

# Alberta Biodiversity Monitoring Institute: 10-Year Science and Program Review

Steering Committee Final Report

August 8, 2018

## Executive Summary

The Steering Committee (SC) was convened to assist the Alberta Biodiversity Monitoring Institute's (ABMI) 10-Year Science and Program Review (Review). This report highlights the purpose of the Review, the SC's role within it, methods used, important points of discussion, and recommendations to the Board.

The purposes of the Review are twofold: 1) to evaluate ABMI's scientific framework and its success in delivering on its initial science objectives, and 2) to assess the range of products and services provided by ABMI and how they meet stakeholder needs. The SC's role in the Review was to evaluate whether the ABMI achieved its Science and Stakeholder Engagement goals and to provide recommendations to the Board of Directors (Board). To do this, the SC reviewed the recommendations from the Science Expert Committee (SEC) and the Stakeholder Advisory Group (SAG), both of which were convened by ABMI to report, respectively, on whether ABMI had achieved its Science and Stakeholder Engagement goals.

In agreement with the SEC, the SC recognized that ABMI fully understands the science behind biodiversity monitoring and has applied it appropriately. In addition to maintaining its scientific foundation, the SC emphasized that continued transparency and strong analysis will help ensure that ABMI remains a credible organization that is relevant to decision-makers. The SC sorted recommendations from the SEC and SAG into two categories, management-level, and board-level. The list of management-level recommendations was provided to ABMI management and the board-level recommendations were re-formulated into a set of ten recommendations for the Board's consideration. The SC developed ten recommendations and unanimously endorsed nine of them but provided majority and minority positions for the tenth recommendation, regarding loosening restrictions on accessibility of site locations of ABMI data.

The recommendations primarily relate to prioritizing and refining aspects of the program to ensure value is optimized. Overall, the SC feels the primary area requiring Board consideration is new opportunities to increase the impact of the program. The SC had no way to evaluate the financial implications of its recommendations but recognizes that this will be an important additional consideration for the Board. The SC also recognized where it did not possess enough information to make a strong recommendation, so some recommendations seek to bring to the attention of the Board specific issues but do not advise further courses of action. Most of the recommendations were related to SEC and/or SAG recommendations.

**Table 1. Topics of Steering Committee discussion and associated recommendations**

Topic	Recommendation
Climate change	1. Include climate change with land-use change as a major driver of the need for biodiversity data.
Initial survey of site locations	2. Prioritize completing the initial survey of data collection site locations.
Strategic stratification of data collection	3. With the assistance of land-use and climate change models that forecast impacts to biodiversity, strategically stratify site revisits.

Stakeholder biodiversity data needs	4. Stakeholder biodiversity data needs should be met primarily at the provincial and regional levels but should be met at the sub-regional level on a case-by-case basis.
Communications strategy	5. Invest in telling Alberta’s biodiversity story more widely.
Communications strategy	6. Identify appropriate communication tools for the spectrum of ABMI audiences, from simple information-out for the public to engagement for stakeholders and decision-makers.
Communications strategy	7. Investigate a business model that supports engagement of stakeholders, including Indigenous groups and municipalities, as a core activity.
Accessibility of site locations	8. If loosening confidentiality of site locations is contemplated, consider very carefully whether it is justified. The majority of SC members recommend maintaining confidentiality protocols and a minority recommend loosening them.
Collaboration	9. Actively promote and invite collaboration with interested parties.
ABMI goals and objectives	<p>10. Amend wording of ABMI’s Stakeholder Goal and one Science Objective (changes italicized)</p> <p>ABMI Goal (Stakeholder Engagement):  Communicate the status and trend of Alberta’s species, native landcover, and human footprint to support provincial <i>and regional</i> land-use and natural resource management decision-making.</p> <p>ABMI Objective (Science):</p> <ol style="list-style-type: none"> <li>1. Describe the status (distribution, abundance, and associations with native landcovers) and trend (change over time) of species throughout Alberta <ol style="list-style-type: none"> <li>a. Describe species-landcover associations for a broad diversity of species</li> <li>b. Describe how species are affected by human footprint</li> <li>c. Predict species change between reference/natural and present condition</li> <li>d. Track actual changes in species from the start of ABMI data collection</li> <li>e. Provide information on relationships between species, landcover, <i>climate change</i>, and human footprint so that species status can be predicted in simulated future landscapes</li> </ol> </li> </ol>

