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2015 Northwest Territories
Environmental Audit

ARCADIS Design & Consultancy for natural and built assets

2015 NORTHWEST TERRITORIES ENVIRONMENTAL AUDIT

March 31, 2016

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2015 NORTHWEST TERRITORIES ENVIRONMENTAL AUDIT

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ACRONYMS AND ABBREVIATIONS

AANDC:	Aboriginal Affairs and Northern Development Canada
ADFN:	Akaitcho Dene First Nations
ADK:	Acho Dene Koe First Nation
CLCA:	Comprehensive Land Claims Agreement
DAAIR:	Department of Aboriginal Affairs and Intergovernmental Relations
DFO :	Fisheries and Oceans Canada
EA:	Environmental Assessment
EIR:	Environmental Impact Review
GNWT:	Government of the Northwest Territories
GNWT-ENR:	GNWT Department of Environment and Natural Resources
GNWT-Finance	GNWT Department of Finance
GNWT-ITI:	GNWT Department of Industry, Tourism and Investment
GNWT-Lands:	GNWT Department of Lands
GRRB:	Gwich'in Land and Water Board
INAC:	Indigenous and Northern Affairs Canada
LUP:	Land Use Plan
LUPB:	Land Use Planning Board
LWB:	Land and Water Board
MVEIRB:	Mackenzie Valley Environmental Impact Review Board
MVLUR	Mackenzie Valley Land Use Regulations
MVLWB:	Mackenzie Valley Land and Water Board
MVRMA:	Mackenzie Valley Resource Management Act
NEB:	National Energy Board
NPMO:	Northern Projects Management Office
NWT CIMP:	Northwest Territories Cumulative Impact Monitoring Program
OAG:	Office of the Auditor General of Canada
OROGO:	Office of the Regulator of Oil and Gas Operations
ORS:	Online Review System
SEA:	Socio-Economic Agreements
SGA:	Self-government Agreement
SLWB:	Sahtú Land and Water Board
SRRB:	Sahtú Renewable Resources Board
TK:	Traditional Knowledge
WQI:	Canadian Water Quality Index
WRRB:	Wek'èezhìi Renewable Resources Board

EXECUTIVE SUMMARY

In the 2015 NWT Environmental Audit, we examined the effectiveness of the Mackenzie Valley regulatory system to protect the environment. We obtained information and views from a wide range of sources and participants including: Aboriginal governments; co-management boards; non-governmental organizations (NGOs), public and private sector proponents; the general public; and, federal and territorial government staff. We used a combination of audit questionnaires, interviews and on-line surveys to obtain information. We received input from about 112 individuals and organizations. We also reviewed printed and electronic information from a variety of sources.

The system of land and water management has its basis in Land Claims Agreements. Unlike most Canadian jurisdictions, the system is founded on a principle of co-management. The Federal Government, the Government of the Northwest Territories (GNWT), Aboriginal governments and organizations, and Boards established by the *Mackenzie Valley Resource Management Act* (*MVRMA*) all play a role.

Since the last Audit in 2010 the environmental regulatory system in the NWT has continued to improve. The integrated system of land and water management is generally effective in protecting the environment. However, at over 15 years old, foundational challenges continue to affect the ability of the system to fully function (see Text Box ES-1). These challenges create uncertainty for proponents, co-management boards, Aboriginal governments and organizations, and regulators. Closing these gaps is a priority.

Text Box ES-1:
Foundational Challenges to a Complete Environmental Regulatory System

- ✓ Completing unsettled land claims
- ✓ Completing land use plans
- ✓ Clarity on federal Crown consultation
- ✓ The capacity for Aboriginal governments and organizations and others to participate
- ✓ Better integration of socio-economics (especially community wellness) into decision-making

Progress continues to be made. The Tłı̨chǫ Land Use Plan covering Tłı̨chǫ owned lands and the Sahtú Land Use Plan have been completed since the last audit. The Land and Water Boards' Engagement and Consultation Policy is yielding positive results. The Federal Government has implemented legislative changes and has implemented or announced regulatory changes which address some of the criticism of the system. With devolution in April 2014, the GNWT has been given, and is taking, a much more active role in the Mackenzie Valley environmental regulatory system. The *Wildlife Act* is closing gaps in wildlife management. The GNWT has acknowledged responsibility for the management of air quality. It is tackling significant challenges in the management of securities. The GNWT is supporting and working towards solutions for land use plans in unsettled areas. These challenges also need to be addressed to add further clarity and certainty to the regulatory process.

The consideration of Traditional Knowledge (TK) as well as scientific data made available to Land and Water Boards (LWBs) and the Mackenzie Valley Environmental Impact Review Board (MVEIRB) is a requirement of the *MVRMA*. We saw focused efforts by many participants in the regulatory process to incorporate TK. Some participants, representing differing interests and roles within the regulatory process, did, however, express a need to better integrate TK into the decision-making.

Since the last audit, the NWT Cumulative Impact Monitoring Program (NWT CIMP) has focused its attention on the priorities of caribou, water and fish. These priorities were identified by environmental decision makers and regulators. This has allowed NWT CIMP to better meet its mandate. Much work needs to be done, but there is a clearer path forward.

Comprehensive and sound trend analyses have been completed for most caribou herds and many of the key watersheds in the NWT. This work needs to be extended to several additional watersheds and to better understand the identified trends in caribou herds. Trend analysis for fish has been limited by data availability. Baseline fish data are being collected and trend analysis work is in progress for a number of waterbodies. NWT CIMP should develop a comprehensive plan to ensure baseline data and trend analysis is completed for key areas and species of interest.

These are the larger themes arising out of the 2015 NWT Audit. Through our examinations, we also identified aspects of the decision-making and regulatory processes that are still evolving. These evolving aspects are typical of maturing systems. The LWBs, MVEIRB and regulators are aware of these and are working to resolve these issues to provide for a more efficient regulatory process.

1 INTRODUCTION

1.1 **Legal Authority**: The Gwich'in, Sahtú and Tłı̨chǫ Agreements set out a framework for an integrated system of land and water co-management in the Mackenzie Valley. These Agreements also provide for independent, periodic environmental audits to be conducted in the Mackenzie Valley. The *Mackenzie Valley Resource Management Act* (*MVRMA*) sets out the requirements for the audit.

1.2 **Terms of Reference:** The 2015 NWT Environmental Audit was completed following a terms of reference. These terms were developed by the Government of the Northwest Territories (GNWT) in consultation with the: Gwich'in Tribal Council; Sahtú Secretariat Inc.; Tłı̨chǫ Government; Dehcho First Nations; North Slave Métis Alliance; Northwest Territory Métis Nation; Inuvialuit Game Council; Akaitcho Territory Government; and Government of Canada (Indigenous and Northern Affairs Canada (INAC)).

1.3 The terms of reference are based on s. 148(3) of the *MVRMA* which requires environmental audits to accomplish the following:

a) Review the effectiveness of the regulatory regime to protect the environment from significant impacts.

b) Review the effectiveness of methods used to monitor cumulative environmental impacts in the NWT (mainly a review of the NWT Cumulative Impact Monitoring Program (NWT CIMP)).

c) List key gaps in information used to determine cumulative impacts and environmental trends, and the significance of the gaps.

d) Review actions taken in response to recommendations from previous audits.

1.4 **Audit Criteria:** Audit criteria represent performance expectations. They help the auditor assess whether a system is performing as it should. Text Box 1, below, summarizes the plain language performance expectations set for the Audit. A more comprehensive set of audit criteria used by the auditor is available in the *2015 Northwest Territories Environmental Audit - Final Audit Plan* (ARCADIS SENES Canada Inc., 2015).

1.5 **Period of Audit:** The 2015 NWT Audit covered the 2010 to 2015 period. During this time, approximately 250 preliminary screenings were completed and ten projects were referred to Environmental Assessment (EA).

Text Box 1: 2015 NWT Audit Criteria

What the evaluation of environmental trends for caribou, water (quality and quantity) and fish should include:

Identifying Needs: There is a clear understanding of what trends need to be monitored.

Quality of Trends Analysis: Trends are based on good information and analysis.

What the NWT CIMP should include:

Program Design: NWT CIMP has appropriate goals, structure and funding.

Relevant Data Available: Processes are established to identify and meet data needs.

Assessing Impacts: Cumulative impacts are assessed in a systematic manner.

Information is Useful: Information is relevant to, and used in, decision-making processes.

What the Mackenzie Valley environmental regulatory system should include:

Regulatory Scope: All valued components are adequately regulated.

Land Use Plans: Land Use Plans are developed and maintained.

Adequate Information: Information is adequate to make informed decisions.

Interested Parties: Interested parties have adequate input into decision-making.

Adequate Resources: Board staffing needs are defined and met.

Timely & Transparent: Decisions follow a timely and transparent process.

Protective Decisions Made: Decisions are protective of the environment.

Monitoring: Environmental impacts are monitored and responded to.

1.6 **Geographic Scope:** The 2015 NWT Audit covered the entire NWT (see Figure 1), including both the Mackenzie Valley and the Inuvialuit Settlement Region (ISR). However, the audit of the regulatory system was limited to the Mackenzie Valley. The ISR is governed by different environmental legislation and its regulatory system was not examined.

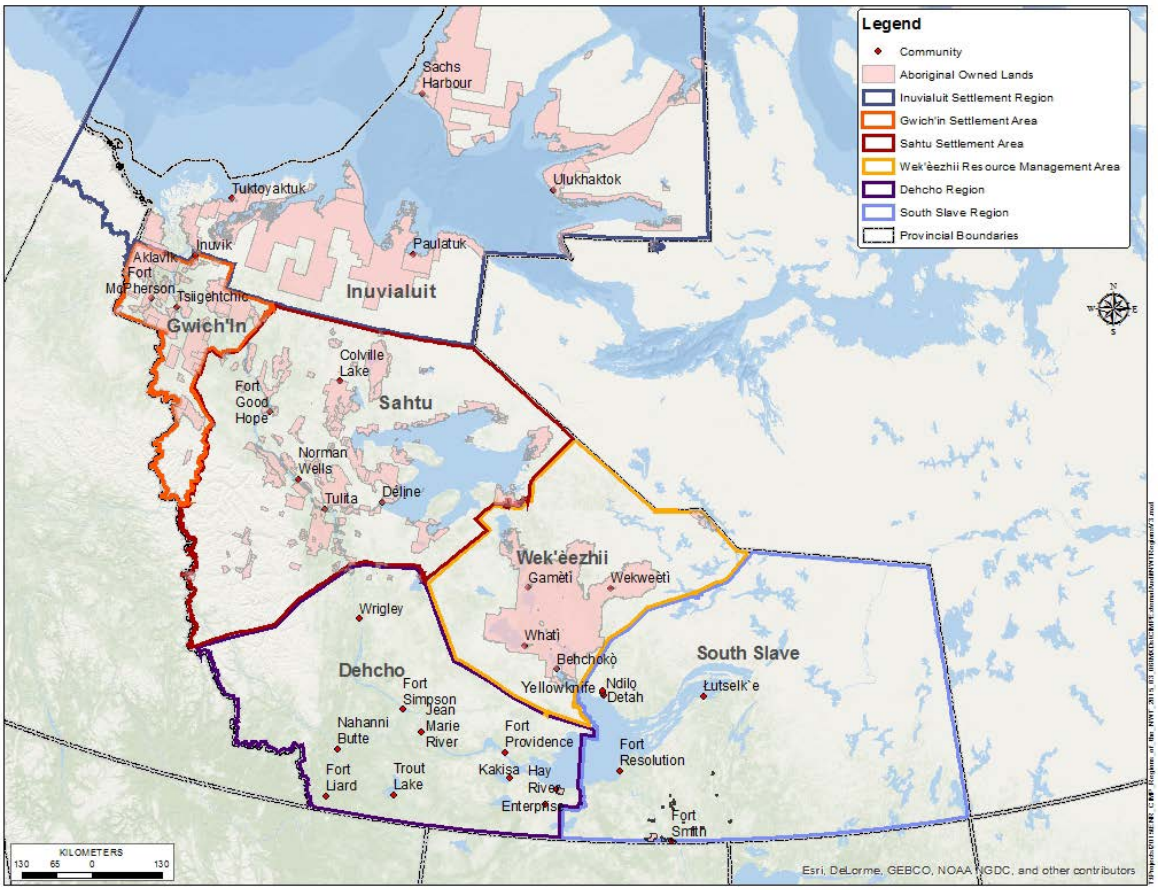


Figure 1: Geographic Scope of the NWT Audit

1.7 **What We Examined:** We obtained information and views from a wide range of sources and participants including: Aboriginal governments; co-management boards; non-governmental organizations (NGOs), public and private sector proponents; the general public; and, federal and territorial government staff. We used a combination of audit questionnaires, interviews and on-line surveys to obtain information. We received input from about 112 individuals and organizations. We also reviewed printed and electronic information from a variety of sources (see Text Box 2). Table 1 provides a summary of input based on regions of the NWT. The numbers provided do not include Federal and Territorial government input.

Text Box 2:

Information Sources Used in the Audit

- ✓ Audit questionnaires/responses
- ✓ Interviews
- ✓ On-line public survey (Survey Monkey)
- ✓ Co-management board websites, bulletins, guidelines and supporting materials
- ✓ Co-management board public registries
- ✓ Published reports and discussion papers
- ✓ Land use plans
- ✓ Aboriginal government and organizations, GNWT and federal websites

Table 1. Summary of Regional Representation for Audit Input

Region	Agency / Organization / Individual
Gwich'in	10
Sahtú	5
Wek'èezhìi	7
Dehcho	6
South Slave	7
North Slave	21

1.8 Information from these diverse sources was considered and assessed against audit criteria. Objective evidence was relied upon when available. In some cases (e.g., the adequacy of consideration of Traditional Knowledge (TK) in the decision-making process) an assessment of diverging viewpoints needed to be considered. Unless otherwise stated in the report, when we use the phrase "we heard," this represents a body of audit evidence and not a singular opinion or point of evidence. Wherever possible, these opinions were corroborated with written or other forms of evidence.

1.9 **Audit Team:** The Audit was led by John Peters, with assistance from Shelagh Montgomery. The assessment of trends analysis was completed by Colin Macdonald (Caribou), Bruce Halbert (Water) and Paul Patrick (Fish) (see Text Box 3 for brief summaries of qualifications).

Text Box 3: Experience of Audit Team

- ✓ **John Peters**, M.Eng., P.Eng, EP(EMSLA), EP(CEA) was lead auditor. He has over 28 years of audit experience across Canada and internationally, assessing compliance, management systems and programs in over 500 projects. He was a key participant in the two prior NWT Audits.
- ✓ **Shelagh Montgomery**, Ph.D., provided coordination support and technical document review. She has over 15 years of experience living and working in the NWT with a focus on water quality, state of knowledge reporting, regulatory assessments and audits, environmental site assessments for abandoned mines, environmental peer review assignments, and facilitation.
- ✓ **Colin Macdonald**, Ph.D., was the lead on the caribou trends. He has over 30 years of experience in environmental research and study design, data analysis and ecological risk assessment. His primary area of expertise is in the movement of chemicals to fish and wildlife through aquatic and terrestrial food webs, and in the fields of ecological risk assessment and toxicology. He participated in the two prior NWT Audits.
- ✓ **Bruce Halbert**, M.Sc., was the lead on the water trends. He has over 40 years of aquatic environment experience, including design of environmental monitoring programs, environmental pathways modeling of contaminant transport through aquatic, atmospheric and terrestrial environments, and assessment of human health and ecological risks of contaminants present in environmental media. He participated in the two prior NWT Audits.
- ✓ **Paul Patrick**, Ph.D., was the lead on the fish trends. He has over 30 years of experience in fisheries and benthic studies, impact assessment and mitigation strategies including habitat assessment and compensation, and developing aquatic monitoring programs. He has reported on various sites in the NWT.

2 ENVIRONMENTAL REGULATORY SYSTEM

2.1 The *MVRMA* established an integrated system for land and water management. This system incorporates land use planning, permitting and licencing, environmental impact assessment and review, and wildlife habitat and renewable resource management. Regulation of land and water is through institutions of public government. Co-management of resources between governments and Aboriginal groups is a key feature. Territorial and federal laws and regulations provide an additional layer of control and oversight. This regulatory regime came about as a direct result of the negotiation of comprehensive land claims agreements and is based on the principles of integration, coordination and consultation. At the time of the Audit, the intended amalgamation of the land and water boards of the Mackenzie Valley had been halted in response to the Tłįchǫ challenge to amendments to the MVMRA. The Federal Government has chosen to appeal the Supreme Court ruling granting the Tłįchǫ injunction.

2.2 On April 1, 2014 the administration and control of the majority of public lands in the NWT was delegated from INAC to the GNWT. INAC maintains a land and water management role for remaining federal lands in the NWT which were not transferred to the GNWT and for funding co-management boards. The *MVRMA* remained federal legislation. The Federal Government has a continuing role in the system. We found a general clarity of federal and territorial roles since devolution. We also found that the GNWT was taking an active role in its new position as land manager. The GNWT has and is closing regulatory gaps and engaging interested parties while making these changes.

Aboriginal Governance and Control of Land and Resources[1]

2.3 Comprehensive Land Claims Agreements (CLCAs) and Self-Government Agreements (SGAs) setting out governance rights and ownership of land and resource rights are important for environmental protection and economic development. “These agreements bring clarity with respect to the Aboriginal party's ownership title of land and resources, cash compensation, royalties from resource development, harvesting rights and rights to participate in the regulation of the land, water, and environment.” (GNWT, 2008).

[1] We limited our examination to the current status of CLCAs and SGAs under the *1986 Comprehensive Land Claims Policy* (INAC, 1986) and *The Government of Canada’s Approach to Implementation of the Inherent Right and Negotiation of Aboriginal Self-Government* (INAC, 1995) and the associated impact on the *MVRMA* regulatory processes. We did not investigate the complex claims negotiating processes.

2.4 The absence of land, resources and SGAs with the Acho Dene Koe First Nation (ADK), Akaitcho Dene First Nations (ADFN), Dehcho First Nations, and the Northwest Territory Métis Nation[2], as well as cases of unextinguished Aboriginal rights (e.g., Treaty 8 rights) is a key gap in the regulatory system. This gap limits the ability to implement co-management boards and land use plans that are key to the *MVRMA*'s integrated system of land and water management and to reconcile conflicting land and resource management interests and expectations. In unsettled areas, rules governing development were less clear and there was more uncertainty as to whom to engage and consult (see Text Box 4). This has been a consistent theme in both of the previous NWT Audits and other reviews of regulation in the Mackenzie Valley (OAG, McCrank, 2008).

Text Box 4: Fraser Institute
2014 Annual Survey of Mining Companies

The lack of settled land claims in very prospective areas that are currently considered traditional territories makes it difficult (and more time consuming and costly) to move projects forward. (Jackson, 2015)

2.5 As was noted in the 2010 Audit, we heard from co-management boards and proponents that uncertainty in unsettled areas was increasing the referral of small scale projects (e.g., limited exploration drilling) under "the might be a cause of public concern" clause (*MVRMA* s.125(1)(a)). However, referrals during the period of this Audit (2010-2015) do not support this. Of approximately 250 projects screened, with over 60% of those preliminary screenings conducted by the MVLWB, ten projects (4% of total), including two mineral exploration projects (both in unsettled areas), were referred to EA. Of these ten, two from settled areas (Sahtú and Wek'èezhii) cited "public concern" as a factor. Two projects in the South Slave area (unsettled) were referred based on "public concern" as well as for other reasons. The balance were referred based on the potential for significant environmental impacts, with three of these referred at the request of the proponent. While "public concern" may represent a low threshold and create a degree of uncertainty for proponents, it is reflective of the values incorporated into the CLCAs and the *MVRMA*. While it is not known whether the decrease in referrals due to "public concern" from previous audit review periods is a result of changes in processes or a lower level of development activity, there is still uncertainty in unsettled areas that should be addressed.

