other.

Inuit Circumpolar Conference. (1996). Recommendations on the Integration of Two Ways of Knowing: Traditional Indigenous Knowledge and Scientific Knowledge. Seminar on the Documentation and Application of Indigenous Knowledge, November 15-17, Inuvik, NWT. Available at: http://www.inuitcircumpolar.com/tek.htm.

This report constitutes the proceedings from a meeting in Inuvik, Northwest Territories, that brought together hunters, elders, resource managers and researchers from Alaska, Canada, Greenland and Russia to discuss indigenous knowledge issues and prepare recommendations for its application in resource management and research. This seminar was a component of a beluga

indigenous knowledge pilot project undertaken under the auspices of the Working Group on the Conservation of Arctic Flora and Fauna, under the Arctic Environmental Protection Strategy. Although this seminar focused on indigenous knowledge about beluga whales, broader aspects of indigenous knowledge were also addressed. Hunters, elders, resource managers and researchers made presentations on a variety of topics, including indigenous knowledge research, co-management of resources, intellectual property rights, community concerns and solutions, and case studies where indigenous knowledge was used in a management or decision-making capacity. Specific questions addressed by participants in working groups were: 1) How do you document indigenous knowledge?, 2) How do you integrate it with scientific knowledge?, 3) How do you apply it in resource management and research? and 4) How do you ensure community involvement? This document offers recommendations on the promotion of traditional ecological knowledge at the community level, and on its use in community consultations. It also provides suggestions for how it should be documented, applied and integrated at various levels. Training recommendations include cross-cultural training for researchers, and training and capacity-building for community residents.

Inuit Tapirisat of Canada. (1998). Research Principles for Community-Controlled Research with the Inuit Tapirisat of Canada. Appendix 1 – Sample Guidelines. In L. Grenier (Ed.), *Working with Indigenous Knowledge*. Available at: http://web.idrc.ca. Accessed: 7 January 2005.

These guidelines offer twelve principles for community-controlled research and reflect a community-based perspective on how research should be conducted. This is an internal, draft document and was provided to researchers for review only. Researchers were instructed not to cite or distribute the document.

Inuit Tapirisat of Canada & NCP Secretariat (2004). Northern Contaminants Program Guidelines for Responsible Research. Operation Management Guide for the Northern Contaminants Program (NCP). Available at: http://www.inchr.org. Accessed: 9 January 2005.

These guidelines are for community consultation and the development of research agreements with communities. They are based on the results of a workshop on community-researcher relationships that included four northern Aboriginal organizations: the Council of Yukon First Nations, the Dene Nation, the Inuit Circumpolar Conference and the Inuit Tapirisat of Canada.

Johnson, M. (Ed.). (1992). *Lore: Capturing Traditional Environmental Knowledge*. Ottawa, ON: Dene Cultural Institute and International Development Research Centre.

This book presents the results of a workshop on the documentation and application of traditional environmental knowledge through community-based research. It examines the process of collecting traditional environmental knowledge while using a 'participatory action[5] or 'community-based[5] approach. It looks at the problems associated with documenting traditional knowledge - problems that are shared by researchers around the world - and it explores some of the means by which traditional knowledge can be integrated with western science to improve methods of natural resource management. The book is intended to assist in the development of effective, culturally appropriate research methods. It has been used as a reference text for the sections on issues and guidelines for conducting traditional knowledge studies, and on training and engagement.

Kavik-AXYS Inc. (2002). *Cumulative Effects Assessments in the Inuvialuit Settlement Region: A Guide for Proponents*. Prepared for the Environmental Impact Screening Committee and the Environmental Impact Review Board, Inuvik, NWT.

This document has been prepared as a guide for proponents who must conduct cumulative effects assessments for proposed developments in the Inuvialuit Settlement Region and is a companion document to a reviewer's guide also prepared by Kavik-AXYS. The proponent's guide

summarizes the information that proponents should provide in their applications, comments on best practice, reviews assessment process steps, identifies opportunities to manage effects and discusses the evaluation of significance. The importance of community participation is emphasized and it is noted that local knowledge should be used in the assessment. The importance of traditional knowledge in identifying issues is also covered.

Kavik-AXYS Inc. (2002). *Cumulative Effects Assessments in the Inuvialuit Settlement Region: A Guide for Reviewers*. Consultant's report prepared for the Environmental Impact Screening Committee and the Environmental Impact Review Board, Inuvik, NWT.

This report will assist the Environmental Impact Screening Committee and the Environmental Impact Review Board in their consideration of the cumulative effects likely to be caused by a proposed development in the Inuvialuit Settlement Region. The guide emphasizes the environmental impact screening process under the Inuvialuit Final Agreement. The guide is structured as a set of questions that the screener needs to consider when coming to a decision on a project.

Kavik-AXYS Inc. (2002). *Cumulative Effects Assessments in the Inuvialuit Settlement Region: Current and Potential Capability*. Consultant's report prepared for the Environmental Impact Screening Committee and the Environmental Impact Review Board, Inuvik, NWT.

This report reviews the tools available to the Environmental Impact Screening Committee and the Environmental Impact Review Board to undertake cumulative impact assessment and management of the effects of activities in the Inuvialuit Settlement Region. The legislative context is examined along with 'process' and 'technical tools. Process tools are those that are available under the legislative mandate and capacity of the Inuvialuit Settlement Region. Technical tools are those that are available given the current information and understanding of the resources in the Inuvialuit Settlement Region. The analysis and recommendations recognize the importance of knowledge based systems and the co-management institutions in cumulative effects assessment and management in the Inuvialuit Settlement Region.

Kavik-AXYS. (2003). *Annotated Bibliography for Heritage Resources in the Inuvialuit Settlement Region Part A*. Consultant's report prepared for Environmental Studies Research Funds, Inuvik, NWT.

This annotated bibliography focuses on recorded heritage resource sites within the areas of current oil and gas exploration and recorded traditional knowledge for the purpose of enhancing the understanding of heritage site locations and site values within the Inuvialuit Settlement Region. This report is an initial step in addressing community feedback on previous heritage studies in the area, which specified that a more detailed study of local traditional knowledge and its relationship to heritage sites was required. Part A of the report includes an overview description of data sets and an evaluation of the identified data gaps in existing literature. Recommendations for further traditional knowledge and oral history research are made, and the specific issues for proponents to consider when conducting traditional land use studies in the area are listed. Further recommendations are made for participatory community engagement in further research in the area.

Lutsel K'e Dene First Nation. (2001). Nn hat'ni - Watching the Land: Cumulative Effects Assessment and Management in the Denesoline Territory: Final Report. Submitted to the NWT CEAM Steering Committee and Canadian Arctic Resources Committee. Available at: http://www.ceamf.ca/ceam_ documents. Accessed: 5 March 2005.

This report was produced by a First Nation (Lutsel K'e Dene) to demonstrate culturally-appropriate methodology for community-based cumulative effects monitoring and management. The focus of this study was to develop a community-based plan for monitoring and managing the cumulative effects in the traditional territory of the Denesoline people. This study demonstrates a

culturally-appropriate methodology for using the Denesoline traditional ways of knowing in the environmental assessment process. A pilot project to test the CEAM plan was conducted through the assessment of the impacts of the ice roads supplying the Snap Lake and Kennedy Lake diamond exploration sites. The results of the pilot project are appended.

Nakasuk, S., Paniaq, H., Ootoova, E., & Angmaalik, P. (1999). *Interviewing Inuit Elders – Introduction, Volume 1*. Iqaluit, NU: Nunavut Arctic College.

This volume is the first part of a series of five books devoted to the study of oral traditions. The research presented was conducted by students of the Inuit studies program of Nunavut Arctic College. The project was set up to develop the skills of students in interviewing, transcribing, and writing essays. In addition to background information on the design of the course, discussions on the production and transmission knowledge in Inuit society, and the nature of Inuit knowledge, several life stories, essays and stories are presented.

Nunavut Research Institute & Inuit Tapirisat of Canada (1998). Negotiating Research Relationships: A Guide for Communities. Nunavut Research Institute and Inuit Tapirisat of Canada. Available at: http://pooka.nunanet.com. Accessed: 7 January 2005.

This guide helps explain the rights and responsibilities of Inuit communities in negotiating research relationships.

Oakes, J., & Riewe, R. (1996). Communicating Inuit Perspectives on Research. In *Issues in the North, Volume I,* (pp. 71-79). Canadian Circumpolar Institute Occasional Publication Number 40. Edmonton, AB: Canadian Circumpolar Institute.

This publication is a joint effort of the Canadian Circumpolar Institute and the Department of Human Ecology at the University of Alberta, and the Department of Native Studies at the University of Manitoba. This paper provides an excellent overview of some of the major issues that the Inuit feel need to be addressed by southern researchers, including: hiring local residents, protecting intellectual property rights and the need for community review.

Roberts, K. (1994). Circumpolar Aboriginal People and Co-management Practice: Current Issues. In K. Roberts (Ed.), *Co-management and Environmental Assessment Proceedings, Circumpolar Aboriginal People and Co-management Practice: Current Issues in Co-management and Environmental Assessment, November 20-24, 1995, Inuvik, NWT.* Calgary, AB and Inuvik, NWT: Arctic Institute of North America and Joint Secretariat - Inuvialuit Renewable Resources Committees.

This one-week workshop examined the experiences of northern co-management regimes, and current issues in northern co-management and environmental assessment practice. Two sessions focused on traditional knowledge: 'Community participation and traditional knowledge', and 'Traditional knowledge and the environmental assessment process'. Guidelines, issues and observations with respect to obtaining and using traditional knowledge in environmental assessment are discussed.

Sherry, E. (Ed.). (1999). *The Land Still Speaks: Gwitchin Words About Life in Dempster Country*. Old Crow, YK: Vuntut Gwitchin First Nation.

This book provides stories of Gwich'in elders. It also includes a chapter on the nature and content of traditional knowledge and guidelines for conducting traditional knowledge research.

Smith, B., Cooley, D., Tousignant, J., & Cunningham, N. (2000). *Using Local Knowledge Focus Groups*. Whitehorse, YK: Yukon Renewable Resources - Fish and Wildlife Branch.

This paper is intended as a how-to guide for wildlife managers and facilitators to apply local knowledge focus groups. It covers topics related to the design and analysis of focus groups,

applying local knowledge focus groups, and limitations of the local knowledge focus group approach.

Usher, P. (2001). Traditional Ecological Knowledge in Environmental Assessment. Presentation given at the *Northern Impact Assessment Seminar; Yellowknife, NWT, 30 October 2001*.

Usher's presentation outlines policy requirements for and barriers to involving traditional knowledge in environmental assessment. Five requirements for the successful utilization of traditional knowledge in environmental assessment are listed. Traditional ecological knowledge is discussed, including definitions, categories, issues, and collection. Finally, integrating traditional ecological knowledge in the public review process of an environmental assessment is outlined with reference to Voisey's Bay panel guidelines. Three "lessons" for improving the process are provided.

West Kitikmeot Slave Study. (n.d.). Traditional Knowledge Research Guidelines. Available at: http://www.wkss.nt.ca. Accessed: 20 December 2004.

These guidelines were drafted by the West Kitikmeot Traditional Knowledge Committee. The requirement for community support and control is foremost.

A.3.2 Canadian - Guidelines

Aboriginal Affairs Branch, British Columbia Ministry of Forests. (1996). Traditional Use Study Program Guidelines (2lld edition). Available at: http://www.for.gov.bc.ca. Accessed: 14 December 2004.

This document provides guidelines on writing proposals for traditional land use studies, traditional use site recording guides, and technical specifications for traditional land use databases. The guidelines were produced for First Nations to consult when submitting a proposal to the Province (British Columbia) to conduct a traditional use study. These guidelines provide information on evaluating traditional use sites, provides standards for mapping the data collected, and advice on standardized methodologies.

Acres International Ltd. (1995). Treaty Nations' Environmental Assessment Manual Focus Group.

A focus group of First Nations' representatives from Treaty areas 6, 7 and 8 in Alberta was established to oversee the preparation of this manual. The manual outlines a process that Bands may adopt to conduct environmental assessments and provides an overview of tools and techniques appropriate for the use of First Nations in conducting environmental assessments. The purpose was to assist Bands to build their environmental assessment capacity and meet requirements under the Canadian Environmental Assessment Act. Traditional knowledge was recognized as an important source of information that should be integral to project planning, assessment and review. A framework for conducting a traditional knowledge study is outlined.

Brascoupe, S. & Mann, H. (2001). *A Community Guide to Protecting Indigenous Knowledge*. Ottawa, ON: Research and Analysis Directorate, Department of Indian Affairs and Northern Development.

This report is designed to be a guide to a community-based model for protecting traditional knowledge. It outlines key issues and steps in the collection, community engagement, use and protection of traditional knowledge. It is orientated towards community-based programs, but offers some useful tips and guidance to the outside practitioner.

Cadieux, D. (2000). *An Illustrated Guide to Parks Canada Relationships with Aboriginal People*. Hull, QC: Parks Canada.

This guide provides background information on Parks Canada's relationship with Aboriginal peoples including policy, legislation and operation approach to Aboriginal issues. Eight different

initiatives are provided as are two detailed case studies of co-operative management of parks. These case studies highlight 'best practices' within the agency.

First Nations Environmental Assessment Technical Working Group (FNEATWG). (2005). *First Nations Environmental Assessment Toolkit.* BC: FNEATWG Administration, Canadian Columbia River Inter-Tribal Fisheries Commission.

The toolkit is designed to help First Nations in British Columbia who are interested in participating in environmental assessments. However, much of the information contained within the toolkit is applicable to Aboriginal groups throughout Canada, including the North. Sections include: environmental assessment basics, environmental assessment from an First Nation perspective, various sections on different assessment processes, a section dedicated to traditional knowledge and environmental assessment (Section 7), guidance on reviewing assessment reports, sand on negotiating development agreements, follow up, case studies (Voisey's Bay and Tulsequah Chief projects) and references. Section 7 contains information that is very helpful to Aboriginal peoples getting involved in impact assessment, and addresses issues such as the protection of traditional knowledge, finding funding, different ways to contribute traditional knowledge to the assessment, and the legal and policy implications. The subsection dealing with how to develop a traditional knowledge study from a community perspective (pp. 14-18), addresses many of the same issues that are dealt with in Volume 2 of this guide. Section 7 also outlines how providing traditional knowledge to an impact assessment process can be advantageous to an Aboriginal community, including (p.2):

- The identification of issues of importance to the community
- An improved understanding of the community's perspective of potential project impacts and mitigation
- An improved understanding of the community's issues and concerns by proponents and regulators, and the facilitation of the proponent-community relationship
- Contribution to design of mitigation and follow up programs, and improved management of project effects (environmental, socio-economic and cultural)
- Community benefits that extend beyond the impact assessment process, including planning, education, community development and land claims.

The toolkit suggests that First Nations should consider providing traditional knowledge even if they are opposed or uncertain about the project, as some of these advantages may still be obtained by doing so. This toolkit is a comprehensive resource for Aboriginal communities who are involved in the impact assessment process.

Garvin, T., Nelson, S., Ellehoj, E. & Redmond B. (2001). *A Guide to Conducting a Traditional Knowledge and Land Use Study*. Edmonton, AB: Canadian Forest Service, Northern Forestry Centre.

This book was written as a 'how-to' guide for traditional land use studies. Traditional knowledge and traditional land use is discussed briefly and sources on traditional knowledge and land use are listed. This guide provides methods for interviewing, mapping, data validation, information management and implementing the traditional land use data.

Hegmann, G., Cocklin, C., Creasey, R., Dupuis, S., Kennedy, A., Kingsley, L., Ross, W., Spaling H., & Stalker, D. (1999). *Cumulative Effects Assessment Practitioners Guide*. Prepared by AXYS Environmental Consulting Ltd. and the CEA Working Group for the Canadian Environmental Assessment Agency. Hull, QC: Canadian Environmental Assessment Agency.

This guide is for practitioners who are preparing cumulative effects assessments as part of a submission to regulators for project review. The guide provides an overview and clarification about the current understanding of the practice of cumulative effects assessment, suggests practical approaches that meet statutory requirements and best professional practice, and case studies of approaches used in cumulative effects assessments.

Honda-McNeil, J. & Parsons, D. (2003). *Best Practices Handbook for Traditional Use Studies*. Edmonton, AB: Alberta Aboriginal Affairs and Northern Development, Government of Alberta.

This handbook provides information for anyone who wants to learn about traditional use studies. It presents best practices and information based on interviews and discussions with people, communities and organizations in Alberta that have been involved in traditional use studies. Topics covered include: what is a traditional use study, planning the study, skills required by those conducting the study, the type of research that should be conducted, mapping, and applying the results of the study.

Labour, S. (2002). Traditional Knowledge Methodology for Impact Assessments (Draft). Internal document prepared for AXYS Environmental Consulting Ltd., Calgary, AB.

This is based on a preliminary workshop to examine how methods for collecting and using traditional knowledge in the impact assessment process could be improved. The document covers: 1) the basic principles and requirements surrounding the collection of traditional knowledge, including interdisciplinary considerations, 2) ways that traditional knowledge can be applied throughout the EIA process, 3) the steps and deliverables involved in a traditional knowledge study, and 4) information on regulatory context and definitions of traditional knowledge.

Menzies, C.R. (2001). Putting Words into Action: Negotiating Colloborative Research in Gitxaala. Department of Anthropology and Sociology, University of British Columbia. Available at: http://faculty.arts.ubc.ca/menzies/words.htm. Accessed: 12 April 2005.

This paper is written from the point of view of an Aborginal scholar working at the University of British Columbia, and discusses the process of negotiating and carrying out respectful research relationships with a First Nation community. Ethical issues and procedures, methodological innovations, and considerations about traditional knowledge demonstrate transformative action for research. Emphasis is placed on the rights, responsibilities and obligations that researchers assume when working with traditional knowledge.

Parks Canada (2000). An Approach to Aboriginal Cultural Landscapes. Parks Canada Aboriginal Affairs Secretariat and National Network. Available at: http://parkscanada.pch.gc.ca. Accessed: 5 March 2002.

The concept of Aboriginal cultural landscapes was explored through consultation with experts, who consistently emphasized the complex and intensive relationship between Aboriginal culture and the land. As such, Aboriginal participation was considered crucial for identifying important landscapes for commemoration as national historic sites. Traditional knowledge is identified as a key source for understanding the values of place to Aboriginal people.

Robinson, M., Garvin, T. & Hodgson, G. (1994). *Mapping How We Use Our Land: Using Participatory Action Research*. Calgary, AB: Arctic Institute of North America, University of Calgary.

This manual is for mapping traditional land use and occupancy. It covers methods for collecting and organizing traditional knowledge.

Scott, K. & Receveur, O. (1995). Ethics for Working with Communities of Indigenous Peoples. *Can. J. Physiol. Pharmacol*. (73), 751-753.

Specific ethical guidelines for working with indigenous peoples have been adopted by several research institutions. Ethical principles aim at promoting cooperation and mutual respect between researchers and communities of indigenous peoples. These principles are meant to be continually assessed. This article reports on the content and format of current ethical guidelines and highlights directions for further development.

Tobias, T. (2000). *Chief Kerry's Moose: a Guidebook to Land Use and Occupancy Mapping, Research Design and Data Collection*. Vancouver, BC: Union of the BC Indian Chiefs and Ecotrust Canada.

This book is for leaders, administrators, and program personnel at the community or First Nation government level, as well as their consultants and external research people, and community researchers who have had experience with studies related to the collection of interview data about traditional use of resources and occupancy of lands by Aboriginal peoples and the presentation of those data in map form. It considers the key factors that lead to success from Aboriginal mapping and provides a guide. The guide emphasizes the importance of quality data and the importance of avoiding the museum approach to mapping, and looks at how to lay the groundwork for good research. Obtaining and training good personnel, taking control of the research design, and respecting your workers' limitations are discussed. The five defining characteristics of any project (why, who, when, where, and what) are discussed, along with the principles guiding research design and implementation, the measures of quality, and the culture of research. The guide ends with a summary of recommendations.

A.3.3 International - Guidelines

Alaska Native Knowledge Network (2004). Welcome to Cultural Research, Documentation and Impact Analysis. Available at: http://www.ankfn.uaf.educ/cultres.html. Accessed: 16 December 2004.

This site provides information about indigenous knowledge and cultural research, focusing on community-based, participatory approaches to research, documentation and impact analysis. It includes links to relevant research, institutions and guidelines.

Berkes, F. (1999). *Sacred Ecology: Traditional Ecological Knowledge and Resource Management*. Philadelphia, PA: Taylor & Francis.

One of the most comprehensive texts available on the cultural and political importance of traditional knowledge to Indigenous peoples. Berkes explains that traditional knowledge research has to be participatory, with Indigenous peoples treated as equals, must recognize that written accounts are incomplete, and that non-Indigenous researchers must be prepared to question their own values, as cross-cultural sensitivity is at the heart of understanding traditional knowledge. In fact, he asserts, one of the most fundamental lessons of traditional ecological knowledge is that worldviews and beliefs do matter when it comes to resource management.

Daes, E. (n.d.). Principles & Guidelines for the Protection of the Heritage of Indigenous People, Alaska Native Knowledge Network Website. Available at: http://www.ankn.uaf.edu/protect.html. Accessed: 13 September 2001.

This document provides principles and guidelines for the protection of the heritage of Indigenous peoples and was produced in conformity with resolutions and decisions of the Sub-Commission on Prevention of Discrimination and Protection of Minorities of the Commission on Human Rights, Economic and Social Council, United Nations. The Principles are based on the self-determination of Indigenous peoples. The Guidelines have the following chapters: 1) Definitions, 2) Transmission of Heritage, 3) Recovery and Restitution of Heritage, 3) National Programmes and Legislation, 4) Researchers and Scholarly Institutions, 5) Business and Industry, 6) Artists, Writers and Performers and, 7) International Organizations.

Dahl, A. (1998). Small Island Environmental Management: A do-it-yourself course and training programme. Available at: http://islands.unep.ch/siem.htm. Accessed: 29 October 2004.

This document aims to help people who live on small islands to manage their environment and plan sustainable development. Unit E3, "Salvaging and Evaluating Traditional Knowledge" provides information on categories of traditional knowledge and ways in which it can be recorded for the future. Some guidance on evaluating traditional knowledge is also provided. These materials are intended for non-commercial use only.

Emery, A. (2000). *Integrating Indigenous Knowledge in Project Planning and Implementation*. Hull, QC: International Labour Organization, The World Bank, Canadian International Development Agency and KIVU Nature Inc.

The purpose of the guidelines is to help develop a framework within which affected indigenous peoples can decide whether a proposed development project should go ahead, and to offer them the opportunity to participate in the planning and implementation of the project using their traditional knowledge systems to held guide decision-making. These guidelines address the questions and issues related to how indigenous and scientific knowledge systems may be used together. General guidelines for project proponents, governments and nongovernmental organizations (NGOs) are presented that will aid them in contacting indigenous peoples and incorporating their knowledge into project planning, implementation, operation and evaluation. A best practices checklist is included as are traditional knowledge case studies from around the world. Guidelines are also presented for indigenous peoples to help them to participate successfully and beneficially in the development process. Specific guidelines for proponents, governments, and NGOs are included. The appendices provide comprehensive information on the "global knowledge base" for traditional knowledge research including websites, centres and literature.

Emery, A. (1997). *Guidelines for Environmental Assessments and Traditional Knowledge (Draft)*. March 1997.

This report was written to draw the world's attention to the need to include traditional knowledge in environmental assessments. The report calls for holding workshops to test these Guidelines so as to alert people to the need for a more rigorous protocol for including indigenous people, and for people to come together to make recommendations about the best means of achieving the goal of mutually beneficial results from development projects in areas involving indigenous people. The workshops will serve as a catalyst for awareness, as well as a vehicle for creating a new set of Guidelines. Guidelines are provided on "establishing a process that will work to everyone's benefit (p. 65)." Separate, but parallel, guidelines are provided for indigenous groups, developers and government.

Grenier, L. (1998). *Working With Indigenous Knowledge: A Guide for Researchers*. Ottawa, ON: International Development Research Centre.

This guidebook provides a comprehensive overview of traditional knowledge research and assessment. It has been used as a reference for the collection and engagement overview sections. It provides suggestions for developing a research framework, and includes the Inuit Tapirisat of Canada and Dene Cultural Institute guidelines for traditional knowledge research.

Johannes, R. (1993). Integrating Traditional Ecological Knowledge and Management with Environmental Impact Assessment. In J. Inglis (Ed.), *Traditional Ecological Knowledge: Concepts and Cases* (pp. 33-39). Ottawa, ON: International Program on Traditional Ecological Knowledge and International Development Research Centre.

This article suggests four aspects of traditional ecological knowledge that are relevant to impact assessment: taxonomic, spatial, temporal and social. Local names (taxonomic) reveal the importance and relevance of various resources (e.g., plants, animals, soils) to local peoples. Spatial references such as the location and distribution of various species and/or sites are intimately known by local Aboriginal people and this information is frequently useful for assessments. Knowledge about the location and timing of significant biological events (temporal) is held by local peoples, but may take assessment teams years to compile. The social frame of reference recognizes that there is "differing awareness among cultures of the impact that people can have on their natural environment." Trained researchers are critical to the process to ensure that the potential significance of the information being collected is not lost. One of the current weaknesses in traditional ecological knowledge research is data verification. Another challenge is the 'attitude problem' of many biologists. Traditional ecological knowledge research in impact assessments can enable greater involvement of Aboriginal peoples in project planning and development.

Morin-Labatut, G. (1993). International Symposium on Indigenous Knowledge and Sustainable Development: Recommendations and Action Plan. Indigenous Knowledge and Development Monitor. Available at: http://www.nuffic.nl/ciran/ikdm.

Recommendations and action plan from this symposium include suggestions for manuals, policy, archiving, sharing, using and conducting research in indigenous knowledge.

MOST/NUFFIC (2002). Database of best practices on indigenous knowledge. MOST Clearing House on Best Practices. Available at: http://www.unesco.org/most/bpikreg.htm. Accessed: 16 December 2004.

This on-line database contains examples of successful projects illustrating the use of local and indigenous knowledge in the development of cost-effective and sustainable survival strategies, covering Africa, Asia-Pacific, Europe, North America and Latin America & Caribbean. It also includes a geographical and thematic index and an index of institutions acting as indigenous knowledge resource centres.

Management of Social Transformations Programme and the Centre for International Research and Advisory Networks (1999). Best Practices on Indigenous Knowledge. Available at: http://www.unesco.org/most/bpikpub.htm. Accessed: 15 December 2004.

