

Biodiversity Offsets 101

Case Studies and Best Practices for Alberta

Presentation by

Dave Poulton, Alberta Land Institute

Panel discussion featuring

Shaun Fluker, University of Calgary, Faculty of Law

Eran Kaplinsky, University of Alberta

Moderated by

Guy Greenaway, Miistakis Institute

A co-presentation of



UNIVERSITY OF ALBERTA
Alberta Land Institute

www.albertalandinstitute.ca



**Miistakis
Institute**

www.rockies.ca

Biodiversity Offsetting 101

Dave Poulton
Director, Alberta Land Institute
ALI/Miistakis Webinar
May 22, 2020



Outline

- The biodiversity crisis
- Biodiversity offsetting: the concept
- Biodiversity offsetting in Canadian law and policy
- Offsetting in Alberta
- Does offsetting work?



A Crisis in Biodiversity

- “Nature, and its vital contributions to people, which together embody biodiversity and ecosystem functions and services, are deteriorating worldwide.”
- 75% of Earth’s land surface altered
- 85% of wetlands lost
- 32 million acres of primary and recovered forest lost
- 1 million species facing extinction
- 40% increase in records of invasive species since 1980.

Source: Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), Summary for Policymakers, 2019.



Biodiversity Offsets

*“[M]easurable conservation **outcomes** resulting from actions designed to compensate for significant residual adverse biodiversity impacts arising from project development after appropriate prevention and mitigation measures have been taken.”*

Business and Biodiversity
Offset Programme, 2009

- AKA “Conservation Offsets”, “Habitat Compensation”, “Compensatory Mitigation”, “Conservation Allowance”
- **Goal of offsetting: No net loss (NNL) or net positive impact (NPI) to biodiversity**



