Habitat Law in Alberta

VOLUME 4:

Recommended Reforms to Habitat Management & Protection Laws in Alberta

Environmental Law Centre
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Environmental Law Centre

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The Environmental Law Centre (Alberta) Society

The Environmental Law Centre (ELC) has been seeking strong and effective environmental laws since it was founded in 1982. The ELC is dedicated to providing credible, comprehensive and objective legal information regarding natural resources, energy and environmental law, policy and regulation in the Province of Alberta. The ELC's mission is to educate and champion for strong laws and rights so all Albertans can enjoy clean water, clean air and a healthy environment. Our vision is a society where laws secure an environment that sustains current and future generations.

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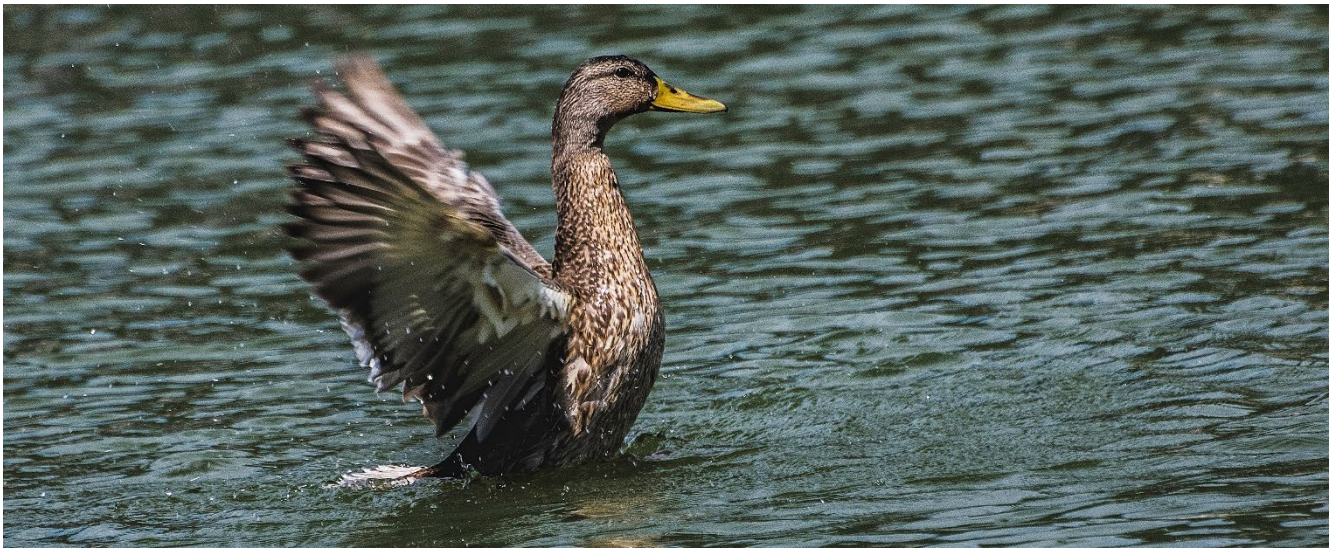
- Habitat Law in Alberta: Executive Summary
- Habitat Law in Alberta Volume 1: The State of Habitat Laws in Alberta
- Habitat Law in Alberta Volume 2: Barriers to Habitat Management and Protection in Alberta
- Habitat Law in Alberta Volume 3: Jurisdictional Review of Habitat Laws
- Habitat Law in Alberta Volume 4: Recommended Reforms to Habitat Management & Protection Regulations in Alberta

TABLE OF CONTENTS



Introduction

The regulatory framework around habitat management in Alberta is similar to many other jurisdictions; fragmented among different levels of governments and between government agencies, and typically reliant on exercising discretion in favour of habitat factors.[1] Alberta is also challenged by a lingering expectation of unconstrained multiple land uses that risk exceeding ecosystem thresholds.[2] Legislatively Alberta has significant barriers to elevating habitat management considerations in decision making, including:

- A lack of habitat-specific or species at risk focused statutes;
- Little to no public process around decision-making associated with granting private interests in Alberta public lands and resources.
- Unrealized potential to address cumulative effects;
- A lack of regulatory linkages between science and decision making;

[1] For a discussion of these fragmentation and integration issues see ELC's Habitat Law in Alberta Volume 1: The State of Habitat Laws in Alberta.
[2] *Ibid*.