[2] A land and resources agreement-in-principle with the Northwest Territory Métis Nation was signed by all parties on July 31, 2015.

Recommendation 1: ***Given the importance of CLCAs/SGAs within the MVRMA framework, INAC and the GNWT should continue to negotiate these agreements in good faith. Timelines should be established, published and monitored.***

INAC's Response: *Canada conducts all negotiations in good faith. The pace of each negotiation is particular to the table. Parties develop tripartite annual workplans that guide their work over the year. Workplans are not public documents.*

GNWT's Response: *The GNWT remains committed to doing its part to finalize all outstanding land, resources and self-government agreements as quickly as possible and in a manner that is fair, balanced and continues to promote workable and affordable agreements that respect Aboriginal rights. Working to resolve outstanding land, resources and self-government agreements is one of the key priorities of the 18th Legislative Assembly. On March 2, 2016, the Minister of Aboriginal Affairs and Intergovernmental Relations was issued the mandate to work to resolve the outstanding land, resources and self-government agreements with the Akaitcho Dene First Nations, Dehcho First Nations, Northwest Territory Métis Nation and the Acho Dene Koe First Nation during the term of the 18th Legislative Assembly.*

Land Use Plans

2.6 CLCAs provide for land and water management and set aside land of environmental and cultural importance. Land use plans (LUPs) provide further clarity and certainty. These plans provide "broad direction to communities, governments, regulators and applicants about how land (including water and other resources) will be conserved, developed and used… and outlines what land use activities are appropriate, where and under what conditions" (SLUPB, 2013). LUPs reflect a consensus on the desired balance between conservation and development of land and water. LUPs are one of the mechanisms by which Aboriginal communities can directly influence the resource management regime considering and incorporating the interests, cultural aspirations, and future vision for Aboriginals and their communities.

2.7 Progress has been made on land use planning since the 2010 NWT Audit. Two new land use plans have been adopted. The Sahtú Land Use Plan became effective August 8, 2013. The Tłı̨chǫ Land Use Plan, developed under the Tłı̨chǫ Agreement, covers approximately 39,000 km2 of Tłı̨chǫ owned lands. It came into effect on June 1, 2013. The Gwich'in Land Use Plan, approved in 2003, was issued in January 2015 as the Draft Revised Gwich'in Land Use Plan for Final Review and Approval. While there were delays in issuing and/or revising these land use plans, we found that the process established in the *MVRMA* and/or by the respective land use planning boards for the development of these plans has largely been followed.

2.8 All three completed land use plans use plain language. They are easy to read and understand. Extensive public engagement and consultation went into their development. We heard generally

favourable comments and satisfaction with the planning process, with balanced discourse about plans allowing either too much or too little conservation and development.

2.9 In areas with approved land use plans, we found proposed activities were assessed for conformity with the land use plan before a decision to proceed was made. We identified no significant issues with the completion of conformity determinations.

2.10 A draft land use plan for the Dehcho area was developed in 2005 by the Dehcho Land Use Planning Committee established under the Dehcho Interim Measures Agreement but was not accepted by Canada or the GNWT. Interim Land Withdrawals to protect important ecological and cultural sites have been put in place to allow for the negotiation process to be concluded. The Dehcho Land Use Planning Committee is in the final stages of revising a draft Dehcho Interim Land Use Plan. Since the plan is in draft form, regulators are not required to make a conformity determination at this time. There are no ongoing federal land use planning initiatives for the unsettled South Slave area.

2.11 The continued absence of approved land use plans in the Dehcho and South Slave areas and the broader Wek'èezhìı area remains a critical factor impeding the successful implementation of an integrated system of land and water management. Both the GNWT Department of Lands (GNWT-Lands) and INAC have identified complete land use planning coverage of the North as a priority; however, INAC "recognizes the need to settle claims in advance of developing land use plans and the potentially extensive resources required for the development of land use plans that all parties can accept" (AANDC, 2015). Both the GNWT and INAC must approve land use plans for these plans to be used in the conformity determination process.

2.12 GNWT-Lands is actively supporting the development of these plans. *The Land Use and Sustainability Framework*, tabled in the Legislative Assembly on February 24, 2014, lays out how the government will carry out its new roles and responsibilities, deal with broad land use issues, and incorporate sustainability principles. The GNWT is examining potential approaches for land use planning in areas where there are no land use plans and is working on building land use planning capacity. For example, the GNWT sponsored a land use planning scoping study in the Wek'èezhìi area which was completed on July 31, 2015. It continues to participate in the Dehcho Interim Land Use Plan refinement. As part of initiating land use planning in areas without final CLCAs, GNWT-Lands is also investigating how those plans might be implemented using existing GNWT legislation (e.g., *Northwest Territories Lands Act*).

Recommendation 2: ***INAC and GNWT should work together in good faith with Aboriginal Governments and other interested parties to develop enforceable land use plans in the absence of settled land claims. Timelines should be established, published and monitored.***

INAC's Response: *INAC works together with the Boards, Aboriginal Governments and the GNWT in good faith in developing enforceable land use plans in the NWT. The establishment of land use plans is crucial to a comprehensive land and water regulatory framework in the NWT. Canada, the GNWT and their treaty partners have already approved land use plans in the Gwich'in and Sahtu regions. The Tłı̨chǫ Government has also approved their land use plan with Canada and the GNWT's input. To date, INAC has been directly involved in negotiating land claim agreements in these unsettled land claim areas, but will not proceed with developing enforceable land use plans without completing its land claim negotiations. An exception to this policy is the Dehcho Interim Land Use Plan as it is still in the development stage prior to the completion of the Dehcho Final Agreement. Land Use Planning processes are complex and are influenced by numerous variables and issues specific to each planning region. Participating parties in the land use planning processes continue to work to meet the timelines proposed within Planning Boards workplans. These workplans are usually available on the public registry.*

GNWT's Response: *It is a priority of the Government of the Northwest Territories to promote and support effective land use planning in all regions of the Northwest Territories. The Department of Lands is working to engage partners such as land use planning boards, Aboriginal governments and organizations and the Government of Canada on a strategic framework for the GNWT's land use planning program and to strengthen relationships among organizations with land use planning responsibilities. The strategic framework will set the stage for advancing land use planning in unsettled areas. The GNWT is participating with representatives of the Government of Canada and the Dehcho First Nations in the development of an interim land use plan for the Dehcho area through the Dehcho Land Use Planning Committee.*

Regulations of the Physical Environment

2.13 Under the *MVRMA*, impact on the environment is broadly defined to include any effect on land, water, air or any other component of the environment, as well as on wildlife harvesting, and includes any effect on the social and cultural environment or on heritage resources (*MVRMA*, s. 111(1)). We expected to see an environmental regulatory system that addressed all components of the physical environment.

2.14 The environmental regulatory framework addressing physical components of the environment is largely complete. As highlighted below, gaps still exist in the regulation of air quality, wildlife, archaeology for some federal lands, paleontology, and groundwater. Land Use Permits and Water Licenses, the primary authorizations used in the Mackenzie Valley, can only include conditions related to the use of land and water and deposit of waste. INAC and GNWT inspectors indicated

that if other conditions were included in authorizations, they do not have a mandate to enforce these.

2.15 Since devolution, GNWT has assumed responsibility for the regulation of air quality in the NWT. Environment and Natural Resources (GNWT-ENR) is working towards the development of comprehensive, territory-wide air quality regulations, which will encompass specific source performance standards (e.g., waste incinerators). GNWT-ENR also identified a number of regulatory hurdles related to federal-territorial issues (e.g., land permits and water licences are issued under federal legislation). GNWT-ENR is exploring methods to overcome these hurdles (examples may include: Memorandum of Understandings and/or policy agreements).

2.16 The *NWT Wildlife Act* came into force in November 2014 to address previous gaps in the management of wildlife. This Act has improved clarity regarding wildlife management and enforcement. Operators of industrial projects may be required to complete enforceable wildlife management and monitoring plans. Guidelines are being developed to clarify requirements and to more fully close the wildlife management gap.

2.17 There are currently no specific NWT standards for the remediation of groundwater at contaminated sites on territorial lands. GNWT-ENR will be updating the Environmental Guidelines for Contaminated Site Remediation to include groundwater standards and is developing new guidelines in consultation with the Land and Water Boards (LWBs) to provide for a consistent set of standards across the NWT.

2.18 The application of the GNWT's new *Archaeological Sites Regulations* excludes lands within the administration and control of Her Majesty in right of Canada, including national parks, contaminated sites, and protected areas such as Edéhzhíe. The Federal Government has no system for regulating archaeological research and access to archaeological sites on these federal lands, other than national parks. Further, unlike most Canadian jurisdictions, there is no legislation or regulation for the protection of paleontological resources within the NWT.

2.19 In addition to addressing gaps, the GNWT is also responding to new regulatory challenges. For example, in response to an increased interest in hydraulic fracturing, proposed regulations are under development.

2.20 The plan to allow the Mackenzie Valley Environmental Impact Review Board (MVEIRB) to issue enforceable development certificates starting in April 2016 (delayed by the Tłı̨chǫ Government's court challenge to amendments to the *MVRMA*) will alleviate some of these gaps for projects subject to EA and EIR. These certificates will ensure developers comply with all measures and conditions placed on a development during permitting / licensing.

Recommendation 3: ***GNWT and INAC should establish and publish formal plans/commitments, including timelines, for the development, implementation and enforcement of regulations and guidelines to address the identified regulatory gaps[3].***

GNWT's Response: *The GNWT recognizes the importance of addressing the identified regulatory gaps (air quality, wildlife, archaeology for some federal lands, paleontology, and groundwater). The GNWT is currently developing NWT Air Regulations, as well as guidelines for Wildlife Management and Monitoring Plans. The GNWT is also currently exploring options for the preservation and protection of paleontological resources in the NWT. And finally, the GNWT will be undertaking work to develop and propose amendments to the Waters Act, as necessary to modernize the Act and fill any identified regulatory gaps.*

INAC's Response: *As stated in the report, considerable progress has been made in addressing the identified regulatory gaps related to air quality, wildlife, groundwater and archaeology. In reference to the archaeological sites regulations and guidelines for some federal lands (Territorial Land Use Regulations), the general practice is for proponents to be referred to the GNWT to handle all paleontological and archaeological sites in the territory. INAC will discuss further the regulatory gaps with the GNWT to ensure that appropriate enforcement and compliance is implemented.*

Socio-economics and Community Wellbeing

2.21 The scope of the *MVRMA* includes the social-economic and cultural environment. Within the NWT, the GNWT has the fundamental responsibility for protecting and enhancing the social, economic and cultural well-being of NWT residents. We expected to see a regulatory system that supported this scope within the context of developments under the *MVRMA*.

2.22 Limited consideration, at a very high level, is given to the socio-economic and cultural environments in preliminary screenings completed by LWBs. Land use permits and licences issued by these Boards can only focus on impacts on land and water. Only at the EA stage did we see significant consideration of these issues.

2.23 MVEIRB was making efforts through its Terms of Reference to include social, cultural and economic issues in EA. In EAs completed since 2010 we found that these issues were considered for larger development projects (e.g., Jay Project, Nechalacho, Prairie Creek All Season Road and Airstrip). For smaller EAs (e.g., exploration projects), where social and economic impacts are not expected to be significant due to the project's scale or duration, the focus was proportionately more on cultural impacts. These smaller EAs were driven by issues relating to the cultural sensitivity associated to the traditionally used setting where the development was proposed.

[3] Gaps on federally managed contaminated site land could also be addressed by INAC by amending the *NWT Act* to allow GNWT legislation to apply to federal areas (as was done for the GNWT's *Surface Rights Board Act*)

These issues were usually an important part of why these smaller projects were referred to EA. When included, we found EAs focused largely on traditional western social and economic metrics (e.g., income, education, employment, crime and health care). Little evidence related to the less measurable indicators of community wellness was on the public record. MVEIRB and communities believe that community wellness is being impacted by development (e.g., impacts of fly-in/fly-out operations on family structures) but little data are available with which to make informed decisions or to verify these beliefs. For health and community wellness, GNWT-Health and Social Services believes the *Communities and Diamonds Annual Report* fairly and accurately captures trends relating to population-level health and wellness. They feel the current indicators provide interested parties with broad, concrete trends in community and territorial level health and wellbeing.

Recommendation 4: ***GNWT should work with MVEIRB and communities to identify indicators of community wellness and to develop monitoring programs for these indicators that can support the regulatory decision-making process.***

GNWT's Response: *As stated in the 2005 Environmental Audit Report "community wellness is a term that has been created in order to assess the overall health of a community. However, what is and what is not a healthy community can vary depending on the values espoused and the objectives of an individual community."*

Government and non-government agencies often use social determinants of health as a baseline for looking at holistic community health. Social determinants of health typically include:

- *income and social status;*
- *employment/working conditions;*
- *education;*
- *gender;*
- *biology and genetic endowment;*
- *social support networks;*
- *social environments;*
- *physical environments (such as community infrastructure and housing);*
- *personal health practices;*
- *access to health services;*
- *culture; and*
- *healthy child development.*

Currently, the GNWT monitors and reports on numerous social determinant indicators as well as indicators aimed at assessing the performance of government and the effectiveness of programs and services in support of NWT residents.

Additionally, the GNWT releases the annual Communities and Diamonds Report. The Communities and Diamonds Report provides reliable quantitative trend analysis on a comprehensive set of socio-economic indicators aimed at measuring community, family and individual wellbeing. The purpose of the Report is to determine if mine activity may be affecting residents of Yellowknife and seven Small Local Communities in the NWT by tracking socio economic indicators since 1996, when the first mine went into construction.

Measures related to community wellness are also available through the INAC website. INAC reports on the Community Well-being index (CWB index 1981 – 2011). This information is

available for every community in the NWT and provides a systematic, reliable summary measure of socio-economic well-being at the community level. The index illustrates variations in well-being across First Nations and Inuit communities in Canada and how it compares to that of non-Aboriginal communities. It allows well-being to be tracked over time, providing a useful source of information to inform research and planning. The index is made up of four components measuring income, education, housing and labour force activity.

2.24 Regulation of socio-economic issues specific to a project review and approval is limited. GNWT-ITI indicated that it is aware that some Aboriginal governments, organizations and communities were not always satisfied with the manner in which potential socio-economic impacts are addressed in the regulatory process.

2.25 In the absence of regulation, reliance is placed on other legal instruments. GNWT-ITI, Health and Social Services, and Education, Culture and Employment work together in establishing and implementing Socio-Economic Agreements (SEAs) for larger projects to mitigate potential adverse socio-economic impacts. Two SEAs (DeBeers Gahcho Kué Project and Prairie Creek Mine Project) were signed since 2010. We found performance against commitments assessed in annual reports. We found that the GNWT followed up with developers to review these indicators and developed plans for the following year. We were told by GNWT, but did not confirm, that the GNWT seeks to adapt its socio-economic programming based on assessing the trends of the annual SEA reports that provide the annual monitoring results for socio-economic indicators in the NWT.

2.26 Bilateral benefit agreements between communities and resource developers continue to be a primary mechanism to mitigate social and cultural impacts of developments. These agreements are not openly shared with the governments or the public. The LWBs require the first and last page of these agreements to ensure one is in place. Participants in the Audit were not willing to share experiences with these agreements in any detail other than to express a general level of satisfaction. We cannot make any determination on how well these bilateral agreements protect or enhance socio-economic and community wellness within the NWT.

2.27 We heard that at times, these bilateral agreements are not signed for a variety of reasons. This may delay development. For example, as of September 17, 2013, Avalon and Lutsel K'e have not signed the Accommodation Agreement for the Nechalacho Project.

Preliminary Screening and Approval Processes

2.28 Land use permit, water licence or other applications trigger a preliminary screening to determine if a more in-depth review is required. These scans are almost always conducted by LWBs. If this high level initial scan determines that the proposed development might cause significant environmental impacts or be a cause of public concern, the development is referred to the Review Board for environmental assessment, otherwise, the process of issuing a land use permit or water licence begins. We expected to find that LWBs had developed clear, transparent and timely

processes to receive adequate information to make informed decisions during the preliminary screening and approval process.

2.29 Since the last Audit, the LWBs have continued to make progress to provide clarity and consistency both across and within Boards. LWBs are working more closely together, sharing resources and standardizing practices. LWBs and the Standard Procedures and Consistency Working Group have issued and continue to work on policies, procedures and guidelines.

2.30 Transparency is enhanced through each board's Online Review System (ORS) and Public Registry which have a consistent look and functionality across Boards. While monitoring data are available on the registries, it can be difficult to find and make use of these data.

2.31 There was a general consensus that LWB policies and procedures were clear. These procedures were also generally followed. Where clarity was criticized, this was mostly related to referrals to EA based on "might be a cause of public concern" (*MVRMA*, s. 125).

2.32 LWB practices were criticized on specific procedural details to make the system more efficient. Examples include: the level of information required during screening and post-authorization monitoring by the Boards; screening of "irrelevant" comments and consolidation of reviewer comments; co-ordination of information requirements with other regulators; development of streamlined processes for routine applications (e.g., operation and maintenance of roads and quarries); the number and scope of required management plans; distribution of incomplete applications for comment; life of project licensing (now possible for water licences under amendments to the *MVRMA*); extensive use of on-line systems which may hinder access; the inability of the ORS to allow Aboriginal groups to provide holistic, integrated comments; use of standardized terms and conditions not reflective of the development; and, the extent of engagement/consultation. These are common challenges in a regulatory system and will require ongoing dialogue between the Boards and participants in the pre-screening and authorization processes.

Recommendation 5: ***LWBs should develop a plan to periodically and formally engage proponents, regulators, Aboriginal Governments, and organizations and community members in ongoing refinements and optimization to the land permitting and water licencing system and to develop guidelines for monitoring data that enhances data recording and reporting in a more consistent, available and easier to use format.***

LWBs' Response: *The Mackenzie Valley Land and Water Board (MVLWB or Board) formed the Standard Procedures and Consistency Working Groups in early 2008. At that time, the Board approved a Terms of Reference to guide the formation and operations of the Working Groups. The Working Groups focused on specific regulatory improvements identified by the LWBs to improve clarity and consistency among the Boards. Though the Working Group initiative was*

successful, lessons have been learned and improvements are necessary to ensure continued success in areas of collective LWB product development.

On December 17, 2015, the MVLWB approved the Terms of Reference for a new Areas of Operation initiative. In particular, three of the following Areas of Operation will help address the issues and concerns listed under item 2.32 of the Audit:

- *The Regulatory Improvement Area of Operation will develop policies, guidelines, and procedures to ensure that the Boards' regulatory process is transparent, consistent, robust, and efficient;*
- *The Information and Communications Technology Area of Operation will focus on the information management systems used by the LWBs (e.g., Online Registry, websites, Online Review System, etc.); and, most importantly,*
- *The Outreach and Engagement Area of Operation will focus on external initiatives and engaging stakeholders to frame and guide Board initiatives. This group will also focus on developing the process for and facilitating the ongoing evaluation of the Boards' policies, procedures, and programs developed collaboratively.*

Under the Regulatory Improvement Area of Operation, various guidelines and initiatives are underway to support water management in the Mackenzie Valley. These will help improve the monitoring programs that are developed and the quality of data received, and will clarify monitoring expectations for proponents. These include:

- *Mixing Zone Guidelines (working with GNWT);*
- *Surface and Groundwater Monitoring Guidelines (applicable to hydraulic fracturing operations);*
- *Standardized Water Licence conditions;*
- *Public Guide to the Water Licensing Process; and*
- *Initiatives to work with municipalities to improve water licence compliance and capacity through the development of templates, training programs, and information sessions.*

Under the Information and Communications Technology Area of Operation, initiatives are underway that will help identify best practices for data collection, and will outline the Board's expectations for data submission. These include the:

- *Online Application System;*
- *Data Management Policy; and*
- *GIS Submission Standards Guideline.*

The GIS Submission Standards Guideline in particular will ensure that GIS data submitted is more comprehensive and in a format that would allow for the integration of monitoring data. This would enable users to view water quality information on maps to see spatial distribution of attributes or trends relating to cumulative effects.

