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Mapping and data support by David Leversee

Acknowledgements

Context

This report describes the state of forests in British Columbia using the language and frameworks of Western science. We recognize that this approach is limited, as Indigenous peoples, cultures, and knowledge systems have coexisted with and sustained these forests for millennia without undermining their ecological integrity. Indigenous experience demonstrates that human societies and forest ecosystems can and do thrive together, offering pathways far more sustainable and respectful than the industrial timber-biased paradigm that dominates today.

We acknowledge with gratitude the Indigenous leaders, knowledge keepers, and communities who continue to defend and care for their lands and waters—drawing on both old and new ways—despite the profound and long-lasting impacts that colonization, industrial exploitation, and imposed land management have had on their lives, cultures, and territories. Their ongoing stewardship is a reminder of the responsibility we all share to find better ways of living with forests and to act with urgency to protect them.

About the authors

Dave Daust (M.Sc., RPF) is a forester and landscape analyst based for 30 years near Smithers, B.C. on unceded Wit'suwit'en territory, and recently moved to Saltspring Island on the unceded territory of the SENĆOŦEN and Hul'qumi'num speaking peoples. Dave's background includes road and cutblock design, silviculture and ecosystem-based woodlot management. For three decades, he has developed and applied approaches for assessing impacts of human activities on forest biodiversity and on focal species—including caribou, grizzly bears, goshawks, marten and salmon—for Indigenous and provincial governments. He has developed adaptive management and monitoring frameworks and has facilitated workshops with topic experts and land managers. In the past two decades, he has incorporated climate change into assessments, workshops and recommendations. In 2021, he participated in the Old Growth Technical Advisory Panel that identified at-risk old growth suitable for harvest deferral in B.C.

Karen Price (PhD) is an independent ecologist working at the interface of science and management. After living for 30 years near Smithers, B.C. on unceded Wit'suwit'en territory, she recently moved to Salt Spring Island on the unceded territory of the SENĆOŦEN and Hul'qumi'num speaking peoples. Karen has worked on, and taught about, old growth and land-use policy for more 30 years, aiming to bring science and transparency to decisions. She focuses on how to maintain ecological resilience given cumulative effects of management and climate. Her peer-reviewed publications—addressing the status old growth, ecosystem-based management, forest structure and disturbance, as well as a variety of species from epiphytic lichens to stream insects, birds and mammals—have garnered many citations and two awards for "outstanding contribution to the sustainability of natural and cultural resources in northwest B.C." She sat on the 2021 provincial Old Growth Technical Advisory Panel identifying at-risk ecosystems for potential harvest deferral.

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Al Gorley and Garry Merkel

in their April 2020 letter to B.C. Forest Minister Doug Donaldson (page 3 of the Old Growth Strategic Review)

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Acronyms used in the report

BEH: Biodiversity and Ecosystem Health Framework

GBR: Great Bear Rainforest

Ha: Hectares

Mtn: Mountain

OG: Old Growth

OGMA: Old Growth Management Area

OGSR: Old Growth Strategic Review

OG TAP: Old Growth Technical Advisory Panel

UWR: Ungulate Winter Range

WHA: Wildife Habitat Area

Summary

Overview

British Columbia's forests are in crisis. Despite strong provincial commitments over the past five years—including the Old Growth Strategic Review (OGSR, 2020), the Nature Agreement to protect 30 percent of B.C. by 2030 (2023), and the draft Biodiversity and Ecosystem Health Framework (2023)—the province has so far failed to deliver the promised paradigm shift in forest stewardship. Industrial clearcutting, climate-driven wildfires, and myopic conservation progress continue to erode ecological integrity, placing biodiversity, First Nations' values, communities, carbon retention, climate resilience and future economic opportunities at risk.

Key findings

- **Old-growth loss continues**: Nearly 5 percent (510,000 hectares) of the 11 million hectares of old growth identified in 2021 has been logged, burned, or removed from the public land base.
- Logging continues to target at-risk, big-treed forests, particularly on the coast. Since 2021, the rate of logging in big-treed old growth continued to be higher than in smaller-treed, less productive old growth forests that are currently at lower risk of biodiversity loss.
- **Deferral recommendations did not effectively pause logging in endangered old growth:** Logging was four times more likely inside at-risk old growth forests that were recommended for deferral than in other old growth.
- OGSR recommendations have not yet led to significant new protection of old growth: Most of the 368,000 hectares of old growth protected by some designation since 2021 stemmed from processes underway long before the province committed to a new stewardship paradigm. Less than 2 percent of the most at-risk forests were protected as a result of new policy.
- Remaining primary forest is dominated by lower productivity ecosystems: Only 2.5 million hectares of high-productivity primary forest (old growth or younger, naturally disturbed forests) with the potential to support large trees remain, much of it in small patches surrounded by degraded forest.
- Wildfire disturbance has increased sevenfold in recent years compared to past decades: Although wildfires are natural parts of a forest's lifecycle, the increased extent and severity of fires driven by climate heating heightens the urgency of protecting remaining old growth from logging.
- There is little evidence of a policy shift that puts ecological health first: The draft Biodiversity and Ecosystem Health Framework is unfinished, conservation progress is glacially slow, and provincial leadership continues to prioritise timber supply over ecological resilience.
- The province's commitment to 30 x 30 provides an opportunity to shift policy: The 12 percent of B.C.'s forests currently under strong protection are skewed toward low-productivity ecosystems with small trees. Less than 5 percent of high-productivity big-treed forests are protected, far short of goals for ecosystem representation. Achieving 30 percent protection of representative ecosystems will require a shift from safeguarding low-productivity areas to protecting remaining big-treed old growth and younger high-productivity primary forests.

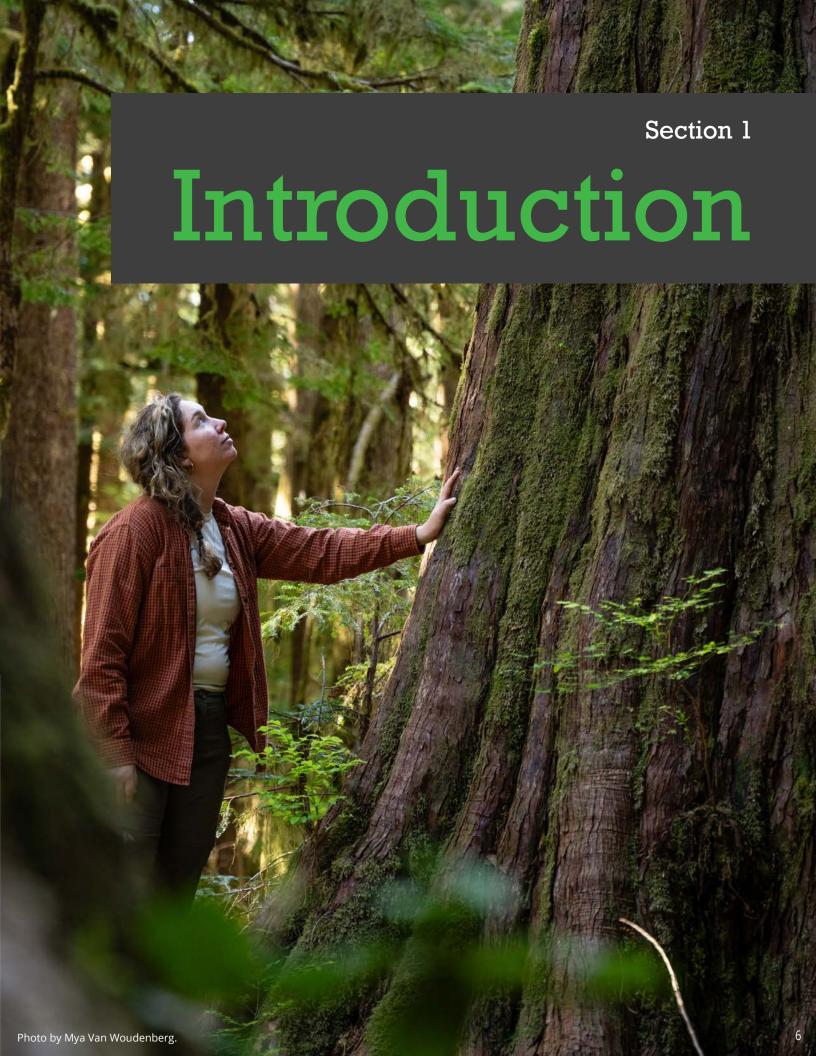
Conclusions and recommendations

Addressing the intercepting crises of our time calls for the promised paradigm shift in managing forests in B.C., a shift that prioritises ecological health, carbon stores, climate adaptation and sustainable human communities above short-term timber revenue and corporate profit. Change will require that the province embraces responsibility for the degraded condition of B.C.'s forests and enables the following actions:

- 1. Speed up effective implementation of the OGSR recommendations by:
 - a) **Keeping at-risk old growth standing** to allow for planning, including providing funding to enable conservation options.
 - b) **Applying an ecological lens to all government decisions** through a finalised Biodiversity and Ecosystem Health Framework.
 - c) **Providing transparent, timely and independent state-of-the-forest and OGSR implementation reporting** to allow the public to track progress.
- 2. **Prioritize protection of big-treed high-productivity forests** to meet 30 x 30 targets instead of continuing to "protect" ecosystems not threatened by logging.
- 3. **Support First Nations leadership** with adequate funding and capacity to achieve interim and long-term conservation solutions, rather than offloading responsibility without resources.

The OGSR recommendations were widely supported, yet the past five years show little evidence of a change in provincial forest stewardship. Without change, B.C.'s globally significant forests and biodiversity will all but disappear, communities will suffer more with wildfires and floods due to cumulative effects of logging and climate heating, First Nations will continue to lose food security, and mills will continue to close. Change is possible: governments, communities and businesses in B.C. can act together with wisdom and integrity to safeguard the ecosystems that support us all.