- A lack the regulatory flexibility to respond to changing ecosystem conditions and knowledge (with and without climate change); and
- Excessive discretion in decision-making resulting in clear accountability for habitat-based outcomes.

Alberta has a variety of potentially valuable regulatory tools that could be adapted for habitat management in regional planning, environmental management frameworks and land disturbance standards however these tools have failed to reach their potential.

The province's habitats will be best served by augmenting how we regulate around habitat objectives, first from the front end by ensuring we have the knowledge and understanding of habitat needs before we make decisions that impact that habitat and, second, by ensuring we can adapt to changes in knowledge or context. The first requires a formalized approach to monitoring, assessing and planning around habitat policy choices and integrating those choices into land-use decisions. The latter requires adaptive measures in regulations, statutory dispositions, and authorizations, and assessing the need for a compensation policy for more onerous habitat adaptations. Ideally the need for the latter approach (i.e., adapt with compensation) would be minimized through time.

This report and the recommendations reflect an approach to habitat management that aims to be integrated, science-based, systematic, and effective. This report builds on the ELC's companion habitat reports: Habitat Law in Alberta Volume 1: The State of Habitat Laws in Alberta; Habitat Law in Alberta Volume 2: Barriers to Habitat Management and Protection in Alberta; and Habitat Law in Alberta Volume 3: Jurisdictional Review of Habitat Laws.

This evolution of habitat management is based on a need for the province to formalize outcomes, governance systems and responses to pressures on habitats. As illustrated in Figure 1 (below), the system will recognize the need for:

1. Habitat knowledge generation, aggregation of habitat data, knowledge translation and the adoption of habitat assessment methodology that can then be used to guide habitat planning;

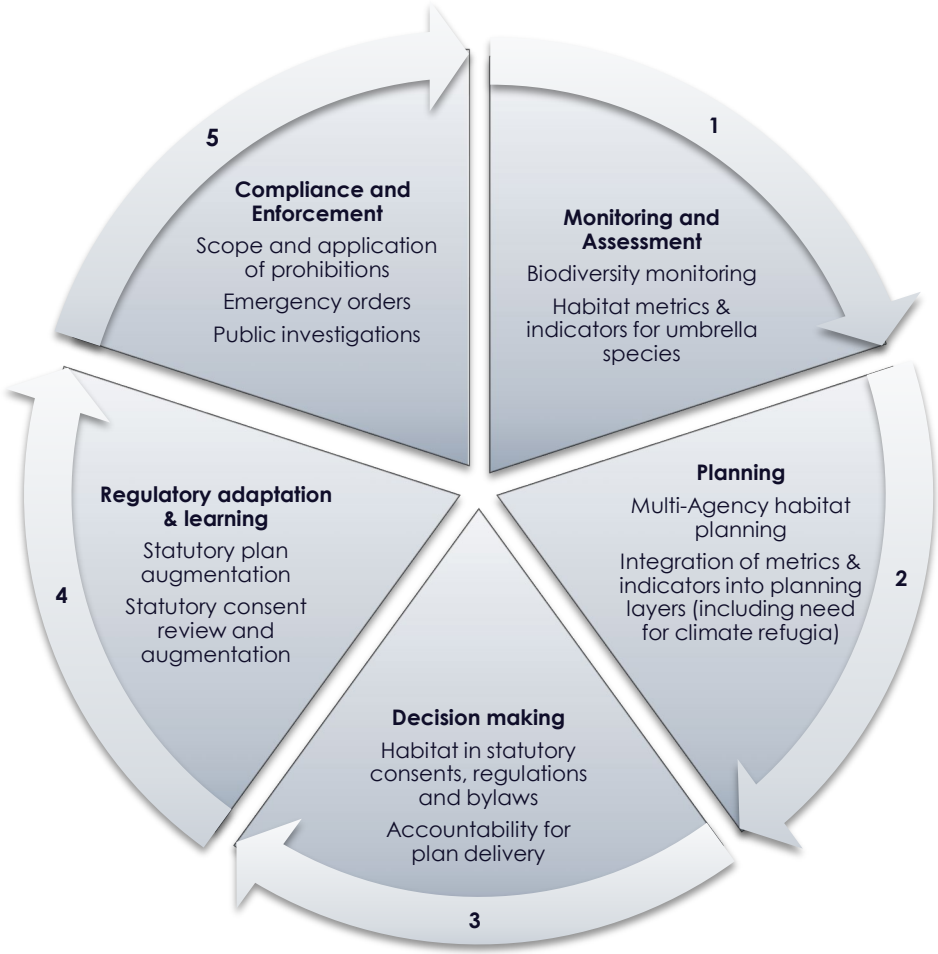
2. Habitat planning that is, at its core, science-driven, but also deliberative with broader civil society to facilitate agreement on habitat plans at a landscape scale;

