CANADIAN PARKS AND WILDERNESS SOCIETY

May 22, 2008

**Policy Brief**

**Interpreting the principle of net environmental benefit:** Ensuring that forest protocols under Canada's Offset System for Greenhouse Gases take the biodiversity impacts of offset projects into account

## Introduction

The first of five principles underlying the design of Canada's Offset System for Greenhouse Gases is "**Environmental benefits -- Offset Projects achieve greenhouse gas reductions and a net environmental benefit**."[1]

Although this principle may have originally been intended to ensure that greenhouse gas emissions reductions do not result in worsening air quality from increased emissions of other pollutants, it could be more broadly interpreted to apply to other types of environmental impacts and benefits of offset projects, such as impacts on biodiversity and conservation from forest offsets projects.

Forest management activities can have negative or positive impacts on biodiversity (see *Biodiversity impacts of forest activities below*).

The upcoming publication of the Guide for Protocol Developers provides an opportunity to confirm a broad interpretation of the net environmental benefit principle. Ideally this interpretation would be that net environmental benefit in the context of forest offsets means 'net biodiversity benefit.' Alternatively, biodiversity impacts could be included as *one* of the required considerations in determining net environmental benefit.

Either way, there are several policy options for implementing this broader interpretation.

## Policy Recommendation

**Policy Option 1**: The Guide for Protocol Developers could state that biodiversity impacts are included in this principle and require that forest offset protocols (e.g. for forest management, afforestation, or deforestation) assess these impacts. The assessment methodology would the purview of protocol developers. Examples of existing and draft forest offset protocols including a biodiversity assessment are given below. *The benefit of this option is that it ensures that biodiversity impacts will be addressed by protocol developers with minimal demand on Environment Canada to develop these approaches. The drawback is that Environment Canada relinquishes some control over the development of these approaches and places additional burden on project developers.*

[1] http://www.ec.gc.ca/doc/virage-corner/2008-03/526_eng.htm#1principles

**Policy Option 2**: List the biodiversity impacts of forest offsets in the Guide for Protocol Developers as an example of the type of tradeoffs that are relevant to the principle of net environmental benefit. *The benefit of this approach is that it would simply be a clarification of the principle's meaning and would not be perceived as a new policy direction. The drawbacks are that it would not necessarily result in the assessment of biodiversity impacts into forest offset protocols and would create uncertainty about who has responsibility for implementing this principle.*

**Policy option 3**: In addition to listing biodiversity impacts of forest offsets as an example of the type of tradeoffs that are relevant to the principle of environmental benefit, Environment Canada could restrict the eligibility of forest offsets to activities that are expected to be neutral or beneficial to biodiversity. This approach was taken by the California Climate Registry, within which only reforestation, conservation or conservation-based forest management are eligible activities.[2] *The benefit of this approach is that it is a policy-based approach that is clear and simpler to implement than technical project assessments of biodiversity impacts. This option would also provide the greatest assurance of positive biodiversity impacts. The short-coming of this approach is that it would restrict the number and types of eligible offset activities.*

## Additional Background

### *Biodiversity impacts of forest activities*

The Intergovernmental Panel on Climate Change (IPCC) states with high agreement and much evidence that forestry can make a very significant contribution to low-cost global climate change mitigation.[3]

The following excerpt lists some of the options listed by the IPCC for reducing emissions from the forestry sector. [4] Additional options added within square brackets are taken from a NRCAN-CFS report on potential options to increase sequestration through forest management activities. [5]

Activities that could have negative impacts on biodiversity are in bold font:

- maintaining or increasing the forest area through reduction of deforestation and degradation and through **afforestation**/reforestation;

[2] California Climate Action Registry. 2007. Forest Project Protocol. Version 2.1. September 2007. pg 15. http://www.climateregistry.org/resources/docs/protocols/project/forest/Forest_Project_Protocol_Version_2.1_Sept2007.pdf

[3] Nabuurs, G.J., O. Masera, K. Andrasko, P. Benitez-Ponce, R. Boer, M. Dutschke, E. Elsiddig, J. Ford-Robertson, P. Frumhoff, T. Karjalainen, O. Krankina, W.A. Kurz, M. Matsumoto, W. Oyhantcabal, N.H. Ravindranath, M.J. Sanz Sanchez, X. Zhang, 2007: Forestry. In Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. pg. 549.