Biodiversity Offsets

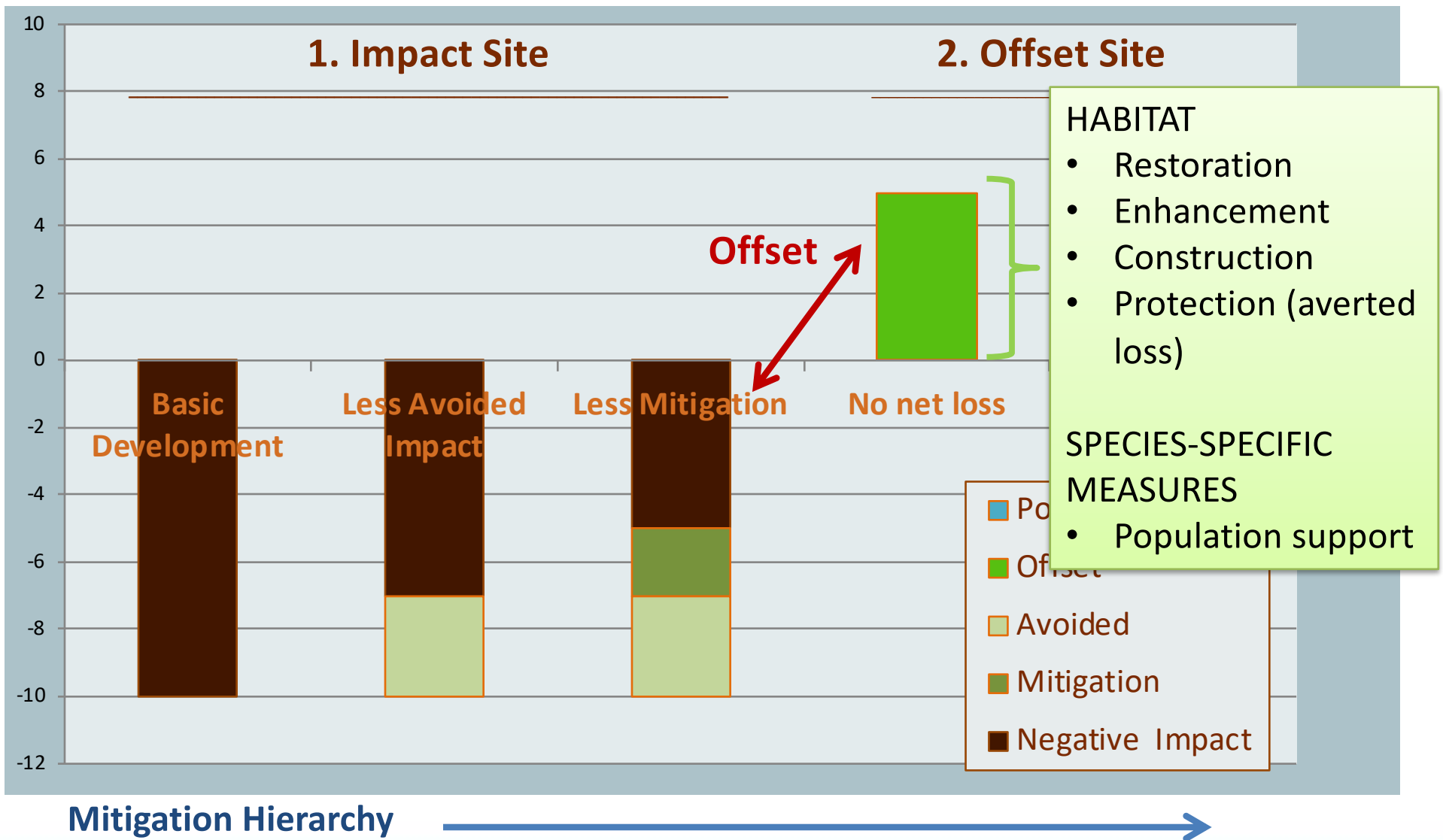




Photo: USFWS

<http://www.cosia.ca/caribou-habitat-restoration>

Photo: Darwin Initiative/Creative Commons



UNIVERSITY OF ALBERTA
Alberta Land Institute

albertalandinstitute.ca
albertalandinstitute@ualberta.ca



Photo: USFWS

<http://www.cosia.ca/caribou-habitat-restoration>



Photo: Darwin Initiative/Creative Commons





Photo:

<http://www.cosia.ca/caribou-habitat-restoration>

Commons



UNIVERSITY OF ALBERTA
Alberta Land Institute

albertalandinstitute.ca
albertalandinstitute@ualberta.ca

Offset Delivery Mechanisms

- **Project-Specific** (“Bespoke” “Permittee-Responsible”)
 - Development proponent responsible for delivery of offsets tailored to development impacts.
- **Banking**
 - A “bank” of offset projects undertaken in advance of development, with credits to be applied as development projects brought forward.
- **In-Lieu Fees**
 - Proponent pays into fund, which is used for later offset projects.



Biodiversity Offsets

Common Issues

- Limits to offsetting – non-offsetability
- Equivalency, fungibility and currency
- Additionality
- Timing and duration
- Uncertainty and risk management
- Social impacts
- Oversight



International Context

- 99 offset programs worldwide (Bennett et al, 2017)
 - >50% national; ~1/3 state/provincial
- Research into offsets supported by parties to UN Convention on Biological Diversity
- IUCN: Policy adopted Sept 2016
- International Financial Corporation (World Bank) Performance Standard 6
 - No net loss in natural habitat
 - Net gain in critical habitat
- Equator Principles

Federal Policy

- Fish habitat (s 35(2) of *Fisheries Act*)
 - Both freshwater and marine
- Federal wetlands policy
 - No net loss policy
- Species at Risk Act
 - Permitting policy (s. 73) under development
- *Operational Framework for Use of Conservation Allowances (2012)*



Biodiversity Offsets

- **Canadian Environmental Assessment Act (2012)**

Section 2:

“*mitigation measures* means measures for the elimination, reduction or control of the adverse environmental effects of a designated project, and **includes restitution for any damage to the environment caused by those effects through replacement, restoration, compensation or any other means.**”

- **Bill C-69 – Impact Assessment Act (2019)**

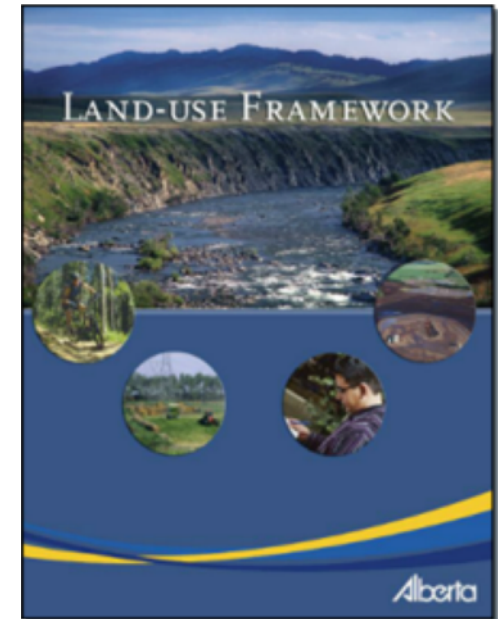
Section 2:

“*mitigation measures* means measures to eliminate, reduce, control **or offset** the adverse effects of a project or designated project, and **includes restitution for any damage caused by those effects through replacement, restoration, compensation or any other means.**”



Conservation Offsets: State of Alberta Policy

- ***Alberta Land Stewardship Act***
 - s 45-47 provide for exchange to be established dealing in “stewardship units” to “counterbalance” adverse effects of activity on the land
- References:
 - *Alberta Land-Use Framework*
 - *Responsible Action (Alberta Oilsands Strategy)*
 - *A Woodland Caribou Policy for Alberta*
 - *Lower Athabasca Regional Plan*
 - *South Saskatchewan Regional Plan*
- Pilot program carried out in SE Alberta
- ***Alberta Wetland Policy (2013)***
- Conservation offset framework accepted within GOA



Other Provincial Policies

British Columbia

- *Environmental Mitigation Policy* (2014) – voluntary and regulatory guidance

Saskatchewan

- Policy under development

Manitoba

- Wetland compensation program for infrastructure

Ontario

- *Endangered Species Act*
- Wetland policy under development

Quebec

- Wetland compensation legislation (2012, 2017)

New Brunswick

- *Wetland Policy*

Prince Edward Island

- *Wetland Conservation Policy*

Nova Scotia

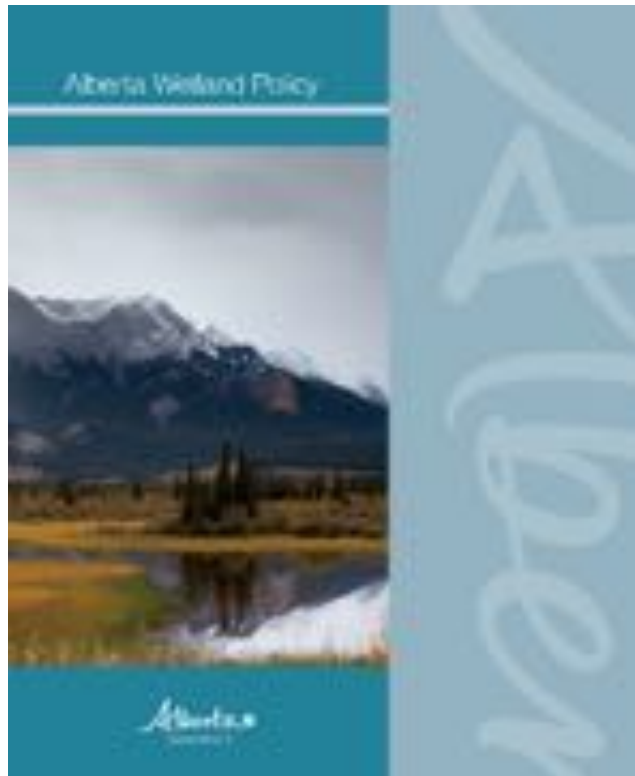
- *Wetland Policy*

Biodiversity Offsets

Regulatory Conditions

- NEB 2010 – 2012: 3 decisions on NGTL pipeline proposals in Horne River area: caribou habitat offsets
- JRP 2011: Total Joslyn oilsands mine: offsets for species at risk
- JRP 2013: Shell Jackpine oilsands mine: wide range of offsets recommendations
- NEB 2013: Enbridge Northern Gateway pipeline conditions: 10 conditions for 4 different types of offsets (wetlands, freshwater fish habitat, marine habitat, caribou habitat).
- NEB 2016: Kinder Morgan Trans Mountain Expansion: caribou habitat, spotted owl, rare plant communities, grasslands, old growth management areas, wetlands, riparian
- NEB 2016: NGTL pipeline project on Alberta eastern slopes: caribou habitat offsets
- CER 2018: NGTL pipeline project on Alberta eastern slopes: recommended development of offset framework for caribou habitat
- **AER 2018: TransCanada Pipelines White Spruce Pipeline (Fort MacKay): caribou habitat**





