

4 DRAFT BIODIVERSITY MANAGEMENT FRAMEWORK

4.1 Introduction

Alberta initiated the development of the draft Biodiversity Management Framework (BMF) in 2014 as part of the implementation of the Lower Athabasca Regional Plan (LARP). This section summarizes the draft BMF issued in November 2014; highlights the benefits and deficiencies in the draft BMF; and describes the requirements to achieve Fort McKay's expectations for a BMF that addresses the needs of the Community and ensures maintenance of biodiversity within Fort McKay's Traditional Territories to provide opportunities for Community Members to exercise Constitutional rights.

Conservation and maintenance of biodiversity in Fort McKay's Traditional Territory is essential to ensure sufficient biological resources and intact cultural landscapes are available to support the pursuit of Constitutional Rights by members of Fort McKay First Nation. Jean L'Hommecourt, a Traditional Knowledge Holder and Active Land User from Fort McKay First Nation, describes the importance of biodiversity to Fort McKay:

*"Our homeland offers a whole way of life for our First Nations and Métis peoples. The plants and animals depend on the land for survival, and in turn the people depend on the plants, animals, and water bodies such as lake, rivers, creeks, streams and wetlands for sustaining our culture."*⁹

Biodiversity supports both the spiritual and cultural well-being of the Community. Ability to pursue traditional activities ensures cultural transmission, resiliency and community cohesiveness. Biodiversity is a crucial component of maintaining the Community's health and well-being. In Fort McKay's Traditional Territory, land-use planning is thus not just about land use (i.e., hunting, fishing, and trapping) but it more broadly involves heritage, culture, spirituality, and social well-being which contributes to a cultural landscape or homeland. Homeland values are not on the same plane as commercial, recreation or even natural values, since they address the essence of Aboriginal right.

4.2 Draft Biodiversity Management Framework Analysis

Alberta describes the BMF as "a new cumulative effects management approach for key indicators of biodiversity."¹⁰ The information provided to Fort McKay for review in August and November 2014 provides a high-level overview that defines biodiversity and services biodiversity provides to Albertans, describes that context of the biodiversity management frameworks as a component of the Land-Use Framework, and summarizes the following components of the draft BMF for the Lower Athabasca Region:

- Objectives

⁹ SENES Consultants Ltd. 2011. An Aboriginal Road to Reclamation A Study Summary for Aboriginal Communities of the Oil Sands Region. Prepared for the Reclamation Working Group of Cumulative Environmental Management Association. Fort McMurray, AB.

¹⁰ Alberta Government. 2014. Lower Athabasca Regional Plan Strategies Biodiversity Management Framework for the Lower Athabasca Region. February 2014. ISBN: 978-1-4601-1528-2 (Printed Version).

- Indicators selection
- Identification of threshold values
- Management response

Alberta defines biodiversity as:

“Biodiversity or biological diversity is defined as the assortment of life on Earth – the variety of genetic material in all living things, the variety of species on Earth and the different kinds of living communities and the environments in which they occur. Biodiversity exists throughout Alberta, both on land and in water, and includes all organisms, from microscopic bacteria to more complex plants and animals.”¹¹

Alberta identifies the following services provided by biodiversity as “critical to the well-being of current and future generations of Albertans:”

- Supporting services – nutrient cycling and dispersal, seed dispersal
- Provisioning services – food, fibre, fresh water, raw materials, energy
- Cultural services – spiritual, recreational, esthetic, cultural benefits
- Regulating services – carbon sequestration, climate regulation, soil formation

As part of this section describing services provided by biodiversity, Alberta states:

“The Government of Alberta is committed to working with First Nations and Métis to consider how the exercise of constitutionally protected rights to hunt, fish and trap for food can continue to occur within reasonable proximity of First Nations’ main population centres.”¹²

4.2.1 Land-Use Framework – Context for Biodiversity Management Framework

Alberta proposes to develop biodiversity management frameworks for each of the regional planning areas to enable comparisons across regions of the key biodiversity indicators. The biodiversity management frameworks within each planning region are expected to provide the regional context for decisions about future activities and management of existing activities in each of the planning regions.

Within each region, regional biodiversity objectives will be included in the biodiversity management frameworks to support management of cumulative effects of development on the environment. The BMF for the Lower Athabasca Region is being developed to support meeting Outcome 3 defined in the LARP as “Landscapes are managed to maintain ecosystem function and diversity.”¹³ Monitoring and reporting on the performance of key indicators and defined threshold

¹¹ Alberta Government. 2014. Lower Athabasca Regional Plan Strategies Biodiversity Management Frameworks for the Lower Athabasca Region. August 2014.

¹² Alberta Government. 2014. Lower Athabasca Regional Plan Strategies Biodiversity Management Frameworks for the Lower Athabasca Region. August 2014.

¹³ Alberta Government. 2014. Lower Athabasca Regional Plan Strategies Biodiversity Management Frameworks for the Lower Athabasca Region. August 2014.

values will inform planning and decision-making and help determine if the biodiversity objectives are being achieved.

Alberta's LARP Team defined four objectives for the draft BMF:

- "Biodiversity and healthy, functioning ecosystems continue to provide a range of benefits to Albertans and communities in the region, including First Nations' continued ability to exercise constitutionally protected rights to hunt, fish and trap for food;
- Species at risk are recovered and no new species require at risk designation; and
- Long-term regional ecosystem health and resiliency are sustained with consideration of natural disturbance patterns and processes."¹⁴

The presentations to Fort McKay by the LARP Team on September 4, 2014, included additional descriptions of the purpose of the draft BMF which were not specifically defined as objectives:

- "A systematic, credible approach to biodiversity management
- Support continued economic and community growth in all Land Use Framework Regions (e.g., Lower Athabasca)
- Drive improved practice (industry and other land users) in a region to minimize the extent and duration of human footprint."¹⁵

4.2.2 Indicator Selection and Identification of Threshold Values

Proposed biodiversity indicators for the draft BMF were selected using the following criteria:

- "Responsiveness to changes in land use and land use management;
- Relevant to regional plan and management framework objectives;
- Representative of regional scale biodiversity and specific vulnerable aspects of biodiversity in the Lower Athabasca Region;
- Feasible to measure and monitor – cost effective; and
- Relevant to biodiversity interactions and ecosystem functions in the region."¹⁶

The indicators were selected by reviewing the Terrestrial Ecosystem Management Framework (TEMF) developed by CEMA¹⁷ and to align with indicators defined by Alberta Biodiversity Monitoring Framework (ABMI). The proposed indicators are arranged into four pyramids: Terrestrial Habitat, Terrestrial Species, Aquatic Habitat and Aquatic Species (Figure 4-1 reproduced below¹⁸). The pyramids represent two scales of biodiversity – species and habitat – to account for the multiple spatial scales that contribute to biodiversity. Within each of the four pyramids, four categories of indicators have been defined (Levels 1, 2, 3 and 4) and only two categories (Level 1 and 2) will have threshold values defined.