Introduction

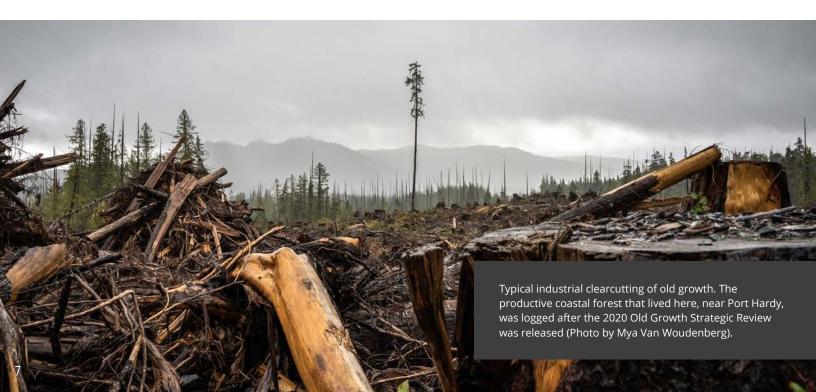
B.C.'s forests are in crisis. Five years ago, the provincial government acknowledged this crisis and promised to shift from a timber-focused to an ecosystem-focused forest stewardship paradigm. Unfortunately, the province has not yet reported the current state of the forest sufficiently to allow the public and decision-makers to evaluate progress. This report attempts to fill that gap by highlighting key conditions and trends, assessing whether the province's actions live up to promises, and identifying where actions fall short of the promised paradigm shift.

Forests have always been integral to the identity of the people in B.C. With more than 50 million hectares of forested ecosystems, forests define the provincial landscapes. Forests provide critical habitat, and function in countless visible and invisible ways to sustain human and ecological communities. First Nations have coexisted with forest ecosystems and supported their ecological integrity for millennia.

In recent years, however, after a century of industrial logging and other anthropogenic impacts combined with increasingly severe climate impacts, a steadily increasing portion of forest ecosystems are in

uncharted territory of high ecological risk, less able to provide historically "free" ecosystem services like flood control, temperature regulation and wildlife habitat. After interviewing a diverse group of forest professionals and knowledge holders, the Old Growth Strategic Review (OGSR 2020)¹ panel highlighted a clear consensus about the need to shift forest management from a timber-first to an ecosystem-first paradigm.

Premier Eby acknowledged B.C.'s forest crisis in his 2022 mandate letter² to Minister Cullen when he stated that B.C. forests are "exhausted" due to the "impacts of short-term thinking on the British Columbia land base". Today, large tracts of B.C. forests are degraded by industrial clearcutting, and their resilience to the escalating pressures of climate change are severely strained. Forest-dependent species, including large mammals, are disappearing, and the capacity of forests to store carbon and reduce climate impacts like floods and droughts is declining. The planned overharvest, and focus on logging the biggest, most accessible trees first, has led to extensive mill closures throughout B.C. as they run out of the large, easily-accessed, economically viable wood.



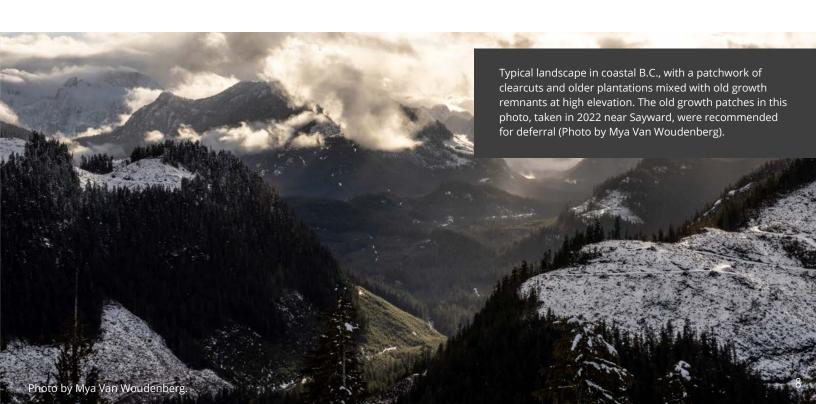
Despite strong commitments like the 2020 OGSR, the follow-up Old Growth Action Plan (2024)³, the Nature Agreement (2023)⁴, and the Draft Biodiversity and Ecosystem Health Framework (2023)⁵, the province has so far failed to implement the paradigm-shift in forest stewardship it promised five years ago—a shift from viewing forests as logs and profit to recognising that forests are complex, interacting, living ecosystems that provide a wide range of services as well as supporting biodiversity.

While there has been some regional progress protecting forests led by First Nations, and steps in the right direction in provincial regulation, forest management remains largely driven by timber bias. Recently, conservation commitments seem to have fallen off the agenda. The unrealistic, and unjustified, goal to ensure a harvest of 45 million cubic meters per year (a roughly 50 percent increase from the most recent annual harvest level)6 in Premier Eby's January 2025 mandate letter to Forest Minister Parmar⁷ is a stark example of short-term thinking that further stresses exhausted forest ecosystems. This goal is irreconcilable with the goal of safeguarding forests as part of our natural life support systems and makes the shift to ecologically responsible forestry harder.

From carbon storage to tourism, recreation, and non-timber forest products, there is ample evidence that forest stewardship reforms provide greater societal benefits8 than business-as-usual industrial forestry. Together, the province's conservation commitments—and the provincial and federal funding tied to them—provide the ingredients needed to correct the course. However, continued lack of transparency and accountability makes it difficult to know if these commitments are being implemented in ways that safeguard ecosystems.

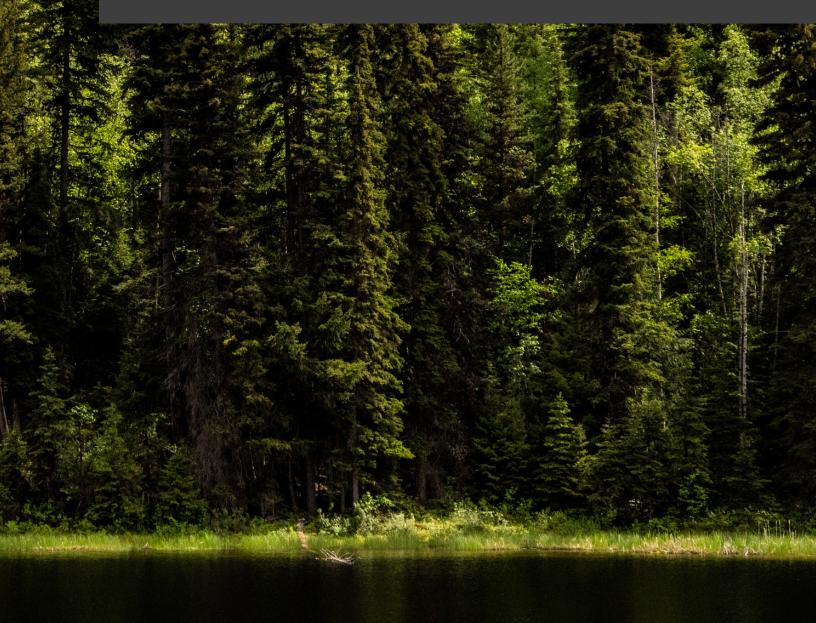
Continued lack of transparency is particularly concerning because the OGSR called explicitly for "timely and objective information about forest conditions and trends". Information is required to measure progress towards shifting the paradigm and to recognize when forests cross thresholds of ecological health that increase risk of catastrophic impacts to biodiversity and communities.

This report focuses on some of the most critical aspects of B.C.'s forests today: the state of old growth and other primary forests, and recent trends in logging, wildfire, and conservation. Our analyses aim to assess whether B.C. is moving towards the promised paradigm shift in forest management and towards meeting the commitment to protect 30 percent of the province's ecosystems by 2030.





Analytical Approach



Analytical approach

This report focuses on old growth and other primary forests that are undisturbed by industrial logging or other large-scale development. We describe several critical elements of B.C.'s forests:

- The loss of old-growth forests mapped by the Minister's Old Growth Technical Advisory Panel (TAP) in 2021.
- The loss of the most at-risk old-growth forests, defined as those within areas recommended for temporary deferral of harvest by the old growth TAP.
- The current status of all primary forests in B.C, including old growth and younger, naturallydisturbed forests (as old-growth forests decline and managed forests expand, understanding the status of primary forests becomes more urgent).
- The change in protected areas since 2021, both across the province and within recommended deferral areas.
- The change in wildfire disturbance.

Forest ecosystems vary with climate, topography, stand age and disturbance history, and B.C.'s complex terrain and oceanic influence generate high ecosystem diversity. For a coarse-scale provincial analysis, we divide the province into broad ecological regions that each support one or two biogeoclimatic zones⁹ (Figure 1). Within these regions, we classify ecosystems by relative productivity (capacity for tree growth), separating high productivity sites with the capacity to grow big trees quickly, from low productivity sites such as subalpine and bog forests that support small trees that grow slowly (based on old growth size class and site productivity class). Different ecosystems function differently and support different communities of species. Conserving enough of each natural ecosystem, a globally accepted ecosystem representation approach included in international agreements¹⁰, is necessary to maintain biodiversity and ecosystem function. Ecological risk increases as the area of each ecosystem decreases from historic amounts.









Photos by Mya Van Woudenberg (Coast and Dry Interior) and Karen Price (Mountain Interior and Sub-Boreal).

