

First Nations Carbon

A BCAFN DISCUSSION PAPER



BC Assembly of First Nations
February 2022



Author:

Michelle Connolly

 <https://ca.linkedin.com/in/michelle-connolly-50354a178>

Contact:

Patricia Rojas

 BCAFN Regional Climate Change Coordinator

 patricia.rojas@bcafn.ca

 Cell: 250 859 1511

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"First Nations have roles and responsibilities to care for the land. The climate emergency is upon us all, and First Nations need support to protect our lands, especially forests. Forest carbon and conservation are key opportunities to mitigate climate change and recover the relationships First Nations have maintained for thousands of years. First Nations have jurisdiction and control of the carbon in our territories— without our free, prior, and informed consent, these projects are at risk."

Regional Chief Terry Teegee

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Introduction

The British Columbia Assembly of First Nations (BCAFN) is a Provincial-Territorial Organization representing 204 First Nations in British Columbia (BC). The BCAFN advocates for the Aboriginal Title, Rights and Treaty Rights of First Nations in BC by supporting First Nations laws, systems of government, jurisdiction and traditions. We envision a future where our inherent laws, lands, and traditions are recognized and respected by governments, industry and the general public.

The rights of First Nations in BC are land-based Aboriginal rights. First Nations communities in BC have the right to the carbon stored and absorbed in their territories and the potential revenues related to such carbon. This discussion paper will demystify carbon for First Nations in BC. What is carbon? What are First Nation rights with regard to carbon? How do carbon offsets work and how can First Nations in BC benefit from them?



Carbon and the Land

Carbon is an element that connects us to Mother Earth. It is found in our bodies, the atmosphere, the soil, and in the Earth's crust. Forests, wetlands, grasslands and the ocean all absorb and store carbon in living and dead tissues through a process that has been occurring for millions of years. Earth's carbon balance was maintained by Indigenous peoples for millennia. Industrialization, which began only a few hundred years ago, altered that carbon balance and drives climate change today.

The burning of fossil fuels transferred carbon from under the Earth's crust to the atmosphere, and the conversion of forests and grasslands into cities and farms altered the land's ability to absorb and store carbon. The global economy produces over 10 billion tonnes of carbon emissions every year, but only half that amount actually goes into the atmosphere. The rest goes into nature.¹

Reducing fossil fuel use is an essential step towards restoring Earth's carbon balance. We can also fight climate change by making sure nature is there to soak up more carbon dioxide, and that this stored carbon is protected over time. Protecting, restoring and improving the management of land increases the overall stock of carbon pulled out, and kept out, of the atmosphere.²





Returning lands to First Nations management will support carbon storage and absorption, as traditional management is compatible and supportive of these functions. Because land-based carbon offsets generate revenue from protecting the physical properties of the land, they can be a tool to enable the re-establishment of First Nations land stewardship and return social and ecological balance to communities.³ Recent projects led by Indigenous communities worldwide have been shown to support community objectives around revenue, land-use, and resilience.⁴ Indigenous Peoples are already stewarding nearly one-fifth of the total carbon held in tropical and subtropical forests worldwide.⁵

A land-based carbon offset generates revenue by maintaining and enhancing natural processes in a defined geographical area, and then turning this service into a tradable commodity to be exchanged.⁶ Carbon offsets are commodified into saleable units through the development of specific *projects*, the outputs of which can be quantified, proven, and traded.⁷ The outputs of a carbon project are *carbon credits*, which represents an emission reduction of one metric tonne of CO₂, or an equivalent amount of other greenhouse gas (CO₂e) that has been reduced already.⁸

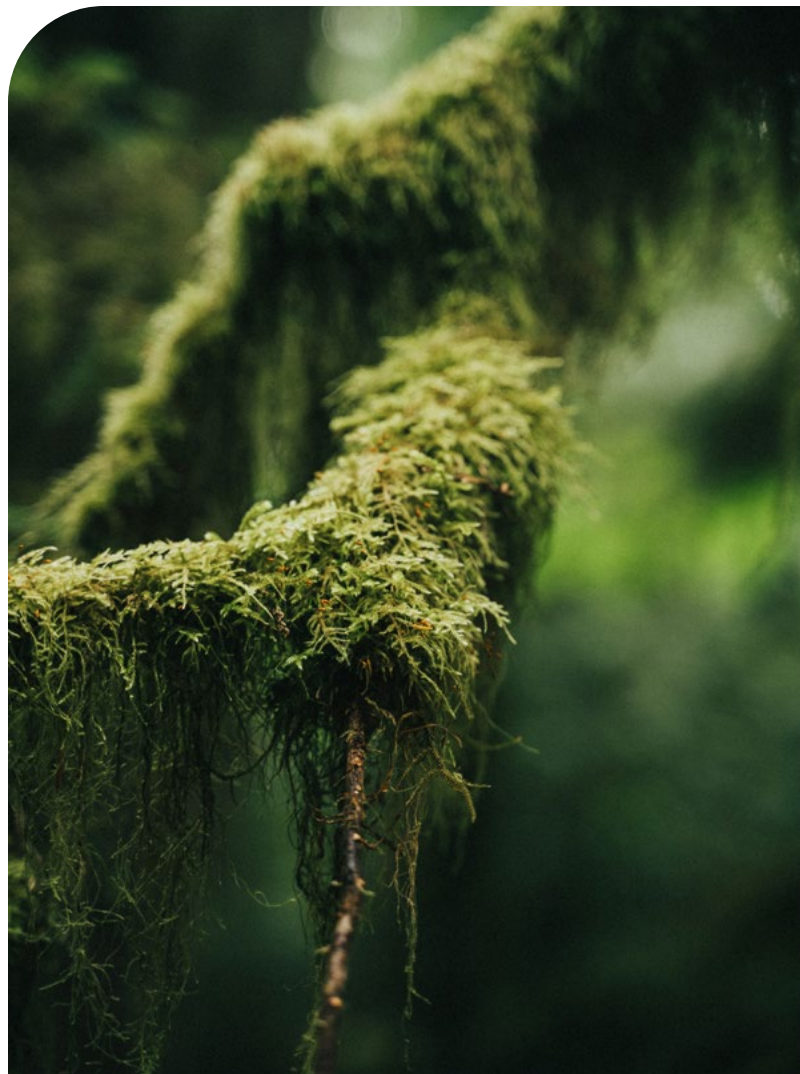
The emission reduction represented by a carbon credit has already been achieved, usually the preceding year.⁹ *Carbon credits* are transferable, and used to convey a net climate benefit from one entity to another. The purchaser of a carbon credit can 'retire' it to claim the underlying reduction towards their own greenhouse gas reduction goals.¹⁰

First Nations Carbon Rights

For emissions reductions to be claimed through a carbon credit and traded as a commodity, the tonne of carbon that is reduced needs to be owned.¹¹ In other words, participation in a carbon market requires that the entity providing the carbon offset has the legal right to it. First Nations rights to the carbon stored and absorbed across Indigenous lands and the potential revenues related to such carbon are for the most part not recognized by the governments of BC or Canada.¹²

First Nations, having occupied the lands which now constitute BC, have constitutionally protected Aboriginal rights, including Title and Treaty Rights (historic and modern treaties and land claims agreements), under section 35 of the *Constitution Act*.¹³ In addition to section 35 of the *Constitution Act*, Canada and British Columbia have both passed legislation to uphold the United Nations' *Declaration on the Rights of Indigenous Peoples* (UN Declaration).¹⁴ The federal *United Nations Declaration on the Rights of Indigenous Peoples Act*¹⁵ and the BC *Declaration on the Rights of Indigenous Peoples Act*¹⁶ require that the governments of Canada and BC, in consultation and cooperation with First Nations peoples, ensure that laws of Canada and BC are consistent with the articles of the UN Declaration.¹⁷

Articles 26 of the UN Declaration states that Indigenous peoples have the right to the lands, territories and resources which they have traditionally owned, occupied or otherwise used, that states shall give legal recognition and protection to these lands, and that such recognition shall be conducted with due respect to the customs, traditions and land tenure systems of the Indigenous peoples concerned.¹⁸ Article 29 states that Indigenous peoples have the right to the conservation and protection of the environment and the productive capacity of their lands (the lands in BC being those of the First Nations who historically occupied BC).¹⁹