The purpose of this publication is to show how indigenous knowledge can be put to good use in development practice. It provides 27 best practices in the field of indigenous knowledge that have been included in UNESCO's MOST Clearing House Best Practices Database. This document includes methods and procedures for the collection and use of indigenous knowledge.

NSW National Parks and Wildlife Service. (2003). *Draft Guidelines for Aboriginal Heritage Impact Assessment*. Sydney, Australia: Prepared by New South Wales National Parks and Wildlife Service with additional text by K. Buck.

This document was produced in Australia to clarify the information requirements for proponents and consultants seeking to meet their statutory obligations under relevant legislation and to facilitate positive outcomes for Aboriginal cultural heritage by involving Aboriginal communities in the assessment process. The document emphasizes the need for environmental assessments to consider the lull range of Aboriginal heritage values, rather than focusing only on precontact archaeological sites. The Aboriginal heritage impact assessment process is outlined including guidelines for identifying Aboriginal heritage values (social, historic, scientific) associated with sites and landscapes and guidelines for assessing their significance.

Secretariat of the Convention on Biological Diversity. (2004). *Akwe: Voluntary Guidelines for the Conduct of Cultural, Environmental and Social Impact Assessment regarding Developments Proposed to Take Place on, or which are likely to Impact on, Sacred Sites ad on Lands and Waters Traditionally Occupied or Used by Indigenous and Local Communities*. Montreal, QC: Secretariat of the Convention on Biological Diversity.

These guidelines are for the conduct of cultural, environmental and social impact assessment for developments proposed which may impact sacred sites, lands and waters traditionally occupied or used by indigenous peoples. The guidelines are a tool offering impact assessment procedures and methodologies and are organized into: procedural considerations, integration of cultural, environmental and social impact assessments as a single process, and general considerations.

World Bank Group (1991). Environmental Assessment Sourcebook 1991 and Updates. Available at: http://lnwebl8.worldbank.org. Accessed: 9 February 2005.

This source book is intended to provide assistance for all those involved in Environmental Assessment. It amalgamates World Bank policies and procedures, guidelines, precedents and "best practice" regarding the environment. Chapter 3 (Social and Cultural Issues in Environmental Review) examines key issues in social analysis related to environmental review. Guidelines for Environmental Assessment are provided for World Bank projects. The inclusion of local knowledge and the contribution of indigenous peoples are emphasized.

A.4 General

A.4.1 Northern - General

Abele, F. (1997). Traditional Knowledge in Practice. *Arctic*, 50(4), iii-iv.

Previous studies by the Department of Fisheries and Oceans (DFO) identified broad whitefish (*Coregonus nasus*) migration routes extending from coastal bays through the Mackenzie Delta and upstream to the Peel and Arctic Red River systems. Field investigations during these projects identified upstream locations in the Peel and Arctic Red River systems as important spawning sites for the anadromous stock of broad whitefish. The information generated by the DFO studies were presented to a mixed audience of Inuvialuit, Gwich'in and Sahtu representatives during the Broad Whitefish Workshop held in Inuvik on March 16-17, 1994. Several experienced fishermen from the Mackenzie Delta informed those present at the workshop of their observations and beliefs that localized populations of broad whitefish spawn in areas within the lSR, as well as the Peel and Arctic Red River sites identified. Specific mention was made regarding sites, timing of fish use of these sites, and fish reproductive status. One such site - Whitefish Bay - was mentioned numerous times, and the subject of considerable discussion. Following a modest traditional knowledge study focusing on the identification of locally presumed broad whitefish spawning sites within the Inuvialuit Settlement Region, it was decided to conduct an onsite investigation in an attempt to verify the prcsencc/abscncc of spawning fish at the Whitefish Bay location. This study is a ground-truthing of the results of the traditional knowledge study using western science.

Arctic Biological Consultants, Stewart, D., Stewart, B., & Ratynski, R. (1996). *A Bibliographic Database for Coastal Zone Planning in the Cumberland Sound and Yukon North Slope Areas of Arctic Canada*. Winnipeg, MB: Fisheries and Oceans Canada.

This computerized bibliographic database was intended to facilitate research into integrated coastal zone management in the Cumberland Sound and Yukon North Slope areas. It consists of two computer databases which were prepared using Pro-cite (v. 2) bibliographic software. The Cumberland Sound database contains over 600 bibliographic records and the Yukon North Slope

over 1800, each with information on its scope of coverage and availability from library collections. Many of these records also include abstracts. This document describes: 1) the scope and content of the bibliographic databases, 2) how to use them, and 3) how they can be updated. The reference material identified both popular and scientific literature, published and unpublished report, films, and audio tapes. While the focus of this work was on the cultural and natural subject areas, references that dealt with the social, economic and legal aspects of natural resource use or archaeology were included in the bibliographies.

Aurora College. (1996). *Traditional Knowledge: An Implementation Workplan for Aurora College.*

This document outlines a practical and efficient framework to guide Aurora College in working with Aboriginal peoples to increase the use of traditional knowledge in its programs and services. It outlines the College's vision for traditional knowledge in its programs, a number of initiatives to be undertaken, challenges to implementing changes, and an implementation schedule for 1996-1999.

Bielawski, E. (1992). Inuit Indigenous Knowledge and Science in the Arctic. *Northern Perspectives,* 20, (1).

This article discusses the different 'ways of knowing' between Inuit and western scientists.a

Brockman, A. (1991). *Report of the Traditional Knowledge Working Group.* A. Legat (Ed.). Yellowknife, NWT: Department of Culture and Communications, Government of the Northwest Territories.

This report summarizes the findings of the Working Group on Traditional Knowledge, established by the Government of the Northwest Territories in 1989. Traditional knowledge is explained as knowledge that derives from, or is rooted in the traditional way of life of Aboriginal people. Traditional knowledge is the accumulated knowledge and understanding of the human place in relation to the universe. This encompasses spiritual relationships, relationships with the natural environment and the use of natural resources, relationships between people, and, is reflected in language, social organization, values, institutions and laws. This report examines the current and potential use of traditional knowledge, provides principles for its preservation and use, and identifies obstacles to its. A series of 20 recommendations to the territorial government related to increasing the influence of traditional knowledge in northern society are listed.

Burgess, P. (1999). *Traditional Knowledge: A Report Prepared for the Arctic Council Indigenous People's Secretariat, Copenhagen.* Copenhagen: Arctic Council Indigenous People's Secretariat.

This report examines the 'concept' of traditional knowledge and the terms associated with it. Programs and research projects related to traditional knowledge currently underway in the Arctic are described, along with a discussion of how traditional knowledge is currently being used in management regimes, with particular reference to the management of renewable resources. A bibliography of written materials that are related to traditional knowledge is provided.

The authors note that a considerable rhetoric of acceptance regarding traditional knowledge has become widespread, but there is a gap between rhetoric and reality. In fact there is a good deal of confusion regarding traditional knowledge: what it means, who has it, who should have access to it, what relevance it has in the Arctic today, whether traditional knowledge has relevance for the 'management' of renewable resources in the Arctic, the suitability or even possibility of attempting to 'incorporate' or 'integrate' traditional knowledge into western science, or even if that is desirable, whether 'integration' will ultimately mean 'assimilation'. What role, if any, does traditional knowledge have for the practice of co-management, who 'controls' traditional knowledge, do holders of traditional knowledge hold intellectual property rights over their knowledge and customs, or has (as some commentators have suggested) traditional knowledge

become such a sacred cow that it is beyond all criticism? These and other relevant issues are discussed.

Canadian Heritage - Parks Canada. (1995). Aulavik National Park - Interim Management Guidelines Responsibility.

These Interim Management Guidelines for Aulavik National Park reflect the departmental direction of Parks Canada. The guidelines were developed co-operatively and they lay out a future of cooperative management for the park. The integration of ecosystem management and of cultural resource management is stressed. A research program will follow which will use knowledge from the scientific and the oral traditions. Research on the cultural environment of Aulavik National Park will be integrated with the research on the natural environment. Knowledge from various sources will be used, including the scientific literature, oral histories, archives, traditional knowledge, and field studies. Parks Canada will use Inuvialuit knowledge, including traditional ecological knowledge, in park conservation, management and interpretation.

Cournoyea, N. (1998). Traditional Knowledge and the Inuvialuit Experience in Land Claims. Conference Presentation, *Community Development from the Inside Out: A Conference Exploring the Incorporation of Traditional Knowledge into Community Development, Edmonton, AB, August 21-22, 1998*. Calgary, AB: Arctic Institute of North America.

Cournoyea provides a list of seven suggestions for "incorporating" traditional knowledge into community development: 1) the creation of community and regional management bodies (e.g., Hunters' and Trappers' Committees), 2) Wildlife and Conservation Management Plans (which, in the Inuvialuit Settlement Region constitute a continuous and dynamic process where community groups develop community conservation plans), 3) the addition of traditional knowledge to curriculum development, 4) the collection, archiving, transcription and translation of any existing traditional knowledge tapes and interviews, 5) revitalization and reintroduction of Inuvialuktun, 6) community-based ecosystem monitoring and, 7) targeted traditional knowledge studies to augment information on various species.

Difrancesco, R. (1996). The Crown, Territorial Jurisdiction, and Aboriginal Title: Issues Surrounding the Management of Oil and Gas Lands in the Northwest Territories. *Energy Studies Review,* 8(3), 232-249.

This article provides a brief summary of the legislative and regulatory context of oil and gas development in the Northwest Territories, including constitutional and land claim processes. The process of community consultation that took place during the Berger Inquiry is noted as establishing a standard in which "the social, economic and cultural systems [of Aboriginal people], and the northern environment, were not to be brushed aside in the pursuit of profit (p. 236)."

Duerden, F. & Kuhn, R. (1998). Scale, context, and application of traditional knowledge of the Canada north. *Polar Record,* 34(188), 31-38.

The application of traditional ecological knowledge (TEK) to land and resource management is critically examined and a typology relating scale, user group, and the transformation of knowledge is developed. Of the many challenges facing the incorporation of TEK in resource management initiatives, perhaps the greatest is the recognition of the appropriateness of scale. The conclusions reached in this paper reaffirm the notion that scale and context are key components in maintaining the validity and integrity of TEK. The primary role of TEK appears to be with providing the most valid and intelligible interpretations of local geographies and prescribing locally appropriate resource management strategies. The authors note that a major problem is identifying appropriate frameworks for the use of traditional knowledge into complex regulatory processes (such as environmental impact assessment).

Ferguson, M. & Messier, F. (1999). Collection and Analysis of Traditional Ecological Knowledge about a Population of Arctic Tundra Caribou. *Arctic,* 50(1), 17-28.

The authors developed a method, with advice from Inuit, to collect Inuit knowledge about historical changes in a caribou population. This paper describes their method, which utilizes traditional ecological knowledge to produce a regional history of changes in wildlife distributions, densities and ecology. The concept and terminology of "traditional ecological knowledge" is defined in the introduction.

Ferguson, M., Williamson, R. & Messier, F. (1998). Inuit Knowledge of Long-term Changes in a Population of Arctic Tundra Caribou. *Arctic,* 51(3), 201-219.

The authors present a history of caribou population changes based on Inuit traditional ecological knowledge and show how indices of changes in population abundance can be derived from Inuit knowledge. Inuit knowledge is compared with reports by non-Inuit, and Inuit knowledge proved to be more complete than the written record both temporally and spatially. The authors also examine how caribou populations are conceptualized by Inuit versus biologists and how these differing concepts have implications for the accuracy of data on caribou abundance.

Fisheries and Oceans Canada. (2002). A Guide to Integrated Coastal Zone Management in Canada (Brochure). Available at: http://www.dfo-mpo.gc.ca. Accessed: 12 April 2005.

This document explains Canada's policy for how integrated management should occur in Canadian marine waters. Integrated management can facilitate the impact assessment process. Stakeholder input, including Aboriginal organizations, is identified as an important source of information contributing to integrated management planning.

Freeman, M. (1992). The Nature and Utility of Traditional Ecological Knowledge. Northern Perspectives 20(1). Available at: http://www.carc.org/pubs/v20no1/utility.htm. Accessed: 6 May 2001.

Traditional ecological knowledge systems seek to understand and explain the workings of ecosystems in a holistic, rather than reductionist, manner. It has been recognized to have relevance for sustainable resource management and environmental impact assessment. Traditional ecological knowledge-based systems already possess base-line data sets that address gaps in scientific knowledge. Three northern cases illustrating the efficacy of traditional ecological knowledge are presented. The author concludes that the quantity of published literature on the subject shows that the application of traditional ecological knowledge to environmental assessment and management should be taken seriously.

GeoNorth Ltd. (2002). *Traditional Knowledge Respecting Water Resources and Management in the Mackenzie Basin.* Consultant's report prepared for Jack Van Camp, Mackenzie River Basin Board Secretariat, Fort Smith, NWT.

The report summarizes the availability and nature of Traditional Ecological Knowledge (TEK) in the Mackenzie River Basin for the purposes of assisting the Mackenzie River Basin Board in determining whether additional collection of TEK is necessary for producing a State of the Aquatic Ecosystem Report (SAER). Recommendations for including traditional knowledge in the SAER are provided, including guidelines for assisting in the incorporation of traditional knowledge.

Government of the Northwest Territories. (1993). *Response by the Government of the Northwest Territories to the Report of the Traditional Knowledge Working Group.* Yellowknife, NWT: Department of Renewable Resources.

This report presents a plan which outlines the role of the Government of the Northwest Territories and its commitment to traditional knowledge. It includes responses to the 20 recommendations of the Traditional Knowledge Working Group and a traditional knowledge policy.

Government of Northwest Territories, Department of Culture and Communications. (1991). *Report of the Traditional Knowledge Working Group.* Yellowknife, NWT.

This report was created because at the 30th annual meeting of the Canadian Commission for UNESCO (the United Nations Educational, Scientific and Cultural Organization) in Yellowknife in 1988, the Leader of the Government of the Northwest Territories, Dennis Patterson, acknowledged that there is a "wide spectrum of areas where traditional knowledge may have an influence on government policy and programs." He established the Working Group on Traditional Knowledge in October 1989 to define traditional knowledge, examine its current and potential use, and identify obstacles and solutions that will increase its influence in northern society.

Hobson, G. (1992). Traditional Knowledge IS Science. *Northern Perspectives,* 20(1), 2.

This paper supports the author's statement that traditional knowledge is science and argues for improved communication and co-operation between southern scientists and holders of traditional knowledge. Traditional knowledge is the accumulated knowledge and understanding of the place of human beings in relation to the world in both an ecological and spiritual sense. It states that it is necessary to develop a framework that allows traditional and scientific knowledge to interact in a complementary fashion.

Inuit Circumpolar Conference. TEK Bibliography. Available at: http://www. inuitcircumpolar.com.

This bibliography is an online resource and contains a listing of traditional knowledge references in the Inuit Circumpolar Conference's library.

Kuhn, R., Duerden, F., & Clyde, K. (1993). Government Agencies and the Utilization of Indigenous Land Use Information in the Yukon. *Environments,* 22(3), 76-84.

The authors examine the use of indigenous land use information by nineteen government agencies in the Yukon Territory. A questionnaire was used to assess the perceptions of, and attitudes towards the utility of indigenous land use information by government employees. Constraints and barriers were identified against the use of such information including issues of accessibility and quality of information, the absence of formalized processes, poor understanding of such information, and difficulties with quantification.

Legendseekers. (2000). *An Assessment of Documented Yukon First Nations Traditional and Local Knowledge and Perspectives on the Impacts of Climate Change within the Yukon Territory and Northern British Columbia.* Report prepared for the Northern Climate Exchange Gap Analysis Project, Whitehorse, YK.

This report summarizes baseline research conducted for the Northern Climate Exchange Project of Yukon College, as part of their report on "The Assessment of the State of Knowledge of the Impacts of Climate Change on Canada's North". The research consisted of a review of publications based on Yukon First Nations oral history to determine traditional knowledge on the climate. Although specific references arc found to weather, climate, and changing conditions throughout oral histories, the authors conclude that there is an immediate need to conduct further oral history research aimed specifically at collecting traditional knowledge of changing climate and weather systems.

Riedlinger, D. (2001). *Community-based Assessments of Change: Contributions of Inuvialuit Knowledge to Understanding Climate Change in the Arctic.* Thesis submitted for the degree of Master of Natural Resource Management, Faculty of Graduate Studies, University of Manitoba.

This thesis is based, partially, on the collaborative research project Inuit Observations of Climate Change (1999-2000) in Sachs Harbour, Western Canadian Arctic. The methods used in that project are described. Riedlinger describes how local Inuvialuit knowledge and community

assessments can provide observations, predictions and explanations of climate change at scales and in contexts currently underrepresented in climate change research. The contributions of traditional knowledge to understanding climate change in the Canadian Arctic are explored and a conceptual framework is proposed for finding common ground between traditional knowledge and scientific knowledge, emphasizing five areas of convergence between them.

Wenzel, G. (1999). Traditional Ecological Knowledge and Inuit: Reflections on TEK Research and Ethics. *Arctic,* 52(2), 113-124.

Wenzel examines how traditional ecological knowledge research has been utilized in cultural studies of the Inuit and concludes that traditional ecological knowledge is a political, as well as scientific and cultural, concern. He identifies three problems with traditional knowledge research in the North: 1) the analysis and interpretation of traditional ecological knowledge must be subject to the same rules as that of other forms of information, 2) traditional ecological knowledge requires a more ethical treatment and, 3) intellectual property rights initiatives to protect traditional ecological knowledge are not likely to serve the long-term interests of the Inuit or researchers.

West Kitikmeot Slave Study (2000). Dogrib Traditional Knowledge: Relationship between Caribou Migration Patterns and the State of Caribou Habitat. Available at: http://www.wkss.nt.ca. Accessed: 20 December 2004.

This project recorded traditional knowledge about caribou movements and habitat and the relationship between the Dogrib people and the caribou. The elders indicated that they feel that scientific research does not provide enough information to properly manage wildlife and that traditional knowledge is important for management. The elders did not claim to predict how caribou might react to mines and other development activities, although they did make observations about changes in caribou behaviour as a result of such activities.

Winkelaar, F. (1990). *The Science Institute of the Northwest Territories and the Westernization of Traditional Knowledge*. Ottawa, ON: Department of History, Carleton University.

This paper investigates some of the characteristics of scientific research in northern Canada from a historical perspective. A brief history of the Science Institute of the Northwest Territories is followed by an historical examination of attitudes toward traditional knowledge. The conclusion reached is that, while the research establishment in the North, as represented by the Science Institute, has developed a policy protective of traditional knowledge, the methods used in northern research and the political motives behind the resurgence of traditional culture combine to encourage the accelerating westernization of traditional knowledge.

A.4.2 Canadian - General

Abbott, K. (2001). Co-management in Canada. Available at: http://www.firstpeoples.org/land_rights/Canada. Accessed 7 July 2003.

This document describes the co-management trends, ideas and arrangement in Canada. The Royal Commission on Aboriginal People's recommendations on environmental impact assessments are discussed. Environmental impact assessments may be ethnocentric and can potentially disregard or alienate Aboriginal communities. Co-management boards should be authorized to conduct environmental impact assessments, the contents and procedures of which must allow for effective Aboriginal participation. The importance of traditional knowledge in co-management is also discussed.

Bill, L. (1997). Traditional Knowledge Research: Uses, Effects, Applications and Choices. Proceedings of the Third National Science Meeting, January 21-25, 1997, Saskatoon, Saskatchewan. The

Ecological Monitoring and Assessment Network, Environment Canada. Available at: http://www.eman-rese.ca/eman. Accessed: 13 December 2004.

Bill compares the medicine wheel framework for considering traditional knowledge that was applied by the Northern River Basins Study to research approaches utilized by other traditional knowledge researchers. Eight traditional knowledge research projects are assessed with regards to the approach utilized by the investigators, the intent and purpose of the research, the information collected and the utilization of the information. The eight research projects are compared to the traditional knowledge component of the Northern River Basins Study, which utilized a medicine wheel framework as a research design.

Brascoupe, S. & Endemann, K. (1999). *Intellectual Property and Aboriginal People: A Working Paper*. Ottawa, ON: Research and Analysis Directorate, Department of Indian Affairs and Northern Development, and Intellectual Property Policy Directorate, Industry Canada.

This paper outlines current Canadian intellectual property legislation as it relates to Aboriginal people in Canada, and provides a general review of the implications of this legislation for protecting the traditional knowledge of Aboriginal people.

Corsiglia, J. & Snively, G. (1997). Knowing Home: NisGa'a traditional knowledge and wisdom improve environmental decision-making. *Alternatives Journal*, 23(3), 22-27.

A general overview of what traditional knowledge is, is given. Then the debate about whether or not traditional ecological knowledge can contribute to Western scientific knowledge is described briefly. The NisGa'a people of British Columbia live in the Nass River Valley and continue to preserve the culture that connects them to their homeland. The NisGa'a traditional science practitioner is trained to observe nature and behave with respect (p. 24) and function as an observer (p. 25). Examples are offered within the context of salmon fishing. A traditional NisGa'a wisdom story is related and interpreted in terms of relevance for resource management (p. 25-6).

Ellis, D. (2001). *Ideas to expand the use of Aboriginal Knowledge and Community Knowledge in Wildlife in Canada*. Status reports prepared by the Committee on the Status of Endangered Wildlife in Canada, Whitehorse, YK. Prepared for B. Smith, Project Biologist, Canadian Wildlife Sservice, Environment Canada.

This discussion paper was prepared to provide practical and constructive ideas to help the Committee on the Status of Endangered Wildlife in Canada meet new obligations and opportunities to include Aboriginal traditional knowledge and community knowledge in the assessment of species of wildlife at risk, arising from the pending National Species at Risk Legislation.

McDonald, M., Arragutainaq, L. & Novalinga, Z. (1997). *Voices from the Bay: Traditional Ecological Knowledge of Inuit and Cree in the Hudson Bay Bioregion.* Ottawa, ON: Canadian Arctic Resources Committee.

This book summarizes the results of a three-year study of the traditional ecological knowledge of Inuit and Cree in the Hudson Bay region. The study was initiated by the environmental committee of Sanikiluaq in response to Cree and Inuit suggestions that traditional ecological knowledge could contribute to a cumulative effects assessment of resource developments in the area. The information gained was to assist in implementing the principle of sustainability and to assist in better, more environmentally and socially responsible decision-making.

Moller, H., Berkes, F., O'Brian Lyver, P. & Kislalioglu, M. (2004). Combining Science and Traditional Ecological Knowledge: Monitoring Populations for Co-management. *Ecology and Society*, 9, 2-3. Available at: http://www.ecologyandsociety.org.

The authors evaluate the ways of combining science and traditional ecological knowledge to monitor wildlife populations in resource management. They draw on case studies from New Zealand and Canada to illustrate traditional management systems and complementary uses of scientific and traditional ecological knowledge for population monitoring. Five areas of complementarities between scientific and traditional ecological knowledge are presented for population monitoring.

Northern River Basins Study Board. (1996). *Northern River Basins Study Report to the Ministers 1996*. Edmonton, AB: Northern River Basins Study Board.

This report summarizes the key findings and policy recommendations of the Northern River Basins Study (NRBS), a benchmark assessment of water quality in the Peace, Athabasca and Slave River basins. Section 3.4 discusses the results of the traditional knowledge component of the NRBS, that was to determine existing native traditional knowledge that could enhance the physical science in all study areas of inquiry.

Turner, N., Boelscher Ignace, M. & Ignace, R. (2000). Traditional Ecological Knowledge and Wisdom of Aboriginal Peoples in British Columbia. *Ecological Applications,* 10(5), 1275-1287.

This paper focuses on the characteristics and applications of the Traditional Ecological Knowledge and Wisdom (TEKW) of Aboriginal peoples in British Columbia, Canada. The features that comprise TEKW are discussed: knowledge of ecological principles, use of ecological indicators, adaptive strategies for resource harvesting and monitoring, systems of knowledge acquisition and transfer, respectful interactive attitudes and philosophies, identification with ancestral lands, and recognition of the power and spirituality of nature. The authors feel that for appropriate incorporation of TEKW into current ecosystem-based management strategies, its complete context must be recognized and respected. A case study of ecological and cultural knowledge of traditional root vegetables is used to illustrate how this can be accomplished.

A.4.3 International - General

Berkes, F., Colding, J. & Folke, C. (2000). Rediscovery of Traditional Ecological Knowledge as Adaptive Management. *Ecological Applications,* 10(5), 1251-1262.

This paper emphasizes the role of local or indigenous communities in using traditional ecological knowledge (TEK) to respond to and manage the functions and processes of complex systems (i.e. the role of TEK for "adaptive management"). Management practices based on local ecological knowledge are identified. The social mechanisms (e.g. world view, values) behind these practices are identified and organized. Traditional knowledge systems are evaluated for the insights they provide for the qualitative management of resources and ecosystems and parallels to adaptive management. It is concluded that adaptive management may be considered the "scientific analogue" of TEK, therefore TEK can inspire adaptive management solutions.

Center for World Indigenous Studies, Morning Star Institute and the Northwest Indian Applied Research Institute. (2000). A Treaty Among Indigenous Nations on the Protection of Native Peoples' Cultural Property Rights: An Exercise of Indigenous National Sovereignty and International Relations. Briefing Memorandum for Participants at *Protecting Traditional Knowledge Conference, February 23-26, 2000, Vancouver, BC.*

This briefing memorandum provides information on the results of a gathering of Indian scholars, political leaders and activists in 2000. This group recognized that the indigenous nations of the world posses the power to institute and enforce laws among their peoples and would benefit by formulating their own international law in the form of a Treaty on Native People's Cultural Property Rights.

Glenn, R. (2000). Traditional Knowledge, Environmental Assessment, and the Clash of Two Cultures. In S. Stephens (Ed.), *Handbook for Culturally Responsive Science Curriculum*. Fairbanks, AK: Alaska Native Knowledge Network.

This short article was included in the Alaskan Handbook for Culturally Sensitive Science Curriculum as an example of involving cultural experts in the classroom. The article is relevant for the issue of developing traditional knowledge guidelines for environmental impact assessment, however, as it presents an individual Inupiat's view on the experience of sharing knowledge with others. The author describes Inupiat traditional knowledge and explains why Inupiat would share such knowledge, despite stigma, misunderstandings, and bad experiences. The author also discusses how knowledge sharing *should* take place, cautioning that not all community members are experts. Because the Inupiat have a culture of consensus, agreement is mandatory on every item passed as traditional knowledge.

Hansen, S. & VanFleet, J. (2003). *Traditional Knowledge and Intellectual Property.* Washington, D.C.: American Association for the Advancement of Science.