Policies, guidelines, and other products released by the LWBs undergo thoughtful internal and external reviews before finalization. Under the Outreach and Engagement Area of Operation, this practice will be formalized such that all proponents, regulators, Aboriginal Governments and organizations and community members are formally engaged on LWB products. The LWBs are also developing a survey that will be circulated to seek input on potential guidance tools that would support improved efficiency and understanding of the regulatory system.

An example of an external initiative was the MVRMA workshop that was held jointly by the LWBs, the MVEIRB, and the GNWT in January of 2016 for all participants in the MVRMA system. The purpose of the workshop was to provide information about the different parts of the MVRMA system, how the parts work together, and how parties can be involved. Feedback on LWB policies and guidelines was also solicited during this informative and interactive workshop. This workshop was the second of its kind – the first one was held in 2015. LWB staff is involved in ongoing planning efforts to make this workshop an annual event, and to ensure topics that are relevant to ongoing refinements and optimization of the land and water regulatory regime are included.

2.33 Regulated timelines for LWBs are still creating challenges. Recent amendments to the *Mackenzie Valley Land Use Regulations* (*MVLUR*) increased the time to process a Type B land use permit from 15 to 30 days. This does not allow sufficient time to conduct a preliminary screening, obtain comments from parties and present evidence to the Board for a decision. Within 42 days of deeming a Type A land use permit application complete, a LWB will either issue a permit; order a hearing or further studies; refer the application to EA; or if a requirement set out in section 61 or 61.1 of the Act has not been met or for any other reason as provided for in legislation, refuse to issue a permit and notify the applicant in writing of its refusal and of the reasons for the refusal. The *Akaitcho Dene First Nations Interim Measures Agreement* allows 21 days for pre-screening of a Type A land use permit. These timelines are inconsistent.

2.34 LWBs and Aboriginal groups themselves noted a limited capacity to respond to applications making regulated timelines unworkable. In responding to similar concerns raised in the 2005 NWT Audit, INAC indicated that it considers existing provisions under s. 22 of the *MVLUR* adequate to manage these situations.

Recommendation 6: ***INAC should work with LWBs, GNWT-Lands, GNWT-ENR and other interested parties to establish appropriate regulated timelines taking into account commitments made in Agreements with Aboriginal Governments and organizations and engagement and consultation requirements resulting from these Agreements and requirements under the MVRMA.***

INAC's Response: *INAC will work with the LWBs, GNWT-Lands and GNWT-ENR and other interested parties to further examine the current regulated timelines taking into account Aboriginal engagement and consultation in the review of Type B and A water licence and land use permits under the MVRMA. The recent amendments to the MVRMA have instituted timelines to most stages of the EA process including Ministerial approval and licensing/permitting processes. Each of the Agreements has consultation provisions within each chapter and these provisions are adhered to by Canada.*

Transboundary Development

2.35 The *MVRMA* delegates authority to the MVLWB for applications related to a use of land or waters or a deposit of waste that is to take place, or is likely to have an impact, in more than one management area, or in a management area and an area outside any management area. We expected to find that the MVLWB had developed clear, transparent processes for regulating these developments.

2.36 The MVLWB developed the MVLWB *Direction on General Policy Matters – Transboundary Applications* (October 2005). Over the Audit review period, there were limited activities which crossed boundaries between management areas or between the NWT and adjacent territories or provinces. The GNWT-Finance fibre optic project was a transboundary project which included the Dehcho, Sahtú and Gwich'in areas. The GNWT-Finance applications were reviewed, deemed to be, and managed as a transboundary project in accordance with the Transboundary Direction. The MVLWB was the coordinating board with the SLWB and GLWB providing input via the current online/electronic process (rather than the more paper-oriented approach reflective of the 2005 Direction). While the issued licence and permit could not be located on the SLWB and GLWB public registries per Direction requirements, the integrated online registries makes them publicly available through the MVLWB.

Environmental Assessment

2.37 Through 2010 to 2015, approximately 250 preliminary screenings were completed. Ten projects were referred to EA (see Table 2). One EIR (Gahcho Kué Diamond Mine) was also finalized over this period (Minister's decision in October 2013). We examined whether systems were in place which allowed for clear, transparent processes for completing these EAs and EIRs.

Table 2. EAs Commenced by Year

Year	Referrals	Completed	Withdrawn	Ongoing
2010	2	2 (pegmatite exploration, rare earth mine)		
2011	1	1 (diamond exploration)	-	-
2012	1		1 (unconventional oil)	
2013	2			2 (diamond mine, highway)
2014	2	1 (water licence amendment)		1 (All season road/ airstrip)
2015	2	-	1 (silica exploration)	1 (Highway)

2.38 We found that MVEIRB had made available on its website Guidelines, Rules of Conduct and Bulletins that provide good guidance to participants and proponents. MVEIRB continues to seek process improvement and operational changes in response to improvements in EA methodology and the evolving legal environment of the North (See Text Box 5). Practitioners' workshops were held to gain feedback and input on changes.

Text Box 5: Examples of Improvements to the EA Process

- ✓ Adequacy reviews replacing conformity checks
- ✓ Online Review System to make incoming evidence more systematic
- ✓ Draft *Cultural Impact Assessment Guidelines*

2.39 In general, we found that MVEIRB followed its Guidelines. MVEIRB has exercised its right to make changes to match the project proposal to achieve efficiency (e.g., using a water or land use application as the Developer's Assessment Report). MVEIRB has been criticized for making these changes. Project-specific changes were viewed as making the process less clear and the EA less comprehensive. Practitioners' workshops about these process changes have assisted in the understanding and acceptance of these changes.

Recommendation 7: ***MVEIRB should check in with parties on a case-by-case basis before making project-specific changes to the standard EA process to ensure all parties have the ability to participate in the EA in a meaningful manner.***

MVEIRB's Response: *In general, actively seeking comments on terms of reference and work plans for EA, in the early stages of an EA, allows MVEIRB to consider the views of parties in planning each EA proceeding. The Review Board has the discretion to alter its processes, including its Rules of Procedure, and may do so for reasons such as to ensure fairness and efficiency. The Board will notify and consult parties before doing so, whenever practicable.*

MVEIRB is reviewing and updating its EIA Guidelines (2003) to reflect recent best practices and better inform parties, developers, and the public about typical EIA processes in the Mackenzie

Valley and some of the reasons why process changes may be made. MVEIRB is also reviewing and updating its Rules of Procedure (2005) to reflect recent best practices and improve clarity. MVEIRB recently issued Direction on Procedure for two EAs to provide clarity regarding the use of a process for information requests that reflects recent best practices but deviates from the Rules of Procedure. MVEIRB views clear communication on all matters related to EIA processes as a top priority.

2.40 MVEIRB's mandate includes the assessment and mitigation of biophysical and socio-economic matters. However, most regulatory instruments (permits, licences and authorizations) in the Mackenzie Valley regulate only the biophysical environment. The proposed enforceable development certificates will partially close this "orphaned measures" gap. However, these certificates focus only on developers for their own measures. Measures directed at government, which must be adhered to under the *MVRMA*, are not included. There is no formal process to track the implementation and completion of these measures. This tracking is important for the accountability and transparency of the EA process.

Recommendation 8: ***GNWT-Lands should develop a process to track and assess the effectiveness of EA measures and suggestions directed at government, including consideration of whether tracking would be for all levels of governments or whether the Federal Government (or other governments) would be tracking separately.***

GNWT-Lands' Response: *The GNWT supports the intent of this recommendation and believes that a comprehensive tracking process, involving federal, territorial and Aboriginal governments, MVEIRB, developers, and others as required, is the best approach. Lands will coordinate GNWT departments' input to measure tracking and assessment.*

A process to assess the effectiveness of suggestions may be challenging to develop given the variety of reasons for MVEIRB to make suggestions.

2.41 In the past, EA in the Mackenzie Valley has been criticized, primarily by developers, as being slow. In 2014, Canada responded by establishing MVEIRB and Ministerial timelines, (*MVRMA*, s. 128). No EAs have been completed under these new timelines. In light of these changes, we gave cursory review to EA timelines, focusing on two exploration projects, given proponent concerns with exploration projects which are usually referred under the broad scope of "public concern". We found these exploration EAs to be narrower in scope and complexity and much more timely (seven to nine months from referral) than development EAs.

Board Administration

2.42 Co-management Land Use Planning Boards, Environmental Assessment Boards, LWBs, and Renewable Resource Boards are an integral part of the *MVRMA* regulatory system. Board membership is made up of individuals nominated or appointed by Aboriginal governments and

organizations, the GNWT, and the Federal Government. This membership model is designed to ensure the Boards have the expertise they need and reflect the interests of all parties in acting as stewards of the environment. To meet this objective, we expected Boards to have full membership and representation.

2.43 In general, organizations make nominations. Appointments are made by the Minister of INAC. The Tłı̨chǫ Government also has the right to appoint some Board members. In reviewing the status of Ministerial appointments to the Boards, we identified significant vacancy gaps (see Text Box 6 for some examples). We understand that these vacancies are a result of delays in both the nomination (e.g., WRRB) and appointment process. There is frustration and a lack of confidence in the Board nomination and appointment process. This has been an ongoing issue previously identified in the 2005 and 2010 NWT Audits.

Text Box 6: Examples of Vacancies at Co-management Boards (as of January 2016)

Board	Nominating Party	Vacant Since
MVEIRB	Gwich'in	March 2011
WRRB	Board	August 2013
WRRB	Environment Canada	December 2014
SLWB	GNWT	November 2012
GRRB	Gwich'in	June 2010
GRRB	GNWT	August 2011
SRRB	Environment Canada	November 2010

Recommendation 9: ***Working with affected parties, INAC's Resource Policy and Program Directorate, in association with the Board Relations Secretariat, the Corporate Secretariat and the Treaties and Aboriginal Government Sector-Implementation Branch, should facilitate discussions for a more efficient and effective processes to ensure board nominations are made and approved in a timely manner.***

INAC's Response: *Canada has made progress with the Board nominations and appointment process over the years. INAC will continue to work and communicate, on an ongoing basis, with the organizations responsible for nominations to ensure the process is as timely as possible.*

2.44 In reviewing board funding, we focused more on the experience of the Boards rather than an analysis of financial data. LWBs reported improvements in funding. The level and consistency of funding has improved through multi-year funding agreements. Pressure funding is also available; however, the Boards reported delays in receiving these funds. This has created cash management issues. MVEIRB indicated when the Board had increased workload pressures, resources were inadequate for a period of time. With current workloads, funding is adequate.

2.45 One area where funding issues were identified was with training. Boards need to ensure board members and staff are well versed in their roles and responsibilities. This requires funding. INAC has not committed long-term secure funding for training initiatives.

2.46 Funding for land use planning boards (LUPBs) was of more concern. LUPBs told us that funding can be challenging. Core funding supported administrative needs. Planning activities were primarily supported through incremental funding. Funding needs vary through different phases of the planning process. Five-year plan reviews are more resource intensive. While LUPBs have managed to meet their mandate, at times planning activities or timely return of board decisions have been impacted.

Recommendation 10: INAC should work with: (1) all co-management boards to better understand long-term secure funding needs for training, and (2) with LUPBs to better understand resource requirements during various stages of the planning cycle, and then develop a funding model to better support resource requirements through this cycle.

INAC's Response: *INAC accepts this recommendation and is taking action. INAC has been working with co-management boards since 2012 to better understand all of the boards' funding requirements, including the need for secure funds for training. To date, INAC engagement has consisted of circulating a questionnaire focused on the boards' needs, soliciting 10 year funding projections from the boards to better understand their anticipated funding pressures, and engaging in a series of follow-up meetings. INAC is committed to continue working with the boards moving forward.*

In regard to LUPBs, INAC is committed to working with the boards to ensure their resource requirements are met in a timely fashion.

Inspection and Enforcement

2.47 Inspection and enforcement are essential elements of an effective environmental regulatory system. We examined the systems in place to monitor and enforce authorizations and environmental regulations to determine if adequate inspection and enforcement was occurring.

2.48 Environmental inspection and enforcement is a multi-agency responsibility in the Mackenzie Valley. Post-devolution, INAC retained its authority to inspect and enforce LUPs and water licences on federal lands only. INAC had developed *FOD 5 - Compliance Levels and Reporting* to define compliance and how compliance was to be reported to the LWBs. GNWT-Lands Resource Management Officers inspect all other projects operating under LUPs. GNWT-ENR Water Resources Officers inspect those projects operating under water licences[4]. GNWT inspectors are

[4] As an exception, GNWT-Lands, not GNWT-ENR is responsible for Water Licence inspections at the four (4) Diamond Mines (Diavik, Ekati, Snap Lake, Kennady Lake).

cross-appointed and may inspect both land and water authorizations. GNWT inspectors also enforce other laws and regulations under their mandates. GNWT-Lands and GNWT-ENR entered into a *Protocol Agreement* that addresses shared or overlapping compliance, enforcement and inspection responsibilities.

2.49 While ENR, Lands, Office of the Regulator of Oil and Gas Operations (OROGO), Environmental Protection Officers, the National Energy Board (NEB), Fisheries and Oceans Canada (DFO) and Environment Canada also have inspection powers under various legislative authorities, we focused our review on GNWT and INAC land use permit and water licence inspection activities since devolution.

2.50 GNWT and INAC inspectors use similar risk management tools to schedule inspections and share resources (e.g., charters), where appropriate, to allow for increased inspection activities. GNWT and INAC land and water inspectors reported that adequate resources are available to adhere to established risk-based inspection schedules. Inspection data were requested from GNWT and INAC to confirm this. Only GNWT-Lands responded (see Text Box 7). Post devolution, there were initial staffing issues with Water Resource Officers which limited inspections. INAC reported that post-devolution, much of its low risk portfolio (e.g., cabins) was eliminated, allowing increased inspection rates of remaining operations and clean-up activities at medium to high risk contaminated sites that require mandatory inspections at start-up, during operations, and for closure.

Text Box 7: GNWT-Lands Fiscal 2014/15 Inspections

	LUPs	Leases
Inspections Planned	106	51
Inspections Completed	276	333
Total Projects Inspected	167	Not tracked
Unacceptable Notations	170	Not tracked

2.51 Both GNWT and INAC land and water inspection reports were observed to be posted on LWB Public Registries. This practice increases the transparency of inspection and enforcement activities.

2.52 Both INAC and GNWT inspectors take an 'educational enforcement' approach, working with proponents to come back into compliance, followed by progressive enforcement, if required. Enforcement would be considered if the violation warrants it. Both INAC and GNWT inspectors indicated that Administrative Monetary Penalty regulations under the *MVRMA*[5] and *Territorial Lands Act* would be a “significant addition to the tools an inspector has at his/her disposal when dealing with non-compliance”.

[5] The coming into force of the *MVRMA* amendment which provides for Administrative Monetary Penalties is awaiting the outcome of the Tłı̨chǫ Government’s court challenge to amendments to the *MVRMA*.

2.53 An administrative enforcement gap arose through the devolution process, whereby inspectors, who are now Territorial, do not have a direct link to the Federal Public Prosecution Service of Canada when initiating prosecutorial actions. We understand there is a work-around in place, however, a challenge remains that needs to be formally rectified.

Recommendation 11: INAC and GNWT need to enhance tools for the enforcement of the MVRMA and Territorial Lands Act through the introduction of Administrative Monetary Penalties regulations as planned. INAC also needs to formally resolve administrative matters in initiating prosecutorial actions at the territorial level.

INAC's Response: *INAC has introduced an Administrative Monetary Penalties (AMPs) scheme under the Territorial Lands Act (s. 36 to 55) and under the MVRMA (Part 6.1 s.150.01 to 150.23) in 2014 and is currently developing draft AMPs regulations which will eventually give effect to these schemes under the Acts. Consultation on the proposed AMPs regulations will be held in 2017.*

INAC will work with GNWT to clarify and resolve any potential administrative matter with regards to prosecutorial actions at the territorial level.

GNWT's Response: *The GNWT supports this recommendation. The Department of Lands will work with INAC to advance the introduction of Administrative Monetary Penalties regulations.*

2.54 Recent interpretations of the *MVRMA* and its Regulations have limited the ability of INAC and GNWT inspectors to make "in field" decisions that they historically were able to so. The Boards have recognized this challenge. Boards are issuing permits and licences that are broader in scope. They are requiring the preparation of management plans to allow flexibility. These changes may create opportunities to misinterpret, or stretch mitigation measures, if permit and licence scope, terms, conditions and management plans remain too broad.

Recommendation 12: Continued work is required between the LWBs and inspection agencies to balance the need for flexibility in the field and the need for proponents to have a clear understanding of what their permits and licences allow them to do and what they don't allow them to do.

LWBs' Response: *A number of initiatives will help address this recommendation, including:*

- *The LWBs are working with the GNWT and INAC to help clarify the Field Operations Directive 5.0 – Compliance Levels and Reporting, which deals with administrative compliance and outlines lines of communication with respect to compliance issues;*
- *The LWBs have developed standard land use permit conditions and are now working on standard water licence conditions. When drafting new conditions and/or revising conditions, the Inspectors are involved in the LWBs' review process of these conditions;*

- *The LWBs, the GNWT, and INAC have started to meet on a regular basis to discuss issues, including compliance and enforcement; and,*
- *As outlined in the response to item 2.32 of the Audit, the LWBs have set up Areas of Operation (i.e. Regulatory Improvement and Outreach and Engagement) that will help clarify what activities their permits and licences authorize them to carry out.*

2.55 LWBs are also exercising their role in the ongoing administration, including determinations of compliance with the terms and conditions of issued authorizations. Tools include terms and conditions which require submissions to be made to the Board by a proponent, and approvals from the Board in ongoing aspects of the permitted activity. A review of a sampling of licences and permits suggested that these were effective at identifying required plans and reports to monitor impacts and avoid adverse impacts.

2.56 The submission of final plans to the LWB by land use permit holders is another tool for monitoring, inspection and enforcement activities. These plans are required within 60 days after the completion of a land-use operation or the expiration of the permit (*MVLUR* s. 29). A similar process / requirement has not been established for water licences. These plans would assist in monitoring the licensed activities and in "closing out" the licence.

Recommendation 13: The Waters Act and Regulations should be amended to allow the LWBs to request final plans, issue letters of clearance, reconciliation of water use fees, and request the appropriate government and department to return the appropriate securities deposits to the licensee for water licences, similar to existing regulatory requirements for land use permits. The Boards should revise their procedure guidelines and licences to reflect the prescribed regulatory requirements.

GNWT-ENR's Response: *ENR will be undertaking work to develop and propose amendments to the Waters Act, as necessary to modernize the Act and fill any identified regulatory gaps. This work has been identified as a priority within the Mandate of the 18th Assembly of the Northwest Territories.*

The GNWT will engage regional Land and/or Water Boards through this process.

2.57 Another aspect of resource management in the NWT relates to oversight provided by the non-regulatory bodies set up under project-specific environmental agreements (e.g., Independent Environmental Monitoring Agency (IEMA), Environmental Monitoring Advisory Board (EMAB), Snap Lake Environmental Monitoring Agency (SLEMA)). In general, these agencies provide potentially affected Aboriginal communities with an impartial, independent and knowledgeable third party to monitor the environmental management of the mines. We heard varying levels of satisfaction with the functioning and ability of these agencies to make important contributions to

environmental management and to provide a greater degree of community participation in environmental management processes. Some are seen as very effective and others not.

