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Recommendations for Alberta's Draft Conservation Offset Framework:
Realizing True Market Potential

Submitted by:
Kay Deborah Linley

Approved by Supervisor:
Tom Flanagan, August 28th, 2015

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TABLE OF CONTENTS

CAPSTONE EXECUTIVE SUMMARY

In May 2015, the province released a Draft Conservation Offset Framework. This analysis offers constructive feedback for the draft framework in attempts to improve future revisions.

This report finds that the province's draft framework focuses primarily on conservation offset design elements. In contrast, there is very little mention of the best delivery mechanisms for conservation offsets. To fully realize conservation offsets as a market-based instrument, this analysis recommends embracing market mechanisms, complete with exchange and banking systems for effective offset delivery in the province.

This analysis suggests that the next revision for Alberta's Conservation Offset Framework should include a greater focus on market delivery and a demonstrated commitment to these mechanisms. This analysis goes on to suggest that in order to promote competitive conservation offset markets, certain aspects of the framework need to be reconsidered and modified. The potential market conflicts include: in-lieu fees, stacking, uncertainty, language, commitment, and objectives.

In conclusion, this analysis recommends the following improvements for the framework:

- Give more focus and commitment to market delivery mechanisms
- Commit to the development of an exchange system for all offset programs
- Enable offset banks for all offset programs
- Ensure offset banks are developed on areas of deferred development only
- Establish the same ecological parameters around in-lieu fees as offsets
- Disallow stacking as an offset principle, or outline and enforce rigorous criteria around offset equivalency
- Reduce government oversight as much as possible with regards to how regional in-lieu fee conservation plans obtain their objectives
- Define what type of development is subject to specific offset programs
- Commit to an ecological objective for the framework

INTRODUCTION

The Alberta government released a draft Conservation Offset Framework in May 2015.[1] This draft framework provides an overarching design for all present and future conservation offset policies for the province. Once the framework is approved, each specific offset program will be structured to some degree around the framework's standards and design elements. Specific offset policies under this framework include Alberta's wetland offset program, which is currently being implemented, and future offset programs for habitat, water, and air.[2]

Although the framework is a step in the right direction because it verifies and enforces standards for ecological performance,[3] the province should focus more on facilitating the development of functioning conservation offset markets. With some regulatory mandates and end land use objectives, a competitive conservation offset market can deliver on environmental outcomes while providing cost savings and economic stimulus for the province.

To realize the ultimate potential for this market-based policy tool, the province is advised to fully support a competitive market system complete with offset banks. In addition to offset design and program implementation, Alberta's Conservation Offset Framework should include an equal amount of focus on common principles for offset market and bank development as well as the basics of an exchange system. In addition, the framework should include mandatory language around these market mechanisms.

Overview

This analysis begins with a brief background on conservation offsets and their implementation to date in Alberta. Next, the paper provides an overview of Alberta's Draft

[1] Government of Alberta, *A Framework for Alberta Conservation Offsets: Draft*, n.p. (Edmonton: Alberta Environment and Parks, 2015).
[2] Ibid, 2.
[3] Nathaniel Carroll, Richard Bayon and Jessica Fox, "The Future of Biodiversity Offset Banking," chapter 15 of *Conservation & Biodiversity Banking: A Guide to Setting Up and Running Biodiversity Credit Trading Systems* (London: Earthscan, 2008), 224.

Conservation Offset Framework and then gives a discussion about market delivery mechanisms. Afterwards, the paper presents an analysis of Alberta's draft framework with proposed improvements and considerations.

BACKGROUND

To begin, it is worthwhile presenting a brief overview of offsets and how they function as a market-based instrument (MBI). In the most general terms, offset systems make developers compensate for the damage they cause relative to the extent of an impact.[4]

Although there are varying definitions for conservation offsets across jurisdictions and countries, the international Business and Biodiversity Offset Program (BBOP) offers a good summary:

> Biodiversity offsets are measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse biodiversity impacts arising from project development, and persisting after appropriate prevention and mitigation have been taken.[5]

The BBOP definition highlights that conservation offsets are to be used in a larger hierarchy of protection. Only when environmental impacts are persistent, after prevention and mitigation efforts have been exhausted, should conservation offsets be practiced.[6] This hierarchy is critical for maximizing environmental protection and is a common component of offset policies around the world.[7]

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[4] Dave Poulton, *Biodiversity Offsets: A Primer for Canada* (2014; Institute of the Environment, 2014), 11, http://www.ie.uottawa.ca/article987-Biodiversity-Offsets-A-Primer-for-Canada.
[5] Business and Biodiversity Offsets Programme, "Biodiversity Offsets," accessed October 15, 2014, http://bbop.forest-trends.org/pages/biodiversity_offsets.
[6] Ibid.
[7] Business and Biodiversity Offset Programme, To No Net Loss and Beyond: an Overview of the Business and Biodiversity Offsets Programme (Washington: Forest Trends, 2013) at 7, online: BBOP <http://www.forest-trends.org/biodiversityoffsetprogram/guidelines/Overview_II.pdf>.; Becca Madsen, Nathaniel Carroll & Kelly Brands, State of Biodiversity Markets Report: Offset and Compensation Programs Worldwide (Washington, DC: Ecosystem Marketplace, 2010) at 2-3; Economics for the Environment Consultancy & the Institute for European Environmental Policy, The Use of Market-Based Instruments for Biodiversity Protection – The Case of Habitat Banking: Summary Report for the European DG Environment (London: eftec, 2010) at 48; 73 Fed Reg 19594 (with respect to U.S. wetlands compensation); Dave Poulton,

According to Alberta's Draft Conservation Offset Framework, conservation offsets include a variety of specific offset programs with objectives to conserve many different types of environmental goods and services while allowing for development to continue in the province.[8]

Alberta's Offset Experience

Although offsets are not new to Alberta, the scope of this policy tool is increasing. Now offsets are being used not only to abate carbon emissions, but also to conserve wetlands.[9] Also, during a project's environmental approval process, the government has discretion over whether offsets are the most suitable option to avoid residual environmental impacts.[10] Most recently, the Alberta Land Stewardship Act (ALSA) has provided some statutory backing for offset programs.[11]

Specific Offset Policies

A well-known offset program in Alberta is carbon offsetting, which is used to manage air quality under the Specified Gas Emitters Regulation.[12] To meet regulated emission reduction targets, heavy emitters have the option of purchasing offset carbon credits as a way of compensating for each ton of carbon above the specified facility target of 100,000 tonnes per year.[13] Facilities that fall below their emissions target receive offset credits and those facilities that exceed their baseline can comply by purchasing these offset credits. According to economic

Biodiversity Offsets: A Primer for Canada (2014; Institute of the Environment, 2014), 12, http://www.ie.uottawa.ca/article987-Biodiversity-Offsets-A-Primer-for-Canada.

[8] Government of Alberta, *A Framework for Alberta Conservation Offsets: Draft*, n.p. (Edmonton: Alberta Environment and Parks, 2015), 1-2.

[9] Alberta Environment and Parks, "Alberta Wetland Policy Implementation: A Phased Process," accessed August 17, 2015, http://www.waterforlife.alberta.ca/03356.html.

[10] Environmental Protection and Enhancement Act, RSA 2000, c E-12, <http://canlii.ca/t/52d7f> retrieved on 2015-08-18

[11] Alberta Land Stewardship Act, SA 2009, c A-26.8, <http://canlii.ca/t/5259q> retrieved on 2015-08-17.

[12] Alberta Environment and Sustainable Resource Development, *Technical Guidance for Offset Project Developers: Specified Gas Emitters Regulation Version 4.0* (2013; Alberta Government, 2014), http://environment.gov.ab.ca/info/posting.asp?assetid=8525&subcategoryid=131.

