

The background image is a photograph of a forest. It features a massive, ancient-looking tree trunk in the foreground, heavily covered in green moss. A person is standing next to it, looking up at the canopy, which provides a sense of the tree's enormous scale. The forest floor is also covered in moss and fallen branches. The lighting is soft, filtering through the dense foliage.

The Economic Value of Old Growth Forests Near Port Renfrew, BC

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 ESSA



Overview

Commercial decisions regarding old growth management prioritize timber revenues and jobs, but intact old growth forests provide many other ecosystem services that are costly or impossible to replace and that society gets for free. This technical brief summarizes the results of a novel study to assess the economic benefits supplied by these forests *in addition to timber*. Our study shows that when other ecosystem services are included in the math, **it makes more economic sense to keep old growth trees in the ground**.

Using publicly managed forests primarily located in unceded Pacheedaht and Ditidaht territories within 35km of Port Renfrew, British Columbia, we assessed a subset of old growth ecosystem services to compare the *net* benefits to society across **17 old growth protection scenarios** ranging from minimal old growth protection (30%) to full old growth protection (100%). In **all** of these scenarios, society would be better off protecting old growth to varying degrees, primarily because these forests provide significant climate change mitigation services from carbon storage, tourism and recreation opportunities, and timber harvest benefits. Over the next 100 years, **fully protected** Provincial old growth forests around Port Renfrew would

contribute **an additional value of \$40 million in net economic benefits** compared to business as usual. Forest carbon emissions would be reduced by 569,250 tonnes of carbon, and tourism and recreation benefits alone would contribute almost \$11 million in additional net benefits.

Importantly, these results are based on **only a small portion of harvestable old growth around Port Renfrew for a subset of old growth ecosystem services** that included carbon sequestration/storage, coho salmon habitat, non-timber forest products like floral greenery and mushrooms, education/research opportunities, and increased real estate values. Many more services are provided by old growth forests, some of which could not be readily monetized like cultural value, and others that lacked available data, like habitat for other species. Including these additional values and all harvestable old growth in the study area would likely increase our results, meaning that **what we report in this technical brief are underestimates** of the value of these free services. Even these underestimates paint a clear economic picture that society is better off with Port Renfrew's old growth forests standing.

It makes more **economic** sense to keep old growth trees in the ground

The Unique Value of Old Growth Forests

While all forests provide ecosystems services, old growth forests are unique in the quality of services they provide and in their increasing scarcity. We define “old growth” as forests older than 140 years, but much older forests are needed for some ecosystem services. A red cedar, for example, should be about 400 years old for certain **Indigenous traditional uses** like large ocean-going canoes and totem poles.

Tourists and recreationists are drawn to old forests because these ecosystems supply an experience that cannot be replicated elsewhere, and this can bring real economic benefits to communities. Port Renfrew, British Columbia has embraced this potential, treating old growth forests as destinations and branding itself the “Tall Tree Capital of Canada”.

The increased media attention and tourist activity around Renfrew’s old growth forests over the last decade has undoubtedly increased our revenues as well as those of other tourism businesses in town and will likely continue to do so as long as those forests remain standing.

- Dan Hager, owner of Handsome Dan’s Cottage Rentals

Increased tourism can also lead to **higher property values** when the aesthetic appeal visitors experience makes them want to live in an area.

There’s no doubt the interest in purchasing property, opening new businesses, and building homes has dramatically increased in the past several years with the enhanced awareness and marketing around the region’s old growth forests and that real estate values have increased in the region as a result.

- Karl Ablack, Director & Managing Partner, Port Renfrew Management Ltd.

Additionally, old rainforests like those on Vancouver Island can help mitigate climate change because they **store**

particularly large amounts of carbon above and below ground. While old trees can emit carbon slowly as they decay, and a portion of that carbon could be stored in wood products while new trees are planted to sequester carbon at a faster rate, harvesting coastal rainforests unlocks a lot more carbon for rapid release into the atmosphere than is mitigated by those strategies.

Compared to forests of other age classes, old growth also provides unique opportunities for **harvesting non-timber forest products** like floral greenery, wild edibles, medicinals, landscaping and restoration products, firewood, smoke wood, materials for arts and crafts, and ingredients for essential oils and soaps. These products provide economic benefits through commercial revenue, recreational harvesting, food supply, and cultural value.