Recommendation 14: Led by GNWT-ENR, an independent review of the existing monitoring agencies should be undertaken to determine strengths and weaknesses so that any future similar agencies are structured to function effectively.

GNWT-ENR's Response: *The monitoring agencies are generally functioning as intended and, as such the GNWT does not believe an independent review is warranted at this time. The GNWT will continue to work directly with the monitoring agencies and other parties, and is prepared to address feedback received through those channels about the effectiveness of the agencies.*

Securities Management

2.58 There is a history of abandoned mines in the NWT which have been left to tax payers to fund the clean-up for. Securities are funds or financial assurances supplied by land permit, water licence or lease holders on public lands. They are held by government to ensure there is money available to clean up a site, if needed. Properly estimating and obtaining security is critical to minimizing risk to governments when a project or lease ends. We expected the setting and collection of security deposits to be an important consideration in the issuing of land use permits and water licences.

2.59 As of April 1, 2014, there was a change in the way security deposits in the NWT are managed. INAC delegated to the GNWT the responsibility to approve the form of security, to hold the security, to apply it for site restoration, if required, and to return any unused security. Since devolution, securities for authorizations granted on public land are collected the ENR, ITI and Lands according to their respective legislative responsibilities. All securities and financial assurances collected by the GNWT are held by the Department of Finance. INAC retained responsibility on federal lands.

2.60 Security amounts are set by the regulatory body that issues the authorization or land tenure instrument. Amounts are determined based on site conditions, proposed activities at the site and technical information and recommendations provided by intervenors in the regulatory process. We found that the LWBs were working on Draft *Guidelines for Closure and Reclamation Cost Estimates for Mines* to better estimate security requirements for mining projects. We were also told that the Boards had recently identified over thirty areas of concern related to security. As these were preliminary discussions, the Boards were not willing to provide details.

2.61 Commonly used models (e.g., RECLAIM) and spreadsheets were relied on to establish reclamation cost estimates which then help inform the security deposit requirements. Recently, security requirements have increased substantively (e.g., from 2 million to 180.9 million for Imperial Oil's Norman Wells Operations in the last licence renewal). There have been a limited number of planned closures for the large resource development projects in the Mackenzie Valley to test the validity of security estimates.

2.62 We found significant unresolved challenges with the management of security deposits which existed prior to devolution and were recognized in the *Fall 2012 Report of the Commissioner on Environment and Sustainable Development* (OAG, 2012). The role of environmental insurance in mitigating security deposit requirements is not resolved. It is unclear how security is to be split between land use permits and water licences. It is unclear how security is to be split between federal, territorial and/or Aboriginal land owners for projects located on federal or Aboriginal lands, respectively. GNWT-ENR and GNWT-Lands have differences in methods used to calculate securities. There does not appear to be a robust information management system to address the handling and processing of securities and to support sufficiency analyses and risk assessment for the GNWT. We were unable to confirm that all security established in land use permits and water licences had been collected by the responsible departments. Existing systems do not make this an easy task.

2.63 GNWT has recognized these challenges. It has established the Liabilities and Financial Assurances Division within the Lands Department. "This Division oversees environmental security management, ensuring proactive coordination among the departments that are involved in securities issues, as well as policy development related to securities. The Division has also assumed new responsibilities related to security management and assessment for individual projects such as the review and posting of the Ekati mine surety bond." (GNWT, 2014). Documentation outlining the Division's vision and implementation strategy were not available.

Recommendation 15: GNWT-Lands should develop policy documents outlining its approach to and timeline for establishing a structured approach to securities management within the NWT.

GNWT-Lands' Response: *The GNWT supports the intent of this recommendation. The Department of Lands will work with other GNWT departments as required.*

Traditional Knowledge

2.64 Traditional Knowledge (TK) has a holistic approach and is largely oral in nature, and may be confidential. As a result, the integration of TK into a largely science-based evidentiary regulatory system continues to be a challenge (see Text Box 8).

Text Box 8: Comment on TK

There is a delicate balance to be struck between scientific and TK information. One cannot be substituted for the other, but should be used to complement the other. To this point, they are not clearly integrated in the decision-making process.

(Confidential response to the 2015 NWT Audit)

2.65 LWBs and MVEIRB are limited in that they review evidence brought before them, including TK. This evidence must be brought forth by proponents, by participants in the screening process, or by EA participants. There is a general belief by most participants in the regulatory system that efforts are being made to integrate TK into the decision-making process, with varying degrees of success. There is also general belief that many proponents are making efforts to incorporate TK into their applications and that the decision-making process is getting better at using TK. However, we also heard that project scoping can be too narrow to truly allow for meaningful use of TK. That is, TK cannot be limited to an exploration licence or claim block.

2.66 Continued efforts are required on this front. We heard that it is common to have Aboriginal groups express frustration that their concerns are not being taking into account in decision-making. For example, decisions may rely on a toxicity response only and not on loss of use by traditional users (e.g., water or fish taste, wildlife avoidance). We also heard that for those projects where Aboriginal groups have concerns over the impacts on their traditional lands, traditional uses, or culturally and spiritually significant areas, they ensure that MVEIRB and the LWBs are aware of these concerns. If a developer has been made aware of TK through the engagement process, but has not submitted that or considered it in their proposals, Aboriginal groups point this out to the Boards.

Recommendation 16: LWBs and MVEIRB should work with interested parties to identify approaches to better utilize and integrate TK information into the decision making processes.

LWBs Response: *TK is used meaningfully when present. Typically, TK information that is incorporated into an applicant's submission is very high level or limited to specific areas within the program. Examples would be: "these are fish lakes", "moose live here", and "cabin located here". Scientific information presented in an applicant's submission ranges from high level to granular for all areas in a program and for all components of the ecosystem. The volume of scientific information presented usually grossly outweighs that of TK. When TK information is present, it is incorporated into the permitting or licencing process. For example, more extensive mitigation measures and reporting requirements may be imposed to protect the fish lakes. Although the volume and extent of the TK data vs scientific data is different, the merit and weight of the evidence is equal in the Boards' process. Meaningful improvements can be made, TK information collection is typically application driven, as such the context of the greater environment and use of traditional territories is limited. Presenting the local and traditional knowledge of the area in conjunction with program or project specific data may elaborate its use and context.*

MVEIRB's Response: *MVEIRB has Guidelines for Incorporating Traditional Knowledge into the Environmental Impact Assessment Process. The document outlines the steps for inclusion of traditional knowledge in EIA, including: preliminary screening, environmental assessment, and environmental impact review. The Guidelines include advice for proponents and all participants in EIA, as well as considerations for: (i) the use of traditional knowledge and (ii) relationships between traditional knowledge holders and both MVEIRB and proponents. Ongoing effort and*

commitment is needed on the part of MVEIRB, proponents, and Aboriginal organizations to ensure the approaches outlined in the Guidelines are implemented and built upon. MVEIRB would also like to promote the development of more systematic protocols for collecting, storing, managing, and using traditional knowledge in a culturally appropriate manner.

MVEIRB respects and values the benefits that TK offers in good environmental decision-making and is committed to working toward improved approaches for its use in EIA. For example, the NICO EA (EA0809-004; completed 2013) included measures with specific requirements related to TK about impacts on caribou and impacts on cultural values. That Report of EA summarizes how the Board considered all the TK that parties shared during the EA, including: traditional knowledge and use studies and associated reports, two days of public hearings specifically on TK, and parties' recommendations to address anticipated project effects.

Public Engagement and Consultation

2.67 CLCAs and SGAs provide Aboriginal governments and people the right to participate in decision-making concerning the use, management and conservation of land, water and resources (see Text Box 9). We expected to see clearly defined roles for public engagement and Crown consultation under s. 35 of the *Constitution Act, 1982* to address this requirement, as well as the broader responsibility to provide the opportunity for all people in the NWT to participate in the regulatory processes.

Text Box 9: Public Engagement

The role of the proponent to carry out engagement with potentially affected parties, the role of the Board to carry out consultation under the *MVRMA*, and the role of the Crown to ensure, when required, that adequate Crown consultation and accommodation has taken place are all important practices that occur throughout the regulatory process, and which often intersect (MVLWB, 2013 – Engagement and Consultation Policy, June 1).

2.68 The GNWT has shown a commitment to public engagement and consultation as it continues to develop the devolved regulatory system and participate in the *MVRMA* process. The Department of Aboriginal Affairs and Intergovernmental Relations (DAAIR) has been assigned lead responsibility. A number of departments undertake their own engagement and consultation activities with some advice from DAAIR. The GNWT has internal processes for consultation, but has no public position or guidelines. As with most engagement and consultation processes, the GNWT's approach has satisfied many, but not all participants.

Recommendation 17: The GNWT should develop a clear policy and program to address and communicate its responsibilities for consultation and public engagement.

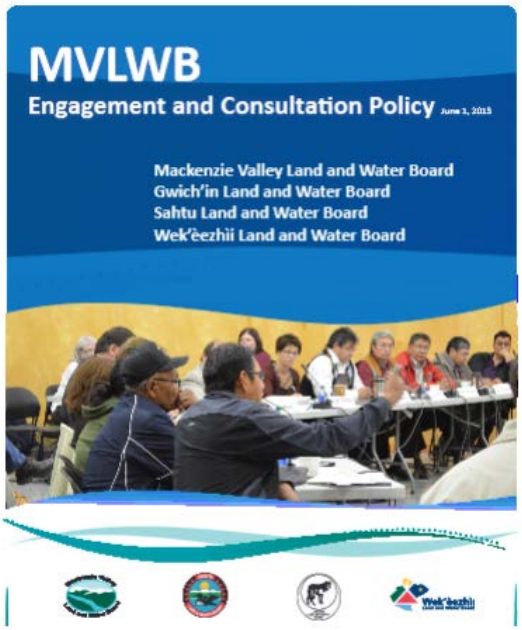
GNWT's Response: *The GNWT's commitment to meaningful Aboriginal consultation is reflected in "The Government of the Northwest Territories' Approach to Consultation with Aboriginal Governments and Organizations" which was tabled in the Legislative Assembly in 2007.*

Link: http://www.daair.gov.nt.ca/_live/documents/content/Aboriginal_Consultation_Approach.pdf

In 2012, the GNWT has also publically released a more formal approach to engaging with Aboriginal Governments. "Respect Recognition Responsibility: The Government of the Northwest Territories' Approach to Engaging with Aboriginal Governments" highlights principles of engagement with Aboriginal governments that include, recognition of rights, building respectful relationships, and responsible and flexible government relationships.

Link: http://www.daair.gov.nt.ca/_live/pages/wpPages/home.aspx

2.69 The LWBs and MVEIRB continue to make progress on community engagement. In particular, we heard that the *MVLWB Engagement and Consultation Policy* (June 2013) has generally resulted in more and earlier engagement between proponents and communities. We heard less concern on engagement and consultation challenges than during the 2010 Environmental Audit.



2.70 Since Devolution, GNWT-ITI has created a Client Services and Community Relations unit to help Aboriginal governments to better position themselves to effectively participate in all stages of the mineral development process in the NWT and to be able to benefit from opportunities as a result of mineral exploration and development.

2.71 In the EA process, Aboriginal consultation letters are sent from both the federal Northern Projects Management Office (NPMO), as well as the GNWT. The NPMO implements the Crown's consultation model within the *MVRMA* regulatory regime. While there have been no successful consultation court challenges on major projects since implementation of the new model in the NWT, there is no evidence that this is or is not a direct result of these changes.

2.72 Both orders of government, however, appear to be relying on the developers' engagement and the EA process in lieu of conducting consultation activities directly. This has led to uncertainty regarding the adequacy of consultation, which leads to delays as people question the Crown on consultation. Draft consultation regulations are to be made under the *MVRMA* to help clarify roles and responsibilities for Aboriginal consultation.

Recommendation 18: INAC should make the development of regulations on consultation a priority to add further clarity and certainty to the regulatory process.

INAC's Response: *INAC has developed a number of tools, such as the "Guidelines for Federal Officials to Fulfill the Duty to Consult" to ensure the duty to consult is well understood and carried out in a respectful and appropriate manner. A number of legislations authorities were added, including specific regulation-making authority with respect to consultation, to the MVRMA through the* NWT Devolution Act*. INAC continues to develop new or amended regulations to add further clarity and certainty to the regulatory process and will assess the need for regulations on consultation on a priority basis.*

2.73 The *MVRMA* is based on a system of public participation and engagement. However, Aboriginal groups and other participants in the regulatory system continue to tell both the Federal Government and the GNWT that they do not have adequate resources and capacity to respond to all pre-screening and EA information requests. Participant funding is not steady or readily available. Participant funding was not addressed during the devolution process. Where capacity does exist, Aboriginal groups and other participants indicated that simultaneous requests and regulated timelines and comment windows set by Boards impede their ability to provide meaningful input. Regulatory tools (e.g., *MVLUR*, s. 22) are available to address this, but at the expense of proponent frustration over the delays.

Recommendation 19: INAC and GNWT should assess public participation / consultation requirements and INAC should make a long-term funding commitment, including stress funding, to Aboriginal governments and organizations and other participants in the MVRMA regulatory processes.

INAC's Response: *In the past, participant funding has been considered on a case-by-case basis and this will apply for any future environmental assessments and regulatory processes in the NWT. Stress funding, also known as resource pressure funding, has been meeting any capacity or participation funding requirements for unexpected regulatory processes for Aboriginal government and organizations, more specifically, in unsettled claim areas. Future discussions with the GNWT will include the Northern Projects Management Office as it is directly involved in delivering Crown consultation obligations for EAs and regulatory processes.*

GNWT's Response: *The GNWT is of the opinion that this recommendation should be directed solely to INAC as the responsibility for the MVRMA remains a federal responsibly.*

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3 NWT CUMULATIVE IMPACT MONITORING PROGRAM

3.1 Under the *MVRMA*, the NWT Cumulative Impact Monitoring Program (NWT CIMP) applies to the Mackenzie Valley. By design, the NWT CIMP also includes the ISR and the NWT portion of Wood Buffalo National Park. With devolution, responsibility for NWT CIMP shifted from INAC to GNWT-ENR. NWT CIMP has an annual budget of three (3) million, two-thirds of which is allocated for research and monitoring. There are nine (9) staff.

3.2 Under the *MVRMA*, in carrying out its functions, NWT CIMP must consult with the Dene and Métis representative bodies and the Tłı̨chǫ Government. This is mainly accomplished through the NWT CIMP Steering Committee, as well as regional results workshops and individual project reporting in communities. In addition to its primary mandate, NWT CIMP also supports community-based monitoring and capacity building and the inclusion of TK (see Text Box 10). Aboriginal governments, organizations and individuals indicated that NWT CIMP was largely fulfilling these rolls. In reviewing projects, we found many examples supporting this, including TK research, TK/science collaborations, and TK archiving. Moving forward, NWT CIMP will need to continually balance funding decisions between the priorities of the Steering Committee, support for community-based monitoring and capacity building, and the inclusion of TK with its primary mandate to monitor the cumulative impacts on the environment.

Text Box 10: NWT CIMP Mandate (MVRMA)

[to] analyze data collected by it, scientific data, traditional knowledge and other pertinent information for the purpose of monitoring the cumulative impact on the environment of concurrent and sequential uses of land and water and deposits of waste in the Mackenzie Valley

3.3 NWT CIMP staff acknowledge that baseline information gaps exist for all valued components in all parts of the NWT. NWT CIMP, however, recognizes that the territory is vast and that the program needs to focus limited monitoring resources on areas and topics that matter to regulators.

3.4 NWT CIMP has focused its limited resources. It surveyed environmental decision makers and regulators in 2011. The themes of “caribou”, “water” and “fish” in geographic “hot spots” of past, current or proposed development were identified as key monitoring and research priorities. Since that time, NWT CIMP has focused on these priorities. From fiscal 2011/12 onwards NWT CIMP has funded over 130 studies. Most of these focused on the three priority valued components: caribou, water and fish. What we did not see, however, was how these individual projects were strategically selected within a broader plan.

3.5 In addressing these priorities, we expected that NWT CIMP would have completed an information needs assessment and a gap analysis of needs versus available information with a clear plan to fill identified gaps. In part, NWT CIMP has met these expectations. LWBs and the Review Board

provided NWT CIMP with broad priorities for monitoring of cumulative effects of human and natural disturbance on caribou, water and fish. NWT CIMP engaged subject matter experts to refine these priorities into specific monitoring and research themes. These themes are documented in recently published *Caribou, Fish and Water Blueprints*. These *Blueprints* identify research priorities. Priorities are reflected in the Proposal Guide for 2016-17. We found that these *Proposal Guides* had become more focused in research requests over time, reflecting the *Blueprints*' focus on addressing data gaps in a more systematic manner. NWT CIMP was promoting standardized reporting methods to ensure the compatibility of datasets for use in regional cumulative impact assessment. It is conducting land disturbance – both human and natural – mapping at the territorial scale, which is key information to facilitate cumulative impacts analysis. What we did not see was a clear prioritization of geographic "hot spots," identification of specific data gaps and targeted research plans to fill identified gaps.

Recommendation 20: NWT CIMP should develop a more focused work plan that clearly identifies and prioritizes geographic "hot spots" and specific research requirements within each "hot spot" to allow for an adequate baseline to be developed and assessment of cumulative impacts to be completed.

GNWT-ENR's Response: *NWT CIMP will continue to refine its monitoring priorities in collaboration with its co-management and Aboriginal partners. The development of specific research and monitoring workplans for specific areas is an approach that will be considered.*

3.6 NWT CIMP provides a comprehensive online source for NWT environmental monitoring information through its *Discovery Portal*. The portal contains over 2,600 individual entries, 900 of which are NWT CIMP-funded project results. Most users reported that the NWT CIMP website / Discovery Portal were easy to use, with useful information. What was lacking was the linking of projects together to understand baseline conditions and / or cumulative effects.

3.7 We found that NWT CIMP has made some progress in addressing the above concern by taking steps in compiling and analyzing data trends. For example, NWT CIMP provided the auditor eighteen (18) examples of environmental trend information that has been developed and reported by NWT CIMP in the last 5 years, including trends in water quality and quantity, snow data, vegetation growth, thaw slumping and lake drainage, fish / fisheries, and harvest trends. The presentation and availability of this information; however, needs improvement (see Text Box 11).

3.8 The *MVRMA* has been amended to allow the Minister of INAC to order regional studies to study the effects of existing or future physical activities carried out in a region of the Mackenzie Valley. This tool can further assist in providing required data for trend analysis and assessment of cumulative impacts.

Text Box 11 - Environmental Trends

Under the [NWT CIMP] environmental trends link, any trends are embedded in large reports, which a) take a long time to download, and, b) the type of language only can be understood by select (i.e., fish scientists) few. [On the Discovery Portal] reports [can be found], but find it is difficult to find real-time or annual trend data. The GNWT's water strategy website is a good example of scientific terms being "translated" for the general public. There are lots of good scientific reports and studies on the webpage and [it is recognized] that it takes time to develop something accessible for all.

(Confidential 2015 NWT Audit Respondent)

3.9 Land and Water Boards and MVEIRB cannot independently draw NWT CIMP cumulative impact data into their decision-making. If proponents, regulators, Aboriginal governments and organizations, environmental non-government organizations and other parties do not present this evidence, it is not considered. NWT CIMP, itself, has a mandate to present cumulative impact data in the regulatory process and can provide data not otherwise presented as evidence. *NWT CIMP's Action Plan* has made a commitment to bring forward this information to regulators (GNWT-ENR, 2015).

