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## LAND USE PLANNING FOR NATURE, CLIMATE, AND COMMUNITIES

### APPENDIX 2: NATURE AND CARBON STEWARDSHIP IN BC

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In this research project West Coast Environmental Law analyzed the resource management direction provided by twenty years of strategic land use planning in BC to address three related questions:

1. How well do existing land designations and related resource management objectives manage the effects of cumulative environmental change from resource management and other human activities?
2. Do BC's existing land designations and resource management objectives provide for resilience and adaptability of ecological systems and human communities in the face of climate change?
3. How could existing or new land designations be used to enable a 'greener' BC economy while safeguarding our natural life support systems?

All legally established, mapped areas with conservation-related management objectives at the landscape level or above were included in the analysis,<sup>1</sup> which examined legislative requirements associated with relevant designations and related management objectives.

Appendix 2 summarizes key concepts and background analysis related to question 3 above. In particular, we explored a case study related to conservation-related forest carbon offset projects.

It is estimated that our forests in BC store around 18 billion tonnes of carbon.<sup>2</sup> Protecting this stored carbon by reducing the greenhouse gas emissions currently associated with deforestation and forest harvesting activities<sup>3</sup> is an essential part of an integrated nature and climate action strategy for BC, and one which has the potential to contribute new revenue streams from conservation initiatives that meet strict carbon accounting standards.

#### Methodology

We first undertook a review of the scientific and policy literature on nature and climate to identify priority considerations to assess the performance of existing legal designations with respect to nature and carbon stewardship. A summary of these is included in this

Appendix. In order to evaluate whether existing environmental designations can support carbon market opportunities for conservation initiatives, we then considered the overall law and policy framework that affects potential carbon market opportunities in BC. We also evaluated whether existing designations would adequately protect carbon benefits and meet other carbon market requirements.

In particular, we examined which land designations in BC serve to legally restrict activities in ways that avoid either deforestation and/or degradation of forest carbon stocks. This analysis is summarized in Table 2. We also evaluated these designations for their potential to meet key elements of credible forest carbon accounting. An example related to the 'permanence' of carbon benefits is shown in Table 2.

#### *Avoided deforestation*

In the nature and climate context 'deforestation is a term used to refer to situations where human activities result in a permanent/long-term change in land use from forest to non-forest use.<sup>4</sup> Inventory reports indicate that about 6,200 hectares of land in BC is deforested every year, principally for agricultural reasons, but also for real estate development, highways etc.<sup>5</sup> About 40% of this impact occurs on private land and the remainder on Crown land.<sup>6</sup> Deforestation is of ecological and policy concern because it "is a source of greenhouse gas emissions, and results in the loss of forests that absorb and store carbon and provide other ecosystem services, such as clean water, wildlife habitat and recreation opportunities."<sup>7</sup> In terms of greenhouse gas emissions it is about 4.7% of BC's annual reported inventory.<sup>8</sup>

It is important to note that the term 'deforestation' in its accepted international usage excludes forestry activities unless they result in permanent loss of forest cover, or the long-term reduction of tree canopy in a defined area to be less than 10 percent.<sup>9</sup> The *BC Zero Net Deforestation Act* appears to take a similar approach.<sup>10</sup>

From a BC legal and policy perspective, there are a number of designations which restrict disposition of land and land use which may have the effect of restricting deforestation. These are summarized in Table 2.

In assessing whether a designation prevents deforestation we considered whether conversion of the area to a non-forest use was prohibited either directly or indirectly.<sup>11</sup>

### ***Avoided degradation***

In Canada and BC an even more significant source of greenhouse gas emissions than deforestation is the ‘degradation’ of forest ecosystems, primarily from logging.<sup>12</sup>

Degradation may be defined as “direct, human-induced reduction in the forest carbon stocks from the natural carbon carrying capacity of natural forest ecosystems” that does not meet the definition of deforestation. In turn, “natural carbon carrying capacity” is:

“the mass of carbon expected to be stored in a forest ecosystem under prevailing environmental conditions and natural disturbance regimes, averaged over large enough spatial and temporal scales to capture the range of natural disturbance.”<sup>13</sup>

