



Land Use Planning for Nature, Climate and Communities

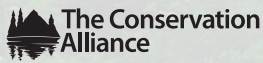
Taking Stock and Moving Forward

West Coast
Environmental Law

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INTRODUCTION

BC's laws about land and resource management were historically designed to facilitate resource extraction and urban settlement.¹ Most of the provincial land base has already been allocated to resource companies through often overlapping licences, leases and other rights. These 'tenures' give companies the right to extract timber, minerals, petroleum and natural gas or undertake other land uses on public and First Nations land. Laws specific to these industries have evolved over time, with little consideration of the cumulative impacts of all of these activities.

Beginning in the early 1990s there was a concerted effort to bring some balance to this situation in BC through strategic land use planning. Community members, stakeholders and governmental representatives sat down around planning tables across the province and worked out land use plans that cover most of BC.² These plans focused on large regional or sub-regional areas, determined areas to be added to BC's protected areas system, and defined resource management zones and objectives for vast areas outside of protected areas. The Province's 'biodiversity strategy'³ also provided for landscape level planning for priority biodiversity values.

According to the provincial government: "The province of British Columbia is one of the only jurisdictions in the world that has applied this type of planning in such a systematic way in an effort to balance social, economic and environmental values."⁴

Twenty years later it is possible to look at the outcomes from these initiatives and take stock of how well they are serving us in managing the impacts of cumulative environmental change, and in sustaining our environment, communities and economy in the 21st century.

In this research project our colleagues at ForestEthics Solutions for the first time mapped⁵ existing environmental designations for the province as a whole—the on-the-ground legacy of BC's strategic planning efforts—and West Coast Environmental Law analyzed the resource management direction provided by these legal tools 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,⁶ which examined legislative requirements associated with relevant designations and related management objectives.

MANAGING CUMULATIVE EFFECTS

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How well do existing land designations and related resource management objectives in BC manage the effects of cumulative environmental change from resource management and other human activities?

The accumulated changes (spatially and over time) on the land from resource extraction and other human activities are referred to as ‘cumulative impacts.’⁷ A recent, comprehensive, science-based assessment of the province’s natural environment concluded that: “The cumulative impacts of human activities in British Columbia are increasing and are resulting in the loss of ecosystem resilience,” and that “[e]cosystem degradation from forestry, oil and gas development, and transportation and utility corridors has seriously impacted British Columbia’s biodiversity.”⁸

The imperative of climate change has further brought the question of cumulative impacts to a head in BC.⁹ “Climate change is already significantly impacting healthy ecosystems in British Columbia, and will likely cause more dire consequences for fragmented or degraded ecosystems.”¹⁰

Given the dedicated efforts of so many British Columbians in strategic land use planning for most areas of the province, why have results not been better? In this research project we examined the legal requirements associated with all environmental designations applied on the ground in BC to find out how well they addressed cumulative impacts.

Key finding 1

BC has many forms of land use designations, but only 15.6% of BC’s land base is covered by an environmental designation that protects the land and water from most types of resource development.

Cumulative impacts from resource extraction affect ecosystem resilience.



Analysis:

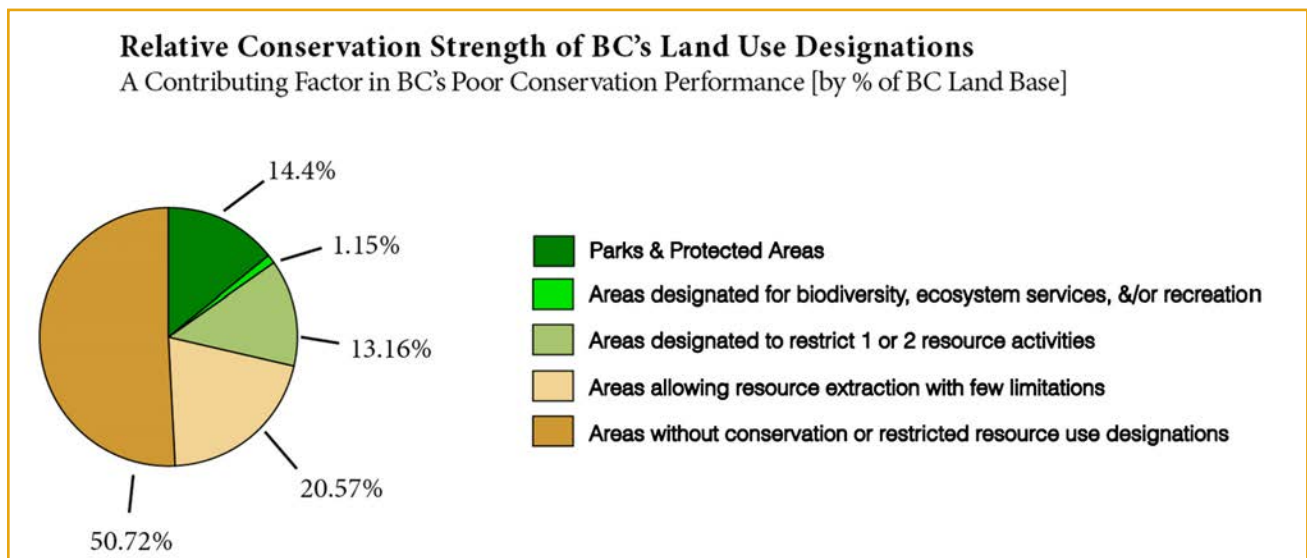
Most industries get a ‘free ride’ from land use plan requirements. This situation arises because of the way in which strategic land use plans in BC have been legalized and enforced.¹¹ Management objectives for most environmental designations (outside of parks and conservancies) are legalized under either the *Government Actions Regulation*¹² to the *Forest and Range Practices Act (FRPA)* or the *Land Act* section 93.4. Unfortunately, both of these legal tools apply only to forestry and range activities.

Relatively recently, the *Oil and Gas Activities Act*¹³ introduced a mechanism that parallels the *Government Actions Regulation* and now permits the establishment of “government’s environmental objectives” for areas like old growth management areas and wildlife habitat areas so that they may also restrict surface impacts of oil and gas activities. Before issuing a permit to allow oil and gas activities the Oil and Gas Commission “considers” these environmental objectives.¹⁴

Similar mechanisms do not, however, exist with respect to other resource activities. Although 2003 amendments to the *Land Act* created a mechanism through which designations and legal objectives could be made to apply to resource development other than forestry and range use, this section (section 93.1) has never been brought into force. Furthermore, there is no direct linkage between land use plans and environmental assessment. Approvals may be granted for projects like power plants, transmission lines, solid waste disposal, highways and resorts even though they conflict with established environmental designations and resource management objectives flowing from land use plans. Perhaps most egregiously, section 14(5) of the *Mineral Tenure Act* explicitly provides that most environmental designations and resource management objectives do not apply to mining activity.¹⁵

This ‘siloed’¹⁶ and incomplete approach to legalizing land use plans significantly limits the effectiveness of most environmental designations in managing the cumulative effects of multiple resource uses and human activities.