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## Introduction

The Alberta Biodiversity Monitoring Institute (ABMI) is undergoing a 10-year Science and Program Review (Review) after incorporating as a not-for-profit organization in 2007. The purposes of the Review are twofold: 1) to evaluate ABMI's scientific framework and its success in delivering on its initial science objectives, and 2) to assess the range of products and services provided by ABMI and how they meet stakeholder needs. A Steering Committee (SC) was convened by ABMI to assist the Review (membership is listed in Appendix A). In the terms of reference provided by ABMI, the SC was tasked with the following scope of work:

- Evaluating the extent to which the ABMI is meeting its two program goals, one Science goal and one Stakeholder Engagement goal, as articulated by their associated program objectives (see Appendix B for Science and Stakeholder goals and objectives)
- A final report on the findings of the evaluation process along with associated recommendations for consideration by ABMI Board of Directors (Board)

Once established, the SC met to finalize the terms of reference for the Science Expert Committee (SEC) and the Stakeholder Advisory Group (SAG). Both of these groups then met, answered the questions set out in their respective terms of reference, and produced separate reports with recommendations for consideration by the SC and by the Board.

## Methodology

SC members were asked to complete a survey of the recommendations from the SEC and the SAG. For each recommendation, the survey asked SC members if they agreed with the recommendation, disagreed with the recommendation, or needed more information to make that determination. The intent of the survey was to develop a sense of which recommendations were likely to garner the most discussion and, therefore, to help structure the meeting in a manner that allowed the SC to efficiently fulfill its terms of reference.

The SC then met for a half-day session, facilitated by a consultant, to answer the questions set out in its terms of reference. At the meeting, the consultant delivered a high-level presentation summarizing the results of the SEC and the SAG reports. These two reports, in addition to occasional input from ABMI's Information Center Director and one of the Science Co-Directors, were the primary inputs that the SC used to inform its discussion and to develop recommendations to the Board.

The SC reviewed the recommendations one-by-one and in groups of related recommendations, first from the SEC and then from the SAG, sorting them into two categories, management-level and board-level. The SC reviewed these recommendations and reformulated those considered to be of board-level significance, into its own set of recommendations for consideration by the Board.

## Discussion and Recommendations

### General Discussion

The SC respected the work previously done on the Review by the SEC and the SAG, in recognition of the expertise and the extra time those two groups had to answer a narrower range of questions. In

agreement with the SEC, the SC recognizes that ABMI got the science behind monitoring right and that ABMI's strong scientific foundation must be maintained.

The SC developed ten recommendations and unanimously endorsed nine of them. The majority and minority positions on the tenth recommendation, regarding loosening restrictions on accessibility of site locations of ABMI data, are provided. The recommendations primarily relate to prioritizing and/or refining aspects of the program to ensure value is optimized. Overall, the SC feels the primary area requiring Board consideration is new opportunities to increase the impact of the program. The SC had no way to evaluate the financial implications of its recommendations but recognizes that this will be an important additional consideration for the Board. The SC recognized where it did not possess enough information to make a strong recommendation, so some recommendations seek to make the Board aware of specific issues but do not advise on courses of action beyond consideration of the issues.

Most of the recommendations were related to SEC and/or SAG recommendations, though some recommendations from the SC vary substantially from those of the SEC and/or SAG.

### Climate Change

Land-use change has been the primary driver for biodiversity data needs since ABMI's inception 10 years ago. However, climate change also drives changes in biodiversity and has become a much more important issue since that time. In order to meet its objective to monitor and evaluate the status and trend of biodiversity throughout Alberta, ABMI should recognize climate change, alongside land-use change, as a major driver of the need for biodiversity data. Both the SEC and the SAG issued supportive recommendations.

**Recommendation: Include climate change with land-use change as a major driver of the need for biodiversity data.**

### Initial Survey of Site Locations

The initial survey of ABMI's grid of 1656 data collection site locations across the province has not yet been completed. All remaining unsurveyed sites on the grid should be surveyed so that there is a complete baseline of data for the entire province that change in biodiversity can be measured against at any point in the future. However, completion of the initial survey should not be done at all costs. The decision of how fast the initial survey of site locations on the grid should be completed and at what cost is an important one that the Board, with its intricate knowledge of ABMI finances, is in the best position to consider. The SEC issued a similar recommendation.

