

Biodiversity Offsets

The development of western Canada's natural resources has brought enormous economic growth. This economic gain, however, comes with a cost to the land. Regardless of best intentions and best practices, development of land can have negative consequences on the diverse makeup of vegetation and wildlife that utilize the land and the areas surrounding it. Stewardship of the land can help to mitigate these negative consequences and help to sustain the natural capital that is vital to our long-term economic, social, and cultural growth.

Both government and industry have multiple tools at their disposal to ensure stewardship of the land is practiced. One such tool is the use of environmental compensation, and more specifically, the use of biodiversity offsets and banks.

As defined by the World Conservation Union (IUCN), biodiversity offsets are the "conservation activities designed to compensate for the residual, unavoidable harm to biodiversity caused by development projects" (IUCN 2004). Biodiversity offsets can be a useful tool in addition to traditional mitigation measures such as environmental management systems, soil conservation schemes, and plans to minimize the impact of operations on sensitive wildlife species. Biodiversity offsets are *not* substitutes for onsite environmental management and should not be used to justify development projects that are not in the best interests of the public.

Biodiversity offsets are similar to, but not the same as, carbon offsets. Like biodiversity offsets, carbon offsets act to reduce the overall harm to the environment

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through an equal compensating action. For example, if Factory A emits 100 tonnes of carbon, they could offset this by purchasing 100 tonnes of carbon sequestered by Company B. However, biodiversity offsets are less tangible than carbon offsets, making them more complex to utilize and more difficult to understand. While carbon can be traded tonne for tonne across multiple jurisdictions, the same is not true for biodiversity. There are inherent difficulties in measuring and valuing biodiversity, and trade between jurisdictions lacks ecological meaning. For instance, the trading of one tonne of carbon between companies in Alberta and in British Columbia is straightforward, as it represents one less tonne of carbon emitted into the atmosphere. However, the outcome of trading a wetland in Alberta for one in British Columbia is not as clear because the particular ecology of each wetland may differ substantially and may not be equivalent in terms of offsetting the negative effects of development.

Biodiversity offsets and conservation offsets have been contemplated and utilized in multiple nations. Each project that is considering using biodiversity offsets, or is required to do so by law, needs to consider the best and most effective programs for their conservation efforts. There are several forms of offsets noted by the IUCN, the Business and Biodiversity Offset Program (BBOP), and the Conservation Commission of Western Australia:

- establishing and protecting corridors;
- improving current protected areas by creating buffer zones;
- creating new wetlands to compensate for destroyed wetland area;
- purchasing of “credits” from an approved conservation bank; and
- rehabilitating previously disturbed sites (e.g., old mining sites).

International Examples

In September 2007, the state government of New South Wales, Australia, implemented a two-year test project for its biodiversity banking and offsets scheme. If the test period proves successful in achieving “no net loss” of biodiversity, the scheme will be fully implemented in September of 2009.

Prior to the development of the scheme, the New South Wales government had provisions for the use of biodiversity offsets as a component of the *Threatened Species Conservation Act 2006* and of the *Native Vegetation Act 2003*. These acts allowed developers the option of utilizing offsets. However, each development was considered on a case-by-case basis, without clear and coherent policy with regard to how biodiversity offsets would be conducted and planned. This led to confusion among developers and decision-makers as well as uncertainty about the efficacy of the biodiversity offsets.

The current scheme allows for a system of trading “biodiversity credits” through the establishment of “BioBank” sites. Agreements between landowners and the government create BioBanks and reward conservation actions on private land with corresponding credits according to the methodology established by the Department of Environment and Climate Change. Developers can purchase these credits either from private landowners, through brokers, or by creating their own BioBank sites to generate offset credits.

This test project is something to watch. If monitoring efforts are substantial and effective, this project could help decision-makers in western Canada determine if biodiversity offsets and banking could be a helpful tool in environmental management here.



This document was prepared by Canada West Foundation Intern Erin Mullinger and is part of the Canada West Foundation’s *Land Stewardship Initiative*—a two-year research and communications endeavour focused on the role of public policy in facilitating land stewardship in western Canada. Land stewardship is the practice of responsible land use to ensure that natural capital is maintained or enhanced for future generations.

Funding for the *Land Stewardship Initiative* has been provided by the Agriculture and Food Council of Alberta and the Investment Agriculture Foundation of British Columbia under Agriculture and Agri-Food Canada’s Advancing Canadian Agriculture and Agri-Food (ACAAF) program, Alberta-Pacific Forest Industries Inc., Alberta Sustainable Resource Development, AltaLink, the Arthur J.E. Child Foundation, Ducks Unlimited Canada, EnCana Corporation, Shell Canada Limited, Suncor Energy Foundation, and Westcorp Inc. The Canada West Foundation expresses its sincere appreciation for this generous support.