In other words, historic forest dynamics or the range of historic variability in ecosystem condition<sup>14</sup> resulting from natural disturbance (e.g., wildfires, wind) and Indigenous management systems (e.g., controlled burning) is an appropriate benchmark against which to measure reductions in carbon storage due to logging and other forestry activities. In addition, because climate change itself is already affecting forest ecosystems and will ultimately begin to push conditions in them outside their historic range of variability, protection and management measures must additionally take a precautionary approach, erring on the side of ensuring that management activities do not exacerbate loss of carbon stocks.

In BC, avoiding degradation of forest ecosystems has not historically been a policy goal of our legal frameworks for land use. Rather, our forestry and tenure systems were designed on the assumption that our old growth forests outside of protected areas and special management designations would be converted to ‘managed’ forests harvested on periodic rotations, which would lack many of the characteristics of natural forest ecosystems. Nor, with limited exceptions, was the design of protected areas and special management zones through land use planning designed to achieve the goal of maintaining ecological integrity. Thus, in many areas of the province, there are opportunities to achieve

substantial reductions in greenhouse gas emissions through changes to land management from status quo practices that will decrease the degradation of forest ecosystems.

From a BC legal and policy perspective, there are already some legal designations and other legal tools that have been or could be used to formally restrict resource activities in a manner that reduce degradation of forest ecosystems from various resource activities. These are summarized in Table 2.

Furthermore, there are voluntary approaches to responsible forest management that already require forest managers to retain post-logging forests in conditions compatible with the historic range of variability (i.e., Forest Stewardship Council Regional Forest Management Standards for British Columbia). However, because forest certification is focused at the management unit level (e.g., a specific forest tenure), regional and landscape level measures are also required, as are legal measures to address the ‘permanence’ of changes made. (Permanence in the carbon accounting sense is discussed in more detail in the next section).

We note that many of the legal and policy barriers discussed in the body of the report *Land Use Planning for Nature, Climate and Communities* also impact on the ability of our land use designations to maintain the natural carbon carrying capacity of ecosystems across the landscape.

For the purposes of the analysis in Table 2 we taken a slightly narrower focus – examining what major activities with potential impacts on carbon stocks are, or are not, permitted within a land use designation.

### ***Permanence***

Issues around permanence in terms of the climate change mitigation benefits of forests may be both ecological and legal. In the first instance, carbon sequestered and stored in forests remains vulnerable to release into the atmosphere due to natural disturbance (e.g., wildfire). In the second, changes in land use must be legally implemented in such a way that future land managers are not allowed to ‘reverse’ carbon benefits/degrade carbon stocks below baseline levels by logging or developing the land. A time period of 100 years is typically used as a proxy for ‘permanence’.<sup>15</sup>

Approaches for dealing with ecological impermanence have been discussed widely elsewhere,<sup>16</sup> and include mechanisms to substitute or buffer the impact of losing forest carbon through natural disturbances or human activities, such as liability agreements, temporary crediting, insurance, project pooling and/or resource demand reduction measures. These are typically addressed through project design/planning requirements in forest carbon offset protocols.

The analysis summarized in Table 2, therefore, is focused on the question of the legal permanence of the land use designations in BC that are potentially relevant to nature and carbon stewardship.

Due to the large percentage of public and Indigenous lands in BC, addressing legal permanence presents distinct challenges compared to other jurisdictions. For example, the Forest Project Protocol for the California Climate Action Reserve accepts deforestation projects only on private land that is subject to a permanent, legal conservation easement (similar to a conservation covenant in BC); however, only a very small percentage of BC's landbase consists of private or 'fee simple' lands on which a this kind of legal mechanism can be used to ensure legal permanence. A similar situation exists elsewhere in Canada.

Thus, in the BC/Canadian context careful attention must be paid to the nature of the legal designation (including related zonations and tenures) that apply to the land, as designations made through or enabled by legislation will be one of two key determining factors with respect to legal permanence. We focused principally on statutory requirements in our analysis, particularly the procedural ease with which changes can be made.