3. Planning and policy outcomes clearly tied with decisions of relevance on the landscape, and includes a suite of regulatory and non-regulatory tools to achieve this outcome;

4. Being adaptive and responsive to changing knowledge and states of habitat;

5. Ensuring accountability for habitat rules by way of an inclusive, flexible and efficient compliance and enforcement regime.

Figure 1: Animating effective habitat management for Alberta



To animate this new approach to habitat protection and management the ELC recommends a regulatory and policy path that aims to:

1. **Clarify** provincial and regional **habitat policy objectives**;

2. **Ensure regulatory coverage** of all relevant habitat-related factors;

3. Create a **governance** system **for monitoring, assessment, and planning** around habitat policy objectives;

4. Ensure **integration of habitat policy objectives and plans into decisions, regulations, statutory plans, and policies**, by:

    a. Identification of relevant regulatory tools, whether that is regional plans, statutory consents, conservation easements, conservation agreements, or municipal statutory plans and bylaws;

    b. Integration of habitat objectives into planning and decision making of relevant habitat planning layers and decision-making criteria;

    c. Creating a habitat government system that has the technical, scientific, financial and governance capacity to monitor, assess, inform and augment the management and protection measures (i.e. a learning and adaptable governance system); and

5. Ensure compliance and enforcement systems are comprehensive and effective.

While it is feasible to simply amend existing legislation (such as the *Public Lands Act*, the *Alberta Land Stewardship Act*, the *Wildlife Act*, the *Water Act*, the *Responsible Energy Development Act* and the *Mines and Minerals Act*) the ELC recommends establishing a habitat-specific piece of legislation (with consequential amendments to relevant statutes). It should be noted that an alternative (second best) approach

may be to have habitat-specific plans integrated into regional plans as issue-specific plans under section 10 of the *Alberta Land Stewardship Act*.

Recommendation 1

A statute (Habitat Protection and Management Act) should be passed to create a governance system and relevant rules to effectively manage, and, where required, protect valued habitats.

Clarifying provincial and regional habitat policy objectives

Currently, habitat management in Alberta is largely done as a function of public land and wildlife management. This occurs through the management of both protected areas (parks and natural areas - see Habitat Law in Alberta Volume 1: The State of Habitat Laws in Alberta - and in general management of public lands and crown owned resources (wildlife, fish and water). While this allows for some relevant habitat considerations to be integrated into decisions (through conditions on public land dispositions and otherwise), habitat objectives need to be articulated such that

decisions around habitat become more intentional, more transparent and more measurable.

Habitat policy objectives, both regionally or provincially, for valued habitats and for habitat values need to be articulated.[3]

Recommendation 2

Habitat objectives should be articulated to guide development of habitat monitoring, assessment, and planning.

[3] Policy choices will need to be made around which habitat values and which valued habitats are the focus of policy objectives. This process should be informed by science to assist in identifying relevant habitat functions, species of significance or umbrella species and "at risk" species.

Ensuring regulatory coverage of relevant habitats and habitat functions

As illustrated by the ELC's Habitat Law in Alberta Volume 1: The State of Habitat Laws in Alberta habitat is not substantively addressed by Alberta law. While there are a variety of tools that can be used to protect habitat in Alberta law, such as through designation of protected areas, prohibitions related to public lands, conditions on public land dispositions, and general protection under the *Water Act*, there are clear regulatory gaps to be filled. Alberta's current approach can be framed as *habitat protection by proxy* insofar as there is significant reliance in how non-habitat-oriented statutes are administered on a day to day basis.

Further, localized and biophysical aspects of habitat (e.g. residence) are only protected in a limited way for a limited number of species under the *Wildlife Act* or are reflected in general prohibitions, such as those found in the *Water Act*. Species that are not birds, fish or mammals are largely ignored in Alberta law. The habitat on which these species depend is not referenced at all.