**Recommendation: Prioritize completing the initial survey of data collection site locations.**

### Strategic Stratification of Data Collection

Although the SC recognizes that completion of the initial survey of ABMI's data collection site locations is the priority data collection issue, another is strategic stratification of data collection.

Stratification should be strategically employed so that data collection occurs disproportionately in areas that are undergoing high rates of change in biodiversity due to climate change and/or by land use change. More frequent site revisits in these areas would provide timely information for use by decision-makers. The oil sands region is an example of a likely candidate for more frequent revisits due to the rate of land-use change occurring there. Models that forecast land-use change and climate change

impacts to biodiversity should be used to assist stratification. Stratification would also improve the cost-efficiency of site revisits, by avoiding unnecessarily frequent revisits to areas where changes to biodiversity are occurring slowly. Stratification should also be used to answer key questions through site differentiation.

The SEC also recommended stratifying the timing of site revisits.

**Recommendation: With the assistance of land-use and climate change models that forecast impacts to biodiversity, strategically stratify site revisits.**

### Stakeholder Biodiversity Data Needs

Some stakeholders have indicated the need for biodiversity data that can be used at the sub-regional level. ABMI's mission is to inform provincial and regional level decision-making, so stakeholder needs should be engaged primarily at the provincial and regional levels. However, ABMI does not meet the biodiversity data needs of some stakeholders at the sub-regional level so this should continue to be considered on a case-by-case basis. There is desire among some stakeholders for biodiversity data at the lease/local level but the SC specifically recommended against this because the resolution of data required to meet those needs is too fine for ABMI to supply. Providing biodiversity data at the lease/local-level was a recommendation of the SAG.

**Recommendation: Stakeholder biodiversity data needs should be met primarily at the provincial and regional levels but should be met at the sub-regional level on a case-by-case basis.**

### Communications Strategy

ABMI is a world class monitoring program with unique opportunities to both tell Alberta's biodiversity story generally and to inform decision-making in Alberta specifically. In consideration of these opportunities, ABMI needs to renew its communications strategy to maximize the impact of the program.

First, ABMI's status as a world class monitoring program provides it the unique opportunity to report with credibility on the state of Alberta's biodiversity. To this end, ABMI should invest in telling Alberta's biodiversity story more widely to a broad spectrum of audiences ranging from the Canadian public to decision-makers in Alberta. It is important for this information to be communicated in a manner that limits opportunities for biodiversity data to be taken out of context and used improperly.

**Recommendation: Invest in telling Alberta's biodiversity story more widely.**

Second, there is a need for specificity in how ABMI communicates with each of its audiences. The appropriate communication tools must be identified for the spectrum of ABMI's audiences, from simple information-out for the public to engagement of stakeholders and decision-makers. Engagements with decision-makers should be regular and they should be structured to allow the close communication necessary for collaboration and co-design of ABMI information products. As the primary funder of ABMI, Alberta Environment and Parks and the Oil Sands Program Co-Chairs are accountable for investment of funds and should have a unique method of communication with ABMI.

**Recommendation: Identify appropriate communication tools for the spectrum of ABMI audiences, from simple information-out for the public to engagement for stakeholders and decision-makers.**

Third, ABMI data could potentially be used by other stakeholders and decision-makers but engagement of them is not supported by the current user-pays business model. To maximize program impact, a business model that supports engagement of stakeholders and decision-makers as a core ABMI activity should be investigated. Two notable potential users of ABMI data are Indigenous groups and municipalities. Indigenous groups are increasingly involved in informing decision-making and municipalities have formalized roles in local decision-making or informing regional or provincial level decision-making.

**Recommendation: Investigate a business model that supports engagement of stakeholders and decision-makers, including Indigenous groups and municipalities, as a core activity.**

### Accessibility of Site Locations

The level of accessibility to data users of site locations of ABMI data was the most contentious topic discussed by the SC and the only recommendation where consensus was not reached. It will be a critical topic of discussion for the Board.

The majority position, represented by all of the SC members except for Alberta Environment and Parks' two representatives, is that site confidentiality is essential to the integrity of the program and should therefore be maintained. This would prevent the integrity of the data collection sites from being compromised through altered management regimes in areas proximal to the sites. The SEC issued a recommendation that supports this position.