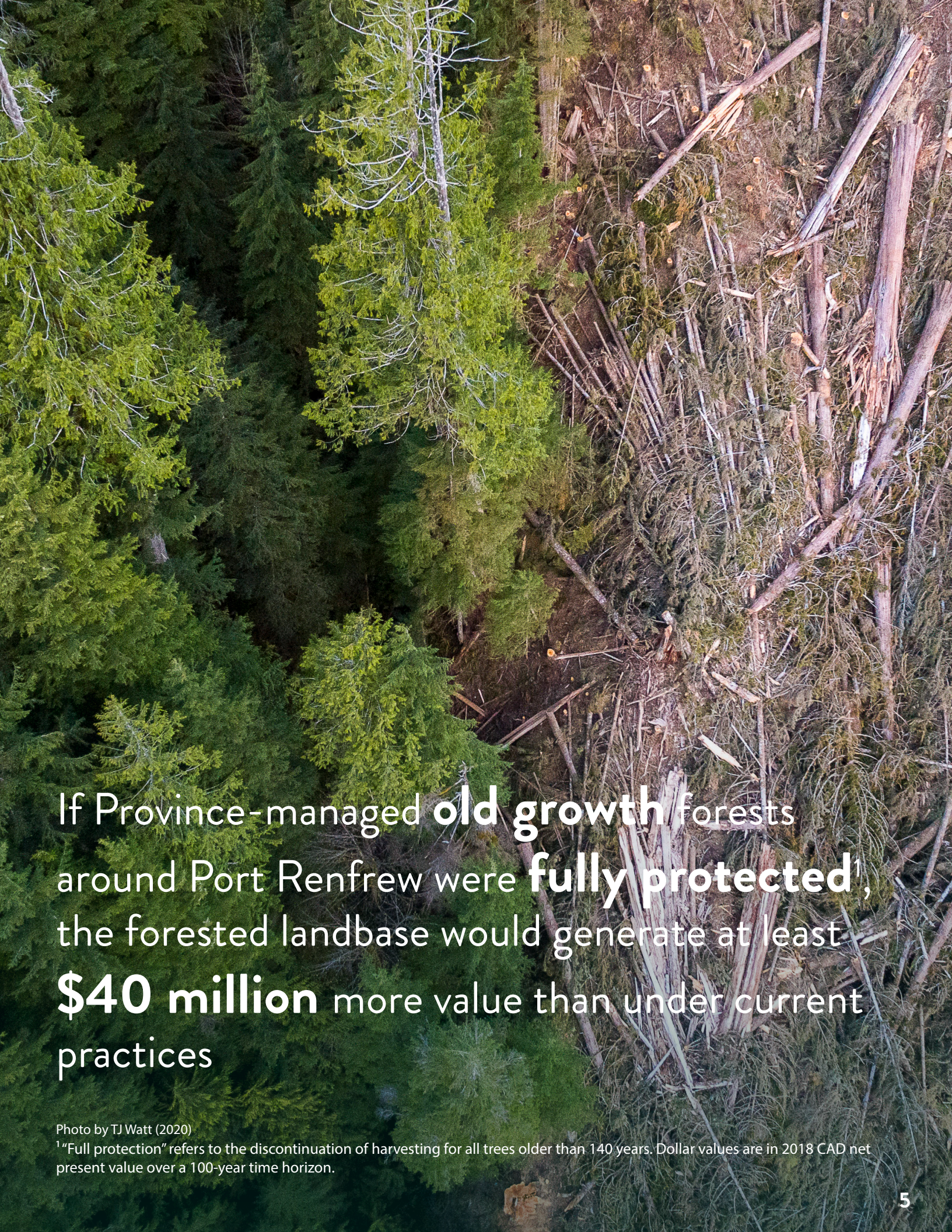
Harvesting old growth can reduce critical habitat, decreasing the benefits people enjoy from commercial and sport activities that rely on impacted species, and ‘non-use’ benefits, like the well-being some people experience from knowing a habitat exists and its species will not be extirpated. Vancouver Island hosts **at-risk species** like the Northern Goshawk, and Marbled Murrelet, which are specially adapted to, and depend upon, old growth rainforests. Many rivers and streams on the Island also provide important **spawning and rearing habitat** for different salmonids including Chinook, pink, chum, sockeye, coho, steelhead/rainbow trout, Dolly Varden, and cutthroat trout.

Finally, intact old growth forests offer opportunities for **education and research activities** that other types of forests do not. On Vancouver Island, this potential is high given the relatively large number of nearby research institutions that host forestry and/or natural resource management departments.

Old growth forests provide **countless ecosystem services** that are often not considered in commercial decisions to harvest



Top and middle photos by TJ Watt (2019, 2018 respectively)
Bottom photo: “Coho Spawning on the Salmon River” (2015) by Bureau of Land Management Oregon & Washington, licenced under CC by 2.0



If Province-managed **old growth** forests around Port Renfrew were **fully protected**¹, the forested landbase would generate at least **\$40 million** more value than under current practices

Photo by TJ Watt (2020)
¹“Full protection” refers to the discontinuation of harvesting for all trees older than 140 years. Dollar values are in 2018 CAD net present value over a 100-year time horizon.

What’s Missing in the Math?

Whenever a decision is made to log a forest, it is an economic one. Logging companies weigh the costs of equipment, staff, and effort against the economic benefits from selling logs. Governments that regulate these firms similarly weigh costs to society against gains in jobs and gross domestic product (GDP), often using **economic impact analysis**. But a lot is missing in the math. Forests provide countless services that have value beyond the price of logs, many of which are impossible or very expensive to replace.