[13] Ibid.

theory and research, it is the flexibility offset programs that allows facilities to meet regulatory targets at the lowest possible cost of compliance.[14]

Another program that uses offsets as a tool to meet conservation objectives falls under the *Alberta Wetland Policy.* The policy uses conservation offsets as a tool within the mitigation hierarchy to "sustain the benefits [wetlands] provide to the environment, society and the economy."[15] The program uses an offset matrix to account for variation amongst wetlands across the landscape by assigning wetland values and relative replacement sizes.[16] The values assigned to the impacted wetlands and the potential replacement wetlands are calculated independently, and it is the relationship between these two values that determines the size of the replacement wetlands.[17] As an example, eights hectares of the lowest valued wetland are required as compensation for one hectare lost of the highest valued wetland.[18] Although Alberta's wetland policy is now a few years old, its offset program is just now being implemented on the landscape.[19]

[14] Jeremy B. Hockenstein, Robert N. Stavins, and Bradley W. Whitehead, "Crafting the next generation of market-based environmental tools," *Environment* 39 no. 4 (May 1997); Kerry ten Kate, Josh Bishop and Riacrdo Bayon, *Biodiversity offsets: Views, experience, and the business case*, (Switzerland and Cambridge: IUCN and London: Insight Investment, 2004), chapter 4, 21; U.S. EPA Office of Atmospheric Programs, EPA Analysis of the American Clean Energy and Security Act of 2009: H.R. 2454 in the 111th Congress 12 (2009); U.S. EPA Office of Atmospheric Programs, Supplemental EPA Analysis of the American Clean Energy and Security Act of 2009: H.R. 2454 in the 111th Congress 20 (2010), available at http://www.epa.gov/climatechange/Downloads/EPAactivities/HR2454_SupplementalAnalysis.pdf; Dirk Forester, *U.S. Climate Policy Implementation: Effective Use of Carbon Markets for Cost Savings* (Washington, D.C.: Environmental Law Institute®, 2010), 10585-10591; DW Montgomery, "Markets in licenses and efficient pollution control programs," *Public Econ* 75 (1972): 273–291; R Stavins , *The problem of the commons: still unsettled after 100 years*, Discussion paper RFF DP 10-46 (Washington: Resources for the Future, 2010), www.rff.org; S Kerr (ed) *Global emissions trading: key issues for industrialized countries* (Northhampton, MA: Edward Elgar Publishing Inc., 2000); W Baumol and Q Oates, *The theory of environmental policy* (Cambridge, New York: Cambridge University Press, 1975); JH Dales, *Pollution property and prices: an essena in policy-making and economics* (Toronto: University of Toronto Press, 1968).

[15] Government of Alberta, *Alberta Wetland Policy* (2013; Alberta Environment and Sustainable Resource Development, 2014), http://www.waterforlife.alberta.ca/documents/Alberta_Wetland_Policy.pdf.

[16] Ibid.

[17] Dave Poulton, personal communication, August 17, 2015.

[18] Government of Alberta, *Alberta Wetland Policy* (2013; Alberta Environment and Sustainable Resource Development, 2014), 19, http://www.waterforlife.alberta.ca/documents/Alberta_Wetland_Policy.pdf.

[19] Alberta Environment and Parks, "Alberta Wetland Policy Implementation: A Phased Process," accessed August 17, 2015, http://www.waterforlife.alberta.ca/03356.html.

In addition to specific offset policies and programs, there been a few informal, voluntary pilot projects for conservation offsets. One example of the "most highly developed offset program[s] in the province" is the Boreal Habitat Conservation Initiative.[20] Under this initiative, the Alberta Conservation Association has partnered with non-governmental organizations and Suncor Energy to secure land in the boreal forest under a protection mandate.[21] Another example is the Southeast Alberta Conservation Offset Pilot, where Alberta Agriculture and Rural Development took the lead in developing a localized terrestrial offset pilot program to help inform the South Saskatchewan Regional Plan.[22]

Integrated Resource Management

For project reviews that fall under both provincial and federal jurisdiction, the Alberta government has conducted joint reviews with the federal government under the mandate of the Joint Review Panel (JRP). In the past, the JRP has recommended offsets to manage residual environmental impacts of these proposed projects.[23] Although effective in offsetting a project's footprint, project-by-project management does not always minimize the cumulative environmental impacts from development. Certain environmental objectives, such as the protection of woodland caribou habitat in northern Alberta, require a larger management scope to ensure success in population rehabilitation.[24]

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[20] Ryan Hackett, "Market-based environmental governance and public resources in Alberta, Canada" Ecosystem Services, 2, 2015, http://dx.doi.org/10.1016/j.ecoser.2015.01.003i.
[21] Alberta Conservation Association, "Boreal Habitat Conservation Initiative (2008)," accessed August, 19, 2015, http://www.ab-conservation.com/go/default/index.cfm/programs/program-report-details/?&cfgridkey=A78CA8BF-188B-E6AA-12019E788784471B.
[22] Alberta Agriculture and Forestry, "Southeast Alberta Conservation Offset Pilot," accessed August 20, 2015, http://www1.agric.gov.ab.ca/$Department/deptdocs.nsf/all/sag14846.
[23] Joint Review Panel, Joint Review Panel Report, Shell Canada Energy, Jackpine Mine Expansion Project, Application to Amend Approval 9756, 2013 ABAER 011 (July 9, 2013), 3[12], http://www.ceaa.gc.ca/050/documents/p59540/90875E.pdf.
[24] The Alberta Woodland Caribou Recovery Team, *Alberta Woodland Caribou Recovery Plan 2004/05-2013/14* (2005; Government of Alberta, 2014), 20, http://esrd.alberta.ca/fish-wildlife/species-at-risk/species-at-risk-publications-web-resources/mammals/documents/SAR-WoodlandCaribouRecoveryPlan-Jul2005.pdf.

In response to Alberta's growing population and increasing land use demands, including recreational uses, resource extraction and industrial development, the province has created the *Land-Use Framework* (LUF).[25] Now more than ever, an *Integrated Resource Management System* made up of provincial policies and land use plans is essential to coordinate land uses and reduce cumulative environmental impacts.[26] To achieve stewardship and conservation, terrestrial offsets are being considered under the LUF, and are "currently under evaluation for use on both public and private lands."[27]

The *Lower Athabasca Regional Plan* (LARP) was created for the oil sands region as part of Alberta's LUF.[28] This regional plan was given precedence before other regions in the province because of the substantial oil and gas development pressures on local communities and the environment in this area.[29] The general goal of LARP is to responsibly manage for social and environmental values under the increasing pressure of oil sands development.[30] It also intends to manage for biodiversity on the landscape and obtain healthy ecosystems.[31] A draft *Biodiversity Monitoring Framework* has recently been released under LARP.[32] The framework lists offsets as a potential tool for biodiversity management in the region and states that an offset policy is under development for the province.[33] Alberta's Draft Conservation Offset Framework is a step towards realizing this policy.

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[25] Alberta Environment and Sustainable Resource Development, *Land-use Framework* (2008; Alberta Government, 2014), https://landuse.alberta.ca/PLANFORALBERTA/LANDUSEFRAMEWORK/Pages/default.aspx.
[26] Government of Alberta, "Alberta Conservation Offsets Policy Framework Discussion Paper," (discussion paper, Government of Alberta, Calgary, AB, October 24, 2014).
[27] Alberta Environment and Sustainable Resource Development, *Land-use Framework* (2008; Alberta Government, 2014), 34, https://landuse.alberta.ca/PLANFORALBERTA/LANDUSEFRAMEWORK/Pages/default.aspx.
[28] Alberta Environment and Sustainable Resources, *The Lower Athabasca Regional Plan* (2012; Alberta Government, 2014), https://landuse.alberta.ca/RegionalPlans/LowerAthabascaRegion/Pages/default.aspx.
[29] Ibid, 22.
[30] Ibid.
[31] Ibid, 42.
[32] Government of Alberta, *Lower Athabasca Region Biodiversity Management Framework* (draft, V.1.0, November 6, 2014).
[33] Ibid, 53.