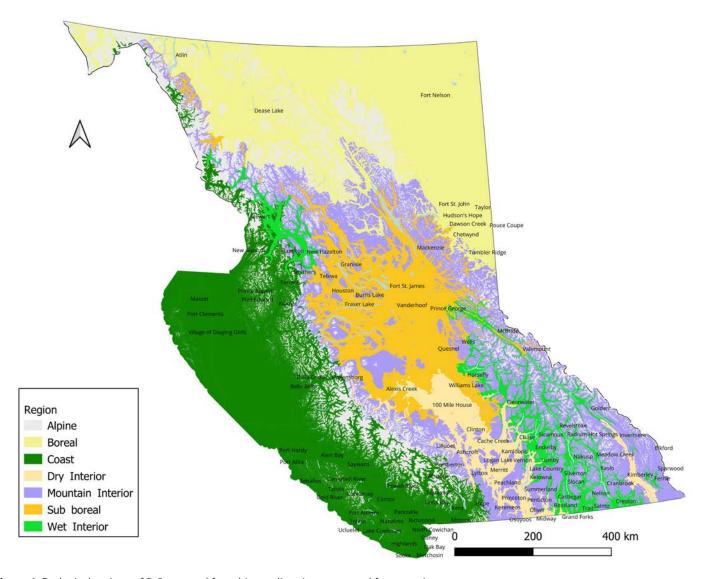


Figure 1: Ecological regions of B.C., created from biogeoclimatic zones, used for reporting.

We analyse forest state based on existing provincial databases. Revisions to these databases occur periodically, complicating reporting of actual onthe-ground changes in forest condition. In 2021, B.C.'s forest inventory identified about 56 million hectares of forest within a total land base of 95 million hectares that includes lakes, wetlands, forests, grasslands, desert and alpine ecosystems as well as rural and urban landscapes. In 2025, the inventory identified about 61 million hectares of forest, because it was expanded to include missing information for Tree Farm Licenses and for the Kitlope valley (along with other minor updates).

To ensure that our old growth reporting captures on-the-ground change, we used 2021 old growth data (and a total forest area of 56 million hectares)

as a baseline and then accounted for land sales, logging, natural disturbance and stand aging. Our new analysis of primary forest area uses 2025 forest inventory data, with a total area of 61 million hectares of forest, because it is more comprehensive and no prior baseline exists.

We use the provincial burn severity database to look at trends in wildfire. This database classifies severity in four classes: nil, low, moderate and high. We focused on forest that burned with moderate or high severity as these fires reset succession to a young seral stage; forests within fire perimeters with "nil" severity were entirely skipped (and hence not burned) and those with "low" severity typically retain the functions of old growth.



Old-growth trends: 2021 – 2025



Old-growth trends: 2021 – 2025

Old growth area

In 2021, 11.1 million hectares of primary old-growth forest, about 20 percent of the total forest area of 56.2 million hectares¹¹, remained in the provincially-managed land base. Since then, about 100,000 hectares of this forest has been logged (mostly undisturbed forest, with a small amount of post-fire logging), 400,000 hectares have burnt, and 11,000 hectares have been removed from the provincially-managed land base to become private land—a total impact of nearly 5 percent (Table 1).

Some regions have been impacted more than others. Sub-boreal forests have been most heavily logged, with 2.4 percent of remaining old growth lost in the past 4 years; other interior forests have lost 1 percent of the remaining old growth to logging, and coastal and boreal forests have lost 0.5 percent (Table 1). About 10 percent of the boreal and dry interior forests burned in climate-change-influenced wildfires, and about 4 percent of sub-boreal and mountain interior forests burned, while only 1 percent of wet interior and 0.1 percent of coastal forests burned (Table 1).

In the same period, some forest has "aged into" the old growth category, with recorded age increasing from, for example, 137 to 141 years old in the interior, or from 247 to 251 on the coast. This apparent "gain" in old growth cannot be compared on a similar scale to loss because the change in structure and function over four years of stand development is ecologically trivial, whereas the change in structure and function when an ecosystem undergoes stand-replacing disturbance, particularly in a conversion from primary forest to plantation, is massive, irreversible, and further exacerbated by the changing climate. Forest aging moved nearly a million hectares across the old growth age threshold, resulting in an estimated 11.6 million hectares defined as old growth in 2025.

About 5% of old growth identified in 2021 has been logged or burned in the last four years.

Table 1: Loss in area of old-growth forest identified on provincially managed land by type of loss (rounded to nearest 100 ha; percentage of region in brackets).

Region	2021 OG ha	Logged ha (%)	Burned ha (%)	Removed ha (%)	Total lost ha (%)
Coast	4,054,200	19,000 (0.5)	5,000 (0.1)	8,400 (0.2)	32,300 (0.8)
Wet Interior	921,300	9,100 (1.0)	11,000 (1.2)	800 (0.1)	20,800 (2.3)
Mtn Interior	2,160,900	21,700 (1.0)	85,500 (4.0)	400 (<0.1)	107,600 (5.0)
Sub-boreal	1,641,000	39,300 (2.4)	65,500 (4.0)	1,100 (0.1)	105,900 (6.5)
Boreal	2,254,800	10,600 (0.5)	222,400 (9.9)	100 (<0.1)	233,100 (10.3)
Dry Interior	88,700	800 (0.9)	9,500 (10.8)	100 (0.1)	10,400 (11.7)
Total	11,120,800	100,300 (0.9)	398,900 (3.6)	11,000 (0.1)	510,200 (4.6)

Logging continues to target big-treed old growth

Logging has historically targeted productive ecosystems with big trees. In 2021, although a considerable area of old forest still existed in parts of the province, remaining old growth mostly consisted of less productive ecosystems that support small trees, with a small fraction of original big-treed old growth surviving.¹²

The 2021 Old Growth Technical Advisory Panel (TAP), in conjunction with the provincial Forest Analysis and Inventory Branch, mapped trees in five tree-size groups within each ecosystem¹³. Using this map as a baseline, we assessed the rate of loss of old growth in each tree-size group within each region since then. Despite the rarity of big-treed old growth, we found that it is still clearly targeted: the rate of loss over the past four years increases with relative tree size (Figure 2). Conversely, wildfires disturbed more small-treed old growth (Figure 2), perhaps because big-treed forests are generally found in relatively wetter locations within each ecosystem.

The bias towards loss of large-treed forest varied by region (Figure 3). The most severe losses of large-treed forest relative to other size classes were in coastal forests, i.e., a larger percentage of large-treed forest was lost compared to smaller-treed forest. That bias was less apparent in the wet interior, sub-boreal and dry interior forests. In high-elevation interior forests and boreal forests, there was no clear pattern in the rate of loss based on tree size.



Clearcut in big-treed old growth logged since 2020 (Photo by Mya Van Woudenberg).

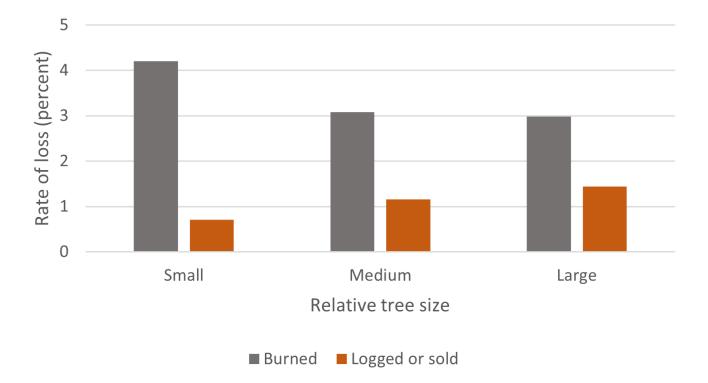
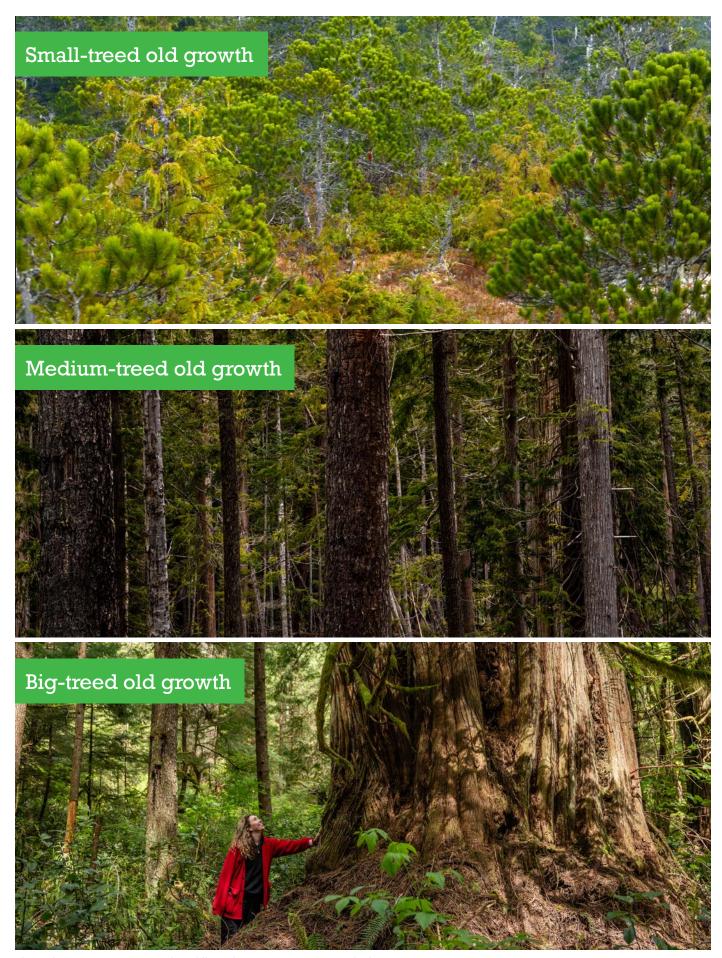


Figure 2: Percent of 2021 old-growth forest impacted by relative tree size and cause of loss. Relative tree size is based on division of size range into five equal groups, calculated separately for each ecosystem: in this graph, "small" trees are those ecosystems in the bottom two size groups; "medium" in the middle; "large" in the top two.



Photos by (Top) Karen Price and (Middle and Bottom) Mya Van Woudenberg.