3.10 Boards may not be aware that information brought forward has been supported by NWT CIMP as it may be brought forward by subject matter experts or intervenors, not by NWT CIMP itself. NWT CIMP provided seven (7) examples of where work it supported has been used in the regulatory process in the past five years, including multiple license/permit applications. NWT CIMP may benefit from better communicating these successes as use of NWT CIMP data in the regulatory process does not appear to be widely known and recognized by participants in the process (e.g., by the LWBs).

3.11 Overall, NWT CIMP has made progress since the last Audit to address long standing criticisms of the program. A clearer path forward has been laid out and the program is moving in the right direction. It has focused its limited resources on priorities communicated to it. The program needs to continue its shift from planning to execution to provide meaningful, easily retrievable and understandable information on baseline and cumulative impact information for use by decision makers. To fully address the broad scope of s. 146 of the MVRMA, NWT CIMP would need to expand the program to monitoring additional valued components. This broader mandate would require additional funding and resources. Within existing resource constraints, and in recognition of identified priorities, NWT CIMP has currently made caribou, water and fish its focus.

References – NWT Cumulative Impact Monitoring Program

GNWT Department of Environment and Natural Resources (GNWT-ENR), *www.enr.gov.nt.ca/files/nwt-cimp-annual-report-2014-2015*.

4 REVIEW OF ENVIRONMENTAL TRENDS

4.1 Unlike previous NWT Audits, we were not asked to evaluate environmental trends. Rather, the Audit Steering Committee directed us to assess how well environmental trends were being evaluated. NWT decision makers have guided NWT CIMP to focus its monitoring and research on three priority valued components: caribou, water, and fish, given their importance to the people of the NWT. We were asked to focus our review on these three priority valued components.

Caribou

4.2 Depending on classification, there are eight to ten barren-ground caribou herds in the NWT at some stage of their annual migratory cycle (Table 3). Boreal caribou are a distinct population of woodland caribou, for which there are two ecotypes: the Boreal ecotype which primarily occupy the Taiga Plains ecoregion from the NWT/AB border all the way to north of Inuvik; and the Mountain ecotype which occupy the Boreal and Taiga Cordillera ecoregions. Some herds, such as the Ahiak / Beverly, Qamanirjuaq and Porcupine herds, have calving grounds outside the NWT, but overwinter in significant numbers in the NWT. Herds are monitored and managed across jurisdictions through co-management boards with representatives of federal and territorial agencies and Aboriginal organizations from each jurisdiction. Declines in most major barren-ground herds (see Table 3) since the early 2000s has resulted in an increased emphasis on monitoring the decline and key metrics of herd productivity, and research on the possible causes and external factors involved.

Table 3. Peak Numbers & Most Recent Estimates for NWT Barren-Ground Caribou Herds

Herd[1]	Peak Number (year)	Latest Population Estimate (year)	Status
Bathurst	472,000 (1986)	19,800 (2015)[2]	Declining
Bluenose-East	119,000 (2000)	38,600 (2015)	Declining
Bluenose-West	112,000 (1992)	15,300 (2015)	Declining
Cape Bathurst	19,278 (1992)	2,300 (2015)	Stable or slightly declining
Qamanirjuaq	496,000 (1994)	345,000 (2008)	Declining
Ahiak/Beverly	276,000 (1994)	195,000 (2011)	Declining
Dolphin and Union	28,000 (1997)	21,750 (2007)	Stable or slightly declining
Porcupine	178,000 (1989)	197,000 (2013)	Increasing
Tuktoyaktuk Peninsula	3,000 (2006)	1,700 (2015)	Declining

[1] *From ENR reports (see References). Status estimates are from CARMA (accessed August 2015).*
[2] *Estimate from 2015 survey (final report not published).*

4.3 Boreal caribou populations have declined in most of their range across Canada. As noted in the online status summary on the GNWT-ENR website, the population of boreal caribou in the NWT is estimated to be between 6,000 and 7,000 animals. While numbers appear to be stable or increasing in some parts of the NWT, numbers are decreasing in parts of the southern NWT where

the majority of boreal caribou are found. Boreal caribou were listed Threatened on the NWT List of Species at Risk in February 2014 (GNWT-ENR 2015a). For northern mountain caribou in the NWT the status of herds is estimated as follows: Bonnet Plume at about 5,000 animals; Redstone with at least 10,000 animals; and, Nahanni Complex, including Coal River, La Biche and South Nahanni, with about 3,000 animals. Population trends for the Bonnet Plume, Redstone and South Nahanni are believed to be stable. Trends for Coal River and La Biche are unknown.

4.4 Two primary methods are used in the NWT to assess the numbers of barren-ground caribou in a herd and to determine the relative numbers of the sexes and individual age classes. The post-calving aerial survey occurs when both sexes combine in large aggregations after calving. Individual caribou that were collared earlier in the year are located and the number of re-located collars used to calculate total numbers and error estimates. Calving ground photo surveys occur during peak calving, and provide the best estimates of the numbers of females and calves. This provides an estimate of the productivity of the herd at that time (e.g., Poole et al. 2014). Total herd size is determined from assumptions of bull to cow ratios and the number of non-breeding cows. A major factor for the success of any census is the weather, which can delay or postpone flights and change flight routes from pre-determined transects, and the ability of observers to observe/photograph caribou. Boreal caribou population trends are estimated based on survival rates of collared adult females and calf recruitment (cow:calf ratios) which is used to calculate an annual rate of population increase. The boreal caribou monitoring programs provide information on population trend but not on absolute population size or density.

4.5 There is an extensive history of monitoring and assessing population trends and herd conditions of barren-ground and woodland caribou in the NWT. This function has been carried out by GNWT-ENR's Wildlife Division through regional offices and the central office in Yellowknife. NWT CIMP directly supports some caribou monitoring programs (e.g., woodland caribou monitoring in the Dehcho – Dehcho Boreal Caribou Study Reports, Larter and Allaire., 2005-2015), including TK and community-based monitoring.

4.6 The Wildlife Division of ENR monitors the trends in numbers and general condition of barren-ground caribou herds. Data are collected using several approaches, from large scale post-calving surveys and calving ground photo surveys to community-driven assessments of the condition of individual animals for disease assessments and fat stores (an indicator of reserves for winter and range quality). Each type of data collection follows standard protocols for consistency and appropriate statistical analysis, with improvements that are needed to adapt to NWT conditions (Fisher *et al*. 2008). Meta-analysis of NWT studies (e.g., Nagy *et al*. 2011, Chen *et al*. 2014) published in the scientific literature have allowed these methods to be critically examined and conclusions reviewed by the scientific community. The Alberta Research Council (Fisher et al. 2008) reviewed the methods used by the GNWT to count and classify the herds and found that the methods used up to that point were generally consistent with widely accepted practices. Observed trends are supported by data collected through several programs and correspond with field observations and information from communities.

4.7 We found that monitoring and assessment programs for barren-ground caribou were being expanded in line with the 2009 technical review of methods by the Alberta Research Council to decrease the time frame between surveys and to make adjustments to field methods to reduce uncertainty and increase confidence in herd estimates. This seems to have been accomplished by a combination of multiple teams assessing the herds (aerial surveys with community-led body condition/disease monitoring conduct assessments) with reporting on an annual basis, however less work is being conducted on other herds.

4.8 GNWT-ENR has acquired the expertise to conduct these surveys and analysis with the most advanced methods. We found the caribou researchers to be experienced in wildlife survey methods, statistics and assessment of caribou health. The research is usually published in peer-reviewed journals and conference proceedings, indicating an openness in review of data and conclusions that will allow improvements and the correction of errors. The publication record of some GNWT-ENR researchers indicates a high level of research, equal or superior to similar programs elsewhere.

4.9 The assessment of herd condition, which includes total numbers, herd composition and the body condition of individuals in the herd, requires a multi-faceted approach that involves several different strategies. The monitoring and assessment of most NWT herds has continued through research projects, often with overlapping objectives (Appendix A). Smaller projects that involve communities add significant information to an understanding of the general condition of the herds and the presence of disease or contaminants.

4.10 Several indicators are used to assess the trends within the herds and the potential for recovery (see Text Box 12). In general, we found the suite of indicators used to be widely accepted and recommended by the scientific community. Groups such as CARMA (CircumArctic Rangifer Monitoring and Assessment Network) publish manuals of field survey protocols developed through consensus of experts, most of which have been adopted in NWT surveys. Although the specific indicators used for any particular survey vary, in general, the indicators collected from the individual herds are comprehensive. The indicators of herd condition are being collected in an appropriate manner, however additional information may be required to

Text Box 12: Survey Indicators Used - 2010 to 2015

- ✓ Total number of individuals (usually by aerial post-calving surveys)
- ✓ Number of females of reproductive age (usually by aerial photo surveys during calving)
- ✓ Calf numbers (usually by aerial photo surveys during calving)
- ✓ Adult female mortality
- ✓ Recruitment (survival of calves to reproductive age)
- ✓ Productivity (number of calves per 100 females)
- ✓ Male-Female ratio (adult composition)
- ✓ Harvest rate
- ✓ Body condition of individual animals, primarily females
- ✓ Concentrations of elements (e.g., cadmium and mercury) and man-made chemicals in tissues

determine their significance and to interpret trends. For some herds, such as the Peary caribou and Dolphin-Union herd, very few survey data are available and long-term trend analysis is not possible. We also found that some regional studies are intermittent and the results not widely disseminated in the form of reports.

4.11 We found that TK and local knowledge was used in several areas to monitor caribou status. The long-term changes in barren-ground caribou condition and their distribution during the annual migration cycle are used to interpret trends. There are also several programs to collect data relating to caribou health (body condition and disease) from hunters as one of the approaches to assess the ongoing status of caribou. This source of information will be reduced as hunting restrictions are placed on individual herds and community hunts become less common. These studies provide valuable information on herd health but are usually conducted in affiliation with university researchers and there may not be long-term commitments to monitor trends.

4.12 We identified concerns with the delay between some collection field studies and the publishing of results. For example, surveys conducted in 2008 were published in 2014. However, as indicated by GNWT-ENR staff, this primarily affects publicly available reporting and not results being made available to senior management and co-management partners. GNWT-ENR reports to boards, Aboriginal governments and communities on survey results by a variety of means as soon as numbers are confirmed.

4.13 Overall, we found research on major barren-ground caribou herds to be comprehensive. Standard methods and protocols are being used. Data are analysed and published in response to concerns from the public. Less work is conducted on other smaller herds. Long-term trend data are available for boreal caribou in some areas (e.g., the Dehcho) although total numbers and condition are still difficult to predict. Despite the amount of research conducted on barren-ground caribou, there are a number of significant information gaps relating to the observed trends in the individual herds:

a. Further research is required in determining the significance of individual indicators and how they relate to observed trends. For example, continued low fecundity and low productivity, as indicated by calf survival, may not be explained by habitat quality or the presence of predators. The role of external factors such as climate change, changes in habitat quality, the impact of development, and the significance of predators and hunting is still unclear.
b. Data are available to assess trends in herd size, but data to assess trends in the relative numbers of sexes and their condition are more difficult to evaluate.
c. Meta-analysis of trends in data collected from individual herds should be a continuing priority. This would help to optimize data collection and provide guidance to federal, territorial and Aboriginal governments and organizations on the best approach to the management of herds.
d. Major questions remain in the assessment of the role of factors such as development, hunting and predators in the rapid decline and inability of the herds to stabilize in numbers. Long-term changes in caribou numbers have been linked with larger atmospheric circulation patterns, however the mechanism involved and how it can be monitored is not

known. Collaborative research with other agencies has shown potential links between the condition of the range, as determined by remote satellite data, and productivity in the Bathurst herd (Chen *et al*. 2014). These types of innovative, collaborative lines of research should be promoted and pursued.

e. Given the heightened conservation status of the Dolphin and Union, and the Peary herds, more frequent assessments of herd condition (numbers, herd composition and body condition) are advisable. We note, however, that recent surveys on Peary caribou on Banks Island (2014) and Northwest Victoria Islands have been completed by GNWT-ENR, with unpublished results having been reported to communities, boards and Aboriginal governments concerned with these populations.

f. There has also been a call for improved cumulative effects assessment using the example of the Bathurst herd, with improved assessment, monitoring and mitigation of impacts (Gunn *et al*. 2014). To this end, we note GNWT-ENR has developed a framework for cumulative effects assessment for wildlife and wildlife habitat in cooperation with Aboriginal governments and co-management boards (GNWT-ENR 2015b), however the implementation of the framework and specific assessment tools are under development.

g. Although not a focus of this review, there seemed to be a general lack of data on the socioeconomic impacts of the loss of caribou in NWT communities.

Recommendation 21: GNWT-ENR and NWT CIMP should include the identified data gaps for caribou monitoring in planning research priorities.

GNWT-ENR's Response: *ENR and NWT CIMP will use the data gaps identified by the Audit to identify areas for further collaboration with co-management partners, communities, industry and academia and to help inform research and monitoring activities undertaken by ENR. Specifically, the identified data gaps for caribou monitoring will be considered when revising the NWT Barren-ground Caribou Strategy and NWT CIMP's Caribou Blueprint.*

References - Caribou

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Water (Quality and Quantity)

4.14 Monitoring of water (quantity and quality) in the NWT has been carried out for varying lengths of time by a number of government agencies and other parties. Table 4 provides a summary of the active northern monitoring stations of Environment Canada and Figure 2: Water Monitoring Programs in the NWT, identifies where, and by which agency, monitoring is carried out within each of the sub-basins in the NWT (Note: The map was produced prior to devolution (April 1, 2014); therefore, monitoring sites depicted as "Aboriginal Affairs and Northern Development Canada" are now led by GNWT-ENR.) A comprehensive inventory of water monitoring programs and research undertaken by Aboriginal, federal and territorial governments, communities, industry and others was compiled in 2013. This was completed in support of the *NWT Water Stewardship Strategy* released in 2010 by GNWT and INAC. The *Water Monitoring Inventory* (updated in December 2013) provides an excellent source of information. Locations and duration of monitoring activities, parameters monitored, as well as, information on reporting mechanisms, availability of monitoring data and which programs include TK are identified.

4.15 The duration of water quantity and quality monitoring programs vary widely. At some locations, flow and quality monitoring has been carried out for over 50 years. At other locations, flow and/or quality monitoring has only been carried out for a few years. The frequency of water quality sampling also varies widely from once per year in the far north to quarterly, bi-monthly or monthly in more accessible areas. The *Water Monitoring Inventory* includes information on the parameters monitored in each program. These generally included a broad range of parameters of potential concern. Not all projects listed in the inventory are for long-term monitoring; some are research projects, which is why they may only have a few years of data.

4.16 The current focus of NWT CIMP for water quality is defined broadly in the *Water Blueprint* (http://www.enr.gov.nt.ca/sites/default/files/nwt_cimp_-_water_blueprint.pdf). This Blueprint was developed to align priorities identified in the 2009 GNWT Science Agenda (http://www.enr.gov.nt.ca/sites/default/files/strategies/gnwt_science_agenda_november_2009.pdf) and the *Water Stewardship Strategy* (http://www.nwtwaterstewardship.ca). The Blueprint identifies three primary focus areas:

a. compiling and analyzing existing data;
b. understanding impacts of anthropogenic and natural disturbances on aquatic systems;
c. collection and analysis of baseline regional aquatic data in areas of development interest.

4.17 In line with these objectives, NWT CIMP facilitates monitoring and research. This includes baseline data collection in areas where there is a scarcity of this information. It includes the analysis of trends and cumulative impacts. Information on NWT CIMP was reviewed to assess the extent to which the objectives outlined above have been achieved since the last audit and the extent to which trend analysis has been completed.

Table 4. Summary of Active Northern Long-Term Monitoring Stations of Environment Canada

Station ID	Location	Start Year	Frequency (per year)	Length of Record (Yrs)
Athabasca River at 27th Baseline	AB	2013	8	1
Peace River at Peace Point	AB	2013	8	1
Coppermine River/Copper Creek	NU	2000	3	14
Great Bear R./Great Bear Lake	NT	1969	3	45
Liard River/Fort Liard	NT	1960	6	54
Liard River/Mouth	NT	1960	6	54
Lockhart River/ Artillery Lake	NT	1969	3	45
Mackenzie R./Norman Wells	NT	1960	6	54
Mackenzie R./Strong Point	NT	1992	6	22
Mackenzie River/Arctic Red R.	NT	1960	6	54
Peel River/Ft. McPherson	NT	1960	4	54
Thelon River/Schultz Lake	NU	1969	3	45
Hay R./NWT-Alta. Boundary	NT	1969	4	45
Slave River at Fort Fitzgerald	AB	1960	8	54
Flat River/Mouth	NT	1972	3	42
Flat River/Pk. Boundary	NT	1988	3	26
Prairie Creek/ New park Boundary	NT	2010	3	4
Prairie Creek/above Cadillac Mine	NT	2003	3	11
Prairie Creek/below Cadillac Mine	NT	2003	3	11
Prairie Creek/Mouth	NT	1988	3	26
Prairie Creek/Old Park Boundary	NT	2001	3	13
S.Nahanni R./Nahanni Butte	NT	1988	3	26
S.Nahanni R./Virginia Falls	NT	1996	3	18
Brown R. at Outlet of Brown Lake	NU	2005	1	9
Abbe River/Mouth	NU	1996	1	18
Ruggles R./Lake Hazen	NU	1996	1	18
Turnabout River/Mouth	NU	1996	1	18
Very River/Mouth	NU	1996	1	18
Owl River/Mouth	NU	2003	1	11
Weasel River/Summit Lake	NU	1997	1	17
Weasel River/Mouth	NU	1997	1	17
Firth River/Sheep Creek	YT	2011	1	3
Firth River/Mouth	YT	2000	1	14
Hornaday R./Little Hornaday R.	NT	1998	1	16
Hornaday R./Unnamed E. Tributary	NT	1998	1	16
Thomsen River/Green Cabins	NT	2000	1	14
Uyarsivik Lake	NT	2011	Every 5 yrs	3

Figure 2: Water Monitoring Programs in the NWT

(Note: The map was produced prior to devolution (April 1, 2014); therefore, monitoring sites depicted as "Aboriginal Affairs and Northern Development Canada" are now led by GNWT-ENR.)

4.18 NWT CIMP reported to the Auditor a number of initiatives where it partnered with organizations responsible for long-term data collection to facilitate analysis of environmental trends and interpretation of environmental conditions. Projects related to the water priority included:

a. ~30 year water quality trend analyses for major rivers and lakes in the NWT, including the Peel (complete), Hay (complete), Slave (complete), and Mackenzie (in progress) rivers, and rivers flowing into Great Slave Lake (in-progress).
b. 30^{+} years of water quality trends analysis from three rivers (Cameron, Yellowknife and Marian) north of and flowing into Great Slave Lake.
c. Collection and analysis of spatial trends in water quality of lakes within 30 km of Yellowknife. The emphasis of this project was to investigate the extent of influence of legacy mining activities on water quality of local lakes and the landscape factors that control water quality.
d. 15^{+} year trend analysis of winter streamflow data on the Taiga Shield north of Great Slave Lake.
e. Community-based monitoring of spatial trends in water quality in 21 communities (and more than 40 sampling sites) along the Mackenzie River and around Great Slave Lake.
f. Analysis of the cumulative effects of two operating diamond mines (1998-present) on the water quality of Lac de Gras.
g. Use of remote sensing to create a framework for assessing cumulative impacts on the aquatic environment of oil and gas development in the Sahtú area.
h. Investigation of the cumulative impacts of environmental change and human activity on the aquatic environment in the Tathlina watershed near the community of Kakisa, and downstream of the Cameron Hills oil and gas development (Strategic Oil and Gas).
i. Development of Learning Plans for the Liard and Petitot River basins (including trends analysis) in accordance with the Mackenzie River Basin Bilateral Water Management Agreement between the NWT and BC. This work is in the conceptual development phase.
j. Study of summer low flow events in the Mackenzie River system (2015).