When we make decisions to log old growth forests without considering the ecosystem services they provide like clean air, fresh water, tourism and recreation opportunities, habitat, and greenhouse gas mitigation, we are essentially saying these other benefits are worth nothing. It was previously easy to “undervalue”

or exclude other benefits from the math because logs, equipment, and labour have a clearly defined market value and ecosystem services do not. But economics has come a long way in the last 45 years and the **opportunity costs** associated with logging old growth forests are clearer. Today, techniques for estimating both market and **non-market** contributions from ecosystem services are well established permitting a more complete **cost-benefit analysis**. While we can never monetize the full value of an intact forest, estimating some non-timber benefits can help balance the scales – not by putting a price tag on nature’s bounty so it can be bought and sold, but by communicating more of its true value for better informed decisions that make society better off.



Helpful Economic Terms

- Cost-benefit analysis:** compares the costs and benefits of a project to determine overall net benefits to society. This method, which we used in this study, is the primary economic approach applied worldwide to examine a project’s public interest contribution in economic terms.² Unlike Economic Impact Analysis, cost-benefit analysis can assess non-market values and explicitly accounts for trade-offs with other opportunities. These characteristics make cost-benefit analysis a more powerful tool for comparing benefits to society across different old growth protection scenarios.
- Economic impact analysis:** traces the effect of a project throughout a region’s economy. The method can be used in the forest industry to evaluate how much a proposed cut would increase jobs, GDP, and personal income as logs are harvested, sold, converted to wood products like lumber and paper, and exported. While useful for communicating impacts in easy to understand metrics, used alone this approach can overstate the value of a project to society because it does not consider costs of implementation (only benefits) and is not capable of assessing opportunity costs associated with non-market values that are reduced due to harvest, or those associated with inputs of labour, land, and capital that could be invested elsewhere.²
- Opportunity costs:** the benefits to society that are lost if a project is implemented and that could be otherwise achieved. For example, when a cutblock is logged there may be a trade-off between gains in employment and losses of ecosystem services like carbon storage, recreation opportunities, and biodiversity conservation. Also, employment opportunities may be foregone in other sectors that are more beneficial to society.
- Non-market value:** the value of environmental goods and services that are not bought and sold in markets. Examples include clean air and water, recreation opportunities, healthy fish and wildlife populations, food production, and more. Since these goods and services are not traded, their value is not revealed in market prices and must be estimated by other methods.

² Joseph, C., Gunton, T., Hoffele, J. (2020). Assessing the public interest in environmental assessment: lessons from cost-benefit analysis of an energy megaproject. Impact Assessment and Project Appraisal.



This **study** is the **first of its kind** on Vancouver Island, and comes at a critical time for old growth forests, the economies they support, and the ecosystem services they provide

Photo by TJ Watt (2015)

An Opportunity to Make Better Economic Decisions About Old Growth Forests

Management of old growth forests on Vancouver Island is at a turning point. In July 2019 the Province of British Columbia initiated an Old Growth Strategic Review with an independent two-person panel appointed to engage with British Columbians and learn about their perspectives on the **ecological**, **economic**, and **cultural** importance of old growth forests. The engagement concluded on January 31st, 2020, and the panel's findings and recommendations, released in September 2020, are expected to inform a **new approach** to old growth management in British Columbia. These efforts by the Province signal an important policy window, an opportunity to start making better economic decisions about old growth forests in ways that increase British Columbians' overall prosperity beyond what is provided by timber harvest alone.

A First on Vancouver Island

With this pilot study, the Ancient Forest Alliance applied a unique combination of simulation modelling and economic valuation methods to better communicate the value of old growth forests on Vancouver Island. The study builds on similar work completed in 2008 by Simon Fraser University's Dr. Duncan Knowler (also a co-author on this report) and Kristin Dust. That earlier effort focused on old growth in the Fraser Timber Supply Area and relied on modelled data from forest management scenarios developed by the Province for Northern Spotted Owl recovery efforts.³ A key difference between that earlier report and this one is that we modelled forest management scenarios ourselves using software from the Canadian federal government (Natural Resources Canada) that complies with the Intergovernmental Panel on Climate Change's recommended carbon estimation methods, and is approved for use in carbon budget modelling for the BC forest sector. The ability to model our own scenarios provided an added level of flexibility and allowed for a more in-depth exploration of each scenario's impact on stand ages and forest species composition over time. This pilot study is a critical step in a broader effort to help communities and governments make more informed decisions about forest management that consider a wider range of economic benefits supplied by intact old growth forests. To our knowledge, this effort is the first of its kind on Vancouver Island.