ALSA provides the legal tools for both the LUF and the LARP to implement their regional visions.[34] Under section 47 of ALSA, the Lieutenant Governor in council is empowered to "make regulations to counterbalance the effect of an activity."[35] Counterbalancing refers to offsetting the impact of development, with each metric of compensation called a "stewardship unit."[36] ALSA enables offsets as a potential tool, not a mandatory action.

Aside from providing a legal mandate for conservation offsets, regional planning will also play a key role in creating overarching land use goals for conservation offset policy. In 2009 Marian Weber, an expert on market-based approaches for resource management in Canada,[37] formed the Alberta Boreal Conservation Offsets Advisory Group, which concluded that it is timely to consider how conservation offsets will be implemented in relation to the development of these regional plans.[38] The recent release of Alberta's Conservation Offset Framework acknowledges the province's move towards cumulative effects management and the *Integrated Resource Management System*.[39] Within the framework, contextual management of offset programs is set within regional land use planning.[40]

ALBERTA'S DRAFT CONSERVATION FRAMEWORK

It is necessary to provide a brief overview of the framework to establish the foundations for this analysis. The following overview highlights key components of the framework and

[34] Alberta Land Stewardship Act, SA 2009, c A-26.8, accessed December 5, 2014, http://canlii.ca/t/5259q.
[35] Ibid.
[36] Ibid.
[37] Alberta Innovates Technology Futures, Environment and Carbon Management: Marian Weber Ph.D. Accessed August 26, 2015, http://www.albertatechfutures.ca/Corporate/MarianWeberbio.aspx.
[38] Alberta Boreal Conservation Offsets Advisory Group, Regulated Conservation Offsets with Banking: A Conceptual Business Model and Policy Framework (2009), 4.
[39] Government of Alberta, *A Framework for Alberta Conservation Offsets: Draft*, n.p. (Edmonton: Alberta Environment and Parks, 2015), 2.
[40] Ibid, 7.

expands upon certain elements to provide an understanding of its terms and to emphasize areas for further discussion.

Overview

The Draft Conservation Offset Framework is relatively short in length, at 7 pages, and it provides only high level guidance for offset program development and offset design. The framework is divided into seven sections, listed below:

1. Introduction
2. Intent and Overview
3. Framework Principles
4. Common Elements
5. Eligibility Requirements
6. Design Characteristics, and
7. Impact

The following is an expansion of each section of the draft framework, listed above.

1. Introduction

The primary objective of the framework is to utilize conservation offsets as a conservation tool for sensitive areas and ecosystem values while continuing to allow for development in designated areas. The framework begins with this policy statement: "Alberta accepts conservation offsets in its regulatory decision process towards meeting resource management outcomes."[41] This is a rather reserved policy direction, fitting with the province's enabling statute of ALSA, which provides support for the creation of offsets only as a conservation tool, keeping offsets discretionary.

The framework goes on to describe how conservation offsets are authorized. There is reference to the broadly enabling legislation, policies, and/or guidelines as one avenue of authorization. In addition, an "authorization decision" is also referenced as to how offsets can be

[41] Ibid, 1.

enabled.[42] An Environmental Impact Assessment for a given project may recommend offsets as a tool to mitigate significant residual environmental impact. And under an approval requirement for the project to proceed, the regulator may decide that offsets should be deployed to minimize this impact.

The framework takes a hands-off approach when it comes to the scope of its application. Although the framework is meant to cover a variety of jurisdictional levels within the province, ultimately, implementation of offsets comes down to the specific offset policies.[43] It is yet to be seen how much power the framework will have over specific offset programs.

2. Intent and Overview

In general, the intention of the Conservation Offset Framework is to lay the groundwork for consistent offset implementation.[44] The draft framework is directed towards specific offset programs, such as the wetland offset program. The other specific offset programs that will take direction from this framework are considered theoretical as they are largely in the planning phase. These specific offset programs include habitat, water, and air based offset programs.[45] The current carbon offset policy does not appear under the framework, however; future air offset programs are presented as a possibility under the framework's jurisdiction.[46]

3. Framework Principles

Seven fundamental principles are described in the framework to influence the way future specific offset programs are developed and the desired outcomes of offset delivery.

To begin, the principles speak to the importance of ***integrating*** specific offset programs into the higher planning level of an *Integrated Resource Management System*.[47] This means that

[42] Ibid.
[43] Ibid.
[44] Ibid.
[45] Ibid, 2.
[46] Ibid.
[47] Ibid, 2.

offset programs will need to work alongside and in conjunction with other policies and land use plans to manage cumulative effects on the landscape. This relates again to the direct influence regional plans will have over offset program implementation and end goals.

Transparency is another fundamental principle described by the framework.[48] Gaining public support for offset programs is important because offsets are a contentious resource management tool.[49] Through transparent means, such as public reporting, actual conservation achievements from offset programs can be disclosed. In addition, a focus on oversight and accountability can help determine whether offsets are the most effective policy tool for achieving environmental goals.[50]

Another principle mentioned in the framework is referred to as ***play-based***.[51] The purpose of this principle is to keep offset practices in congruence with regional and provincial "management outcomes and priorities."[52] For instance, regional plans may designate certain areas as high development. LARP, for example, may promote resource extraction in the oil sands mineable area, but promote conservation offsets for caribou range outside of the mineable oil sands region. This principle captures the inherent trade-offs between economic development and conservation efforts that the province and the regions will face when deploying offset programs, and ultimately allows flexibility for offset design and implementation with regards to these trade-offs.

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[48] Ibid.
[49] Friends of the Earth Europe, Nature is not for sale: The dangers of commodifying our natural world, June 2014, https://www.foeeurope.org/sites/default/files/foee_position_nature_is_not_for_sale.pdf; Kerry ten Kate, Josh Bishop & Ricardo Bayon, Biodiversity Offsets: Views, Experience, and the Business Case (Gland, Switzerland: IUCN and Insight Investment, 2004) at 19, online: IUCN <http://www.iucn.org/about/work/programmes/economics/econ_resources/?471/Biodiversity-Offsets-Views-experience-and-the-business-case> ; McKenny & Kiesecker, supra note 8 at 173; Martine Marone, Ascelin Gordon, Brendan G. Mackey, Hugh P. Possingham and E.M. Watson, "Stop Misuse of Biodiversity Offsets," Comment in *Nature* 523 (July 23, 2015): 401-403.
[50] Government of Alberta, *A Framework for Alberta Conservation Offsets: Draft,* n.p. (Edmonton: Alberta Environment and Parks, 2015), 2.
[51] Ibid.
[52] Ibid.

In a similar capacity, the framework lists ***relevancy*** as another principle.[53] In collaboration with the above, offset programs must also be relevant to the stakeholders involved in the impact and offset areas. Aboriginal interests and rights are a significant component for this principle, with consultation around environmental impacts, offset design, and offset location, as some examples of future Aboriginal involvement within the framework.[54]

Cost-effectiveness is also described as a framework principle.[55] The framework promotes creating offsets and offset programs in a way that minimizes cost while providing desired environmental outcomes. Offsets are a market-based instrument, and as such, they are designed to achieve environmental outcomes in a relatively cost-effective manner compared to Command and Control regulatory techniques, which are deemed to be more expensive to industry and society because of their rigidity in how outcomes are met.[56]

The framework also encourages ***stackable*** offsets as a principle.[57] *Stackable* offsetting allows one offset effort, such as the conservation of land, to account for more than one credit, such as a combination of carbon sequestration credits for the trees and wetlands plus habitat credits for the refuge these trees and wetlands provide. The market for conservation offsets is encouraged under this principle because suppliers of offsets will receive additional credits, which they can sell for a profit above and beyond their single conservation investment.