Figure 1: Relative Conservation Strength of BC’s Land Use Designations



RESILIENT ENVIRONMENT, RESILIENT COMMUNITIES

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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?

Biodiversity, or “the variety of species and ecosystems on Earth and the ecological processes of which they are a part”¹⁷ have both intrinsic value and provide a host of ecosystem services—from fresh water to flood protection to climate regulation—that underpin the well-being of human communities. As noted above, these natural life support systems are under threat from the combined impacts of resource extraction, development and climate change.

Even taking the most optimistic view, and assuming we will be successful in significantly reducing our future greenhouse gas emissions, our climate is already changing and will continue to change as a result of past emissions, meaning that a concerted effort to better ensure resilience and adaptability of our natural life support systems will be required. We refer to such efforts as “nature-based climate adaptation strategies”.

Put simply, nature-based climate adaptation strategies will require us to, wherever possible, avoid compounding the impacts of climate change by fragmenting or degrading ecosystems through other human activities.¹⁸ This is because, as the United Nations Environment Program has noted, “many of the most severe impacts of climate-change are likely to stem from interaction between threats... rather than from climate acting in isolation.”¹⁹

Biodiversity provides the natural life support system for human communities.



This research project has allowed us to evaluate how well existing environmental designations and resource management objectives are designed to achieve the goal of managing for resilience. Based on a review of the scientific and policy literature on nature and climate, we focused on the following framework of priority considerations to assess the potential of environmental designations to be used in the context of nature-based climate adaptation strategies.

- Resilience and ecosystem function (coarse filter biodiversity)
 - ✓ Low risk to ecological integrity from permitted management activities
 - ✓ Precautionary factor to account for climate change
- Species
 - ✓ Habitat needs of focal species
 - ✓ Habitat needs of species at risk: rare and endemic species
- Connectivity
 - ✓ Science-based thresholds for roads and surface disturbance
 - ✓ Land-use management and industrial practices compatible with species movement
 - ✓ Landscape level connectivity
- Water
 - ✓ Maintaining hydrological/riparian function
 - ✓ Water quality and supply for human consumption

A more detailed description of each of these considerations may be found in Appendix 1.

Legal barriers to resilience

Key finding 2

When it comes to managing for resilience, BC's laws and policies are 'hardwired for failure'. Our laws and policies governing the nature, extent and distribution of various land use designations present barriers to maintaining resilient ecological systems and human communities. These barriers include:

- Legal or policy caps on how much land may be protected and/or how great an impact on resource extraction is permitted
- Exemptions and loopholes that allow economic considerations to trump conservation objectives
- Designations and legal management objectives that are not applicable to most forms of development
- Absence of mandatory triggers for conservation planning
- Failure to recognize and give legal effect to First Nations decision-making authority in the context of land use planning and environmental decision-making

Analysis:

To understand the existing (and potential) effectiveness of environmental designations and resource management objectives as tools to manage for resilience we looked closely at the designations themselves along with the external law and policy constraints that govern their application. We found significant legal barriers to effectiveness.

Legal and policy limits on protection

Protected areas: In 1993, the BC government released *A Protected Areas Strategy for British Columbia*, which adopted the goal of 12 percent protection recommended by the 1987 World Commission on Environment and Development (the Brundtland Commission). Broad-scale regional and sub-regional strategic land use planning processes were instrumental in allocating this target through a network of protected areas containing representative examples of the natural diversity of the province, and by 2001, with strategic land use planning largely completed, this target had been met. Functionally, for strategic planning processes completed during this time period the 12 percent target served as a quota or a cap on the percentage of the planning area that might be placed in protected areas. This is exemplified by the actual results of planning, and by the experience of planning table participants.²⁰

Although provincial policy subsequently shifted²¹ and the small number of outstanding plans were allowed to exceed the 12 percent target, strategic land use planning was already completed for most regions of the province by that point.

The 12 percent target for parks and protected areas that applied in BC throughout most regional and sub-regional strategic planning efforts may be contrasted to evidence-based scientific studies and reviews, which “suggest that some 25-75% of a typical region must be managed with conservation of nature as a primary objective to meet goals for conserving biodiversity.”²²

The challenge presented by the 12 percent target is summarized succinctly by Stevens and Darling:

*[T]he goal was not based on science. Although British Columbia has reached the 12% target, we cannot pretend that either our species and ecosystems at risk or the rest of our considerable biological diversity can be maintained in that area alone.... If there is no consideration for conservation in the matrix [the land area in which protected areas are embedded], then much more than 12% (recent papers suggest 40–60%...) would be needed to maintain current levels of biodiversity.*²³

Other environmental designations and land use objectives: Looking after our land and water (and the web of life that sustains us) does not stop at the boundaries of protected areas. Environmental conditions outside of parks are as important, if not more important, in sustaining biodiversity and our environmental life support systems. BC’s ‘biodiversity strategy’, which was intended to manage biodiversity outside of protected areas through the establishment of old growth management areas and wildlife habitat areas for species at risk, was also subject to legal and policy caps on the extent to which these designations were permitted to impact on timber supply.²⁴ These caps were

initially set out in policy direction and incorporated by reference into the *Forest Practices Code of British Columbia Act*, and today inform interpretation of the *FRPA* and the *Government Actions Regulation* under *FRPA*.

This situation was mitigated somewhat where regional or sub-regional strategic land use plans also identified mapped zones or management areas outside of protected areas with specific conservation objectives. Provided that these objectives were legally established under the *Forest Practices Code* or the later the *Land Act*, these “higher level plans” were, in theory, permitted to exceed the timber supply impact caps. However, the *Land Use Objectives Regulation* still requires that the Minister must be satisfied that: “the importance of the land use objective or amendment outweighs any adverse impact on opportunities for timber harvesting or forage use within or adjacent to the area that will be affected” before establishing or amending legal objectives.²⁵



Exemptions and loopholes can allow economic considerations to trump conservation objectives

Even for those resource sectors to which land use plan designations and objectives apply, BC’s laws contain a number of exemptions and loopholes that permit their effectiveness to be compromised.