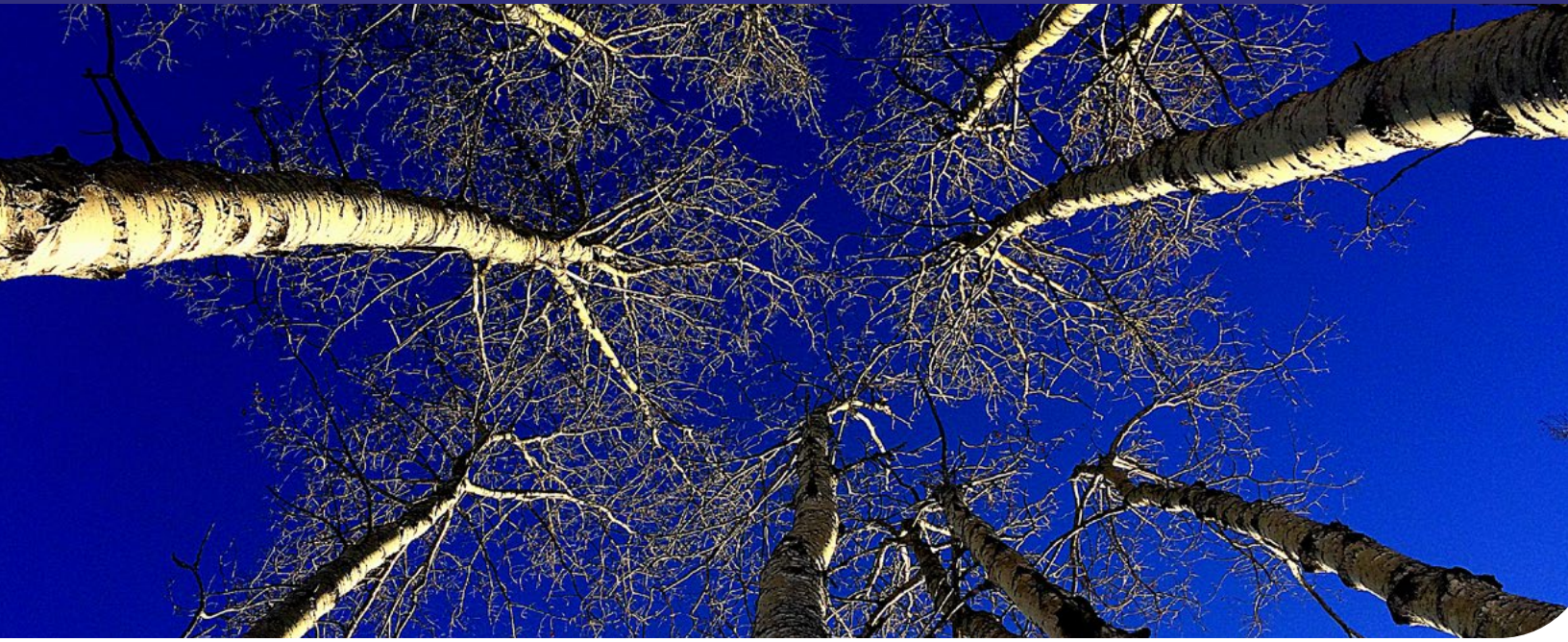
The introduction of the Declaration Acts in BC and Canada may offer new opportunities for First Nations to negotiate carbon rights on a government-to-government basis through negotiated treaties and reconciliation agreements. Additional legal arguments for First Nations in Canada claiming ownership and rights of use of carbon offsets are laid out in the *Legal Review of First Nations Rights to Carbon Credits* report,²⁰ and paraphrased by Mary-Kate Craig in *Nature-Based Solutions: Indigenous-led Conservation and Carbon Storage in Canada*.²¹

1. Claiming ownership to carbon as a resource that was not ceded by First Nations to the crown specifically, and thus ownership and rights of use is still retained by the First Nation.
2. Asserting territorial jurisdiction over forests and areas that can be managed and conserved in a way that is compatible with recognizing the existence of carbon rights that underlie carbon offsets. This could happen in areas controlled by First Nations governance structures under settled land claims agreements, on reserves, and off-reserve through assertion of Aboriginal title.
3. First Nations can argue that they have Aboriginal and treaty rights to or related to the conservation and environmental management practices that would result in the ability to own and sell carbon offsets.

The 'rules' guiding carbon offset projects on 'crown land' are largely shaped by the BC and Canada governments and businesses, and thus reinforce existing power imbalances. Because First Nations carbon projects have the potential to significantly impair, or in some cases eliminate, the economic interests of non-First Nations stakeholders, those stakeholders who stand to lose will lobby against them. The status quo is not likely to change without a strong political push – all the more reason for First Nations in BC to be fully engaged in both the development of legislative and policy changes, and land-based carbon offset projects.²²

Tenure and atmospheric benefits

In other parts of the world, such as the United States and New Zealand, Indigenous Peoples have been able to participate in forest carbon markets because land tenure was defined in a way that clearly delineated their carbon rights.²³ In BC, the government takes the position that, in the absence of any agreement or legislation to the contrary, it is the owner of the rights to benefit from land-based offset projects on 'crown land' (which does not include private land or reserve land), except in relation to lands where Aboriginal Title has been proven.²⁴ An Atmospheric Benefit Sharing Agreement (ABSA) is how BC currently allocates the right to benefit from the sale of carbon credits on 'crown land' to a First Nation or other party.²⁵



An ABSA clarifies carbon ownership over a given area and allows the sale of carbon credits by identifying a percentage of the atmospheric benefits granted annually to the proponent.²⁶ The Minister of Forests, Lands and Natural Resource Operations and Rural Development and the Minister of Indigenous Relations and Reconciliation currently have the authority to approve these ABSAs, which are typically re-negotiated every five years. Retaining a share of the benefits obtained through the sale of carbon credit is often a condition of approval for these representatives of the crown. To date 14 First Nations have established ABSAs with BC.²⁷

There have been disagreements between First Nation carbon project proponents and BC on what represents a fair and equitable economic benefit sharing agreement.²⁸ For projects that involve limiting logging, the potential decrease in government revenue because of foregone stumpage can diminish BC's support.²⁹ Some proponents involved in carbon projects have suggested that they should receive all of the carbon credit income because offset projects normally do not incur governmental expenses like status quo extraction, such as the cost of roads.³⁰

A crown tenure is the mechanism by which BC transfers specific rights, obligations and their duration to private companies, individuals, non-Indigenous communities and First Nations.³¹ Most forest tenures in BC grant only rights to extract timber, and do not confer carbon rights.³² Timber extraction can foreclose on opportunities for persistent carbon removals, as forest degradation or conversion to non-forest land uses reduces carbon storage and uptake from the atmosphere.³³ Community Forest Agreements and First Nations Woodland Licenses provide rights to non-timber forest values; however, these tenure types make up less than 2% of harvest rights in the province.

The Cheakamus Community Forest is an example of a First Nations-led carbon project.³⁴ Carbon projects resulting from the Great Bear Rainforest Agreements covered areas in which there were various tenure types and holders to which BC had granted rights to use crown land. The BC Carbon Registry houses documents that describe the pathways followed by these successful First Nations-led carbon projects.³⁵

Forest Carbon Facts

Contrary to narratives from the timber industry and the BC government, industrial forestry is not 'carbon neutral'.³⁶ Harvesting primary (natural) forests contributes significantly to climate change worldwide, incurring a carbon 'debt' that will not be repaid for centuries or millennia, if ever.^{37, 38} Converting primary forests to managed plantations sends a pulse of carbon to the atmosphere, all but eliminates carbon capture in the short term (before 2050) and reduces long-term storage capacity.³⁹ Producing more wood products, particularly from natural forests, is not a climate solution but rather a substantial short-term problem.^{40, 41}

Natural forests are more valuable standing.⁴² Old natural forests store vast amounts of carbon in trees and soils.^{43, 44} Three quarters of this stored carbon is lost when a forest is converted into wood products.^{45, 46, 47} Secondary stands do not begin to store carbon for two or three decades and take more than a century to reach the storage capacity of the primary stand they replaced, leading to increased atmospheric levels for this time.⁴⁸ Carbon absorbed (sequestered) by young stands cannot replace the stored carbon lost due to logging.^{49, 50, 51}

Primary forests generally resist wildfire better than managed forests and plantations.^{52, 53} Thus the risk of potential short-term carbon release from fire in primary forests is lower than in managed forests and plantations.

Responsible forest carbon management in BC would minimize the carbon impact of wood products by sourcing them from areas that were previously logged and maintaining the carbon stores in primary forests within First Nations-led conservation areas such as Indigenous Protected and Conserved Areas (IPCAs) and carbon reserves. Leaving carbon-dense natural forests standing is the most effective way to reduce greenhouse gas emissions in the short term.^{54, 55} Other carbon-positive actions are growing managed forests to maturity (also known as 'proforestation') and increasing the length of time between harvests of managed forest.⁵⁶

Accounting for carbon outside of project boundaries and across sectors is also important. If, as part of a carbon project, a First Nation logs an area but does not process that wood, the project cannot claim carbon sequestered in Harvested Wood Products (HWP). If a First Nation harvests and processes the wood they can claim the carbon sequestered in the HWPs but not substitution benefits, such as replacing cement with wood in construction (the project doing the substitution can claim this). If a community harvests a forest for bioenergy (pellets) this carbon loss is borne on the community; the bioenergy sector gets to claim the substitution benefits of replacing coal with pellets. Bioenergy is only 'carbon-neutral' because the land use sector takes the carbon hit for harvesting; replacing coal with pellets results in no atmospheric benefit in the short term.