Alberta Wetland Policy (2013)

Goal: “to minimize the loss and degradation of wetlands, while allowing for continued growth and economic development”

Developer may:

- Reduce own impact (avoid & minimize)

OR

- “Restorative replacement”: restoration, enhancement or construction of another wetland
- Pay a per hectare fee to GOA Wetland Replacement Program



Photo: Brian Gratwicke/Creative Commons



Alberta Wetland Policy

Relative Wetland Value assessed on four criteria:

- Contribution to water quality
- Hydrology
- Biodiversity
- Human Use + Regional scarcity.

		The Wetland Replacement Matrix			
		Value of Replacement Wetland			
		D	C	B	A
Value of Lost Wetland	A	8:1	4:1	2:1	1:1
	B	4:1	2:1	1:1	0.5:1
	C	2:1	1:1	0.5:1	0.25:1
	D	1:1	0.5:1	0.25:1	0.125:1

*Ratios are expressed as hectares of wetland



Alberta Land Stewardship Act

- S. 23 authorizes research and development of market-based instruments for land stewardship
- S. 45 – 47 enable regulations for
 - Creation of “an exchange”
 - Prescription of “stewardship units”
 - Requiring the counterbalancing the effects of an activity, including through use of stewardship units.
- **No regulations to date, but work underway**



Does Offsetting Work?

zu Ermgassen et al (2019), “The Ecological Outcomes of Biodiversity Offsets under ‘No Net Loss’ Policies: A Global Review” Conservation Letters

- Reviewed 32 studies of offsetting under NNL policies in 5 countries,
 - Totalling at least 300,000 hectares in offset projects
- Landscape scale: 1 of 4 studies reported NNL achieved
- Program scale: 7 of 12
- Project level: 17 of 48
- Most successful: wetlands; least successful: forest ecosystems
- Problem with lack of ecological data or opaqueness of data