A second key determining factor with respect to legal permanence in the BC context is the existence of unextinguished Aboriginal Title, constitutionally protected by section 35(1) of the Canadian Constitution.

The Supreme Court of Canada has held that the Crown (i.e., provincial or federal governments) must deal honourably with First Nations when decisions are made about land and resource use, including consultation and accommodation of their Aboriginal Title and Rights, even where Aboriginal Title and/or Rights have not yet been formally recognized by the courts or in a treaty.<sup>17</sup> If the Crown does not live up to its duties, resource approvals and decisions, including those for the management of forests in the context of carbon stewardship or otherwise, may be challenged in court.

Thus, any failure to deal honourably with First Nations has the potential to create uncertainty and call into question the 'permanence' of any legal designations with respect to forests.

Looking forward, it is almost inevitable that during the 100-year plus time horizon contemplated for 'permanence' of measures related to nature and carbon stewardship, such as forest carbon projects, that one or more First Nations will achieve formal recognition of their title in court or through treaty, and existing uncertainty will continue to be a legal reality. Already the courts have held that in the post-recognition environment there will be circumstances where full First Nations consent is required for resource activities on their territories, and at a minimum consultation will always be required.<sup>18</sup>

Thus, in looking at the relative certainty/permanence offered by a given legal designation we have evaluated whether co-management (sometimes referred to as shared/joint decision-making) with First Nations is required or enabled by legislation with respect to the designations in question.

At the end of the day, addressing challenges with respect to legal permanence are critical: the more permanent the designation the higher the likelihood that the change in land use will qualify under credible accounting protocols and the greater the security that climate mitigation benefits will be 'real' and lasting.

BC's laws are also relevant to other aspects of carbon accounting for forest carbon offset projects. Some brief comments on these are included below.

### ***Additionality***

Additionality means ensuring that greenhouse gas reductions or removals achieved (for example through conservation or restoration activities) are incremental to the status quo. It originates in the context of carbon offsets, where greenhouse gas emitters may 'offset' some of their emissions by paying others to reduce or avoid emissions elsewhere, but only if the reductions or avoided emissions are 'additional' to business as usual. For our purposes this measure is important because it can help to assess the utility from a strategic point of view of using legal designations to meet nature and carbon stewardship goals, by helping to demonstrate whether there will be an improvement over the status quo (i.e. a reduction in net greenhouse gas emissions from BC

forests) if the designation is employed. Furthermore, at a practical and operational level this analysis can confirm whether a given legal designation can be used to support the additionality requirements associated with forest carbon offset projects and possibly other types of conservation financing.

In a forestry context, additionality is assessed by comparing the impact of the new, proposed land use to a baseline scenario that includes all existing relevant legal requirements, agreements, contracts or industry standards and a conservative assessment of the most likely amount of greenhouse gas emissions that would have occurred without the change in land use.<sup>19</sup>

Thus, establishment of new legal designations such as those identified in Table 2 could formalize a shift in land use that is incremental to existing legal requirements with respect to the carbon balance of the ecosystem that would be relevant to meeting the additionality requirement of forest carbon accounting protocols.

### ***Leakage***

Leakage occurs when the land use change in question leads to an unintended change in greenhouse gas emissions or removals elsewhere, such that the overall positive climate impact of the land use change is lessened or negated. For example, if logging activities are stopped or reduced as a result of the land use change, there may be fewer wood products on the market as an initial result of the land use change, but if demand remains constant it can lead to logging elsewhere. This is often called “activity shifting leakage”.<sup>20</sup>

Another type of leakage, referred to as “market leakage,” can occur when a land use change leads to price changes that in turn result in greater greenhouse gas emissions elsewhere. Market leakage is considered to be difficult to assess without reference to aggregated market data, and it will not be considered here.<sup>21</sup>

In this project we did an initial assessment of activity shifting leakage, by considering whether establishment of the land designation/zonation results in less logging within BC.<sup>22</sup> For example, in many cases it is possible to assess whether establishment of the legal designation triggers the removal of the area from the timber harvesting land base, such that it will be reflected in the Chief Forester’s determination of allowable annual cut under section 8 of the *Forest Act*.