This handbook represents a step forward in the realization of Article 27 of the Universal Declaration of Human Rights as it attempts to explain the implications and possible solutions to human rights issues surrounding intellectual property for traditional knowledge holders. This handbook is designed to make intellectual property protection issues and options more understandable to traditional knowledge holders and human rights organizations and legal professionals working with local and indigenous communities. This resource will help traditional knowledge holders identify potentially applicable protection mechanisms in the current intellectual property rights regime.

Mauro, F. &. Hardison, P. (2000). Traditional Knowledge of Indigenous and Local Communities: International Debate and Policy Initiatives. *Ecological Applications*, 10(5), 1263-1269.

The authors examine international law and policy that are defining the role of traditional and indigenous knowledge in biodiversity management and conservation. Indigenous rights in international law are discussed, as is the Convention on Biological Diversity, and other global conventions and 'soft laws'. The securement and recognition of indigenous rights is an ongoing struggle but implementing equitable principles for indigenous and local community involvement in biodiversity management does not need legislative grounds (p. 1267).

MOST/NUFFIC (2002). Database of best practices on indigenous knowledge. MOST Clearing House on Best Practices. Available at: http://www.unesco.org/most/bpikreg.htm. Accessed: 16 December 2004.

This on-line database contains examples of successful projects illustrating the use of local and indigenous knowledge in the development of cost-effective and sustainable survival strategies, covering Africa, Asia-Pacific, Europe, North America, Latin America, and the Caribbean. It also includes a geographical and thematic index and an index of institutions acting as indigenous knowledge resource centres.

Secretariat of the World Intellectual Property Organization. (2000). Matters Concerning Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore. *WIPO General Assembly, Twenty-Sixth (12th Extraordinary) Session, Geneva, September 25 to October 3, 2000*. Geneva, Switzerland: World Intellectual Property Organization.

These conference proceedings discuss intellectual property issues regarding the protection of traditional knowledge. These issues are grouped into four categories: 1) terminological and conceptual issues, 2) standards concerning the availability and scope and use of intellectual

property rights in traditional knowledge research, 3) criteria for the application of standards and, 4) the enforcement of rights in traditional knowledge.

Stephens, S. (2003). *Handbook for Culturally Responsive Science Curriculum*. Fairbanks, AK: Alaska Native Knowledge Network.

This handbook is the result of the development of a standards-based, culturally relevant curriculum that integrates indigenous and western knowledge around science topics. With regards to traditional knowledge and impact assessment, this document is relevant in that it is an example of how indigenous and western knowledge can be integrated in a culturally appropriate way to create greater depth, breadth and significance of knowledge. Furthermore, a standards-based system was developed to correlate indigenous knowledge with the Alaska science standards for the curriculum. Culturally relevant assessment of cultural behavior, knowledge and values is also discussed.

Stoffle, R., Halmo, D., Evans, M., & Olmsted, J. (1990). Calculating the Cultural Significance of American Indian Plants: Paiute and Shoshone Ethnobotany at Yucca Mountain, Nevada. *American Anthropologist*, 92(2), 461-432.

This article applies a quantitative plant evaluation model to field data from the Yucca Mountain, Nevada, ethnobotany study to explore the utility of the model for evaluating the cultural significance of botanical resources to contemporary American Indian peoples. The authors conclude that although it is difficult to combine Western scientific and Native American cognitive reasoning into one model of cultural significance, the model is successful for determining the cultural significance of plants from both a resource policy and ethnographic standpoint. They recommend that similar models be developed for calculating the significance of other cultural resources.

World Commission on Environment and Development (WCED). (1987). *Our Common Future*. Oxford, UK: Oxford University Press.

This report is a response to a call by the General Assembly of the United Nations for a 'global agenda for change'. The WCED, led by Gro Harlem Brundtland, Prime Minister of Norway, was tasked with examining the critical environment and development problems on the planet and formulating realistic proposals to solve them. Environmental sustainability was a key focus of the WCED's work.

TRADITIONAL KNOWLEDGE GUIDE FOR THE INUVIALUIT SETTLEMENT REGION, NORTHWEST TERRITORIES

VOLUME II: USING TRADITIONAL KNOWLEDGE IN IMPACT ASSESSMENTS

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Environmental Studies Research Funds
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Executive Summary

The traditional knowledge guide developed as Phase II of ESRF-04-048 is essentially a management document for proponents, consultants and responsible authorities concerned with the role of traditional knowledge in the impact assessment process. The guide stresses consideration and understanding of cultural differences in this process. As working concepts, a distinction is made between traditional knowledge, traditional environmental knowledge and traditional land use in order to help 'compartmentalize' not only the scope, but also different kinds of traditional knowledge information.

The guide discusses and provides approaches to developing collection and use protocols, engaging Inuvialuit people, and collection strategies. Discussion pertaining to needs related to project and assessment scoping, information sharing and assessment process. The benefits of using traditional knowledge are provided. As a means of illustrating how and when traditional knowledge can be used in the assessment process, each stage is discussed and real-life examples provided as to how such information was used or could have been used in past projects. Information is also provided as to the nature and content of reports on traditional knowledge to meet both impact assessment and community needs.

Résumé

Le guide des connaissances traditionnelles élaboré durant la Phase II du FÉE-04-048 est essentiellement un document de gestion destiné aux promoteurs, aux consultants et aux autorités responsables qui s'intéressent au rôle des connaissances traditionnelles dans le processus d'évaluation des répercussions environnementales. Le guide insiste sur la prise en compte et la compréhension des différences culturelles dans le cadre de ce processus. En ce qui concerne les concepts de travail, on établit une distinction entre les connaissances traditionnelles, les connaissances traditionnelles en environnement et l'usage des terres à des fins traditionnelles, afin d'aider à « compartimenter » non seulement la portée, mais également différents types d'information sur les connaissances traditionnelles.

Le guide examine et propose des méthodes pour mettre au point des protocoles de collecte et d'utilisation, auxquels participeraient les Inuvialuit, et des stratégies de collecte. Il met l'accent sur les besoins liés à la détermination de la portée du projet et de l'évaluation, au partage de renseignements et au processus d'évaluation. Le guide relève également les avantages de l'utilisation des connaissances traditionnelles. Pour illustrer de quelle manière et à quel moment les connaissances traditionnelles peuvent être utilisées lors des évaluations, chaque étape y est expliquée et des exemples concrets y sont fournis pour montrer dans quelle mesure l'information a été ou aurait pu être utilisée dans les projets antérieurs. Le guide fournit également des renseignements sur la nature et le contenu des rapports sur les connaissances traditionnelles pour répondre aux besoins en matière d'évaluation des répercussions et aux besoins des communautés.

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Table of Contents

List of Tables

List of Box Keys

Abbreviations

ESRF ..... Environmental Studies Research Fund
FMA ..... FMA Heritage Resources Consultants Inc.
GIS ..... geographic information systems
GPS ..... global positioning system
ISR ..... Inuvialuit Settlement Region
Kavik ..... Kavik-AXYS Inc.
MVEIRB ..... Mackenzie Valley Environmental Impact Review Board
NTS ..... national topographic system
RA ..... responsible authority
RFP ..... Request for Proposal
SAGD ..... steam-activated gravity drainage
VEC ..... valued ecosystem component
VSC ..... valued social component

1 Introduction

What do I need to know about this guide?

In the fall of 2004, Environmental Studies Research Fund (ESRF) managers accepted a proposal from Kavik-AXYS Inc. (Kavik) and FMA Heritage Resources Consultants Inc. (FMA) to develop a guide "for the collection, integration, use and assessment of traditional knowledge" in project-specific impact assessments (Solicitation No. ESRF-04-048). The guide was developed in two phases/volumes:

1. Phase 1 – Volume 1 of the guide, which includes research and evaluation of related literature, and
2. Phase 2 – Volume 2 of the guide (this volume), which presents information on 'how-to' collect and use traditional knowledge for impact assessments.

The ESRF program "sponsors environmental and social research to assist oil and natural gas exploration companies in making wise decisions about development on frontier lands. Frontier land includes those areas where the resources are located in offshore areas off the East and West coasts and all lands north of the 60th parallel" (ESRF website 2005). The main focus of research for this guide was therefore on Canada's north, namely the Northwest Territories and the Yukon. During early scoping meetings with ESRF managers, it was determined that particular attention should be paid to examples and context relevant to the Inuvialuit Settlement Region.

The guide is meant to provide a management document for consultants, proponents, and responsible authorities (RAs) focused on understanding and considering cultural differences in the conduct and analysis of impact assessment. It may also provide guidance to people conducting traditional knowledge studies, be they community members or outside consultants (traditional knowledge facilitators). It is written from perspective and experience of traditional knowledge facilitators, but may also be useful to Inuvialuit communities conducting or managing their own traditional knowledge studies for impact assessments.

1.1 Benefits

What are the benefits of collecting and using traditional knowledge in impact assessments?

Some of the potential benefits that traditional knowledge has for enhancing the impact assessment process include:

- more accurate descriptions of the environmental and socio-economic settings
- contribution to project design and final project definition
- improved confidence in environmental and socio-economic effects analyses
- better mitigation strategies and follow up programs
- improved decision-making at all phases of a proposed project
- improved ability to meet regulatory requirements and avoid costly delays in project planning

For these benefits to be realized, "all parties need to know in practical terms what traditional knowledge is, what information it provides, how this information can be documented and brought into the environmental assessment process, and how it should be expected to affect both the process and the outcome....there is an overriding requirement for common rules and protocols, transparency of procedure, and clarity of outcome for all parties" (Usher 2000: 184-185). This document suggests some concrete ways that progress can be made in improving the collection and use of traditional knowledge in the assessment process.

1.2 Working Concepts

What concepts are helpful in using traditional knowledge for impact assessments?

A full discussion of the terms and concepts used in the guide is provided in Section 2.3: Working Concepts of Volume 1. A summary of the three most commonly used terms is provided here for convenience.

The term 'traditional knowledge' is used here to refer to two of the most important types of information that can be provided by Aboriginal peoples and used in impact assessments. The first type of information, traditional land use[1] information, is collected to build a picture of Aboriginal patterns of use (from current time to approximately 50 years ago; archaeological and heritage resource studies normally deal with traditional use patterns prior to this time), and to discover how a proposed project may affect that use. This information is needed to assess the potential effects of a proposed project on traditional use (traditional land use impact assessment).

The second type of information, traditional environmental knowledge, refers to knowledge about the environment that is held by local Aboriginal peoples.[2] This knowledge could be generally considered as knowledge about resource management. It can include knowledge of animal movements and population trends, location of permafrost, changes in water and air quality, berry patches, and the reaction of animal species to different disturbances, to name just a few examples. In the context of impact assessments, it may also include information about changes to community wellness, climate and health; the location and importance of heritage resource sites; and resource use. This knowledge, in addition to contributing to the assessment of effects to traditional land use, can be used in conjunction with Western science to improve the scientific and socio-economic assessments. (Please see Section 3.2: Information Needs for a more detailed discussion of the types of traditional environmental knowledge that may be collected and used by different impact assessment components.)

[1] Traditional *land* use also refers to activities that may not be land-based, as in the case of the Inuvialuit beluga harvest.
[2] The terms traditional environmental knowledge and traditional knowledge are often used interchangeably in the literature. They have different meanings in this guide. Traditional knowledge is a very broad concept comparable to 'Western knowledge'. Traditional environmental knowledge and traditional land use information are just two of many possible types of knowledge that come under its umbrella.

1.3 Organization and Use of the Guide

How is the guide organized and how do I use it?

The traditional knowledge guide is presented in two volumes. Volume 1 (Phase I work) is comprised of a literature review and evaluation. It is 'academic' and represents the research portion of the guide. This volume, Volume 2 (Phase II), is the 'how to' part of the guide.

Volume 1 contains the following information:

- Objectives, scope of work, and how the guide is organized (Section 1)
- Methodology used in the literature review, and working concepts, terms and definitions to be used in the guide (Section 2)
- Review and evaluation of current legislation and policy, traditional knowledge guidelines and impact assessments using traditional knowledge (Section 3)
- Recommendations and comments on the general direction of traditional knowledge studies (Section 4)
- An annotated bibliography of the following (Appendix A):
    - relevant legislation, policy, policy guidelines and legal decisions
    - current impact assessment studies where traditional knowledge has been used, focusing on the Canadian north
    - existing traditional knowledge guides, guidelines and general literature pertinent to the study

The current volume is organized into the following sections:

- Summary information on project background and scope, benefits of using traditional knowledge, guide structure and working concepts (Section 1).
- Information on how to approach a traditional knowledge study, including protocols, working with communities and participants and different research approaches (Section 2).
- Discussion regarding the collection of traditional knowledge, such community engagement, and information scoping, sharing and needs for impact assessment work (Section 3).
- Approaches to using and applying traditional knowledge information at each stage of the impact assessment process (Section 4).
- Suggestions for presentation and creation of traditional knowledge reports (Section 5).
- Concluding statements regarding some of the major issues facing the collection and use of traditional knowledge (Section 6).
- References used in Volume 2 (Section 7).
- Appendices containing sample consent forms, and interview topic checklists.

To make this volume more interactive and easier to use, some 'user-friendly' features have been added. In addition to section titles, key questions are included at the beginning of each section to help the reader understand the main questions that are addressed in each section. In addition, text boxes are used throughout the guide to summarize key points. These are referred to as 'box keys', and are listed in the table of contents. Real-life examples, where available, have been provided throughout Section 4: Applying Traditional Knowledge to provide additional direction on how traditional knowledge may be used.

2 Research Philosophy

What are some of the things that I need to consider before collecting traditional knowledge?

This section provides information on things that need to be considered and set up prior to doing a traditional knowledge study with Inuvialuit communities.

2.1 Fundamental Research Principles

What are some of the guiding principles of traditional knowledge research?

Application of the following principles – to both research and consultation – is regarded as fundamental to the successful collection and use of traditional knowledge:

- Consultation and traditional knowledge protocols are required
- Inuvialuit people own and control their traditional knowledge
- Respect for the body of knowledge contained within traditional knowledge
- Inuvialuit groups and participants required informed consent to participate in traditional knowledge research
- The Inuvialuit should be actively and meaningfully consulted at all stages of the impact assessment for a proposed project whenever possible
- The Inuvialuit must be active participants in the design and conduct of a traditional knowledge study
- Respect for traditional channels of authority, and level(s) of approval that may be required by Inuvialuit group(s)

Box Key A: Research Principles

1. Establish protocols
2. Traditional knowledge ownership
3. Respect for traditional knowledge
4. Informed consent
5. Active and meaningful consultation
6. Flexible study design
7. Several levels of consent
8. Community selection of participants
9. Respectful and professional conduct
10. Facilitators only

- Community selection of traditional knowledge participants
- Researchers shall work with Inuvialuit groups and/or traditional knowledge participants to establish a traditional knowledge program that reflects their perspectives, needs, capacity and schedule
- The conduct of researchers and others working with the Inuvialuit must be professionally responsible and culturally respectful at all times
- Traditional knowledge researchers act as facilitators only, and cannot in any way speak for an Invuvialuit group or traditional knowledge holders

2.2 Collection Protocols

What are traditional knowledge protocols and why are they important?

Traditional knowledge protocols outline the agreed practices, standards, schedule and means of carrying out a traditional knowledge study. It is strongly recommended that proponents establish an understanding with community representatives and participants before trying to collect traditional knowledge.

For small projects, this may take the form of an initial meeting with the community to discuss the proposed traditional knowledge study. For larger projects, or where the proponent is conducting extensive consultations with an Inuvialuit group, traditional knowledge collection protocols may have to be discussed and drafted into a formal document. Either way, protocols for the collection, use and protection of traditional knowledge need to be discussed and agreed upon before proceeding with a traditional knowledge study in an Inuvialuit community.

Protocols for the collection of traditional knowledge help both the community and the proponent understand each other's goals and expectations with regard to traditional knowledge research. Some of the things that may be included in traditional knowledge protocols are listed in Box Key B.

The protocols required for traditional knowledge collection are different from consultation protocols that may be provided by an Inuvialuit community, although they may have elements in common. Consultation protocols describe how a proponent should proceed in its discussions with a community; traditional knowledge protocols will likely be more detailed and specific to the proposed project and work.

Box Key B: Traditional Knowledge Collection Protocols

1. Study goals, schedule, and timelines
2. Sharing and use of information collected
3. Confidentiality issues (if applicable)
4. Required data verification, follow up procedures and anticipated issues
5. Acceptable amount and method of payment to Elders and community workers (e.g. payment for time, honoraria, gifts) (Payment schedules should be consistent with those used by local institutes and cultural resource centers.)
6. Recognition of contributions to the study made by interviewees and community workers
7. Role and function of Community Advisory Committee (if applicable)
8. Interview protocols
9. Engagement of community workers
10. Contribution to documentation of cultural history and traditions
11. Investment in the storage and collection of information gathered
12. Gifting protocols
13. Assist in the promotion of traditional knowledge and traditional knowledge research priorities at the community or regional level
14. Sharing of study findings (e.g., local media, open houses, meetings)

2.3 Determining Stakeholders

How do I determine which Inuvialuit communities should be involved in the traditional knowledge study for my impact assessment?

During project planning and before the collection of traditional knowledge can begin the potential Inuvialuit groups that may have historical and traditional interest in the area must be determined. Who should be consulted and how is usually determined by the proponent and their public consultation team, although they may receive some guidance from responsible authorities (RAs), and Inuvialuit organizations. Traditional knowledge discipline lead(s) may also provide insight because of their knowledge of historic and traditional use patterns. Geographic areas currently used by a particular Inuvialuit group

may not reflect historical patterns of use. Traditional territories often overlap, so some work must be done to determine the Inuvialuit communities that have an interest in the proposed project area, or who may be affected by the project.

2.4 Study Format

What determines the size and type of traditional knowledge study I need to undertake?

The type of traditional knowledge study to be undertaken depends on the type and scale of project being proposed. The type of project influences the aerial extent of potential project effects, the proponent's commitment to undertaking a traditional knowledge study, and agreement by the Inuvialuit community to participate in the work. For example, the development of a well site in which effects may be limited to a small geographic area, consultation with community members and Elders may suffice to identify potential effects. On the other hand, an oil sands project, because of the potential to affect a large number of environmental, social and health factors over a large area (e.g., air emissions), would require a larger field-based program in which impacts are studied in depth. In many instances, a generic effects assessment in which either focus group interviews or one-on-one interviews are conducted, along with site visits, will be sufficient to identify community concerns and enable effects assessment. It is important when presenting the project to the community that the project description be as complete as possible and presented in a format (e.g., plain language) that is readily understood by all community members in order that they can advise on the size and type of traditional knowledge study needed to be undertaken.

What role will the community play in how the traditional knowledge study is carried out?

In addition to the things mentioned above, community goals and capacity will also factor into the format of the traditional knowledge study. The way a traditional knowledge study is conducted can range from community-based research to a more consultant-based model. Some Inuvialuit groups may choose to conduct their own traditional knowledge study. Others may recommend that the traditional knowledge study be carried out by qualified consultants, with some degree of guidance from them. For most projects conducted north of 60, it is best to assume that a more community-based model of research will be required. In the Inuvialuit Settlement Region (ISR), for example, proponents will be asked to hire community members to be involved in the traditional knowledge study. This may take the form of hiring community members to conduct traditional knowledge

Box Key C: Before You Start

1. Determine proponent commitments
2. Determine stakeholders
3. Establish protocols
4. Determine study type:
   - Community-based or consultant-based?
   - Traditional environmental information required?
   - Generic effects assessment (i.e., traditional land use type interviews only)
5. Determine community requirements/needs
6. Determine community timing considerations
7. Determine who will be involved in the collection of traditional knowledge information:
   - Consultants:
     - Public consultation
     - Disciplines
     - Traditional knowledge facilitator(s)
   - Community members:
     - Traditional knowledge facilitator(s)
     - Interpreters, translators, transcribers
     - Elders, traditional scientists
   - Combined effort of community workers and consultants
   - Proponent representatives
8. Determine how and with who follow up and data verification will be conducted

interviews, but a more participatory approach is recommended. For the Devon Canada Corporation's Beaufort Sea Exploration Drilling Program Application, for example, local Inuvialuit were hired, provided with training on conducting interviews and the use of traditional knowledge in impact assessments, and were involved in all aspects of the traditional knowledge assessment (Kavik 2004).

The development of traditional knowledge collection protocols will involve some discussion of the proposed project, and of the size and format of the traditional knowledge study. These discussions are usually held between the project proponent and the appropriate community bodies from the Inuvialuit community. Beyond these discussions, an initial meeting between traditional knowledge facilitators and community workers (i.e., people from the Inuvialuit community who are hired to work on the study, in whatever capacity), representatives and/or participants (i.e., traditional knowledge holders) is required to further scope and define the nature of the work to be carried out before proceeding with the traditional knowledge study.

Who are traditional knowledge facilitators and what role can they play?

In cases where the Inuvialuit community cannot or does not wish to carry out the traditional knowledge study required for the impact assessment independently, outside consultants may be hired to manage and/or complete the work. These people are termed 'traditional knowledge facilitators'. Unlike some of the community workers who may be hired to work on the traditional knowledge study, they do not hold traditional knowledge. They must work with participants and/or community workers to collect and present traditional knowledge in an appropriate and accurate fashion, thus facilitating its use in the impact assessment.

Box Key D: Traditional Knowledge Facilitators

External researchers who undertake traditional knowledge studies with an Aboriginal community are facilitators. They do not 'own' the information they are collecting. Facilitators:

1. Lead interviews and the collection of traditional knowledge
2. Ensure traditional knowledge is treated in accordance with agreed upon protocols.
3. Present traditional knowledge in a way that is accurate and appropriate to its context, meaning and value.
4. Work with traditional knowledge participants to ensure accuracy.

The skills for collecting traditional land use information and traditional environmental information are complementary, but somewhat different. They both require a facility for interpersonal relationships and cross-cultural understanding. Traditional knowledge facilitators must not only be able to conduct effective interviews and build trust with co-workers and participants, but must also be able to understand impact assessment science, methodologies and process. Traditional knowledge facilitators must therefore have an appreciation of the cultural *and* ecological context of the proposed project.

Traditional knowledge facilitators must also be prepared to help other team members understand the cultural and political sensitivities of their work. Less experienced team members must be able to approach discipline leads with issues, and inform managers and the proponent of any potential problems that are encountered. Discipline leads should also consider other managers or specialists who have worked in similar arenas as sources of support and guidance when addressing difficult or sensitive issues.

2.5 Traditional Knowledge and Western Science

What are some of the differences between traditional knowledge and western science?

Comparing traditional knowledge to western science is like comparing 'apples and oranges' (Berkes et al. 2000). A more appropriate comparison would perhaps be western *knowledge* and traditional knowledge. However, the collection and use of traditional knowledge in an impact assessment context means that emphasis is placed on the scientific aspects of western knowledge and, as explained elsewhere, the traditional environmental knowledge and traditional land use aspects of traditional knowledge. It is helpful is to try and understand how the differences between western and traditional knowledge, and the cultures that they flow from, lead to different social structures and resource management tactics as impact assessments and Inuvialuit concerns with respect to the environment are both ultimately about resource management (Table 1).

Table 1 Traditional Knowledge and Western Science

Traditional Knowledge	Western Science
Knowledge and Learning	
"Supremely concrete"[1]	"Supremely abstract"
Subjective; does not exclude cultural values and perspectives	'Objective'; tries to exclude culture and values
Apprentice-based learning	'Book' learning
Oral	Written
Long-term, local	Short-term, regional
Social Organization	
Communal	Individualistic, independent
Sharing, reciprocity, respect, humility	Trade, dominance, power, control
Cultural survival and identity	Technological improvements
Barter, non-market economies	Market economies
Resource Management	
Stewardship	Ownership
Precautionary, preventative	Risk management (mitigate and compensate)
Conservationist	Monitoring
Ecosystem-based	Population-based
Integrative	Hierarchical
Ability to absorb future events	Precision of future predictions
SOURCES: Berkes et al. 2000, Emery 1997, Oakes and Riewe 1996	
NOTE: 1) Levi-Strauss quoted in Berkes et al. 2000.	

Traditional knowledge is different from western science, not only in its content, but also in the way that it is gained. The main difference is the inseparability of culture and the environment in traditional knowledge. In modern resource management, these differences are starting to be mediated by approaches that stress the precautionary principle, or that adopt adaptive, integrative or co-management strategies. In the context of impact assessments, this implies a shift from the consideration or prediction of impacts to an examination of the "*kind* of assessment and management research that can be undertaken" (Author's emphasis, Berkes 1998: 201).

In the context of impact assessments, traditional knowledge and western science frequently overlaps and complements each other through things like improved scoping, the identification of valued assessment components and indicators, and the assessment of potential impacts. The involvement of the Inuvialuit is also called for as the results of the assessment are communicated back to the community.

Because traditional knowledge represents accumulated knowledge about the environment and its relationship to human occupancy, collection and use of this knowledge in impact assessment processes can provide information reflecting different cultural origins and the historical time depth of observation and interaction of these cultures with the environment, which can add great value to an impact assessment. These observations can sometimes differ from 'western science' because they are rooted in the past and reflect cultural and social adaptation to environment through time.

3 Collecting Traditional Knowledge

How do I collect traditional knowledge?

> "Scientists think they are always right just because they have their information in writing. Well, they are not always right.... The Inuvialuit have all kinds of valuable information about the environment...it is not all written down. This has to come together somewhere. Maybe you should talk to us more." (Billy Day quoted in Kavik-AXYS 2002.)

Unlike the collection of environmental data by western science, the collection of traditional knowledge relies on people. For the most part, the cultural values and mores of traditional knowledge participants differ from those of western society. Respect for elders and their knowledge, respect for the land and all its occupants, and established protocols for contacting, acquiring, and acknowledging traditional knowledge are of utmost importance to Inuvialuit groups.

This section discusses the major elements involved in collecting traditional knowledge including how to:

- Engage community workers and traditional knowledge participants
- Define the types of traditional knowledge information required for the application
- Ensure that confidentiality and intellectual property issues are addressed
- Factor traditional knowledge collection into application schedules and timelines
- Complete baseline research for the traditional knowledge study

3.1 Community Engagement

How do I approach the community?

The first step in approaching an Inuvialuit community is usually when the proponent forms its public consultation team. Public consultation personnel will normally have established relationships in the community, and experience with the impact assessment process. This type of background is valuable in establishing initial contact with the community to share information about the proposed project. The public consultation team can normally guide the proponent on how to proceed with discussions with the community, which normally involves a series of meetings between the proponent and a community's political representatives.

How do I employ community members for a traditional knowledge study?