Carbon Markets

Global origins

Earth has one atmosphere, so it doesn't matter where greenhouse gas emissions ('emissions') are released, they all contribute to climate change. If countries, companies or communities agree to limit their collective emissions to a certain amount, it doesn't matter where those reductions happen, as long as the whole group does not emit more than what they committed to.⁵⁷ The argument behind carbon trading is that the best way to take climate action is to reduce emissions where there is a cost-effective opportunity to do so.⁵⁸

The market for carbon offset credits is rooted in international efforts to control the accumulation of greenhouse gases in the atmosphere.⁵⁹ Markets first emerged following agreements under the United Nations Framework Convention on Climate Change, which enabled an entity such as a government or company to purchase a quantified emission reduction from another entity in order to comply with their own national commitment or target. In a carbon market, indirect emission reductions via carbon offsets can be exchanged from one entity to another.⁶⁰

The Paris Agreement was adopted in 2015 and compels countries that have signed on to help fulfill the goal to limit global warming to 1.5 degrees by reducing emissions and protecting and enhancing carbon storage and absorption in nature.⁶¹ The Paris Agreement Rulebook was finalized at COP26, outlining how countries will work together to achieve their commitments. At COP26, countries reached consensus on how to implement Article 6, establishing the rules for countries to trade carbon credits in the form of an Internationally Transferred Mitigation Outcome (ITMO). Article 6 creates an opportunity for countries to cooperate and buy cheaper carbon credits – increasing climate ambition and demand for carbon offset projects.

Each country will have its own approach to reaching its Nationally Determined Contribution, and it will be up to individual countries to reach bilateral agreements and trade ITMOs under Article 6.2, or to purchase ITMOs through the Article 6.4 mechanism. The establishment of the Paris Rulebook at COP26 creates the international market necessary to stimulate demand for carbon projects. See Appendix A for a representation of carbon market origins and how First Nations have been involved in their development.





Compliance and voluntary

There are two broad types of carbon markets. Compliance markets are regulated by regional, national or international regimes of emission reductions.⁶² Voluntary markets exist outside of government-mandated compliance programs.⁶³ Demand for emissions reductions varies over time and jurisdiction. In BC, demand has been driven mostly by commitments made by the provincial government. Project proponents are in the best situation where there are both voluntary and compliance markets in place in their jurisdiction, diversifying the demand for credits.

In compliance markets, offset credits are purchased by emitters that must comply with mandatory, legally-binding emissions reductions targets that are supported by legislation.⁶⁴ An example of a compliance market is the Western Climate Initiative, which sets a cap on total emissions and allows different organizations within participating jurisdictions to trade carbon credits.⁶⁵ Compliance markets lead to emission reductions by gradually reducing the available emission allowances over time.⁶⁶ Voluntary markets enable entities such as businesses, governments and nongovernmental organizations to voluntarily purchase carbon credits.

Compliance markets are currently limited to specific regions, but voluntary carbon credits are not restrained by boundaries set by colonial governments, nation states or political unions.⁶⁷ First Nations carbon offset projects can sell offset credits to international companies and individuals in the voluntary market. Voluntary credits have the potential to be accessed by every sector of the economy instead of a limited number of industries.⁶⁸

British Columbia

In BC, the legislation setting out overarching requirements for carbon offset projects is the *Greenhouse Gas Industrial Reporting and Control Act* (GGIRCA, 2014).⁶⁹ The GGIRCA enables: the creation of carbon credits, BC's carbon offset market, and creation of protocols through which proponents can submit plans for specific offset projects. The Greenhouse Gas Emission Control Regulation (GGECR)⁷⁰ under GGIRCA sets out specific requirements for carbon offset project plans.⁷¹

BC's current emissions trading market is small, with proponents only having access to potential buyers in two provincial compliance markets, with some limited voluntary demand from the private sector.⁷² The first compliance market was enacted under the Climate Change Accountability Act (2007) which constrains the public sector to become carbon neutral through emission reduction and the purchase of carbon credits.⁷³ The second compliance market was created when the GGIRCA came into force because it restrains the emissions of liquefied natural gas plants and permits the purchase of carbon offsets to partially meet these limits.

First Nations land-based carbon offset projects in BC must be compliant with the GGIRCA and GGECR. The previously issued BC Forest Carbon Offset Protocol (FCOP 1.0) has been retired and a draft FCOP 2.0 is under public review and will likely be finalized by early 2022. The FCOP 2.0 will be the approved protocol for projects in BC on 'crown land'.⁷⁴ Projects on private land or on reserves can use any protocol they want.

Canada

In Canada, legislation that creates demand for carbon credits is the *Greenhouse Gas Pollution Pricing Act* (GGPPA), which came into force in 2018. This act includes an emissions trading system for large industrial facilities, known as the Output-Based Pricing System (OBPS). A new Federal Greenhouse Gas Offset System (Federal Offset System) is under development to enable generation of carbon offsets eligible to be utilized for compliance under this system. Though the primary objective of developing this system is to generate offsets for compliance, its offsets may also be used by companies pursuing voluntary emissions reductions.⁷⁵

The OBPS sets a limit on emissions for industrial polluters such as mines, oil and gas, cement production and others. Under the OBPS, regulated facilities (those that emit more than 10,000 tonnes of carbon dioxide pollution a year) have to compensate for emissions that exceed their annual limit.⁷⁶ Facilities that emit more than their limit can comply by either paying a charge⁷⁷ for each tonne of excess emission or by remitting a compliance unit for each tonne of excess emission that exceeds their allowed limit.⁷⁸ This compliance unit may either be a carbon offset, or excess emissions permits from another company that has reduced its emissions more than it was mandated to.





Though there are no finalized offset protocols listed as of January 1, 2022, BC's offset program is on Environment and Climate Change Canada's list of approved offset programs under the OBPS.⁷⁹ This means that facilities regulated under the OBPS may purchase and use carbon credits generated from certain offset protocols/project sectors (to be approved in the future) under the BC offset program as valid compliance units that substitute for direct emission reductions. This creates potential future demand for credits from BC by adding them as an option for industrial emitters across the country to reduce their emissions to the required level.

The incoming Federal Offset System is separate from the OBPS, but primarily designed to deliver compliance carbon offset credits for use within the OBPS. Because the OBPS directly addresses emissions from fossil fuel combustion and a range of other activities, the offset system is designed to support the reduction of domestic emissions from sources that are not covered by carbon pollution pricing such as the OBPS.⁸⁰ The Federal Offset System will include regulations, protocols for different project types, and a public registry for tracking projects.

International air travel

The Paris Agreement does not currently cover the international aviation sector. The Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) fills this niche as a carbon market designed specifically for airlines. CORSIA is geared towards reducing emissions from international flights.⁸¹

CORSIA was established by a United Nations body responsible for aviation, and Canada is a signatory along with 190 other countries where operators have international flights with more than 10,000 tonnes of emissions annually.⁸² BC has been negotiating with the International Air Transport Authority for recognition of the BC Offset Program in this market, which is in its pilot phase until 2023.⁸³ Programs that are currently eligible for creating offsets that airlines can use in this market are on the International Civil Aviation Organization (ICAO) website.⁸⁴ The ICAO approved the inclusion of forest carbon offsets issued through the Verified Carbon Standard and achieved by conservation and avoided deforestation in November 2020 – a positive sign for inclusion of forest carbon offset credits in this system.⁸⁵

Markets for First Nations carbon

Some have argued that in order to actualize broader opportunities for First Nations land-based projects, access to larger markets is key. Others argue that making markets compatible with each other, or simply having a single global carbon market is an essential way to improve the existing system for sellers, buyers and the atmosphere.⁸⁶

While some suggest that there should be a certification for First Nations carbon offset projects to help differentiate them from other projects,⁸⁷ others argue that carbon markets do better the more they converge rather than segment.⁸⁸ Rather than creating a whole new First Nations carbon offset standard and having to build all the details, certifications, trust and market demand – it may be more desirable to create an additional certification to designate quality First Nations projects.⁸⁹

The Climate Community and Biodiversity Standard is a good example, as it is not a standalone offset generation standard, but rather a standardized screen for other added biodiversity and community data, additive to the climate certification achieved by another standard like the Verified Carbon Standard.⁹⁰ Multiple-benefit carbon projects can also be registered under the SOCIALCARBON Standard.⁹¹ These additional standards tend to align with First Nations' values and can create credits that are more desirable, and potentially of more financial value, in the voluntary marketplace.