4.19 Information and reports on many of these initiatives are available online at the NWT CIMP website (nwtcimp.ca), the NWT Discovery Portal (nwtdiscoveryportal.enr.gov.nt.ca), on the GNWT Water Resources Division webpage (http://www.enr.gov.nt.ca/programs/water-management/reports-and-publications), or via sources listed in the NWT Water Monitoring Inventory (http://www.nwtwaterstewardship.ca/news/new-nwt-water-monitoring-inventory). A review of information posted on these websites demonstrates that NWT CIMP has made significant progress in meeting its objectives on each of the primary focus areas for water.

4.20 To assess progress made in each of the focus areas, selected reports were reviewed to determine the types of analyses that have been carried out to date, the adequacy of the databases for assessing temporal trends and factors contributing to identified trends. Comprehensive reviews have been completed for the Peel River watershed, the Hay River, the transboundary reach of the Slave River, the Coppermine River basin, and the Lockhart River basin. Other regular temporal

trend monitoring carried out by GNWT-ENR includes water quality for the Yellowknife, Cameron and Marian rivers, trends in winter flows in various rivers, and monitoring of Great Slave Lake water levels. These are highlighted in the following sections.

4.21 Flow monitoring in the Peel River watershed has been carried out for over 40 years at a downstream location near Fort McPherson. The watershed is largely undeveloped and flow and quality is influenced by several mountain ranges, few wetland areas and almost continuous permafrost. The climate of the watershed is typical of the far north (cold dark winters and short cool summers with long days of nearly continuous sunlight). These factors contribute to rapid runoff during spring melt with limited storage of runoff due to extensive permafrost (frozen ground) conditions.

4.22 Flow data were statistically analyzed by Stantec in their 2012 report (Stantec 2012) to examine temporal trends in a number of metrics. Trend analyses were undertaken using linear regression (graphical presentation of trend analysis) and the Mann-Kendall statistical test. The key metrics and overall findings included:

a. The timing of spring freshet was variable from year-to-year (starting anytime between late April and early June). There was no significant trend towards an earlier or later spring freshet.
b. The intensity of the spring freshet was highly variable. There was no significant trend towards either an increase or decrease in the maximum or total flows. A significant decrease in flow in June was reported but the factors contributing to the change were not fully understood.
c. There was no significant change in the timing of lowest flow rates. These usually occur around the end of March or earlier April.
d. The intensity of low flow showed a significant increase in the annual minimum flow rate over the period of record.
e. The timing of winter base flow was found to occur significantly later in fall.
f. The intensity of winter base flow showed a significant increase in the winter time base flow rate. (The update to NWT State of the Environment report (GNWT-ENR 2015) confirmed this finding on 13 river systems in the NWT, including the Peel River watershed).
g. The amount of total annual flow showed no significant change in the total volume of water discharged annually from the Peel River, despite the other changes noted above.

4.23 Water quality in the Peel River watershed has been measured near the location of the downstream flow monitoring station since 1960 and at several other locations in the watershed (sampled between 1999 and 2005). Water chemistry in the river and its tributaries is influenced by the sedimentary rocks (sandstone, shale, limestone and dolomite) that dominate the ecozone. Stantec analyzed these data for seasonal differences, temporal trends and spatial variability using a range of statistical techniques. Findings for the key metrics are as follows:

a. Turbidity levels - no significant trends were found in the turbidity level in the Peel River above Fort McPherson despite the changes in flow conditions noted above. A strong positive correlation was found between flow rate and turbidity, resulting in high seasonal variability in

turbidity over the year. Statistical analysis indicated highly significant differences in turbidity levels between the three seasons (spring freshet, summer recession and winter base flow).

b. Major Ions - Concentrations of major ions (e.g., calcium, magnesium, sulphate) decreased with increasing flow. Analysis confirmed seasonal differences in the concentrations of the major ions. It was postulated that the release of major ions is controlled by weathering processes and not by flow. This would explain low ion concentrations at high flow rates. Highly significant positive increasing trends were reported for calcium (15 to 20%), magnesium (20 to 50%) and sulphate (50 to 75%) over time. These trends were interpreted to indicate increased chemical weathering rates and increased contributions of groundwater to total flow.
c. Total Trace Metals – Concentrations of all but one of fifteen trace metals increased or decreased with turbidity. Changes were not directly proportional to changes in turbidity. The high variability in turbidity and total metal concentrations was found to obscure trend analysis of the total metals data for the purpose of defining baseline conditions.
d. Dissolved Trace Metals – Twenty of the twenty-two metals analyzed for dissolved concentrations showed decreasing trends in the dissolved/total ratio as turbidity increased. Dissolved concentrations of most trace metals and ions were not correlated with flow, which suggested that there is little seasonality in concentrations. This is an unexpected outcome and thought to be a result of a limited dataset and/or difficulties associated with sampling and measuring low dissolved concentrations.
e. Nutrients - Concentrations of dissolved organic carbon, total nitrogen and total phosphorus were found to be positively correlated to flow rate and turbidity. The highest nutrient levels were measured during spring freshet but were also found to be highly variable within and between all three seasons.

4.24 To examine the overall status of water quality in the Peel River watershed the authors applied the Canadian Water Quality Index (WQI). Using total metal concentrations, the calculated WQI values suggest that water quality is marginal (i.e., is threatened or impaired with conditions that depart from desirable levels). However, inserting dissolved metal concentrations instead into the calculation, the water quality is rated as good to excellent (i.e., close to natural or pristine levels).

4.25 We found the analysis carried out to assess the status and trends of flow and water quality in the Peel River watershed to be sound. In general, adequate data were available to support the conclusions drawn from the assessment of available data and appropriate analysis was carried out by competent researchers.

4.26 Similar conclusions, as noted above for the Peel River, were reached on review of the trend analyses reported for the Hay River, Coppermine and Lockhart rivers, the Slave River, and the South Nahanni River (Parker *et al*. 2010)

4.27 Differences noted in some of the findings in these investigations are attributable to watershed features or development activities in the respective watersheds. For example, the Coppermine River features diamond mining in the area near Lac de Gras. Trend analyses revealed highly to

moderately significant increasing trends in a number of water quality parameters at the outlet of Lac de Gras as well as in lakes immediately downstream of the operations. The findings of the trend analysis were reported by Stantec (Stantec 2015) to correspond with a study that is underway to assess potential cumulative effects and spatial and temporal trends in Lac de Gras (Stantec unpublished report). Significant differences in water quality between the southern and northern watershed areas of the Coppermine River were also reported and attributed to natural geologic conditions (igneous granitic rock versus sedimentary rock) and changes in vegetation conditions (tundra versus boreal forest). The Stantec study (Stantec 2015) included recommendations to improve the overall hydrology and water chemistry monitoring programs to better facilitate the assessment of cumulative effects. We concur with these recommendations.

4.28 Overall, it was found that there is a sufficient period of record of flow monitoring data for at least one key location in each of these watersheds to assess seasonal and long-term trends. In general, it was also found that there is a sufficient period of record of water quality data to assess long-term trends at key locations. Likewise, the database for general chemistry parameters (e.g., major ions, nutrients, physical parameters) was adequate to determine seasonal trends and correlations between parameters and/or flow. In some cases, however, it was found that the database was not adequate to reach statistically valid conclusions regarding seasonal effects for trace parameters (e.g., total and dissolved trace metals and organic compounds) due to insufficient seasonal data. Analytical method detection limits were also identified as a constraint for some trace elements. We found appropriate analyses were carried out to support trend assessments.

4.29 Water quality trend assessments in the Yellowknife, Cameron and Marian rivers includes the major ions calcium, magnesium, sodium, potassium, chloride, silicon, and sulphate. Concentrations of major ions in the Yellowknife and Cameron rivers have increased significantly since 1995, with statistically significant increases found in calcium, magnesium, sodium, potassium, chloride, sulphate, and alkalinity. Dissolved organic carbon has also increased over time in the Yellowknife and Marian rivers. It is thought that permafrost degradation may contribute to the changes but this has yet to be confirmed.

4.30 Trend assessments have been conducted for winter flows in 13 rivers across the NWT (representing different ecozones and catchments). In all cases the rivers have natural flow regimes and have been monitored for 30-40 years. As presented in the online summary on the GNWT-ENR website, winter flows show increasing trends across all ecozones. The Cordillera and Taiga Plains rivers show small increases between the 1970s and 1980s and larger increases in the 1990s and 2000s over a range of catchment sizes. The two Taiga Shield Rivers (Cameron River and Baker Creek) are relatively small and have a shorter period of record but show large increases in the decade average in the 2000s. The Southern Arctic (Tundra Shield) rivers are relatively stable through the 1970s to the 1990s, with an increase in winter flows apparent in the 2000s. The larger rivers, such as the Mackenzie River with tributary inflows from more than one ecozone, also show increasing winter flows based on decade averages. It is thought that increasing winter flows may be a result of increased autumn rainfall and/or warmer autumn and winter temperatures that delay ground freezing.

4.31 Where trend analysis has been completed for major river systems it has been done well; that is, thorough assessment of multi-year datasets using appropriate statistical methods. Trend analysis for the Mackenzie River is in progress. A focus on monitoring of water quality and quantity in the Great Bear Lake watershed is envisioned if the Tsá Tué Biosphere Reserve designation is achieved, as currently being sought by Délı̨ne.

4.32 In assessing water quality, measured total and dissolved concentrations of parameters were mostly compared to Canadian water quality guidelines, where applicable. Measured concentrations were generally input to the calculation of WQI values following the guidance provided by the Canadian Council of Ministers of the Environment. Due to naturally high suspended solids levels in many of the watersheds, the WQI approach often results in overall water quality being judged to be marginal to poor. When dissolved concentrations of the metals were substituted for total concentrations, the WQI values were generally found to rate water quality as being good to pristine. The fact that dissolved metal concentrations were often found to be substantially less than the total metal concentrations suggests that development of site-specific guidelines is warranted.

Recommendation 22: GNWT-ENR (Water Resources Division) should develop NWT site-specific guidelines for use in water quality assessments to better reflect the impact of naturally high suspended solids on water quality in many watersheds in the territory.

GNWT-ENR's Response: *Site specific water quality triggers were developed for the Slave and Hay Rivers and incorporated into the recently signed Bilateral Water Management Agreement between the Province of Alberta and the NWT (signed in March 2015). These triggers are based upon site-specific datasets for these rivers. Additionally, ENR is undertaking work with respect to how site-specific water quality objectives could be established for waters across the NWT that incorporates site-specific physical (e.g., suspended solids), biological and human/social components.*

4.33 NWT CIMP appears to have made substantial progress in engaging northern communities in local monitoring activities and in communicating findings to members of these communities. Monitoring programs where TK has been captured are identified in the NWT Water Monitoring Inventory. Little evidence was presented in the status and trend analyses reports that TK was considered to support the observations and conclusions reached in these efforts.

Recommendation 23: NWT CIMP should engage partners of the NWT Water Stewardship Strategy to facilitate the collection of TK to complement the sound scientific analysis of water quality and quantity trends completed to date.

NWT CIMP's Response: *Providing TK for use in decision making is a priority for NWT CIMP. NWT CIMP will engage with partners to facilitate the collection and analysis of TK for the purposes of identifying environmental trends.*

4.34 Overall, a tremendous amount of water monitoring is occurring in the NWT, including important community-based programs that have gotten underway in the last several years. However, with respect to trend analyses and reporting, there is a gap in the availability of reports that compile multi-year results. Trend reporting is based on data collected regularly and consistently over periods of 5 to 10 years or more, with data evaluated to determine whether water quality and/or quantity is improving, deteriorating, or remaining about the same over the years. Water quality objectives or guidelines are used to assess the environmental significance of the trends. As previously highlighted, such compilations have been recently produced for the Peel, Slave, Hay, Coppermine, and Lockhart rivers, and work is underway for the Mackenzie River. A summary of water trend findings based on Audit criteria is provided in Table 5.

Table 5. Summary of Trends Evaluation for Water

Audit Considerations	Comment
Information appropriate and sufficient to assess trends is available.	Generally yes Recent and long-term water quality and quantity monitoring is conducted over a large area of the NWT. However, limited for TK information.
Trends are being reported on.	Yes Recent comprehensive analysis of, and reporting on, multi-year data (e.g., Peel River, Hay River, Slave River, Coppermine River, and Lockhart River).
Trends, their significance and contributing factors are assessed in a systematic and defensible manner.	Yes Applies to instances where trend analyses have been conducted and reported on.
TK and scientific data are identified, obtained, and included in the trend analysis.	No Where trend reporting has been completed it is not apparent that TK information has been included.
Major gaps.	• Many monitoring projects underway but lack of evidence of trend analysis and reporting for many. • Lack of TK in existing trend reports.

References - Water Quality and Quantity

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Fish

4.35 Compared to work on caribou and water, the analysis and assessment of trends for fish in the NWT is not as far advanced. Monitoring of fish and fish habitat in the NWT has been carried out for several decades by a number of government agencies, university researchers, Aboriginal organizations, and other parties; however ,these have often been discrete projects not focused on long-term trends, or where trend assessments have been completed, the work pre-dates the 2010-2015 focus for the Audit (e.g., 1945-2009 assessment of Buffalo River Inconnu in Great Slave Lake (DFO 2013a)). In other cases, trend reporting is planned but the data haven't been fully synthesized or the work is in progress.

4.36 This is reflected in the *Fish Blueprint* prepared by NWT CIMP which lists specific research and monitoring priorities (http://www.enr.gov.nt.ca/sites/default/files/nwt_cimp_-_fish_blueprint_.pdf). The Blueprint identifies five primary focus areas:

1. Compiling and analyzing existing data
2. Developing and validating standards and protocols
3. Assessing cumulative impacts of anthropogenic and natural disturbances
4. Baseline data collection on fish ecology in areas of development interest
5. Assessing contaminants in fish

4.37 NWT CIMP reported to the Auditor a number of initiatives where it partnered with organizations carrying out data collection to facilitate analysis of environmental trends and interpretation of environmental conditions. Projects related to fish included:

a. Funding to DFO to analyze long term (~25 year) trends in riverine chars - Dolly Varden and Bull Trout - using changes in abundance and population structure such as length and age.

b. Funding to the University of Waterloo to analyze spatial trends in mercury (Hg) concentrations in different fish species commonly fished for food in the upper Mackenzie Basin, Dehcho area.

c. Funding to the WRRB to conduct community-based monitoring and analyze trends in fish condition, and water and sediment quality in each of the four Tłı̨chǫ communities.

d. Funding to DFO to extend the existing time series for baseline fisheries assessments in Great Bear Lake. Trend analysis has shown evidence of long-term effects of harvesting and subsequent recovery in fish populations in Great Bear Lake.

e. Funding to DFO and the University of Manitoba using community based monitoring to examine spatial trends of range expansion of Pacific salmon in the NWT associated with climate change since 2011. There appear to be annual cycles of abundance that coincide with local knowledge.

f. Funding to Trent University on understanding impacts of environmental change on char in the ISR: Science and Inuvialuit Knowledge for community monitoring (CIMP112) where TK was used to identify climate change trends affecting Inuvialuit fish resources.

g. Funding to DFO on impacts of climate change on contaminants in consumed fish (CIMP128) that identified trends in mercury concentrations in fish over time.

h. NWT CIMP investigating the cumulative impacts of environmental change and human activity in the Tathlina watershed (CIMP149) – identified spatial trends of drainage patterns, terrestrial carbon and mercury transport to aquatic ecosystems.

i. Funding to DFO on integrated eco-monitoring and assessment of cumulative impacts on Great Slave Lake fisheries ecosystems (CIMP132) – identified trends in abundance in Great Slave Lake.

4.38 DFO has historically focused efforts on commercial stocks. DFO is now collecting required baseline data and completing trend analysis where data are sufficient. Examples include: (a) baseline data have been collected over a 5-year period and trend analysis is nearing completion for Great Slave Lake (with a focus on Lake Whitefish); and, (b) DFO baseline and trend work is in progress for the Mackenzie River, Buffalo Lake, Hornaday River, and Great Bear Lake. DFO also collects data on commercial and recreational fishing and compiles annual summaries of fish harvesting activities, including data from the NWT. Multi-year trend analysis of these data was not located, nor were recent estimates for subsistence fishing.

4.39 Great Slave Lake has seen a commercial Lake Whitefish fishery since 1945. In 1950 there was a historical peak in combined harvest of over 4,000 tonnes of Lake Whitefish and Lake Trout, which was the largest commercial harvest in the NWT (DFO 2014a). The whitefish fishery declined to approximately 1,000 tonnes in 1997 and 500 tonnes in the mid-2000s to the present. With harvest

declines over the past 20 (believed to be attributed to socioeconomic reasons and not due to a decline in whitefish stocks), Great Slave Lake Whitefish stocks are thought to be stable.

4.40 In response to a 2013 recommendation from the Great Slave Lake Advisory Committee that Closure Zones A and B near the south shore of the lake be re-opened yearly from September 1 - October 31 to allow for the targeted inshore harvest of Lake Whitefish, DFO undertook a stock assessment (DFO 2014a). The primary concern was whether or not the closure zones could be safely opened with minimal impacts to the Buffalo River Inconnu stock, a bycatch of the whitefish fishery. A review of all available information showed some spawning individuals might still be caught and that there would be potential to harvest the post-spawning out-migration of Inconnu from the Buffalo River which occurs in a concerted run in October. Furthermore, in 2013, the total harvest of Inconnu in the Administrative Area where Closure Zones A and B are located, was over double the recommended maximum removal for the entire west basin. Given the instability of the Buffalo River Inconnu stock the area was not reopened.

4.41 The Hornaday Char Monitoring Program (established in 1990) collects fisheries information on an annual basis and the data are used to assess trends in the Hornaday River population. A voluntarily established annual harvest limit of 1,700 anadromous Arctic Char that had been in place between 1998 and 2012 and includes both summer (in Darnley Bay) and winter (in the Hornaday River only) fisheries was increased to 1,800 in 2013 (DFO 2016). Information from various programs was synthesized in order to characterize Arctic Char relative abundance, demographics and stock structure in Darnley Bay, and the time-series data from the Hornaday River were modelled to assess stock status. Trends in the biological and catch-effort data time-series give no indication that Arctic Char from the Hornaday River is currently overharvested. Modeling indicates the Hornaday River population is not currently experiencing overfishing and that stock status is healthy.

4.42 In 1987, declines in the abundance of Dolly Varden from the Big Fish River (situated in the ISR) resulted in all fishing activity being prohibited in the river, its tributary, the Little Fish River, and areas adjacent to its mouth in the Mackenzie River Delta (DFO 2013c). Follow-up assessments in 2002 and 2008 indicated that population abundance remained low, although it wasn't clear whether this was a result of harvesting, changes in overwintering habitat, or a combination of both. Population abundance estimates in 2009 and 2010 remain lower compared to the 1970s, but are comparable to estimates from the 1990s. The stock appears to have a low and stable abundance, which has not changed considerably over the past 20 years (Gallagher *et al*. 2013).

4.43 Three freshwater fishes found in the NWT have been identified by the Committee on the Status of Endangered Species in Canada (COSEWIC) as being at some level of risk: Dolly Varden (northern form) was assessed in 2010 to be of Special Concern; Bull Trout was assessed in 2012 to be of Special Concern; and Shortjaw Cisco was assessed in 2003 to be threatened (GNWT-ENR 2015). Within the NWT there is uncertainty about the recent trend in population of these species where Dolly Varden is reported to be "declining" but "uncertain" and both Bull Trout and Shortjaw Cisco

are reported as “unknown”. Trends for these cannot be reliably determined at this time (GNWT-ENR 2015).