Finally, ***continuous improvement*** is listed as an internally directed principle, where the framework itself will be updated and reviewed on a regular basis.[58] This principle makes sense

[53] Ibid.
[54] Ibid.
[55] Ibid.
[56] Ibid.
[57] Ibid.
[58] Ibid.

for a framework currently in draft form, which may require numerous revisions after implementation feedback from specific offset programs, such as wetland offset experience.

4. Common Elements

In this section, the framework outlines the common elements that all offset programs should share.[59] These elements are ordered in a hierarchy, explaining the different tiers of direction, management and implementation that will guide offset delivery on the landscape. Within this hierarchy, the framework describes some flexibility in decision-making to assist developers in obtaining their offset requirements. The elements also include obligatory conditions, which are needed to accredit offsets as ecologically sound and to file these offsets into a pubic registry.[60]

The framework designates high level direction to provincial authority, the management of achieving this objective to regional governance, and implementation of this direction to coordinators on the ground.[61] In addition to these authorities, the framework delineates offset programs as a management tool that can be used to achieve higher level provincial conservation objectives. Offsets are not seen as a standalone tool to achieve conservation outcomes, rather they are one possible way to meet larger objectives.[62]

Although the framework includes a description of obligations that offsets must meet to be deemed creditable under provincially approved protocols, a large component of flexibility is still given to the developer with regards to offset delivery. For example, the developer can decide upon the delivery mechanism, either to offset or to pay into an in-lieu fund.[63] Under the framework, both of these options are offered to developers as ways of mitigating significant

[59] Ibid, 2-4.
[60] Ibid, 3.
[61] Ibid.
[62] Ibid.
[63] Ibid.

residual impacts. Furthermore, developers have the choice on how to deliver the offset if they decide upon offsetting as a mitigation strategy.[64] Delivery could include hiring a third-party to create the individual offset or purchasing an offset credit from a conservation offset bank.

Although understated, the framework makes mention of administrative and market infrastructure as a common element for offset programs.[65] In its early phases, this infrastructure will act as a registry, with the long-term intent to transform into a fully functioning exchange.[66] The exchange will track demand and supply within the province and match buyers and sellers for successful transactions. By including the exchange as a common element, the province's support for private market delivery of conservation offsets can be inferred. However, the framework has dedicated only one sentence within the common elements section to this important policy direction.

5. Eligibility Requirements

This part of the framework briefly outlines what parameters offsets need to meet in order to be deemed credible.[67] Under these terms, a qualified entity must go out to the offset site and verify its credibility; this includes measuring ecosystem services and functions and making sure that the offset offers real and substantial returns. The developer needs to prove clear ownership of the offset and that the offset was implemented according to Alberta's obligatory protocols. The offset credit can only be used once by the developer to meet a regulatory requirement.[68]

An additional component to this section is dedicated to the eligibility of private and public lands for offset implementation.[69] The framework includes both private and public lands as acceptable for offsets, and asks for conservation securement through legal means as necessary

[64] Ibid.
[65] Ibid.
[66] Ibid.
[67] Ibid, 4.
[68] Ibid.
[69] Ibid.

provisions for offset providers. Subsurface rights will continue for resource extraction even under legal conservation securement.[70]

6. Design Characteristics

Under this section, the framework introduces necessary characteristics for specific offset programs that require the development of rules.[71] Some of these design characteristics are specific to the offset design itself, including impact, equivalency, additionality and temporal scale and duration, whereas other characteristics target program design, such as offset service area and monitoring.[72] Sections 7.1-7.6, summarized below, expand upon each individual design characteristic.

7.1-7.6 Design Characteristics Expanded

To begin, the characteristic called ***impact*** describes how the triggers for an offset must be specified within the specific offset program.[73] The key trigger for offsetting is whether or not the impact is considered significant. A test is involved to help determine whether an impact meets this definition of significance.[74]

The next characteristic of ***additionality***, or ***baseline and eligible actions***, requires offset actions to provide conservation values greater than a specified base-case scenario.[75] Actions that are considered offsets are listed in this section. Some examples are: the "restoration or improvement of degraded habitat," and the deferral of future projects with respect to mineral rights.[76] Interestingly, offset efforts are accepted within already protected areas, such as parks, if they provide additional conservation values via actions of restoration or improvement.[77] It is

[70] Ibid.
[71] Ibid, 4-5.
[72] Ibid.
[73] Ibid, 5.
[74] Ibid.
[75] Ibid.
[76] Ibid.
[77] Ibid.

possible the government prefers restoration efforts as eligible actions, because orphaned sites, which have diminished ecological value, could be restored by industry instead of through government efforts. However, deferred development has been proven a more cost-effective action for offsets in Alberta.[78]

Along with baseline and eligible actions, ***in-lieu*** fees are also mentioned as a potential option within an offset program, but are not themselves considered offsets.[79] The *in-lieu* fees can be used towards indirect offset mechanisms, like education and research projects geared towards offsetting impacts. The framework does not specifically address the percentage of in-lieu fees that can be spent on indirect versus direct compensation.

The framework then expands upon the characteristic of ***equivalency,*** explaining how impact and offset must correspond in magnitude.[80] There is some flexibility offered about how a specific offset program could ensure equivalency, although three key principles are defined as mandatory:

> 1) same method and tools used to assess both impact and offset,
> 2) identification of a shared baseline case for measuring changes from impact and offset, and
> 3) the utilization of appropriate mitigation ratios, or multipliers, to account for risks associated with offsetting, such as time-lag and restoration failure.[81]

Offset service area, another design characteristic under the framework, includes the need for geographic boundaries within which offsets are considered equivalent to an impact within the

[78] Marian Weber, Economic-Ecological Evaluation of Dynamic Offset Contracting in Alberta's Boreal Forest, Submission to 2014 BioEcon Conference, Biodiversity, (Cambridge, UK: Ecosystem Services and Sustainability, May 31, 2014), http://www.bioecon-network.org/pages/16th_2014/Weber.pdf.
[79] Government of Alberta, A Framework for Alberta Conservation Offsets, Draft, May 25, 2015, 5, retrieved from the Alberta Association of Conservation Offsets.
[80] Government of Alberta, *A Framework for Alberta Conservation Offsets: Draft,* n.p. (Edmonton: Alberta Environment and Parks, 2015), 6.
[81] Ibid.

same boundaries.[82] The offset framework uses the regional boundaries, defined in the province's LUF, as appropriate service areas for offset exchange.[83]

The framework goes on to describe the necessary ***duration and temporal scale*** for offset programs.[84] The framework enables both temporary and permanent offsets as long as they are in equivalence to the impact in question. Also, the framework suggests that offsets be established before significant residuals impacts take place, but this is not strictly enforced. To establish offsets before the environmental impact, offset banks are suggested by the framework.[85] Offset banks are considered off-site compensation areas where conservation efforts are concentrated in one location.[86] Offset banks can be used as a way of reducing potential time-lag between impact and offset because they are an establishment of ready-to-use credits.[87] According to the framework, it is up to individual offset programs whether to allow or enable banks.[88] However, the offset program must consider specific factors when approving a bank's establishment. These factors include design attributes for the bank and offsets as well as legal mechanisms and proof of bank ownership.[89]

Finally, the framework elaborates briefly on the design characteristic of ***monitoring***.[90] Monitoring includes evaluation of both the success of the offsets and the success of the offset programs. End goals must be defined for the offset program so that performance can be monitored and so that success can be measured.[91]

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[82] Ibid.
[83] Ibid.
[84] Ibid.
[85] Ibid.
[86] Deborah L. Mead, "History and Theory: The Origin and Evolution of Conservation Banking," chapter 2 of *Conservation & Biodiversity Banking: A Guide to Setting Up and Running Biodiversity Credit Trading Systems* (London: Earthscan, 2009), 15.
[87] Ibid, 17.
[88] Government of Alberta, *A Framework for Alberta Conservation Offsets: Draft,* n.p. (Edmonton: Alberta Environment and Parks, 2015), 6.
[89] Ibid.
[90] Ibid.
[91] Ibid.