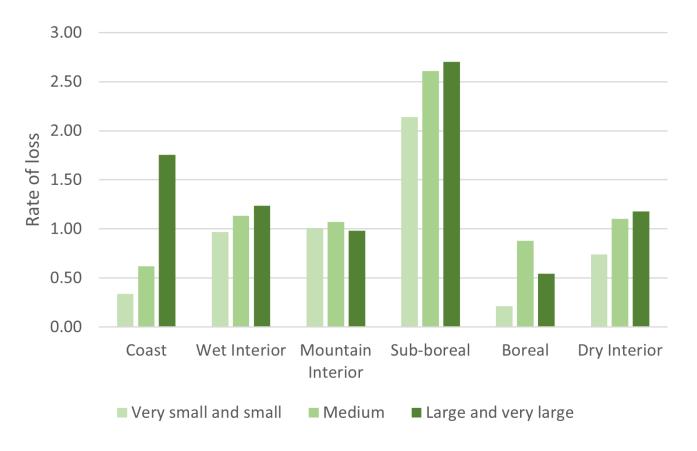


Figure 3: Rate of loss (percent) of 2021 old-growth forest due to logging and removal from the provincial land base, by relative tree size. Relative tree size is based on division of each ecosystem into five equal size groups; hence tree size in each class varies with ecosystem.

At-risk deferral area

In 2021, 2.6 million hectares of high-priority at-risk old growth were recommended for harvest deferral to allow time for long-term conservation planning with First Nations¹⁴. About 157,000 ha (6 percent) of this area was logged or burned in the past four years. Of this area, 55,000 ha (2 percent) was logged and nearly 100,000 ha (4 percent) burned, with variation by region (Table 2).

Looking at the proportion of total old growth disturbed within and outside deferral areas demonstrates whether identifying priority at-risk old growth for harvest deferral was an effective temporary conservation strategy. Wildfire disturbed similar proportions of areas within and outside deferral areas, a pattern that would be expected from unbiased disturbance (Figure 4). Logging, however, showed a different pattern. Logging disturbed 2.1 percent of old growth within areas recommended for deferral and only 0.5 percent of the area outside these areas, meaning that logging was four times more likely in areas recommended

for deferral than outside them (Figure 4). Deferral recommendations did not protect old growth; instead, they may have increased the rate of harvest in these rare, high-value forests.

Overall, deferral recommendations did not effectively pause logging in endangered old growth; instead, they appeared to increase the risk of logging. Logging was four times more likely within areas recommended for deferrals than in other old growth.

The province keeps track of all TAP recommended deferral areas and accepted deferrals. Because they have not, however, shared maps or details about ecosystems, terms or conditions for deferrals, deferral status can change at any time, without transparency. As of February 2025¹⁵, more than half of the 2.6 million hectares of the most at-risk forests remain without deferrals, with almost no change in the last two years, despite new funding opportunities associated with the 2023 Nature Agreement.

The bias towards clearcutting big-treed forests—which led to the need for logging deferrals—has continued after the deferral recommendations were made public, with proportionally more logging in identified "big-treed old growth" deferrals than in other deferral types. Conversely, proportionally less area in big-treed old growth burned, likely because these forests grow in moist ecosystems.

Table 2: Loss of old growth recommended for deferral area by type of loss from 2021 to 2025 (rounded to nearest 100 hectares).

Region	Deferral* ha	Logged ha (%)	Burned ha (%)	Removed ha (%)	Total lost ha (%)
Coast	496,900	4,800 (1.0)	500 (0.1)	800 (0.2)	6,100 (1.2)
Wet Interior	278,400	5,600 (2.0)	5,200 (1.9)	300 (0.1)	11,000 (4.0)
Mountain Interior	602,600	12,300 (2.0)	20,800 (3.5)	200 (<0.1)	33,300 (5.5)
Sub-boreal	889,100	27,000 (3.0)	26,000 (2.9)	900 (0.1)	53,900 (6.1)
Boreal	215,000	2,400 (1.1)	30,900 (14.4)	5 (0)	33,200 (15.5)
Dry Interior	123,300	2,900 (2.4)	16,000 (12.9)	200 (0.1)	19,100 (15.5)
Total	2,605,400	55,000 (2.11)	99,300 (3.8)	2,300 (0.1)	156,600 (6.0)

^{*}Recommended for deferral

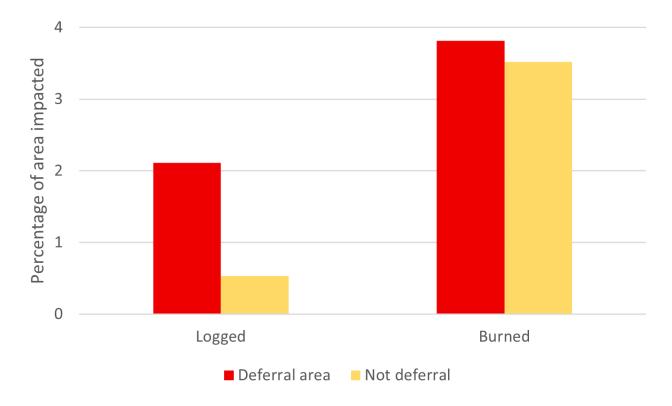


Figure 4: Percentage of area of old growth within and outside high-priority at-risk forests recommended for deferral that has burned or been logged since 2021.

New old growth protection

Total old growth protection (including areas within and outside of areas recommended for deferral) increased by 367,752 hectares, from about 3.5 million hectares in 2021 to about 3.9 million hectares in 2025. The strength of protection varies by designation: while parks and other protected areas prohibit most industrial use, other designations may allow certain activities and can be easily changed.

There is little evidence of new protection due to the province's commitment to change its stewardship paradigm:

- Most (64 percent) new protection (236,296 ha) lies within Great Bear Rainforest (GBR) landscape reserves (Figure 5). These reserves were conceptually approved in the 2016 GBR Act and finalized in the 2023 GBR Land Use Order; hence they did not result from the province's promised changed paradigm.
- Large areas of old growth were also protected in new conservancies (50,748 ha) and Old Growth Management Areas (OGMAs; 47,612 ha in nonlegal and 659 in legal OGMAs¹⁶) following from ongoing processes.
 - The large conservancies in Clayoquot Sound were protected after decades of work led by Ahousaht and Tla-o-qui-aht Nations and thus were not protected due to changed old growth strategy.
 - The Incomappleux was designated recently but was removed from the timber harvesting land base a decade ago when a rockslide prevented access.
 Some non-legal OGMAs reflect recommendations of a Forest Practices Board investigation completed in 2020¹⁷.

- The large Klinse-za Park extension includes 15,594 hectares of old-growth forest; this park was intended to protect endangered caribou habitat, and planning was initiated before new old growth commitments were announced in 2020.
- Ungulate winter range (UWR) and wildlife habitat area (WHA) designations with "no-harvest" stipulations protected an additional 9,000 ha of old growth—reserves designed primarily for wildlife rather than old growth conservation.

Understanding when conservation actions happened matters because the OGSR authors were aware of the current state of conservation actions in the province, and yet still identified the need for both a fundamental paradigm shift, and protection of additional high-risk old-growth forests. We cannot determine the exact area of new protection due to a change in old growth strategy, but it clearly represents a small proportion of the area added. In part, this is because new strategies take years to implement. This makes effective interim protections such as deferrals of the most at-risk forests even more vital to allow time for First Nations and the province to agree on long-term conservation solutions.

Most new protection resulted from processes in place long before the province's 2020 OGSR commitment—there's little evidence of new protection for old forest resulting from implementation.



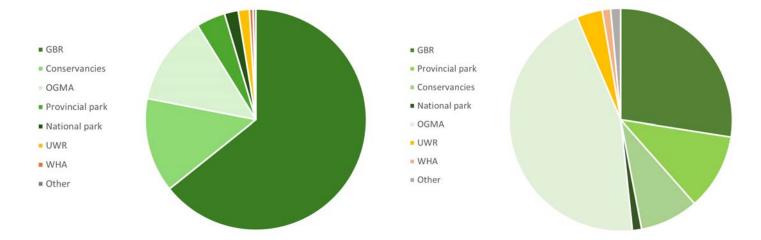


Figure 5: Proportion of 367,752 ha of new old growth protection (since 2021) by type of protection. Note that the strength of protection varies among types; parks and conservancies, shown in darker green, are stronger. Almost all OGMAs (99%) are not legally designated.

Figure 6: Proportion of 152,012 hectares of deferral protection (since 2021) by type of protection. The strength of protection varies among types; parks and conservancies, shown in darker green, are stronger.

Within the 2.6 million hectares of recommended old growth deferral areas, 152,012 hectares (about 6 percent) have been designated for some form of protection since 2021 (Figure 6). Protection designations within recommended deferral areas were similar to those for all old growth, with most protection in the Great Bear Rainforest landscape reserves, Clayoquot Sound conservancies and non-legal OGMAs. While some of the non-legal OGMAs resulted from processes underway before the announcement of OGSR commitments, some may have been a result of changed policy. At most, 1 to 2 percent of B.C.'s highest priority, most at-risk old growth has been protected due to a change in the old growth management paradigm (i.e., of the 6 percent designated, less than a third could be attributed to new policy).