For example, operational forestry plans only have to be consistent with established legal objectives flowing from land use plans “to the extent practicable,” a test which brings into play economic issues as well as other discretionary factors.²⁶ Additionally, a number of regulatory provisions insulate forest operations in some areas of the province from compliance with land use plan designations and legal objectives, either completely or for a period of time following plan implementation.²⁷ In many cases, this can mean up to four years of further unconstrained logging inconsistent with strategic land use plans even once those plans are legally implemented.

Legal exemptions and loopholes compromise conservation objectives.

With respect to oil and gas activities, the Oil and Gas Commission may exempt a permit holder or a person from “government’s environmental objectives” under the *Oil and Gas Activities Act* (e.g., from restrictions on oil and gas activities in old growth management areas and wildlife habitat areas) on any condition the Commission considers necessary.²⁸

Furthermore, designations like old growth management areas and land use objectives are not embedded in legislation. They created by minister order and amendments are relatively common.²⁹

Designations and legal management objectives to not apply to all resource industries and projects

As noted above, only a handful of environmental designations in BC offer comprehensive protection from all resource development threats. Legal objectives established following land use planning have no legal effect for the vast majority of human activities in BC. Perhaps even more worrying is the specific exemption of mining activity from land use plan requirements that apply to other industries.

Absence of mandatory triggers for conservation planning

Legal triggers for strategic conservation planning are largely absent from BC’s laws. For example, BC has no stand-alone endangered species legislation that mandates recovery

BC lacks legal triggers for strategic conservation planning such as endangered species legislation.



planning for species at risk. Similarly, BC has no legal framework to require broad-scale assessment of the cumulative effects of past, present and reasonably foreseeable future development on key values (e.g., water) at a regional scale, and to integrate the results into land use plans and environmental decision-making.

As a recent Forest Practice Board report found, the key gaps regarding cumulative effects management in BC “are not primarily about the methods of assessment; they are about the need for a comprehensive land management framework in which those methods could be used.”³⁰

In the context of cumulative effects management, the costs of this gap are multifold, including:

- *unintended and unexpected ecological impacts;*
- *costs to the economy due to loss of productive capacity of the land and resource base;*
- *conflicts among resource users;*
- *costs to government and taxpayers of corrective actions after harm is done.*³¹

Strategic conservation planning is not being handled well even within our system of protected areas and parks: the recent Auditor General’s report found deficiencies in the BC Parks Program plan, and noted that less than half of our Class A Parks have the management plans that are mandated under BC Parks Master Plans Policy, and 78% of the existing plans are 10 years or older.³²

Failure to recognize and give legal effect to First Nations decision-making authority in the context of land use planning

For close to a decade it was provincial policy to design land use planning processes as ‘multi-stakeholder’ negotiations without proper government-to-government engagement with First Nations. This meant both lost opportunities to benefit from Indigenous knowledge about the land and water, and uncertainty about the constitutionality of planning outcomes like the establishment of new protected areas.

The Supreme Court of Canada has since clarified that the Crown’s constitutional duties to First Nations requires consultation, and where necessary accommodation with respect to strategic level decisions about land and resources,³³ and there are now several examples of government-to-government strategic land use agreements.³⁴ However, BC has a legacy of ‘historic’ land use plans which did not benefit from government-to-government engagement with First Nations.

Climate change not considered

Key finding 3

Climate change was not explicitly taken into account in most strategic land use plans and resulting decisions about designations and land use objectives.

In addition to considering how law and policy constraints generally limit the effectiveness of existing environmental designations as tools to manage for resilience, we also looked at whether these designations and the land use plans that guide their application have specifically addressed climate change concerns.

At present, scientists and resource managers are grappling with how best to meet biodiversity and resilience goals in a context where climate change itself is affecting the structure and composition of ecosystems. Possible approaches include:

- using ‘enduring features’ to identify areas of conservation priority;³⁵
- extending the elevational and latitudinal breadth of protected areas and other land designations to give species room to adapt to a variety of climate scenarios;³⁶
- reducing non-climate stresses in areas most likely to be climate refugia, e.g., “areas where the climate changes will be ameliorated by such influences as topography (north slopes and toes slopes), or legacies of older ecosystems (large old trees)”³⁷; prioritizing climate refugia in conservation planning;³⁸ or,
- emphasizing ecological connectivity to allow movement of organisms, including managing the matrix (the area between protected areas) to resemble natural conditions, removing or restricting barriers to movement (e.g., roads), and increasing both north-south and elevational connectivity between protected areas.³⁹

Without presupposing the ‘right’ approach to incorporating climate change into the design of protected areas and other land designations we have examined all strategic land use plans and resulting designations and objectives to determine whether climate change factors were addressed. Perhaps unsurprisingly given that most strategic land use plans were completed over a decade ago, we found little evidence in all but the most recent plans that climate change was factored into planning at all.

A notable exception is the recently completed 2011 *Wóoshtin wudidaa Atlin Taku Land Use Plan*. In addition, recent strategic land use plan agreements between the Crown and First Nations, resulting in new legal designations and management objectives for the Coastal First Nations territories on the Central and North Coast and Haida Gwaii, and in Gitanyow territories in the mid-Nass and Skeena watersheds do include consideration of the environmental and economic value of conservation measures in terms of avoided greenhouse gas emissions and enhanced carbon sequestration. However, for the more than three quarters of BC covered by earlier land use plans, there is little indication that the nature, extent and distribution of existing designations took climate change, or carbon values into account.

LOOKING AHEAD: LAND DESIGNATIONS TO ENABLE A 'GREENER' BC ECONOMY?

How could existing or new land designations be used to enable a 'greener' BC economy while safeguarding our natural life support systems?

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A recent report from the Pacific Coast Collaborative, whose members include the province of British Columbia, and the states of California, Oregon, Washington and Alaska, observes that the so-called “clean economy” in our region is expected to be “the single most important global opportunity on the medium-term horizon with revenues expected to reach \$2.3 trillion by 2020.”⁴⁰ “Environmental protection and resource management” is flagged as one of three key sectors of the “clean” economy that stand out for their job growth potential. The report finds that emerging opportunities for employment gains in this sector “are linked directly to conservation, ecosystem restoration, and climate adaptation initiatives.”

In this project we focused on economic opportunities potentially associated with emerging markets for carbon stored in natural ecosystems as a case study. Globally, and in British Columbia, deforestation⁴¹ and degradation⁴² of forest ecosystems through development and industrial logging are massive sources of greenhouse gas emissions.⁴³ While some forest carbon remains in products produced from harvested trees, converting old growth forests to managed forests harvested on periodic rotations can reduce net carbon storage dramatically for decades.⁴⁴ On the other hand, conservation initiatives that maintain or enhance carbon storage levels by protecting living trees that would otherwise be lost through timber harvesting or other development can create a carbon benefit. This carbon benefit may have a market value in voluntary or regulated carbon markets.