Further, Alberta law gives no direct consideration to biophysical attributes of the habitat needs beyond species residence (e.g., nests and dens). Instead there is reliance on proxy regulations and prohibitions such as those found in section 54 under the *Public Lands Act* which aim to protect public land from "loss or damage" to serve to protect other biophysical attributes of habitat and habitat function. Habitat specific factors or functions are not likely to be effectively protected through proxy regulations. Alberta law needs to reorient towards a more ecological and biophysical perspective of managing habitat.

The current system fails to emphasize and consider the nature of habitat values and functions. This failure results in a lack of consistent and strategic habitat direction aimed at government administrators and undermines their ability to meet habitat objectives.

Recommendation 3

Statutory reforms are required to ensure that both species coverage and relevant habitat metrics are specifically identified for management and/or protection. Alberta's current regulatory system underserves plant, invertebrate, fungi, and also biophysical aspects of habitat.

Legislate prohibitions and regulations to appropriately protect and/or manage localized and/or valued biophysical habitat traits, particularly for species at risk and at-risk habitats.

Habitat monitoring, assessment, and planning

Alberta's approach to monitoring and assessment of habitat has largely focused on a periodic review of the status of specific species and relies on general monitoring conducted by government and related non-government organizations. The Government of Alberta has also shown leadership in relation to biodiversity monitoring in its support of the Alberta Biodiversity Monitoring Institute (ABMI), an organization that has led large scale monitoring of biodiversity in the province.

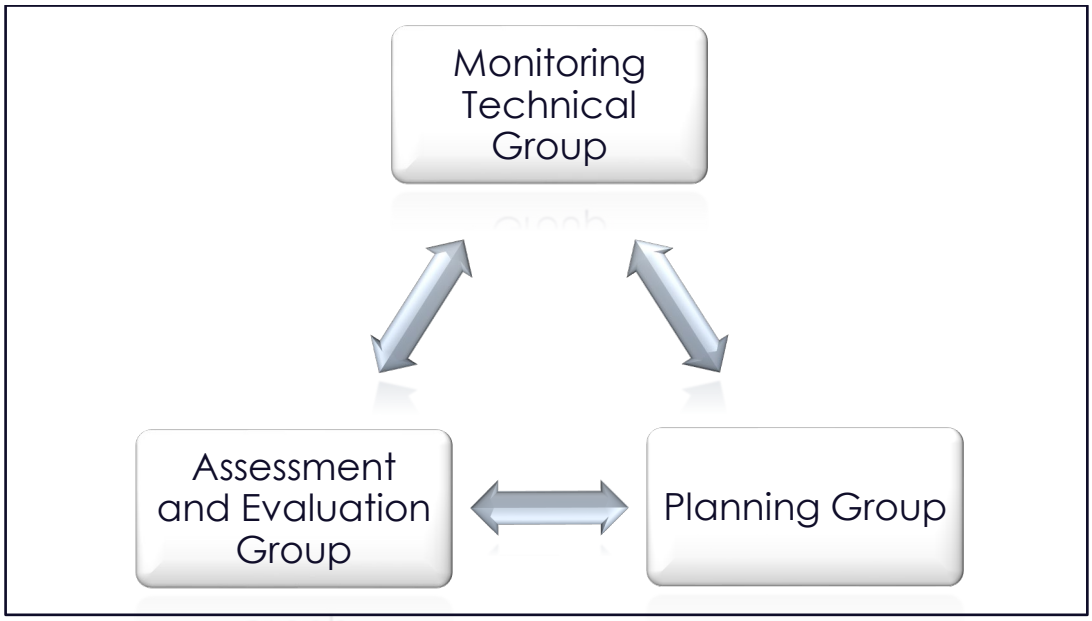
This more general and coarse scale monitoring may be further augmented by a broad host of agency-based habitat monitoring, industry monitoring (both voluntary and regulated), peer-reviewed research, and contributions of other non-governmental organizations (such as watershed planning and advisory councils).

Data consistency, data aggregation, and data interpretation such that habitat data can effectively inform assessments and planning are significant challenges in ensuring an effective habitat regulatory framework.[4]

The ELC recommends a multi-layered approach to monitoring assessment and planning groups comprised of government and non-government agents (see Figure 2) and are described further below. These groups may have similar membership across the groups however it is likely that variable skill sets will be required in each group.