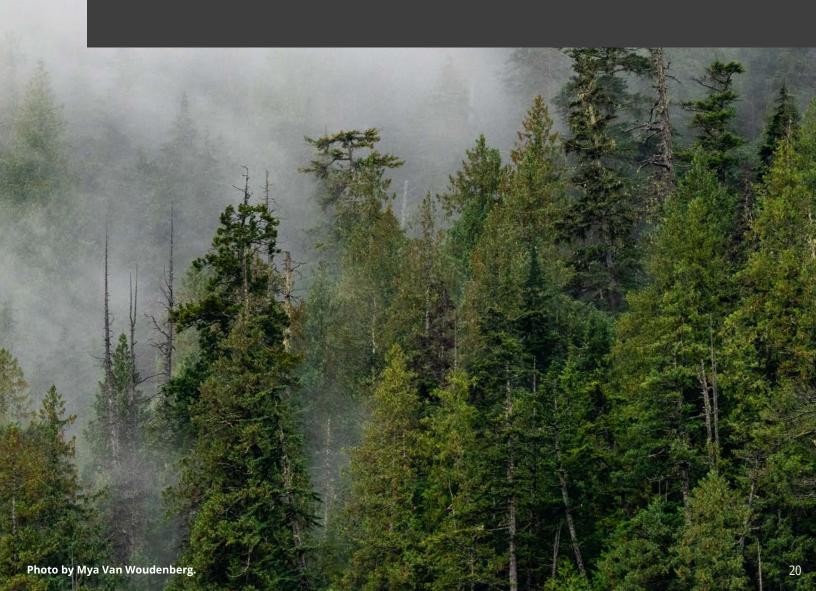
Only a tiny fraction (at most 1-2%) of the 2.6 million hectares of highest priority at-risk old growth has been given strong or weak protection due to 2020 OGSR commitments



Unprotected deferral area near 100 Mile House (Photo by Mya Van Woudenberg).

Section 4

Primary forest status: 2025



Primary forest status: 2025

Primary forests are naturally regenerating forests whose structure, composition and dynamics are dominated by ecological processes¹⁸. Primary forests may be old growth or younger, naturally disturbed forests. They include forests managed following Indigenous knowledge and practices and exclude forests that have been disturbed by industrial activities.

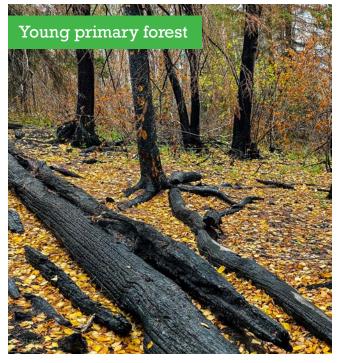
An effective response to the biodiversity and climate crises requires greater efforts to protect and improve stewardship of old-growth forests and other primary forests. Younger naturally regenerated forests—that have not been subsequently logged—are diverse ecosystems, with open areas full of herbs and shrubs mixed with patches of live trees, scattered dead standing snags, and abundant logs. These structural legacies provide habitat for a wide variety of organisms, increase diversity, and speed recovery towards old forest conditions. Young natural stands with complex structure are characteristic of much of

B.C.'s interior and support biodiversity as well as having high carbon storage compared with managed stands.

Because the province has not yet recognised the ecological importance of primary forest (beyond old growth), there is no primary forest data layer; hence mapping and assessments will vary with assumptions and methodology. We explored available datasets; some data layers classify sparsely-treed sub-alpine and wetland ecosystems as "forested". To reduce uncertainty about these classifications, we separate low productivity ecosystems that grow very small trees (based on site index of less than 10 metres potential tree height at age 50 years) from the rest of primary forests in analyses.

For the primary forest analysis, we use the updated provincial inventory that includes 61 million hectares of total forest. Nearly a third (18 million hectares) of this total forest has been degraded





A coastal old-growth forest (Left) compared to a young sub-boreal primary forest (Right). The image of the sub-boreal primary forest was taken two years post-fire near Francois Lake showing complex legacy structure: conifer snags, logs, and autumn leaves fallen from patches of surviving aspen trees (Photos by Mya Van Woudenberg and Karen Price).

or deforested. Clearcutting, and subsequent conversion to tree plantations, is the largest cause of degradation, impacting 10 million hectares of the most productive ecosystems. Linear features deforest and degrade a further 4 million hectares (roads, rail, pipelines; including a corridor that varies from 50 – 100 meters depending on the feature). More than a million hectares of previously forested ecosystems have been deforested (converted to urban areas, fields, or mines), and more than two million hectares are now privately owned with varying amounts of deforestation and degradation.

Of the remaining 43 million hectares of unlogged primary forest, 17 million hectares have very low productivity (Site Index<10), supporting very small trees. Higher productivity forests support larger trees, more dead wood, increased structural diversity and higher biodiversity. While old low-productivity forests provide many ecosystem services, they do not support the large old trees that form keystone ecological structures and carbon stores that are at risk globally. This leaves 27 million hectares of relatively productive primary forest (Site Index>10; growing medium-sized or large trees). Range tenures overlap with 10 million hectares of this area, with potential degradation of unknown

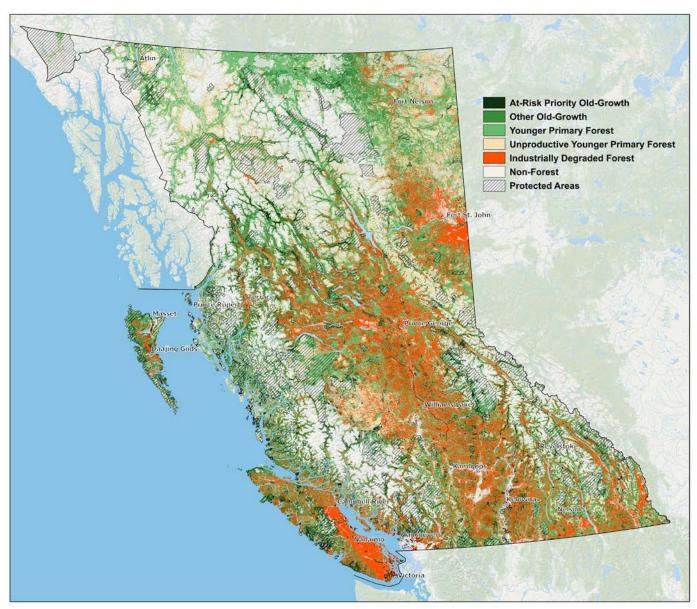


Figure 7: This map shows remaining old growth, including the most at-risk old growth recommended for deferral. Younger primary forests (i.e., not degraded but not old) include large areas of "unproductive" forests that support small trees. Industrially degraded forests include plantations, buffers around roads and other linear disturbances, and deforested and private land. Protected areas are shown by black hatching.

severity due to livestock grazing. About 7 million hectares of the 27 million hectares of relatively productive primary forest is old growth while the rest is mature or younger.

Most remaining primary forest is either in the far north of the province or is found in protected areas or in small patches. The north of the province supports large areas of very low productivity ecosystems (including wetlands, shrub-dominated ecosystems and sub-alpine ecosystems) with more productive primary forest in valleys (Figure 7). Over the rest of the province, large patches of primary forest (excluding very low productivity ecosystems) only remain in protected areas (Figure 7). On the interior plateau, in valleys on the coast, and in the

interior temperate rainforest, small patches of primary forest are surrounded by degraded forest (Figure 7).

Remaining primary forest is dominated by lower productivity ecosystems. Logging targets higher productivity forests with bigger trees. While 27 million hectares of relatively productive primary forest remains, less than 10 percent of this area (2.5 million hectares) supports high productivity primary forest capable of growing large trees quickly. While only a quarter of primary forest is on moderate or high productivity sites (capable of supporting moderate and large trees), 70 percent of degraded forest is on these sites (Figure 8).

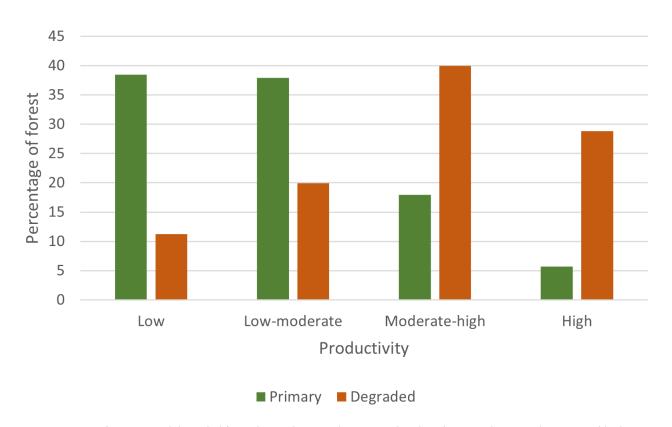


Figure 8: Percentage of primary and degraded forest by productivity class (site index class: low 5-10; low – mod 10-15; mod-high 15-20; high >20). Forest with range tenures included as primary.



Natural disturbance and wildfire trends

Wildfires, insects and storms are natural parts of a forest's lifecycle. While old growth is unique, threatened and provides important habitat, younger primary forests are also ecologically important. Natural disturbances add diversity and leave valuable legacies, including remnant patches of live trees interspersed with snags, logs, native understories, fungi and seed banks, that support a rich community of organisms. Ecologically, a dead tree, particularly a large dead tree, is more valuable than a live tree—it's a biodiversity hotel that keeps on giving and continues to store carbon for decades or more. Just like old-growth forests, these younger rich and diverse disturbed forests are "primary forests", unaltered by industrial logging, and vastly different from managed plantations characterised by uniformity.

As the earth heats, disturbances increase. Although disturbance has always been a natural part of a forest's life, leaving structural legacies that support a rich community of organisms, climate heating increases the frequency and severity of all types of disturbance. Twenty-five years ago, partially due to a changed climate, mountain pine beetles killed most

of the pine trees in interior B.C., affecting more than a third of the total forest area in this vast province. In the past decade, hotter temperatures and increased drought have driven a massive increase in forest area burned (Figure 9).



Disturbances leave legacies that provide complex habitat and store carbon and moisture (Photo by Mary Paquet).

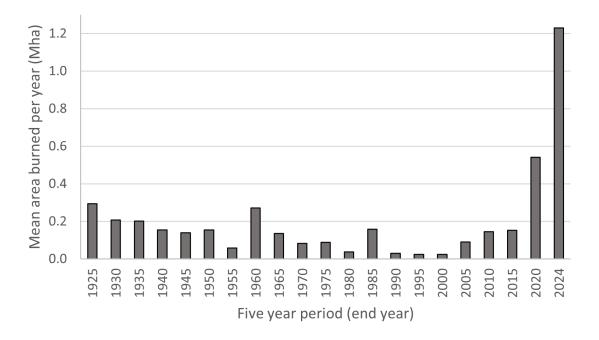


Figure 9: Mean area burned in B.C. in five-year periods (million hectares/year) based on fire perimeter data that include unburned fire skips. The last period is only four years long (2021 to 2024).