Logging is a massive source of greenhouse gas emissions.



To evaluate whether existing environmental designations can support carbon market opportunities for conservation initiatives, we 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. We also evaluated these designations for their potential to meet key elements of credible forest carbon accounting. For our full analysis please refer to Appendix 2.

Nature and Carbon – Opportunities for BC

Key finding 4

Lack of overall strategic direction and gaps in the enabling legal framework are likely to hamper forests' contribution to a 'greener' economy in BC, but with leadership from provincial and First Nations governments and collaboration with non-governmental organizations these challenges could be surmountable.

Analysis:

BC has passed legislation—the *Greenhouse Gas Reduction Targets Act*⁴⁵—which establishes targets for the purpose of reducing BC greenhouse gas emissions, and requires all BC public sector organizations to be carbon neutral. BC is also working with other jurisdictions through the Western Climate Initiative (WCI) to put in place “a flexible, market-based, regional cap-and-trade program that caps greenhouse gas emissions and uses tradable permits to incent development of renewable and lower-polluting energy sources” by 2015.⁴⁶

Emissions from deforestation and logging will not be directly covered by these new rules. The system will, however, permit regulated industries to purchase offsets that meet stringent carbon accounting standards, including forest carbon offsets. In other words, regulated industries that have mandated greenhouse gas reduction requirements will be allowed to meet some portion of their greenhouse gas reduction obligations by purchasing reductions achieved by a third party.⁴⁷

While the role of offsets in regulated markets remains controversial given the overriding need to reduce industrial emissions, an exponential increase in demand for offsets is soon to be a reality.⁴⁸ Existing carbon neutral government requirements⁴⁹ in BC and the implementation of cap and trade systems which permit carbon offsetting in BC and other WCI jurisdictions, particularly California,⁵⁰ are anticipated to generate massive demand for carbon offsets in the coming years.

Experience to date in BC has been that conservation-based forest carbon offset projects have the best potential, and may be the only type of offsets capable of scaling up to meet this kind of demand.⁵¹ Conservation-based forest carbon offset projects may either be



Conservation-based forest carbon offset projects have the best potential to meet market demand.

focused on avoiding greenhouse gas emissions from the conversion of forests to non-forest land use, or improved forest management that increases long-term storage of carbon in forests, e.g., through conservation areas.⁵² This situation creates opportunities for new revenue streams associated with enhanced conservation in BC.

Are we positioned to take advantage of it? Yes and no.

First, we have clear conservation needs that remain unmet in British Columbia. The urgency of evolving the way we manage our lands and waters to address the cumulative impacts of climate change, resource extraction and other human activities is starkly apparent: our natural life support systems are at risk and the very survival of many of our native species is in question. Existing strategic land use plans in BC—most completed over a decade ago—provide an important foundation, but legal analysis of laws and policies governing the nature, extent and distribution of resulting designations and resource management objectives strongly suggests that more must be done.

Second, a number of existing or anticipated provincial and voluntary initiatives could result in enhanced conservation with marketable carbon benefits (e.g., area-based planning associated with cumulative effects management; implementation of the Conservation Framework/recovery planning for species at risk; First Nations land use planning; management plans associated with Forest Stewardship Council certification; potentially watershed planning resulting from *Water Act* modernization).

Third, a substantial area of BC is presently under some form of conservation-related land designation where an incremental shift in the level of protection⁵³ could enhance the security of conservation gains and the permanence of carbon benefits in a way that may be additional to business as usual (thus potentially enabling sale of carbon associated with avoided greenhouse gas emissions/enhanced carbon sequestration).⁵⁴

The vast majority of strategic land use plans in BC were developed without full consideration of climate change (either in terms of managing for resilient forests, or with respect to carbon management) and without government-to-government engagement with First Nations. Augmenting existing plans through conservation-based forest projects lead by First Nations at the landscape or sub-regional/First Nations territorial level could thus potentially provide additional benefits from both a climate mitigation perspective as well as for ecological resilience, biodiversity and ecosystem services.

However, BC currently lacks a mechanism for initiating and coordinating new conservation initiatives to ensure that they are deployed in a manner that:

- reduces CO₂ emissions from logging at a scale likely to meet demand for conservation-based forest offsets;
- generates optimal 'co-benefits' for biodiversity, ecosystem resilience and ecosystem services;
- deals clearly with carbon ownership issues so that First Nations and local communities may benefit from conservation projects; and,
- avoids duplication of effort thus improving efficiency and reducing transaction costs.

The recently implemented Protocol for the Creation of Forest Carbon Offsets in British Columbia contemplates conservation-based forest carbon offset projects (through avoided conversion or improved forest management) in provincial forests, which make up over 80 percent of British Columbia. Government-to-government strategic land use plan agreements and reconciliation protocols addressing forest carbon benefit sharing

*Leadership will be required
if forests are to contribute
to a 'greener' economy.*



between the provincial Crown and First Nations (e.g., in the Great Bear Rainforest and the Gitanyow Huwilp) present an example of the potential to meet conservation needs while creating new revenue streams associated with carbon markets. However, no systematic approach for concluding similar land use agreements elsewhere in the province is yet in place.

The Province's current policy, the *'New Direction for Strategic Land Use Planning in BC'* has been interpreted by provincial officials to mean that new strategic land use initiatives will be the rare exception, and in practice such processes have generally been initiated only where legal proceedings, markets campaigns or direct action have created financial and political costs for not doing so (an apparent element of the so-called "business case" required by the policy). In the result, potential benefits from additional broad-scale conservation-based forest offset projects are presently being lost.

Achieving land use decisions that address conservation needs and carbon project opportunities at necessary scales will require leadership, from both provincial and First Nations governments, and the cooperation of non-governmental partners.

The leadership required to meet conservation needs and enable the potential of new revenue streams from carbon markets would logically begin with identification of criteria for and mapping of high potential areas for both biodiversity and a high likelihood of persistent carbon storage to provide a spatial guide for potential conservation-based forest projects. This form of decision tool could be used to inform and guide a variety of ongoing conservation initiatives. Furthermore, without completely reopening existing land use plans this type of mapping product could allow a 'climate conservation' overlay to be applied to existing plans with the intent of strengthening or augmenting existing designations and resource management objectives to address climate considerations.

Land use decisions of this nature would require a high degree of government-to-government engagement with First Nations and participatory opportunities for concerned citizens, non-governmental organisations and affected businesses commensurate with the scale of anticipated changes.

Key finding 5

With respect to many land designations in BC, our laws do not position us well for the rigorous application of forest carbon accounting standards, with potential environmental and economic costs to the province and project proponents.