Community members can become involved in a traditional knowledge study in a number of ways. They may be hired as community liaisons, coordinators, interviewers, report writers, interpreters (spoken word), translators (written word) and/or transcribers.

3.1.1 Community Workers

It is important that all workers – including outside facilitators – be technically competent. It is equally, if not more, important that they be enthusiastic and motivated. Some basic

skills recommended for community workers are: "a high level of curiosity and analytical capacity; an understanding of their own culture and how research among their own people should be conducted; a good traditional education; and confidence and respect" of community members (Grenier 1998: 32-33). Community workers should also have a keen interest in, and deep respect, for their own culture and traditions, as well as some understanding of the potential benefits that traditional knowledge research can provide.

How do I hire community workers?

The first step in engaging community workers is the identification of interested and/or qualified parties. Local cultural and social institutes and Elders' Committees are knowledgeable about who in the community has relevant experience, and who may be available to assist in the traditional knowledge study. Community employment offices may also assist in the hiring of community workers. These organizations can also be consulted about how to make best use of local media to advertise for these positions. Further, local individuals will also have information about acceptable employment terms and fees for local workers.

Once community workers have been hired, it is very important to spend time educating them about the proposed project, and explaining work objectives. The context and need for the study should also be clearly outlined. Some of the key questions that need to be addressed with community workers are listed in Key Box E.

As with traditional knowledge participants, it is important to ensure that local workers feel they are contributing in a meaningful way, and that their work is appreciated and acknowledged.

Box Key E: Community Worker Questions

1. What are the regulatory requirements for the proposed study?
2. What kind of information is needed?
3. How is the information going to be used and shared?
4. How will their work be acknowledged?
5. What is the study methodology?
6. How will their work be acknowledged?
7. What protocols or research standards have been agreed to?
8. What tools or equipment will be used (e.g., tape recorders, cameras, maps, GPS units, all-terrain vehicles)?

Will community workers require training?

Community workers may require some training to effectively participate in a traditional knowledge study. They will need to know how to effectively conduct traditional knowledge interviews, and how to use interview equipment. Basic training in working with maps, tape recorders, cameras and hand-held global positioning system (GPS) units can be provided in on-the-job training sessions with traditional knowledge facilitators. Training in basic interviewing techniques and/or in conducting oral history research may be obtained from local cultural institutes. Such organizations should be consulted as to their ability or willingness to provide such training. The Prince of Wales Northern Heritage Centre Oral Traditions Manual (Hart 1995) is a valuable reference tool and can be obtained online (http://www.pwnhc.ca/research/otm/otm.htm). This guide can be used as a primer in conjunction with on-the-job training sessions and/or training workshops for community workers.

The Prince of Wales Manual suggests the following minimum standard for interpreters and translators working in the Northwest Territories: Grade 10 reading and writing (English), some experience in interpreting and translating, graduation from the interpreter/translator program at Arctic College, the ability to write the Inuvialuit languages correctly with standardized orthographies or syllabics (Government of

Northwest Territories standards), and to speak and write both languages. In the ISR, the skills required for interpreters and translators are even more specialized because they must be able to read and/or write in the appropriate local dialect of Inuvialuktun.

3.1.2 Traditional Knowledge Participants

What do I need to know to work with traditional knowledge participants?

Proper honour and respect must be paid to traditional knowledge participants, many of whom will be elders. Elders are leaders and venerated guidance counselors in their communities. Experienced hunters and trappers and other community members may also be interviewed. Some of these people may not have extensive 'book' learning, but may be just as smart as, or more, than university graduates or corporate leaders. Traditional knowledge collection protocols may provide some information on how to work with elders and other participants, but in the absence of any specific guidelines, a good approach is to always treat the person being interviewed as though they are very learned person from whom you are about to gain much valuable information. Additional information on conducting participant interviews is presented in the Section 3.5: Baseline Work.

The community itself is best suited to select the most appropriate people for providing the required traditional knowledge information, and the number of individuals that are either suitable and/or available for interviews. The main focus of traditional knowledge collection will be community elders, who have a long history of living off the land and who represent the main repositories of traditional knowledge. It should be remembered that when asking elders or other community members questions, that different languages may have different meanings or interpretations for the same words. For increased understanding when asking questions, especially of elders, use Inuvialuit words and a translator when practical. Experienced and active hunters and trappers or outfitters will also have much valuable information about current and more recent trends. In the ISR, community youth may also be involved in the traditional knowledge study. Both male and female participants should be included to ensure that gender-specific is captured.

While it is assumed that traditional knowledge participants will be selected by the community, a request should be made to specifically include elders who have a good knowledge of community oral traditions and history, a history of living on the land, and who represent both sexes. For small-scale projects, with few or no regional effects, participants who are familiar with the project area are preferred.

Traditional knowledge participants should be paid for their services. The rates of pay need to be consistent and equal for interviewees. The one exception to this is youth, who may receive a lower rate of pay. Rates of pay should be established with the community when developing your study protocols.

3.2 Information Needs

What types of traditional knowledge do I need to collect?

This section describes how to decide exactly what kinds of traditional knowledge information are needed for impact assessment. As mentioned previously, there is a call for two basic different types of traditional knowledge information: 1) traditional land use information and, 2) traditional environmental knowledge. The nature and scope of

traditional land use information required will be fairly standard from project to project. Traditional environmental knowledge requirements will be determined by the nature and scope of the project and environmental components being assessed.

3.2.1 Traditional Land Use Information

What types of traditional land use information do I need to collect?

Traditional land use information is collected to provide an understanding of the potential impacts of a proposed project on traditional use. Although the specific scope and nature of the traditional knowledge study to be undertaken has to be determined in consultation with community members, the collection of traditional land use information usually contains basic components relevant to understanding the context of traditional use (history, geographical area), community use patterns, philosophy of landscape use and the resources used, and potential interactions with the proposed development and the impact assessment. The broad types of traditional land use information required generally include:

Box Key F: Traditional Land Use Information Needs

1. Historical context
2. Definition of traditional territory
3. Community sub-group territorial use
4. Summary of philosophy of resource use
5. Inventory of prime resources/area
6. Inventory of primary human habitation areas
7. Traditional Knowledge (see section on traditional environmental knowledge)
8. List of issues and concerns
9. Mitigation and monitoring recommendations

- Extent of territory occupied/used
- Context for current traditional land use practices
- Inuvialuit philosophy regarding their relationship with the environment
- Maps of traditional land use activities and site locations.
- Official or local names to identify locations on map. Care should be taken with place names as some local names may be used multiple times for different locations (e.g., Fish Lake).
- Inuvialuit perspectives on potential impacts (issues) from both previous developments and the proposed project
- Mitigation strategies and monitoring programs recommendations relative to proposed project

More detailed traditional land use information regarding traditionally used areas and species is also needed, including:

- Family and group foci for traditional activities
- Special use sites (e.g., fish camps, berry picking camps, medicinal plant collecting areas)
- Special women's areas (e.g., puberty retreats, spiritual renewal camps)
- Burial sites
- Sacred/spiritual sites/geography
- Significant traditional landmarks
- Trail systems

- Cabins, campsites
- Registered trap lines
- Occupation/meeting/gathering places
- Relationship (ties) to the land (spiritual, individual)
- Legends, stories, traditional lore
- Archaeological sites
- Resource species used and their uses
- Relative importance of species
- Harvest methods and numbers harvested
- Community use and distribution of species and harvest
- Water resources

3.2.2 Traditional Environmental Knowledge Information

What kinds of traditional environmental knowledge do I need to collect?

The types of traditional environmental knowledge information to be collected for the impact assessment will depend on several factors: Inuvialuit agreement to participate in the traditional knowledge study, the availability of previously completed traditional knowledge studies, the scope of the current impact assessment, and the needs and objectives of the Inuvialuit communities, proponent and impact assessment components. In the formal collection of traditional environmental knowledge, traditional knowledge facilitators will discuss information needs with other impact assessment scientists to create a list of topics to be covered during participant interviews. Once participant interviews are complete, there is a need for further discussions to explore how the information gathered can be applied in the effects assessments. (Traditional environmental knowledge may also be 'informally' collected from Inuvialuit assistants by assessment scientists during field studies. This aspect of traditional knowledge collection is discussed in greater detail in Section 3.3: Information Sharing).

Box Key G: Traditional Environmental Knowledge Information Needs

1. Environmental component needs:
   - Soils
   - Air
   - Water
   - Vegetation
   - Fisheries
   - Wildlife
   - Heritage resources
   - Noise
   - Resource use
   - Socio-economics
   - Human health
2. Long-term trends
3. Overall environmental health
4. Cumulative effects
5. Issues and concerns regarding potential project effects on environmental components and/or animal species
6. Mitigation and monitoring recommendations

Some suggested types of information that

may be useful for the analysis of the various impact assessment components are listed below. Note that this is not a comprehensive list, and is intended as to serve as a guide only. Types of traditional environmental knowledge information that may be applicable include things such as:

- Soil conditions and terrain – location of permafrost, changes in permafrost conditions, trends in moisture conditions, changes in drainage patterns, flood patterns, and terrain stability
- Air quality – climatic conditions (variability, change), such as, precipitation conditions, wind conditions, micro-climate temperatures, seasonality of climate, and changes in air quality
- Hydrology and hydrogeology - stream conditions, watershed effects, water temperatures, water quality (potable, colour, odour), seasonal flow levels, unusual flow levels, locations of or changes in underground aquifers, locations, changes and, seasonal ice conditions
- Vegetation - abundance, diversity, health, animal forage, food collection, seasonal and timing issues, and traditional use (medicinal, ceremonial, construction (e.g., bark))
- Fisheries - abundance, diversity, habitat, health, spawning grounds, seasonal or timing issues, or disturbance leading to avoidance behaviour
- Wildlife - abundance, diversity, habitat, health, nesting or denning areas, bird staging areas or flyways, seasonal or timing issues, disturbance leading to avoidance, important movements and migration corridors and changes to these, location of important sites (e.g., salt licks, grouse leks, calving grounds), and predator-prey relationships (i.e., movements, cycles)
- Heritage resources – traditional camp sites, cabins and cabin sites, burial sites, spiritually significant sites, other historical or spiritual locations
- Noise – trends in noise levels, seasonal variations, location of important wildlife habitat, disturbance leading to avoidance, location of cabins or other traditionally used sites
- Resource use – hunting, trapping, plant collection, fishing areas, trends, species, timing
- Socio-economic – community or family relationship concerns, cultural retention and transmission concerns
- Human health – perceived risks or recent changes in human health, preferred traditional foods, general idea of how much of diet is comprised of traditional foods (Note: Dietary studies are very different from traditional knowledge studies per se.), and quality or trends in traditional foods

More generic information relevant to the impact assessment process may be obtained by discussing the following issues with traditional knowledge participants:

- Overall environmental degradation, cumulative effects, long-term ecosystem effects and trends
- Concerns about the impact of the proposed development, and its potential impact on the environment and the community

- Mitigation recommendations to minimize impacts
- Suggestions for monitoring

3.2.3 Information Needs Communication

How do I address information needs for traditional knowledge?

Traditional knowledge facilitators need to be involved in impact assessment scoping meetings so that the information needs of other components can be discussed and explored. Discipline leads need to be informed of the level of detail and kind of traditional knowledge information that they can expect to gain through the traditional knowledge study for the impact assessment. To prepare for the collection of traditional knowledge, the following question needs to be asked of impact assessment discipline leads: what type(s) of traditional knowledge would be useful to you for your baseline and analysis? Traditional knowledge facilitators may also be able to offer insight and suggestions as to where traditional knowledge can provide additional information for the scientific analyses.

This step requires active and ongoing communication between the assessment discipline leads and the traditional knowledge facilitator(s). To use the fisheries assessment as an example, traditional knowledge facilitators would discuss fisheries information needs with the fisheries scientists prior to carrying out interviews with traditional knowledge participants. Information required would be added to the topic checklist for the traditional knowledge interviews. Traditional environmental knowledge would be recorded (along with traditional land use information) and provided back to the fisheries scientists. Conversations and comments from the interviews would be recorded verbatim, with notes added by the traditional knowledge facilitator for clarification as required. (The interpretation of interview transcripts can sometimes be difficult as the spoken language used in conversations is informal and missing the context of 'being there'.)

It is expected that there would be further communication and discussion between the fisheries scientists and the traditional knowledge facilitators should further information or clarification be required. This sometimes requires follow up communication with one or several participants, especially if there is a need to gain a better understanding of what a particular piece of traditional knowledge might mean. Accepted communication protocols should be followed to gather any additional information from traditional knowledge participants. In some cases, direct dialogue between scientists and traditional knowledge participants may be warranted. The collection of traditional environmental knowledge in the context of an impact assessment cannot be considered a detailed or exhaustive traditional environmental knowledge study, any more than traditional land use information collected in the same context can be considered a traditional land use study. Both are limited by project and assessment scope. Traditional knowledge facilitators may be able to work in conjunction with impact assessment scientists and traditional knowledge participants to involve traditional scientists in field surveys, or in focused traditional environmental knowledge discussions.

Table 2 provides of overview of where and when in the impact assessment process the traditional knowledge facilitator needs to communicate with other discipline leads. The table also identifies other groups with whom the traditional knowledge facilitators should be speaking. The public consultation team may have information that would assist in the design of the traditional knowledge study, or that would help prepare the traditional knowledge team for work in the community. Discussion between the proponent and the

traditional knowledge team may happen at any stage of the process, but is especially important at the planning and scoping stages, and again at the mitigation, significance and follow up stages, where the proponent may make commitments to address stakeholder concerns. Traditional knowledge facilitators will likely also interact with the impact assessment methodology team, particularly at the beginning of the impact assessment work. The proponent may choose to communicate with the Inuvialuit group and/or participants at any or all stages of the process.

Table 2 Information Needs Communication Matrix

	Discipline Leads	Public Consultation Team	Impact Assessment Methodology Team	Proponent	Inuvialuit Group and/or Participants
Planning/Preparation					
Scoping					
Analysis					
Mitigation					
Significance					
Follow Up					
Regulatory					

LEGEND:
White boxes indicate where communication is optional or unnecessary.
Boxes with horizontal lines indicate where communication is recommended.
Dark gray boxes indicate areas where communication is highly recommended.

Traditional knowledge facilitators must also be prepared to help other team members understand the cultural and political sensitivities of their work. Less experienced team members must be able to approach discipline leads with issues, and inform managers and the proponent of any potential problems that are encountered. Discipline leads should also consider other managers or specialists who have worked in similar arenas as sources of support and guidance when addressing difficult or sensitive issues.

What role will the community play in defining information needs?

The information needs from the community perspective will be generally identified during the initial scoping meeting held with the community, and by any previously published work that has noted community concerns. The documentation and analysis of community concerns, provides direction for general interview topics and effects assessment. More specific information needs should be with the Inuvialuit community and participants as the traditional knowledge study progresses.

The traditional knowledge study may also be able to contribute to community objectives in the following ways:

- Documentation of Inuvialuit cultural or community history
- Contribute to the storage and collection of community traditional knowledge
- Contribute to training and capacity-building in community
- Improve the understanding of impact assessment and project details through the sharing study activities and findings

- Assisting in the promotion of traditional knowledge and traditional knowledge research priorities at the community or regional level (e.g., educational programs or curriculum development; contributions to archival collections, or the Prince of Wales Northern Heritage Centre's geographic place names database).

3.3 Information Sharing

What things do I need to consider with respect to information sharing?

Traditional knowledge collection protocols can greatly facilitate the gathering and sharing of traditional knowledge information for assessment purposes (see also Section 2.2: Collection Protocols). It is important and necessary that communities provide input on how information from a traditional knowledge study is shared. How a community wants information shared may be specific to a given project and may not apply to all studies. A community may choose to withhold access to traditional information, or may want to use the information collected to achieve other goals (e.g., land claims). Some Inuvialuit groups may choose to independently present their traditional knowledge at hearings (see also Section 4.3.3: Hearings).

Some traditional knowledge information may be obtained outside the formal process of traditional knowledge interviews (e.g., from Inuvialuit assistants during field surveys, from Inuvialuit stakeholders during project meetings and/or public consultation). Traditional knowledge gathered outside the formal traditional knowledge process is not subject to the same research principles and standards that are applied to the formal conduct of traditional knowledge research (e.g., informed consent, protection of intellectual property, cross-cultural facilitation skills, interview information verification) and should be shared with traditional knowledge facilitator(s). It may provide additional direction for the scoping and/or analysis of impacts to traditional land use. This step also helps ensure that *all* of the traditional knowledge gathered throughout the impact assessment work is captured and recorded, and passed on to the relevant assessment disciplines.

3.3.1 Informed Consent

How do I ensure that I have informed consent?

One of the primary responsibilities of traditional knowledge facilitators is to ensure that they have the informed consent of participants. During the first meeting with participants, researchers need to spend time explaining the purpose and goals of the traditional knowledge study, as well as nature of the proposed project. The more educated participants are about the impact assessment and the use of their traditional knowledge, the better participants will be able respond to the needs of the study. The types of information that need to be discussed to obtain informed consent are listed in Box Key H.

Documentation for traditional knowledge interviews should therefore contain a record of informed consent. This may be in the form of verbal consent recorded either on tape, or on consent form. (A sample consent form is provided in Appendix A.) It should be noted that the distribution and publication of personal photographs are legally protected, so express permission must be obtained from participants if their photographs are to be used for any publications associated with the impact assessment. At a minimum, interview documentation should include the following:

- Name, affiliation, date of birth, gender and address of participant
- Family relationship to other interviewees (if applicable)
- Length of residence on the land
- History of residence in the area.
- What seasons are spent in the area?
- How is the area used (i.e., hunting, berry picking etc.)?
- Last time in the area.
- Signed consent form

Box Key H: Obtaining Informed Consent

1. Provide enough information about the proposed project so that participants are able to form an opinion about potential impacts.
2. Explain why traditional knowledge is being collected.
3. Explain and commit to how and where their traditional knowledge will be used, and where and how original interview materials will be archived.
4. Discuss the purpose and process of the impact assessment that traditional knowledge is being collected for.
5. Note that you understand that they have the right to:
   - Not participate
   - Set conditions of use for their traditional knowledge
   - Protect their intellectual property rights
   - Assert confidentiality over certain aspects of traditional knowledge
6. Note the obligations of researchers and proponent (e.g., respect traditional knowledge collection protocols, instructions for confidentiality)
7. Explain how and when payment would be made for their participation.
8. Describe the consultation process.
9. Provide information on who can be contacted if they have additional questions or concerns.
10. Explain how they will be given credit for their contribution.
11. Describe the proposed follow up and data verification process.
12. Repeat what has been agreed too to ensure both parties understand correctly.
13. Use a consent form when possible.

The informed consent from traditional knowledge participants is just one of several levels of consent that may have to be obtained before traditional knowledge is actually collected (Menzies 2001). Other levels of consent (e.g., political, community organization level) may or may not involve the traditional knowledge team, as they may be obtained through proponent negotiations or public consultation discussions. The different levels of consent and that that are required before traditional knowledge can be shared will vary from community to community.

3.3.2 Intellectual Property

How do I ensure that intellectual property rights are protected?

Establishing informed consent and traditional knowledge collection protocols will go a long way towards ensuring that intellectual property rights are protected (see also Section 2.2: Collection Protocols). Traditional knowledge facilitators need to share their research approach and declare their recognition and protection of intellectual property rights with participants. An example of what a commitment to protecting intellectual property rights (from FMA's corporate practices) looks like is provided below:

Inuvialuit traditional knowledge is privileged, confidential information to be controlled and disseminated under the guidance of community Elders and political representatives. FMA recognizes community control of the process, from setting the program agenda, through consultation and trainee selection and program development, and a commitment to community ownership and control of all research products and their use. FMA assumes a strong and continuing reliance on the capability of community adults as trainee researchers, teachers, writers and project advisors, while at the same time recognizing that the community may wish youth to be involved in the traditional knowledge study with Elders. We stress that our role is only to interpret and edit those aspects of information that the Inuvialuit choose to share with developers and the general public. In this context, all information, whether it is in tape and/or transcribed form, is the property of the Inuvialuit community of origin and is returned to the community at the completion of the traditional knowledge program. Copies of these documents are made only at the request of the community, or through agreement with individuals providing the information.

3.4 Schedules and Timing

How do I manage schedules and timing to ensure that traditional knowledge is included in the impact assessment?

The importance of considering the collection of traditional knowledge when developing schedule and timelines for the assessment application cannot be stressed enough. Proponents are bound by factors such as regulatory timeframes, construction windows and economic considerations.

Traditional activities and gatherings often mean that the people who need to be involved in the traditional knowledge study will be unavailable for certain periods of time (e.g., in the ISR, the spring polar bear hunt, the summer beluga hunt, jamborees, arts festivals). Community consultation people and/or community workers can offer a great deal of guidance on these matters. They will be aware of busy periods in the communities and of what activities need to be taken into account when trying to schedule traditional knowledge interviews or meetings. Community workers may suggest scheduling interviews right after a hunt, when the species of interest or area are fresh in people's minds. It should be remembered that communities do not all share the same time for when seasons begin or end. For example, spring time or goose hunting will occur earlier in Inuvik than in Sachs Harbour.

The availability of community workers, and the time required for the transcription and/or translation of interview tapes is another factor that needs to be considered in the timeline for the traditional knowledge study. For example, there are very few translators who are qualified to work in the three Inuvialuktun dialects, and work schedules and deliverables must be organized to accommodate their availability. There are also short-term scheduling considerations such as the time of day an interview is conducted, length of the interview, the location of the interview and other considerations of an individuals needs.

Allowing adequate time for review and feedback from community organizations and participants is also recommended. Community members will ultimately determine what is an 'adequate' timeline, but this can be addressed at the early planning stages through discussions regarding traditional knowledge collection protocols and study methodology. To approach this issue in a respectful manner, present your schedule as a 'draft', with the recognition that community input may dictate that timelines be extended. One of the most

effective ways of alienating community members is by proceeding with your work as if they have to accommodate *your* schedule. If you make an effort to work with community representatives and participants to respect their needs and perspectives on scheduling, they will be far more willing and able to participate.

It is recommended that traditional knowledge baseline research be completed before the scientific field surveys are begun. One of the most common complaints made by Inuvialuit groups with regard to impact assessment work is that the work is already done, and conclusions already reached, before they are even consulted. The collection of traditional knowledge information prior to baseline field studies enables the inclusion of traditional knowledge in the scientific assessments. Traditional knowledge facilitators will be able to provide the other disciplines for information that can assist them in scoping and focusing their work. (See Section 3.5: Baseline Work below and Section 4: Applying Traditional Knowledge for more information.)

3.5 Baseline Work

What does baseline work for traditional knowledge consist of?

After the Inuvialuit stakeholders have been determined, met, and the nature of the study has been selected, traditional knowledge baseline work can begin. Baseline traditional knowledge work involves the review of relevant, existing traditional knowledge information (if available), and interviews and site visits with Inuvialuit participants.

3.5.1 Baseline Research

What types of baseline research do I need to do?

Baseline research consists of a literature review of previous traditional knowledge studies. This familiarizes the traditional knowledge team with existing literature relevant to the specific Inuvialuit group(s) and the geographic area in which the proposed projects is situated, and with the Inuvialuit group itself. It can provide information on potential issues and concerns, cultural lifestyle, and other relevant background information. It also allows for identification of 'data gaps' in previous studies, and identifies ways in which interviews may most usefully be directed. The literature review forms the basis for participant interviews and the effects assessment.

Many groups have already completed some, if not extensive, traditional knowledge work in their communities. This previous work may be available to be used for the traditional knowledge study required for the impact assessment. This work may also include past study questionnaires which may assist in the development of a new questionnaire and avoid duplication or improve questions to be asked. There may be traditional land use studies available for reference, or geographic information systems (GIS) data that can be purchased from the community.

Baseline research may also include obtaining biological information. It is important that project personnel have a basic understanding of the species of interest in the study area. In some cases it may be valuable to contact a local biologist to get more up-to-date and detailed information on specific species for an area.

3.5.2 Participant Interviews

How do I interview traditional knowledge participants?

Perhaps the most important element of conducting interviews with traditional knowledge participants is to be respectful. What does being respectful mean? Ask yourself the following questions to make sure that respect is first and foremost in your mind when working with traditional knowledge participants:

- Did I provide the potential participant with enough pre-interview information so that they could make an 'educated' decision about whether or not they wanted to participate in the traditional knowledge study for the proposed project?
- Did I provide sufficient lead time when setting up interviews?
- Did I allow the participant to select the time and location of the interview? Interviews should be scheduled to fit participant schedules and not the interviewer.
- Was I adequately prepared for the interview so that I could present information and answer questions in a clear and organized fashioned?

Box Key I: Being Respectful

1. Pre-interview
2. Interview time and place
3. Organized presentation of information
4. Do not rush!
5. Never interrupt
6. Non-judgmental attitude
7. Respect participant's privacy and boundaries
8. Allow lots of time for questions
9. Do not overtire participant
10. Be polite
11. Thank participant before leaving

- Did I consider the language (plain language) used in the questions?
- Did I 'rush' or show impatience during any part of the interview?
- Did I interrupt the participant at any point?
- Did I make every effort to put the participant at ease, comfortable?
- Did I maintain a non-judgmental attitude throughout the interview?
- Was I respectful of the participant's privacy and/or desire to share only certain types of information?
- Did I allow adequate opportunity for them to ask questions?
- Did I pay attention to the participant's level of interest and fatigue so as to not overtire them (maximum interview time is normally two hours)?
- Was I polite at all times?
- Did I thank the participant before leaving?

What is most effective interview format for collecting traditional knowledge?

Traditional knowledge interviews may be conducted in a variety of formats and settings. Consideration of participants' needs and wishes should be paramount in determining final format and setting for interviews. Having two facilitators on hand is optimal as this allows one person to focus on directing the questions, and the other to focus on taking accurate notes. If acceptable to participants, tape recorders and/or video cameras may be

used, in addition to note taking. Additional direction on interview format is provided below.

Box Key J: Baseline Information Collection

1. Literature review
   - Historical cultural pattern
   - Existing reports, interviews
   - Previous effects assessments
2. Participant Interviews
   - Documentation - maps, audio or video recording
3. Site Visit
   - Site-specific resource use
   - Site-specific observations
   - Location documentation
4. Reduction of data into 'patterns'
   - Seasonal round
   - Resource harvest foci
   - Camp locations
5. Identification of 'irregularities'
6. Verification

- *Focus group versus individual interviews*. Either or both of these techniques may be used. It is sometimes helpful for people to have others present who share their memories and experiences. However, exclusive use of group interviews is not recommended, as it is often difficult for interviewers to obtain clear and focused information in such settings. Use of a combination of these techniques is best.