¹⁴ Alberta Government. 2014. Draft Lower Athabasca Regional Biodiversity Management Framework V 1.0 November 6, 2014.

¹⁵ Alberta Government. 2014. Lower Athabasca Region Biodiversity Management Framework Workshop Working Presentation August 15, 2014. P. 4 of PDF.

¹⁶ Alberta Government. 2014. Lower Athabasca Regional Plan Strategies Biodiversity Management Frameworks for the Lower Athabasca Region. Working Document No. 2: Identification of Threshold Values. August 2014.

¹⁷ Sustainable Ecosystem Working Group. 2008. Terrestrial Ecosystem Management Framework for the Regional Municipality of Wood Buffalo. Prepared by Sustainable Ecosystem Working Group of the Cumulative Environmental Management Association. June 5, 2008.

¹⁸ Alberta Government. 2014. Lower Athabasca Regional Plan Strategies Biodiversity Management Frameworks for the Lower Athabasca Region. Working Document No. 1: Indicator Selection. August 2014.

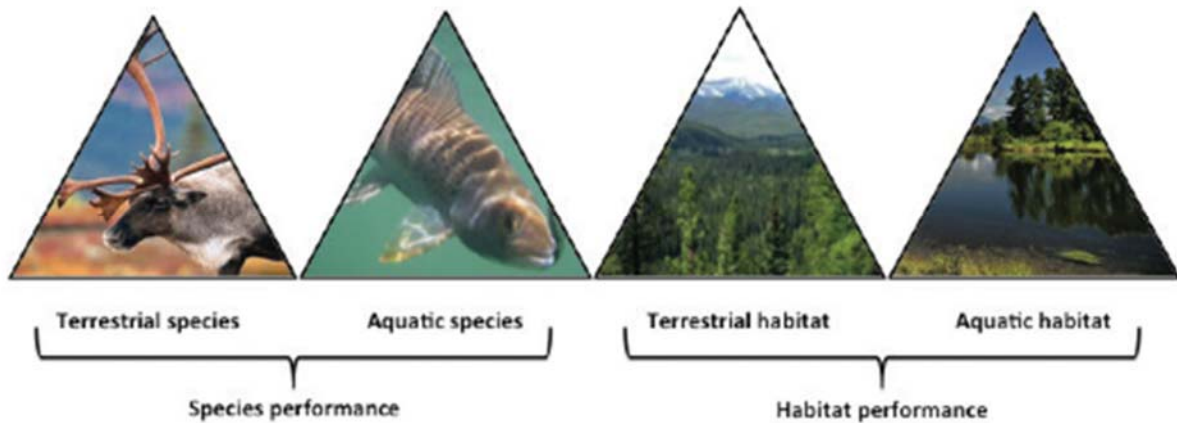


Figure 4-1: Four Categories of Indicator Pyramids Used in the Biodiversity Management Framework

Figure 4-2 (reproduced below¹⁹), depicts the hierarchical organization of the four levels of indicators. Level 1 represents one composite indicator that communicates the general state of biodiversity within the region and will be associated with a threshold value. Level 2 represents two indicators of regional significance that are associated with threshold values. Level 3 is described as subcomponents of the Level 1 and 2 composite indicators that will not be associated with any threshold value. Level 4 is described as supporting data that provides valuable additional information regarding the status of biodiversity within the region and the effectiveness of management applications applied in response to thresholds for Level 1 and 2 indicators.

4.2.3 Setting Threshold Values (Triggers)

Alberta proposes to develop threshold values for the Level 1 and 2 indicators only.

Alberta states that the threshold values will be used to assess the condition of the indicators and indicate the need for a management response. Threshold is defined in the *Alberta Land and Stewardship Act* as “a limit, target, trigger, range, measure, index, or unit of measurement.” Alberta intends to use threshold values in the BMF as triggers, representing warning signals for decision-makers. Alberta states the threshold values are intended to drive improved practice to minimize the rate, extent and duration of human footprint. A risk-based approach based on the evaluation of current conditions used by the International Union for the Conservation of Nature (IUCN) to define risk to species and ecosystems will be used to set threshold values. A management response will be initiated if a threshold value is exceeded.

¹⁹ Alberta Government. 2014. Lower Athabasca Regional Plan Strategies Biodiversity Management Frameworks for the Lower Athabasca Region. Working Document No. 1: Indicator Selection. August 2014.