³ Knowler, Duncan, and Kristin Dust, 2008. "The Economics of Protecting Old Growth Forest: An Analysis of Spotted Owl Habitat in the Fraser Timber Supply Area of British Columbia." Burnaby, BC

Pilot Study - Port Renfrew

The purpose of this pilot study was to assess broader benefits to society from old growth protection using a cost-benefit analysis that incorporates both market and non-market values. The area around Port Renfrew was an ideal pilot location because it still contains several intact tracts of old growth and the community is transitioning from a resource-based economy, now branding itself the 'Tall Tree Capital of Canada'. The area is also part of the unceded territories of the Pacheedaht, Ditidaht, Te'mexw, Hul'qumi'num, and WSÁNEĆ Nations. The Pacheedaht engage in commercial timber harvest and processing as the owners/operators of a local log sorting facility and sawmill, and have old growth tourism interests (e.g., a campground and Soule Creek Lodge tourism accommodations). The Ancient Forest Alliance has engaged in advocacy to protect old growth around Port Renfrew for the last decade, raising the public profile of several unique groves and tall trees through advocacy, education, and public outreach. Importantly for our modelling purposes, data from a recent Provincial harvest plan were publicly available for the area (2018 Arrowsmith-South Island Timber Supply Review). The Province provided key input data including growth projections for different tree stand types, Provincial harvest projections, and the spatial boundaries of the publicly owned portion of the harvestable land base.

As shown in the inset map (red highlighted areas, Figure 1), this area covers only a small portion of all old growth around Port Renfrew. About 32% (64,951 ha) of historical old growth⁴ currently remains within a 35km radius of the community (see map). 11.6% of the region's original old growth (24,886 ha) is now protected either provincially or federally. Of the remaining old growth, 7% (4,729 ha) is within the Provincial Timber Supply Area (TSA). The remaining old growth (54%) is in other Crown lands or privately owned/managed lands for which no harvest data are publicly available. 4% (2,784 ha) of old growth within the TSA is eligible for harvest under the Arrowsmith TSR (the other 3% is not currently eligible for harvest).