Analysis:

If and when new conservation areas are identified, our current laws do not position us well for the most rigorous application of carbon accounting rules, particularly with respect to the permanence of climate change mitigation benefits achieved by a forest project.

The issue of permanence has both ecological and legal aspects. In the first instance, carbon sequestered and stored in forests remains vulnerable to release into the atmosphere due to natural disturbance (e.g., wildfire). Approaches for dealing with ecological impermanence have been discussed widely elsewhere.⁵⁵ In the second instance, changes in land use associated with a forest project must be legally implemented in such a way that the carbon benefits are not ‘reversed’ in the future, i.e., by activities like development or logging that degrade carbon stocks below baseline levels. A time period of 100 years is typically used as a proxy for ‘permanence.’⁵⁶

Two limitations of BC’s current legal framework, discussed above, present particular challenges in this regard:

- the vast majority of designations do not restrict non-forestry development activities that may result in ‘reversals’ of anticipated carbon benefits from a forest project; and,
- the relative ease with which designations can be modified or eliminated (e.g., by ministerial order versus legislative change).

This context presents a legal and financial risk for forest project proponents, who may have little or no control over other resource activities that could be approved or are permitted by provincial law within the project area.

The recommendations below are designed to move towards removing these and other legal barriers identified in this report.

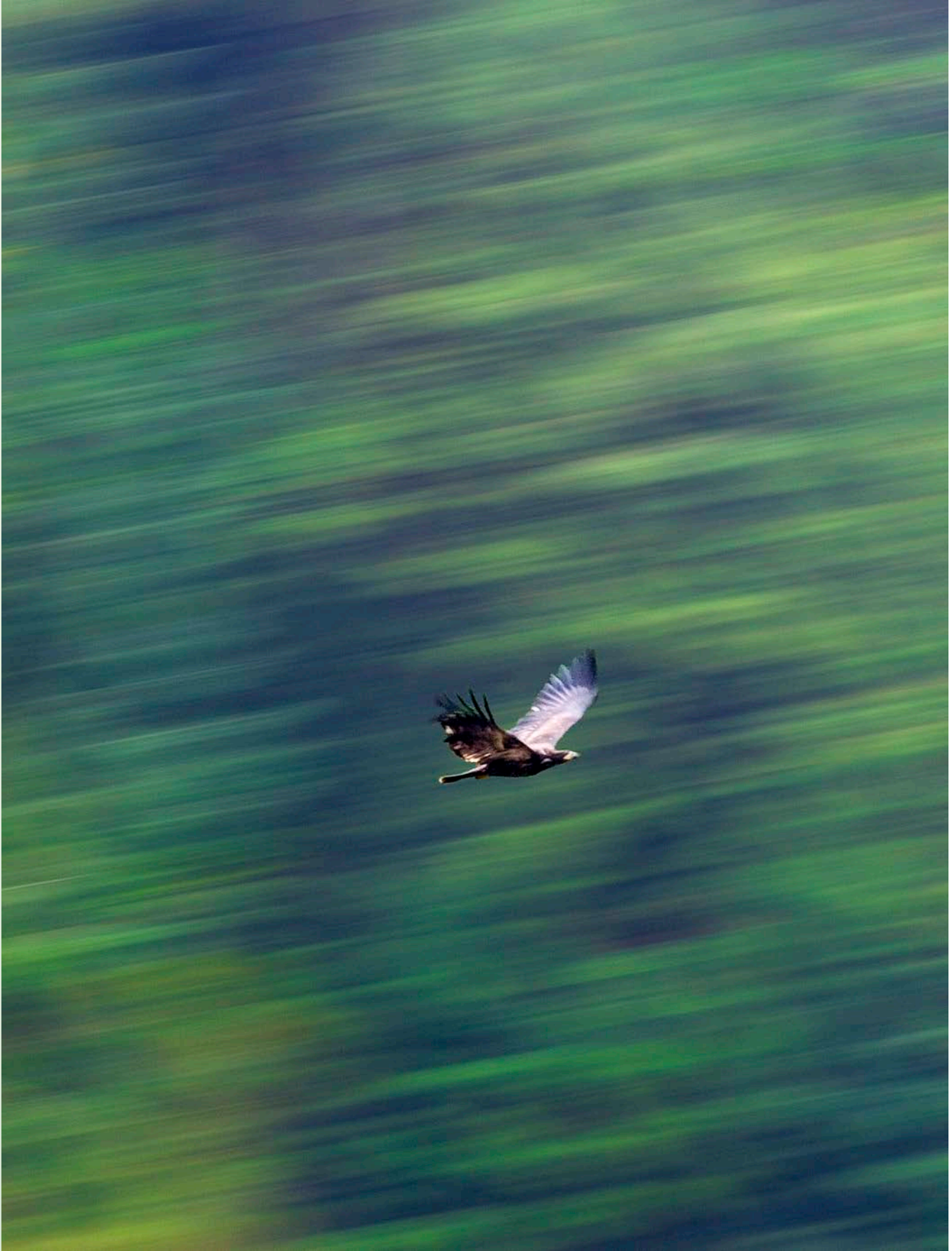


CONCLUSION

Already BC communities are grappling with water shortages, forest fires and the mountain pine beetle epidemic, underlining the need to evolve the way we manage our environment to take climate change into account as part of an integrated, strategic approach to managing cumulative effects. The management choices we make today can make a vital difference in both climate change mitigation—avoiding emissions of greenhouse gas pollution that cause climate change—and giving species, ecosystems and ultimately ourselves a chance to survive and adapt to the inevitable level of climate change that we already face.

In terms of land use designations and resource management objectives, BC has a wide assortment of legal tools available under different statutes to establish high level land use direction for defined areas of land at various spatial scales. However, our current laws and policies present barriers to managing for resilient ecological systems and human communities, and risks for forest carbon project proponents. Meanwhile, lack of overall strategic direction and gaps in the current legal framework are likely to hamper forests' contribution to a 'greener' economy in BC. The imperative of dealing with cumulative environmental change, particularly related to climate change, demands a more integrated and holistic approach.





RECOMMENDATIONS

Reinstate a land use planning mandate within the provincial government. This could be a distinct, neutral agency with dedicated planning expertise.

Carry out land use planning for areas of the province where it has not taken place, in a manner that is consistent with the other recommendations here.

Build on existing plans. In recent hearings conducted by a special legislative committee around the province, British Columbians from all walks of life spoke out resoundingly to affirm that areas currently reserved from logging to protect water, wildlife and other values should remain in place and not be re-opened. If anything, the committee was told, we should be doing more, not less to sustain our natural life support systems in the face of climate change.