- *Interview setting*. Interviews should be conducted in settings that are comfortable and familiar to the participants (i.e., their home). You may wish to set up access to a more formal interview setting (e.g., office) if possible, as some participants may suggest a setting where there are fewer interruptions and/or that is quieter if their home is particularly busy. Field trips and/or site visits with participants are highly recommended (see Section: 3.5.3: Site Visits).

- *Interview structure*. A semi-structured interview with open-ended questions is best suited to traditional knowledge collection. In this type of interview, the interviewer acts as a facilitator, and helps provide focus and direction to the interview. Because it is a less structured interview format, it is important that interviewers have experience and/or training in conducting this type of interview. Some researchers favor questionnaires as they provide structure that appears to make the study simpler and more efficient. Unfortunately, when collecting traditional knowledge, this approach limits the information one is able to collect and defeats the purpose of personal interviews, which is to create intimacy and trust with participants. Additional information on interview questions is provided below.

- *Interview aids*. Maps, photographs and reference texts may all be used during interviews. (This is in addition to materials needed for recording interview information such as tape recorders, video recorders and/or note taking materials.) If site photographs are relevant and available, these may encourage participants to 'remember' location information. Photographs or graphics of project facilities are very helpful for providing context to the introduction of the proposed project. Reference text that have colour photographs and that are suitable to the region may help participants identify wildlife, fish and plant species during discussions regarding traditional environmental knowledge. Even if the species being discussed is not presented in the reference text, participants will likely be able to identify a similar species, and describe how it differs from the one that is presented. Both large and small-scale maps should be used to aid researchers and participants in discussing site-specific and regional traditional knowledge. Maps of the project footprint are required during interviews to provide participants with the proposed location of the project, and an impression of the context for potential impacts. Additional information regarding the use of maps in participant interviews is provided below.

- *Participant photographs*. A signed release for personal photographs is legally required in Canada. Traditional knowledge facilitators need to provide participants with information on what their photograph may potentially be used for to obtain informed consent. Obtaining this release can be part of the informed consent process. (See Section 3.3.1 Informed Consent and Appendix A: Sample Consent Form.)
- *Recording interviews*. It is recommended that all interviews be recorded. This enables fact checking and can constitute a contribution to local archives. It should be noted that high quality recordings are required; the transcription of audio recordings can be very tedious and time consuming. Prior to recording ensure the interviewee is comfortable and gives their permission for the use of audio recordings. If written or typed recording is required ensure the notes are taken down carefully.
- *Verification*. Follow up and verification is an essential part of the collection of traditional knowledge. It may include activities such as discussing findings with key representatives and organizations, fact checking with participants, or participating in community meetings and/or workshops. Follow up processes ensure that the communities and participants know how their input has contributed to the proposed project and allows them to review, correct, and potentially add to the information collected.

What type of questions do I ask during participant interviews?

A 'checklist' of interview topics relevant to the proposed project and the impact assessment information needs can be prepared from information gathered during initial meetings, background research and discussions with the impact assessment team. Appendix B contains an example of the kind of topic checklist that can be used in interviews with traditional knowledge participants. This checklist was used for the collection of traditional knowledge for the Devon Canada Corporation Beaufort Sea Exploration Drilling Program (Kavik 2004).

What kind of maps do I need for participant interviews, and how do I use them?

Maps are needed during participant interviews to introduce the project area, record site-specific information, and note areas of interest. Small-scale maps that cover large areas (e.g., 1:250,000) can be used to discuss regional patterns of harvesting and travel, or animal movements. Large-scale maps that cover smaller areas (e.g., 1:50,000), and that provide more detail, are normally best suited for discussing site-specific information in or near the proposed project area. National topographic system (NTS) maps can be purchased for these purposes. The regional-scale maps must cover an area that encompasses the full extent of the traditional territory used by the Inuvialuit group you are working with.

Maps illustrating the project footprint will be available from the proponent. In some cases, the proponent will be able to illustrate their footprint over aerial photography. These kinds of maps are very helpful as it makes it easier for participants to visualize the topography and landscape if they are unfamiliar with NTS maps, and/or map scales, or have never seen the land from the air.

While maps based on aerial photography are wonderful aids in illustrating the proposed project area, they are limited in their usefulness as 'mark-up maps.' Interviewers will have to 'mark-up' maps during discussions with participants to note areas that will either

be visited during field trips, and/or included on maps in the final report. Maps are normally 'marked-up' in pencil, and pencil marks are very difficult to see on an aerial photograph background.

The geographic information systems (GIS) team and/or the proponent may be able to provide good quality maps that include the project footprint and enough topographic detail to be used in interviews. For projects involving a large number of participants, and where it is expected that a great deal of information will be collected over a relatively large area, this might be the most economical and suitable way of obtaining mark-up maps.

Any number of 'mark-up' methods may be used on the maps. Some researchers use mylar overlays, and do not mark on the map itself. This works well in desk-top settings and where detailed information is required, but where maps are also being used in the field, this method can be cumbersome. A numbered reference system may also be used, wherein small dots with numbers are placed in innocuous locations on the maps and arrows drawn to specific sites in pencil. The interviewer then notes the location number and activity associated with that number. This avoids having multiple and/or confusing pencil marks in the same location on the mark-up map. If the area being covered is relatively small, the simplistic approach of using NTS maps and pencil marks may be adequate. However, interviewers should have several copies of the NTS maps on hand in case a 'clean' mark-up map is required.

3.5.3 Site Visits

Why are site visits important?

Site visits with participants to the proposed project area provide the added benefit of providing context to desk-top interviews. Since traditional knowledge is a 'lived' experience, much additional valuable information can be obtained from visiting areas or sites that elders or harvesters have used, and discussing their experiences there with them. Elders often feel more comfortable on the land, and because of the contextual nature of traditional knowledge, a visit to traditional use sites frequently yields information that would otherwise not be shared. Site visits are also an appreciated confirmation of traditional users' ties to the land.

Photographs, sketches, site descriptions and GPS readings, in addition to note taking, are all part of the recording of site visits.

4 Applying Traditional Knowledge

How can I use and apply traditional knowledge?

This section is intended to provide a picture of how, at each possible stage of the assessment process, traditional knowledge can be applied. It is assumed that readers are familiar with the different aspects of impact assessment processes, so more attention is paid to the potential uses and applications of traditional knowledge than to the actual processes themselves. However, some background on the type and scope of work expected at each stage is provided to help the reader understand underlying assumptions.

The collection and application of traditional knowledge will necessarily be different for each and every project and assessment. Discussions regarding the application of traditional knowledge therefore begin with a generic, best-case scenario, with real-world examples being provided where possible. Examples provided are not restricted to northern Canada, as lessons learned from impact assessments practice elsewhere in Canada may have some applicability to regions north of 60.

An effort has been made to provide as many real-life examples (from professional experience and/or from project-specific impact assessment literature) as possible. In some cases, suggestions on how to use traditional knowledge are based on recommendations or comments from Inuvialuit or academic sources. The use of traditional knowledge in impact assessments, while not new, lacks precedent in some areas.

In addition to any formal traditional knowledge collection that is planned, traditional knowledge may also be collected through various consultation processes with the Inuvialuit (e.g., public consultation or biophysical field studies). The discussion of traditional knowledge application is therefore not restricted simply to the effects assessment stage, but also covers meetings and discussions that are held between regulators, the proponent and/or Inuvialuit groups (e.g., development of project Terms of Reference, hearings; see also Table 3).

Assessment stages are organized into three major categories: project planning, effects assessment and regulatory. Not all of the stages described below will be applicable to all assessments. Processes such as screening (regulatory) and pre-development assessments (project planning), which may or may not involve a full impact assessment, are covered in categories considered most appropriate for the type of work required.

Table 3 at the end of this section summarizes the stages of traditional knowledge application as described in the text.

4.1 Project Planning Stage

What happens at the project planning stage?

The project planning stage includes three different types of activities: project design and definition, which may extend beyond the project planning stage itself; the formulation of terms of reference for the impact assessment; and public consultation. This stage basically involves all the planning required in preparation for an impact assessment, and largely involves the proponent, regulators and impact assessment managers (See Box Key K and the Project Planning section of Table 3). As this planning may involve the

Inuvialuit at some stages, reference to how they might become involved, and how traditional knowledge could be used, is discussed.

4.1.1 Project Design and Definition

How can traditional knowledge contribute to project design and definition?

The project design and definition stage includes preliminary planning, post-application and pre-license refinements, permitting, pre-development assessment work, and decommissioning. Many of these aspects of project planning do not normally involve traditional knowledge or consultation with the Inuvialuit. For instance, some Aboriginal groups in British Columbia have expressed their frustration that project planning for some mine developments involves post-application licensing and project definition that substantially changes the project, but for which no consultation of Aboriginal peoples or inclusion of traditional knowledge is currently required (British Columbia First Nation Environmental Assessment Working Group 2000; Ferris and Day 2000). The Mackenzie Valley Environmental Impact Review Board (MVEIRB) traditional knowledge guidelines (2005) suggest that early discussions with Aboriginal groups can serve to minimize design modifications and avoid potential information deficiencies.

It is important that detailed project plans are shared. Data transfer needs to include "...full access to information, data (baselines, modeling, risk) and maps (layout, options, GIS)" to enable adequate review and input (Ferris and Day 2000). Impact assessment training and cross-cultural awareness workshops during the project planning stage can also facilitate the impact assessment process. Cultural perspectives, values and expectations (e.g., perspectives on significance, sustainability and risk) may be brought forward, providing greater clarity on funding requirements, consultation and participation needs and protocols, and impact assessment direction and focus (Winds and Voices 2000).

Box Key K: Project Planning and Traditional Knowledge

1. Project design and definition:
   - Early planning stages
   - Detailed information-sharing
   - Minimize design modifications
   - Avoid potential information deficiencies
2. Terms of reference:
   - Early issue identification and scoping
   - Consultation requirements
3. Public consultation:
   - Early issue identification
   - Consultation requirements
   - Traditional knowledge collection protocols

Some real-world examples of how traditional knowledge can improve or contribute to project design and definition are provided below.

Pipeline Routing

In northeastern Alberta, a culturally significant area was protected through avoidance and proactive project planning. Traditional knowledge facilitators, in working with community Elders, identified unusual drumlin-like formations that figured prominently in history of the local Aboriginal peoples. These formations were protected when the proponent made the decision to mitigate potential impacts through a realignment of the pipeline.

Wellpad Placement

In another case in northeastern Alberta, where pipeline routing and pad placement for a steam-activated gravity drainage (SAGD) project proceeded without input from local Aboriginal groups, it was observed that the project would significantly impact wildlife. Pads and pipelines were placed such that they surrounded a lake that was important for regional wildlife use and ungulate movements and access to the lake were impeded. Traditional knowledge participants commented that project design could have been improved, and impacts on wildlife mitigated, had they been involved in early project planning.

Airstrip Orientation

In the planning stages for a northern diamond mine, input from a community elder assisted engineers in early project planning. During initial community meetings, an elder quickly noted that the orientation for the airstrip was inappropriate because of prevailing wind directions, which could cause problems for arriving and departing aircraft.

4.1.2 Terms of Reference

How can traditional knowledge be used in developing a terms of reference for a proposed project?

In addition to the development and finalization of engineering plans, the project planning stage of the impact assessment process includes the creation of the impact assessment terms of reference for a proposed project. The participation of the Inuvialuit in the creation of the terms of reference can serve to identify critical issues early on in the impact assessment process. Formal recognition of the potential role of aboriginal peoples and traditional knowledge in the development of an appropriate terms of reference has been recognized in some parts of Canada. The MVEIRB uses traditional knowledge to in the development of their terms of references for example (2005). And in British Columbia, the provincial assessment office is expected to work with Aboriginal peoples to identify their interests, and ask for their input and comments on effects to be assessed, consultation requirements and/or other requirements to be included in the terms of reference (British Columbia Environmental Assessment Office 2003).

Hydroelectric Development

A series of early public consultation meetings targeting Aboriginal groups potentially affected by a hydroelectric project in northern Manitoba were used to frame the terms of reference for the impact assessment. (North Central Transmission Line Environmental Assessment Review Panel 1992, Inkpen 1999).

4.1.3 Public Consultation

What role can traditional knowledge play during public consultation?

Public consultation with Inuvialuit groups is best carried out at the earliest stages of the project planning and overall impact assessment process. The identification of potential Inuvialuit stakeholders and the determination of which Inuvialuit groups will be involved in the traditional knowledge study for the proposed project often occurs at the this stage. (See also Section 2.3: Determining Stakeholders). Good public consultation can assist in

early issue identification, add to scoping and project definition, and the development of the terms of reference.

If not already defined, consultation requirements and protocols will likely be determined during the public consultation stage as well. Protocols for the collection and use of traditional knowledge for project purposes may also be developed through discussions with the potentially affected Inuvialuit groups at this stage. (See also Section 2.2: Collection Protocols.)

A traditional knowledge study is made much easier when preparation has been made prior to the beginning of the study. If a proponent has a poor relationship with a particular Inuvialuit group, much precious time may be lost when visiting the community, as participants may be angry, uncooperative or frustrated. If the proponent has conducted meaningful consultation with the Inuvialuit group and traditional knowledge collection protocols have been developed, there is a greater likelihood that these types of situations will be avoided. Obtaining informed consent and ensuring that intellectual property rights are protected also facilitates the traditional knowledge study.

Audio-visual presentations on the proposed project and impact assessment planning and findings that are shared through public consultation would preferably be in English and Inuvialuktum. Information materials should also be appropriate to the Aboriginal community (Winds and Voices 2000).

Change in Ice Conditions

During initial public consultation meetings and disclosure for an exploratory drilling program in the Beaufort Sea, the proponent received numerous comments from community members about climate change and ice formation. This eventually led to additional scientific studies to examine changes in the timing of break-up and freeze-up, which confirmed community comments and led a modification in project scheduling and planning.

4.2 Effects Assessment Stage

What happens at the effects assessment stage?

The five basic steps in conducting an assessment of potential project effects are: scoping, analysis, mitigation, significance and follow up (Hegmann et al. 1999). The potential uses and application of traditional knowledge for each of the five stages are explored below.

4.2.1 Scoping

How can traditional knowledge be used for the selection of indicators?

Traditional knowledge can contribute critical information to the scoping stage of an impact assessment, and identify issues of concern unique to traditional users. Valued ecosystem and social components (VEC/VSC) identified by Inuvialuit communities often differ from those selected by western scientists. The very concept of VEC/VSC selection is contrary to a holistic view of nature. The development of the impact assessment approach and methods therefore needs to include traditional knowledge so that indicators and values appropriate to Inuvialuit communities are used. This implies that disciplines

(other than traditional land use) will have enough traditional knowledge available to them to make decisions about which VEC/VSCs should be included in their assessment, and that the traditional land use assessment has selected indicators appropriate to the Inuvialuit group that they are working with. In the case of the traditional land use assessment, a draft list of indicators (based on literature review and/or previous experience) may be selected prior to interviews with traditional knowledge participants, but this list must be verified with participants.

Box Key L: Scoping Tasks

1. Identification of regional issues or concerns
2. Selection of appropriate valued components (indicators)
3. Identification of spatial and temporal boundaries
4. Identification of potential impacts

VEC Selection

Moria (*Lota lota*) is valued as a traditional food in many Aboriginal communities in northern Alberta, but is not viewed as an indicator species or valued as a sport fish, and therefore rarely (if ever) included as a VEC in fisheries assessments conducted in the region.

An impact assessment for a large oil sands development in northeastern Alberta did not include caribou as a VEC as scientific documentation did not record it as an 'important' species in the region. Traditional land use work conducted after the biophysical studies revealed that caribou was considered the 'most important' wildlife species from a traditional use perspective, and that Elders were very concerned about their disappearance from areas where they had once been common.

How can traditional knowledge be used to select study areas?

There is no 'cookie cutter' approach to the selection of local and regional study areas for traditional land use assessments. The selection of study areas depends on number of factors, not the least of which is the type of project being assessed, and the perspectives and concerns of the Inuvialuit community.

Local study area boundaries for traditional land use need to include areas that may be affected by the proposed project. As with other impact assessment disciplines, the area "in which the obvious, easily understood and often mitigable effects will occur" will drive the formulation of a local study area (Hegmann et al. 1999: 14). In this context, the project footprint might be an appropriate local study area for projects where the principal effects will be 'on the ground' (e.g., steam-assisted gravity drainage development).

To address cumulative effects to traditional land use, the selection of a regional study area (where the interaction of project effects with other effects is considered) should reflect regional traditional use (e.g., traditional territory). When air emissions are associated with a project, the overlap of the air quality study area with an Aboriginal group's traditional territory may be an appropriate choice for a regional study area. This area encompasses potential impacts to vegetation (e.g., potential acid deposition), and therefore represents the largest spatial extent of potential impacts to plant gathering. As air quality study areas normally represent much larger areas than a single traditional territory, the traditional territory of Aboriginal groups other than the main stakeholder(s) may be implicated.

As with the selection of VEC/VSCs, traditional knowledge may also influence the selection of study areas for other assessment components. If a 'new' species is added to

the wildlife assessment's VEC list, for example, this may change the wildlife study area boundaries.

How can traditional knowledge be used to select temporal boundaries?

The concept of temporal boundaries in impact assessment practice is intended to address change from existing (baseline) conditions to some foreseeable and 'predictable' point in the future. Temporal boundaries have a start ('base') date and an end date. The base date is best identified by the Inuvialuit group, and depending on their perception, may be constituted by 'today's' date or the date at which they see major changes beginning to occur in traditional use and/or surrounding environmental conditions. In the case of an Inuvialuit community living in a relatively undisturbed or 'pristine' setting, the base date might best be constituted by the existing, present-day conditions. (See example below from Athabasca oil sands for an example of 'base' date defined as point in time in the past when the Aboriginal groups started observing major changes in their surroundings.)

The end date generally coincides with completion of project decommissioning, but may be seen to continue beyond cleanup if ongoing, 'residual' effects are contemplated or perceived. For example, many Aboriginal peoples have little confidence that current reclamation practices can return the land back to a state that permits acceptable levels of traditional use.

The longer the time period forecasted, the more difficult and uncertain the prediction of impacts becomes. Impact assessments therefore normally restrict their forecasts to 'reasonable' time periods. Temporal boundaries in the Aboriginal worldview would extend from 'time immemorial' to seven generations into the future. In this context, the evaluation of environmental sustainability, risk and significance take on new meaning. (See also Section 4.2.2: Analysis below and Section 2.5: Traditional Knowledge and Western Science.)

Assessment Boundaries

In traditional knowledge interviews regarding the proposed development of an offshore exploratory drilling program in the Beaufort Sea, mark-up maps covering a large area of traditional harvesting patterns and movements were used. The local study area was discussed with participants as being the drilling areas, barging routes and other areas where 'normal' project activities might potentially interact with traditional use. As upset events must be considered for assessments in the ISR, the regional study area encompassed the area that may potentially be affected by a blowout event.

In Alberta's Athabasca oil sands many Aboriginal groups view 1960 as a critical turning point. Prior to 1960, Aboriginal peoples in the area were still able to carry out a traditional lifestyle. After 1960, development in the region began to increase, affecting local environmental conditions and traditional sources of food (Tanner et al. 2001). Thus, 1960 represents a meaningful base date for the assessment of cumulative effects to traditional land use in that area.

4.2.2 Analysis

How do I use traditional land use information for to analyze effects?

During the analysis of effects, the collection of regional baseline data is completed, and cumulative and project-specific effects (on selected VEC/VSCs) are assessed. Traditional land use information is used for the analysis of potential effects to traditional use. (The types of traditional land use information required are provided in Section 3.2.1: Traditional Land Use Information. A sample interview checklist can be found in Appendix B.) To understand how a proposed project may affect traditional land use, a picture of traditional use must be developed, and participants' impressions of potential impacts need to be presented. Conclusions derived from this perspective may or may not 'agree' with the conclusions reached by impact assessment scientists.

Box Key M: Assessing Community Wellness

Evaluation of potential disruption or loss of traditional patterns and cultural continuation associated with loss of harvest territories, including:

- cultural properties
- ties to the land
- self esteem
- independence
- community organization and interaction
- a sense of a structured place in the modern world

The assessment of potential effects to traditional use is based on community wellness. In Aboriginal culture, community wellness is a reflection of knowing one's place in the world, of being able to participate in and continue practices and activities conducted by past generations (albeit in modern forms), and the ability to pass on the collective knowledge and use of the environment according to past tradition. Cultural values reflect these facets of community wellness as well as a 'healthy' relationship with 'the land'.

Analysis of community wellness must address both the cultural values and cultural mores of a particular Inuvialuit community. Cultural mores reflect the social importance of species, harvesting techniques and community use (distribution) patterns. (If information on things such as 'culturally significant ecosystems' (McKillop 2002) is available, this can be added to the spatial analysis.) For example, disruption of caribou migration patterns affects family hunting as a resource use, and relates to the cultural transfer of traditional environmental knowledge regarding the geographic area used by caribou. Disruption of caribou migration may also affect harvest numbers and result in diminished food distribution in the community, leading to hardship among some community members, thus affecting community wellness.

Similar to other assessment components, the assessment of potential effects to traditional land use has to consider the implications of different project stages (scenarios). Effects on traditional use will vary throughout operations, construction and decommissioning. Traditional knowledge participants will likely not restrict their observations to the assessment stages of a project; their perspective of potential impacts will include things such as exploration, seismic work, and post-reclamation success. Analysis of effects to traditional land use will need to include these observations, even if they are not specific to the proposed project, as they relate to participants impressions of cumulative impacts.

Perspectives on cumulative effects to traditional use must also include consideration of the 'time lag' and interaction of other activities with various project scenarios. Effects arising out of the construction phase are probably the easiest to identify and analyze in the context of selected indicators, as construction activities and changes in the local environment are immediate and readily visible. On the other hand, effects resulting from

operations may be more subtle and enhanced/aggravated over time. What may initially appear to be a minor effect can, through the duration of the project, become a major effect. Effects associated with the operations stage are most likely to have residual effects and are most likely to be of concern to an Inuvialuit community as such, effects will potentially affect their lives long after decommissioning is complete.

How do I use traditional environmental knowledge to analyze effects?

The inclusion of traditional environmental knowledge in the analysis of biophysical and socio-economic effects begins at the scoping stage with the identification of indicators appropriate to the traditional knowledge provided. Using a hypothetical case of a proposed offshore development in the Beaufort Sea as an example, the fisheries impact assessment scientists may have already selected Arctic charr as one of their VECs, based on their knowledge of the area, the role char plays in the ecosystem and previous scientific research. Preliminary traditional knowledge information confirms that charr plays an important role in the ecosystem (traditional environmental knowledge), and is also a critical source of traditional food for the fall harvest period (traditional land use). As charr use both freshwater lakes and rivers and the ocean throughout their life cycle, their movements and presence at different times during the year is information important to both fisheries scientists and traditional knowledge participants. Traditional environmental knowledge can be used to improve the knowledge base of the fisheries assessment in providing (perhaps additional, perhaps new and previously unrecorded) information on the location of spawning and over-wintering areas; the location and timing of charr movements; observed changes and trends over time in charr abundance, presence/absence, size, health; and the relationship of these all these things to environmental factors (e.g., water quality, temperature). This traditional environmental knowledge could then be added and used in the analysis of potential effects to charr, alongside the data gathered from the scientific literature and field studies.

Box Key N: Traditional Environmental Knowledge Analysis

- Begins with selection of appropriate indicators
- Provision of 'traditional science' information to assessment components
- Information source equivalent to scientific literature and field studies
- Include summary statement of use and contribution of traditional environmental knowledge to analysis

While the requirement to include traditional knowledge in impact assessments is now quite common, there is still quite a lot of discussion surrounding its weighting and use, so it is appropriate that assessment scientists include some description of how traditional environmental knowledge is used in their analysis and write up. Did the information gained from the traditional environmental knowledge add to was already known or 'assumed' by western science in any way? If so, how? Does it support or contradict previous scientific studies, or the assessment scientist's own professional experience? The answers to these questions may reveal critical information gaps, and/or the limitations of existing science to address important assessment questions. Some scientists may be uncomfortable discussing the limitation or weaknesses of their science, and traditional environmental knowledge may highlight these weaknesses. (This is equally true for the strengths of western science. However, professional experience shows that assessment scientists are much more comfortable discussing the strong points of their work than they are its weaknesses.) From the perspective of many Aboriginal stakeholders, this is precisely why traditional knowledge holders have so much to offer impact assessments, and why a description of how it is used in the various assessment components is merited. If a serious disjunction between western and traditional science

does arise during the course of the traditional knowledge study and analysis, it is recommended that the proponent, impact assessment managers, Inuvialuit representatives, and (if applicable) RAs be consulted as to how to proceed.

Port Development

In the case of a recent port development near Vancouver, the impact assessment analysis and conclusions did not reflect the values and understanding of local Aboriginal peoples. For example, traditional knowledge, in contradiction to western science values and assumptions, asserted that eel grass is good, and that an increase in the presence of harvestable resources is of greater value than an increased diversity in non-harvestable species. Aboriginal stakeholders did not expect that the western science would agree with their conclusions, but did expect that the traditional knowledge point of view would be represented in the conclusions and write up of the impact assessment.

Vegetation Assessments

Vegetation assessments now frequently include valued traditional species and identify disturbance to them. For the a large mine in the Athabasca oil sands, areas of high, moderate and low traditional plant potential were evaluated as part of the vegetation assessment (Golder Associates 2002).

Winter Spawning Fish

In one case in Alberta's oil sands, Aboriginal participants commented that the fisheries studies did not capture the fact that a winter spawning fish species important to traditional users would be affected by the project. The fisheries studies did include spring spawning species, and because traditional environmental knowledge was not collected for the assessment, analysis of winter spawning was not done.

4.2.3 Mitigation

How can traditional knowledge help design mitigation strategies?

The use of traditional knowledge in the impact assessment process provides opportunities for applying adaptive management principles to resource management. Both traditional knowledge and adaptive management must deal with situations where "much is unknown, some things are certain, and the unexpected must be acknowledged" (Berkes 1999: 125). How is this relevant to mitigation? In the impact assessment process, potential project effects are managed through mitigation (and to much lesser degree, through monitoring). In fact, the significance of effects is only evaluated in the context of mitigation measures (residual effects).

The collection of traditional knowledge for an impact assessment includes the solicitation of recommendations for mitigation from traditional knowledge participants. (See also Section 3.2: Information Needs, and Appendix B: Sample Interview Checklist.) Suggestions for mitigation from traditional knowledge participants are not limited to measures to 'protect' the environment (e.g., protection of habitat, additional scientific studies), but also include things normally associated with 'compensation' or capacity-building (e.g., day care or cultural centres, traditional land use studies, training, jobs and contracts).