MARKET DELIVERY

Before considering potential revisions to the framework, it will be beneficial to discuss market mechanisms in some detail to gain a better understanding of why this mode of delivery is favourable for the province.

Market-Based Instruments

Because one of the predominant causes of environmental degradation is market failure, economic incentives are a fitting solution. Lucy Emerton of the World Conservation Union reminds us that there are numerous economic incentives that can be deployed to conserve the environment, including: property rights, charge systems, fiscal instruments, bonds and deposits and livelihood support.[92] In general, economic incentives are intended to influence people's behaviour by making it "more desirable for them to conserve, rather than to degrade or deplete, biodiversity in the course of their economic activities."[93]

Market-based instruments (MBIs), a type of economic incentive, attach a price to the specific environmental destruction making development more costly to the proponent. This increased cost is not a new cost.[94] In fact, "the transfer of this cost to the developer can be seen as the removal of a public subsidy on development."[95] The intention is to curb behaviour away from destruction thus reducing environmental exploitation.[96] If the benefits of a given project outweigh these internalized costs, then the development will proceed.

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[92] Lucy Emerton, *Using Economic Incentives for Biodiversity Conservation* (2000; The World Conservation Union, 2014), 2.2, https://portals.iucn.org/library/efiles/documents/PDF-2000-002.pdf.
[93] Ibid, 2.
[94] Dave Poulton, *Biodiversity Offsets: A Primer for Canada* (2014; Institute of the Environment, 2014), 11, http://www.ie.uottawa.ca/article987-Biodiversity-Offsets-A-Primer-for-Canada.
[95] Ibid.
[96] Ibid.

Incentives

One intention of MBIs is to change what was once a liability of a landowner or developer into an asset.[97] This is done by giving value to a natural resource or environmental service. By giving value to the environment, what was once a liability to production, and seen as more costly to conserve than to develop, becomes conservation-worthy because of the monetary gain involved.[98] Financial incentives brought about by MBIs offer something that Command and Control (CAC) mechanisms cannot, which is a kind of self-driven regulation. The idea is that developers will actually want to conserve environmental functions and services for the economic gain, whereas CAC mechanisms require more oversight and enforcement to modify the developers' behaviour. The financial incentives created by MBIs offer a business case for conservation actions.[99] MBIs are an important policy tool that nudge developers to act in their own best interest by protecting natural resources. Certainly, there is a place for CACs to set the foundation and framework for MBIs to function most effectively; however, CACs alone cannot achieve the key behavioural changes that society requires to meet conservation goals.

Flexibility

For individual developers, MBIs allow for some flexibility in meeting conservation targets. The opportunity cost of forgoing a project under CAC parameters can be much more expensive than continuing onwards with a project while minimizing and compensating for environmental impact elsewhere.[100] MBIs can also allow for the transfer of environmental obligations to third parties who can specialize in the conservation efforts needed, allowing the

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[97] Craig Denisoff, "Business Considerations," chapter 8 of *Conservation & Biodiversity Banking: A Guide to Setting Up and Running Biodiversity Credit Trading Systems*, (London: Earthscan, 2009), 116.
[98] David W. Poulton, *Biodiversity Offsets: A Primer for Canada* (Sustainable Prosperity and the Institute of the Environment, February 2014), 28, accessed August 20, 2015, http://www.sustainableprosperity.ca/sites/default/files/publications/files/Biodiversity%20Offsets%20in%20Canada.pdf.
[99] Kerry ten Kate, Josh Bishop and Ricardo Bayon, chapter 4 of *Biodiversity offsets: Views, experience and the business case*, (London: Earthscan, 2009), November 2000, 21.
[100] Ibid.

developer to focus on their project.[101] The very economic incentives created through MBIs can create niche markets and specialization in conservation efforts. This secondary market can bring about innovative techniques in achieving environmental goals, which is typically more costly for the developer to pursue on their own.[102]

Cost-Effectiveness

Although they acknowledge the role for CACs in environmental conservation, Hockenstein *et al.* suggest that MBIs should be one of the first policy tools considered when addressing environmental issues.[103] Their affinity for MBIs rests on the premise that the environment should be protected in the most cost-effective manner and MBIs are much more cable of achieving this than CACs.[104] Hockenstein *et al.* believe that "[m]aking the best use of resources is especially important because we have other pressing social problems to address, including poverty, education, and violent crime."[105]

Market Exchange

In a fully functioning conservation offset market, producers and consumers of offsets communicate through an exchange system, which provides a platform for synching supply and

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[101] Ibid.
[102] David W. Poulton, *Biodiversity Offsets: A Primer for Canada* (Sustainable Prosperity and the Institute of the Environment, February 2014), 28, accessed August 20, 2015, http://www.sustainableprosperity.ca/sites/default/files/publications/files/Biodiversity%20Offsets%20in%20Canada.pdf.
[103] Jeremy B. Hockenstein, Robert N. Stavins, and Bradley W. Whitehead, "Crafting the next generation of market-based environmental tools," *Environment* 39 no. 4 (May 1997), 20.
[104] Kerry ten Kate, Josh Bishop and Riacrdo Bayon, *Biodiversity offsets: Views, experience, and the business case*, (Switzerland and Cambridge: IUCN and London: Insight Investment, 2004), chapter 4, 21; U.S. EPA Office of Atmospheric Programs, EPA Analysis of the American Clean Energy and Security Act of 2009: H.R. 2454 in the 111th Congress 12 (2009); U.S. EPA Office of Atmospheric Programs, Supplemental EPA Analysis of the American Clean Energy and Security Act of 2009: H.R. 2454 in the 111th Congress 20 (2010), available at http://www.epa.gov/climatechange/Downloads/EPAactivities/HR2454_SupplementalAnalysis.pdf; Dirk Forester, *U.S. Climate Policy Implementation: Effective Use of Carbon Markets for Cost Savings* (Washington, D.C.: Environmental Law Institute®, 2010), 10585-10591; DW Montgomery, "Markets in licenses and efficient pollution control programs," *Public Econ* 75 (1972): 273–291; R Stavins , *The problem of the commons: still unsettled after 100 years*, Discussion paper RFF DP 10-46 (Washington: Resources for the Future, 2010), www.rff.org; S Kerr (ed) *Global emissions trading: key issues for industrialized countries* (Northhampton, MA: Edward Elgar Publishing Inc., 2000); W Baumol and Q Oates, *The theory of environmental policy* (Cambridge, New York: Cambridge University Press, 1975); JH Dales, *Pollution property and prices: an essena in policy-making and economics* (Toronto: University of Toronto Press, 1968).
[105] Ibid, 19-20.

demand. A conduit for exchange between consumers and producers of conservation offsets can greatly increase efficiency in the market by providing more information and increasing the competitive nature of the market system.[106] With an exchange system, consumers of offsets can have access to multiple suppliers of offsets, and as such can shop around. This puts pressure on suppliers to stay competitive and keep prices low enough to make conservation offsets feasible for developers. Suppliers of offsets can also reap benefits of increased exposure to clientele, allowing them to sell to the highest bidder.

In 2011, Marian Weber made a direct recommendation to the Alberta government to "develop a centralized conservation exchange and clearinghouse with electronic trading platforms to support smart markets for offsets."[107] The researchers suggested a timeframe of 5-10 years for the exchange development window.[108] If the Government of Alberta follows this recommendation, the exchange should be complete by 2021.