4.44 In general, trend analysis for fish has been limited by data availability. Baseline data are being collected. TK is also being used in some studies to assist with sampling locations and in flesh quality and taste assessments. As outlined above, trend analysis work is in progress for a number of waterbodies. A comprehensive plan is required to ensure baseline data and trend analysis is completed for key areas and species of interest. A summary of fish trend findings based on Audit criteria is provided in Table 6. These species were selected based on both the number of research studies conducted, especially involving some sort of trend analysis and the commercial importance of the fish species. The focus on the trend analysis was based on population numbers or structure and/or meristic information concerning growth and year class strength.

Table 6. Summary of Trends Evaluation for Examples of Fish Species

Audit Considerations	Dolly Varden	Shortjaw Cisco	Walleye	Buffalo River Inconnu	Arctic Char	Lake Whitefish
Data exist to assess trends	Yes, for some rivers (Big Fish, Rat and Hornaday rivers)	Limited data – studies in Great Slave Lake & Great Bear Lake	Yes, for Tathlina Lake	Yes	Yes, for Hornaday lake and Darnley Bay area	Yes, for Great Slave Lake
Period for data	Mostly 1970s to 2000s with some post-2009	One time studies between 2008-2010	Long-term: 1946-1979 and 1990s to 2007	Long-term: 1945-2008	Long-term: 1960s to 2013	Long-term: 1940s to mid-2000s
Trends reports	Yes, general trends for population, length & age	No	Yes, general trends for population, length & age	Yes, general trends for population, length & age	Yes, general trends for population, length & age	Yes, general trends for population, length & age
Systematic assessment of trends	Often inconsistent sampling methods & locations	No	Sampling limited to commercial fishing sites and variation in sampling methods	Yes, but with some sampling variations	Yes	Primarily stock size but not contributing factors
TK and scientific data used	Majority of studies did not include TK	No	No	No	No	No
Information gaps	Lack of recent data. Inconsistencies in capture methods and timing of sample collection.	Need for trend assessment (given “threatened” status).	Lack of recent data. Subsistence harvest levels could be collected. Given length of record, add climate data.	Lack of recent data. Future studies could include spring sampling. Consider changing water levels in Great Slave Lake.	Improve knowledge of critical summer feeding habitat. Improve community harvest survey (perceived stock status and environmental conditions).	Information gaps and uncertainties in the fish biological assessment. Changing hydrology, development pressure and climate factors should be considered.

Recommendation 24: NWT CIMP should continue to work with DFO to identify locations where fishery baseline and trend data are required.

NWT CIMP's Response: *NWT CIMP will continue to work with DFO and its other co-management and Aboriginal partners to identify priority locations for understanding fishery baseline and trend data.*

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5 REVIEW OF RESPONSES TO PREVIOUS NWT AUDITS

5.1 The *MVRMA* requires the auditor to review actions taken in response to recommendations from previous Audits. There is no requirement for any party to formally respond to these Audit recommendations. When governments and Boards did develop responses, these were not published. They remained internal documents. Many recommendations from the first Audit were carried over to the second. Many of the key recommendations of the second Audit remain unresolved. Without formal action plans being established, it is uncertain whether the lack of progress is due to inaction or fundamental disagreement with the recommendations as stated.

5.2 The inability of the Auditor to compel a response from Audit parties has led some to question the efficacy of the Audit as a means of improving the regulatory regime of the Mackenzie Valley. The 2015 NWT Audit is different. For this Audit, formal responses are embedded within the Audit report. This increases the accountability and transparency of the Audit. It allows the public to monitor adherence of respondents to their commitments in a proactive, rather than retrospective manner.

5.3 Since the 2010 NWT Audit, devolution has occurred. There has been a fundament shift in major roles and responsibilities for the management of lands and waters in the NWT. The legislative and regulatory frameworks have been updated. Co-management boards have updated practices and guidelines. Roles between the Federal Government and the GNWT, and within the GNWT itself, have changed.

5.4 In light of all of these challenges, the 2015 NWT Audit did not evaluate actions taken in response to each individual outstanding recommendation made in the previous Audits. Rather, we took previous recommendations into consideration as we took a fresh look at the newly evolving regulatory system and NWT CIMP. We focused 2015 NWT Audit recommendations on those fundamental issues required to complete the regulatory system in the Mackenzie Valley and to move to further align the NWT CIMP with its legislated mandate.

APPENDIX A:
Caribou Studies

Appendix A: List of projects and reports published since 2010 on the numbers, herd composition and body condition of NWT barren-ground and woodland caribou.

Herd	Author/Year	Title	Scope of Report
All Herds	Poole *et al.* (2014)	*An operations guide to barren-ground caribou calving grounds density, dispersion and distribution surveys, based on an assessment of the June 2007 and 2008 surveys, Northwest Territories and Nunavut*	· Description of survey methods used to estimate herd sizes.
Bathurst	Gunn *et al*. (2014)	*Satellite collaring in the Bathurst herd of barren-ground caribou. 1996-2005.*	· Information on collaring of Bathurst herd cows from 1996 to 2005. · Cows showed fidelity to calving and post-calving ranges.
	Mattson *et al.* (2009)	*Winter survey of Bathurst caribou and associated wolf distribution and abundance.*	· Stratified random survey of Bathurst herd on the winter range. · Estimated total herd size of 36,000 to 41,000.
	B. Croft, ENR (2010)	*Bathurst caribou health, condition and contaminant monitoring. 2010 Annual Report of NWT wildlife Research permits. 138 pp.*	· Body condition, disease and parasite burden was recorded for Bathurst caribou (13 female and 7 males) collected in a community hunt.
	B. Croft, ENR (2011)	*Bathurst Caribou Health,* *Condition and Contaminant Monitoring. 2011 Annual Report of NWT wildlife Research permits. 155 pp.*	· Body condition recorded at community hunt in winter/spring of 2011. · A total of 31 females, 19 males and 2 unidentified.
	Nishi *et al.* (2014)	*An estimate of breeding females in the Bathurst herd of barren-ground caribou, June 2009*	· Results of a calving ground survey of breeding females in 2009. · Recorded antlered cows and newborn calves. · Estimated 16,650 breeding females, showing a continuing decline since 2006.
	Boulanger *et al.* (2014a)	*An estimate of breeding females and analyses of demographics for the Bathurst herd of Barren-ground caribou: 2012 calving ground photographic survey*	· Calving ground photo survey to determine breeding female numbers. · Estimated 15,935 breeding females out of a total of 24,166 1+ year caribou on calving ground. · Survey was considered to be very precise, with a coefficient of variation of 8%. · Result show slight decline since 2009 survey, which had been shown to be a significant loss since 2006.

Herd	Author/Year	Title	Scope of Report
Ahiak/ Beverly	A. Kelly, ENR (2009)	*Health, condition and contaminant monitoring of the Ahiak and Beverly barren-ground caribou herds. 2009 Annual Report of NWT wildlife Research permits. 130 pp.*	· 4 cows, four bulls and 2 yearlings from the Ahiak/Beverly herd were harvested below the tree line and body condition assessed. · 26 caribou were harvested above the tree line. · Body condition was generally good and the levels of disease recorded.
	A. Kelly, ENR (2010)	*Population parameters, movements, distribution and habitat use of the Ahiak and Beverly barren-ground caribou herds. 2010 Annual Report of NWT wildlife Research permits. 138 pp.*	· To continue 2009 study on Ahiak/Beverly herds. · Locate collared females. · Collect specimens for analysis.
	H. Sayine-Crawford, ENR (2010)	*Population dynamics, physical condition, seasonal movements, health, contaminants and harvest of barren-ground caribou – CLS America. 2010 Annual Report of NWT wildlife Research permits. 138 pp.*	· Distribution of barren-ground caribou in the Sahtú area. · Map seasonal ranges of Bluenose-West and Bluenose-East herds.
	A. Kelly, ENR (2011)	*Population parameters, movements, distribution, and habitat use of the Beverly and Ahiak barren-ground caribou. 2011 Annual Report of NWT wildlife Research permits. 155 pp.*	· Tracking females that had been collared in previous years. · Spring and fall composition survey conducted in 2011 to determine calf:cow and bull:cow ratios.
	Johnson and Williams (2013)	*Spring composition of the Ahiak and Beverly herds, March 2008*	· Winter distribution survey of Ahiak and Beverly herds conducted in 2008. · Determined some herd metrics; such as bull:cow and calf:cow ratio. · Estimated good calf survival, but reduced pregnancy and calf production in 2008.
	A. Kelly, ENR (2011)	*Distribution and movements of Beverly and Ahiak Barren-ground Caribou. 2013 Annual Report of NWT wildlife Research permits. 204 pp.*	· Satellite collars were deployed on 27 caribou for future population counts.
Bluenose-East	Boulanger *et al*. (2014b)	*A estimate of breeding females and analyses of demographics for the Bluenose-East herd of barren-ground caribou: 2013 calving ground photographic survey*	· Calving ground survey of Blue-nose east herd. · Estimated 60,387 of >1 year old caribou on calving ground, with 34,472 breeding females. · Breeding females 66% lower than 2010 estimate possible due to low female survival.
	Adamczewski *et al*. (2011, 2014)	*A comparison of calving and post-calving photo surveys for the Blue-nose east herd of barren-ground caribou in the Northwest Territories, Canada in 2010*	· Photo surveys of herd during calving and post-calving in 2010. · Calving ground survey reported 51,757 breeding females to give a total herd size of 102,704. · The post calving survey produced an estimate of 98,000 to 123,900 caribou of 1+ years.

Herd	Author/Year	Title	Scope of Report
Bluenose-East and Bathurst	B. Croft, ENR (2010)	*Monitoring of the Bathurst and Bluenose-East caribou herd 2010 Annual Report of NWT wildlife Research permits. 138 pp.*	· Late winter surveys to determine calf survival and recruitment of the herds. · Calf:cow ratios were 45 (Bathurst) and 47 (Bluenose-East) per 100 females.
	B. Croft, ENR (2011)	*Continued monitoring of the Bathurst and Bluenose-East Caribou Herd. 2011 Annual Report of NWT wildlife Research permits. 155 pp.*	· Continuation of previous year's project. · Survey of herd meristics and distribution.
	B. Croft, ENR (2013)	*Monitoring of the Bathurst and Bluenose-East caribou. 2013 Annual Report of NWT wildlife Research permits. 204 pp.*	· Project will deploy collars and conduct spring and fall surveys in 2012.
	B. Croft, ENR (2013)	*Bathurst and Bluenose-East caribou health, condition and contaminants monitoring. 2013 Annual Report of NWT wildlife Research permits. 204 pp.*	· Tissue samples will be collected in 2012 for contaminants and disease assessment.
	Environment and Natural Resources	*Bluenose-East and Bathurst barren-ground caribou herd calving ground reconnaissance composition and photo-survey, 2015*	· Conducted in June 2015. · No results yet.
Bluenose-West	T. Davison, ENR (2012)	*Radio collar deployment and a post-calving survey to estimate the number of caribou in the Bluenose-West Herd in 2012. 2012 Annual Report of NWT wildlife Research permits. 160 pp.*	· Tracking distribution of 60 collared females from the Bluenose-West herd. · Collars were also placed on caribou from the Tuktoyaktuk Peninsula and Cape Bathurst herds. · post calving survey was conducted for all three herds.
Cape Bathurst Bluenose-West and Bluenose East	Environment and Natural Resources	*Technical report on the Cape Bathurst, Bluenose-West, and Bluenose-East barren-ground caribou herds*	· Technical document outlining methods of assessment for the 3 herds up to 2012 for the Cape Bathurst and Bluenose-West, and 2013 for the Bluenose-East.
	T. Davison, ENR (2009)	*Caribou body condition and health monitoring. 2009 Annual Report of NWT wildlife Research permits. 130 pp.*	· Working through Hunters and Trappers Committee's to collect body condition data of the Tuktoyaktuk Peninsula, Cape Bathurst and Bluenose-West herds.
	T. Davison, ENR (2012)	*Caribou sampling initiative: caribou body condition and health monitoring. 2012 Annual Report of NWT wildlife Research permits. 160 pp.*	· Analysis of tissues from the Porcupine (12 animals) and Bluenose-West (4) herds for body condition and contaminants.
	T. Davison, ENR (2012)	*Late winter recruitment of the Tuktoyaktuk Peninsula, Cape Bathurst, and Bluenose-West barren-ground caribou herds. 2012 Annual Report of NWT wildlife Research permits. 160 pp.*	· Recruitment surveys of 3 northern herds to determine herd composition. · Calf:cow ratios were 47.4 for the Cape Bathurst herd and 52.4 for the Tuk Peninsula herd.

Herd	Author/Year	Title	Scope of Report
	T. Davison, ENR (2013)	*Collaring and photo survey of Tuktoyaktuk Peninsula, Cape Bathurst, and Bluenose-West barren-ground caribou. 2013 Annual Report of NWT wildlife Research permits. 204 pp.*	· Collars were deployed early in the year for a post-calving survey. · Total numbers in the herds were 2,192 in the Tuk Peninsula, 2,427 in the Cape Bathurst and 20,465 in the Bluenose-West.
Tuktoyaktuk Peninsula, Cape Bathurst and Bluenose-West	Davison *et al*. (2014)	*Population estimates of Tuktoyaktuk Peninsula, Cape Bathurst and Bluenose-West barren-ground caribou herds, using post-calving photography, July 2009.*	· 83 collars deployed in March 2009 for post-calving survey. · Estimate of total population was 2,753 for the Tuk Peninsula herd, 1,934 for the Cape Bathurst and 17,897 for the Bluenose-West herd.
Peary Caribou	T. Davison, ENR (2010)	*Arctic Island Caribou and Muskox* *Population Survey. 2010 Annual Report of NWT wildlife Research permits. 138 pp.*	· Obtain estimates of Peary caribou. · Population estimated at 1,097 of 1+ year
Woodland Caribou (Boreal)	T. Davison, ENR (2009)	*Ecology of boreal woodland caribou in the lower Mackenzie Valley, NWT. 2009 Annual Report of NWT wildlife Research permits. 130 pp.*	· Telemetry was used to locate collared cows three times a year. · Produced data on calf survival and calving rate.
	A. Kelly, ENR (2009)	*Boreal caribou population trends and habitat use in the north and south Cameron Hills. 2009 Annual Report of NWT wildlife Research permits. 130 pp.*	· Study conducted through assessment of body condition during collaring and aerial surveys of distribution of collared individuals.
	H. Sayine-Crawford, ENR (2010)	*Ecology of boreal woodland caribou in the central Mackenzie River valley. 2010 Annual Report of NWT wildlife Research permits. 138 pp.*	· Continuation of project. · Map boreal caribou habitat in Mackenzie Valley.
	M. Branigan, ENR (2010)	*Boreal woodland caribou habitat and productivity. 2010 Annual Report of NWT wildlife Research permits. 138 pp.*	· Map boreal herds in Gwich'in area.
	A. Kelly, ENR (2010)	*Boreal caribou fitness and habitat use in the Cameron Hills/ Hay River Lowlands area of the Dehcho, Northwest Territories. 2010 Annual Report of NWT wildlife Research permits. 138 pp.*	· Continuation of projects since 2003 to map boreal caribou in southern NWT.
	Larter and Allaire (2010)	*Dehcho boreal caribou study progress report, April 2010*	· A total of 18 collars deployed in 2010. · Home ranges and calf: cow ratios, classification and mortalities were determined. · Adult female pregnancy and survival were measured.
	A. Kelly, ENR (2012)	*Boreal caribou monitoring - Hay River Lowlands (Ka'a'gee Tu Candidate Protected Area) and Cameron Hills. 2012 Annual Report of NWT wildlife Research permits. 160 pp.*	· Continuation of earlier study. · Few collared females remain from earlier studies restricts data collection.

Herd	Author/Year	Title	Scope of Report
	Larter and Allaire (2012)	*Dehcho boreal caribou study progress report, April 2012*	· Sex/age classification study conducted in 2012 using 30 collars. · Similar metrics to previous years measured.
	A. Kelly, ENR (2013)	*Boreal caribou monitoring - Hay River Lowlands (Ka'a'gee Tu Candidate Protected Area) and Cameron Hills. 2013 Annual Report of NWT wildlife Research permits. 204 pp.*	· Continuation of earlier study. · Few collared females remain from earlier studies restricts data collection.
	Larter and Allaire (2013)	*Dehcho boreal caribou study progress report, April 2013*	· Continuation of program since 2004. · A total of 35 collars deployed in 2013. · Body condition, disease and herd classification determined through aerial survey.
	Larter and Allaire (2014)	*Dehcho boreal caribou study progress report, April 2014*	· Continuation of Dehcho program. · Using 32 collars.
	Larter and Allaire (2015)	*Dehcho boreal caribou study progress report, April 2015*	· Continuation of Dehcho program. · Continuous sampling using consistent methodology since 2004 allows delineation of trends in female survival, calf recruitment and herd size.

APPENDIX B:

List of Recommendations and Responses

Recommendation 1: ***Given the importance of CLCAs/SGAs within the MVRMA framework, INAC and the GNWT should continue to negotiate these agreements in good faith. Timelines should be established, published and monitored.***

INAC's Response: Canada conducts all negotiations in good faith. The pace of each negotiation is particular to the table. Parties develop tripartite annual workplans that guide their work over the year. Workplans are not public documents.

GNWT's Response: The GNWT remains committed to doing its part to finalize all outstanding land, resources and self-government agreements as quickly as possible and in a manner that is fair, balanced and continues to promote workable and affordable agreements that respect Aboriginal rights. Working to resolve outstanding land, resources and self-government agreements is one of the key priorities of the 18th Legislative Assembly. On March 2, 2016, the Minister of Aboriginal Affairs and Intergovernmental Relations was issued the mandate to work to resolve the outstanding land, resources and self-government agreements with the Akaitcho Dene First Nations, Dehcho First Nations, Northwest Territory Métis Nation and the Acho Dene Koe First Nation during the term of the 18th Legislative Assembly.

Recommendation 2: ***INAC and GNWT should work together in good faith with Aboriginal Governments and other interested parties to develop enforceable land use plans in the absence of settled land claims. Timelines should be established, published and monitored.***

INAC's Response: INAC works together with the Boards, Aboriginal Governments and the GNWT in good faith in developing enforceable land use plans in the NWT. The establishment of land use plans is crucial to a comprehensive land and water regulatory framework in the NWT. Canada, the GNWT and their treaty partners have already approved land use plans in the Gwich'in and Sahtu regions. The Tłı̨chǫ Government has also approved their land use plan with Canada and the GNWT's input. To date, INAC has been directly involved in negotiating land claim agreements in these unsettled land claim areas, but will not proceed with developing enforceable land use plans without completing its land claim negotiations. An exception to this policy is the Dehcho Interim Land Use Plan as it is still in the development stage prior to the completion of the Dehcho Final Agreement. Land Use Planning processes are complex and are influenced by numerous variables and issues specific to each planning region. Participating parties in the land use planning processes continue to work to meet the timelines proposed within Planning Boards workplans. These workplans are usually available on the public registry.

GNWT's Response: It is a priority of the Government of the Northwest Territories to promote and support effective land use planning in all regions of the Northwest Territories. The Department of Lands is working to engage partners such as land use planning boards, Aboriginal governments and organizations and the Government of Canada on a strategic framework for the GNWT's land use planning program and to strengthen relationships among organizations with land use planning

responsibilities. The strategic framework will set the stage for advancing land use planning in unsettled areas. The GNWT is participating with representatives of the Government of Canada and the Dehcho First Nations in the development of an interim land use plan for the Dehcho area through the Dehcho Land Use Planning Committee.

Recommendation 3: GNWT and INAC should establish and publish formal plans/commitments, including timelines, for the development, implementation and enforcement of regulations and guidelines to address the identified regulatory gaps[6].