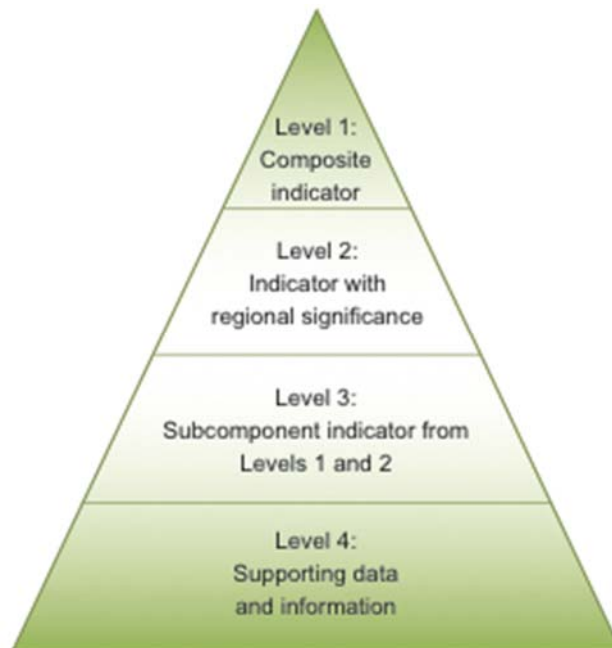


Figure 4-2: Levels of the Indicator Pyramid

The risk-based approach compares current conditions of an indicator to a reference condition to define a risk category. Four risk categories will be used to describe how much the current conditions deviate from reference conditions. The deviation is measured as a percentage with 100% being same as reference condition and 0% being extreme deviation from reference condition. Three breaking points are used to define the risk categories: 70%, 50% and 20% of reference condition. Figure 4-3 (reproduced below) shows the range of reference condition for each risk category.

Within each risk category, a tolerance for change in the condition of the indicator is assigned. The purpose of the tolerance for change value is to prevent the shift of the condition of the indicator to a higher risk category. The tolerance for change decreases the further the current condition is from the reference condition. The draft BMF proposes the following tolerances of change:

- Category A (over 70% similar to reference condition): 4% change tolerated
- Category B (50-70% similar to reference condition): 3% change tolerated
- Category C (20-50% similar to reference condition): 2% change tolerated
- Category D (less 20% similar to reference condition): 1% change tolerated

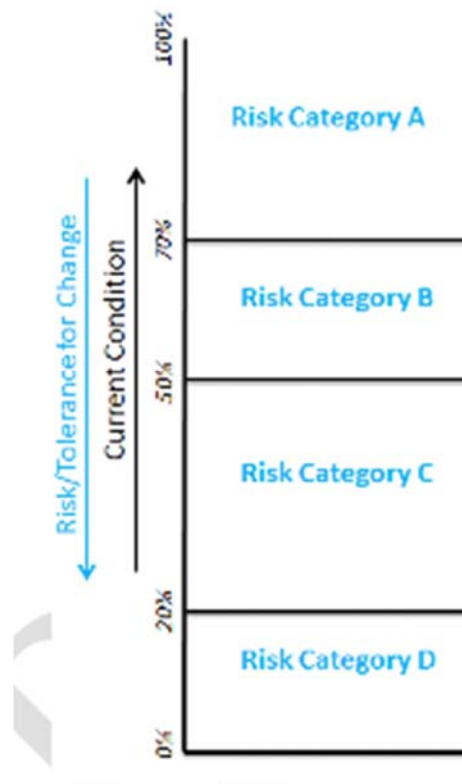


Figure 4-3: Risk Categories

Within each risk category, four levels of trigger values will be used to correspond to management intentions for the indicator. The initial level will be designated based on current condition of the indicator. Level 1 triggers will apply in Category A only, Levels 2 and 3 will apply to Category A, B and C. Level 4 will apply to Category C and D. Value for the current condition triggers are presented in the draft BMF for some of the proposed indicators and are under development for the others. The trigger levels are defined as outlined below:

- Level 1: Low risk
- Level 2: Low to moderate risk
- Level 3: Moderate to considerable risk
- Level 4: Consider to high risk

4.2.4 Management Response

Alberta states that the BMF will build on the foundation of current management practices that support biodiversity such as existing conservation areas, forest management planning, species at risk planning, regulatory requirements in approvals and dispositions, hunting and fishing requirements, and land management plans at a sub-regional and local level. The BMF will include “proactive management actions” to further support achievement of biodiversity objectives now. Alberta states that “managing linear footprint, including the extent, duration and rate of disturbance and motorized access are the most significant actions that can be taken to support

biodiversity.”²⁰ The Landscape Management Plan, being developed by Alberta, separately from the BMF and with no input to date from Fort McKay, will be used to determine how and where these management approaches should be used.

Alberta proposes a six-step management response to be undertaken if a threshold value (i.e., trigger) is exceeded. These steps include verification, preliminary assessment, investigation, mitigative management actions, oversight/delivery of management actions, assess implementation of effectiveness and communication. Not all steps might be required for all management responses. Mitigative management actions will be developed by Environment and Sustainable Resource Development (ESRD) in collaboration with other parties (i.e., other provincial government departments and agencies, local governments, stakeholders, First Nations and Métis.)

4.3 Benefit and Deficiencies of Draft BMF

As noted in Fort McKay’s submissions to the LARP consultation process, Fort McKay supports the development of a BMF. The benefits of a BMF identified by Fort McKay include using the BMF and its associated indicators to establish designated land-use zones, amount and location of conservation areas, management strategies to address environmental indicators currently at risk or that might become at risk in the future, and approaches to respond to monitoring data that indicate stated environmental objectives are not being achieved.²¹

Based on the materials provided in August and November 2014 for review and discussion at the September 4, 2014 information session and the presentations and discussions that occurred during this information session, Fort McKay identified the following main deficiencies with the draft BMF:

1. BMF Does Not Adequately Address Constitutional rights
2. BMF is Incomplete and Not Ready for Release
3. BMF Does Not Align with UN Convention on Biodiversity
4. BMF Does Not Align with Canadian Biodiversity Strategy
5. BMF Lacks Clarity in Purpose
6. BMF Lacks Clarity in Linkages to Integrated Resource Management System
7. Indicator Selection Incomplete and Not Relevant to Fort McKay
8. Identification of Thresholds Incomplete and Not Relevant to Fort McKay
9. Monitoring Requirements Incomplete
10. Management Response Incomplete and Excludes Fort McKay

Each of these deficiencies is described in more detail below.

4.3.1 Draft BMF Does Not Adequately Address Constitutional rights

The draft BMF states that one of the objectives is: “Biodiversity and healthy, functioning ecosystems continue to provide a range of benefits to Albertans and communities in the region, including First Nations’ continued ability to exercise constitutionally protected rights to hunt, fish and trap for

²⁰ Alberta Government. 2014. Lower Athabasca Regional Plan Strategies Biodiversity Management Frameworks for the Lower Athabasca Region. Working Document No. 3: Management Response. August 2014.