Carbon Project Concepts

Project boundaries, crediting period, project period and aggregation

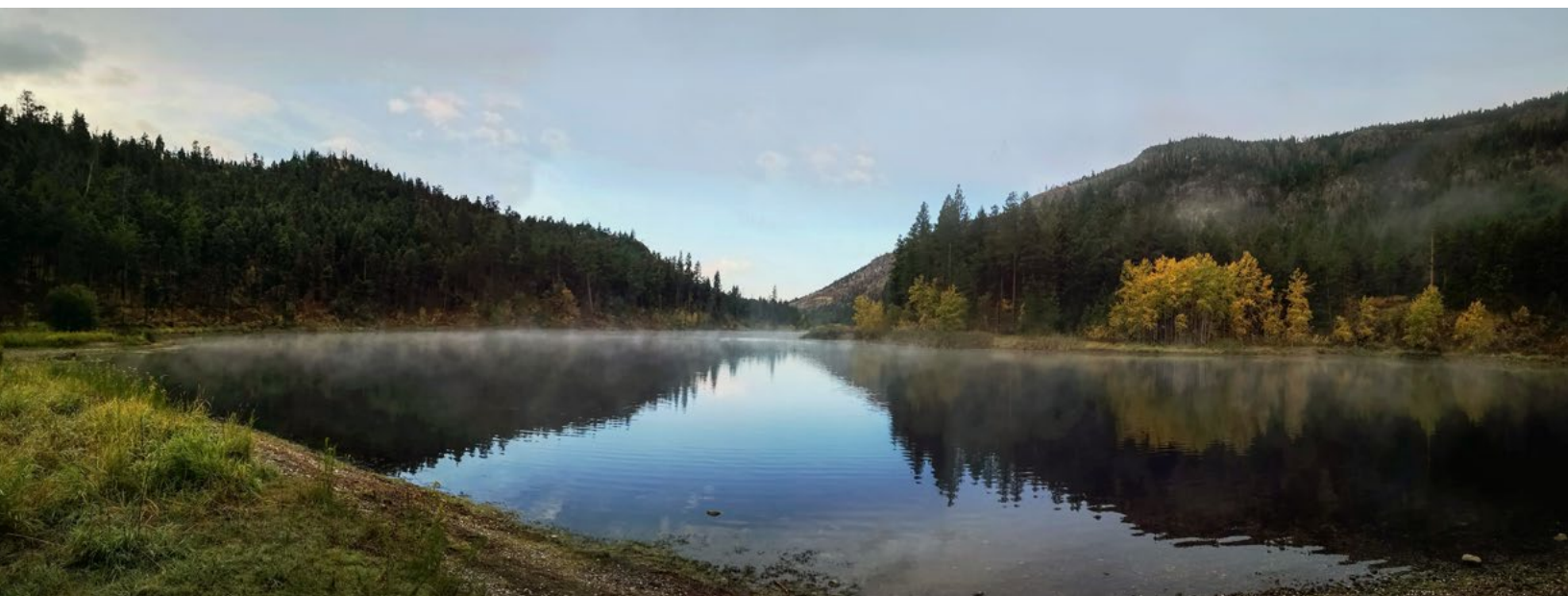
Defining the *project boundaries* is one of the first tasks for a community considering a carbon offset project.⁹² An economically feasible project requires that it be of a large enough size and have enough carbon sequestration ability to cover the costs of management and monitoring over the commitment period and generate a profit.⁹³ Viable project size will vary by the type of ecosystems, and their condition (is it a deforested area, a young plantation or a primary forest?).

For carbon quantification purposes, the project must also account for all primary and major secondary carbon effects associated with the project that may occur outside of the physical project area, such as the carbon emissions associated with the production of any fertilizer used by the project. This is referred to as the greenhouse gas assessment boundary.

Under the BC Forest Carbon Offset Protocol (FCOP), the *crediting period* is time span in which a project can generate credits, which is followed by a 100-year monitoring period after the last crediting period. Different protocols sometimes have different requirements.

Project *aggregation* can mean a couple of different things. An aggregated project can be when a single project proponent bundles smaller parcels of land into a project of a larger size in order to increase the economic feasibility of a project.⁹⁴ An aggregated project can also be where multiple proponents group multiple projects together to share project costs and register a project as a group.⁹⁵ The Great Bear Forest Carbon Project is an example of an aggregated project.⁹⁶

Land-based projects can be designed so as not to hinder community members' access to the land for cultural and other purposes. Land-based carbon projects are generally compatible with the harvesting of medicines, hunting, as well as recreation. Some projects plan for the harvest of trees at rates and scales that maintain the project's integrity.





Protocols and project plans

A legitimate carbon offset project that wishes to issue an offset certified to a carbon standard, is required to follow a *protocol*. A protocol is an accepted, technically sound method for quantifying the emission reductions associated with a particular carbon offset project type, such as landfill gas capture, wind power or improved forest management. Once the emission reductions of a project have been quantified and certified as a carbon offset under the requirements of a protocol, the project can be integrated into the respective compliance markets or voluntary markets.⁹⁷

In BC, only protocols that have been established under the GGIRCA can be used to prepare a compliance carbon offset project.⁹⁸ For example, most land-based offset projects must be planned and implemented following the FCOP. The FCOP sets out all technical aspects of designing, quantifying, and verifying carbon offsets from a broad range of forest activities on private and public land in BC.⁹⁹ A draft updated FCOP has been developed by a government-appointed technical committee in compliance with GGIRCA legislation.¹⁰⁰

The BC government requires that a *project plan* for a carbon offset project must be completed in accordance with the Greenhouse Gas Emission Control Regulation (GGECR) and the relevant protocol.¹⁰¹ Using a template available on the BC government website, a project plan sets out the project purpose, boundary, baseline scenario, and selected emission sources and pools (these are explained below).¹⁰² A project plan also identifies the length of time the project will be eligible to create offset credits.

Completed project plans are then *validated* by an accredited validator who is free of conflicts of interest. The validator reviews the project plan against the GGIRCA, the GGECR, and the pertinent protocol. A validated project plan and a validation statement is then submitted by the validator to the director of the BC Carbon Registry to the director for review.¹⁰³

When accepted, the validated project plan and related documents are published on the BC Carbon Registry, which is where all offset projects in BC are managed. Regulated entities, proponents, validators and verifiers, and the BC government use the BC Carbon Registry to post project-related documents and to issue, transfer and retire carbon offset units.¹⁰⁴

Additionality, baselines, sinks, sources and reservoirs

Emissions reductions are additional if they would not have occurred in the absence of a market for offset credits; this is referred to as *additionality*.¹⁰⁵ If the reductions would have happened anyway – i.e., without any prospect for project owners to sell carbon offset credits – then they are not additional.¹⁰⁶ The intervention of the project should cause additional reductions in emissions above and beyond any legal requirements or a conservative business-as-usual scenario.¹⁰⁷

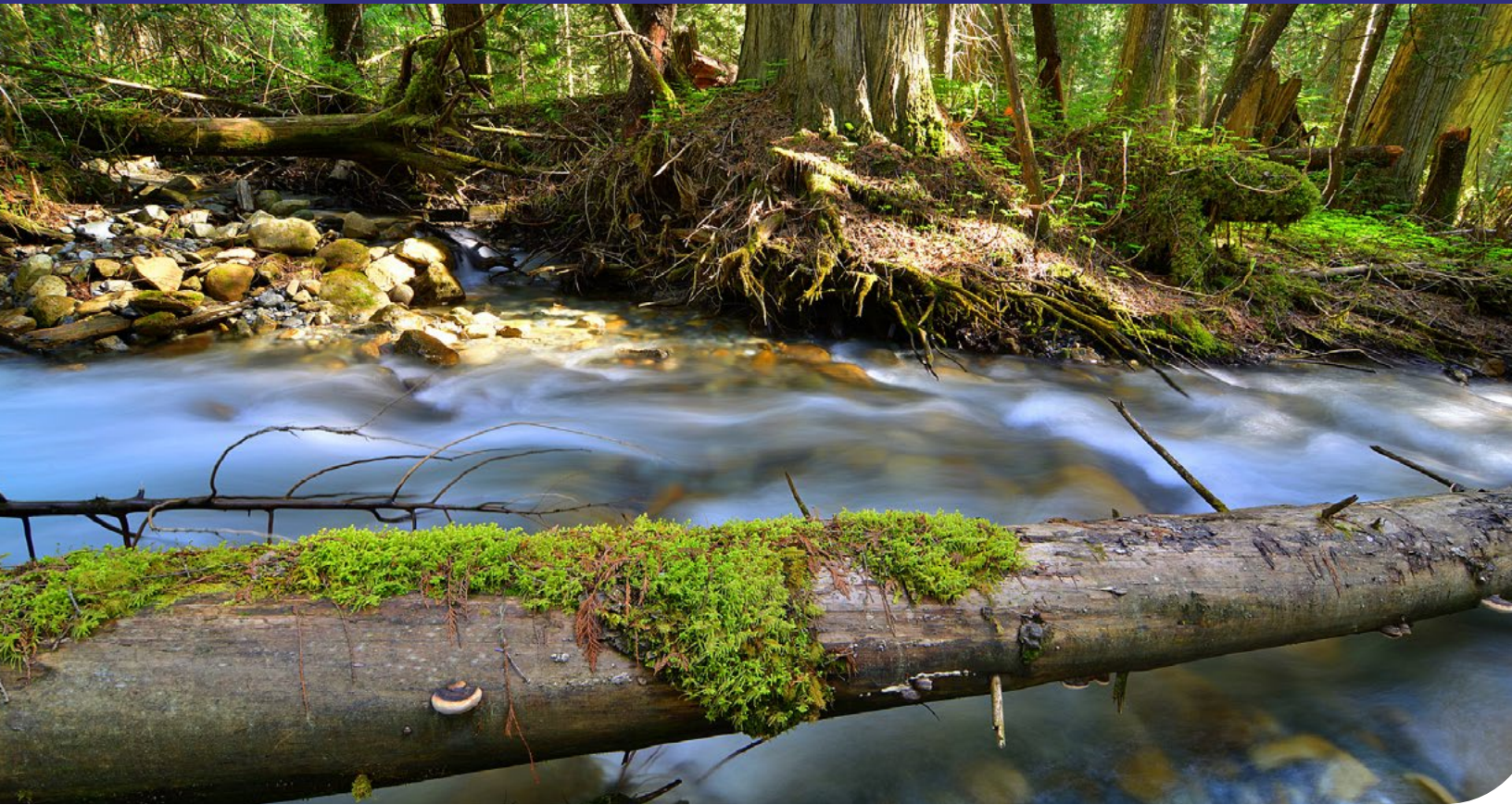
Legislated deferrals of old growth logging can make a project ineligible, as it is now business-as-usual. First Nations should insist on language in any deferrals that specifies the expectation of replacing lost revenue from harvesting with carbon credits. The same applies to First Nations stewardship plans, which should specify that carbon credits are required to finance increased removals over business-as-usual, for example when a community increases buffers around streams from 50 m (business-as-usual) to 150 m. Without a statement, a First Nation's stewardship plan can become business-as-usual and there is no longer additionality.