Recommendations for mitigation from Aboriginal stakeholders may also be provided during the proponent's public consultation activities or meetings with Aboriginal political representatives. As with other types of traditional knowledge gathered outside the formal traditional knowledge collection process, these should be shared with traditional knowledge facilitator(s). Mitigation recommendations associated with traditional knowledge will be outlined in the traditional land use assessment. Recommendations that have implications for other assessment components need to be passed on to the relevant discipline lead(s).

Pipeline Routing

Project location can impact traditionally used locations. For example, the routing of a pipeline in the East Slopes of Alberta transected a well-known and actively used Aboriginal berry picking area. This blueberry picking area was not only important to the community as source of traditional food, but was also an important harvest area for ceremonial feasts. A minor rerouting (mitigation measure) of the pipeline would have avoided this culturally significant site. Impact to traditional use was mitigated through compensation, which would have been unnecessary had Aboriginal peoples been consulted in the project planning stage.

Wildlife Crossings

The design and location of wildlife crossings for above-ground pipelines in northern Alberta have been affected by traditional environmental knowledge collected for impact assessments. Recommendations to improve this mitigation measure include the study of wildlife trails around pipeline corridors, and modifications to make crossings more 'natural'.

4.2.4 Significance

How can traditional knowledge be used to determine significance?

It is critical that the traditional land use assessment reflect the values and perspectives of the Inuvialuit community potentially affected by the project. Different Inuvialuit groups and communities will have different values and perspectives. The analysis of significance is best completed in consultation with traditional knowledge participants and/or the Inuvialuit community in question. Discussions of significance need to include: frequency of use, historical length of use, number of users, rarity, number of resources and number of uses, as well as associations with spiritual, medicinal and cultural transferal activities. This information may be collected during traditional knowledge interviews (see Appendix B for an interview topic checklist), and confirmed during follow up meetings in the community.

It is also critical to recognize that the traditional land use assessment reflect an 'anthropological' perspective of environmental significance. In contrast to western science, which focuses on the environmental relationships of particular species, a traditional knowledge study evaluates effects from a holistic perspective in that sense that it not only considers a particular species, but also its role and value to social and cultural aspects of the community. What may not be significant to the ecological community may have important implications to community use and organization. As such, there may be differences in VECs and in attached significance assessment between western and traditional science. These differences, with appropriate contextual background to enable

an understanding of the basis of these differences, can be described in the final baseline and assessment reports for the traditional land use assessment. Therefore, it is crucial that the traditional knowledge discipline leads have some background in cultural science so that they can facilitate an understanding of the role of 'culture' and cross-cultural differences in impact assessment.

In this context, a high impact (significant) would be indicated by a loss of a significant proportion of traditional activities, interactions and use as a result of project effects. It suggests that there will be a significant loss of individual well being (as part of a viable cultural entity) and community well being (cultural continuance). A high impact could result from the loss of a particularly important or sensitive environmental component, traditional use pattern or community social interaction (e.g., traditional food harvesting for elders).

A medium (moderate) impact could be defined as project effects hindering the capacity for cultural continuation by the loss of basic traditional elements, making it difficult to maintain holism in complete cultural and traditional continuity. Low impact could be defined as project effects being limited to the loss of minor harvest species, harvest areas or access to either.

Through the exercises described in the sections above (Sections 4.2.1: Scoping, 4.2.2: Analysis and 4.2.3: Mitigation), traditional knowledge may also contribute to the significance conclusions of other impact assessment disciplines. While the conclusions of western science may be different from those reached by traditional science, they should be considered as being equivalent to western science, and discussion regarding such conclusions should be presented alongside impact assessment findings derived from western science (see also Section 4.2.2: Analysis).

Disturbance to Vegetation

During one environmental assessment in the Athabasca oil sands, discipline leads for vegetation found that less than two percent of the study area would be affected. This disturbance was determined to be not significant in the impact assessment. Aboriginal participants in the traditional land use work disagreed with this conclusion, stating that this disturbance was indeed significant (D. Bush, pers. comm.).

Heritage Resource Significance

Scientists working on archaeological assessments frequently work with community elders to determine and rank the significance of heritage resources and sites. A similar type of approach could be applied to other impact assessment components, particularly where it is expected that there will be a discrepancy in the significance determinations of western and traditional science. This type of information collection could be managed through the involvement of traditional knowledge participants in the biophysical and archaeological field studies.

4.2.5 Follow Up and Monitoring

How can traditional knowledge be used at the follow up stage?

Follow up in the context of impact assessment includes measures to verify assessment predications (e.g., monitoring) and manage effects. The five-year review of the CEA Act resulted in a greater emphasis on and requirement for follow up (Bill C-9, Section 38).

Some Aboriginal groups see "First Nation involvement in post-EA [environmental assessment] monitoring and follow-up" as an "effective mechanism to ensure accountability" (British Columbia First Nations Environmental Assessment Working Group 2000: 4).

Recommendations for follow up (e.g., need for additional studies, monitoring programs) are solicited during traditional knowledge interviews and presented in the traditional land use impact assessment report. (See also Section 3.2: Information Needs, and Appendix B: Sample Interview Checklist.) Recommendations relevant to other assessment components would be passed on to the relevant discipline lead(s).

Monitoring Program for Mine

A well-known example of the application of traditional knowledge to monitoring is the Environmental Monitoring Advisory Board for the Diavik diamond mine in the Northwest Territories. This community-based monitoring program contributes traditional knowledge and conducts follow up on issues such as the management of fish habitat, and fencing for the protection of wildlife.

4.3 Regulatory Stage

What happens at the regulatory stage?

For the purposes of this guide, the regulatory stage is seen as those steps of the impact assessment process in which traditional knowledge may play a role, but in which a formal impact assessment may not be conducted (e.g., screening), or over which the proponent has little or no control (e.g., regulatory hearings). While this stage may constitute an important part of an impact assessment process, it is discussed in a summary fashion here, as the main intent of the guide is to provide guidance on how to collect and use traditional knowledge in the analysis of effects.

4.3.1 Screening

How can traditional knowledge be used during a screening process?

The screening process seeks to identify the nature and intensity of potential impacts and provides information for RAs to determine the need for a full comprehensive study. In the ISR, screening requires consultation with community members and traditional knowledge holders. It may be completed without formal or intensive field programs, but normally involves discussions with community representatives and the presentation of project maps. It therefore relies on the experience and knowledge of local individuals corporations in the project area

4.3.2 Panel Review

What role can traditional knowledge play in a panel review?

Aboriginal peoples may also participate in or provide information to an impact assessment panel review. Although rare, examples of Aboriginal representation on panel reviews do exist and can provide a very effective means of ensuring that Aboriginal issues are addressed and that traditional knowledge is used in the impact assessment

process (e.g., Manitoba Hydro North Central Transmission Line). Some Aboriginal groups criticize the panel review process for being "inflexible" and offering little or "no opportunity for shared decision-making" (British Columbia First Nations Environmental Assessment Working Group 2000: 3).

4.3.3 Hearings

How can traditional knowledge contribute to the hearing process?

A participant of the traditional knowledge study should be present when information from the study is shared at a hearing. It is preferable to have the participant deliver this information directly or at a minimum be present with the person who is speaking. Having a participant present at the hearings allows for questions specific to traditional knowledge to be answered by a holder of this knowledge and not by a facilitator. If a hearing, presenting traditional knowledge is being held in a local community then the local Hunters and Trappers Committee should be notified.

Project proponents and traditional knowledge facilitators need to be prepared to accept that the Inuvialuit may choose to participate in ways that are 'external' to the assessment itself by intervening or participating in hearings. Proponents should also be aware that even if traditional knowledge *is* collected during an impact assessment, this does not prevent an Aboriginal group from acting as an intervener.

Hearings are sometimes seen as an alternative to taking part in an impact assessment process that is viewed as being fundamentally flawed (e.g., Innu Nation and hearings for Voisey's Bay mine in Labrador). Hearings may also be used as a means of further airing and clarifying comments on or objections to an impact assessment that they did participate in (e.g., intervention of some Aboriginal groups in Athabasca oil sands region).

4.3.4 Regulatory Decision

What role can traditional knowledge play at the regulatory decision stage?

At the decision stage and before impact assessment report review is complete, the Inuvialuit may submit comment on the findings of the impact assessment. At this point, responsible authorities have to make a decision and set the conditions of approval (if so granted).

Hydroelectric Dam

A hydroelectric development in Yukon was deemed by scientific studies to have no significant impacts and some benefits. From the perspective of local Aboriginal communities and traditional knowledge, significant effects were predicted. The regulatory decision was that the project should not proceed.

Table 3 Summary of Potential Application of Traditional Knowledge in Impact Assessments

Environmental Assessment Process	Types of Traditional Knowledge[1]			
	Factual	**Use & Management**	**Values**	**Cosmology**
Project Planning				
Project Design and Definition[2] *Proponent* *Aboriginal Group(s)*	• Identification of potential impacts • Identification of potential site selection problems • Identification of constraints (e.g., Diavik – Elders recommendations about directional placement of airport based on knowledge of prevailing winds)	• Preliminary identification of patterns of use • Identification of potential impacts	• Delineation of impact assessment process and Aboriginal participation • Identification of Aboriginal stakeholders • Identification of preliminary issues • Identification of potential impacts • Impact assessment and cross-cultural awareness training	• May offer different perspectives on project design and alternatives • Opportunity for improving cross-cultural understanding
Terms of Reference *Proponent* *Responsible Authority* *Assessment Practitioners* *Aboriginal Group(s)*	• Identification of potential impacts	• Identification of potential impacts	• Delineation of impact assessment process and Aboriginal participation • Definition and agreement on concepts of thresholds and significance relevant to traditional knowledge • Identification of preliminary issues • Identification of potential impacts • Impact assessment and cross-cultural awareness training	• May offer different perspectives on impact assessment process and methodologies • Opportunity for improving cross-cultural understanding

Table 3 Summary of Potential Application of Traditional Knowledge in Impact Assessments (cont'd)

Environmental Assessment Process	Types of Traditional Knowledge[1]			
	Factual	**Use & Management**	**Values**	**Cosmology**
Project Planning (cont'd)				
Public Consultation *Proponent* *Aboriginal Group(s)*	• Identification of potential impacts	• Identification of patterns of use • Identification of potential impacts	• Development of consultation protocols • Development of traditional knowledge protocols • Identification of issues • Identification of potential impacts • EA and cross-cultural awareness training	• Opportunity for improving cross-cultural understanding • May offer different perspectives on project design and alternatives
Effects Assessment				
Scoping *Proponent* *Responsible Authority* *Assessment Practitioners* *Aboriginal Group(s)*	• Contribute to baseline information* • Contribute to identification of spatial and temporal boundaries (e.g., knowledge of animal migration, fish spawning areas) • Help answer question of whether boundaries adequately represent change or trends in effects • Identification of potential impacts	• Identification of patterns of use* • Contribute to identification of spatial and temporal boundaries (e.g., extent of berry picking areas) • Identification of potential impacts	• Development of traditional knowledge protocols • Definition and agreement on concepts of thresholds and significance relevant to traditional knowledge • Identification and selection of VEC/VSCs* • Identification of potential impacts • Impact assessment and cross-cultural awareness training	• May offer different perspectives on assessment process and methodologies • May offer different perspective on what is a VEC/VSC* • Opportunity for improving cross-cultural understanding, especially among assessment scientists and holders of traditional knowledge
Analysis *Assessment Practitioners* *Aboriginal Group(s)*	• Input to modeling (e.g., avoidance behaviour of certain species, selection of modeling techniques) • Knowledge of cumulative effects (e.g., how will a particular VEC/VSC respond to given pressure, knowledge of trends)	• Contribute to selection of indicators and/or measurable parameters (e.g., knowledge of response of ecosystems and/or species, traditional knowledge based prediction of cause-effect relationships)	• Assessment of which effects probable, or which would have most serious impacts to traditional use	• May offer alternative analysis (e.g., risk, sustainability) • Opportunity for improving cross-cultural understanding, especially among impact assessment scientists and holders of traditional knowledge

Table 3 Summary of Potential Application of Traditional Knowledge in Impact Assessments (cont'd)

Environmental Assessment Process	Types of Traditional Knowledge[1]			
	Factual	**Use & Management**	**Values**	**Cosmology**
Effects Assessment (cont'd)				
Mitigation *Proponent* *Assessment Practitioners* *Aboriginal Group(s)*	• Management of effects through identification of areas to be avoided to protect either traditional use or animal species	• Identification and development of mitigation measures	• Input as to how to prioritize mitigation	• Legends and stories relating to environmental protection, resource management and conservation may offer alternative suggestions for mitigation measures
Significance *Proponent* *Assessment Practitioners* *Aboriginal Group(s)*	• Knowledge of trends can contribute to significance evaluation	• Interpretation of what results mean	• Interpretation of what results mean3	• Legends and stories relating to environmental protection, resource management and conservation may offer alternative interpretation of significance
Follow Up and Monitoring *Proponent* *Responsible Authority* *Aboriginal Group(s)*	• Monitoring impacts on VEC/VSCs* • Verification of predictions	• Contribution to development of monitoring programs and/or contingency plans	• Assessment of effectiveness of mitigation or accuracy of predictions	• Legends and stories relating to environmental protection, resource management and conservation may offer alternative interpretation of follow up
Regulatory				
Screening *Proponent* *Responsible Authority* *Aboriginal Group(s)*	• Identification of potential impacts • Identification of potential site selection problems • Identification of constraints	• Preliminary identification of patterns of use • Identification of potential impacts	• Identification of preliminary issues • Identification of potential impacts	• May offer different perspectives on project design and alternatives
Mediation *Proponent* *Responsible Authority* *Aboriginal Group(s)*	• Identification of potential impacts	• Identification of potential impacts	• Identification of preliminary issues • Identification of potential impacts	• May offer different perspectives on project design and alternatives

Table 3 Summary of Potential Application of Traditional Knowledge in Impact Assessments (cont'd)

Environmental Assessment Process	Types of Traditional Knowledge[1]			
	Factual	Use & Management	Values	Cosmology
Regulatory (cont'd)				
Panel Review *Responsible Authority* *Assessment Practitioners* *Aboriginal Group(s)*			• Participation and representation on panel (e.g., Manitoba Hydro North Central Transmission Line assessment review panel)	
Hearings *Proponent* *Responsible Authority* *Assessment Practitioners* *Aboriginal Group(s)*			• Hearings - Direct statements from individuals* (e.g., Innu Nation presentation at Voisey's Bay hearings)	
Decision Stage *Proponent* *Responsible Authority* *Aboriginal Group(s)*			• Submission of comments on impact assessment adequacy	

NOTES:
1 Adapted from Usher 2000 and 2001. Usher categorizes the impact assessment process into four stages: scoping, preparation of an environmental impact statement, public review and monitoring and follow up. He has identified specific areas where traditional knowledge can fit into the impact assessment process. These are noted with an asterisk.
2 Project design and definition includes preliminary planning, post-application and pre-license refinements; pre-development assessment work, and decommissioning.
3 There is a risk that the significance conclusions reached via traditional knowledge and western science will differ.

5 Traditional Knowledge Reporting

How do I prepare traditional knowledge reports for an impact assessment?

The discussion on reporting assumes that external consultants will be responsible for gathering and presenting the traditional knowledge information, and applies to the assessment of impacts to traditional land use only. For discussion of how traditional environmental knowledge information may be presented by other assessment disciplines, please see Sections 4.2.2: Analysis and 4.2.4: Significance). The generic contents of a traditional knowledge study are presented, and well as the different types of reports that may be prepared for assessment work. Reports that contain baseline and assessment information are part of the standard, required reporting for an impact assessment. The community report is an optional report that is sometimes prepared for the community's use only.

As discussed in previous sections, there are several distinct stages in gathering and presenting traditional knowledge information. After protocols, study scope and a schedule have been agreed too, the traditional knowledge team can arrange a site visit. Once information has been gathered from the site visit(s) and traditional knowledge interviews, traditional knowledge facilitators will review the information and create a draft traditional land use impact assessment report. This may be comprised of separate baseline and impact assessment reports, or be combined into a single impact assessment report. These reports are public and will be filed as part of the regulatory application. Separate 'community' reports may also be created in cases where confidential or sensitive information is gathered, and which the Inuvialuit group wishes to see recorded, but not shared with the general public. These contents of the various reports are discussed in more detail in the following sections.

How do I meet my commitment to the community on the reporting of traditional knowledge?

Once the draft reports have been 'signed off on' by the proponent, copies of all draft reports need to be sent to the community coordinator or representative(s) for review and distribution. A follow-up meeting in the community may need to be scheduled to discuss preliminary results with traditional knowledge participants. Guidelines and requirement for this process will likely be provided in the traditional knowledge collection protocols. Other elements which may also be in the traditional knowledge collection protocols are the recognition of the study participants in all reports. Once all reports are finalized they should be distributed to the appropriate community organizations and to participants of the study. Results of the study should also be presented to the community at large. If videos are being shown of participants in public in their own or local community, ensure families who have members in the video are notified of the time and place when the video will be shown.

5.1 Contents

What are the basic contents of a traditional knowledge study report?

Some of the basic elements that would apply to most types of traditional knowledge reports include:

- Introduction, objectives and background – an overview of the proposed project and assessment context, as well as nature and extent of the traditional knowledge study completed, including Inuvialuit groups involved in the work.
- Cultural and historical context – a description of the history, culture and traditional use patterns of Inuvialuit communities whose traditional territory may be affected by the proposed project, and/or who are involved in the traditional knowledge study for the impact assessment.
- Regulatory context – a description of regulatory requirements and/or expectations regarding the collection and use of traditional knowledge for the assessment. This may be brief description of relevant legislation, policy, or simply a presentation of the project terms of reference as relevant to traditional land use and traditional environmental knowledge.
- Methods – a detailed description of scope, approach and nature of the traditional knowledge study conducted for the assessment. Participants' names would be listed here, if not provided in an acknowledgements section at the beginning of the report. (Unless specific release was granted, personal quotations used from various individuals are normally coded to protect a participant's identity.) Dates of interviews, types of material covered and questions asked, the manner in which assessment conclusions were derived would all be described in a methods section.
- Baseline – summary of background research.
- Results – results information would include a summary of the traditional knowledge information collected, the issues and concerns raised by participants, and recommendations (may be separate section) provided by traditional knowledge participants.
- Summary and Conclusion – a synopsis of results and conclusions reached as a result of discussions with traditional knowledge participants.
- Proponent Commitments – the proponent may wish to add information on mitigation or monitoring programs pertinent to Inuvialuit stakeholders and/or the traditional knowledge collected.

These categories of information may be presented together in a single report that contains both baseline and assessment information or separately as stand-alone baseline and assessment reports. The sections on baseline and assessment reports that follow describe the contents stand-alone documents.

5.2 Baseline Report

What does a traditional knowledge baseline report look like?

The traditional knowledge baseline provides the cultural and historical context, including traditional territories, for potentially affected Inuvialuit groups. It may also include a summary of issues from existing, published documentation. However, this type of information should not be presented until the Inuvialuit group(s) has given its agreement to work with the proponent, as Inuvialuit group(s) may see it as 'stealing' their traditional knowledge or, in worse cases, as a proponent trying to avoid negotiations or discussions with legitimate stakeholders.

Traditional knowledge information presented in the baseline is focused on information that is relevant to the assessment of potential impacts. It should be sufficient to support an independent decision as to whether potential effects on traditional use might arise from a proposed development, or whether a particular Inuvialuit group's traditional territory will be implicated. More detailed study (i.e., effects assessment) is required to determine the nature and scale of potential effects.

A baseline report may also include a summary of the traditional environmental knowledge collected, or other baseline-type information collected during site visits and traditional knowledge interviews.

5.3 Assessment Report

What does a traditional knowledge assessment report look like?

Although the details of how and where impacts are assessed will change from assessment to assessment, it is most appropriate to create a separate section for the assessment of impacts to traditional use. This section would include information on mitigation and monitoring recommendations specific to the Inuvialuit stakeholders involved in the traditional knowledge study, and detail how traditional knowledge is used in the assessment.

The assessment of impacts to traditional use is largely a qualitative exercise that involves editing and applying information from traditional knowledge participants. However, quantitative analysis can be applied to berry picking or hunting areas by modeling the potential area lost due to project effects. This is appropriate if adequate context is added to permit a culturally appropriate interpretation of impacts. Cumulative effects can be illustrated by showing how access to the traditional use areas has been restricted by various developments.

The methodology section of the traditional land use assessment should clearly state the assumptions and limitations underlying the traditional knowledge study. For example, the age, number and gender of participants should be described, and any constraints on participation should be outlined. As with other impact assessment sections, the analysis and assessment of impacts must be defensible in a hearing.

It is recommended that the traditional land use impact assessment report avoid presenting and cross-referencing the conclusions of the other impact assessment disciplines. The issues and concerns raised by traditional knowledge participants leads to the development of an analysis of impacts from *their* perspective, and deserves presentation in that context. The presentation of 'answers' or 'solutions' from a western science perspective

in the traditional land use assessment has been commented on as being 'dismissive' by a number of traditional knowledge participants. A separate section for proponent commitments or strategies for mitigation may be included to ensure that RAs know that issues and concerns raised during the traditional knowledge study are being addressed.

5.4 Community Report

What is a community report?

A community report contains all of the traditional knowledge information gathered during site visits and participant interviews. This may includes stories or personal histories that are not directly relevant to the impact assessment, but that do reflect values and traditions important to the Inuvialuit stakeholder, and which they wish to have documented. It may also contain information that is considered sensitive or confidential; information traditional knowledge participants do not want to reveal to the general public. Unlike the baseline and assessment documents, the community report is not a public document. Distribution of this document is controlled by the stakeholder.

5.5 Verifying Results

How do I ensure that the results of the traditional knowledge study are accurate?

The verification of results from the *traditional knowledge study* is essential, not just to ensure that the traditional knowledge was recorded correctly, but also to make certain that the Inuvialuit group's values, perspectives and impressions of potential impacts are presented in accurately (i.e., significance determinations). This step is a fundamental part of the process of completing a traditional knowledge study. Traditional knowledge participants and/or community representatives need to review and comment on how the traditional knowledge information provided is being used and presented for the impact assessment. In some cases, this will involve follow up meetings with traditional knowledge participants to present and review results. Traditional knowledge reports can only be finalized after the Inuvialuit stakeholder has reviewed and commented on the draft documents.

5.6 Mapping

Can I present traditional knowledge results on maps?

The mapping of traditional environmental knowledge and traditional land use sites or areas can be a delicate process if information considered confidential or sensitive needs to be shared to discuss potential project effects. Some potential concerns may be addressed through the process of creating traditional knowledge collection protocols. Details on how (or even if) sensitive information is to be presented may be available from such protocols. As with all other aspects of the traditional knowledge study and reporting, the desires and needs of traditional knowledge participants and community representatives have to be respected. Traditional knowledge facilitators, in obtaining informed consent, will discuss the fact that participants are not obliged to share any information that they feel to be of a sensitive nature. If the traditional knowledge participant feels that it is necessary to mention such areas to ensure that they will be

protected, interviewers can discuss how the exact location of important sites and/or areas might be protected through various mapping techniques (e.g., buffer zones, offsetting central points, setting boundaries of 'red zones' or areas that need protection).

Professional experience indicates that 'real' problems with presenting or using traditional knowledge are relatively rare in impact assessment practice. Traditional knowledge participants and Inuvialuit stakeholders are as anxious, if not more, to 'protect' the environment as impact assessment practitioners are, and to make sure that appropriate resource management is implemented.

Traditional knowledge information may be presented in any number of ways on maps. Traditionally used sites and areas may be represented. Significant or intensely used areas other may be ranked to illustrate where the majority of activity is (or was) taking place. It may be used to develop a constraints map illustrating areas that need to be avoided or protected. The important thing is that maps created for traditional knowledge reports accurately and appropriately reflect the nature and importance of the information gathered during the traditional knowledge study. The verification of mapped information can be done in conjunction with the follow up exercises required for the draft reports (see Section 5.5: Verifying Results).

6 Concluding Statements

What are some of the major challenges facing the collection and use of traditional knowledge?

Some of the major and fundamental challenges to the collection and use of traditional knowledge in impact assessments are summarized below. These issues need to be addressed to fully and effectively make use traditional knowledge in the impact assessment process.

- *Resource Management.* Traditional knowledge and its use in impact assessment is really about resource management. For Inuvialuit communities, the impact assessment process in not just about assessing the effects of a particular project; it is really about managing cumulative effects and environmental sustainability. Issues regarding informed consent, intellectual property, meaningful consultation and participation, and decision-making power must be addressed, so that impact assessment can become effective and meaningful to the Inuvialuit.
- *Meaningful Participation.* The Inuvialuit need to play a role in all aspects of impact assessment. The assessment of impacts to traditional use must include Inuvialuit perspectives; otherwise effects to traditional use are not really being assessed. This can only be done when the Inuvialuit become full and active members of the impact assessment team early in the process. Meaningful participation and consultation is not just about information sharing and the provision of reports and maps; it entails discussion, explanation and dialogue. If this approach is taken, it will be almost impossible to not 'incorporate' traditional knowledge into the assessment.
- *Funding and Training.* Informed consent and participation also requires the ability to fully understand and take part in impact assessment process and procedures, which in many cases involves the provision of funding and training. Adequate training and fiscal support is an essential part of the meaningful consultation and participation of Inuvialuit in the impact assessment process. Training is also necessary to improve proponent, RA, impact assessment managers, practitioners and scientists understanding of Inuvialuit cultures and the value of traditional knowledge.
- *Project Schedules and Timelines.* In addition to training, and funding to support such capacity building activities, project schedules and timelines are an additional hurdle. The Inuvialuit frequently do not become involved in an impact assessment until after biophysical baseline work and project definition is complete. It is difficult, if not impossible, for impact assessment scientists to make use of traditional knowledge after their scoping and baseline research has been completed. Proponent timelines often do not permit enough lead-time for discussion of the project and impact assessment process, including the consideration of the advisability of providing traditional knowledge or the identification of the specific questions to be addressed by the traditional knowledge study. Serious consideration of Inuvialuit involvement and traditional knowledge usually requires adjustments to project timelines.