²¹ FMSD. 2011. Fort McKay Submission to the Draft Lower Athabasca Integrated Regional Plan 2011-2021 Appendix I – Fort McKay’s review of Terrestrial, Biodiversity and Traditional Land Use Aspects of the Plan.

food.”²² The BMF is the natural framework to include an explicit objective to support this aim. On p. 25 of the draft BMF below the Regional Objectives, the following information is provided to address cultural sustainability:

“Meeting the above established objectives is intended to address a range of values, including to help support exercise of constitutionally protected rights to hunt, trap, and fish for food within reasonable proximity of First Nations’ main population centres. The objectives are also intended to help support traditional land use and cultural practices associated with the right to hunt, trap, and fish for food.”²³

The draft BMF does not adequately address maintenance of biodiversity to support Constitutional rights related to cultural and spiritual activities. It is unclear why the current objective focuses specifically on the right to hunt, trap, and fish for food and Fort McKay requests additional opportunities to review and update the objectives for the BMF. It is critical that Fort McKay be involved in defining appropriate land-use objectives for the BMF. A review of Aboriginal criteria and indicator frameworks indicated that the framework objectives need to more directly include the objectives of Aboriginal peoples to ensure their voice is heard. Until Aboriginal goals and their relationship with the land are recognized, Aboriginal values will never truly be included in criteria and indicator frameworks.²⁴ By assuming that Constitutional rights will be protected as a natural extension of protecting the environment, Alberta continues to misunderstand the nature of Constitutional rights and marginalize the needs of Aboriginal people in land use planning.

Fort McKay requested at the September 4, 2014 information session that Alberta work with Fort McKay to develop wording for a new objective to address the maintenance of biodiversity to support exercise of Constitutional rights. Alberta has not agreed to develop this objective stating that other mechanisms will address Constitutional rights and that the selected indicators will implicitly address Constitutional rights.

Fort McKay fundamentally disagrees with Alberta’s position that other mechanisms address Constitutional rights with respect to maintaining biodiversity and that the biodiversity indicators selected by the LARP Team with no input from Fort McKay or no consideration of Fort McKay’s LARP submissions will implicitly address Constitutional rights.

Fort McKay requests that Alberta works with Fort McKay to develop a new objective specific to maintenance of biodiversity to exercise Constitutional rights and that Fort McKay be provided with capacity, time and opportunity to identify indicators to evaluate that this objective is being achieved.

Examples of potential thresholds to be developed to support this objective might include the following:

- Availability of land: limits on land disturbance, limits on the intensity of development in RMWB and in defined areas (example: around reserves and culturally relevant for the

²² Alberta Government. 2014. Draft Lower Athabasca Regional Plan Strategies Biodiversity Management Frameworks for the Lower Athabasca Region. V 1.0 November 6, 2014. August 2014.

²³ Alberta Government. 2014. Draft Lower Athabasca Regional Plan Strategies Biodiversity Management Frameworks for the Lower Athabasca Region. V 1.0 November 6, 2014. August 2014.

²⁴ Adam, Marie-Christine and Daniel Kneeshaw. 2009. Formulating Aboriginal Criteria and Indicator Frameworks. Sustainable Forest Management Network, Edmonton, Alberta 35 pp.

- exercise of Constitutional rights), amount of undisturbed land accessible within one hour of travel from communities
- Availability of terrestrial resources: population and abundance of wildlife and vegetative resources (berries, plants, trees) sufficient to support harvesting for the exercise of rights
 - Availability of these terrestrial resources on lands where the Fort McKay First Nation have right of use and access in close proximity to its traditional territory and communities
 - Continuity of watercourses and their integrity
 - Limits on amount of linear disturbances
 - Limits on forestry in intensive development areas
 - Limits on off highway vehicle access to linear disturbances areas of intensive development (except for the exercise of Constitutional rights)
 - Criteria for progressive reclamation to land capable of supporting TLU

4.3.2 Draft BMF is Incomplete and Not Ready for Release

Alberta acknowledges that the draft BMF is incomplete and more work is required to identify indicators, threshold values, management responses and monitoring protocols but is intending to release the BMF according to the imposed timeline (Early 2015). Alberta states that the LARP includes a review process for the management frameworks and after a 5-year or 10-year period, the BMF will be reviewed and it will be determined during the review if any updates or revisions are required.

Fort McKay does not support releasing an incomplete framework under the pretense that in five or ten years, the deficiencies will be reviewed and a plan for updating the BMF during the review process will be determined. This approach is ineffective and fails to provide Fort McKay with any confidence that the BMF will protect the community's Constitutional rights. Fort McKay is concerned that releasing an incomplete and ineffective framework will do more harm than good because an incomplete or preliminary framework creates a false impression that cumulative effects are being sufficiently managed, and has the potential to allow proponents to divest themselves of any responsibility for mitigating activities that contribute to cumulative environmental degradation. For example, recently proponents and the regulator have considered mitigation of cumulative effects outside their scope, on the assumption that the LARP is managing these impacts.

4.3.3 Draft BMF Does Not Align with UN Convention on Biodiversity

Article 8(j) of the UN Convention on Biodiversity, to which Canada is a signatory, acknowledges that indigenous people and practices require the same protection as traditional indicators of biodiversity, and their inclusion in land management is imperative. This Article identifies a responsibility to "respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and

practices.”²⁵ Despite this, the knowledge and land-based practices of Aboriginal peoples is not mentioned in the draft BMF.

Fort McKay participated in a Biodiversity Traditional Knowledge Study conducted by the Reclamation Working Group at the Cumulative Environmental Management Association (CEMA). This project documented that “The Program of Work related to Article 8(j) identifies the need for Parties to enhance and strengthen the capacity of indigenous communities to be effectively involved in decision-making related to Article 8(j) objectives.”²⁶ From Fort McKay’s perspective, the development of the BMF for use in the Lower Athabasca Region must address Article 8(j) and provide opportunities for Fort McKay to be directly involved in the development of the content of the BMF (i.e., defining objectives, indicator selection, identification of threshold values, developing monitoring protocols, determining management responses) and the process by which decision-making will occur for initiating a management response where threshold values are exceeded.