To figure out what emissions would be under business-as-usual, one looks at the *baseline*. A baseline is a forward-looking prediction of events and actions expected to occur in the absence of the project. The carbon credits generated by a potential carbon offset project is assessed relative to this baseline for the 100-year life of a typical forest carbon project.

To estimate both the baseline emissions and the project emissions for a forest project, carbon *sources*, *sinks* and *reservoirs* in that forest must be identified and accounted for.¹⁰⁸ In a natural forest, the bodies of living trees, shrubs and herbaceous plants actively absorb (sequester) carbon; they are carbon sinks. Dead trees, standing and fallen, store carbon (as reservoirs) or release carbon as they decompose (sources). The forest floor and the soil also store and release carbon over time.

The harvest of trees in the baseline and the project must also be accounted for. A product made from the wood from a forest (such as a table) is a carbon reservoir for a period of time, but eventually decays and becomes a source. Emissions from burning fuel in transport vehicles and logging equipment are examples of sources of carbon emissions, as is decomposing logging waste. Combustion turns wood pellets into a source.¹⁰⁹





In very simplified terms, values for sinks, sources and reservoirs are plugged into a model approved for use by a protocol such as the FCOP and quantified to produce the total baseline (business as usual) emissions and the project emissions.¹¹⁰

Simulating how carbon behaves in nature is an exercise imbued with uncertainty. At the same time, people have been studying forests for a long time – ideally pairing this with First Nations’ knowledge of their territories. This has enabled the development of forest carbon models that can project the carbon impact of different forest management scenarios. Direct measurements of forests in the field are also used to help calibrate modeling and reduce the inherent uncertainty in quantifying carbon in nature.¹¹¹

Carbon offset credits are generally issued based on the difference between the baseline emissions and the project emissions. Net project reductions are reported in metric tonnes of CO₂e.¹¹²

Reversals, permanence, leakage and buffer pools

Forest carbon offsets represent carbon that is withdrawn from the atmosphere for a period of 100 years; projects must maintain carbon storage for a century from the start of the project. This is called *permanence* and it applies to projects where carbon is sequestered in a natural system, such as a forest.

Traditional First Nations property systems may be able to provide increased assurance of permanence.¹¹³ The continuity of land ownership and management under First Nations governing entities may lower the permanence risks of land-based carbon projects compared to projects done by non-First Nations interests.¹¹⁴ In addition, a community can incorporate a particular land use into its laws and regulations, which would further increase stability and permanence of a project.¹¹⁵

Carbon in a forest is regularly emitted to the atmosphere through natural events such as a lightning-caused fire, or an insect outbreak that kills trees. Natural disturbances are normal and unavoidable and should be included in the calculations of the baseline and project emissions. However, a threat to permanence in a land-based project is an unanticipated *reversal*, or a natural disturbance that is larger or more severe than expected.

Reversals can be compensated with offsets from a *buffer pool* to provide insurance against them. Some jurisdictions require that projects with significant risk of reversals to contribute over 50% of the offset value to such an account so that projects can draw from them if needed. In BC, proponents of land-based projects are expected to prepare a risk mitigation and contingency plan for unanticipated reversals, as well as intentional reversals such as unplanned logging or roadbuilding.

From the perspective of a proponent, it's desirable to build into a project a way to deal with unintentional reversals that is straight-forward and non-punitive.¹¹⁶ Some carbon offset schemes account for an intentional reversal (like logging) by requiring project proponents to repay the value of carbon offsets lost from it.

Leakage refers to the risk that emissions reductions due to land-use change in one area will simply cause the previous use to move to another area, resulting in no net change in emissions. For example, a project may reduce logging in an area and harvest activity shifts to outside the project area, leading to forest loss and carbon release elsewhere.¹¹⁷ Leakage can reduce carbon revenues.

Internal leakage would be shifting the harvest to lands owned by the project proponent. External leakage is someone outside the project harvesting more to fill in the gap left by the project's reduced harvesting. Leakage is assessed at the start of a project, as well as throughout the life of the project, and is accounted for in project calculations. Determining the ongoing risk of potential leakage in a forest project for example would be done through periodic monitoring, reporting, and verification of harvested wood products.



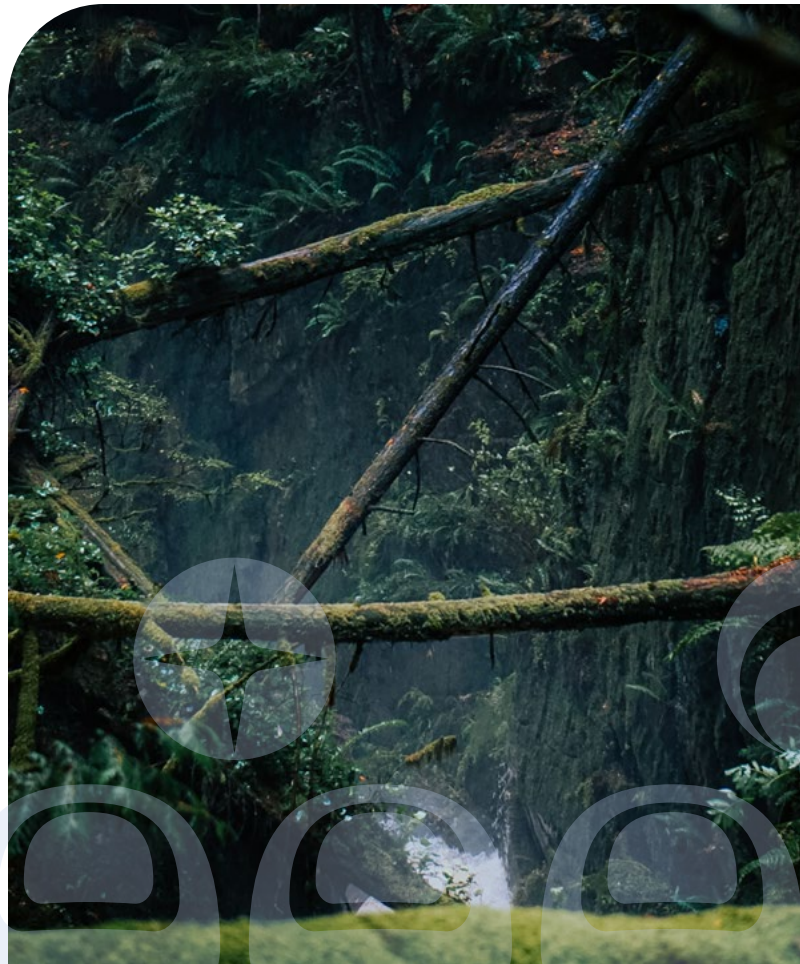
Monitoring, verification and reporting

Monitoring is a routine check of a project to make sure that it is functioning. The BC government treats project monitoring as a form of quality assurance.¹¹⁸ On the ground, monitoring in a land-based project designed to avoid logging emissions for example, would need to establish that no more trees have been removed than was in a project plan and protocol, and that the amount of carbon is remaining constant or increasing in the project area.

A carbon offset project's performance must be *verified* by an independent, third-party inspector. The goal of the verification process is to ensure that a project has actually reduced emissions, meets all requirements and that project information is well-documented.¹¹⁹ Verification is akin to auditing in the financial world; it provides credibility and transparency of a project's claims in a way that is easy to understand by concerned entities such as regulatory bodies, governments, the public, investors, and market actors.¹²⁰

In BC, accredited verifiers follow the criteria established by the GGIRCA, the GGECR, and the pertinent protocol (such as FCOP) to review a project.¹²¹ BC currently provides a report template to be filled out by a project verifier, who must also demonstrate that they are not in a conflict of interest with respect to that project.

In BC, the verifier submits a project report to the BC Carbon Registry, where it is reviewed by the director of the offset program.¹²² When the report is approved, the director issues the project offsets into the proponent's (Account Holder's) account in the registry.¹²³ The BC Carbon Registry tracks who owns offset units, the status of those offsets, and lists those that have been retired, among other important information.¹²⁴





Partnerships

A *project developer* can support, lead or complete the work of turning emissions reductions actions into an offset credit for the market.¹²⁵ Some project developers offer the service of a feasibility assessment before an agreement is made in order to save a community the up-front capital costs of this key step. The costs of the feasibility may be paid up front or come out of revenues made when the carbon credits are sold.