Begin from best available scientific and Indigenous knowledge about what it will take to sustain the ecological and societal values we care about, taking climate change into account. Invest in mapping projects to support land use decision-making that identify both areas with high conservation values for species/biodiversity and those with high potential to store carbon in natural ecosystems over the long term.

Conduct broad-scale, proactive, regional cumulative effects assessment to inform planning efforts that focus on valued components of ecological and human well-being. What impacts have already happened historically? Where do we stand today? What are a range of future scenarios that could achieve maximum mutually reinforcing benefits? Regional initiatives also need to be connected to provincial level strategies regarding nature and climate change.

Ensure future land use decision-making is inclusive, participatory and just. Social choice decisions about land use should be made in a manner that is inclusive and participatory, while recognizing the distinct and constitutionally protected role of First Nations as decision-makers in their territories. New institutions, independent from existing line ministries or the Environmental Assessment Office will likely be required.

Fully integrate the outcomes from regional cumulative effects assessment and land use planning into our land management system. To be effective, land use designations and management objectives established should be applicable to all resource industries and all government decisions about land and water. Our laws will require updating to ensure this occurs.

Implement and sustain monitoring programs and practice adaptive management. We need to know if management objectives are being met and if these are effective over time at achieving our goals. Our legal frameworks need to include triggers for action if we learn that they are not.

ENDNOTES

1. See for example, analysis in: Jessica Clogg, *Tenure Reform, Law Reform Discussion Paper* (Vancouver: West Coast Environmental Law, 2007), online: West Coast Environmental Law <www.wcel.org>; Karen Campbell, *Undermining Our Future: How Mining's Privileged Access To Land Harms People And The Environment – A Discussion Paper On The Need To Reform Mineral Tenure Law In Canada* (Vancouver: West Coast Environmental Law, 2004), online: West Coast Environmental Law <www.wcel.org>
2. For a map of completed land use plans as of June 2012 see online: Status of Land Use Planning in BC Map <ilmbwww.gov.bc.ca/sites/default/files/resources/public/PDF/LRMP/status_LUP_map_201206.pdf>.
3. Forest Practices Board of British Columbia, *Implementation of Biodiversity Measures under the Forest Practices Code* (Victoria: Forest Practices Board, 2004), online: <www.fpb.gov.bc.ca>. The Forest Practices Board uses 'biodiversity strategy' to refer to three provincial policy documents, the *Identified Wildlife Management Strategy*, the *Biodiversity Guidebook* and the *Landscape Unit Planning Guide* under the Forest Practices Code of British Columbia Act, R.S.B.C. 1996, c. 159 [*Forest Practices Code*].
4. Ministry of Forests, Lands and Natural Resource Operations, *History of Land and Marine Planning*, online: <www.ilmb.gov.bc.ca>.
5. Marlene Cummings, *Drawing the Line: British Columbia's Conservation Land Use Designations, Mapped and Interpreted against Current Science* (ForestEthics Solutions, 2013), online: <forestethicssolutions.org> [ForestEthics Solutions, 2013]
6. Including resource management zones and special management areas outside of protected areas.
7. Used interchangeably with the term 'cumulative effects.'
8. M.A. Austin, D.A. Buffett, D.J. Nicolson, G.G.E. Scudder and V. Stevens (eds.), *Taking Nature's Pulse: The Status of Biodiversity in British Columbia* (Victoria: Biodiversity BC, 2008) at xix, online: Biodiversity BC <www.biodiversitybc.org> [*Natures Pulse*].
9. *Nature's Pulse* concludes that: "Climate change is already seriously impacting British Columbia and is the foremost threat to biodiversity" at xix.
10. Jim Pojar, *A New Climate for Conservation: Nature, Carbon and Climate Change in British Columbia* (Vancouver: Working Group on Biodiversity, Forests and Climate, 2010) at 15, online: West Coast Environmental Law <www.wcel.org> [Pojar, *New Climate*].
11. Prior to the introduction of the *Forest Practices Code* in 1995, strategic land use plans that were completed could be adopted as provincial government policy but were not legally binding (with the exception of new parks that were sometime established following planning). The *Forest Practices Code* introduced the concept of a 'higher level plan.' Higher level plan was a legal term used by the *Forest Practices Code*, rather than a new type of land use plan. Establishment of higher level plans became the primary mechanism for linking strategic land use planning to operational forestry activities, through a *Forest Practices Code Act* requirement that operational plans for forest practices be consistent with higher level plans. Prior to June 15, 1997, entire land use plans could be established as higher level plans by ministerial order: *Forest Practices Code*, s. 3(8). Three plans, the Cariboo Chilcotin Regional Land Use Plan, the Kamloops Land and Resource Management Plan (LRMP) and the Kispiox LRMP were designated in this fashion. Subsequently, the definition of higher level plan was changed to refer to "an objective for (a) a resource management zone, (b) a landscape unit or a sensitive area, (c) for a recreation site, a recreation trail or an interpretative forest site": *Forest Statutes Amendment Act*, S.B.C. 1997, c. 48, s. 44(g). Today, although the term 'higher level plan' is no longer used, the basic approach remains constant, with forest and range objectives now established under the *Land Act*, R.S.B.C. 1996, c. 245, s. 93.4 [*Land Act*], and linkages to operational planning established through the *Forest and Range Practices Act*, S.B.C. 2002, c. 69 [FRPA], which came into effect on January 31, 2004 and replaced the *Forest Practices Code*.
12. B.C. Reg. 582/2004.
13. *Oil and Gas Activities Act*, S.B.C. 2008, c. 36 [*Oil and Gas Activities Act*].
14. See *Oil and Gas Activities Act*, ss. 1, 25.1, 103–104, and *Environmental Protection and Management Regulation*, B.C. Reg. 200/2010.