Other management frameworks in Canada exist where the objectives of the framework directly identify the need to comply with Article 8(j). For example, the Nunavut Wildlife Management Board objectives state:

“To comply with relevant directions in the International Convention on Biological Diversity, as well as in the Canadian Biodiversity Strategy;

- *International Convention on Biological Diversity, Article 8: Respect, preserve, and maintain indigenous knowledge, innovations, and practices, and promote their wider application.*
- *Canadian Biodiversity Strategy, Traditional knowledge can provide an excellent basis for developing conservation and sustainable use policies and programs. All too often, however, traditional knowledge is inappropriately used or disregarded by policy-makers, scientists, resource planners, and managers.”²⁷*

4.3.4 Draft BMF Does Not Align with Canadian Biodiversity Strategy

Canada was one of the first countries to ratify the UN Convention on Biodiversity. In 1995, Canada released a Biodiversity Strategy to fulfill national obligations to the UN Convention. The strategy identified the benefits and challenges in working appropriately with traditional knowledge and defined an objective to:

“identify mechanisms to use traditional knowledge, innovations and practices with the involvement of the holders of such knowledge, innovations and

²⁵ United Nations. 1992. Convention on Biological Diversity. Montreal, PQ: Secretariat of the Convention on Biological Diversity. <http://www.cbd.int/convention/convention.shtml>. Accessed September 2014.

²⁶ SENES Consulting Limited. 2010. Renewing the Health of Our Forests Biodiversity Traditional Knowledge of the Oil Sands Region Final Report Volumes I-III. Prepared by The Biodiversity Traditional Knowledge Research Team. Prepared for the Biodiversity and Wildlife Task Group of the Reclamation Working Group of the Cumulative Environmental Management Association, Fort McMurray, AB. (Contract 2009-0031).

²⁷ Nunavut Wildlife Management Board. IQ Program and Database Objectives. Available at: <http://www.nwmb.com/en/funding/introduction/97-english/sidebars/current-initiatives/109-iq-program-and-database#>. Accessed September 2014.

practices, and encourage the equitable sharing of benefits arising from the utilization of such knowledge, innovations and practices.”²⁸

Both the process to develop the draft BMF and the content presented by Alberta do not address the strategic direction of Canada’s Biodiversity Strategy cited above. The Nunavut Wildlife Management Board also directly incorporates the strategic direction of Canada’s Biodiversity Strategy as shown in the example provided in Section 5.2 above.

4.3.5 Draft BMF Lacks Clarity in Purpose

The draft BMF outlines four objectives summarized above. Alberta also identified that “Threshold values are intended to drive improved practice (industry and other land users) in a region to minimize the extent and duration of human footprint” as a purpose of the draft BMF.

Fort McKay requests that the “drive to improve practice to minimize human footprint” be adopted as a formal objective of the draft BMF. If the threshold values are evaluating performance of practice and expected to lead to improvements, then formally stating an objective to drive improvements in practices is required. By doing so, performance measures of existing practices can be defined and the effectiveness of these practices at achieving their intended outcomes can be measured.

In the existing draft BMF materials, there is a lack of clarity regarding how existing practices (i.e., existing conservation areas, forest management planning, species at risk planning, regulatory requirements in approvals and dispositions, hunting and fishing requirements, and land management plans at a sub-regional and local level) contribute to achieving the stated biodiversity objectives and how the contributions of these practices will be measured to evaluate their effectiveness at achieving their intended biodiversity outcomes.

4.3.6 Draft BMF Lacks Clarity in Linkages to Integrated Resource Management Systems

Alberta launched the Integrated Resource Management System (IRMS) in 2013 and presented a linkage diagram depicting how the draft BMF informs the IRMS and is linked to other components of the IRMS. These linkages are poorly developed and lack sufficient information to explain how the management response described in the draft BMF will lead to modifications to the components of the IRMS associated with specific exceedances in threshold values.

Furthermore, as discussed above, the contributions of existing practices (i.e., existing conservation areas, forest management planning, species at risk planning, regulatory requirements in approvals and dispositions, hunting and fishing requirements, and land management plans at a sub-regional and local level) to achieving biodiversity outcomes is unclear. Many of these existing practices are components of the IRMS (i.e., forest management planning). However, the draft BMF does not incorporate the biodiversity requirements of forest management plans in the indicator selection process or identification of threshold values.

²⁸ Canada. 1995. *Canadian Biodiversity Strategy: Canada’s Response to the Convention on Biological Diversity*. Ottawa: Minister of Supplies and Services Canada. http://www.biodivcanada.ca/560ED58E-0A7A-43D8-8754-C7DD12761EFA/CBS_e.pdf. Accessed September 2014.

Even within the LARP, it is unclear how the other management frameworks have been considered in the development of the draft BMF. The cumulative effects to air, surface water quantity, surface water quality and groundwater will all have direct effects on the state of biodiversity in the Lower Athabasca Region but these are not considered directly in the draft BMF.

Finally, many of the components of the IRMS were developed with little to no input from Fort McKay. For example, The Integrated Land Management Tools Compendium²⁹ does not include Aboriginal land uses as a group in the Sector definitions of land uses and none of the tools have any direct application to the cultural context of Aboriginal land use. Alberta did not provide any information in the draft BMF describing how integrated land management and its contributions to achieving the biodiversity objectives is currently monitored within the IRMS or what criteria are used to determine that the tools are successful. The Landscape Management Plan is expected to provide this information but is being developed outside of the draft BMF with no input from Fort McKay.

4.3.7 Indicator Selection Incomplete and Not Relevant to Fort McKay

Fort McKay has several concerns with the indicators selected for the draft BMF. These concerns include:

- lack of opportunity for Fort McKay to participate in and contribute to the indicator selection process;
- lack of information identifying how each of the selected indicators demonstrates that the objectives of the draft BMF are being achieved;
- lack of information describing the relationships and linkage among the four levels of indicators;
- lack of information describing how indicators will provide sub-regional evaluations of cumulative effects (i.e., within Fort McKay's Traditional Territory and Fort McKay's Moose Lake area);
- lack of alignment to cumulative effects assessments completed as part of energy applications under the *Environmental Protection and Enhancement Act*; and
- lack of consideration of recent literature on the status of wildlife in Fort McKay's Traditional Territory.