In addition to doing an initial feasibility assessment, project developers manage project documentation, write and negotiate purchase contracts, model emissions (baseline and project), manage the third-party validation and verification processes, register the carbon credits and sell them.¹²⁶

First Nations can expect a project developer to take a percentage of the project's revenues, depending on their agreed-upon role in the project. Understanding the work that will be done by an external project developer, and the fees and project share that will be taken as a result is of paramount importance in negotiating a project relationship.

The carbon project commodity chain can include project developers, local organizations, financial institutions and individual consumers, corporations, or countries who purchase the credits.¹²⁷

An experienced project developer could also support community capacity building so that a First Nation may carry out their own monitoring and reduce the long-term cost of managing a project.¹²⁸ Some communities have their own field crews collect data in the field whereas others have a project developer carry out all aspects of a project, including field inventory work.

A conscientious project developer will ask how the carbon project fits in with a community's strategic goals. They should also present all considerations, without underplaying the risks of a project. A community should take time before committing to work with a project developer to examine them closely, including obtaining professional advice and undertaking due diligence to evaluate fees. This can include talking with other communities about their experiences with the project developer.^{129, 130} A phased or stepped approach to the partnership is recommended.

A Note About Additionality in BC

In BC, additionality is achievable in primary (never logged) forests within the Timber Harvesting Land Base (THLB), areas degraded by logging in the past, and areas being examined for their ability to supply the bioenergy industry with raw materials.

The THLB contains all lands identified by the crown as available for logging; areas that are accessible, contain commercial tree species (those desirable for conventional products like lumber and pulp) and are outside of the existing set-asides for nature such as parks.¹³¹ The THLB is specifically 'earmarked' for logging. Industry groups are applying pressure on the BC government to 'lock-in' parts of the land base that still remain unlogged as an industrial forestry zone that would preclude other designations.¹³²

As pointed out in at least two First Nations carbon project plans in the BC Carbon Registry, in the absence of a carbon project, the most likely scenario is that forest licensees carry out their activities across the full unprotected operating land base (the THLB) in accordance with standard provincial forest practices regulations and rules such as the *Forest Act* and the *Forests and Range Practices Act* (FRPA).¹³³ Proponents make the argument that provisions in the FRPA compel licensees to prepare and implement forestry plans that do not have an adverse impact on timber supply. Similarly, provisions in the *Forest Act* require licensees to harvest their full apportionments; otherwise the volume will be taken back and re-apportioned to other license holders and entrants. It is likely that the THLB across BC will all eventually be logged under the status quo.

There is also some evidence that the government of BC is interested in expanding the loggable land base for the purpose of providing the raw materials for pellets and liquid biofuels, which can be produced from forest types not normally used for lumber or pulp.¹³⁴ More of these commercially marginal forest types still exist in their intact form than forests that were historically harvested for products.¹³⁵ So even remaining intact forest lands outside of the current THLB will likely become under pressure for industrial harvest in the near future, with a realistic scenario being that they will be logged without the intervention of a First Nations carbon project or an IPCA.¹³⁶



Opportunities and Challenges

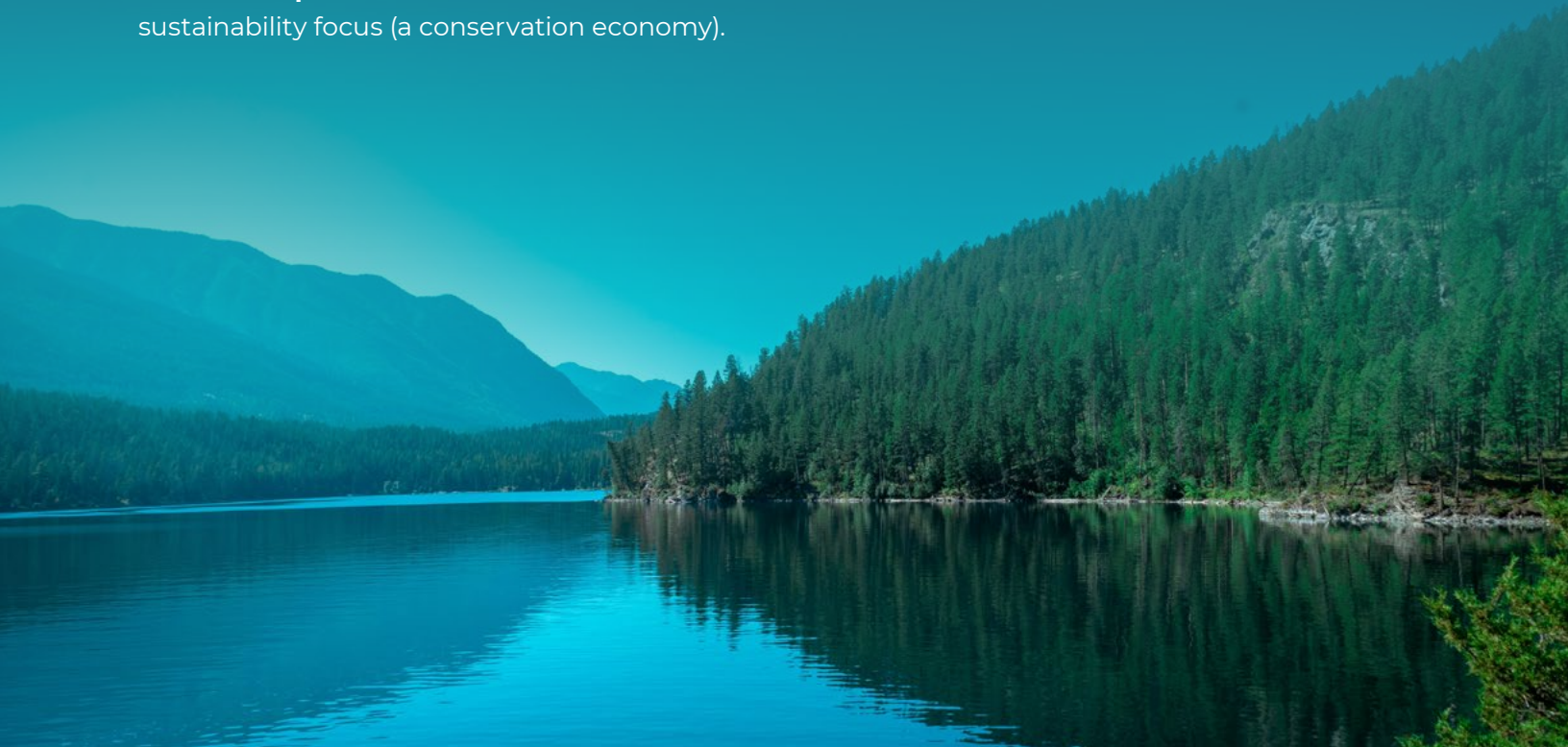
With modifications for the BC context, the following points from *Nature-Based Solutions: Indigenous-led Conservation and Carbon Storage* in Canada cover briefly the potential challenges and opportunities of land-based carbon projects for First Nations.¹³⁷

Challenges

- **Defining land tenure and carbon rights** is the biggest barrier to First Nations participation in carbon markets. Crown recognition of First Nations' jurisdiction over their territories is limited and carbon rights have not yet been defined across most of BC. However, the introduction of the Declaration Acts may offer new opportunities for recognizing jurisdiction and negotiating carbon rights on a government-to-government basis.
- Negotiating **Atmospheric Benefit Sharing Agreements** with the BC government can be time-consuming and slow.
- Carbon and conservation projects can create tensions among communities with **shared territories**.
- **Capital** may be required if a First Nation wishes to purchase privately owned land for an IPCA or carbon project.
- **Measuring** how much carbon is stored in an ecosystem can be technically challenging.
- Developing a carbon offset project requires significant **resources and time**. The rigid rules and regulations related to carbon offset projects underlie this challenge.
- Carbon and conservation related activities (e.g. protection and restoration) may **prevent** the pursuit of other non-aligned economic ventures (e.g. logging, mining).
- Carbon opportunities can be perceived as **risky**, complicated and can lead to fears of dispossession by the community.
- A **lack of trust** can make partnership building with Crown governments or among First Nations communities a challenge.
- Being limited to using the BC Forest Carbon Offset Protocol on 'crown land' might not be in the best interest of a First Nation.¹³⁸

Opportunities

- The introduction of the Declaration Acts may offer new opportunities for recognizing First Nations' jurisdiction and negotiating carbon rights on a government-to-government basis.
- There is **alignment** between carbon storage and First Nations-led conservation, which is a co-benefit of land-based projects. Carbon markets may align better with territorial stewardship and protection than extractive industries.
- The Government of Canada has committed to conserving 25% of Canada's lands and waters by 2025 and achieving net zero emissions by 2050.^{139, 140} These commitments enable the creation of an IPCA and/or a carbon project.
- Paired with an IPCA, a land-based carbon project can be linked to cultural maintenance and revitalization.
- Paired with an IPCA, a land-based project can generate employment and funds to seed **social enterprises** and new businesses with a sustainability focus (a conservation economy).
- Carbon projects enable **self-determination** when they are established and managed according to First Nations legal, knowledge, and governance systems are an expression of Indigenous nationhood.
- Carbon markets can contribute to **economic diversification**. Developing new local markets can create direct and indirect jobs and spin-off benefits.
- **Restoring** degraded landscapes and **protecting** forests within the timber harvesting land base can increase the net carbon storage of the ecosystem and avoid emissions from logging, which can support community goals.
- **Indigenous Guardians** could monitor the climate, measure carbon, and deliver on carbon projects. Carbon offset credits could generate capital to support Guardians programs.