This should at least have the legal effect of ensuring that reduced logging in one area of BC will not result in an increase elsewhere in the region or province. However, given the interplay with market supply and demand globally, a more complete consideration of this type of leakage would necessarily have to go beyond the provincial impact of different land use designations.

### **Forests and carbon analysis –Table 2**

In summary, we examined which land designations in BC serve to legally restrict activities in ways that avoid either deforestation and/or degradation of forest carbon stocks. This analysis is summarized in Table 2. We also evaluated these designations for their potential to meet key elements of credible forest carbon accounting. An example related to the ‘permanence’ of carbon benefits is shown in Table 2.

## NOTES

<sup>1</sup> Including resource management zones and special management areas outside of protected areas; in some cases site level designations were also included in data sets used by ForestEthics Solutions in their concurrently released mapping project. Marlene Cummings, *Drawing the Line: British Columbia's Conservation Land Use Designations, Mapped and Interpreted against Current Science*, online: <forestethicsolutions.org> [ForestEthics Solutions, 2013].

<sup>2</sup> Sara J. Wilson and Richard J. Hebda, *Mitigating and Adapting to Climate Change through the Conservation of Nature* (Salt Spring Island, BC: Land Trust Alliance of BC, 2008) at 9.

<sup>3</sup> Ministry of Environment, British Columbia Greenhouse Gas Inventory Report 2010 at 55-56, online: <www.env.gov.bc.ca/cas/mitigation/ghg\_inventory/>. Deforestation accounted for 2.92 MtCO<sub>2</sub>e emissions in BC in 2010, while logging and slash burning accounted for emissions of 51.3 MtCO<sub>2</sub>e (including, respectively, 43.8 MtCO<sub>2</sub>e and 7.5 MtCO<sub>2</sub>e).

<sup>4</sup> Sometimes also referred to as “conversion.”

<sup>5</sup> Ministry of Environment, British Columbia Greenhouse Gas Inventory Report 2010 at 55, online: <www.env.gov.bc.ca/cas/mitigation/ghg\_inventory/>

<sup>6</sup> Province of British Columbia, “Zero Net Deforestation, Frequently Asked Questions”, <www.for.gov.bc.ca/hfp/znd/faqs.htm>

<sup>7</sup> Ministry of Forests and Ranges, *Achieving Zero Net Deforestation in British Columbia* (Victoria, BC: Ministry of Forests and Ranges, 2010) at ii, online: <www.for.gov.bc.ca/ftp/hfp/external!/publish/web/znd/files/znd-discussion-paper.pdf>

<sup>8</sup> Ministry of Environment, British Columbia Greenhouse Gas Inventory Report 2010 at 11,16, online: www.env.gov.bc.ca/cas/mitigation/ghg\_inventory/ Note that this 4.7% includes a very small adjustment downwards due to removals from afforestation.

<sup>9</sup> Global Forest Resources Assessment Update. 2005. Terms and Definitions of Forests and Forest Change.

http://www.fao.org/docrep/007/ae156e/AE156E04.htm - P782\_36389 (FAO. 2001. Global Forest Resources Assessment FRA 2000 – Main report. Rome)

<sup>10</sup> “Deforestation” means the human-induced removal of trees from an area of forest land to such an extent that the area is no longer forest land, but does not include the removal of trees from any area of forest land that is excluded from this definition by regulation”: Zero Net Deforestation Act, S.B.C. 2010, c. 10, s.1. The act itself does not prevent or constrain deforestation, rather it focuses on using existing initiatives and approaches encourage afforestation activities (“the human-induced establishment of trees on an area of non-forest land to such an extent that the area becomes forest land”) that offset deforestation, hopefully resulting in meeting a legislative target of “zero net deforestation” by December 31, 2015. Lands that are eligible for afforestation are those that are currently “non-forest land”; the Act uses the date of the international Kyoto protocol to set an initial cut off for this, defining “non-forest land” as “an area of land that has not been forest land at any time after December 31, 1989” but leaving open that another cut-off date may be prescribed in regulation.