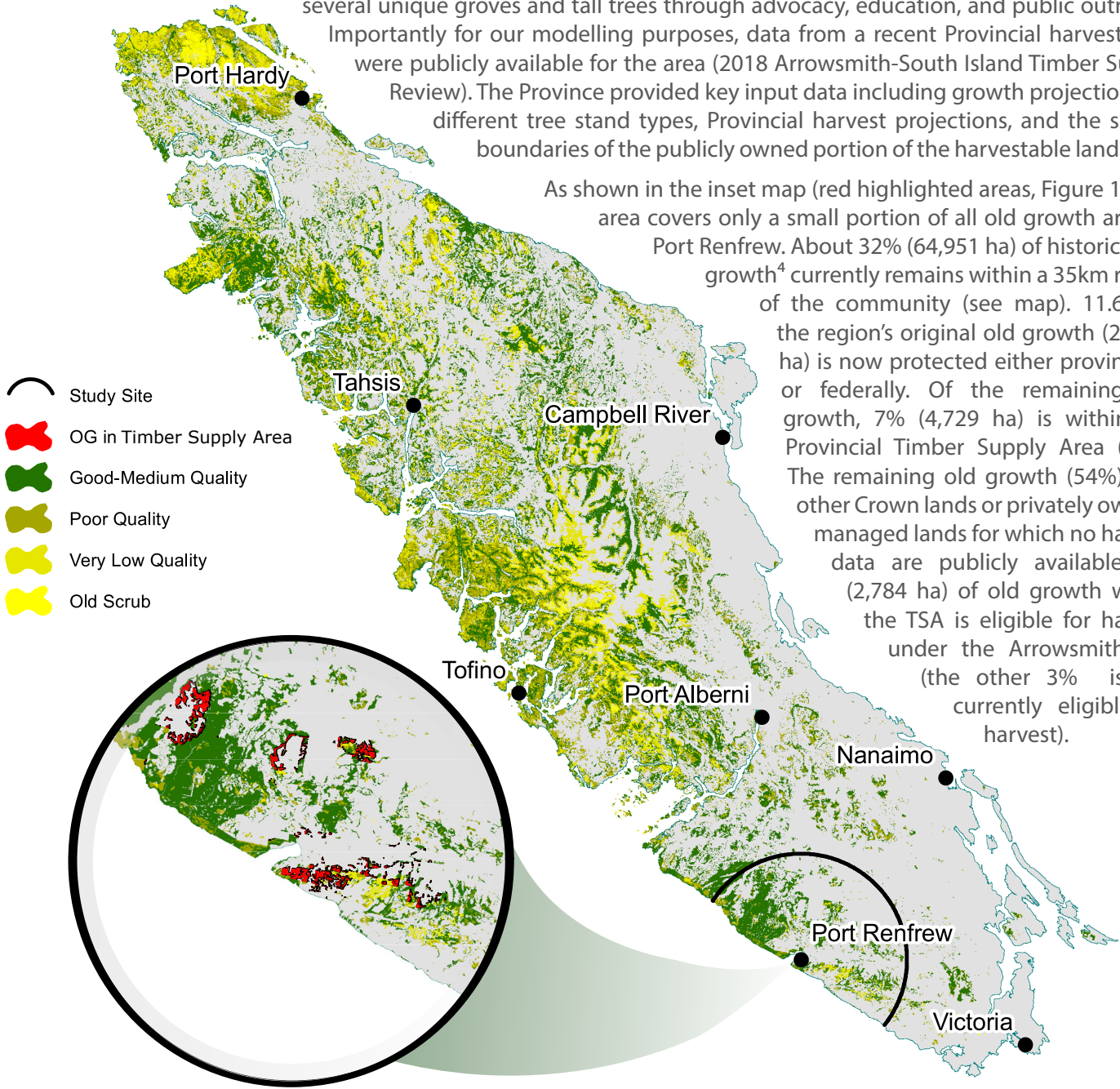
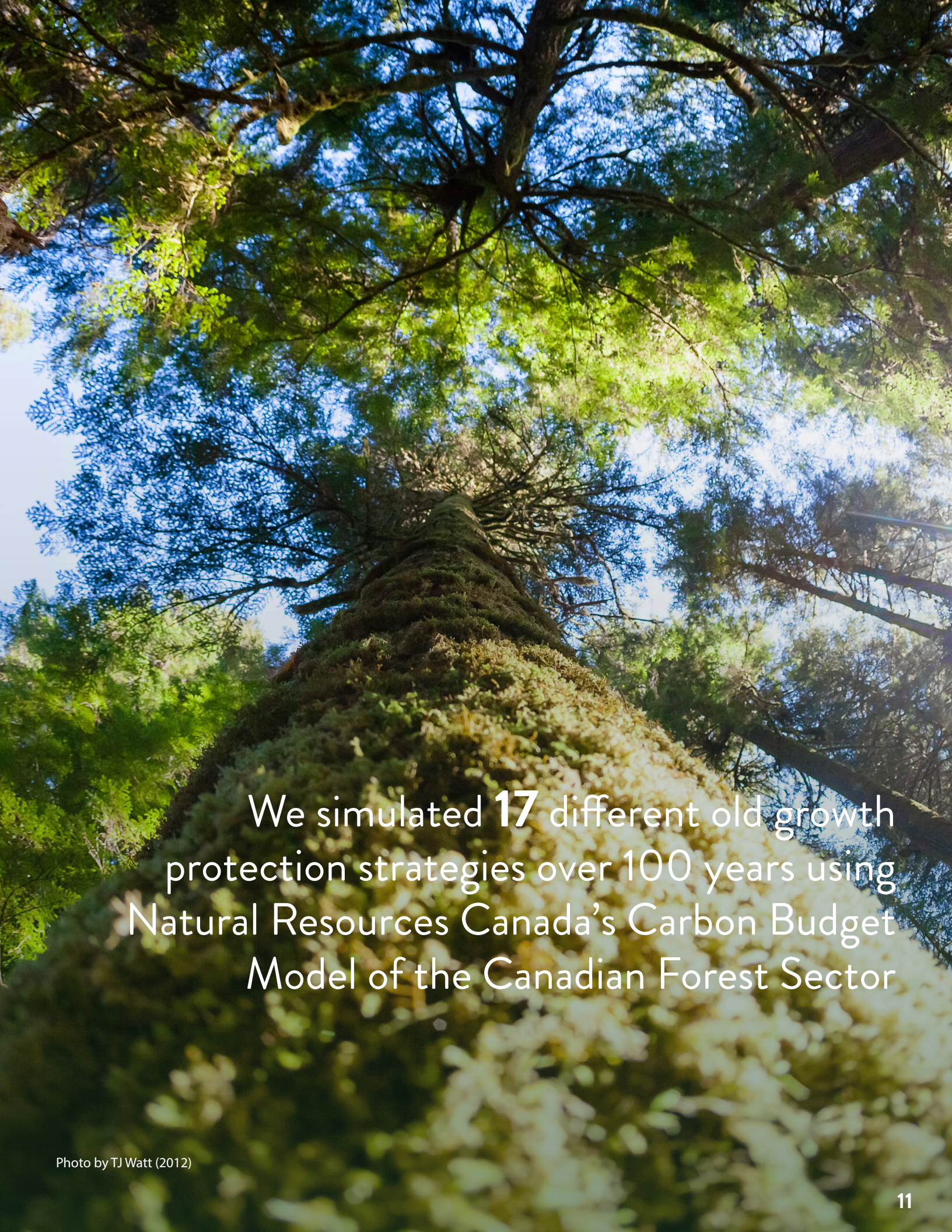


Figure 1. Map of Vancouver Island showing the distribution of various-quality stands of old growth throughout the island. Our study area is delineated by the circle, and the old growth stands we accounted for are the those within the BC Timber Supply Area (shown in red in the inset map).

Over the last decade, the Ancient Forest Alliance has engaged in advocacy to protect **old growth** forests around **Port Renfrew** which has contributed to the growth of local **eco-tourism**

⁴ Using current coverage of all forest in the area as a proxy for historical old growth coverage
Aerial photo of Port Renfrew by TJ Watt (July 2012)



We simulated **17** different old growth protection strategies over 100 years using Natural Resources Canada's Carbon Budget Model of the Canadian Forest Sector

Photo by TJ Watt (2012)

What We Did

The Ancient Forest Alliance worked with ESSA Technologies Ltd. to conduct simulation modelling of over 100 years of timber harvest under 17 different old growth protection strategies and compared these to a 'business as usual' case where no protection is applied.⁵ These comparisons allowed us to evaluate changes in the species and age composition of the forests in the portion of the Province's Timber Supply Area (TSA) that exists within the study site. Our protection scenarios ranged from just 30% old growth protection to 100% protection, including immediate and phased protection alternatives, and two different definitions of 'old growth' – 140 year old trees and 250 year old trees.