BCAFN's Commitment to Carbon and Climate Integrity

Resolutions are the mechanism by which First Nations in BC provide mandates to the BCAFN. Via resolution, the BCAFN has the mandate to support the advancement of First Nations community-based climate leadership, a First Nations Forest Strategy and sustainable economic development.^{141, 142, 143} BCAFN was also mandated to prepare a draft [First Nations Climate Change Strategy and Action Plan](#) in partnership with the First Nations Leadership Council organizations.

The Strategy will identify strategic actions to strengthen Indigenous climate leadership and response to reduce greenhouse gas emissions and achieve resilience to climate impacts while protecting and strengthening First Nations' Title, Rights, and Treaty Rights.¹⁴⁴ The Strategy will also provide strategic actions to enhance the key role of First Nations in BC in protecting biodiversity and water and achieving the urgent goal of limiting global warming below 1.5°C.

In addition, BCAFN is advocating for further support for First Nations' community-driven climate initiatives, changes to the current engagement frameworks to meaningfully include First Nations rights-holders in climate decision-making, and climate policy and legislative reform such as those related to carbon offset project development. BCAFN works collaboratively with First Nations in BC, First Nations organizations and other partners to incorporate First Nations' worldviews, interests, and the recognition of First Nations' jurisdiction and respective carbon rights in Canada's and BC's climate responses. BCAFN is also advocating for and working to advance the implementation of the Canada and BC Declaration Acts, and to affirm First Nations inherent and constitutionally protected Title, Rights and Treaty Rights. BCAFN works towards First Nations' economic independence that aligns with First Nations values and priorities while taking into consideration the climate crisis and the sources of carbon pollution.



Canada and BC see carbon offsets as an opportunity to cut emissions, meet the climate targets and become net-zero by 2050. In doing so, both governments are currently updating the federal and provincial carbon offset systems and frameworks and have committed to engage Indigenous Peoples within the process. BCAFN is strongly advocating to governments to fulfill their commitments, ensure that the Title- and Rights-holders are fully engaged in all the stages of policy and legislative development to discuss the benefits and disadvantages that could arrive with carbon offset project development. First Nations in BC have the inherent and constitutionally protected right to territorial jurisdiction and to the capture of carbon within these territories. Land-based carbon offset project development, including carbon markets, must not infringe in any way on those and other fundamentals Indigenous rights, nor allow any incremental carbon pollution that could result from the use of carbon-trading systems by the private or public sectors.



What's Next?

Fourteen First Nations currently have agreements with BC which allow them to participate in the carbon market. In the United States, thirteen tribal groups are involved with forest projects via the California cap and trade system.¹⁴⁵ Twenty-two Indigenous-led projects have been created through carbon in Australia.¹⁴⁶ Old growth forests are being protected on Maori land by a Maori owned corporation and generating revenue from carbon credits in New Zealand.¹⁴⁷

First Nations with an interest in entering the carbon market may have a deep and long-term commitment to the land and thousands of years' worth of knowledge about local land stewardship.¹⁴⁸ First Nations land management may generate offset credits by transitioning mis-managed land back to First Nations management and jurisdiction, or from preventing the mismanagement of land by the status quo.¹⁴⁹ These activities are akin to restoration and protection, two activities that help restore carbon balance to Earth.

The Forest Carbon Economy Fund is a pathway under development by a Canadian charity to develop, package and finance First Nations-led land-based carbon emissions reductions taking a slightly different route than generating carbon offsets.¹⁵⁰ If implemented, such a model would drive investment to First Nations communities' forest carbon projects and support the government of Canada in reaching its target under the Paris Agreement.¹⁵¹

Recommendations to First Nations leadership and communities

The rights of First Nations in BC are land-based Aboriginal rights, and it is First Nations communities that have the right to the carbon stored and absorbed across their lands and the potential revenues related to such carbon. Section 35 of the *Constitution Act* and the implementation of both the Canada and BC Declaration Acts may be an opportunity for your nation to:

Assert jurisdiction:

- Claim ownership to carbon as a resource that was not ceded by your nation to the crown specifically, and thus ownership and rights of use is still retained by your nation.¹⁵² Include carbon rights as a component of Aboriginal rights in your negotiated treaty or a reconciliation agreement.
- Assert your territorial jurisdiction over forests and areas that can be managed and conserved in a way that is compatible with recognizing the existence of carbon rights that underlie carbon offsets. This could happen in areas controlled by your nation's governance structures under settled land claims agreements, on reserves, and off-reserve through assertion of Aboriginal Title.¹⁵³





- If your community does not already have a Community Forest Agreement or a First Nation Woodland License, push for the creation of a tenure or a transfer of tenure from another licensee in order to enable a carbon project.
- Assert your Aboriginal (Art. 29 of the Declaration Act) and Treaty Rights to or related to the conservation and environmental management practices that would result in the ability to own and sell carbon offsets.¹⁵⁴

Advocate for legislation, regulation and policy reforms:

- Support collective action to advance First Nations' carbon rights, facilitate discussion on the benefits and limitations of carbon offset projects and propose mechanisms to ensure Indigenous rights and priorities are upheld during every phase of the carbon offset system.
- Push for reforming legislation, regulations, policies and procedures at multiple scales (e.g., international, federal and provincial) that are limiting First Nations in pursuing land-based carbon offsets and conservation projects in their territories.
- Nations in BC ought to be able to choose which protocol/registry is used on their lands.

Explore conservation as a carbon project:

- Consider creating a conservation area such as an IPCA that includes a carbon project. The Government of Canada has committed to conserving 25% of Canada's lands and waters by 2025 and achieving net zero emissions by 2050. An IPCA and First Nations carbon project can help the Government of Canada in achieving these targets.
- Map the ecosystems in your territory. Identify areas of primary forest, as well as forest that can be restored (degraded forest). These lands constitute a potential carbon project and/or IPCA.
- Consider working with communities with whom you share territory to pursue a joint project that protects primary forest and restores degraded lands.

Strengthen capacity and support economic development:

- Build technical and professional capacity for careers in carbon, such as carbon project development, validation and verification.
- Consider building First Nations businesses related to carbon project development, validation and verification.
- Consider how a carbon project can generate employment in your community and create seed funding for low-carbon economic development with a conservation and sustainability focus.
- Support innovation on value-added forest products from second-growth forests.
- Support a National Occupational Classification category for carbon and climate change careers.
- Before selecting a project developer, consider speaking with other First Nations that the developer has worked with to get a sense of how they felt about the relationship.
- Support the development of a list of companies in BC that do work on carbon projects, including third-party verifiers.



The Yurok Tribe Carbon Project

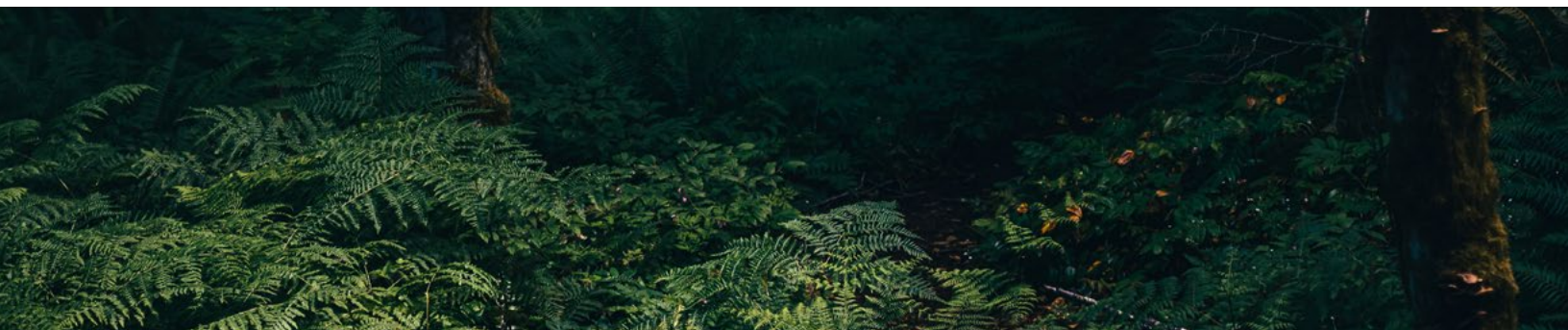
This account of an Indigenous land-based carbon offset project has been paraphrased from *Returning the Yurok Forest to the Yurok Tribe: California's First Tribal Carbon Credit Project*, by Beth Rose Middleton Manning and Kaitlin Reed.