Though an exchange system seems like the most effective way to deliver the most suitable conservation offsets from producers to consumers, there are other opinions on the matter. For example, the Alberta Conservation Association prefers negotiation amongst numerous parties, such as "companies, land trusts, and private landowners" to achieve the best-fit offset for a given project.[109] This is called bilateral trading, and at the current size of Alberta's offset market, this method makes sense in terms of finding common ground and best-interests. However, Weber suggests that this trading system will not be robust enough to launch a fully operational conservation offset market. "The approach may impose unacceptable risks to buyers,

[106] Marian Weber, *Experimental Economic Evaluation of Offset Design Options for Alberta: A Summary of Results and Policy Recommendations* (Edmonton: Alberta Innovates Technology Futures, November, 2011).
[107] Ibid, iii.
[108] Ibid.
[109] Ibid.

sellers and the public in large scale regulatory programs."[110] Weber goes on to describe that the centralized exchange would provide transparency of information to sellers and buyers as well as reduce administration costs, costs which would likely grow with an expanding market.[111]

There are examples of environmental market exchange systems around the world that are working effectively to deliver environmental services, such as conservation offsets. For example, markit® offers a registry system that tracks carbon, water and biodiversity credits on a global scale.[112] Canada has only carbon credits for auction on this online registry, however; other countries such as the United States have a more diversified portfolio, such as carbon, wetland quality and biodiversity and habitat credits.[113] Another example of an online market exchange for offsets is called Bushbroker, presented by the State of Victoria's Department of Environment and Primary Industries in Australia. Bushbroker was developed to promote the protection of native grassland vegetation through credits for landowners conserving vegetation and the exchange for developers who, as part of their permit requirements, need vegetation credits to proceed with development.[114]

Banks

Offset banks are concentrated efforts of conservation actions where multiple offset credits are created. The banks can be created by developers themselves, third parties,

[110] Ibid.
[111] Ibid, iv.
[112] Markit®: Financial Information Services, "Registry," accessed August 16, 2015, https://www.markit.com/Product/Registry.
[113] Ibid, "Registry-Public View," accessed August 16, 2015, https://mer.markit.com/br-reg/public/index.jsp?entity=project&name=UnitedStates&standardId=&unitClass=&sort=project_name&dir=ASC&start=60.
[114] Department of Environment and Primary Industries, "Bushbroker," accessed August 17, 2015, http://www.depi.vic.gov.au/environment-and-wildlife/biodiversity/native-vegetation/native-vegetation-permitted-clearing-regulations/native-vegetation-offsets/bushbroker.

government, or ENGO's.[115] Just as many different entities can produce conservation banks, many developers can buy credits at the same conservation bank.[116]

There are numerous benefits to taking a conservation banking route. Economically speaking, conservation banks have been a success in the United States, shown by "the fact that most conservation banks created prior to the year 2000 have sold out of credits."[117] Some conservation bankers have also pursued additional conservation bank initiatives, demonstrating that some suppliers that participate in this market continue to do so over the long-run.[118] Although the annual number of conservation banks has remained relatively constant over time, the total number of conservation banks has increased steadily since 1996.[119] For further reference, the Regulatory In lieu fee and Bank Information Tracking System, or RIBITS for short, provides a useful database of the numerous conservation offset banks across the United States.[120]

In terms of business considerations, conservation offset banks can reduce costs to suppliers and regulators.[121] Economies of scale, time savings, and lower mitigation costs are three ways conservation offset banks can minimize overall costs.[122] With respect to economies of scale, average per hectare cost can be minimized because planning, permitting and implementation costs are spread out over a large area.[123] Time can also be saved by the regulator, because permitting conservation offsets can be done for an entire bank, rather than piecemeal for

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[115] Deborah L. Mead, "History and Theory: The Origin and Evolution of Conservation Banking," chapter 2 of *Conservation & Biodiversity Banking: A Guide to Setting Up and Running Biodiversity Credit Trading Systems*, (London: Earthscan, 2009), 28-29.
[116] Ibid, 15.
[117] Ibid, 29.
[118] Ibid.
[119] Ibid.
[120] RIBITS, "Regulatory In-Lieu Fee and Bank Information Tracking System," accessed August 20, 2015, https://ribits.usace.army.mil/ribits_apex/f?p=107:2:14065449410960::NO:RP:.
[121] Craig Denisoff, "Business Considerations," chapter 8 of *Conservation & Biodiversity Banking: A Guide to Setting Up and Running Biodiversity Credit Trading Systems*, (London: earthscan, 2009), 109.
[122] Ibid.
[123] Ibid.

individual offsets.[124] And, developers do not need to deal with uncertainty around offset credits, because the credits are already established in the bank before development begins, further reducing mitigation cost and the uncertainty of success.[125] In the United States, developers have demonstrated an affinity for conservation offset banks, because they allow the transfer of liability to a third party, who is specialized in achieving conservation outcomes.[126]

Wayne White, an independent contractor for conservation bankers in the United States, is an advocate for conservation banking. White states that "the benefits of conservation banking clearly outweigh the current alternatives."[127] White goes on to explain that banking offers "a collection of mitigation obligations that provides a well thought out, larger preserve with greater ecological value."[128]

Although White's rationale sounds reasonable from an environmental standpoint, other concepts of additionality and the assignment of baselines, similar to design elements of individual offsets, need to be clearly specified to prevent a net loss in biological diversity. Because conservation banks are typically large acquisitions of land, the bank in its entirety may not be under imminent threat of development. As such, the bank may not be considered a true compensation for the loss of habitat elsewhere.[129]

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[124] Ibid.
[125] Ibid.
[126] Kerry ten Kate, Josh Bishop and Riacrdo Bayon, *Biodiversity offsets: Views, experience, and the business case*, (Switzerland and Cambridge: IUCN and London: Insight Investment, 2004), 44.
Craig Denisoff, "Business Considerations," chapter 8 of *Conservation & Biodiversity Banking: A Guide to Setting Up and Running Biodiversity Credit Trading Systems*, (London: Earthscan, 2009), 109.
[127] Wayne White, "The Advantages and Opportunities," chapter 3 of *Conservation & Biodiversity Banking: A Guide to Setting Up and Running Biodiversity Credit Trading Systems*, (London: Earthscan, 2009), 33.
[128] Ibid, 34.
[129] Ibid, 43-44.

ANALYSIS

As the above framework overview describes, the province has chosen to expand its use of offsets as a policy tool to manage residual environmental impacts from development. I provide the following constructive improvements for the provincial framework in hopes that future drafts will more readily support market delivery of conservation offsets.

Potential Market Conflicts

Within Alberta's Conservation Offset Framework, there are a few potentially conflicting design and contextual elements that should be reconsidered and modified to fully support the market delivery mechanisms described above.

In-Lieu Fees

The framework presents in-lieu fees as an option to compensate for impact. Like offsets, in-lieu fees are a type of market-based instrument that has sometimes been included within conservation offset policies. Although in-lieu fees do not offer the same one-to-one compensation between specific project impact and specific offset measure, they attempt to offer compensation comparable in scale to a development's impact.[130] In-lieu fees are collected from the developer by the regulator, and the funds can be used for similar conservation purposes as offsets or towards indirect conservation efforts, such as education.[131]

In-lieu fees are a matter of contention within the realm of conservation offset policies. They offer both strengths in terms of economic savings and weaknesses in terms of conservation effectiveness. These concerns are described by Poulton:

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[130] David W. Poulton, *Biodiversity Offsets: A Primer for Canada* (Sustainable Prosperity and the Institute of the Environment, February 2014), 29, accessed August 20, 2015, http://www.sustainableprosperity.ca/sites/default/files/publications/files/Biodiversity%20Offsets%20in%20Canada.pdf.

[131] Government of Alberta, *A Framework for Alberta Conservation Offsets: Draft*, n.p. (Edmonton: Alberta Environment and Parks, 2015), 5; David W. Poulton, *Biodiversity Offsets: A Primer for Canada* (Sustainable Prosperity and the Institute of the Environment, February 2014), 29, accessed August 20, 2015, http://www.sustainableprosperity.ca/sites/default/files/publications/files/Biodiversity%20Offsets%20in%20Canada.pdf.