GNWT's Response: The GNWT recognizes the importance of addressing the identified regulatory gaps (air quality, wildlife, archaeology for some federal lands, paleontology, and groundwater). The GNWT is currently developing NWT Air Regulations, as well as guidelines for Wildlife Management and Monitoring Plans. The GNWT is also currently exploring options for the preservation and protection of paleontological resources in the NWT. And finally, the GNWT will be undertaking work to develop and propose amendments to the *Waters Act*, as necessary to modernize the Act and fill any identified regulatory gaps.

INAC's Response: As stated in the report, considerable progress has been made in addressing the identified regulatory gaps related to air quality, wildlife, groundwater and archaeology. In reference to the archaeological sites regulations and guidelines for some federal lands (Territorial Land Use Regulations), the general practice is for proponents to be referred to the GNWT to handle all paleontological and archaeological sites in the territory. INAC will discuss further the regulatory gaps with the GNWT to ensure that appropriate enforcement and compliance is implemented.

Recommendation 4: GNWT should work with MVEIRB and communities to identify indicators of community wellness and to develop monitoring programs for these indicators that can support the regulatory decision-making process.

GNWT's Response: As stated in the 2005 Environmental Audit Report "community wellness is a term that has been created in order to assess the overall health of a community. However, what is and what is not a healthy community can vary depending on the values espoused and the objectives of an individual community."

Government and non-government agencies often use social determinants of health as a baseline for looking at holistic community health. Social determinants of health typically include:

- income and social status;
- employment/working conditions;

[6] Gaps on federally managed contaminated site land could also be addressed by INAC by amending the *NWT Act* to allow GNWT legislation to apply to federal areas (as was done for the GNWT's *Surface Rights Board Act*)

- education;
- gender;
- biology and genetic endowment;
- social support networks;
- social environments;
- physical environments (such as community infrastructure and housing);
- personal health practices;
- access to health services;
- culture; and
- healthy child development.

Currently, the GNWT monitors and reports on numerous social determinant indicators as well as indicators aimed at assessing the performance of government and the effectiveness of programs and services in support of NWT residents.

Additionally, the GNWT releases the annual Communities and Diamonds Report. The Communities and Diamonds Report provides reliable quantitative trend analysis on a comprehensive set of socio-economic indicators aimed at measuring community, family and individual wellbeing. The purpose of the Report is to determine if mine activity may be affecting residents of Yellowknife and seven Small Local Communities in the NWT by tracking socio economic indicators since 1996, when the first mine went into construction.

Measures related to community wellness are also available through the INAC website. INAC reports on the Community Well-being index (CWB index 1981 – 2011). This information is available for every community in the NWT and provides a systematic, reliable summary measure of socio-economic well-being at the community level. The index illustrates variations in well-being across First Nations and Inuit communities in Canada and how it compares to that of non-Aboriginal communities. It allows well-being to be tracked over time, providing a useful source of information to inform research and planning. The index is made up of four components measuring income, education, housing and labour force activity.

Recommendation 5: ***LWBs should develop a plan to periodically and formally engage proponents, regulators, Aboriginal Governments, and organizations and community members in ongoing refinements and optimization to the land permitting and water licencing system and to develop guidelines for monitoring data that enhances data recording and reporting in a more consistent, available and easier to use format.***

LWBs' Response: The Mackenzie Valley Land and Water Board (MVLWB or Board) formed the Standard Procedures and Consistency Working Groups in early 2008. At that time, the Board approved a Terms of Reference to guide the formation and operations of the Working Groups. The Working Groups focused on specific regulatory improvements identified by the LWBs to improve clarity and consistency among the Boards. Though the Working Group initiative was successful, lessons have been learned and improvements are necessary to ensure continued success in areas of collective LWB product development.

On December 17, 2015, the MVLWB approved the Terms of Reference for a new Areas of Operation initiative. In particular, three of the following Areas of Operation will help address the issues and concerns listed under item 2.32 of the Audit:

- The Regulatory Improvement Area of Operation will develop policies, guidelines, and procedures to ensure that the Boards' regulatory process is transparent, consistent, robust, and efficient;
- The Information and Communications Technology Area of Operation will focus on the information management systems used by the LWBs (e.g., Online Registry, websites, Online Review System, etc.); and, most importantly,
- The Outreach and Engagement Area of Operation will focus on external initiatives and engaging stakeholders to frame and guide Board initiatives. This group will also focus on developing the process for and facilitating the ongoing evaluation of the Boards' policies, procedures, and programs developed collaboratively.

Under the Regulatory Improvement Area of Operation, various guidelines and initiatives are underway to support water management in the Mackenzie Valley. These will help improve the monitoring programs that are developed and the quality of data received, and will clarify monitoring expectations for proponents. These include:

- Mixing Zone Guidelines (working with GNWT);
- Surface and Groundwater Monitoring Guidelines (applicable to hydraulic fracturing operations);
- Standardized Water Licence conditions;
- Public Guide to the Water Licensing Process; and
- Initiatives to work with municipalities to improve water licence compliance and capacity through the development of templates, training programs, and information sessions.

Under the Information and Communications Technology Area of Operation, initiatives are underway that will help identify best practices for data collection, and will outline the Board's expectations for data submission. These include the:

- Online Application System;
- Data Management Policy; and
- GIS Submission Standards Guideline.

The GIS Submission Standards Guideline in particular will ensure that GIS data submitted is more comprehensive and in a format that would allow for the integration of monitoring data. This would enable users to view water quality information on maps to see spatial distribution of attributes or trends relating to cumulative effects.

Policies, guidelines, and other products released by the LWBs undergo thoughtful internal and external reviews before finalization. Under the Outreach and Engagement Area of Operation, this practice will be formalized such that all proponents, regulators, Aboriginal Governments and organizations and community members are formally engaged on LWB products. The LWBs are also developing a survey that will be circulated to seek input on potential guidance tools that would support improved efficiency and understanding of the regulatory system.

An example of an external initiative was the *MVRMA* workshop that was held jointly by the LWBs, the MVEIRB, and the GNWT in January of 2016 for all participants in the *MVRMA* system. The purpose of the workshop was to provide information about the different parts of the *MVRMA* system, how the parts work together, and how parties can be involved. Feedback on LWB policies and guidelines was also solicited during this informative and interactive workshop. This workshop was the second of its kind – the first one was held in 2015. LWB staff is involved in ongoing planning efforts to make this workshop an annual event, and to ensure topics that are relevant to ongoing refinements and optimization of the land and water regulatory regime are included.

Recommendation 6: ***INAC should work with LWBs, GNWT-Lands, GNWT-ENR and other interested parties to establish appropriate regulated timelines taking into account commitments made in Agreements with Aboriginal Governments and organizations and engagement and consultation requirements resulting from these Agreements and requirements under the MVRMA.***

INAC's Response: INAC will work with the LWBs, GNWT-Lands and GNWT – ENR and other interested parties to further examine the current regulated timelines taking into account Aboriginal engagement and consultation in the review of Type B and A water licence and land use permits under the *MVRMA*. The recent amendments to the *MVRMA* have instituted timelines to most stages of the environmental assessment process including Ministerial approval and licensing/permitting processes. Each of the Agreements has consultation provisions within each chapter and these provisions are adhered to by Canada.

Recommendation 7: ***MVEIRB should check in with parties on a case-by-case basis before making project-specific changes to the standard EA process to ensure all parties have the ability to participate in the EA in a meaningful manner.***

MVEIRB's Response**:** In general, actively seeking comments on terms of reference and work plans for EA, in the early stages of an EA, allows MVEIRB to consider the views of parties in planning each EA proceeding. The Review Board has the discretion to alter its processes, including its Rules of Procedure, and may do so for reasons such as to ensure fairness and efficiency. The Board will notify and consult parties before doing so, whenever practicable.

MVEIRB is reviewing and updating its EIA Guidelines (2003) to reflect recent best practices and better inform parties, developers, and the public about typical EIA processes in the Mackenzie Valley and some of the reasons why process changes may be made. MVEIRB is also reviewing and updating its Rules of Procedure (2005) to reflect recent best practices and improve clarity. MVEIRB recently issued Direction on Procedure for two EAs to provide clarity regarding the use of a process for information requests that reflects recent best practices but deviates from the Rules of Procedure. MVEIRB views clear communication on all matters related to EIA processes as a top priority.

Recommendation 8: ***GNWT-Lands should develop a process to track and assess the effectiveness of EA measures and suggestions directed at government, including consideration of whether tracking would be for all levels of governments or whether the Federal Government (or other governments) would be tracking separately.***

GNWT-Lands' Response**:** The GNWT supports the intent of this recommendation and believes that a comprehensive tracking process, involving federal, territorial and Aboriginal governments, MVEIRB, developers, and others as required, is the best approach. Lands will coordinate GNWT departments' input to measure tracking and assessment.

A process to assess the effectiveness of suggestions may be challenging to develop given the variety of reasons for MVEIRB to make suggestions.

Recommendation 9: ***Working with affected parties, INAC's Resource Policy and Program Directorate, in association with the Board Relations Secretariat, the Corporate Secretariat and the Treaties and Aboriginal Government Sector-Implementation Branch, should facilitate discussions for a more efficient and effective processes to ensure board nominations are made and approved in a timely manner.***

INAC's Response: Canada has made progress with the Board nominations and appointment process over the years. INAC will continue to work and communicate, on an ongoing basis, with the organizations responsible for nominations to ensure the process is as timely as possible.

Recommendation 10: ***INAC should work with: (1) all co-management boards to better understand long-term secure funding needs for training, and (2) with LUPBs to better understand resource requirements during various stages of the planning cycle, and then develop a funding model to better support resource requirements through this cycle.***

INAC's Response: INAC accepts this recommendation and is taking action. INAC has been working with co-management boards since 2012 to better understand all of the boards' funding requirements, including the need for secure funds for training. To date, INAC engagement has consisted of circulating a questionnaire focused on the boards' needs, soliciting 10 year funding projections from the boards to better understand their anticipated funding pressures, and engaging in a series of follow-up meetings. INAC is committed to continue working with the boards moving forward.

In regard to LUPBs, INAC is committed to working with the boards to ensure their resource requirements are met in a timely fashion.

Recommendation 11: ***INAC and GNWT need to enhance tools for the enforcement of the MVRMA and Territorial Lands Act through the introduction of Administrative Monetary Penalties regulations as planned. INAC also needs to formally resolve administrative matters in initiating prosecutorial actions at the territorial level.***

***INAC's Response*:** INAC has introduced an Administrative Monetary Penalties (AMPs) scheme under the *Territorial Lands Act* (s. 36 to 55) and under the *MVRMA* (Part 6.1 s.150.01 to 150.23) in 2014 and is currently developing draft AMPs regulations which will eventually give effect to these schemes under the Acts. Consultation on the proposed AMPs regulations will be held in 2017.

INAC will work with GNWT to clarify and resolve any potential administrative matter with regards to prosecutorial actions at the territorial level.

***GNWT's Response*:** The GNWT supports this recommendation. The Department of Lands will work with INAC to advance the introduction of Administrative Monetary Penalties regulations.

Recommendation 12: Continued work is required between the LWBs and inspection agencies to balance the need for flexibility in the field and the need for proponents to have a clear understanding of what their permits and licences allow them to do and what they don't allow them to do.

***LWBs' Response*:** A number of initiatives will help address this recommendation, including:

- The LWBs are working with the GNWT and INAC to help clarify the *Field Operations Directive 5.0 – Compliance Levels and Reporting*, which deals with administrative compliance and outlines lines of communication with respect to compliance issues;
- The LWBs have developed standard land use permit conditions and are now working on standard water licence conditions. When drafting new conditions and/or revising conditions, the Inspectors are involved in the LWBs' review process of these conditions;
- The LWBs, the GNWT, and INAC have started to meet on a regular basis to discuss issues, including compliance and enforcement; and,

- As outlined in the response to item 2.32 of the Audit, the LWBs have set up Areas of Operation (i.e. Regulatory Improvement and Outreach and Engagement) that will help clarify what activities their permits and licences authorize them to carry out.

Recommendation 13: The Waters Act and Regulations should be amended to allow the LWBs to request final plans, issue letters of clearance, reconciliation of water use fees, and request the appropriate government and department to return the appropriate securities deposits to the licensee for water licences, similar to existing regulatory requirements for land use permits. The Boards should revise their procedure guidelines and licences to reflect the prescribed regulatory requirements.

***GNWT-ENR's Response*:** ENR will be undertaking work to develop and propose amendments to the *Waters Act,* as necessary to modernize the Act and fill any identified regulatory gaps. This work has been identified as a priority within the Mandate of the 18th Assembly of the Northwest Territories.

The GNWT will engage regional Land and/or Water Boards through this process.

Recommendation 14: Led by GNWT-ENR, an independent review of the existing monitoring agencies should be undertaken to determine strengths and weaknesses so that any future similar agencies are structured to function effectively.

GNWT-ENR's Response: The monitoring agencies are generally functioning as intended and, as such the GNWT does not believe an independent review is warranted at this time. The GNWT will continue to work directly with the monitoring agencies and other parties, and is prepared to address feedback received through those channels about the effectiveness of the agencies.

Recommendation 15: GNWT-Lands should develop policy documents outlining its approach to and timeline for establishing a structured approach to securities management within the NWT.

***GNWT-Lands' Response*:** The GNWT supports the intent of this recommendation. The Department of Lands will work with other GNWT departments as required.

Recommendation 16: LWBs and MVEIRB should work with interested parties to identify approaches to better utilize and integrate TK information into the decision making processes.

LWBs' Response: TK is used meaningfully when present. Typically, TK information that is incorporated into an applicant's submission is very high level or limited to specific areas within the program. Examples would be: "these are fish lakes", "moose live here", and "cabin located here". Scientific information presented in an applicant's submission ranges from high level to granular for all areas in a program and for all components of the ecosystem. The volume of scientific information presented usually grossly outweighs that of TK. When TK information is present, it is incorporated into the permitting or licencing process. For example, more extensive mitigation measures and reporting requirements may be imposed to protect the fish lakes. Although the volume and extent of the TK data vs scientific data is different, the merit and weight of the evidence is equal in the Boards' process. Meaningful improvements can be made, TK information collection is typically application driven, as such the context of the greater environment and use of traditional territories is limited. Presenting the local and traditional knowledge of the area in conjunction with program or project specific data may elaborate its use and context.

MVEIRB's Response: MVEIRB has *Guidelines for Incorporating Traditional Knowledge into the Environmental Impact Assessment Process*. The document outlines the steps for inclusion of traditional knowledge in Environmental Impact Assessment (EIA), including: preliminary screening, environmental assessment, and environmental impact review. The Guidelines include advice for proponents and all participants in EIA, as well as considerations for: (i) the use of TK and (ii) relationships between TK holders and both MVEIRB and proponents. Ongoing effort and commitment is needed on the part of MVEIRB, proponents, and Aboriginal organizations to ensure the approaches outlined in the Guidelines are implemented and built upon. MVEIRB would

also like to promote the development of more systematic protocols for collecting, storing, managing, and using TK in a culturally appropriate manner.

MVEIRB respects and values the benefits that TK offers in good environmental decision-making and is committed to working toward improved approaches for its use in EIA. For example, the NICO EA (EA0809-004; completed 2013) included measures with specific requirements related to TK about impacts on caribou and impacts on cultural values. That Report of EA summarizes how the Board considered all the TK that parties shared during the EA, including: traditional knowledge and use studies and associated reports, two days of public hearings specifically on traditional knowledge, and parties' recommendations to address anticipated project effects.

Recommendation 17: The GNWT should develop a clear policy and program to address and communicate its responsibilities for consultation and public engagement.

GNWT's Response: The GNWT's commitment to meaningful Aboriginal consultation is reflected in "The Government of the Northwest Territories' Approach to Consultation with Aboriginal Governments and Organizations" which was tabled in the Legislative Assembly in 2007.

Link: http://www.daair.gov.nt.ca/_live/documents/content/Aboriginal_Consultation_Approach.pdf

In 2012, the GNWT has also publically released a more formal approach to engaging with Aboriginal Governments. "Respect Recognition Responsibility: The Government of the Northwest Territories' Approach to Engaging with Aboriginal Governments" highlights principles of engagement with Aboriginal governments that include, recognition of rights, building respectful relationships, and responsible and flexible government relationships.

Link: http://www.daair.gov.nt.ca/_live/pages/wpPages/home.aspx

Recommendation 18: INAC should make the development of regulations on consultation a priority to add further clarity and certainty to the regulatory process.

INAC's Response: INAC has developed a number of tools, such as the "Guidelines for Federal Officials to Fulfill the Duty to Consult" to ensure the duty to consult is well understood and carried out in a respectful and appropriate manner. A number of legislations authorities were added, including specific regulation-making authority with respect to consultation, to the *MVRMA* through the *NWT Devolution Act*. INAC continues to develop new or amended regulations to add further clarity and certainty to the regulatory process and will assess the need for regulations on consultation on a priority basis.

Recommendation 19: INAC and GNWT should assess public participation / consultation requirements and INAC should make a long-term funding commitment, including stress funding, to Aboriginal governments and organizations and other participants in the MVRMA regulatory processes.

INAC's Response: In the past, participant funding has been considered on a case-by-case basis and this will apply for any future environmental assessments and regulatory processes in the NWT. Stress funding, also known as resource pressure funding, has been meeting any capacity or participation funding requirements for unexpected regulatory processes for Aboriginal government and organizations, more specifically, in unsettled claim areas. Future discussions with the GNWT will include the Northern Projects Management Office as it is directly involved in delivering Crown consultation obligations for EAs and regulatory processes.

GNWT's Response: The GNWT is of the opinion that this recommendation should be directed solely to INAC as the responsibility for the *MVRMA* remains a federal responsibly.

Recommendation 20: NWT CIMP should develop a more focused work plan that clearly identifies and prioritizes geographic "hot spots" and specific research requirements within each "hot spot" to allow for an adequate baseline to be developed and assessment of cumulative impacts to be completed.

GNWT-ENR's Response: NWT CIMP will continue to refine its monitoring priorities in collaboration with its co-management and Aboriginal partners. The development of specific research and monitoring work plans for specific areas is an approach that will be considered.

Recommendation 21: GNWT-ENR and NWT CIMP should include the identified data gaps for caribou monitoring in planning research priorities.

GNWT-ENR's Response: ENR and NWT CIMP will use the data gaps identified by the Audit to identify areas for further collaboration with co-management partners, communities, industry and academia and to help inform research and monitoring activities undertaken by ENR. Specifically, the identified data gaps for caribou monitoring will be considered when revising the NWT Barren-ground Caribou Strategy and NWT CIMP's Caribou Blueprint.

Recommendation 22: GNWT-ENR (Water Resources Division) should develop NWT site-specific guidelines for use in water quality assessments to better reflect the impact of naturally high suspended solids on water quality in many watersheds in the territory.

GNWT-ENR's Response: Site specific water quality triggers were developed for the Slave and Hay Rivers and incorporated into the recently signed Bilateral Water Management Agreement between the Province of Alberta and the Northwest Territories (signed in March 2015). These triggers are based upon site-specific datasets for these rivers. Additionally, ENR is undertaking work with respect to how site-specific water quality objectives could be established for waters across the NWT that incorporates site-specific physical (e.g., suspended solids), biological and human/social components.

Recommendation 23: NWT CIMP should engage partners of the NWT Water Stewardship Strategy to facilitate the collection of TK to complement the sound scientific analysis of water quality and quantity trends completed to date.

NWT CIMP's Response: Providing TK for use in decision making is a priority for NWT CIMP. NWT CIMP will engage with partners to facilitate the collection and analysis of TK for the purposes of identifying environmental trends.

Recommendation 24: NWT CIMP should continue to work with DFO to identify locations where fishery baseline and trend data are required.

NWT CIMP's Response: NWT CIMP will continue to work with DFO and its other co-management and Aboriginal partners to identify priority locations for understanding fishery baseline and trend data.

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