<https://conbio.onlinelibrary.wiley.com/doi/epdf/10.1111/conl.12664>



Biodiversity
Offsets

WESTERN CANADA
FORUM ON

**POSTPONED:
Stay Tuned!**

TO BE DETERMINED AT A LATER DATE

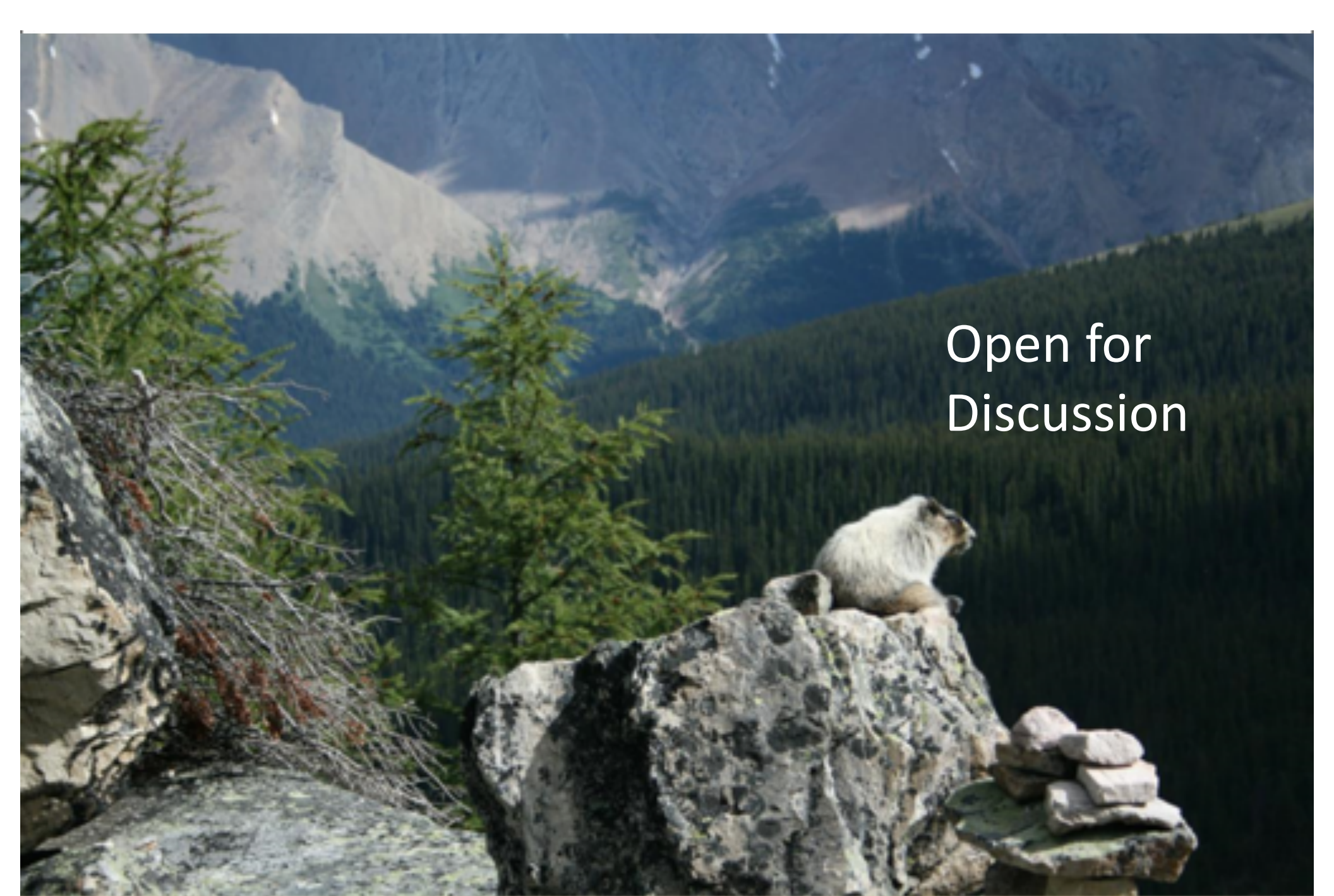


LANDUSE 2020

PRESENTED BY ALBERTA LAND INSTITUTE AND
OUR PREMIER PARTNER ALBERTA INNOVATES

AlbertaLandInstitute.ca/LandUse



A mountain goat is perched on a large, grey rock in the foreground. The background features a vast mountain range with steep, rocky slopes and dense evergreen forests. The sky is clear and blue. The text "Open for Discussion" is overlaid on the right side of the image.

Open for Discussion



Biodiversity Offsets 101

Case Studies and Best Practices for Alberta

CONTACT INFORMATION

Dave Poulton - dpoulton@ualberta.ca

Shaun Fluker - sfluker@ucalgary.ca

Eran Kaplinsky - eran.kaplinsky@ualberta.ca

Guy Greenaway - guy@rockies.ca



LAND USE 2020 CONFERENCE

www.landuse2020.ca

SLIDES & RECORDING



UNIVERSITY OF ALBERTA
Alberta Land Institute

www.albertalandinstitute.ca



Miistakis
Institute

www.rockies.ca/webinars.php

Biodiversity Offsets 101

Case Studies and Best Practices for Alberta

SELECTED RESOURCES

Ian Dickie et al., *The Use Of Market-Based Instruments for Biodiversity Protection: The Case of Habitat Banking* (2010)

https://ec.europa.eu/environment/enveco/pdf/eftec_habitat_technical_report.pdf

Kaitlyn MacEachern, *Market-based Instruments within the Green Economy* (2013)

https://conservationontario.ca/fileadmin/pdf/policy-priorities_section/GreenEconomy_Literature_Review.pdf

Alex Kenny et al., *Advancing the Economics of Ecosystems and Biodiversity in Canada: A Survey of Economic Instruments for the Conservation & Protection of Biodiversity* (2011)

<https://institute.smartprosperity.ca/sites/default/files/publications/files/Advancing%20the%20Economics%20of%20Ecosystems%20and%20Biodiversity%20in%20Canada.pdf>

Koen Rademaekers et al., *The role of market-based instruments in achieving a resource efficient economy* (2011)

https://ec.europa.eu/environment/enveco/mbi/pdf/studies/role_marketbased.pdf

Biodiversity Offsets 101

Case Studies and Best Practices for Alberta

SELECTED RESOURCES (cont.)