Simulation modelling was done using the Carbon Budget Model of the Canadian Forest Sector (CBM-CFS3)⁶, which can estimate changes in a forest's stock of carbon over time given different harvest/protection scenarios.^{7, 8, 9} Model outputs in tonnes of stored carbon per forest stand can then be converted to cubic meters of timber¹⁰ to aid in estimating the value of other ecosystem services. The CBM-CFS3 model simulated tree growth and harvest based on input data from the TSR. In all cases, the old growth protection simulations sequentially prioritized stands for 'harvest' based on greatest to least stand

volumes above a minimum threshold of 350 m³/ha. This harvest was simulated until the annual allowable cut (AAC) was achieved. For business as usual, we estimated the AAC at 62,480 m³/yr for the portion of the TSA in the study area, and we assumed this volume decreased proportionally with increasing old growth protection for the other scenarios.

Using outputs from CBM-CFS3, our modelled scenarios consider economic benefits from **multiple ecosystem services** provided by old growth forests, including timber harvest, carbon storage/sequestration, tourism, recreation, non-timber forest products, coho salmon habitat, real estate values, and education/research opportunities. We applied economic valuation techniques to estimate the net economic benefit for each of these ecosystem services¹¹ (see full report for a detailed description of the methodology³). We then compared these net benefits with those from the business as usual case to determine overall economic improvements provided by old growth protection. As a supplementary study, we also completed an economic impact analysis to better understand how old growth protection would impact the contribution to BC jobs, GDP and other macroeconomic indicators from the timber harvest and tourism sectors.

⁵ For further details on methods, assumptions and model limitations, see the full report by Morton et al. (2020) titled "*Economic Valuation of Old Growth Forests on Vancouver Island: Pilot Study; Phase 2 – Port Renfrew Pilot*".

⁶ CBM-CFS3 models carbon stored in above and below ground biomass, as well as litter, dead wood, and soil organic carbon. The model complies with the Intergovernmental Panel on Climate Change's (IPCC) carbon estimation methods and is approved for use in carbon budget modelling for the BC forest sector.

⁷ Kurz, W. A., C. C. Dymond, T. M. White, G. Stinson, C. H. Shaw, G. J. Rampley, C. Smyth, et al. 2009. "CBM-CFS3: A Model of Carbon-Dynamics in Forestry and Land-Use Change Implementing IPCC Standards." *Ecological Modelling* 220 (4): 480–504.

⁸ Natural Resources Canada. 2019. "Carbon Budget Model." 2019. <https://www.nrcan.gc.ca/forests/climate-change/carbon-accounting/13107>.

⁹ Kull, S.J.; Rampley, G.J.; Morken, S.; Metsaranta, J.; Neilson, E.T.; Kurz, W.A. 2019. "Operational-scale Carbon Budget Model of the Canadian Forest Sector (CBM-CFS3) version 1.2: user's guide". Nat. Resour. Can., Can. For. Serv., North. For. Cent., Edmonton, AB.

¹⁰ Using the standard Canadian carbon-to-timber conversion factor of 4 tC per m³

¹¹ In 2018 CAD net present value calculated over a 100-year time horizon

What We Learned

This novel study allowed us to assess the net economic benefit to society of standing old growth forests around Port Renfrew. Of the seven ecosystem services we assessed we found that the **main drivers of economic benefit are carbon sequestration, timber harvest, and recreation/tourism.**

For the full protection scenario ('100% OG Protected' in Figure 2), we found that society would be better off by \$40 million (2018 CAD, net present value) if trees older than 140 years were fully protected, and \$34 million if trees older than 250 years were fully protected. For the >140 year old growth definition, the resulting \$16 million loss in benefits from timber harvest would be easily compensated for by gains in other ecosystem services. Tourism and recreation would contribute about \$11 million in additional benefits, but carbon sequestration is a major driver of our results. Due to today's harvest practices, the land base in the study area will be a net **carbon source over the next 100 years.** Fully protecting old growth would **reduce this source status**, retaining 569,250 tonnes over the next 100 years for a net economic benefit to society of over \$46 million. This result arises because many old growth forests still have net uptake of carbon, with the youngest **old** trees still growing, albeit at a slower rate than younger forest stands.

Importantly, our results should be interpreted as *underestimates* of the total economic value of intact old growth forests around Port Renfrew. As with any economic assessment of ecosystem services, it is not possible to capture all values supplied to society by these forests. Some additional values we did not include are cultural benefits, health and well-being, and the value of habitat for salmon species other than coho, among others. These values are either difficult to monetize (e.g., cultural value) or lack available data, but should nevertheless be considered in decision making about old growth management. Also, our pilot study was constrained to the portion of old growth forest in the study site that occurs within the Provincial Timber Supply Area. More unprotected old growth exists in the overall study area on both public and private lands, but a full analysis is not possible at this time because harvest data for these stands are not publicly available. Extending the analysis to include these stands would likely reveal much larger benefits from old growth protection.