[4] See Mac. A. Campbell, Biran Kopach, Petr E. Komers and Adam T. Ford "*Quantifying the impacts of oil sands development on wildlife: Perspectives from impact assessments*" Environmental Reviews (2019), online: , https://doi.org/10.1139/er-2018-0118 . And Westwood AR, Olszynski M, Fox CH, Ford AT, Jacob AL, Moore JW, Palen WJ. (2019) "The role of science in contemporary Canadian environmental decision-making: The example of environmental assessment." UBC Law Review.

Figure 2: Habitat knowledge and planning governance



Monitoring

Alberta has various monitoring entities that need to come together to ensure current habitat condition, threats to habitat, and indicators for meeting habitat policy objectives can be identified and evaluated.

Monitoring must be guided by ensuring that the monitoring being conducted is scientifically sound, policy-relevant, transparent and publicly available, and consistent. [5] A central agency with a public registry of aggregated data should be formed to ensure abidance with these core principles.

[5] See Mac. A. Campbell, Biran Kopach, Petr E. Komers and Adam T. Ford "*Quantifying the impacts of oi sands development on wildlife: Perspectives from impact assessments*" Environmental Reviews (2019), online: , https://doi.org/10.1139/er-2018-0118 also see Westwood AR, Olszynski M, Fox CH, Ford AT, Jacob AL, Moore JW, Palen WJ. (2019) "The role of science in contemporary Canadian environmental decision-making: The example of environmental assessment." UBC Law Review.

Creating consistent and policy-relevant monitoring requires a centralized agent for monitoring and data management which is clearly linked to habitat policy objectives. Organizations that should inform this group's work is found in table 1.

Table 1: Primary habitat monitoring sources

Primary sources of habitat monitoring and assessment
Alberta Biodiversity Monitoring Institute (ABMI)
Alberta Environment and Parks
Alberta Agriculture and Forestry
Indigenous knowledge advisors
Academic institutions
Federal and provincial technical/scientific committees (COSEWIC/ESCC)
Municipal and NGO monitoring agents (e.g. WPACs, land trusts, municipal monitoring programs)
Industry monitoring initiatives (both impact assessment related and ongoing monitoring initiatives)

Recommendation 4

Create a statutory "habitat hub" or central registry for habitat relevant data.

Recommendation 5

Mandate the creation of a scientific and technical habitat data committee.

Assessment

There is a need to ensure monitoring systems are able to move from general status assessments to assessing threats and factors in ensuring long term habitat viability for the purpose of maintaining or restoring valued habitat and habitat function.

The primary challenge is translating general monitoring data into a habitat planning tool that is readily usable by decisions makers on the landscape, including all relevant levels of government, industry, civil society, and Albertans more generally. This requires evaluation of available data, identification of pressures or threats to habitat, and identification of relevant indicators and thresholds. The province has

started down the road of cumulative effects management and outcome-based decision making but a clear regulatory framework for habitat management has yet to evolve.[6] For a sample approach see *Mapping and Assessment of Ecosystems and their Services: An analytical framework for mapping and Assessment of ecosystem condition in EU*.[7] (see insert)

While direct assessment of a variety of habitat pressures is required there is a need to also assess the impacts of climate change and the need to plan for managing climate refugia. Climate variability is likely to pose challenges for various species as augmentation of habitat occupation changes through time (biome shifts). [8] This will likely pose variable advantages and disadvantages for different species.[9]