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Appendix A Sample Consent Form

Traditional Knowledge Research
Sample Consent Form

PART 1

Participant Name: _____ Participant Code: _____

Date of Interview: _____ Family Affiliation/Community: _____

Participant Address: _____

Date of Birth: _____ Length of residence on the land: _____

Elder ___ Harvester ___ Community Member ___

Male ___ Female ___

Was a language other than English used during the interview? Yes __ No __

Which? _____ Interpreter Name: _____

PART 2

Researcher Statement

Interviews are being done in the communities of _____. Elders, harvesters and/or community members are being asked to share their knowledge, experiences and wisdom about the areas that are being studied to assist in _____*[goals of project/study]*_____. The study team recognizes that the local communities and individuals maintain ownership and rights of distribution for their traditional knowledge.

As per the Traditional Knowledge Collection Protocols with your community, the study team agrees to:

- Respect restrictions on the use and distribution of information provided,
- Respect and present the information provided by the participants accurately and appropriately in our interpretations and analysis, and
- Provide drafts of any interpretations and analysis of traditional knowledge in a timely manner to community representatives and/or participants, who shall have the right to review the information to ensure its accuracy.

PART 2 (cont'd)

Participant Statement

_____*[Study researcher's name]*_____ has talked to me about the work they are doing for _____*[project/study name]*_____ and I agree to provide information for this study.

I understand that the information collected will be used to_____*[how the information will be applied; usually 'one-time' application]*_____.

I understand that a copy of working materials (e.g., maps, tapes, meeting minutes, reports, presentations) will be returned to _____*[designated community organization]*____ for archival, and that I will be sent a copy of my individual interview transcripts and/or my interview tape(s) *(if applicable)*.

I give permission for my statements to be used in study reports: Yes ___ No ___

I would like my quotes to be used, but I would like my name protected: Yes ___ No ___

I consent to have my picture taken and used for this work: Yes ___ No ___

PART 3

_____	_____
Participant (print name)	*Signature*
_____	_____
Interpreter (print name)	*Signature*
_____	_____
Interviewer (print name)	*Signature*

Page 2 of 2

Appendix B Sample Interview Checklist

Interview Checklist
Traditional Knowledge Interviews
Devon Offshore Exploration Drilling Program

Part A: Assessment of Potential Impacts

The topics below are introduced to provide us with a picture of where and how the proposed project may interact with or affect traditional land uses. This information is needed to conduct an assessment of the potential impact that the project may have on traditional land users.

Traditional land use information may be collected on a wide variety of things. Some examples include things such as camps, graves, fishing areas, travel routes, hunting spots, and spiritual sites. For each activity and or site, the questions of who, what, when, where, why and how should be asked. The mark-up map, with notes on associated activities, will be used to record these activities. Topics to be covered include:

- Which animals (includes birds and fish) do you use? Please include Inuvialuit names if they are not already recorded.
- How is the animal used and what role does it play in Inuvialuit life? For example, is it used for food, ceremonial purposes, to strengthen social customs (e.g., communal sharing of meat)?
- What is the relative importance of animals harvested? Or of areas used?
- Please identify areas of concentration by:
  - Types of activities taking place there (e.g., harvesting, camping, traveling)
  - Location (on map)
  - Type(s) of animal species
  - Time of year, season
  - Animal movements, migration
- Please identify type and methods of harvest:
  - Group or solitary hunting?
  - Family or group camps? Who, where, when?
  - What species are being harvested? Age, sex?
  - How harvested? Tools or equipment used?
- Please discuss the significance of relevant species and/or locations.
- Identify the changes that may result from project, and any negative or positive impacts that the participant may be concerned about.

Part B: Collection of Traditional Environmental Knowledge

Based on the discussion of preceding two topics, the interviewer will likely have some idea of which of the following topics is relevant to the participant's particular area of expertise or traditional knowledge. These topics are related to the impact assessment components for the Devon project, and will help us provide traditional knowledge that can be used in the assessment.

Many of the generic questions regarding hunting and fishing will likely be covered by the questions in Part A. These questions have been italicized in the text below. If you have already covered them, skip these and go on to questions in plain text.

- Wildlife – marine mammals (seals, whale and polar bears)
  - Where is participant hunting?
  - When are they hunting in those areas?
  - What species are they hunting?
  - What are most important species and/or hunting locations?
  - Will there be any potential impacts on the hunting activities described above from the proposed project?
  - Does the participant foresee any impact on animal habitat or animal migrations?
  - Do polar bears use any of the areas that are targeting for drilling?
  - What about seals?
  - Are there any other wildlife species that may be affected by the proposed project?
  - Trends and changes. Note any changes have been observed and over what time period. Were changes noticed in participant's lifetime or in stories heard from Elders? What is the cause of the changes?
- Wildlife – marine birds
  - Where does the participant hunt birds?
  - When are they hunting in those areas?
  - What species are they hunting?
  - What are most important species and/or bird hunting locations?
  - Will there be any potential impacts on the bird hunting activities described above from the proposed project?
  - Does the participant foresee any impact on bird habitat or migrations as a result of the proposed project?
  - Where are birds gathering in the spring (when the ice is starting to open)?
  - Are there areas near the proposed project that are important for birds? For nesting? Or for staging (places where birds gather in preparation for migration)?
  - Trends and changes. Note any changes have been observed and over what time period. Were changes noticed in participant's lifetime or in stories heard from Elders? What is the cause of the changes?

Part B: Collection of Traditional Environmental Knowledge (cont'd)

- Fish (includes benthos – bottom-dwelling creatures - and plankton – small aquatic creatures that live in the water above the ocean floor, whale food):
  - Where is participant fishing?
  - When are they fishing in those areas?
  - What species are they fishing?
  - What are most important species and/or fishing locations?
  - Does the participant foresee any potential impacts on the fishing activities described above resulting from the proposed project?
  - Does the participant foresee any impact on fish habitat or fish migrations?
  - What is participant's knowledge of fish species presence? Season? Movement? Size of fish populations, or observed changes to this? How close are the fish to shore?
  - Trends and changes. Note any changes have been observed and over what time period. Were changes noticed in participant's lifetime or in stories heard from Elders? What is the cause of the changes?
- Coastal processes (erosion along the shoreline):
  - Where are the most active and least active areas on erosion along the coastline in the study area?
  - What direction does sediment moving towards in these areas?
  - Have any changes been observed in storm patterns? More often? Summer/fall? Shorter/longer? Bigger waves? Abnormal winter storms? Water levels nearshore during storms higher (storm surge)?
  - How does the level of boat traffic near the lease area compare to the 1970s and 1980s?
  - Trends and changes. Note any changes have been observed and over what time period. Were changes noticed in participant's lifetime or in stories heard from Elders? What is the cause of the changes?
- Ice and physical oceanography:
  - What are observed changes in ice conditions over time, particularly in Devon's lease area? Changes in when and how it forms in fall and breaks up in spring? Seeing same changes every year, or very different each year? More or less ice nearshore in summer? Is the old polar ice in summer different (i.e., heavier or lighter)?
  - Observed changes in ice thickness? Is it thinner or thicker during freeze-up? Early winter? Mid to late winter?
  - Changes in position or movement of landfast ice? Is the moving ice edge to the west of the Tuk Peninsula closer to shore than it used to be? Changes in cracks and small openings in the landfast ice?

Part B: Collection of Traditional Environmental Knowledge (cont'd)

- Ice and physical oceanography (cont'd):
  - Changes in ice ridges or rubble fields (ice rocks or boulders)? Bigger/smaller? More/less? Is the ice smoother or rougher?
  - Is there more or less snow, changes in fall and winter winds or other factors that are causing changes in landfast ice conditions?
  - Observed historical changes in ocean currents?
  - Observations and concerns with respect to climate change and resulting changes in ice with respect to Devon's proposed project?
  - Concerns about changes in landfast ice that may result from the Devon project? (For example, a past concern - in the late 1970s and early 1980s - was the potential extension of the fast ice edge further offshore, thereby forcing the polar bear hunt further seaward.)
  - Trends and changes. Note any changes have been observed and over what time period. Were changes noticed in participant's lifetime or in stories heard from Elders? Note specific years if possible. What is the cause of the changes?

- Socio-economic:
  - Issues and concerns with respect to changes in employment, family income, cost of living, community infrastructure and demands on family life?
  - Changes to traditional land use and/or cultural values?
  - Impacts on overall community health and well-being?
  - Trends and changes. Note any changes have been observed and over what time period. Were changes noticed in participant's lifetime or in stories heard from Elders? What is biggest change participant has seen in their lifetime? What caused this change?

- Chemical oceanography (ocean water quality):
  - Does the participant have any issues or concerns regarding the impacts of the proposed project on ocean water quality?
  - Trends and changes. Note any changes have been observed in water quality and over what time period. Were changes noticed in participant's lifetime or in stories heard from Elders? What is the cause of the changes?

Part B: Collection of Traditional Environmental Knowledge (cont'd)

- Geotechnical (sea floor (bottom of sea) and sea bed (under sea floor)):
  - Does the participant have any issues or concerns regarding the impacts of the proposed project on the ocean floor or bed?
  - Trends and changes. Note any changes have been observed and over what time period. Were changes noticed in participant's lifetime or in stories heard from Elders? What is the cause of the changes?

- Air emissions:
  - Does the participant have any issues or concerns regarding the impacts of the proposed project on air quality?
  - Trends and changes. Note any changes have been observed and over what time period. Were changes noticed in participant's lifetime or in stories heard from Elders? What is the cause of the changes?

- Noise:
  - Does the participant have any issues or concerns regarding the potential negative impacts of the proposed project on noise levels?
  - Trends and changes. Note any changes in noise levels that have been observed and over what time period. Were changes noticed in participant's lifetime or in stories heard from Elders? What is the cause of the changes?

- Land and Resource Use:
  - Record any mention of potential impacts to sport, commercial or recreational (non-Inuvialuit) activities on the land.

- Other:
  - Does the participant have any other issues or concerns that they want to express?
  - Are there any topics that they want to discuss that have not been covered in the interview thus far?

5 of 5

Appendix C Workshop Report

ESRF Traditional Knowledge Manual Review Workshop

JUNE 7 – 8, 2007

INUVIK, NWT

Prepared For
Environmental Studies Research Fund

Prepared by
KAVIK-AXYS Inc.

March 2008

ESRF-06-090

Executive Summary

A workshop was held in Inuvik on June 7th and June 8th, 2007 to review the draft Traditional Knowledge Manual: Using Traditional Knowledge in Impact Assessments. The workshop was attended by representatives of the Hunters and Trappers Committees (HTC), and Elder Committees from the six communities within the Inuvialuit Settlement Region (ISR), as well as a representative of the Environmental Impact Screening Committee. Requests for representatives from the Inuvialuit Cultural Resource Centre and Inuvialuit Game Council were also made but these organizations were unable to send representatives to the workshop.

The draft manual was developed with funding from the Environmental Studies Research Fund to address perceived deficiencies in and the lack of standard methodology in the collection, use, application and reporting of traditional knowledge in impact assessments in the ISR. The original drafting of the manual did not include direct Inuvialuit input. The workshop was used to obtain direct Inuvialuit feedback on the manual to ensure a common understanding and agreement on the process by which traditional knowledge will be used in the environmental impact assessment process. Tacit approval was achieved by obtaining acceptance of the process described in the manual and obtaining further input on how the process may be enhanced. Agreement for the purpose of this workshop does not refer to a formal endorsement by workshop participants. A formal endorsement would require separate statements of endorsement from each HTC and Elders Committee.

Community organizations were provided with extra copies of the draft manual for other members of their organizations who wished to provide comment. Several HTCs were visited on an opportunistic basis and briefed on the manual and its purpose. A presentation was made to the Environmental Impact Screening Committee and the Fisheries Joint Management Committee on the content and purpose of the manual. The Inuvialuit Game Council was presented with the results of the Traditional Knowledge Manual consultations at their September 2007 meeting. No concerns regarding the manual were raised at this meeting.

The manual was well received with the exception of a few individuals. These individuals did not see value to having the manual; this may have been due to confusion over the purpose of the manual and its audience. Comments received both during and after the workshop were very constructive. Comments were provided both on the review process for the manual as well as on the content of the manual. Overall, the manual was seen as a good tool to guide the collection, use and recording of traditional knowledge for use in environmental impact assessments in the Inuvialuit Settlement Region.

There was a consistent message from workshop participants and other community organizations that it would have been preferred if the manual was vetted through each community separately. Travelling to each community was not possible for the review of this manual and this was explained to workshop participants and Inuvialuit organizations. Consulting with individual communities should be considered as the preferred option for any new guidance documents related to traditional knowledge.

There were no comments or suggestions on Volume 1 of the manual; all comments and suggestions pertained to Volume 2. A number of the suggestions made at the workshop were ideas that had been captured in the manual. Most new suggestions and comments would enhance the manual if incorporated. This report documents the comments and suggestions made at the June workshop and other consultations on the Traditional Knowledge Manual. Suggestions incorporated into the manual are identified in this report by Manual Section.

It was suggested at the workshop that the Traditional Knowledge Manual should be referred to as a guide instead of a manual. For this report the original name of Traditional Knowledge Manual will be used but the revised document will be renamed a Traditional Knowledge Guide.

Résumé

Les 7 et 8 juin 2007, un atelier a été tenu à Inuvik dans le but d'examiner l'ébauche du *Manuel des connaissances traditionnelles : utilisation des connaissances traditionnelles dans l'évaluation des répercussions environnementales*. Participaient à l'atelier des représentants des comités de chasseurs et de trappeurs et des comités des Sages des six communautés de la région désignée des Inuvialuit, ainsi qu'un représentant du Comité d'étude des répercussions environnementales. Avaient également été invités les représentants du Centre des ressources culturelles des Inuvialuit et du Conseil Inuvialuit de gestion du gibier, mais ces organismes n'ont pu envoyer leurs représentants.

L'ébauche du manuel a pu être réalisée grâce à un financement accordé par le Fonds pour l'étude de l'environnement en vue d'examiner les lacunes perçues et l'absence de méthode standard pour collecter, utiliser, appliquer et faire rapport des connaissances traditionnelles dans le cadre des évaluations des répercussions environnementales dans la région désignée des Inuvialuit. La première ébauche du manuel ne comprenait pas la contribution directe des Inuvialuit. L'atelier visait donc à obtenir les commentaires des Inuvialuit pour alimenter le manuel et ainsi parvenir à une compréhension et une entente communes sur le processus par lequel les connaissances traditionnelles seront utilisées lors des évaluations des répercussions environnementales. Une entente tacite a été réalisée en obtenant l'acceptation du processus décrit dans le manuel ainsi que leur contribution à l'amélioration du processus. L'entente ainsi réalisée durant l'atelier ne signifie pas que les participants y ont adhéré officiellement. Pour cela, il faudrait des déclarations d'acceptation de la part de chaque comité de chasseurs et de trappeurs de même que du comité des Sages.

Les participants à l'atelier ont reçu des exemplaires supplémentaires de l'ébauche du manuel pour les remettre aux autres membres de leurs organismes respectifs qui souhaiteraient exprimer des commentaires. Plusieurs comités de chasseurs et de trappeurs ont été rencontrés lorsque l'occasion se présentait pour leur expliquer les visées du manuel. Une présentation a été faite au Comité d'étude des répercussions environnementales et au Comité mixte de gestion de la pêche sur le contenu et les visées du manuel. Le Conseil Inuvialuit de gestion du gibier a pu prendre connaissance des résultats des consultations sur le Manuel des connaissances traditionnelles lors de sa réunion de septembre 2007. Aucune préoccupation à l'égard du manuel n'a été alors exprimée.

Le manuel a été bien accueilli, sauf par quelques personnes, qui ne croyaient pas à son utilité. Cela est peut-être dû à la confusion existant autour des visées du manuel et des personnes ou organismes auxquels il s'adresse. Les commentaires reçus durant et après l'atelier se sont révélés très constructifs; ils portaient à la fois sur le processus d'examen du manuel et sur le contenu du manuel. Dans l'ensemble, le manuel est considéré comme un bon outil pour guider la collecte, l'utilisation et la consignation des connaissances traditionnelles qui serviront aux évaluation des répercussions environnementales dans la région désignée des Inuvialuit.

Les participants à l'atelier et d'autres organismes communautaires ont déploré que le manuel n'ait pas été soumis à l'approbation de chacune des communautés. Or il n'était pas possible de se rendre dans chacune d'elles pour qu'elles en fassent l'examen; cela a été expliqué aux participants à l'atelier et aux organismes Inuvialuit. Par contre, il faudrait dorénavant consulter chacune des communautés chaque fois qu'un nouveau document d'orientation sur les connaissances traditionnelles est envisagé.

Il n'y a eu aucun commentaire ni aucune suggestion sur le volume 1 du *Manuel*; les commentaires et suggestions concernaient tous le volume 2. Plusieurs des suggestions faites à l'atelier avaient déjà été abordées dans le *Manuel*. La plupart des nouveaux commentaires et suggestions exprimés amélioreraient le *Manuel* s'ils y étaient incorporés. Le présent rapport prend en compte les commentaires et suggestions exprimés lors de l'atelier du mois de juin et d'autres consultations menées à propos du *Manuel*. Les suggestions incorporées dans le *Manuel* sont identifiées dans le présent rapport, selon la section.

Lors de l'atelier, il a été suggéré de remplacer le mot « manuel » par le mot « guide ». Pour les fins du présent rapport, l'appellation *Manuel des connaissances traditionnelles* sera maintenue, alors que le document révisé s'appellera le *Guide des connaissances traditionn*

Table of Contents

Abbreviations

CEAA ..... Canadian Environmental Assessment Act
EIA ..... Environmental Impact Assessment
EISC ..... Environmental Impact Screening Committee
EIRB ..... Environmental Impact Review Board
ESRF ..... Environmental Studies Research Fund
FJMC ..... Fisheries Joint Management Committee
HTC ..... Hunters and Trappers Committee
IFA ..... Inuvialuit Final Agreement
IGC ..... Inuvialuit Game Council
ISR ..... Inuvialuit Settlement Region

8 Introduction

Kavik-Axys was contracted by the Environmental Studies Research Fund (ESRF) to conduct a review with representatives of Inuvialuit communities of the draft Traditional Knowledge Manual: Using Traditional Knowledge in Impact Assessment (ESRF-06-090). The ESRF, which was established under the *Canada Petroleum Act*, sponsors environmental and social research to assist in decision making and planning for oil and gas exploration and production on frontier lands.

The Traditional Knowledge Manual was developed under an earlier ESRF contract (ESRF-04-048). The manual is designed for use by proponents, consultants and responsible authorities who use or are required the use of traditional knowledge in the environmental impact assessment process in the Inuvialuit Settlement Region (ISR). The manual discusses and provides approaches to developing protocols and strategies for the collection, application and reporting of traditional knowledge in environmental impact assessments (EIA). The manual was developed based on past examples of traditional knowledge use in environmental impact assessments, and on in-house expertise of staff in the collection and use of traditional knowledge.

In the ISR, "the Environmental Impact Screening Committee (EISC) has a legislated responsibility to screen all proposed developments in the ISR which may negatively impact the environment and/or Inuvialuit wildlife harvesting" (EISC 2004). This legislated responsibility is established through the Inuvialuit Final Agreement (IFA). If the EISC determines that a given proposal may result in a significant environmental impact then it may recommend rejection of the development or refer it to the Environment Impact Review Board (EIRB) for environmental review.

Neither the operating guidelines nor procedures of the EISC and EIRB specifically state a requirement for the use of traditional knowledge in an environmental impact assessment; however it is often expected by communities or government agencies that traditional knowledge will be used in environmental impact assessments. The EISC does require information on traditional and other land uses (EISC 2004). The EIRB operating procedures does require that "supplementary documentation necessary to support statements made in the Environmental Impact Statement or assist in the evaluation of potential negative impacts" be provided (EIRB 2004). This supplementary information may include traditional knowledge.

The Canadian Environmental Assessment Act (CEAA) does make reference to the use of traditional knowledge in environmental impact assessments but does not make it mandatory. Section 16.1 of CEAA states, "Community knowledge and aboriginal traditional knowledge may be considered in conducting an environmental assessment." Although not mandatory through CEAA, it is becoming a more accepted practice to use traditional knowledge, when available, in environmental impact assessments.

9 Purpose of Workshop

The purpose of the workshop was to undertake a review of the Traditional Knowledge Manual with community representatives from the ISR. This review was necessary as the Inuvialuit were not directly involved in the development of

the draft manual. The workshop was designed to solicit feedback on the draft manual and to foster common understanding and agreement on the process by which traditional knowledge will be collected, analyzed, applied and reported in the environmental assessment process. Agreement in this case does not refer to a formal endorsement by workshop participants. Although the workshop participants were representatives of HTCs and Elder Committees, they did not have the power to make endorsements on behalf of their committees. The workshop aimed instead, at achieving agreement by acceptance or tacit approval of the processes described in the manual with enhancements suggested by workshop participants.

10 Workshop Methodology

A two day workshop was held in Inuvik on June 7 and June 8, 2007. Two representatives were invited from each Hunters and Trappers Committee (HTC) and Elders Committee from all six Inuvialuit communities (Appendix A). Invitations were also sent to the Inuvialuit Cultural Resource Centre, Environmental Impact Screening Committee (EISC) and Inuvialuit Game Council (IGC).

The workshop format was to include a combination of full group forums and break-out groups. The agenda (Appendix B) outlines the content and flow of the workshop. On Day one of the workshop, participants were provided with background information on why and how the draft manual was developed, followed by a high level overview of both Volume 1 and Volume 2 of the Manual.

The high level overviews were followed by a more detailed review and discussion of Volume 1. Volume 1 contains the results of an evaluation of traditional knowledge literature, definition of terms used in Volume 2 and a discussion on the direction of traditional knowledge studies. Essentially Volume 1 is a support document for Volume 2. No further discussion was held on Volume 1.

On the afternoon of Day 1 a broad overview of Volume 2 was provided followed by a more detailed summary of Sections 1, 2 and 3 of Volume 2. Prior to dividing into break-out groups a discussion was held on whether to stay as one group or continue, as proposed, into break-out groups. Workshop participants decided they preferred to stay as one group so that comments on the manual could be heard and discussed by all at one time. It was also decided that the remainder of Day 1 would be used to go through the summaries of the other sections of Volume 2 and that Day 2 would be used for discussion and comment.

On Day 2 the participants and facilitators were seated in a circle. This provided a more informal setting and allowed everyone to see the speaker. When it appeared that only a few individuals were commenting on any one section, opinions of other participants were solicited by the facilitators to obtain the most information as possible. At the end of the workshop, everyone around the table was asked to provide a final comment.

Hand written notes on the workshop were taken by the workshop facilitators. The workshop was also recorded using digital recorders.

As a follow-up to the workshop, letters were sent out to the participants of the workshop inviting any further comments on the draft manual. Letters inviting comments, and copies

of the manual were also sent to the different organizations represented at the workshop to allow other members of those organizations to provide comment.

Presentations were also made to the Environmental Impact Screening Committee (EISC) and the Fisheries Joint Management Committee (FJMC) to explain the purpose of the manual and to answer questions regarding its contents.

11 Workshop Feedback

Comments and suggestions made at, and outside, the workshop all pertained to Volume 2 of the Manual. No comments or suggestions were made regarding Volume 1; therefore, the Results section only pertains to Volume 2 of the manual.

Comments and suggestions from the workshop and subsequent consultations can be divided into two categories; those dealing with the review process of the manual, and those dealing with specific content of the manual.

11.1 Review Process:

All comments regarding the review process for the draft Traditional Knowledge Manual were related to a desire for more Inuvialuit input. This included Inuvialuit input at the drafting stage of the manual and the opportunity for greater input during the review process itself. Comments on the process included:

- An Inuvialuit representative should have been involved to guide the writing of the draft manual;
- The draft manual should have been presented separately to all Inuvialuit communities and their organizations;
- Workshop participants would have preferred to have more time to review the manual and to consult and present information about the draft manual and the workshop to their respective organizations;
- The draft manual should be vetted through all community organizations (HTCs, Elders Committee and Community Corporations);
- A request was made for an additional workshop to review changes made and to provide follow-up comments or suggestions on the draft manual, and
- The Inuvialuit should have been consulted prior to the development of the draft manual.

Summary and Follow-up

A consistent message given at the workshop was that the manual should be presented to each community and community organization separately. People are strongly tied to their traditional knowledge. People who hold the traditional knowledge want to ensure they have a say on its collection, reporting and application. Some workshop participants were not comfortable with a few individuals being selected to speak on behalf of the whole community on matters pertaining to traditional knowledge.

It is suggested that any new initiative pertaining to traditional knowledge in the ISR be vetted through each community separately.

11.2 Manual Comments by Section:

General Comments:

Generally there were favourable comments on the purpose of the manual stating and its utility for people when conducting new studies. There were several comments questioning the necessity of having a traditional knowledge manual. The rationale given for not requiring a traditional knowledge manual was that the necessary guidelines for collecting and using TK already exist in documents such as the EISC Operating Guidelines and the Inuvialuit Final Agreement. Also it was felt by some that those conducting traditional knowledge in the ISR already knew how to conduct traditional knowledge studies. There was one comment that a manual cannot be written for obtaining traditional knowledge. The rationale provided for this last comment was that traditional knowledge is gathered by the people in the community and grows with individuals as they grow in age. It was also commented that traditional knowledge is not passed-on by writing but orally between people and that traditional knowledge should not be passed on by non-Inuvialuit.

Neither the EISC Guidelines nor the Inuvialuit Final Agreement provides guidelines for the collection and use of traditional knowledge. New researchers who come into the ISR may not have the same understanding of how to proceed with a traditional knowledge study in this region. These comments may have arisen from a misunderstanding of the purpose of the manual and that it is not intended to guide Inuvialuit in obtaining traditional knowledge but instead aimed at guiding others (non-Inuvialuit) on how to gather traditional knowledge from the Inuvialuit for the purpose of using it in environmental impact assessments. Other general comments and suggestions on the manual included:

- Keep the language in the manual simple – many of the words used are difficult for some people to understand; and
- Remove the word "Manual" from the title and provide a more descriptive title instead. It was commented on that the word "manual" in the context of traditional knowledge was confusing for some. It was suggested that the word "guide" be used in place of "manual".

Summary and Follow-up:

Several workshop participants felt that there were too many difficult words in the manual making it hard to understand. It was suggested the manual be written in plain language. To turn the manual into a complete plain language document would require a complete rewrite. An alternative to a plain language document would be to replace some of the more difficult terms with simpler terms or phrases. It also should be noted that the main target audience for the manual is proponents, consultants and responsible authorities. The terminology used in the manual can have specific meanings to those for whom the manual is intended.

The term manual was felt by many at the workshop to imply too rigid a process for conducting traditional knowledge studies. They used the example of a car manual, which has very specific instructions that must be followed. However the guide was perceived as being more flexible in nature, which is the best approach to traditional knowledge study.