> Often in-lieu fees programs are seen as having lower transaction and administration costs than strict offsets…[t]hese lower costs, however, are often based upon a lowering of standards of assessment of development impacts, and a lack of rigour in matching losses and gains in quality and extent. The higher the standards that are applied to these matters, the more closely the system will resemble true offsets, and the less likely the cost savings of the in-lieu fee program.[132]

By allowing the option of in-lieu fees, a conflict can arise with conservation offset producers in competition for the same market demand.[133] Because the regulations around in-lieu fees are typically less strict than direct offsets, in-lieu fees tend to outcompete more expensive offset options.[134] As a result, the success of offset banks may be compromised; some producers may leave the market and other potential producers may chose not to enter.[135] For in-lieu fees, it is important to reinforce a payment that fits the damage.

Another potential conflict with private market delivery of offsets is government run or supported land conservation plans, funded by in-lieu fees.[136] These regional conservation plans can reduce the participation of private suppliers.[137] Cost-controlling tendencies can occur as a result of government oversight along with "discretion over the permitting process" within these in-lieu programs.[138] This creates an unfair competitive advantage over private suppliers, which dissuades participation in the conservation offset market as well as reduces the private incentive to protect land.[139]

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[132] David W. Poulton, *Biodiversity Offsets: A Primer for Canada* (Sustainable Prosperity and the Institute of the Environment, February 2014), 29, accessed August 20, 2015, http://www.sustainableprosperity.ca/sites/default/files/publications/files/Biodiversity%20Offsets%20in%20Canada.pdf.
[133] Deborah L. Mead, "History and Theory: The Origin and Evolution of Conservation Banking," chapter 2 of *Conservation & Biodiversity Banking: A Guide to Setting Up and Running Biodiversity Credit Trading Systems*, (London: earthscan, 2009), 23.
[134] Deborah Fleischer and Jessica Fox, "The Pitfalls and Challenges," chapter 4 of Conservation & Biodiversity Banking: A Guide to Setting Up and Running Biodiversity Credit Trading Systems, (London: earthscan, 2009), 46.
[135] Ibid.
[136] Craig Denisoff, "Business Considerations," chapter 8 of *Conservation & Biodiversity Banking: A Guide to Setting Up and Running Biodiversity Credit Trading Systems*, (London: earthscan, 2009), 117.
[137] Ibid.
[138] Ibid.
[139] Ibid.

Stacking

The framework is in favour of stacking conservation offset credits. Although this design principle can promote offset markets, because more credits are offered as incentive for producers with no extra conservation effort, without a provincial commitment to no net-loss, the province may end up with an ineffective conservation policy with respect to conservation outcomes. This can happen when credit sales diverge and exceed conservation efforts.[140] Or in other words, when a policy allows double-dipping, or stacking, but that does not account for the true extent of a project's impact.[141]

Alternately, capturing the true range of offset attributes also leads to challenges, which could reduce participation in the market due to increased costs.[142] Salzman and Ruhl suggest that an in-depth approach to capturing ecological value may be worthwhile as "complementary currencies are needed to reasonably account for different components of biodiversity."[143] This discussion refers to the framework's design characteristic of equivalency. To provide adequate conservation outcomes while allowing for stacking, the framework must either ensure that the design characteristic of equivalency is strictly enforced and/or that a conservation objective of no net-loss is adopted.

Uncertainty

Although the framework introduces an offset exchange registry and accepts offset banks as a method of offset delivery, the framework makes no commitments and gives very little focus to these market mechanisms. A market exchange system is only "anticipated" by the framework,

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[140] Jessica Fox, "Getting Two for One: Opportunities and Challenges in Credit Stacking," chapter 11 of *Conservation & Biodiversity Banking: A Guide to Setting Up and Running Biodiversity Credit Trading Systems*, (London: earthscan, 2009), 180.
[141] Susan Hill, "Regulatory Considerations," chapter 7 of *Conservation & Biodiversity Banking: A Guide to Setting Up and Running Biodiversity Credit Trading Systems*, (London: earthscan, 2009), 98; David W. Poulton, Stacking of Multiple Environmental Credits: An Alberta Discussion Paper, (August 28, 2014), 13-14, http://dx.doi.org/10.2139/ssrn.2560656.
[142] Alberta Boreal Conservation Offsets Advisory Group, *Regulated Conservation Offsets with Banking: A Conceptual Business Model and Policy Framework* (2009), 15-16.
[143] J, Salzman and J. B. Ruhl, "Currencies and the commodification of environmental law," *Stanford Law Review* 53 (2000) 1260.

and the decision to require offset banks has been passed off to specific offset policies, rather than being established in the framework for all programs.

The lack of certainty in the framework about the conservation offset exchange and bank mechanisms can hinder the establishment and development of a competitive market for conservation offsets. Suppliers of conservation offsets can be limited by this uncertainty. Because the hurdle costs of entering a conservation offset market are substantial, suppliers need confirmation that the demand for conservation offsets will be there and will be long-term.[144]

Ambiguity can stem from vaguely written legislation and policy.[145] For example, in the United States, the Clean Water Act received criticism for being ambiguous in intent, with definitions that are up for interpretation.[146] In turn, judicial rulings around such matters have destabilized the demand for conservation offsets, affecting the confidence of potential suppliers.[147]

Although Alberta's framework should remain flexible for the tailoring of specific offset policies, to allow for the full development of these market mechanisms, the province is advised to emphasize market mechanisms within the framework and take a leadership role in committing to a fully functioning registry exchange complete with offset banks.

Objectives

Alberta's Draft Conservation Offset Framework proposes important offset program design elements and offset characteristics to promote effectiveness and creditability. However, it is unclear as to how much specific offset programs will need to adhere to these framework parameters. The framework uses mandatory language for offset design elements; however, the

[144] Leonard Shabman and Paul Scodari, *Past, Present, and Future of Wetland Credit Sales*, Discussion Paper 04-48 (Washington DC: Resources for the Future, December 2004).
[145] Ibid, 12.
[146] Ibid.
[147] Ibid.

framework does not use mandatory language with respect to common elements for offset programs. As it is currently written, the framework appears to remain flexible around the design of specific offset programs and stricter around offset requirements.

Interestingly, policy objectives for conservation offsets are not defined in the framework. The framework offers a general direction of achieving environmental outcomes while allowing for development to continue in the province. However, the framework does not provide an end objective for environmental outcomes that offsets are expected to achieve.

Typically, conservation offset policies strive for an end goal of net gain or at least no net loss in biological diversity on the landscape.[148] However, Alberta has decided not to implement a "no net-loss" policy for the province.[149] This lack of a final objective for all offset policies under the framework will likely result in a reliance on specific offset programs to provide environmental objectives, or a reliance on individual offset design elements, such as equivalency, to achieve environmental outcomes.

Proposed Improvements

The following proposed improvements begin with general suggestions followed by more specific changes for the draft framework.

To begin, Alberta should demonstrate more focus and commitment to market delivery mechanisms within the framework. The majority of the framework is dedicated to design principles. The sections on market delivery mechanisms are short and lack mandatory language. Conservation offset markets as a delivery mechanism deserves a more equal representation, and

[148]Business and Biodiversity Offset Programme, *To No Net Loss and Beyond: an Overview of the Business and Biodiversity Offsets Programme* (Washington: Forest Trends, 2013), accessed August 20, 2015, http://www.forest-trends.org/publication_details.php?publicationID=3319.
[149]Anish Neupane, "Wetland Policy Implementation," (lecture, Leduc, AB, November 24, 2014).

the province is advised to make a commitment to market systems through mandatory language in the framework.

Alberta should commit to the development of an exchange system for all offset programs. The province should follow previous direction from Weber and commit to a due date of completion for the exchange system by the year 2021.[150] This level of commitment should be clearly articulated in the framework with a defined due date.