[6] See for example, Alberta Energy Regulator, *Looking at the Big Picture*, online: https://www.aer.ca/documents/applications/application-processes/ABR-CE-NALA_Integrated-Narrative.pdf . Also see discussions of biodiversity management frameworks, *supra* note 1.
[7] European Commission, *Mapping and Assessment of Ecosystems and their Services: An analytical framework for mapping and Assessment of ecosystem condition in EU* Discussion Paper (2018) Technical Report 2018-001. http://ec.europa.eu/environment/nature/knowledge/ecosystem_assessment/pdf/5th%20MAES%20report.pdf.
[8] Nixon, A. E., R. J. Fisher, D. Stralberg, E. M. Bayne, and D. Farr. 2016. Projected responses of North American grassland songbirds to climate change and habitat availability at their northern range limits in Alberta, Canada. *Avian Conservation and Ecology* 11(2):2 http://dx.doi.org/10.5751/ACE-00866-110202 http://www.ace-eco.org/vol11/iss2/art2/ See Alex C. Y. Yeung, Alesksey Paltsev, Abby Daigle, Peter N. Duinker and Irena F. Creed "Atmospheric changes as a driver of change in the Canadian Boreal zone (2018)Environ. Rev. NRCResearch Press. https://www.nrcresearchpress.com/doi/pdfplus/10.1139/er-2018-0055 See Diana Stralberg, Erin M. Bayne, Steven G. Cumming and Péter Sólymos, Samantha J. Song and Fiona K.A. Schmiegelow. "Conservation of future boreal forest bird communities considering lags in vegetation response to climate change: a modified refugia approach" *Diversity and Distributions* (2015) 21 1112-1128 https://onlinelibrary.wiley.com/doi/pdf/10.1111/ddi.12356 . Also see Enric Batllori, Marc-André Parisien, Sean A. Parks, Max A. Moritz, Carol Miller, "Potential relation of climatic environments suggest high rates of climate displacement within the North American protection network" (2017) *Global Change Biology* and EL Rowland, N. Fresco, D. Reid, HA Cooke, "Examining climate-biome ("cliome") shifts for Yukon and its protected areas" (2016) *Global Ecology and Conservation* 8: 1-17. In this paper they conclude, by using an existing modeled dataset for Yukon from Scenarios Network for Alaska and Arctic Planning (SNAP), that the Yukon will become more homogenized in its "cliomes", with the number of distinct "cliomes" being lost.
[9] *Ibid*.

The end result of the assessment would be the generation of relevant habitat layers of interest. These habitat layers should be made public so long as there aren't concerns regarding the protection and safety of valued species.

Recommendation 6

Establish a methodology of assessing and evaluating habitat outcomes and thresholds for valued habitats and valued habitat functions.[10]

[10] See Mac. A. Campbell, Biran Kopach, Petr E. Komers and Adam T. Ford "*Quantifying the impacts of oi sands development on wildlife: Perspectives from impact assessments*" Environmental Reviews (2019), online: , https://doi.org/10.1139/er-2018-0118 also see Westwood AR, Olszynski M, Fox CH, Ford AT, Jacob AL, Moore JW, Palen WJ. (2019) "The role of science in contemporary Canadian environmental decision-making: The example of environmental assessment." UBC Law Review.

An analytical framework for assessing ecosystem condition
(European Commission, 2018)

An example of how a broader habitat and ecosystem assessment process may be pursued is set out in the European Commission's Mapping and Assessment of Ecosystems and their Services: An analytical framework for mapping and Assessment of ecosystem condition in EU Discussion Paper (2018) Technical Report 2018-001.

As detailed in this Report pressures, ecosystem conditions and policy outcomes for specific ecotype are considered. Below is a table outlining relevant pressures and conditions for consideration that can then inform habitat mapping.

Table 2.2. Hierarchical structure and classification of pressure and condition indicators

Pressures	Habitat conversion and degradation (land conversion)		
	Introductions of invasive alien species		
	Pollution and nutrient enrichment		
	Over-exploitation		
	Climate change		
	Other pressures		
Ecosystem Condition	Environmental quality (physical and chemical quality)		
	Ecosystem attributes (biological quality)	Structural ecosystem attributes	Structural ecosystem attributes (general)
			Structural ecosystem attributes based on species diversity and abundance
			Structural ecosystem attributes monitored under the EU nature directives
			Structural soil attributes
		Functional ecosystem attributes	Functional ecosystem attributes (general)
			Functional soil attributes

Recommendation 7

Establish habitat mapping layers to be used by planners to integrate into statutory plans.

Habitat Planning

Once relevant indicators and monitoring programs have been established there is a need to enter a planning exercise to allow for the integration of policy objectives into statutory planning documents and other instruments for habitat management. This process would be driven by land managers however it should also involve a significant commitment to public participation in the planning process. The planning process is summarized in Figure 3. The scale of the planning process will be dictated by the policy outcomes for specific habitat types or habitat functions of value.

Figure 3: Habitat planning process for Alberta

The initial stage of plan development would rely on a team of informed land managers and planners with a clear linkage with the habitat monitoring and assessment teams. This group would, at least, consist of those organizations listed in Table 2. Any proposed plan should undergo an additional deliberative planning process to incorporate feedback from the Alberta public, civil society, and industry. The resulting plan will result in integration of habitat considerations in statutory plans at relevant scales.[11]

[11] For additional reading related to localizing ecosystem protection see Keith H. Hirokawa, "Sustaining Ecosystem Services Through Local Environmental Law" (2011) *Pace Envtl. L. Rev*. 28:760, online: http://digitalcommons.pace.edu/pelr/vol28/iss3/4.