15. *Mineral Tenure Act*, R.S.B.C. 1996, c. 292, s 14(5): “Unless the location is one of the following, a land use designation or objective does not preclude application by a recorded holder for any form of permission, or approval of that permission, required in relation to mining activity by the recorded holder:
- (a) an area in which mining is prohibited under the *Environment and Land Use Act*;
 - (b) a park under the *Park Act* or a regional park under the *Local Government Act*;
 - (c) a park or ecological reserve under the *Protected Areas of British Columbia Act*;
 - (d) an ecological reserve under the *Ecological Reserve Act*;
 - (d.1) an area of Crown land if
 - (i) the area is designated under section 93.1 of the *Land Act*, for a purpose under that section, and
 - (ii) the order under that section making the designation, or an amendment to the order, precludes the application by the recorded holder;
 - (e) a protected heritage property.”
- However, note that another provision of the *Mineral Tenure Act*, s. 17, does give the gold commissioner the ability to establish mineral reserves and such reserves presently cover approximately 10 percent of the province (6 percent of which is outside of parks and other more comprehensive conservation designations).
16. I.e., segregated, cut off, separate.
17. Environment Canada, *Canadian Biodiversity Strategy*, (Hull, QB: Minister of Supply and Services Canada, 1995) at 5, online: Biodiversity Canada <www.biodivcanada.ca/560ED58E-0A7A-43D8-8754-C7DD12761EFA/CBS_e.pdf>.
18. “Climate change is already significantly impacting healthy ecosystems in British Columbia, and will likely cause more dire consequences for fragmented or degraded ecosystems.” Pojar, *New Climate* at 15.
19. Secretariat of the Convention on Biological Diversity, *Interlinkages between Biological Diversity and Climate Change: Advice on the Integration of Biodiversity Considerations into the Implementation of the United Nations Framework Convention on Climate Change and its Kyoto Protocol*, CBD Technical Series no. 10, UNEP, 2003, online: <www.cbd.int/doc/publications/cbd-ts-10.pdf>
20. See e.g., M. Paridaen, “Perceived Effect of 12% Protected Areas Guideline on LRMP Protected Areas Selection Process” in “Protected Areas Selection and the LRMP Process” (Masters Research Project, University of Guelph, 2000) at 77.
21. BC Ministry of Environment, Lands and Parks, Media Release, “B.C. surpasses target of protecting land” (January 18, 2001).
22. Reed Noss et al, “Bolder Thinking For Conservation,” *Conservation Biology* (2011) 26: 1.
23. Victoria Stevens and Laura Darling, “Conservation of Species and Ecosystems at Risk: BC Parks and Protected Areas Challenges,” in T.D. Hooper, ed., *Proceedings of the Species at Risk 2004 Pathways to Recovery Conference*. Victoria: 1 March 2–6, 2004, online: <www.arlis.org/docs/vol1/69415913/stevensv_parks_edited_final_march_31.pdf>
24. Examples of specific limitations include the following:
- Policy direction that only 10% of sub-regional planning units are to be managed with a high emphasis on biodiversity, and approximately 45% assigned low biodiversity emphasis, where “pattern of natural biodiversity will be significantly altered, and the risk of some native species being unable to survive in the area will be relatively high”: Ministry of Forests, *Biodiversity Guidebook* (1995) at 7.
 - Past Chief Forester direction that the impact of landscape unit biodiversity objectives on provincial timber supply is “not permitted to exceed 4.1% in the short-term and 4.3% over the long-term.”: Larry Pederson et al to Regional Managers and District Managers, MOF; Regional Directors and Designated Environmental Officials, MELP; and all staff involved in Landscape Unit Planning, “Release and Implementation of the Landscape Unit Planning Guide,” March 17, 1999.

- Policy direction that limits to 1% the allowable impact on short-term harvest levels that may result from implementing measures for Identified Wildlife, e.g., Wildlife Habitat Areas (WHAs). Ministry of Water, Land and Air Protection, *Identified Wildlife Management Strategy, Procedures for Managing Identified Wildlife*, Version 2004.
 - Policy direction that early and mature seral targets are not to be met unless there is no timber supply impact and that all low biodiversity emphasis areas are to be managed to achieve only one third of the old seral target: Ministry of Forests and Ministry of Environment, Lands and Parks, *Landscape Unit Planning Guide* (1999) (unless there are no timber supply impacts).
 - Policy direction that management for most landscape and stand attributes (other than old growth and wildlife tree retention) is only permitted if it would have no timber supply impacts: *Landscape Unit Planning Guide* (unless resource management zone objectives provide otherwise; now 93.4 objectives under the *Land Act*)
 - Past Chief Forester direction that biodiversity representation must not be considered at a scale finer than BEC variant level when establishing landscape unit objectives: Larry Pederson, Chief Forester to District Managers, MOF and Designated Environmental Officials, MELP “Chief Forester Direction on Landscape Unit Objectives,” May 25, 1998.
25. B.C. Reg. 357/2005, s.2(2)(b).
26. *Forest Planning and Practices Regulation*, B.C. Reg. 14/2004, s. 25.1; See also FRPA General Bulletin, No. 3: *Use of the Term “Practicable” Under the Forest and Range Practices Act (FRPA) and Regulations* (MOF: June 2005): “Practicability should take into account reasonable commercial considerations, amongst other considerations.”
27. For example:
- Once a forest stewardship plan (FSP) is approved, licensees can unilaterally create a new designation called a “declared area” which is insulated from compliance with legal objectives that are subsequently established: *Forest Planning and Practices Regulation*, s. 23(1) and 32.1. A declared area means an area identified under section 14 (4) of the *Forest Planning and Practices Regulation*, which reads: “A person who prepares a forest stewardship plan may identify an area as a declared area if, on the date that the area is identified, (a) the area is in a forest development unit in effect, and, (b) all activities and evaluations that are necessary in relation to inclusion of cutblocks and roads in the area have been completed.” The activities and evaluations referenced in s. 14(4)(b) are not legally prescribed. Section 23(1) insulates “declared areas,” and cutblocks and roads previously shown in a Forest Development Plans (as set out in FRPA, s.196(1)) from legal objectives with respect to any *new* FSPs submitted for approval. Section 32 insulates “declared areas” and cutblocks and roads previously shown in a Forest Development Plans (as set out in FRPA, s.196(1)) from new legal objectives *with respect to mandatory amendments to already approved FSPs*. But for s.32.1 of the *Forest Planning and Practices Regulation*, the establishment of new legal objectives would trigger mandatory amendments to FSP results and strategies pertaining in these areas as per FRPA, s. 8.
 - FRPA allows delays of up to two years or more before FSPs have to be amended to comply with legal objectives once they are established: FRPA, s. 8(1.1).
 - Other provisions of the FRPA framework insulate already approved cutting permits from compliance with the outcomes of strategic level planning. In many cases, this can mean up to four years of further unconstrained logging that is inconsistent with the implementation of strategic level plans: FRPA, s.7(1)(a) provides that any part of an FSP that pertains to a cutting permit, road permit, or timber sales licence (if the permit or licence is in effect on the date of the submission of the FSP to the minister) “must be considered to have received the minister’s approval.” *Forest Planning and Practices Regulation*, s. 23(1) also extends this exemption to permits or Timber Sales Licences that are not in effect but that have a term commencing after the FSP is submitted to the minister.
28. *Oil and Gas Activities Act*, s. 36(2).
29. Table of Approved Legal Objectives, online: <www.ilmb.gov.bc.ca/slrp/legalobjectives/index.html>
30. Forest Practices Board, *Cumulative Effects: From Assessment Towards Management* (Victoria: Forest Practices Board, 2011) at 1, online: <www.fpb.gov.bc.ca>