The province should also commit to enabling offset banks for all offset programs. These offset banks will help manage time-lag between impacts and offsets, and if implemented correctly can provide more ecological benefits than individual on-site offsets.[151] The province needs to create certainty around conservation offset markets. To support market delivery, Alberta should show a commitment in the framework to the exchange and bank systems for all current and future offset programs.

As a subsequent improvement to the banking systems, the framework should require that offset banks be developed on areas of deferred development only to promote an ecological outcome of no net-loss. As discussed in the "banks" section above, banks typically do not achieve no net-loss of biological diversity because they are usually on acquired land that is not under threat of development. This proposed rule for banks would address this issue.

Another consideration for the province, beyond focus and commitment, is the need to mitigate conflicting framework principles. To deliver conservation offsets in a competitive market, all of the framework's design elements and principles must work together to achieve the effectiveness of this delivery mechanism.

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[150] Marian Weber, *Experimental Economic Evaluation of Offset Design Options for Alberta: A Summary of Results and Policy Recommendations* (Edmonton: Alberta Innovates Technology Futures, November, 2011).
[151] Wayne White, "The Advantages and Opportunities," chapter 3 of *Conservation & Biodiversity Banking: A Guide to Setting Up and Running Biodiversity Credit Trading Systems*, (London: earthscan, 2009), 39.

In order to address the potential competition conflict between in-lieu fees and private market delivery, the province should establish the same parameters around in-lieu fees and offsets to provide for an even economic playing field. If in-lieu fees is an option the province wants to keep under the framework, equal parameters for offsets and in-lieu should be explained in the framework to ensure equality to private market proponents.

With regards to stacking, the province is advised to either not allow stacking as an offset principle, or if stacking is still desired, to outline and enforce rigorous criteria around offset equivalency. The province should be aware of the increased time and money involved with ensuring like-for-like replacement under the stacking principle, for both impact and offset. This cost should not be passed to producers, who are already facing substantial hurdle costs.

As previously discussed, another potential deterrent to private market delivery for offsets is government run or influenced in-lieu fee regional conservation plans. According to Alberta's framework, conservation offset programs will be subject to regional planning processes within an Integrated Resource Management System. Alberta needs to be aware of the potential nullifying effects regional plans can have on offset markets, and as such, the province and municipalities may want to reduce oversight as much as possible with regards to how these in-lieu fee plans obtain their objectives. In support of market delivery, private parties should be left to run these programs. Although this is not a specific improvement for the framework itself, detail can be added to the management component of the framework to divide the roles for government and private entities.

The framework would also benefit from defining what type of development is subject to offset programs. It seems the framework is currently targeting larger industrial development, such as oil sands mining in requirement of regulatory approval. However, the framework should

address the targeted developers more clearly. As the framework is for the entire province, and other types of development and land-uses can have substantial impacts on the landscape, such as agricultural and residential development, it may be worthwhile including all development types with significant, residual impacts under the framework. Inclusivity of development type within the framework will help achieve ecological objectives.[152]

Finally, the province should commit to an ecological objective for the framework. The goal is apparent, to manage for provincial resources while allowing for development, however; the framework does not specify an objective. Alberta is advised to adopt an end resource objective of no net-loss and the province should add this objective to the framework's policy statement.

Other Considerations

It is important to consider the confines of Alberta's Draft Conservation Framework within the province's legal and political environments. It is worthwhile drawing attention to these environments as they will influence the framework's ability to deliver creditable conservation offsets.

Legislation

Regulation, both in terms of enforcement and written legislation, is critical in driving mitigation demand.[153] The very construct of a conservation offset market would not appear without a regulatory initiative, as legislation creates the need for proponents to deliver offsets in the first place.[154]

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[152] Alberta Boreal Conservation Offsets Advisory Group, *Regulated Conservation Offsets with Banking: A Conceptual Business Model and Policy Framework* (2009), 22.
[153] Ibid, 114; Natasha Landell-Mills and Ina T. Porras, *Silver bullet or fools' gold? A global review of markets for forest environmental services and their impact on the poor* (London: IIED, 2002), ix.
[154] Royal C. Gardner, "Legal Considerations," chapter 6 of *Conservation & Biodiversity Banking: A Guide to Setting Up and Running Biodiversity Credit Trading Systems* (London: earthscan, 2009), 70.

To be fair, conservation offset market systems can be created without legislation through the use of guidance documents. However, the reliance on guidance documents without specific statutory context results in an element of risk for suppliers and thus the very development of a functioning offset market.[155] Creating and supplying conservation offset credits is an expensive and timely endeavour for both suppliers and regulators.[156] By having a stable policy environment with more rigid statutory backing, suppliers are more likely to enter the market because risk of the policy changing course is much lower.[157]

Under section 47 of ALSA, the Lieutenant Governor in council is empowered to "make regulations to counterbalance the effect of an activity."[158] This enabling provision does not offer the certainty of demand required for the establishment of an effective offset market to take hold. In other words, conservation offsets cannot be considered a true market-based instrument without this regulatory backing.[159] The province is advised to improve current enabling legislation for conservation offsets, such as the Alberta Lands Stewardship Act, to contain mandatory provisions for conservation offsets.

Role for Government

The role of government in the development of this conservation offset market system can be as involved or as hands-off as deemed necessary to achieve environmental goals in the most efficient and effective manner. For example, the Alberta Boreal Conservation Offsets Advisory Group believes that a new market regime "would require little on-going government

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[155] Ibid, 73.
[156] Natasha Landell-Mills and Ina T. Porras, *Silver bullet or fools' gold? A global review of markets for forest environmental services and their impact on the poor* (London: IIED, 2002), ix.
[157] David W. Poulton, *Biodiversity Offsets: A Primer for Canada* (Sustainable Prosperity and the Institute of the Environment, February 2014), 28, accessed August 20, 2015, http://www.sustainableprosperity.ca/sites/default/files/publications/files/Biodiversity%20Offsets%20in%20Canada.pdf; Dave W. Poulton, "Conservation Offset Policy for Alberta: A Comparative Legal Analysis" (Master's Thesis, University of Calgary, 2014), 139.
[158] Alberta Land Stewardship Act, SA 2009, c A-26.8, <http://canlii.ca/t/5259q> retrieved on 2015-08-17.
[159] Ryan Hackett, "Market-based environmental governance and public resources in Alberta, Canada" *Ecosystem Services*, 3, 2015, http://dx.doi.org/10.1016/j.ecoser.2015.01.003i.

supervision."[160] To achieve minimal government involvement, the advisory group proposes an arms-length agency to develop the offset design through best scientific data.[161] The scope of government's role depends on whether the province wants to relinquish control over conservation offset delivery.

The province may in fact have a difficult time embracing a hands-off market-based approach to conservation offset delivery. Ryan Hackett recently published an article in the *Journal of Environmental Services* that addresses Alberta's challenge in committing to terrestrial conservation-offset markets as a means of balancing conservation with development. Hackett explains that the province's tentativeness around embracing market-mechanisms stems from preserving the provincial interest in royalty shares. At a level of voluntary offsetting or "industry-NGO corporate social responsibility,"[162] conservation offsets do not threaten oil and gas production and revenues. However, the effectiveness of a fully functioning market system would impact oil and gas revenues and result in reduced royalties for the province.[163] Although Hackett makes a valid point, the province must respond swiftly and effectively to international concerns about the environmental impacts of oil and gas development and take comfort that conservation offset markets can reduce compliance costs for industry, monitoring and oversight costs for government, and provide new spin-off markets in restoration practices and offset accreditation.

[160] Alberta Boreal Conservation Offsets Advisory Group, *Regulated Conservation Offsets with Banking: A Conceptual Business Model and Policy Framework* (2009), 16.
[161] Ibid.
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