Table 2: Habitat plan drafting team

Initial Habitat Plan Development	
AEP	Science Advisory Panel
	Indigenous Wisdom Advisory Panel
Municipalities (regional)	
Regional Indigenous government	
Alberta Agriculture and Forestry	
Alberta Energy	
Federal department (Environment Canada and Climate Change/ Department of Fisheries and Oceans)	
Land trusts	

Recommendation 8

Initiate habitat planning at relevant scales with relevant stakeholders to achieve stated habitat policy outcomes.

Implementation of planning outcomes

The integration and implementation of policy and habitat plan outcomes will require:

1. **Identification** of the relevant and most appropriate **regulatory tools** to achieve habitat outcomes (e.g. prohibitions, protected areas, management areas, regional plans, statutory consents, conservation easements, or municipal statutory plans and bylaws),

2. Integration of planning outcomes into decision making using habitat planning layers and decision-making criteria, and

3. A habitat governance system that allows for ***learning and adaptation*** and has the technical, scientific, financial and governance capacity to monitor, assess, inform and augment the management and protection measures that are put into play.

Tool choice: from plan to decision making

Once planning has occurred the policy and regulatory tool decisions follow. This should be clearly informed by the policy objectives and planning layers for habitat management. The tool choice may include a wide range of mandatory (i.e. regulatory) and voluntary (i.e., policy-driven) choices depending on the circumstance, (such as the nature of risks, where the habitat is on private vs. public land) and on the decision-maker (i.e., provincial department, municipality, land trusts, landowners).

Implementation for provincial government departments and regulatory agencies

Implementation for provincial government departments will include using habitat planning layers to decide on:

1. Resource tenure and allocation, and renewals;
2. Terms and conditions on dispositions and on disposition renewals (to allow for life cycle habitat management and restoration);
3. Land disturbance standards on public lands;
4. Appropriate conservation offset rules and mitigation banking;
5. Regional plan approvals, review and amendments;
6. Biodiversity management frameworks (although these could become redundant with the integrated habitat management system).

Implementation for municipalities

Implementation for municipal government department will include using habitat planning layers to integrate habitat needs into:

1. Inter-municipal development plans,
2. municipal development plans,
3. regional growth plans,
4. area structure plans, and
5. subdivision and development decisions (including environmental reserves, environmental reserve easements, and conservation reserves);
6. land use bylaws;
7. land purchases for municipal park and conservation areas;
8. land use planning tools such as tradable development credit systems.

Implementation for Land trusts and Landowners

Implementation of habitat planning layers for land trusts and landowners will typically be at their discretion. As agents of habitat conservation and protection, there is an opportunity to further integrate habitat management on private lands, to augment municipal approaches outlined above.

Recommendation 9

Direct relevant public authorities to implement habitat plans.

Initiate or catalyze the use of existing tools

Implement habitat-based disturbance standards

There are a couple of central tools under the *Public Lands Act* and *Alberta Land Stewardship Act* which, if implemented could be used for significant augmentation of how habitat is managed.

Mandate the creation of habitat management zones and link zones to disturbance standards.

The current *Public Lands Act* and related regulations do not clearly articulate the relevance of disturbance standards to habitat needs. In this regard, disturbance may act as a proxy prohibition against harm to habitat. Disturbance is broadly defined in the *Public Land Administration Regulation* to include a host of biophysical and sensory nature. Section 1(1)(i)

> "disturbance", in respect of public land, means human activity that moves or removes one or more of the following features of the public land or that alters or results in the alteration of the state of one or more of those features from the state in which it existed before the human activity occurred, and includes any change in the intensity, frequency or nature of the human activity:
>
> (i) vegetation;
> (ii) soil;
> …
> (vi) wetland;

The definition also includes disturbance that is the form of light and sound.[12]

Under current regulation, all applications for a formal disposition on public land must include the applicant certifying compliance with an "applicable disturbance standards".[13] Notable the use of disturbance standards under the PLA does not apply

[12] *Public Land Administration Regulation*, AR 187/2011, at s. 1(1)(i).
[13] *Ibid.* at s.9(1)(f).

to forestry and therefore a separate system would be required to address forestry impact on valued habitat.