Stuart Whitten et al., *An Overview of Market-Based Instruments and Environmental Policy in Australia* (2003)
<http://sustainableprosperity.ca/sites/default/files/publications/files/SAM.pdf>

Stephanie Cairns et al, *Sustainability Alignment Manual: Using Market-Based Instruments to Accelerate Sustainability Progress at the Local Level* (2015)
<http://sustainableprosperity.ca/sites/default/files/publications/files/SAM.pdf>

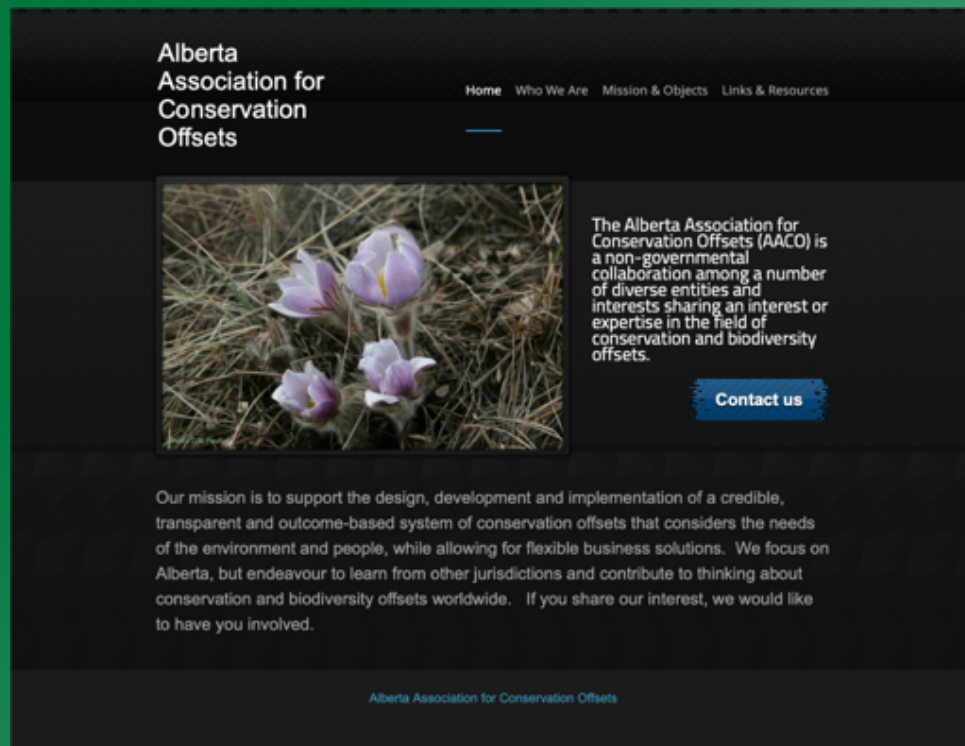
Jay Anderson et al, *Ecosystem Service Valuation, Market-Based Instruments, and Sustainable Forest Management: A Primer* (2010)
<https://accre.ualberta.ca/wp-content/uploads/sites/83/2018/09/Ecosystem-Service-Valuation-Market-Based-Instruments.pdf>

Biodiversity Offsets 101

Case Studies and Best Practices for Alberta

ALBERTA
ASSOCIATION OF
CONSERVATION
OFFSETS

www.aaco.ca



The screenshot displays the website for the Alberta Association for Conservation Offsets (AACO). The header features the organization's name and a navigation menu with links for Home, Who We Are, Mission & Objects, and Links & Resources. A central image shows several purple flowers in a field of dry grass. To the right of the image is a text block describing AACO as a non-governmental collaboration of diverse entities interested in conservation and biodiversity offsets, with a blue 'Contact us' button below it. A paragraph of text below the image details the organization's mission to support a credible, transparent, and outcome-based system of conservation offsets. The footer contains the text 'Alberta Association for Conservation Offsets'.

Alberta Association for Conservation Offsets

Home Who We Are Mission & Objects Links & Resources

The Alberta Association for Conservation Offsets (AACO) is a non-governmental collaboration among a number of diverse entities and interests sharing an interest or expertise in the field of conservation and biodiversity offsets.

Contact us

Our mission is to support the design, development and implementation of a credible, transparent and outcome-based system of conservation offsets that considers the needs of the environment and people, while allowing for flexible business solutions. We focus on Alberta, but endeavour to learn from other jurisdictions and contribute to thinking about conservation and biodiversity offsets worldwide. If you share our interest, we would like to have you involved.

Alberta Association for Conservation Offsets