<sup>11</sup> E.g., through a legal restriction on disposing of the land through an interest in land/tenure that would permit conversion to non-forest uses.

<sup>12</sup> In the context of international climate negotiations the focus has been on reducing both types of activities and their related impacts through the “REDD” initiative: Reducing Emissions from Deforestation and Degradation. See the United Nations

Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries, online: <www.un-redd.org/>

<sup>13</sup> B. Griscom, D. Ganz, N. Virgilio, F. Price, J. Hayward, R. Cortez, G. Dodge, J. Hurd, F. L. Lowenstein, B. Stanley. 2009. *The Hidden Frontier of Forest Degradation: A Review of the Science, Policy and Practice of Reducing Degradation Emissions*. The Nature Conservancy, Arlington, VA. 76 pages; see also Gupta, R.K. & Rao, D.L.N. (1994) Potential of wastelands for sequestering carbon by reforestation. *Current Science*, 66, 378–380. The authors further note:

“In maintaining consistency with the Kyoto Protocol, we stress the importance of limiting definitions of forest degradation to anthropogenic activities, such as logging, fire, and fuelwood harvest. The emphasis on carbon stocks provides a real means to measure degradation. Natural carbon stock fluctuations (such as natural fire and hurricane damage) are not designated as degradation in our definition and would be encompassed within the natural carbon carrying capacity. Time-averaged natural carbon carrying capacities vary with landscape, and provide the best indicator of the appropriate baseline state from which to gauge degradation. The use of a different indicator than carbon carrying capacity risks reducing incentives to maintain forests in their natural state and could result in diminished opportunity for credited emissions reductions. In specifying performance periods as the time frame, we exclude temporary changes in carbon stocks, while at the same time provide a realistic means to operationalize the definition. By excluding areas that would be considered “deforested” by current definitions, we avoid double counting issues.”

<sup>14</sup> Also referred to as the ‘range of natural variability’.

<sup>15</sup> See e.g., *Emission Offsets Regulation*, B.C. Reg. 393/2008, s. 3(2)(r); Climate Action Reserve Forest Project Protocol, Version 3.3, November 15, 2012, s. 3.4, online: <www.climateactionreserve.org/how/protocols/forest/dev/version-3-3/>

<sup>16</sup> See, e.g. Canadian Council of Forest Ministers, *A Framework for Forest Management Offset Protocols* (Ottawa: Climate Change Task Force of the Canadian Council of Forest Ministers, 2009), online: <www.ccfm.org/pdf/FFMOP\_e.pdf>

<sup>17</sup> *Haida Nation v. BC (Ministry of Forests)*, [1994]. 3 S.C.R. 511, 2004 (S.C.C.) 73

<sup>18</sup> *Delgamuukw v. British Columbia*, [1997] 3 S.C.R. 1010 .

<sup>19</sup> Note that in the offsets context there are further steps to the additionality assessment. For example, the UNFCC “Tool for the demonstration and assessment of additionality” and similar requirements under BC’s Emissions Offset Regulation (EOR) also require proponents to identify “financial, technological or other obstacles to carrying out the project that are overcome or partially overcome by the incentive of having a greenhouse gas reduction recognized as an emission offset.” See s.3(2)(k) of the EOR.

<sup>20</sup> See, for example, Frank Vöhringer, Timo Kuosmanen, Rob Dellink, (2004) *A Proposal for the Attribution of Market Leakage to CDM Projects*, Hamburg Institute of International Economics, HWWA Discussion Paper 262, online: <http://papers.ssm.com/sol3/papers.cfm?abstract\_id=508322 >

<sup>21</sup> *Ibid.*

<sup>22</sup> This is also the approach taken in the Government of British Columbia’s *Protocol for the Creation of Forest Carbon Offsets in British Columbia*, online: <http://www.env.gov.bc.ca/cas/mitigation/fcop.html>