Recommendation 10

Develop a triage approach to establishing land disturbance standards using the best available knowledge and integrating cumulative effects. This should be accompanied by transparency measures including the rationale and science that supports the disturbance standards and annual reporting on the effectiveness of disturbance standards.

Enable changes to disturbance standards: Disturbance standards should be reviewed for accuracy and effectiveness every 5 years. This review should have a regulatory linkage with dispositions so that they can be revised in a sequential fashion to reflect any changes to the standard.

Conservation offsets and stewardship units

The *Alberta Land Stewardship Act* provides the opportunity to create a conservation offset whereby a higher level of protection may be achieved for valued habitats. This requires additional regulation to ensure that the system is strategic and accountable to preserve habitat values and valued habitats.

Recommendation 11

Formalize a system of regulation and management of conservation offsets for use toward valued habitats.

Learning and Adapting: Reconciling new habitat knowledge with existing regulation and dispositions

There is a need to be able to adapt activities to respond to evolving knowledge of habitat, species requirements, mitigation effectiveness, and natural variability and the inherent and variable uncertainty in all these assessments. To this end being responsive and adaptive in relation to managing around habitat requires regulatory structures that are similarly responsive and adaptive. To this end, the ELC has three primary cross-cutting recommendations.

Recommendation 12

Integrate substantive adaptation and augmentation language and approaches in resource allocation statutes, regulations, dispositions, and authorizations.

"Substantive adaptation" means having clear processes and accountability for adapting regulations and dispositions and authorizations in law, such that evolving habitat knowledge is reflected directly in activities on the landscape and in how discretionary decisions are made. This reflects a significant change from past approaches to adaptive management that were not substantively reflected in legal instruments.[14]

Recommendation 13

Identify "compensable adaptation" measures and create a compensation system to address these measures.

Recommendation 14

Create and fund through conservation levies to provide for compensation to allow for "compensable adaptation" in certain instances. (Existing mechanism under the Alberta Land Stewardship Act exist however regulations are required).

[14] See Martin Olszynski "Failed Experiments: An Empirical Assessment of Adaptive Management in Alberta's Energy Resources Sector" (2017) 50 *U.B.C. Law Rev*. 697.

Accountability for impacts on habitat: compliance and enforcement

The fostering of accountability for habitat outcomes requires a full review, evaluation and potential reform of compliance systems. This includes:

- Ensuring habitat suitable prohibitions with clear language and links to violations exist in statutes, regulations, and dispositions;
- Ensuring there are adequate administrative tools such as habitat management and protection orders and emergency order to enable government action where habitat standards are not being met,
- Conduct a review and assessment of administrative penalties that foster deterrence.

Further, to broaden accountability there is a need to allow for broadening compliance monitoring and enforcement by enabling Albertans to trigger an investigation related to alleged violations of habitat rules. A mechanism that allows for public and disposition holder monitoring and compliance response is needed. This can be analogous to the process under sections 196 and 197 of the *Environmental Protection and Enhancement Act*.[15] Further, a public registry of allowable habitat disturbance (linked with various dispositions, regulations or standards) should be created to allow for public monitoring and enforcement.

[15] R.S.A. 2000, c. E-12.

Recommendation 15

Legislate clear enforcement powers across sectors for habitat management outcomes.

Recommendation 16

Review, evaluate and, as needed, amend administrative penalties and fines to foster deterrence.

Recommendation 17

Legislate a public investigation trigger process for alleged offences of habitat standards and rules.

Conclusion

There is significant room for animating more effective habitat management in Alberta. The recommendations set out in this report are aimed at focusing decision making, ensuring decisions are based on science, and being deliberative and adaptive in reaching habitat objectives as province. From monitoring, assessment and planning there is need to ensure decision makers at all levels are guided by the best available information. Implementation of effective habitat management approaches must fall to all levels of government, supported by industry and civil society. This means resourcing front end planning and programming focused on habitat restoration and a suite of regulatory implementation tools.

Policy driven habitat management and protection in Alberta must become more intentional, transparent and accountable. It must also become more adaptive. These changes will require significant law reform that provides clarity regarding habitat outcomes combined with a regulatory system that supports and provides assurance around adapting to evolving habitat knowledge.

Finally, there is the need to broaden the scope of compliance options allowing for the engagement of citizens in monitoring and responding to violations of habitat standards.