31. Province of British Columbia. *Cumulative Effects Assessment and Management Framework Discussion Paper* (March 2012).
32. Auditor General of British Columbia, *Conservation of Ecological Integrity in BC Parks and Protected Areas*, (British Columbia: Office of the Auditor General British Columbia, 2010), online: <www.bcauditor.com/pubs/2010/report3/conservation-ecological-integrity-bc-parks>.
33. *Haida Nation v. BC (Ministry of Forests)*, [1994]. 3 S.C.R. 511, 2004 SCC 73; *Taku River Tlingit First Nation v. BC (Project Assessment Director)*, [2004] 3 S.C.R. 550, 2004 SCC 74.
34. See e.g. those with Coastal First Nations, online: <archive.ilmb.gov.bc.ca/slrp/lrmp/nanaimo/central_north_coast/plan/slupas.html>
35. E.g., physical landscape, geology, landforms, soils: Jim Pojar, *Climate Change And Land Use Planning In The Atlin – Taku Area*, report prepared for the Taku River Tlingit First Nation and for the Integrated Land Management Bureau, British Columbia Ministry of Agriculture and Lands (2009) at 12-13, online: <www.ilmb.gov.bc.ca/sites/default/files/resources/public/PDF/SRMP/climate-change-in-the-atlin-taku-pojar.pdf>
36. Victoria Stevens, “Opportunities in a Changing Climate: British Columbia Parks and Protected Areas,” in Samantha Weber and David Harmon, eds. *Proceedings of the 2007 George Wright Society Biennial Conference on Parks, Protected Areas, and Cultural Sites* (Hancock, Michigan: The George Wright Society, 2008) at 254: “This analysis was based on the assumption that an organism needs to move 100 km north for every 1 degree C temperature increase in order to stay in a similar comfort zone,” online: <www.georgewright.org/0747stevens.pdf>
37. *Ibid* at 255.
38. Nancy-Anne Rose and Philip J. Burton, “Persistent climate corridors: The identification of climate refugia in British Columbia’s Central Interior for the selection of candidate areas for conservation” *BC Journal of Ecosystems and Management* 12 (2011) : 101-117.
39. Washington Wildlife Habitat Connectivity Working Group (WHCWG), *Washington Connected Landscapes Project: Climate-Gradient Corridors Report* (Olympia, WA: Washington Departments of Fish and Wildlife, and Transportation, 2011); Meade Krosby, “Analyzing connectivity in light of a changing climate in Washington and neighboring habitats including BC” (Presentation to Wildlinks Conference, Vancouver BC, October 24, 2011); Meade Krosby, et al, “Ecological Connectivity for a Changing Climate,” *Conservation Biology* 24 (2010): 1686–1689.
40. Globe Advisors and The Center for Climate Strategies, *The West Coast Clean Economy, Opportunities for Investment & Accelerated Job Creation* (Pacific Coast Collaborative, March 2012) online: <www.globeadvisors.ca/market-research/west-coast-clean-economy-study.aspx>
41. Generally the permanent/long-term change in land use from forest to non-forest use. In BC: “‘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.
42. 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: B. Griscom et al. *The Hidden Frontier of Forest Degradation: A Review of the Science, Policy and Practice of Reducing Degradation Emissions* (Arlington, VA: The Nature Conservancy, 2009).
43. Ministry of Environment, *British Columbia Greenhouse Gas Inventory Report 2010*, online: <www.env.gov.bc.ca/cas/mitigation/ghg_inventory/>. For example, logging and slash burning accounted for emissions of 51.3 MtCO₂e (including, respectively, 43.8 MtCO₂e and 7.5 MtCO₂e) in BC in 2010.
44. See, for example, Pojar, *New Climate* at 60.
45. *Greenhouse Gas Reduction Targets Act*, S.B.C. 2007, c. 42 [Greenhouse Gas Reduction Targets Act].
46. Western Climate Initiative, “Program Design”, online at: <www.westernclimateinitiative.org/designing-the-program>

47. *Greenhouse Gas Reduction (Cap and Trade Act)*, S.B.C. 2008, c. 32, s. 38(3). See also BC Government, Consultation for a Proposed Offsets Regulation, online: < www.env.gov.bc.ca/cas/mitigation/ggrcta/offsets-regulation/index>
48. Maximum allowable offsets through 2020 for California alone have been estimated to be 232.6 MtCO₂, see online: <www.newforests.com.au/news/pdf/articles/CaliforniaCarbonMarket2010.php>
49. 730,000 tonnes CO₂ in 2010. See Pacific Carbon Trust, *Carbon Neutral Government 2010*, online: <pacificcarbontrust.com/what-we-do/carbon-neutral-government/carbon-neutral-government-2010/>
50. Although only US forest projects will be initially eligible under California's system, their regulatory framework provides for accepting offsets from external greenhouse gas trading systems, e.g., other WCI partners once in place and approved, as well as for approving additional protocols. See Title 17, *California Code of Regulations (CCR)*, sections 95801-96022, Subarticle 12: Linkage to External Greenhouse Gas Emissions Trading Systems, online: <www.arb.ca.gov/cc/capandtrade/september_2012_regulation.pdf>
51. More than half of the offset needs of BC's public agencies for 2010 were met by just one improved forest management project focused on conservation and restoration. See Pacific Carbon Trust, *Carbon Neutral Government 2010*, online: <pacificcarbontrust.com/what-we-do/carbon-neutral-government/carbon-neutral-government-2010/>
52. Protocol for the Creation of Forest Carbon Offsets in British Columbia (designated under s. 7(1) of the *Emission Offsets Regulation*, B.C. Reg. 393/2008, August 12, 2011) ss. 2.3.1.3/2.3.1.4.
53. For example by applying restrictions that currently apply to forestry to other industries.
54. With respect to existing land use plan outcomes, while it essential that forest carbon projects produce carbon benefits that are additional to the status quo, somewhat ironically, the limitations of existing designations may also represent a current opportunity. As noted above, in the vast majority of cases, existing designations did not restrict the full range of potential human activities that could result in forest degradation or deforestation. For example, where there is evidence indicating a high likelihood that development not currently restricted by the designation (e.g., mining) would have occurred, adjustment of legal requirements to secure conservation goals may result in measurable carbon benefits. These benefits can likely be achieved without time-consuming process costs (expense/time), as the planning efforts to identify the areas have already occurred.
55. 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>
56. See e.g., *Emission Offsets Regulation*, 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/>



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