[4] ibid. pg. 543

[5] These examples of additional practices were taken from Graham, P. Potential Options to Increase Sequestration Through Incremental Forest Management Actions: Key Data and Research Needs for Analysis. NRCAN – Canadian Forest Service. 102pp.

- maintaining or increasing the stand-level carbon density (tonnes of carbon per ha) through the reduction of forest degradation and through **planting, site preparation**, **tree improvement**, **fertilization**, uneven-aged stand management, or other appropriate silviculture techniques [e.g. managing logging residues, mixed species management, avoiding site degradation, improved post-fire regeneration, **commercial and pre-commercial thinning**, **plantation management**, , **increased forestry salvage**]
- maintaining or increasing the landscape-level carbon density using forest conservation, longer forest rotations, **fire management** [**increased fire suppression,** Landscape manipulation to reduce impact of natural disturbances], and **protection against insects**;

***Precedent for a biodiversity principle***

There is precedent for incorporating biodiversity principles within frameworks for forestry and land use activities aimed at climate change mitigation. Land use, land-use change and forestry activities under the Kyoto Protocol are governed be a number of principles including:

> *e) That the implementation of land use, land-use change and forestry activities **contributes to the conservation of biodiversity** and sustainable use of natural resources*[6]

***Precedent for inclusion in offset protocols***

Some examples of how to include biodiversity assessments within forest offset protocols already exist. The first example is a draft offset protocol developed by ICF Consulting Canada for submittal to Alberta Environment and the second is an existing project design standard developed and applied by the Climate Community and Biodiversity Alliance (CCBS). Although offset protocols developed for inclusion within Canada's Offset System for Greenhouse Gases need not follow either of these approaches, they demonstrate that approaches can be feasibly developed.

1. Draft Protocol for Forest Carbon Management Projects, developed for submittal to Alberta Environment. [7]

Although not yet accepted by the Alberta government as a draft offset protocol by the Alberta government, this draft forest offset protocol does include a test of biodiversity impact of projects:

> "In order to ensure that the project has the necessary environmental integrity, the project should ensure that, at a minimum, the project activities do not adversely

[6] United Nations Framework Convention on Climate Change. Report of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol on its first session, held at Montreal from 28 November to 10 December 2005. Addendum: Part Two: Action taken by the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol at its first session. Contents: Decisions adopted by the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol. FCCC/KP/CMP/2005/8/Add.3. http://unfccc.int/resource/docs/2005/cmp1/eng/08a03.pdf#page=3

[7] ICF Consulting Canada. 2008. Draft Protocol: Quantification Protocol for Forest Carbon Management Projects. For Submittal to: Alberta Environment. May 6, 2008.

affect the biodiversity objectives of the Alberta Forest Management Planning Standard. Further these objectives should be set in accordance with Annex 4 of the planning standard, which provides the framework for linking biodiversity values to clear objectives and measurable indicators and targets.

In order to facilitate the necessary protocol flexibility in regards to ensuring biodiversity objectives in projects of this type, additional biodiversity assessment techniques have been identified. These alternative metrics include: Certification with the Sustainable Forest Institute which can be obtained following implementation and audit of the 2005-2009 SFI Standard, implementation of the Canadian Council of Forest Minister (CCFM) Criteria and Indicators Framework, and the Forest Stewardship Council Forest Management Certification. While additional indicators may be available and could be demonstrated to be functionally equivalent to the Alberta FMPS framework these alternative should be justified in the project document and vetted by the reviewing RFP and 3rd party verifiers."

2. The Climate, Community and Biodiversity Project Design Standards (CCBS) for land-based carbon mitigation projects. [8]

The CCBS include an explicit requirement to demonstrate net biodiversity impacts:

**B1. Net Positive Biodiversity Impacts**

**Concept**

The project must generate net positive impacts on biodiversity within the project boundaries and within the project lifetime, measured against the baseline conditions.