The minority position, represented by Alberta Environment and Parks' two representatives to the SC, advocates loosening restrictions on access to select site locations of ABMI data. Loosening some restrictions would aid with decision-making on specific biodiversity management issues and, in this way, remain relevant to funders, decision-makers and stakeholders. The SAG issued a recommendation that supports this position.

The ramifications of the decision either way is critical to the foundation of ABMI. As such, this decision must be considered very carefully by the Board.

**Recommendation: If loosening confidentiality of site locations is contemplated, consider very carefully whether it is justified. The majority of SC members recommend maintaining confidentiality protocols and a minority recommend loosening them.**

### Collaboration

ABMI has collaborated with multiple external partners over the last 10 years. It has had many successful collaborations but some stakeholders have reported being unsure about whether ABMI is open to collaboration. The current openness of ABMI data is important in this regard and should be maintained. The value of ABMI data and methodologies to date is significant but there are a large number of areas of inquiry possible that would build on ABMI's foundation. ABMI cannot and should not try to pursue each of these areas of inquiry, to do so would overextend the capacity of the organization. However, ABMI should actively invite potential external partners to collaborate in ways that leverage that value of ABMI's program without negatively impacting its core business.

**Recommendation: Actively promote and invite collaboration with interested parties.**



## ABMI Goals and Objectives

ABMI's stakeholder engagement goal and one science objective were slightly modified to better align with biodiversity data needs. There were no related recommendations from the SEC or the SAG.

**Recommendation: Amend wording of ABMI's Stakeholder Goal and one Science Objective (changes italicized).**

**ABMI Goal (Stakeholder Engagement):**

**Communicate the status and trend of Alberta's species, native landcover, and human footprint to support provincial *and regional* land-use and natural resource management decision-making.**

**ABMI Objective (Science):**

- 2. Describe the status (distribution, abundance, and associations with native landcovers) and trend (change over time) of species throughout Alberta**
  - a. Describe species-landcover associations for a broad diversity of species**
  - b. Describe how species are affected by human footprint**
  - c. Predict species change between reference/natural and present condition**
  - d. Track actual changes in species from the start of ABMI data collection**
  - e. Provide information on relationships between species, landcover, *climate change*, and human footprint so that species status can be predicted in simulated future landscapes**

## Appendices

### Appendix A: Steering Committee Organizational Membership

Interim Executive Director, Alberta Biodiversity Monitoring Institute

Executive Vice President, Stakeholder and Government Engagement, Alberta Energy Regulator (did not participate in facilitated meeting)

Assistant Deputy Minister, Parks Division, Alberta Environment and Parks (did not participate in facilitated meeting but participated in a subsequent private meeting)

Director, Fish and Wildlife Policy Branch, Alberta Environment and Parks

Conservation Specialist, Alberta Wilderness Association

Director General, Northern Forestry Centre, Canadian Forest Service, Natural Resources Canada

Senior Director, Sustainable Development, Conoco Phillips

Reeve, Mountainview County

### Appendix B: Science and Stakeholder Engagement Goals and Objectives

#### **Stakeholder Engagement Goal**

Communicate the status and trend of Alberta's species, native landcover, and human footprint to support provincial land-use and natural resource management decision-making.

#### **Stakeholder Engagement Objectives**

1. Create data and information products that are relevant and accessible to stakeholders.
2. Continuously engage stakeholders to determine whether ABMI data and information products meet stakeholder business needs, and mobilize stakeholder feedback into the product development process.

#### **Science Goal**

Monitor and evaluate the status and trend of biodiversity throughout Alberta.

#### **Science Objectives**

1. Describe the status (distribution, abundance, and associations with native landcovers) and trend (change over time) of species throughout Alberta
  - a. Describe species-landcover associations for a broad diversity of species
  - b. Describe how species are affected by human footprint
  - c. Predict species change between reference/natural and present conditions
  - d. Track actual changes in species from the start of ABMI data collection
  - e. Provide information on relationships between species, landcover, and human footprint so that species status can be predicted in simulated future landscapes
2. Describe the status and trend of native landcover throughout Alberta
  - a. Describe the current condition of native landcover throughout Alberta
  - b. Describe how native landcover changed between reference/natural conditions and present conditions
  - c. Track the actual change in native landcover from the start of ABMI data collection
3. Describe the status and trend of human footprint throughout Alberta

- a. Describe the current condition of human footprint throughout Alberta
- b. Track the actual change in human footprint from the start of ABMI data collection