Overall, Port Renfrew serves as a powerful example of the potential economic value of protecting Vancouver Island's old growth forests.

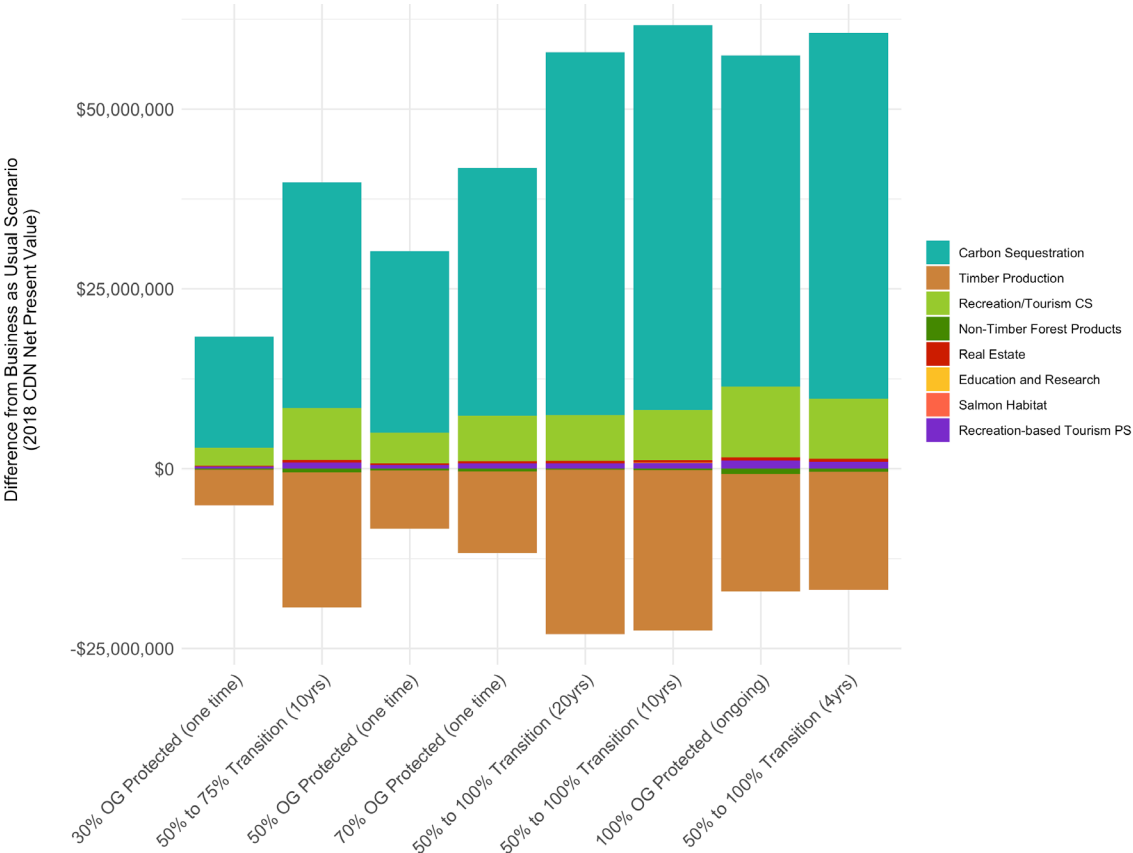


Figure 2. Difference in economic benefit to society relative to the base case for each scenario (>140 year old growth definition). Results are in net present value (2018 CAD) discounted at 3% over 100 years.

Forest **carbon emissions** would be **reduced** by **569,250 tonnes of carbon** over the next 100 years, for a net economic benefit to society of over **\$46 million**¹²

¹² Compared to business as usual and based on "full protection" scenario results for old growth stands in the Provincial Timber Supply Area near Port Renfrew.
Photo of Nitinat Lake area by TJ Watt (2015)



Photo: "Avatar Grove near Port Renfrew BC" by Roy Luck (2019), licenced under CC by 2.0.

Comparison of Selected Old Growth Protection Scenarios

Business as Usual



The current area of stands older than 140 years decreases by about 21% in the next 50 years, and 28% in the next 100 years. Harvest composition shifts from primarily lower value hemlock to include fir after the first 35 years, and the availability of **old cedar trees** decreases by about 52%, which is detrimental for Indigenous cultural practices and local timber processing facilities that currently produce cedar products. The contribution of old growth to tourism and recreation opportunities decreases. **Due to harvest cycles, the land base acts as a net carbon source**, which has both local and non-local consequences related to climate change. Despite the land base's 100-year net carbon source status, this scenario returns **net benefits of \$56.4 million**, driven largely by recreation opportunities and timber harvest. Timber harvest provides 13 full-time equivalent (FTE) jobs, and \$500,000 annually to the provincial GDP, while tourism provides 25 FTEs and \$930,000 annually.