Area burned per year in the last decade is nearly seven times the historic average. Between 1921 and 2015 fires in B.C. burned roughly 130,000 hectares per year (about 650,000 hectares per five-year period; based on fire perimeter data that includes surviving forest that the fire skipped). Between 2016 and 2020, fire burned about 540,000 hectares per year; between 2021 and 2024 fire burned more than 1.2 million hectares per year. Area burned oscillates considerably from year to year, but recent years lie well beyond the trend over the last century. These trends can be expected to continue as temperatures warm and summer droughts increase.

Climate heating increases pressure on all forests, including old growth. Fires burn primary and degraded forest, with burn severity patterns that vary in complex interacting ways with species composition (e.g., deciduous versus coniferous forest), stand history (e.g., time since last disturbance and/or type of disturbance), site productivity and other ecosystem characteristics. Old-growth forests

are less likely to burn than younger forests in moist and wet ecosystems and, despite having higher biomass, are not more likely to burn than younger forest in any ecosystem. However, as the climate continues to heat, and all forests burn, the age-class distribution of remaining primary forest will shift towards young stands, and old growth will become even scarcer. Climate heating increases the urgency of protecting remaining at-risk old-growth forests to support ecological recovery and to provide a lifeboat for old growth dependent species while the landscape changes.

Patterns vary by region. Over the past decade, the area of primary forest burned varied considerably by region in expected patterns: wetter ecosystems, on the coast, in the interior temperate rainforest and at high elevations, burned less; drier interior ecosystems in the north and south of the province burned more (Figure 10).

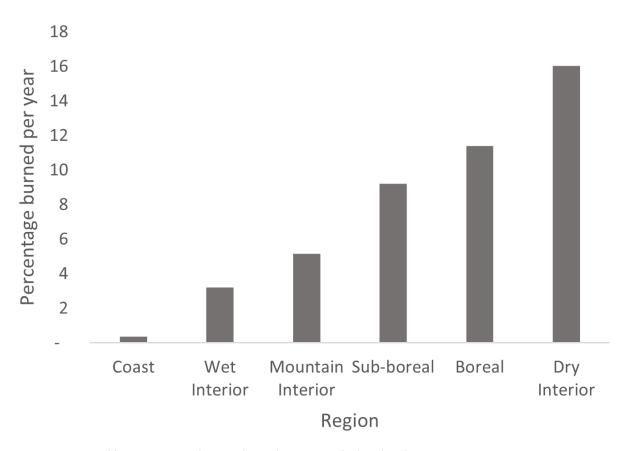
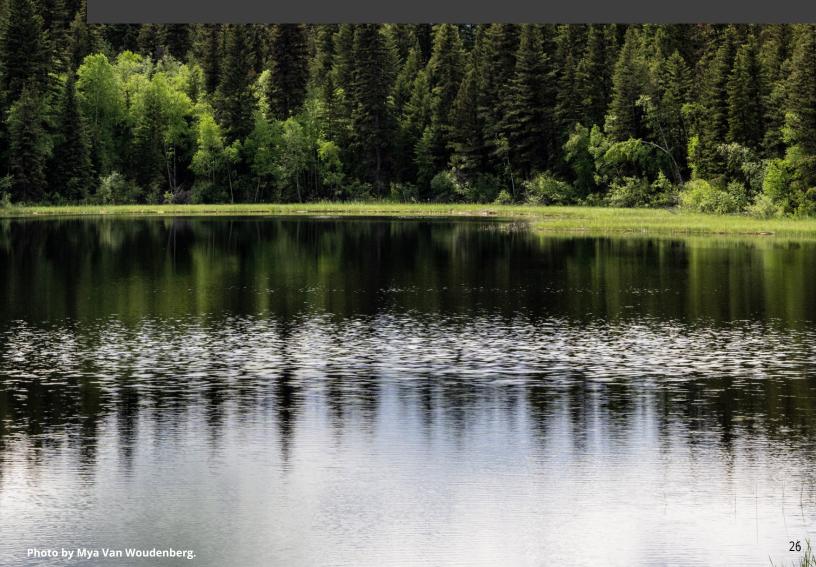


Figure 10: Percentage of forest area in each region burned per year in the last decade.



Status of the paradigm shift



Status of the paradigm shift

In 2020, B.C. committed to implementing the recommendations of the OGSR, which intended to shift forest management from a timber-first to an ecosystem- and community-first paradigm. To their credit, the provincial government took some steps to follow OGSR recommendations, identifying at-risk old growth for deferral, preparing a draft Biodiversity and Ecosystem Health (BEH) Framework, and initiating forest planning and investing in data, research and conservation planning. They supported expansion of the Klinse-Za Park and the creation of conservancies in Clayoquot Sound. The B.C. government also signed the Tripartite Framework Agreement on Nature Conservation ("Nature Agreement") with the First Nations Leadership Council of B.C. and the federal government supporting Canada's international commitment to biodiversity conservation and the goal to increase protection of lands and waters to 30 percent by 2030.

Unfortunately, provincial efforts to shift the forest management paradigm seem to have lost momentum. Progress towards finalising the BEH framework and implementation plan has stalled. Recommended deferrals are only partially in place; even BC Timber Sales, a program within the Ministry of Forest, continues to plan cutblocks in at-risk old growth recommended for deferral. A provincial review of BC Timber Sales in mid-2025 focused on increasing access to timber volume and ignored the implications of the OGSR commitments as well as the opportunity to use government control over this agency to spearhead implementation. The province is relying on Forest Landscape Planning processes to implement new forest management policy, but these processes do not have a mandate to increase protection to levels consistent with the Nature Agreement. Instead of bringing science-based leadership and willingness to rectify past mistakes to the table, responsibility to conserve biodiversity and ecosystem function has been handed largely to First Nations who are already swamped with other land management, economic and governance issues.

Biodiversity and ecosystem health framework is overdue and urgently needed

In 2023, B.C. released a draft Biodiversity and Ecosystem Health (BEH) framework that provides general strategic support for the paradigm shift. The framework describes the importance of ecosystem health and outlines B.C.'s commitment to conservation and management of ecosystem health and biodiversity. It lists actions necessary to shift to an ecosystem health paradigm, including increasing ecological education, reporting ecosystem condition, developing ecologically-focused objectives (including Ecosystem-Based Management), policy and legislation in collaboration with First Nations, developing financing support to facilitate stewardship, and enabling jobs and economic security in sustainably managed ecosystems. Unfortunately, the draft framework has not yet been officially endorsed, despite thousands of positive reviews, and an implementation plan does not yet exist.



Photo by Mya Van Woudenberg.

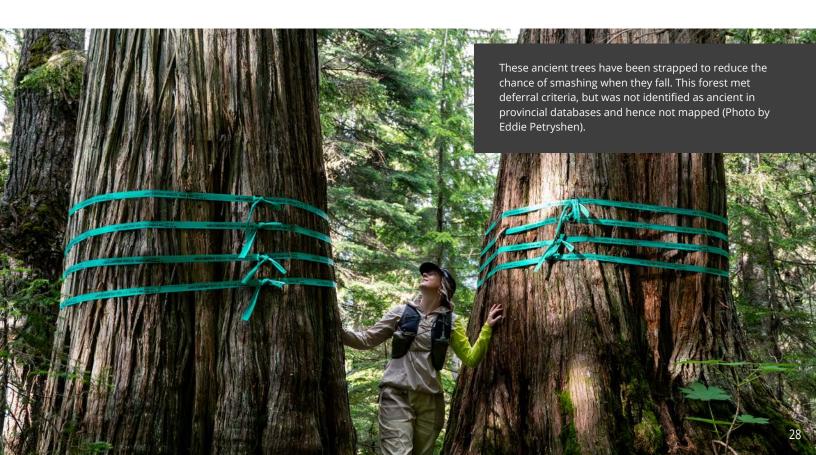
Recommended old growth deferrals have not accelerated old growth protection

In 2021, B.C. recommended that 2.6 million hectares of old growth be deferred from logging, as an interim measure to retain conservation planning options. Recommended deferrals¹⁹ identified patches of old growth in forest ecosystems at high risk of losing biodiversity and ecosystem function. These old growth patches were selected to provide the highest potential contribution to ecosystem representation; they thus identify top priority ecosystems for conservation.

Recommended deferral areas continue to be logged. Since 2021, 55,000 hectares of recommended deferrals have been logged. An additional nearly 100,000 hectares have burned. Only 136,000 hectares out of 2.6 million hectares of forests recommended for deferrals (5 percent) have been protected. Most of these areas were included in conservation plans that began long before deferrals were identified (e.g., Clayoquot Sound Conservancies, Great Bear Rainforest reserves, Klinse-Za Park). Lack of immediate protection is not a sign of failing to implement the OGSR because conservation planning is a multi-year endeavour.

However, allowing logging to continue in at-risk stands recommended for a pause in logging while conservation planning continues constitutes a failure to protect the most at-risk old growth.

The high rate of logging in recommended deferrals suggests that mapping may even have created an impetus for industry to accelerate clearcutting of at-risk old growth. A government map leaked in 2024 showed that areas of "accepted deferrals" (i.e., areas where logging has been temporarily paused) have moved from the mapped at-risk big-treed oldgrowth forests to smaller-treed forests not originally recommended for deferral.²⁰ The province created an uneven playing field with respect to field-checking recommended deferral areas: forests deemed not to meet the deferral criteria on the ground can be logged (with no transparency about the decisionmaking process shared with the public), while those newly identified in the field that meet criteria for atrisk old growth but not shown on the map can also be logged. In addition, roads can be built through recommended deferral areas with no limitations, and internal policy direction within BC Timber Sales²¹ (and recent examples²²) show that the province continues to clearcut big-treed old growth. Together, these actions provide evidence of a strong bias towards logging rather than conserving at-risk old growth.