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Another example of biodiversity offsets being utilized is the Inland Sea Shorebird Reserve in Utah, USA. This project was highlighted by the IUCN and Insight Investment in a 2004 report entitled *Biodiversity Offsets: Views, Experience and the Business Case*.

The Inland Sea Shorebird Reserve is located near Rio Tinto's Kennecott Utah Copper mine. When the mine expanded their tailings storage into an area near a designated wetland habitat, the company was required by law to offset damages to the ecosystem. Kennecott Copper Corporation entered negotiations with a technical advisory team, comprised of a variety of representatives from both state and federal environmental and wildlife agencies as well as NGOs, to produce a wetland mitigation scheme.

The wetland mitigation scheme that was implemented exceeded the minimum requirement of a 1:1 offset ratio set by the technical advisory team. In 1996, a 1,011 hectare shorebird and waterfowl refuge was created to compensate for the 427 hectares damaged. Ongoing monitoring of the area determined that the site had become home to 100 different species and the wildlife value of this area had increased significantly.

Based on monitoring reports and determination that the project was successful, the site was expanded in 1997 to 1,460 hectares of reserve land. This site is part of what has been identified as an Important Bird Area for National Audubon. The IUCN reports that Rio Tinto's Kennecott Utah Copper mine plans to eventually hand over the National Audubon to be held as a bird reserve in perpetuity and as a part of a 14 km shoreline habitat.

These examples are among many others from around the world where there has been some promise and success in the implementation of biodiversity offsets.



This market-based system can offer many benefits to industry, government, and stakeholders. With these benefits come inevitable tradeoffs. Regardless, these offsets are worthy of consideration to add to the "tool-kit" of policy options available to ensure sustainable land use for generations to come.

Benefits

The potential benefits of utilizing biodiversity offsets include:

- More conservation—Biodiversity offsets have the potential to expand the areas already preserved and protected, compensating for the land that has been developed. Legal requirements for creation of these biodiversity offsets aids in making conservation a priority for developers and increases the land base that is conserved.
- Better conservation—Those using offsets can trade, as the IUCN puts it, "small blocs of degraded ecosystems for large chunks of functioning

ecosystems." As well, through offsets such as adding buffer zones around existing protected areas, habitat fragmentation is reduced.

- Cost-effective conservation—It may be more cost-effective for developers to target their conservation dollars toward purchasing credits and preserving functional ecosystems. Offsets allow developers to choose where their money can go the furthest. This does not negate the need for remediation onsite; there is a balance to be achieved in fulfilling remediation regulations and in achieving the best, landscape-wide, ecological outcomes.
- Creating value for undeveloped land—The IUCN notes that many laws designed to protect biodiversity, like those protecting endangered species, have "perverse incentives" that actually undermine biodiversity outcomes. One example the IUCN cites is the *Endangered Species Act* in the US where, if a landowner discovers an endangered species on his or her land, that land is automatically protected and development prohibited. In an attempt to preserve land value and development potential, landowners may then be tempted to kill the endangered animals before they are discovered by others and reported to the government. Through biodiversity offsets, monetary value is created for the land that provides a positive incentive for protecting it and its biodiversity.

Challenges

Some of the major challenges to using biodiversity offsets are:

- Determining ecologically and economically meaningful values for offsets—It can be challenging to place monetary value on ecological components that have no concrete monetary value in the marketplace.
- Temptation to conserve cheap land—There is the potential for companies to be more likely to conserve cheap land over more costly, diverse ecosystems. This temptation can be overcome with adequate legislation, regulation, and enforcement.
- Determining success—Measuring "no net loss of biodiversity" is difficult. Determining equivalencies, values of conservation components and establishing trading systems can all be challenging as biodiversity and conservation are not equivalent in all areas or ecosystems. Additionally, the question of who determines success needs to be addressed in order to make use of biodiversity offsets.
- Location of offsets—Offsets can be located onsite or offsite. One of the questions surrounding the use of biodiversity offsets is whether this matters to overall stewardship. There is some uncertainty whether protecting land that is similar to the land being developed is as ecologically meaningful as creating offsets on the actual site being developed.
- Offsets could be seen as the "easy way out"—There may be a temptation to use offsets in the place of best environmental practices or to develop land beyond its capabilities and then find an offset to make up for this. It is important to have policy clarity that reiterates the need for best practices in *all* areas of the development process—from approval to remediation and restoration.

Resources

World Conservation Union www.iucn.org
 Business and Biodiversity Offset Program www.forest-trends.org/biodiversityoffsetprogram/
 New South Wales Department of Environment and Climate Change www.environment.nsw.gov.au/index.htm