The Yurok Tribe's "identity, subsistence, religion, and law are deeply entwined with the mountains and rivers, forests and prairies...."¹⁵⁵ By 1900, most of the 162,000 hectares of the Tribe's ancestral territory in northwest California had been seized by the state for use by timber companies, miners and homesteaders. As Yurok leaders explain in their constitution, "Our social and ecological balance, thousands and thousands of years old, was shattered by the invasion of the non-Indians."¹⁵⁶

As of 2018, after many decades of work and with revenues from their carbon offset project, the Yurok Tribe has re-possessed 23,300 hectares of their homeland. The Tribe has asserted its inherent sovereignty over the land in part through the use of the California cap and-trade program. The Tribe's participation in the carbon market has supported their interest in transitioning their forest away from solely producing timber and returning to traditional land management, where the forest is for people with multiple recognized uses. It has also financed their re-acquisition of traditional lands.

California passed The Global Warming Solutions Act in 2006, mandating statewide emissions reductions to 1990 levels by 2020. A mandatory cap-and-trade program for the state's industrial polluters came into effect in 2013 as one of the main policies to achieve this target.¹⁵⁷ The cap-and-trade program allows polluters to purchase carbon offsets to achieve up to 4 percent of their emissions reductions.

By 2011, the Tribe had raised the necessary financing via a low-interest loan to purchase 19,000 hectares from a private timber company for almost \$19 million USD. To pay back the loan, the Tribe committed to sell carbon offsets from these lands, during what were still the 'early days' of this type of market. After a financial feasibility study was completed by a hired consultant for the 19,000-ha proposed project area, the Yurok Tribe took steps to initiate a compliance offset project registered under the Air Resources Board (ARB) Forest Project Protocol.



Under the ARB Forest Projects Protocol, Improved Forest Management (IFM) is a project type where activities must maintain or increase carbon stocks on forested land relative to baseline levels of carbon stocks. As traditional Yurok stewardship strategies are compatible with managing forest land for carbon storage and sequestration, the IFM project type was the most suitable. For example, burning is a cultural practice that dates back thousands of years and supports the regeneration of fire-adapted plants, open areas for wildlife, and decreases the risk of large wildfires, which release more carbon than small, periodic fires. The Tribe wanted a project that was consistent with their other land values as well, such as tending and harvesting culturally important plants, and hunting.

To start the project following the methods laid out in the IFM section of the protocol, the Tribe did an inventory of the current carbon on the land as well as an estimation of carbon within currently harvested wood products for the project area. With a five-person inventory team, the Tribe took field measurements by laying out plots in random locations throughout the 19,000 ha, marking them using GPS, and measuring tree height, diameter and crown closure, as well as dead wood. The inventory data collected by the Tribe was put into a mathematical model, as required by the protocol, to estimate the baseline carbon stocks and actual project carbon stocks within the project area for the life of the project (100 years). The information was then used to figure out how much carbon would remain sequestered with or without the Yurok carbon project over time.

Past Timber Harvest Plans filed with the state by the previous owner of the land – a private timber company – helped the team determine the business-as-usual scenario and figure out how their project would increase carbon storage and sequestration. The Tribe's IFM project passed the additionality test in part because the planned activities were determined to be above and beyond 'common practice' for the area.

In embarking on this project, the Yurok Tribe committed to annually updating and maintaining the carbon inventory for its 100-year life. One concern of the Yurok Tribe's Forest Manager was that his department had the funding and trained personnel to do this work over the century-long commitment period. Revenues from the project are now being used to train Yurok wildland fire crews in traditional fire management, and to buy back more ancestral lands. The Yurok Tribe is engaging with a Western market in a way that does not seek to commodify nature, but instead prioritize a "social and ecological balance, thousands of years old."¹⁵⁸



APPENDIX A: Carbon market origins and First Nations

Level	Name	How were First Nations involved?
International	Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) is a carbon market designed by the UN's International Civil Aviation Organization (ICAO) to reduce carbon emissions from international aviation.	CORSIA is a non-state initiative. Documents make no reference to Indigenous people.
International	<p>The Kyoto Protocol first established an international mechanism for emissions trading (Article 17) and established carbon pricing.</p> <p>Paris Agreement compels Canada to limit global warming by reducing emissions, and introduces opportunities to create emissions trading systems and carbon offset mechanisms.</p> <p>Will establish the rules for Internationally Transferred Mitigation Outcomes (ITMOs). ITMOs are a revised version of international trading that builds on the systems established under the Kyoto Protocol.</p>	<p>The Paris Agreement was negotiated by representatives of 195 countries and ratified by Canada in 2016. It acknowledges but does not fully recognize the rights of indigenous people.</p> <p>Indigenous peoples were involved in the discussions and negotiations of the Paris Agreement, as they attempted to lobby participating countries to adopt a strong human rights approach. Ultimately, the Paris Agreement acknowledges Indigenous rights and knowledge in a perfunctory manner and falls short on Indigenous rights.</p>

Level	Name	How were First Nations involved?
National	<p>Canada's Greenhouse Gas Pollution Pricing Act (GGPPA) puts a price on greenhouse gases (GHGs) to establish minimum national standards across Canada. Where provinces or territories have their own carbon pricing systems, these systems must meet the national minimum standards. Where provinces or territories do not have their own carbon pricing systems, the federally-managed backstop system will apply.</p> <p>The GGPP functions by creating a regulatory charge on fuels and also creating an Output-Based Pricing System (OBPS), which is an emissions trading system for large industrial facilities. The Output-Based Pricing System Regulation provides more details on the market.</p> <p>Includes Federal Greenhouse Gas Offset System, which will be fully established through regulation. enable the generation of offsets to use under OBPS.</p>	<p>The GGPPA was <u>challenged</u> as being unconstitutional in 2019 but was <u>ruled</u> as constitutional by the Supreme Court of Canada in 2021.</p> <p>A number of First Nations and Indigenous organizations acted as interveners in the Supreme Court hearing.</p>

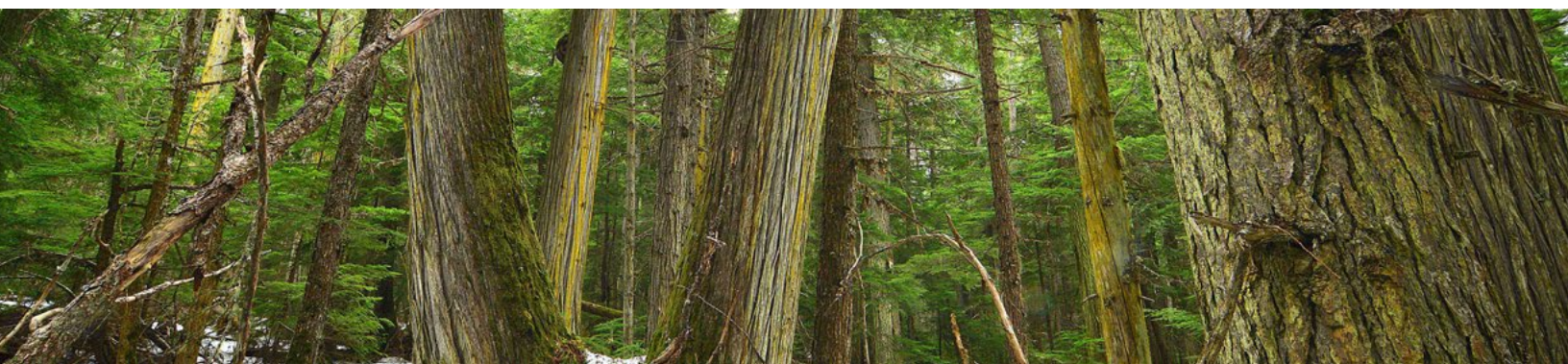
Level	Name	How were First Nations involved?
Provincial	<p>BC's Greenhouse Gas Industrial Reporting and Control Act (GGIRCA) establishes specific performance standards for industrial facilities. Where industry operators are below the prescribed limits, they earn 'earned credits'. Where industry operators exceed their prescribed limits, they can comply with the legislation by purchasing either 'earned credits' or 'offset units' from other market participants or 'funded units' from the government. These three types of credits or units are collectively referred to as 'compliance units'.</p> <p>The GGIRCA and supporting regulations establishes the framework for carbon offset projects to generate 'offset units', which can be sold to market participants and provides for the creation of protocols for the offset units. A protocol contains instructions on how to quantify GHG emissions reduction from different types of projects.</p> <p>The Greenhouse Gas Emission Control Regulation (GGECR) sets out the requirements around registering 'compliance units' and transactions involving transfer of compliance units. The GGECR also establishes specific requirements for carbon offset project plans.</p> <p>Includes the BC Forest Carbon Offset Protocol 2.0 which will set out technical aspects of land-based carbon-offsets.</p> <p>Also includes the Greenhouse Gas Emission Reporting Regulation and the Greenhouse Gas Emission Administrative Penalties and Appeals Regulation.</p>	<p>The GGIRCA came into force in 2015, and was subject to a consultation process with First Nations.</p> <p>In 2018 the BC government established the Climate Solutions and Clean Growth Advisory Council to provide strategic advice on climate action and economic growth and includes members from First Nations.</p> <p>A draft BC Forest Carbon Offset Protocol has been developed by BC.</p>

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