Timber paradigm drives the response to wildfire

Increased wildfire activity, attributable to climate change, poses direct and indirect threats to old growth. Wildfires have burned almost 400,000 hectares of the 11.1 million hectares of old growth in B.C. since 2020. Fires change the forest ecosystem, but do not destroy ecological values; instead, burned old growth becomes young primary forest with high ecological value. An effective conservation response to increased disturbance would increase the area of primary forest conserved to ensure that sufficient old growth remains to support B.C.'s biodiversity while accommodating additional wildfire mortality. However, the current timber-first paradigm has fed a narrative that endorses the opposite response: increased logging of old growth to 'get it before it burns' in a misguided attempt to reduce risk, or after it burns to "salvage" economic value at the cost of degrading ecological function. Recent industry propaganda²³ embeds this misinformation in a public campaign that appears in some cases to be at least tacitly, if not directly, supported by the Ministry of Forests. Removing barriers to log within fire boundaries, while allowing extensive harvest of the least severely burned areas with many live trees fails to recognise the high ecological value of primary forest ecosystems.

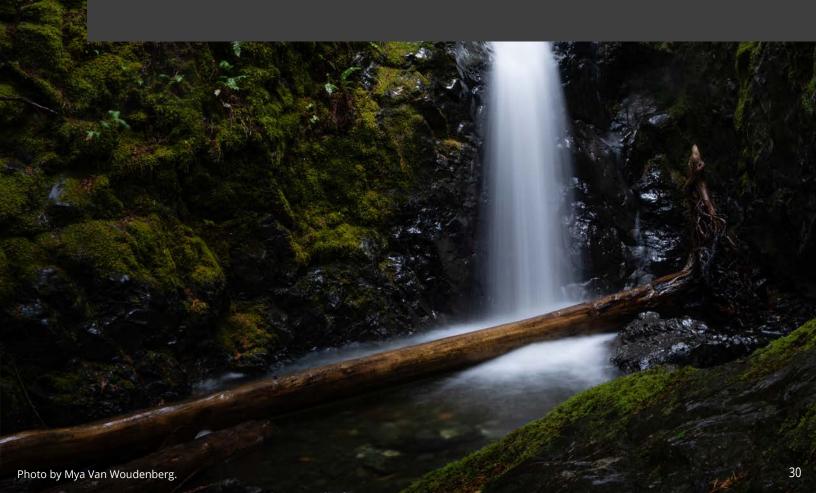
Nature Agreement and 30 x 30 provide an opportunity to conserve the most at-risk ecosystems

The B.C. government has endorsed the Nature Agreement. This agreement, initiated by Canada and including First Nations and a billion-dollar funding commitment, should provide additional support and impetus to implement OGSR recommendations. The agreement has objectives to protect 30 percent of lands by 2030 (30 x 30), restore degraded habitats, improve protection for species at risk and share conservation information. The agreement aims to meet Canada's commitment to the Kunming-Montréal Global Biodiversity Framework and the Convention on Biodiversity. As well as providing additional guidance to restore 30 percent of degraded habitats, the global biodiversity framework highlights the need to conserve areas of particular importance for biodiversity and ecosystem services. It is not meaningful to simply protect areas that avoid conflict with industries, because these areas are often already well represented in protected areas. A sound approach to safeguarding biodiversity calls for representative protection of the most ecologically important ecosystems and habitats (i.e., in proportion to abundance). B.C.'s old growth deferrals were designed to fill gaps in forest ecosystem representation needed to implement the Nature Agreement.





Moving towards ecosystem health



Moving towards ecosystem health

Protecting 30% by 2030

The province has committed to protecting 30 percent of ecosystems by 2030 to meet global biodiversity goals intended to reverse the internationally recognised loss of biodiversity²⁴. Ecological risk increases as the area of any primary ecosystem decreases from historic amounts through degradation and deforestation. Effective ecosystem representation requires that a minimum of 30 percent of each natural ecosystem is protected, and evidence is building that "nature needs half". To examine B.C.'s progress towards the goal, we assess the area of forested ecosystems (of any age) protected and assess representation by region and productivity class.

Protection designations vary in strength. Parks and protected areas prohibit most industrial and agricultural use and are relatively permanent²⁵. Weak protections may not prohibit any or all development (e.g., only logging may be restricted, and exceptions are often allowed for access, timber harvest or activities such as grazing). Old Growth Management Areas (OGMAs), which are usually located in areas of low value for timber extraction due to the continued policy to locate them "without unduly impacting timber supply", and often contain no old growth

at all (only 30 percent of OGMAs are old growth)²⁶, offer particularly weak protection as the majority can easily be moved from one location to another with lower ecological values.

To date, the province has protected 12 percent of total forest area (primary and logged forest) in strong protection designation, with an additional 11 percent in weak protection (totaling 13.9 million hectares, with 13 million hectares of primary forests of various ages; Figure 11). Both sets of protection are highly skewed to low productivity, sparsely forested ecosystems, and avoid the high-value at-risk high productivity low elevation ecosystems. Additional protection covers nonforested ecosystems, including high elevation alpine areas and shrub ecosystems in the far north of the province.

Analysing the percentage of remaining old growth that is protected is misleading because the percentage of old growth within protected areas increases as logging reduces the total pool of old growth (i.e. even if the protected area stays the same, the percentage increases because the total pool shrinks, not because more is being protected). Over time, this pattern can lead to an endpoint where 100 percent of old growth will be protected

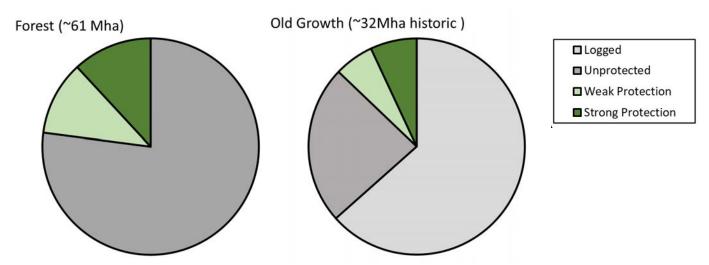


Figure 11: Percent of area of A) all forest (61 million hectares) and B) old-growth forest (estimated historic natural amount 32 million hectares) with strong and weak protection in B.C. The light grey segment in B) represents historic old growth that has been logged. The estimate of historic old growth comes from Price et al. 2021 based on provincial estimates of natural disturbance regimes.

because all other old growth has been logged. Instead, it is more appropriate to compare protected old growth to the amount that would have existed under historic disturbance conditions. We use the estimate of historic old growth amount (52 percent) calculated in Price et al. (2020)²⁷ based on provincial estimates of natural disturbance regimes for each ecosystem.

The province has currently protected 7 percent (2.2 million hectares) of the estimated historic amount of old growth of any productivity class in strong protection, with an additional 6 percent (1.9 million hectares) in weak protection. Protecting at least 30 percent of the historical amount of old growth requires protection of an additional 17 percent, approximately 5.4 million hectares of old-growth forest, which should focus on the highest risk, highly productive ecosystems to meet the intent of international agreements.

Achieving ecosystem representation

Because ecosystems vary, it is also important to protect sufficient area of each ecosystem type in a representative ecosystem approach. Achieving 30 x 30 requires not just adding protection but adding ecologically relevant protection. Just as we do not need to protect more rock and ice, we do not need to protect more low productivity forest in most regions.

Protection of forested ecosystems varies by broad ecosystem. In general, the southern dry interior forests have the least strong protection (5 percent)

with sub-boreal forests of the northern interior at 7 percent. Wet interior forests (inland temperate rainforest) have 10 percent in strong protection and coastal temperate rainforests have 19 percent protected in this category (Table 3). Protection within these broad groups varies significantly, with some coastal ecosystems (e.g., most of the dry Coastal Western Hemlock ecosystems) with very low protection levels compared with this rolled-up total.

While coastal forests appear better protected than other regions at 19 percent in strong protection, this calculation ignores ecosystem productivity. Because site productivity influences ecosystem function and biodiversity, it is critical to assess protection within productivity classes. Within most ecosystems (e.g., the very wet maritime subzone of the Coastal Western Hemlock) protection is heavily biased towards less productive forest with smaller trees, thus failing to protect the most important at riskforests, the big-treed forests that have been most heavily harvested (Figure 12). The situation is worse for high productivity old growth, where less than 5 percent of the expected amount is protected (Figure 12). Current policy has "protected" forests not at risk of degradation from logging due to low economic value. Continuing this approach will not maintain the biodiversity associated with B.C.'s diverse and globally rare forests.

Table 3 also includes a summary of the "weak" protection levels for each forest type. While some protection designations may be suitable for inclusion in meeting a 30 x 30 representation target, many will not meet the required criteria for an "effective conservation measure". To halt the decline of biodiversity, areas used to meet 30 x 30 targets must contain high value features, be ecologically functional and be permanently protected.

Table 3: Area of forest protected in each region (rounded to nearest 1000 ha).

Region Forest (ha)		Strong Protection (ha)	Weak Protection (ha)	
Coast	10,359,687	1,988,136 (19%)	1,396,631 (13%)	
Wet Interior	4,998,520	476,202 (10%)	607,353 (12%)	
Mountain Interior	13,939,554	1,940,699 (14%)	2,638,320 (19%)	
Sub-boreal	11,202,323	833,638 (7%)	702,706 (6%)	
Boreal	16,763,241	1,809,175 (11%)	931,211 (6%)	
Dry Interior	3,657,107	186,612 (5%)	467,472 (13%)	
Total	60,920,432	7,234,462 (12%)	6,743,693 (11%)	

While ecosystems supporting small tress are reasonably well protected in most regions, only 10 percent of high productivity forests that grow large trees have protection (half of this strong protection) across the province (Table 4). Thus, achieving 30 percent protection requires protecting significant

additional area of high productivity forests. Many of these forests may not be old growth, because so little high productivity old growth remains; instead, achieving 30 by 30 will require protection of the best high productivity younger forests to recruit to old growth over time.