50% Old Growth Protection (immediate, one time)



The current area of stands older than 140 years in the Province's Timber Supply Area decreases by about 10% in the next 50 years, but only 6% by 2118. This change in old growth means that **tourism and recreation benefits rise by about \$4.8 million but benefits from timber supply decrease by just over \$8 million**, cancelling out recreation benefits. Value from non-timber forest products declines slightly because mushrooms and salal prefer younger forests of 40-120yrs, and the added protection ensures stands are less frequently in this range. The change in harvest practices also **reduces the land base's carbon sink status**, which is the main driver of this scenario's **net improvement of \$21.8 million** compared to business as usual.

100% Old Growth Protection (immediate, ongoing)



The area of stands older than 140 years in the Province's Timber Supply Area increases by about 4% in the next 50 years, and 16% by 2118. Only 69% of the base case's cumulative annual allowable cut is harvested, decreasing net timber harvest benefits by \$16 million, resulting in 7 fewer full-time equivalent (FTE) jobs, and decreasing the forest sector's contribution to provincial GDP by \$247 thousand annually. Reductions are easily compensated for by gains in carbon storage/sequestration (\$46 million), tourism and recreation (\$11 million), and, from the tourism sector, 7 more FTE jobs, and a \$162 thousand increase in annual contributions to the provincial GDP. **Old cedar increases by 4% in the land base** ensuring a greater supply for Indigenous cultural practices. The **land base becomes less of a carbon source**, reducing forest carbon emissions by 569,250 tonnes of carbon. Combined net benefits from all ecosystem services will provide an **overall net improvement from this scenario of \$96.75 million**.

Comparison of net benefits for selected ecosystem services (2018 CAD millions)

	Business as Usual	50% OG Protection	100% OG Protection
Carbon sequestration	(48.35)	(23.14)	(2.35)
Recreation CS*	58.64	62.93	68.49
Tourism PS*	6.46	6.96	7.59
Timber production	33.08	24.96	16.75
Mushrooms & salal harvest	6.53	6.30	5.79
Other**	0.01	0.24	0.48
Net Benefits	56.38	78.26	96.75
Improvement		21.88	40.38

* Recreation consumer surplus (CS) and tourism producer surplus (PS)

** Combined benefits from real estate, coho habitat, and education/research

Where to Now?

This pilot study represents a first step toward improving the economic valuation of market and non-market ecosystem services from old growth forests on Vancouver Island and underscores why we must move away from reliance on economic impact assessment alone to make decisions regarding forest management. We also acknowledge that Indigenous Nations have distinctive rights on their traditional lands and any decisions about old growth forest management must include meaningful consultation and accommodation of those rights, consistent with the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). Below we provide some key next steps:

Filling the data gaps

An important opportunity exists to improve decisions about old growth management with a broader program of research. A surprise result from this pilot was the absence of economic studies focusing on Vancouver Island forests, as well as some significant data gaps for key ecosystem services. For example, the most current dataset available for assessing recreation benefits was from a 1990 study by the Province. Since the ways British Columbians value recreation have likely shifted in the last three decades, AFA is currently collaborating with Simon Fraser University to update these data using the Port Renfrew region as a study site. Other strong candidate values for future incorporation include human health impacts, additional fish habitat benefits for coho and other species (e.g., from recreational fishing and nutrient cycling, not just commercial fishing), and water quality impacts for areas of the Island that rely on surface water.

Prioritization of specific old growth stands

Identifying priority old growth stands for protection across the harvestable land base is a critical next step, and one that should be done for both publicly and privately owned and managed lands. Prioritizing old growth forests most at risk that provide the greatest economic benefit will help maximize the benefits old growth forests provide at least cost to society. With scientifically defensible and repeatable criteria, stand-level prioritization will help paint a fuller picture of the value of old growth forests.

Policy recommendations

In January 2020, as part of the Ancient Forest Alliance’s submission to the Province of British Columbia’s Old Growth Strategic Review, we relied on results of this pilot study and other efforts to make recommendations to the Province that included specific actions for modernizing existing Provincial policy and legislation. These included new, science-based old growth protection standards; transitioning to a sustainable, value-added second growth forest sector; and supporting enhanced economic and community well-being for Indigenous Nations that are seeking opportunities to protect old growth.

The old growth panel’s report, which recommends a paradigm shift in BC forest management, emphasizes the need to prioritize ecological health and consider other non-timber values in old growth management. The report is intended to inform a new provincial Old Growth Strategy in BC and represents an important opportunity to re-assess and re-prioritize the economic benefits generated for society by old growth forests. The results presented here are intended to inform the new Strategy so it can support better economic decisions and ultimately increase the prosperity of British Columbians’ beyond what is provided by timber harvest alone.

For more information about the Ancient Forest Alliance’s submission, or to obtain a copy of the full economic study, please contact us at info@ancientforestalliance.org.

This pilot study represents a first step toward helping people make **better economic decisions** about old growth protection and harvest on Vancouver Island

Photo by TJ Watt (2018)