4.3.8 Fort McKay Participation in and Contribution to the Indicator Selection Processes

The engagement process defined and implemented by Alberta for the development of the draft BMF is ineffective. This process did not provide any opportunities for Fort McKay to be included in the indicator selection process. In addition, a new objective to maintain biodiversity at sufficient levels to ensure First Nations and Métis communities are able to continue to exercise Constitutional rights is required. This objective would require identification of indicators to demonstrate that this objective is being achieved. None of the currently proposed indicators are relevant to assessing maintenance of biodiversity in the context of Constitutional rights.

²⁹ Alberta. 2012. Integrated Land Management Tools Compendium. Prepared by O2 Planning + Design Inc.

4.3.9 Identify How Selected Indicators Demonstrate Draft BMF Objectives

Each of the selected indicators should directly inform on the stated objectives of the draft BMF. The rationale provided for each of the indicators does not include a description of how the measurement of the indicator will provide information on whether or not the stated objectives are being achieved.

The criteria and indicator framework structure proposed by the Canadian Council of Forest Ministers in 1995 outlines how indicators provide direct feedback on goals, objectives and criteria.³⁰ This criteria and indicator model was adopted by 12 countries covering 90% of the world's temperate and boreal forests as part of the Montreal Process. In Alberta, the criteria and indicator structure was recommended to Alberta by CEMA for evaluating oil sands mine reclamation certification.³¹ Alberta accepted the recommendation and directed CEMA to continue to develop the indicators for reclamation certification as part of the framework. The indicators in the draft BMF should be clearly linked to the Goals, Objectives and Criteria defined for the BMF to demonstrate how the indicator will evaluate if the objectives are being achieved. Consider the example below using the Level 1 indicator from the Terrestrial Habitat pyramid:

Level 1 – Total amount of terrestrial native land cover

Rationale: Habitat loss and land conversion are the largest contributors of local biodiversity loss on Earth. By monitoring terrestrial native land cover in the region we get a clear picture of the amount of habitat being lost or converted.

Go back to the objectives:

- Biodiversity and healthy, functioning ecosystems continue to provide a range of benefits to Albertans and communities in the region, including First Nations' continued ability to exercise constitutionally protected rights to hunt, fish and trap for food;
- Species at risk are recovered;
- No new species require at risk designation; and
- Long-term regional ecosystem health and resiliency are sustained.

The BMF should clearly outline how "amount of habitat being lost or converted" informs the four objectives to demonstrate that these objectives are being achieved. None of these objectives specifically address habitat loss. It is unclear how this Level 1 indicator, which will have a defined threshold value, will inform on any of the four objectives defined by the LARP Team.

4.3.10 Describe Relationships and Linkages among Four Levels of Indicators

Alberta presents the selected indicators in the form of a four-level pyramid (see Figure 2 above). This categorization of the indicators does not provide any information regarding the relationship among the four levels or the purpose of collecting data on all four levels of indicators. Relationships

³⁰ Canadian Forest Service. 1995. Defining sustainable forest management: A Canadian approach to criteria and indicators. Canadian Council of Forest Ministers, Ottawa. 22 p.

³¹ CEMA. 2012. Criteria and Indicators Framework for Oil Sands Mine Reclamation Certification. Prepared by Mike Poscente and Theo Charette for the Cumulative Environmental Management Association. Fort McMurray, AB. CEMA Contract 2010-0028.

among indicators need to be defined from both a western science and traditional knowledge perspective.

The Great Lakes Environmental Indicators Project developed two types of indicators – ecological (state) indicators and stressor (pressure) indicators.³² Ecological indicators provide information about the condition of the environment from species to landscape scale. Stressor indicators provide information on the human-influenced factors affecting the ecological condition. The relationship between stressor indicators and ecological indicators needs to be evaluated to know which stressors are causing the environmental condition so that management responses can be defined to prevent the stressor from affecting the ecological indicator.

The LARP Team should consider how to categorize the indicators selected for the BMF as either ecological or stressor indicators and then link these to the objectives of the draft BMF. The current categorization of Level 1, 2, 3 and 4 is not informative and does not provide any information about the relationship among indicators.

Fort McKay participated in a project at the Reclamation Working Group of CEMA where the *Environmental Protection and Enhancement Act* approval conditions outlining monitoring requirements were evaluated to determine if the monitoring was assessing an ecological indicator or stressor indicator and how these indicators contribute to assessing the biodiversity on reclaimed lands in the oil sands region.³³ The categorization of the variables is very informative for understanding the relationships among management practices, stressor indicators and ecological indicators.

In a review of Aboriginal criteria and indicator frameworks³⁴, the researchers found that traditional knowledge holders automatically consider the relationship among indicators. The western science approach of separating indicators and evaluating them independently does not provide holistic information to traditional knowledge holders. A process of working with traditional knowledge holders is required to identify indicators to evaluate the new objective proposed by Fort McKay to maintain biodiversity to provide opportunities to exercise Constitutional rights. Through this process, the relationship among indicators that is relevant to evaluating impacts to Constitutional rights can be defined. This would be much more informative than the non-descript level 1, 2, 3 and 4 currently described by the LARP Team.

4.3.11 Describe How Indicators Will Provide Sub-regional Evaluations of Cumulative Effects

From Fort McKay's perspective, existing, approved and planned disturbance in its Traditional Territory is substantial and directly affects the ability of members of the Community to exercise their Constitutional rights. Indicators defined to assess the new objective proposed by Fort McKay should be analyzed to quantify sub-regional and regional effects. In this way, the vastly different disturbance scenarios north (i.e., mining and in situ developments) and south (no mining) of Fort McMurray can be relevantly described.

³² Great Lakes Environmental Indicators Project. 2005. Evaluating potential indicators of environmental condition. Available at: <http://glei.nrri.umn.edu/default/dsnanalysis1.htm>. Accessed September 2014.