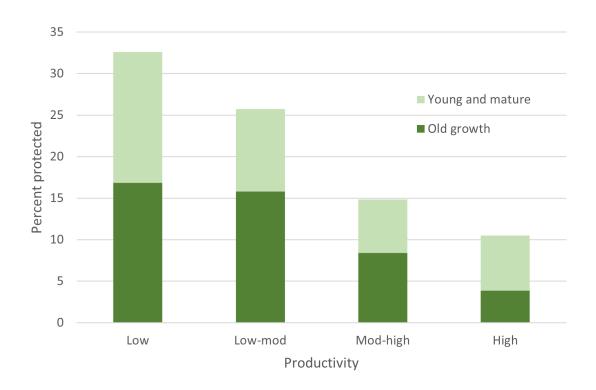
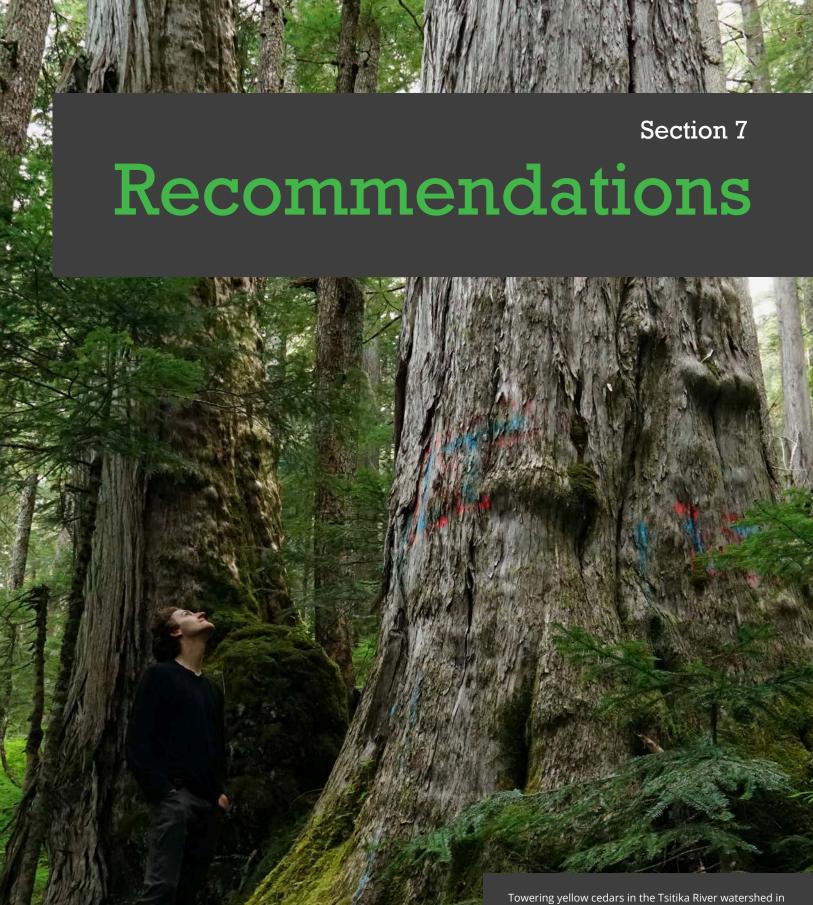


Figure 12: Percentage of forest protected across B.C. (strong and weak protection combined) by productivity class (site index class: low 5-10; low – mod 10-15; mod-high 15-20; high >20) for all forest (any age, primary or previously logged) and for old growth (as a percentage of amount expected; expected amount taken from Price et al. 2021).

Table 4: Percentage of each site index class in each region that is protected (strong and weak combined).

Region	5-10	10-15	15-20	>20
Coast	48	43	37	15
Wet Interior	34	31	19	11
Mountain Interior	42	31	16	12
Sub boreal	21	21	9	4
Boreal	21	17	8	7
Dry Interior	27	19	13	13
Total	32	26	15	10



Towering yellow cedars in the Tsitika River watershed in a forest prepared for auction by government controlled BC Timber Sales in the fall of 2025, despite being recommended for deferral in 2021 as ancient old-growth. (Photo by Joshua Wright).

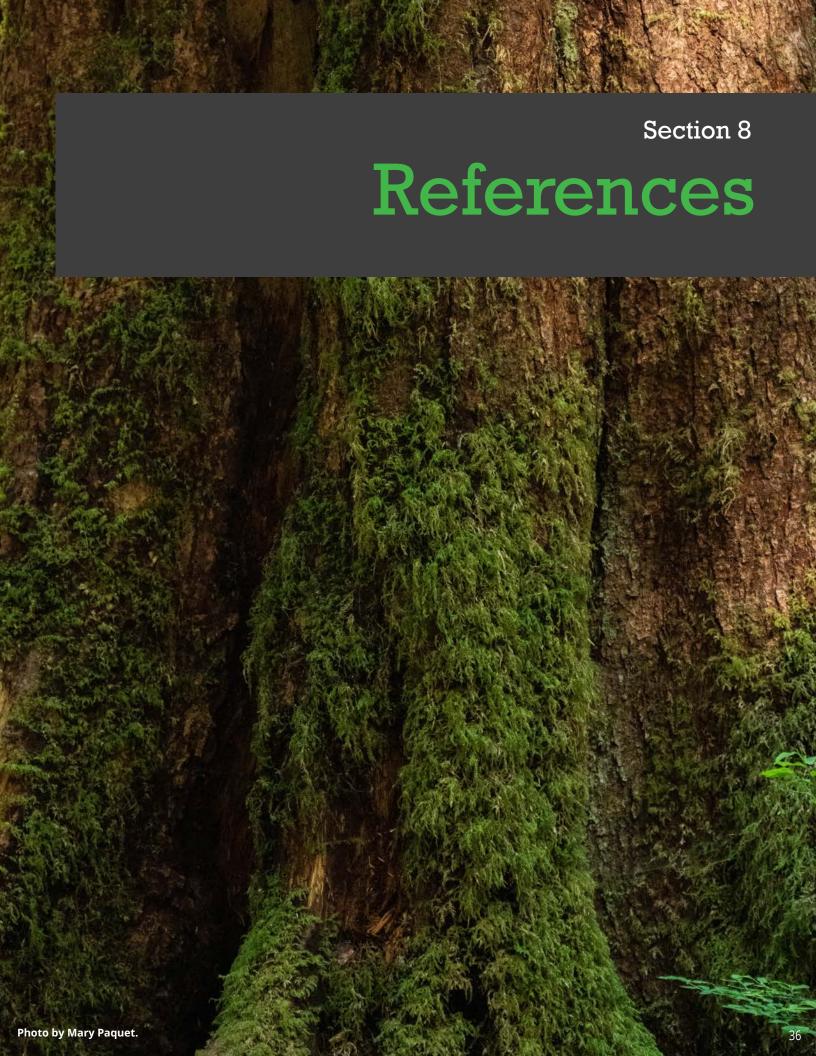
Photo by Joshua Wright.

Recommendations

Addressing the intersecting crises of our times calls for the promised paradigm shift in managing our forests, a shift that prioritises ecological health and human communities above timber revenue and corporate profit. Implementing the paradigm shift laid out in the OGSR, the draft BEH framework and the Nature Agreement will require that the province embraces responsibility for the dire condition of B.C.'s forests and works with First Nations, western science and traditional ecological knowledge holders, and communities. It will require clear direction from the top of the B.C. government, enabling a small provincial team to lead this process. The following actions are needed:

- 1. Effective implementation of 30 x 30 requires a focus on currently under-represented, atrisk ecosystems including highly productive big-treed forest. Where old-growth forest ecosystems have been reduced to a small fraction of their historic extent, representation will require protecting remaining old, plus older second-growth forests and younger primary forest to recover towards old growth function. Implementing an ecosystem representation approach that values all ecosystems is consistent with the OGSR, draft BEH framework, and the Nature Agreement. Effective representation means moving from an approach that disproportionately "protects" rock, ice and sparsely-treed high-elevation forests while neglecting at-risk forests and other endangered landscapes. A strategy that continues to disproportionately protect subalpine forest and bogs over and above valley-bottom cathedral forests will continue to fail the globally important biodiversity held in British Columbia.
- 2. Speed up the paradigm shift and implement OGSR recommendations immediately and effectively.
 - Keep at-risk old growth standing to allow for effective planning. The province must stop shuffling policy, tenures and practices while allowing the last big-treed forests to fall.
 - Revise conservation direction including representation targets to be consistent with current knowledge about ecosystem health.

- Apply an ecological lens to all government decisions, consistent with recommendation 2 of the OGSR which called for making biodiversity a priority for all sectors. Finalizing the BEH framework and implementation plan is a necessary first step. Ensuring crossministry collaboration and developing a BEH law that guides all ministries, not just one or two, is critical.
- Provide transparent and timely information on the state of the forest in ways that are easy to interpret. Information on current state, logging rates, carbon and other non-timber values, conservation gaps and commitments will support planning tables. The province must move away from presenting information that obscures trends. Arms-length reporting would help to provide accurate and relevant information.
- 3. Ensure effective implementation that removes the economic burden from First **Nations**, many of whom currently depend economically on logging revenues and incentives. The province of B.C. is currently putting its stewardship responsibility into the hands of planning processes occurring in some areas of the province (Forest Landscape Plans). These processes may address the type of direction outlined in OGSR recommendations but are currently handing off the problem of the dire condition of the forests to First Nations, without providing adequate support for conservation solutions, as well as delaying potential solutions for years—if not decades—into the future. Overcoming this risk will require that the province:
 - Ensures access to conservation funding associated with the Nature Agreement to enable immediate deferrals for all at-risk forests as an interim solution allowing time to agree on long-term conservation solutions.
 - Offer support for ecological risk assessment and conservation planning to First Nations across B.C.



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