Follow-up: The suggestion to use more plain language may be considered in any future revisions of the manual.

Follow-up: Replace the term manual with guide in the title.

Section 2.1: Fundamental Research Principles

Two comments made at the workshop related to traditional knowledge research principles. These comments were:

- Traditional knowledge is owned by the people (in this case Inuvialuit); and
- Traditional knowledge needs to be respected.

Summary and Follow-up:

The first comment which pertained to ownership of Inuvialuit traditional knowledge is covered in Section 2.1 of the manual. In this Section, the principle of ownership is expanded to also include control of the knowledge. The guide states "Aboriginal people own and control their traditional knowledge." The second comment referred to the need to respect traditional knowledge. The manual refers to respecting the traditional channels of authority and levels of approval. The manual also states that researchers need to be culturally respectful at all times. However being culturally respectful and respecting channels of authority may not infer respect for traditional knowledge itself.

Follow-up: Respect for traditional knowledge should be added to the list of fundamental research principles. Respect for channels of authority and researchers being culturally respectful at all times should remain as principles as well.

Section 2.2: Collection Protocols

There was only one suggestion made regarding traditional knowledge collection protocols.

- People participating in traditional knowledge studies should be acknowledged in the resulting report(s).

Summary and Follow-up:

Workshop participants stated that those participating in traditional knowledge studies should be acknowledged in the resulting report(s). The manual makes reference to this acknowledgement in Box Key B of Section 2.2 where it states "Recognition of the contributions to the study by elders and community workers." Recognition in this case is synonymous with acknowledgement. However the statement in the box key refers to only elders and community workers. The reference to elders is too limiting in terms of who receives recognition. Non-elder adults and youth may also be participating in the study and should be acknowledged.

Follow-up: Change statement of recognition in Box Key B to read, "Recognition of contributions to the study made by interviewees and community workers."

Section 2.4: Study Format

The results of discussions on Section 2.4 of the manual focused on two main themes. The first theme was on project descriptions that are presented to communities. Community representatives commented that project descriptions are not always complete nor presented in a format readily understandable by all people in the community. The second theme pertained to which organizations should be contacted initially when proposing to

conduct a traditional knowledge study. For example the local community HTC and Elders Committee are the logical starting places for collecting traditional ecological knowledge. For information regarding social and economic traditional knowledge, local Community Corporations should be contacted. In most situations these organizations would be initial contact points within a community. Comments on Section 2.4 included:

- When presenting a project to the community, make sure all elements of the project description are provided. Information on timing and activities in any given area are required for scoping purposes. Reasons why and when certain activities are occurring should also be provided in the project description;
- Use plain language in project descriptions when meeting with community members;
- The initial contact with the community should be through the HTC, and later with the whole community when presenting draft research protocols;
- Organizations should be asked whether they prefer to meet individually or together;
- Meet with Elders Committee before the HTC;
- Those to be interviewed should be chosen by HTCs, Elders and Community Corporations;
- Interviewees for environment and wildlife should be chosen by HTCs and Elders;
- Interviewees for social and economic considerations should be selected by Community Corporations; and
- Go to community organizations for background information.

Summary and Follow-up:

The comments provided by community participants when reviewing this section could also be applied to Section 3, which deals more with community engagement and the collection of traditional knowledge. Providing complete and clear understandable information on project descriptions will assist in defining the scope of a traditional knowledge study. Discussing the project with the appropriate organizations and individuals is valuable in determining the format of the traditional knowledge study to be conducted. There was a difference in opinion between which organization should be contacted first. In such cases it would be beneficial to discuss this subject with others who have previously worked in the community.

Follow-up A statement has been included under the first question, "What determines the size and type of traditional knowledge study I need to undertake?" The statement notes that the project description should be complete and presented in a format (plain language) that is readily understood by all community members.

Follow-up: Under the second question of Section 2.4 "What role will the community play in how the traditional knowledge study is carried out?" a generic statement has been added stating that the appropriate community bodies need to be consulted during the initial discussions on study methodology.

Box Key C: Before you start:

A comment on Box Key C was to add "determine timing of the study". The rationale provided with this comment was that the time when a study is conducted can play an important role in the quality of information obtained and even affect the success of a study. For example, it would not be beneficial if the study was conducted when key individuals might be out on the land; also it may be advantageous to conduct a study just after people have returned from the land or harvesting so that the area and events are still fresh in their minds.

Summary and Follow-up:

As discussed in the results section, important considerations are determining when the best time to consult on conducting a traditional knowledge study and when is the best time to conduct the study in any given community.

Follow-up: Add community timing considerations to Box Key C.

Box Key D: Traditional Knowledge Facilitators:

There was only one comment regarding Box Key D. It was felt that the box was difficult to read in its present format as one long paragraph. The responsibilities of the facilitator were difficult to identify in this format.

Summary and Follow-up:

Follow-up: The format of this key box has been modified. The box begins with a short definition of what a traditional knowledge facilitator is, followed by bullets describing their responsibilities.

Section 3.1.1: Community Workers

There was very little comment on this section of the manual except for the following suggestion.

- Local community employment offices may be helpful in identifying interviewers.

Summary and Follow-up:

Follow-up: Community employment offices as a potential vehicle for hiring community interviewers has, been included in Section 3.1.1.

Section 3.1.2: Traditional Knowledge Participants

This section elicited a thorough discussion. The general intent of the comments and suggestions made were ensuring that the most knowledgeable people were interviewed during a traditional knowledge study. Suggestions brought forward were:

- All interviewees should be paid at the same rate of pay;
- The local HTC should identify or recommend the interviewees;
- Use interpreters when interviewing elders;
- Include men, women and younger people in the study as they may use the land differently and have different perceptions or experiences about an area or animal;

- Ensure that those interviewed have experience in the area where the project is to occur; and
- Consider interviewing outfitters.

Summary and Follow-up:

Comments on using men, women and youth as potential interviewees and consideration of their experience in a proposed project area are already contained in Section 3.1.2 of the guide. There was discussion at the workshop on having equality of pay for those interviewed such as between an adult non-elder and elder, or a woman and a man. However whether the rate of pay for youth should be the same as an adult was not as clear. Rate of pay is an important factor in any kind of study within a community as it may be an important source of income for many community residents. Also, if varying rates are paid to participants, this could lead to conflicts between individuals in the community, and reflect negatively on the study lead or proponent. Other comments such as the use of translators and the consideration of outfitters as potential interviewees are also not captured in the draft manual.

Follow-up: A brief discussion regarding the need for consistency and equality on rates of pay for interviewees has been included in the manual.

Follow-up: The potential requirement of using a translator when interviewing elders and consideration of interviewing outfitters have both been added to Section 3.1.2.

Section 3.2: Information Needs

Information needs refers to both the collection of traditional land use and traditional environmental knowledge. Comments received centered on the requirement for traditional knowledge researchers to have a basic understanding of the area of study and its use by local people. Comments also identified pitfalls which researchers may fall into such as when several places can have the identical name. Comments on Section 3.2 are as follows:

- Conduct background research first to see what other information has been collected from past studies;
- Use correct and/or local names of places and identify these locations on a map;
- Different places may have different uses and times of use (e.g., fishing camps, community gathering places like Shingle Point, medicine places where medicinal plants grows and camping places;
- Expectations from companies: What can companies give back to communities (e.g., donations to local traditional dancing groups);
- When possible use Inuvialuit words for better understanding – languages have different meanings;
- Take note of myths and taboos; and
- Consider people's way of life.

Summary and Follow-up:

The comment to conduct background research is already contained in the manual under Sections 3.2.1 and Section 3.5.1 Baseline Research. The comments referring to different places having different uses and time; to take note of myths and taboos; and to consider peoples way of life are already covered in Section 3.2.1. The question of what companies can put back to communities is addressed under Section 3.2.3 Information Needs - Communication. The comments on considering people's way of life is also covered in this Section (3.2.1).

Follow-up: Statements referring to the use of local or official location names and the fact that some names may be used more than once for different locations have been added to Section 3.2.1. A statement on using Inuvialuit words for better understanding has been added to Section 3.1.2 Traditional Knowledge Participants.

Section 3.3: Information Sharing:

Comments on this section are listed below:

- How information is shared may be specific to a given project and not apply to all studies.
- Community input is required on how information should be shared.

Summary and Follow-up:

Follow-up: Both statements have been incorporated into Section 3.3

Section 3.3.1: Informed Consent

In Section 3.3.1 there is a short list of information requirements on what the minimum documentation requirements are for an interview. One of the information requirements is stated simply as the "length of residence on the land". Many of the workshop participants felt that the "length of residence" was vague and that more information is required to properly understand the completeness of the knowledge a person may have about an area or activity.

Summary and Follow-up:

Follow-up: Under the bullet "length of residence on the land", sub bullets have been added which provide more descriptive detail on the length of residence of an individual. These include what seasons are spent in the area, what type of experience or use occurs in the area, last time spent in the area, and history of residence in the area.

Section 3.3.1: Box Key H: Obtaining Informed consent:

Obtaining informed consent is a primary responsibility of traditional knowledge facilitators. Box Key H provides a list of actions and concepts for obtaining informed consent. Comments and suggestions from workshop participants focused on ways of ensuring that both parties understand how a traditional study would be conducted and on how information would be used and included:

- Ensuring there is a commitment by a company about how traditional knowledge will be used and stored.

- Clearly explaining the project and all its components before obtaining consent.
- Obtaining consent for the use of photographs.
- Obtaining agreement between both parties on how information is to be used.
- Repeating what has been agreed to before consent form is signed – ensure both parties understand what is being consented to.
- Ensuring that consent is written out and copies are held by community organizations and traditional knowledge facilitators.

Summary and Follow-up:

As discussed in the Results section of this report, much of the discussion on this topic centered around ensuring that both parties understood what they were consenting to. Some of the comments made at the workshop are already contained in this Box Key, such as explaining the project and its components. As well obtaining permission to use photographs is covered in the text of Section 3.3.1 Informed Consent. However, other comments made will strengthen the process and understanding of obtaining informed consent. For example, some workshop participants did not equate explaining how traditional knowledge will be used with a commitment on how the knowledge would be used.

Follow-up: In Box Key H, statement number 3 now reads "Explain and commit to how and where traditional knowledge will be used…"

Follow-up: Point 12 has been added to Box Key H which refers to repeating what has been agreed on to ensure that both parties understand what is being consented to.

Follow-up: Point 13 has also been added which states that the use of a consent form (see Section 3.3.1), although not always necessary, is generally recommended.

Section 3.4: Scheduling and Timing

Workshop participants noted that timing and scheduling of interviews are important to the success of a traditional knowledge study. Suggestions were:

- Schedule traditional knowledge studies around special times (community harvest periods);
- Consider the timing of community activities and events when scheduling a study;
- The time of day when interviews are conducted can be important;
- Consider individual needs of the interviewee (timing, length of interview, place);
- Seasonal timing of interviews is important. Different communities have different seasons (e.g. spring break-up occurs earlier in Inuvik than Sachs Harbour); and
- Talk to communities shortly after a hunt so the area and activity are fresh in their minds.

Summary and Follow-up:

Some suggestions such as working around community harvest periods or community events have already been captured in Section 3.4. Other suggestions made pertained to fine-scale or large-scale scheduling. Fine-scale scheduling suggestions include

coordinating the time of day for conducting a specific interview. For some people or even communities, interviews in the morning may not be feasible. Also some interviewees may require more time or need to have interviews spread over several days. An example of a large-scale scheduling consideration is to schedule a traditional knowledge study after a hunting event such as caribou or geese hunting, so that the species and area visited are still fresh in people's minds.

Spring in one community in the ISR does not necessarily occur at the same time in another community. For example spring break-up or spring goose hunting may happen one month earlier in Inuvik than in Sachs Harbour. This is important to recognize when planning studies in different communities within the ISR.

Follow-up: Fine scale scheduling considerations such as time of day for conducting interviews and individual needs of the interviewee such as (timing, length of interview, place) have been included in Section 3.4. Large scale scheduling considerations, such as conducting interviews after the end of a hunting season, have also been included in Section 3.4.

Follow-up: The fact that all communities do not necessarily share the same times for seasons and harvesting events has been added as a timing consideration.

Section 3.5: Baseline Work

Workshop participants indicated that individuals who are developing questionnaires and conducting interviews should have a basic knowledge of the species in the area of interest. Conducting baseline work in advance of the interviews would contribute to the knowledge required by community workers or traditional knowledge facilitators to respond to answers with supplementary questions and to ensure an understanding of the information being provided by the interviewees. Suggestions included:

- Community workers and facilitators should have a basic knowledge of species in the area of interest.
- Facilitators should review studies which are publicly available.
- Interviewers and facilitators should self-educate themselves prior to conducting interviews.

Summary and Follow-up:

Suggestions on baseline work required prior to conducting a traditional knowledge study have already been captured in the manual with the exception of one suggestion that the interviewer have a basic knowledge of the animals in the area. This suggestion is important in that having a basic understanding of the animals discussed will assist in the development of the questionnaire and help the interviewer ask the relevant supplementary questions to responses given.

Follow-up: Having a basic knowledge of the species that may be discussed in the study has been included in this Section. A basic knowledge of a specie's life history may include information on migration, diet, mortality, calving or spawning etc. In some cases it may be useful to discuss possible questions with a local biologist.

Section 3.5.2: Participant Interviews

Most of the suggestions provided in this section related to respect for the interviewee and respect for traditional knowledge itself. There was one comment regarding the importance of interviewers understanding how people obtained their knowledge. This comment both reflects the need for respect of the interviewee and their knowledge, as well as an understanding of the completeness of the information being provided. For example, if an individual only spent short periods of time in an area and only participated in one activity in that area then their knowledge may not be as complete as someone who spent more time and conducted more activities in that same area. Suggestions included:

- Conduct interviews in person and not by phone;
- Accommodate the interviewee's schedule – do not have them fit your schedule;
- Do not use big words – use plain language;
- Consider the language used in questions. Consider having questions reviewed by a local person or translator;
- Have an interpreter present when possible;
- Come out to site (e.g. fishing camp) and watch and help out. Conduct the interview during this period;
- Interview elders at home but check with each individual to see where they would be most comfortable;
- Conduct the interview at the proposed project site when possible;
- Make the interviewee comfortable;
- Understand how people obtained their knowledge;
- Ask interviewees if they are tired and come back another day if required. This may also help people to remember new things;
- Provide ample lead time for scheduling the interview and ask the interviewee when the best time of day is to be interviewed;
- Have maps and pictures of the species or landscape available during interview;
- Conduct interviews in small groups and work around maps;
- Form a local working group in the community to help guide the traditional knowledge study;
- Researchers should request any previously approved questionnaires from the local Community Corporation;
- Standard sets of questions could be built and housed in each community for reference purposes;
- Consult with all communities which have individuals who use the area under study; and
- Ask people how you should record information (e.g. tape recording or writing).

Summary and Follow-up:

The suggestions provided regarding conducting site visits for interviews are covered in the manual under Section 3.5.3 Site Visits. The use of small groups, maps and pictures of species are also covered in the manual under Section 3.5.2.

A number of the suggestions were related to the issue of respect and provided additional guidance beyond what is already contained in the manual. It is important that the interviewee understands and agrees to the way information is being recorded. This is especially true when using tape recordings. It is also important to note the importance of accurate recording so that interpretation and analysis of the information provided can be conducted accurately.

The suggestion to form local working groups to help guide traditional knowledge studies may be useful for large traditional knowledge studies, but could become cumbersome and expensive for smaller traditional knowledge studies. An alternative would be to seek advice from the Inuvialuit Cultural Centre.

There was also a suggestion that all communities be consulted on traditional knowledge studies. This suggestion is not always practical or warranted. The communities that are consulted would be determined during the scoping of the study. It should be remembered that the traditional knowledge study is in support of an environmental impact assessment and therefore should be limited to the geographic extent of potential project effects. Often proposed projects are large distances from some communities with no potential for any possible effects occurring. Also knowledge of community members of areas outside their community harvest or use areas are generally limited compared to those individuals from communities who do use those areas. If there is doubt about when a community should be included in the study it is best to ask that community directly to determine their level of interest and potential involvement.

Follow-up: In the Section regarding respect, the following points were added.

- Interviews should not be conducted by phone.
- Interviews should be conducted to fit the interviewee schedule;
- Ensure the interviewee is comfortable.
- Give interviewees sufficient lead time when setting up interview times.

Follow-up: The following points were added to the manual:

- Consider the language used in developing questions.
- It may be useful to have questions reviewed by a local person or translator.
- Do not use big words in questions.

Follow-up: A brief section on recording the information from an interview has been added. This includes the importance of good reporting and the need to obtain permission for different types of recording from the interviewee.

Follow-up: The following points were added:

- Researchers (facilitators) may want to review previous traditional knowledge questionnaires for the area.
- To facilitate obtaining questionnaires, copies of questionnaires should be housed in the community for future reference. This suggestion has been included in Section 5.2 as part of Baseline Studies.

Section 4.1: Applying Traditional Knowledge

Workshop participants provided the following suggestions on how traditional knowledge may be used for project planning and design.

- Use traditional knowledge when estimating timing for break-up or freeze-up and how ice moves;
- Traditional knowledge can help determine where to place a rig or other project related activities;
- Use traditional knowledge for identifying lakes for certain purposes (e.g. water withdrawal) or which ones should not be used; and
- Traditional knowledge could help improve timing considerations to help avoid nesting and calving periods.

Summary and Follow-up:

The application of traditional knowledge to project planning and design has been either misunderstood or not understood by many project proponents, especially those proponents new to using traditional knowledge. The manual has provided real project examples to demonstrate traditional knowledge value in project planning and design. Some suggestions made on how traditional knowledge can be applied to project planning and design during the workshop have been used in the manual. It was suggested that it would be beneficial to have a box key with additional examples of the application of traditional knowledge in project design and planning.

Follow-up: This suggestion may be considered in any future revisions of the manual.

Section 4.2.5: Monitoring and follow-up

There was limited discussion on the use of traditional knowledge for monitoring and follow-up activities.

- Local and traditional knowledge can help with monitoring such as observations of changes to important waterbodies or in selection of waterbodies to be monitored.

Summary and Follow-up:

Only one suggestion was provided on the use of traditional knowledge for monitoring and follow-up. The suggestion is in this section of the manual as well as in Section 4.2.1, which also discusses the selection of indicators. No further changes are required to this component.

Section 4.3.3: Traditional Knowledge Hearings

An important element raised during the workshop discussion was the notification of community members when traditional knowledge was to be used in hearings. This was especially important if video or pictures from family members were to be used. It was also felt that if a representative of the participants in a traditional knowledge study assisted with the presentation of this knowledge then they would be in a better position to answer any questions regarding the knowledge in the study. Suggestions included:

- Having a local person who participated in the traditional knowledge study giving or assisting with the presentation of traditional knowledge at meetings;

- The HTC should be notified when information is to be presented;
- If a video is made during a traditional knowledge study, the families who may be on the video should be notified prior to it being shown at the hearing; and
- Copies of videos should be distributed to individuals in the study.

Summary and Follow-up:

The following two statements have been incorporated into the manual.

Follow-up: Consider using a local person who participated in the traditional knowledge study to assist with the traditional knowledge presentation.

Follow-up: The local HTC should be notified when the information is to be presented

Section 5.0: Traditional Knowledge Reporting

Numerous participants commented on the need to report back on the information gathered from a traditional knowledge study. Suggestions were:

- Report back to community;
- The report should be provided to the people who participated in the study;
- Reports should go back to the HTCs, Elders and Community Corporations;
- A presentation of the report should be made to the community;
- Allow some interviewees to review the report; and
- Use a community working group to guide and review the report.

Summary and Follow-up:

Suggestions and comments made regarding traditional knowledge reporting centered around the reporting responsibility of the facilitators back to the community. This responsibility is discussed in the manual during the establishment of protocols and partly in Section 5.4 Community Report. The community report is a separate document from the report filed publicly in an environmental assessment process. It would be advantageous to the reader of the manual to be reminded that any report on traditional knowledge should also be brought back to the community. This includes providing copies to community organizations and often to study participants. It would also be beneficial for a community interviewee or worker to review the report before release. A suggestion was made to use a working group but, as discussed earlier a working group may be useful in larger studies, but may not be practical for use in smaller studies.

Follow-up: An additional question to be answered was added to Section 5.0. The question reads "How do I meet my commitment to the community on reporting of the traditional knowledge study?" This would include review by community individual(s), presentation to the community, acknowledgement of study participants and reports back to community organizations and participants.

Follow-up: Additions in this Section include the use of videos and the need to contact family members if video is shown publicly so they may have an opportunity to view it. Also note copies of the video should be sent to the participants who may be in the video.

Comments Received After Workshop

A number of comments were received or discussed after the workshop was held. These comments were as follows:

- Add as a separate document or appendix a quick "field guide" version of the manual which contains a brief plain language description of key elements to conducting a TK study and a series of checklists or "things to consider" tables. Many of these checklists would be drawn from the key boxes in the manual;
- Box Key D: Traditional Knowledge Facilitators. This box key consists of one long paragraph. The box key should either become part of the text or be simplified for easy comprehension. The box may be more useful if it focused on the role of the facilitator and used bullets for the facilitator's responsibilities; and
- If the focus of the manual is on the Inuvialuit Settlement Region then the term "aboriginal" should be replaced by Inuvialuit" and there should be reference to HTC's, Elder Committees and other Inuvialuit and community organizations. A separate section with Inuvialuit organizations listed may also be useful.
- The Environmental Impact Screening Committee provided the following comments via a letter to KAVIK-AXYS (Appendix D).
    - "The manual … should help the developers working in the Inuvialuit Settlement Region."
    - "The Committee felt that any further input the project could receive from the communities could only benefit the final project."

Summary and Follow-up:

A shorter version of the manual, such as a pocket guide or series of checklists would be beneficial to those working on a study within the community as a quick reference guide. The comment regarding Key Box D has already been dealt with from comments received at the workshop. The comment to replace the term aboriginal with Inuvialuit provides a clearer focus on the area for which the manual is intended. Listings of community organizations and contacts are available through organizations such as the Joint Secretariat and does not require duplication in the manual. Comments made by the EISC require no further follow-up. The manual has a strong community focus and the intent of the manual was to help developers in the ISR with understanding how to collect and use traditional knowledge in their project assessments.

Follow-up: The term aboriginal has been replaced with Inuvialuit, where appropriate.

5 References

CEAA. 2003. Canadian Environmental Assessment Act. Justice Canada.

EIRB. 2004. Environmental Impact Review Board Operating Procedures. 52 p.

EISC. 2004. Environmental Impact Screening Committee Operational Guidelines and Procedures. 56 p

Appendix D List of Participants

Name	Organization	Community
Annie B. Gordon	Elders Committee	Aklavik
Billy Archie	HTC	Aklavik
Donald Aviugana	HTC	Aklavik
Rhoda Kayotuk	Elders Committee	Aklavik
Ron Gruben	EISC	Inuvik
Sarah Tinhmiak	Elders Committee	Inuvik
Abel	Elders Committee	Inuvik
Joseph Haluksat	HTC	Ulukhaktok
Jean Ekpakohak	Elders Committee	Ulukhaktok
Sadie Joss	HTC	Ulukhaktok
Margaret Kanayok	Elders Committee	Ulukhaktok
Fred Thrasher	Elders Committee	Paulatuk
Bob Ruben	HTC	Paulatuk
David Ruben	HTC	Paulatuk
Mary Green	Elders Committee	Paulatuk
Jean Harry	Elders Committee	Sachs Harbour
Margaret Carpenter	Elders Committee	Sachs Harbour
Fred Wolki	Elders Committee	Tuktoyaktuk
Jean Gruben	Elders Committee	Tuktoyaktuk
James Pokiak	HTC	Tuktoyaktuk
David Nasogaluak	HTC	Tuktoyaktuk
Facilitators		
Doug Chiperzak	KAVIK-AXYS	
Michael Fabijan	KAVIK-AXYS	

Appendix E Workshop Agenda

Agenda

Traditional Knowledge Manual Review
Inuvik, June 7 – 8
Midnight Sun Recreation Complex
9 am to 5 pm

Day 1: Thursday, June 7

1. Prayer
2. Greetings & Introductions
3. Introduction to workshop
    a. ESRF – what is it?
    b. How the manual came about?
    c. Purpose of workshop
    d. Structure of workshop
    e. What happens to the findings from the workshop?
4. High-level Overview of the Traditional Knowledge Manual (Volumes 1 and 2)
    a. Purpose of the manual
    b. How the manual was constructed.

Morning Coffee Break

5. Overview of Volume 1

Lunch (Provided)

6. Review of the morning findings
7. Overview of Volume 2
8. Sections 1 and 2 (Introduction and Research Philosophy)
    a. Section Overviews
    b. General discussion

Afternoon Coffee Break

9. Section 3: Collecting Traditional Knowledge
    a. Section overview
    b. Break-out groups
    c. General forum to bring together results of working groups and further discussion

End of Day 1

Day 2: Friday, June 8

10. Day 2 Introduction
    a. Review of Day 1 findings
    b. Process for Day 2
11. Section 4: Applying Traditional Knowledge
    a. Section overview
    b. Examples or case studies

Morning Coffee break

    c. Break-out groups
    d. General forum and review of comments

Lunch (Provided)

12. Section 5: Traditional Knowledge Reporting
    a. Section overview
    b. Examples
    c. Break-out groups
    d. General forum and review of comments

Afternoon Coffee break

13. General forum and discussion
14. Next steps
15. Thank you

Appendix F Workshop Pictures

Photo 1 **Workshop Participants and Facilitators**

Photo 2 **Workshop participants discussing Traditional Knowledge Manual**

Appendix G Letter from the Inuvialuit Environmental Impact Screening Committee

ENVIRONMENTAL IMPACT SCREENING COMMITTEE

September 14, 2007

Kavik-Axys
Box 2320
Inuvik, NT X0E 0T0

ATTENTION: MICHAEL FABIJAN

Dear Mr. Faijan,

RE: ESRF TRADITIONAL KNOWLEDGE STUDY

The Environmental Impact Screening Committee would like to thank you for making a presentation on the above-mentioned project on August 11, 2007. Learning more about the study, its origins and the objectives for the project was very helpful and informative.

Developers are encouraged to use the best knowledge they can obtain to prepare their project descriptions. This includes both Traditional Knowledge and scientific knowledge. The manual developed as part of this project should help the developers working in the Inuvialuit Settlement Region.

The Committee felt that any further input the project could receive from the communities could only benefit the final project.

Yours sincerely,

Fred McFarland

Chair
Environmental Impact Screening Committee

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