Projects should have no negative effects on species included in the IUCN Red List of threatened species (which encompasses endangered and vulnerable species) or species on a nationally recognized list (where applicable). Invasive species must not be planted by the project.

Genetically Modified Organisms (GMOs), as a relatively new form of technology, raise a host of ethical, scientific and socio-economic issues. Some GMO attributes may result in invasive genes or species. In the future, certain GMOs may be proven safe. However, given the currently unresolved issues surrounding GMOs, projects cannot use genetically modified organisms to generate carbon credits.

[8] The Climate, Community and Biodiversity Alliance. Climate, Community and Biodiversity Project Design Standards. First Edition. pg 26 – 30. http://www.climate-standards.org/images/pdf/CCBStandards.pdf

**Indicators**

The project proponents must:

1) Use appropriate methodologies (e.g., key species habitat analysis, connectivity analysis) to estimate changes in biodiversity as a result of the project. This estimate must be based on clearly defined and defendable assumptions. The "with project" scenario should then be compared with the baseline "without project" biodiversity scenario completed in **G2**. The difference (i.e., the net biodiversity benefit) must be positive.

2) Describe possible adverse effects of non-native species on the area's environment, including impacts on native species and disease introduction or facilitation. If these impacts have a substantial bearing on biodiversity or other environmental outcomes, the project proponents must justify the necessity of using non-native species over native species.

3) Identify all IUCN Red List threatened species and species deemed threatened on nationally recognized lists that may be found within the project boundary. Project proponents must document how project activities will not be detrimental in any way to these species.

4) Identify all species to be used by the project and show that no known invasive species will be used.

5) Guarantee that no genetically modified organisms will be used to generate carbon credits.

The CCBS also include requirements to assess offset biodiversity impacts, conduct biodiversity impact monitoring, and require native species use:

## B2. Offsite Biodiversity Impacts

**Concept**

The project proponents must quantify and mitigate likely negative offsite biodiversity impacts; namely, decreased biodiversity outside the project boundary resulting from project activities.

**Indicators**

The project proponents must:

1) Identify potential negative offsite biodiversity impacts that the project is likely to cause.

2) Describe how the project plans to mitigate these negative offsite biodiversity impacts.

3) Evaluate likely unmitigated negative offsite biodiversity impacts against the biodiversity benefits of the project within the project boundaries. Justify and demonstrate that the net effect of the project on biodiversity is positive.

## B3. Biodiversity Impact Monitoring

**Concept**

The project proponents must have an initial monitoring plan to quantify and document the changes in biodiversity resulting from the project activities (within and outside the project boundaries). The monitoring plan should state which measurements will likely be taken and which sampling strategy used.

Since developing a full biodiversity-monitoring plan can be costly, it is accepted that some of the plan details may not be fully defined at the design stage, when projects are being evaluated by the CCB Standards. This will especially be true for small-scale projects.

**Indicators**

The project proponents must:

1) Have an initial plan for how they will select biodiversity variables to be monitored, and the frequency of monitoring. Potential variables include species abundance and diversity, landscape connectivity, forest fragmentation, habitat area and diversity, etc. Biodiversity variables at risk of being negatively impacted by project activities should be monitored.

## B4. Native Species Use

**Concept**

In most cases, species that are native to a region will have a higher biodiversity benefit than non-native species. In other cases, non-native species can be more effective than native species for rehabilitating degraded areas or providing fast growing biomass, timber, fruits and other beneficial products. For instance a project may need to use non-native species on severely degraded land to achieve ecological restoration before native species can be reintroduced.

**Indicators**

The project proponents must:

- Show that the project will only use species that are native to the region.

*Or*

- Justify that any non-native species used by the project are superior to native species for generating concrete biodiversity benefits (e.g., for rehabilitating degraded areas unlikely to support natives, or for producing fuel wood that reduces logging pressure on intact ecosystems).

Contact:
Chris Henschel, National Manager of Domestic and International Policy, Conservation and Climate Change, Canadian Parks and Wilderness Society