³³ Ciborowski, J.J.H., M. Kang, A. Grgicak-Mannion, D. Raab, S.E. Bayley and A.L. Foote. 2013. Synthesis: Applying the Reference Condition Approach for Monitoring Reclamation Areas in the Athabasca Oil Sands Region. Submitted to the Cumulative Environmental Management Association. CEMA Contract No. 2010-0025.

³⁴ Adam, Marie-Christine and Daniel Kneeshaw. 2009. Formulating Aboriginal Criteria and Indicator Frameworks. Sustainable Forest Management Network, Edmonton, Alberta 35 pp.

4.3.12 Align indicators to cumulative effects assessments completed under the *Environmental Protection and Enhancement Act*

Each commercial in situ and mining oil sands project application filed under the *Environmental Protection and Enhancement Act* (EPEA) assesses potential cumulative effects under three development scenarios: Base Case, Application Case and Planned Development Case. For all three development scenarios, a regional study area is defined where valued ecosystem components (VECs) or key indicators resources (KIRs) for biodiversity are identified. A cumulative effects assessment is completed for the VECs or KIRs with the intent to understand the potential effects at a regional level. The draft BMF does not discuss how the proposed indicators will align with commonly used VECs or KIRs in the project applications or provide any guidance for how project applications might incorporate the indicators proposed for the draft BMF into the cumulative effects assessments. Fort McKay regularly files statements of concerns on in situ and mining EPEA approval applications documenting the deficiencies of the current biodiversity cumulative effects assessments due to a lack of regional datasets and bold assumptions regarding the effectiveness of mitigation measures for re-establishing biodiversity on disturbed lands. The draft BMF should include guidance for improving the selection of VECs or KIRs for these project applications and should define the requirements for regional datasets of sufficient quality to allow for credible cumulative effects assessments to be completed as part of EPEA applications for approval.

4.3.13 Status of Wildlife in Fort McKay's Traditional Territory

In the indicator selection, Alberta has not considered recent literature published by Fort McKay describing the results of scenario analyses predicting the potential environmental effects on the habitat suitability indices of wildlife species within Fort McKay's Traditional Territory.³⁵ This modelling exercise clearly demonstrated that habitat suitability indices of wildlife species important to the community will decline substantially under the current resource development business as usual case. Fort McKay proposed alternate resource development scenarios that showed improvements in the sustainability of the habitat suitability indices. Based on the results of the scenario analyses, the following integrated suite of management strategies were recommended:

- “That the indirect impact on habitat will likely be effectively reduced through continued improvement and coordinated implementation of industry best practices that reduce footprint growth and hasten footprint reclamation.
- Implementation of a systematic and regional coordinated access management plan to manage and monitor access across the regional land base will be a critically important management strategy to reduce the continued and unintended consequences of increased harvest pressure and mortality of wildlife and fish.
- Expanded protected areas that are “no-go” areas for industry will provide a building block for anchoring a land base that will prioritize production and sustainable harvesting of wild plants and animals to support traditional harvesting activities.”³⁶

³⁵ Nishi, J.S., S. Berryman, J.B. Stelfox, A. Garibaldi, and J. Straker. 2013. Fort McKay Cumulative Effects Project: Technical Report of Scenario Modeling Analyses with ALCES®. ALCES Landscape and Land Use Ltd., Calgary, AB., and Integral Ecology Group, Victoria, BC. Prepared for the Fort McKay Sustainability Department, Fort McMurray, AB. 126 pp + 5 Appendices.

³⁶ Nishi, J.S., S. Berryman, J.B. Stelfox, A. Garibaldi, and J. Straker. 2013. Fort McKay Cumulative Effects Project: Technical Report of Scenario Modeling Analyses with ALCES®. ALCES Landscape and Land Use Ltd., Calgary, AB., and Integral Ecology Group, Victoria, BC. Prepared for the Fort McKay Sustainability Department, Fort McMurray, AB. 126 pp + 5 Appendices.

The draft BMF does not sufficiently address how the proposed indicators are linked to evaluation of industry best practices, access management strategies or effectiveness of currently designated protected areas. Fort McKay expects Alberta to consider the results of this study and provide rationale explaining why similar work is not planned or has not been completed to support indicator selection and identification of threshold values for the draft BMF.

4.3.14 Thresholds Identification Is Incomplete and Not Relevant to Fort McKay

The LARP Team proposed threshold values for some of the aquatic and terrestrial habitat and species indicators in the draft BMF and is developing values for the remaining indicators. Fort McKay objects to not having the opportunity to participate in the process for determining threshold and rejects the risk-based approach presented in the draft BMF. The LARP Team is proceeding with the development of threshold values despite Fort McKay's request in September to be included in refining the objectives and selected indicators and determining threshold values.

In general, threshold values for biodiversity should be defined using a reference condition approach. There is a vast body of literature on this procedure and Fort McKay has actively participated in projects at the Reclamation Working Group of CEMA to develop monitoring programs for assessing biodiversity in the oil sands region using a reference condition approach. Furthermore, in areas of intensive development, such as Fort McKay's Traditional Territory, identifying reference condition sites is difficult due to the level of existing impact. From Fort McKay's perspective, the following points need to be discussed, at a minimum, before proceeding with determining threshold values:

1. What data will the LARP Team use to calculate threshold values?
2. Will the pre-industrial baseline conditions be defined as the reference condition?
3. How will existing human-footprint be considered in defining threshold values?
4. Who will decide that the threshold values are acceptable limits?
5. How will data gaps be managed for indicators where it is not possible to calculate a threshold value?

Selecting relevant indicators, defining reference conditions and current conditions of each indicator, and determining threshold values is very complex. Fort McKay requests that a multi-stakeholder process be used to determine indicators and threshold values acceptable to all parties, particularly First Nations and Métis peoples.

4.3.15 Monitoring Requirements Incomplete

For each indicator, a monitoring protocol needs to be defined that ensures a random sample, collected at a sampling intensity sufficient to meet data needs for statistical purposes. The draft BMF proposes to use Alberta Environmental Monitoring, Evaluation and Reporting Agency (AEMERA) to conduct the monitoring. However, since AEMERA is presently a clearinghouse of all the regional monitoring programs brought under one agency and limited by a \$50 million annual budget, it is unclear how the indicators proposed for the BMF will be specifically incorporated into AEMERA.

4.3.16 Management Response Incomplete and Excludes Fort McKay

LARP includes the implementation of management actions that have direct effects on biodiversity outcomes in the Lower Athabasca Region such as establishment of conservation areas and multi-use zones, encouraging timely and progressive reclamation, caribou habitat needs in alignment with provincial caribou policy, integrated land management strategies and others.

It is unclear if the draft BMF will incorporate the components of other initiatives either external to or embedded within the LARP to understand how the implementation of these management actions is contributing to achieving the objectives defined for the draft BMF. It is also unclear how existing management responses will be incorporated into the six-step management response proposed in the draft BMF.

The material presented by the LARP Team refers mainly to identifying management actions if a threshold value is exceeded. More clarity is required regarding how the current management activities (i.e., integrated land management strategies, conservation areas) will be implemented when threshold values are exceeded. Consider the caribou habitat example:

Level 2 Indicator – Woodland Caribou

Rational – Woodland Caribou is listed as Threatened under Alberta’s *Wildlife Act* and the federal *Species at Risk Act (SARA)*. This species-at-risk indicator is intended to track the status of a species sensitive to human development and important to local peoples and regional environmental management.

Definition – Populations of woodland caribou are currently monitored, or are the focus of developing monitoring protocols, under several policies/plans. The indicator will be monitored using the approach outlined in the Alberta Action and Range Planning Project in the immediate future.

1. Populations of woodland caribou are declining in Alberta. (See: Hervieux, D., M. Hebblewhite, N.J. DeCesare, M. Russell, K. Smith, S. Robertson and S. Boutin. 2013. Widespread declines in woodland caribou (*Rangifer tarandus caribou*) continue in Alberta. *Canadian Journal of Zoology* 91: 872-882.)
2. The threshold value for disturbance (i.e., human footprint) in caribou habitat has already been met in certain caribou ranges.
3. The integrated land management strategies define a restricted activity period and progressive reclamation for continuing industrial activities in caribou ranges.
4. One of the BMF objectives is “Species at risk recover.”
5. The management action of the restricted activity period and progressive reclamation exist but the woodland caribou population is still declining.
6. How will the stated objective be achieved for the woodland caribou indicator and how will the DRAFT BMF address this?

From Fort McKay's perspective, it makes more sense to evaluate how often approval is granted to industrial activities despite the restricted activity period designation, and how much area of progressive reclamation is completed per year in the caribou zones. Limits on overriding the restricted activity period and annual quotas for progressive reclamation in caribou habitat could and should be established under the BMF. These are two stressors that directly affect caribou performance and both of these can be managed through integrated land management strategies. Preventing the exceedance of the threshold value that measures negative impacts to woodland caribou should be the goal of the BMF. The present approach is focused on managing exceedances of impacts to ecological indicators. Fort McKay suggests that it is more effective to focus on preventing the exceedances by managing the stressor indicators contributing to the negative response of the ecological indicators.

4.4 Proposed Changes

In order to effectively manage biodiversity at levels to support the pursuit of Constitutional rights, we recommend that Alberta undertakes the following:

1. Works with Fort McKay to develop a new objective specific to maintenance of biodiversity to exercise Constitutional rights and provide Fort McKay capacity, time and opportunity to identify indicators to evaluate that this objective is being achieved.
2. Shares the internal review of the Aboriginal submissions to the LARP consultation process with Fort McKay and validate the information incorporated from the Fort McKay submissions into the draft BMF materials.
3. Establishes a process in collaboration with Fort McKay that provides Fort McKay with capacity, time and opportunity to contribute to the content of the BMF and develop a timeline to allow for the deficiencies identified in the draft BMF to be addressed prior to the release of the BMF.
4. Expands the draft BMF to address using the BMF and its associated indicators to establish designated land-use zones and to determine amount and location of conservation areas required to maintain biodiversity for Fort McKay to continue to exercise Constitutional rights in close proximity to our Community and reserves.
5. Addresses the known deficiencies and develop a more robust framework that addresses Fort McKay's concerns and incorporates Fort McKay's input before releasing to the public.
6. Aligns the draft BMF with Article 8(j) of the United Nations Convention on Biodiversity.
7. Aligns the draft BMF with the strategic direction of Canada's Biodiversity Strategy.
8. Provides more clarity on the purpose of the draft BMF, specifically with respect to the drive to improve practices implemented to reduce habitat disturbance.
9. Provides more clarity on the linkages of the draft BMF to the IRMS.
10. Addresses the following concerns prior to releasing the draft BMF to the public: the lack of opportunity for Fort McKay to participate in and contribute to the indicator selection process; lack of information identifying how each of the selected indicators demonstrates that the objectives of the draft BMF are being achieved; lack of information describing the relationships and linkage among the four levels of indicators; lack of information describing how indicators will provide sub-regional evaluations of cumulative effects (i.e., within Fort McKay's Traditional Territory); lack of alignment to cumulative effects assessments completed as part of energy applications under the *Environmental Protection and Enhancement Act*; and lack of consideration of recent literature on the status of wildlife in Fort McKay's Traditional Territory.
11. Addresses the following questions relating to defining threshold values prior to releasing the draft BMF to the public:

- a) What data will the LARP Team use to calculate threshold values?
 - b) Will the pre-industrial baseline conditions be defined as the reference condition?
 - c) How will existing human-footprint be considered in defining threshold values?
 - d) Who will decide that the threshold values are acceptable limits?
 - e) How will data gaps be managed for indicators where it is not possible to calculate a threshold value?
12. Provides more information regarding the development of monitoring protocols and funding to support implementation of the monitoring programs.
13. Provides Fort McKay with capacity, time and opportunity to identify appropriate management responses to threshold-value exceedances for indicators identified to evaluate the objective of maintaining biodiversity to provide opportunities for exercising Constitutional rights.
14. Establishes a multi-stakeholder process to determine threshold values for indicators and appropriate management responses.