

FOREST EYE

An Eye on Old Growth Destruction

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Introduction

The B.C. government's landmark Old Growth Strategic Review, "A New Future for Old Forests", finalized in April 2020, marked an important shift in the concept of old growth management. The report highlighted the strong agreement that forest management – and particularly for old growth – needed a paradigm shift away from a timber-centric model, toward prioritizing ecological and community values.¹ In that spirit, the review recommended that old growth forests be deferred (or temporarily protected) from logging while this shift occurred. The deferrals process, as it has come to be known, is therefore an exercise in restraint for industry.

Consequently, [a map of the old growth recommended for deferral](#) by the B.C. government's own Technical Advisory Panel (TAP) was released on November 2, 2021. The areas indicated therein are referred to as candidate priority deferral areas, and they represent the most rare and at-risk old growth forests left in the province. When the maps were released, the province indicated its intention to pursue deferrals and asked companies (in good faith) to avoid logging them.²

When he was appointed Premier in November, 2022, David Eby made a pledge to "accelerate action on old growth." However, the first 6 months of data from our Forest Eye satellite monitoring and alert system indicate that logging in candidate deferral areas has continued under his leadership and that rather than showing restraint, industry has continued to log deferrals that they have access to.

Methods and Results

Forest Eye uses remote sensing and satellite data to track logging in the old growth forests mapped in the Priority Deferral Areas map published by the B.C. government.³ Alerts from Forest Eye are screened manually by researchers and only posted to the website if logging or road building is confirmed. So far, over 900 logging alerts have been confirmed and posted to the Forest Eye website and Stand.earth researchers continue to process alerts, with more coming in every day.

Since its launch in July 2023, Forest Eye has identified almost 17,000 hectares of old growth forests logged between January 2020 and October 2023 – **including over 9,000 hectares (55%) in candidate old growth deferrals**. Because the system generates alerts regularly, which need to be manually screened, these figures represent just a portion of all old growth logging in B.C. over the last several years.

However, by augmenting Forest Eye data with GIS analysis of historic cutblocks, a picture of old growth loss emerges that suggests that logging in old growth candidate deferrals may have

¹ Merkel, G and A. Gorley. 2020. "A New Future for Old Forests. B.C. Government of B.C." Province of British Columbia. April 2020. <https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/stewardship/old-growth-forests/strategic-review-20200430.pdf>

² Province of British Columbia. 2021. "Government taking action on old-growth deferrals." Accessed Nov 6, 2023 from <https://news.gov.bc.ca/releases/2021FLNR0068-002088>

³ Province of British Columbia. 2021. "Old Growth maps". Accessed Nov 6, 2023 from <https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/old-growth-forests/old-growth-maps>

accelerated after the April 2020 Old Growth Strategic Review (OGSR). The period between April 2020 and November 2021 is important because during this time, the industry knew that the OGSR had recommended old growth deferrals but specific recommendations were yet to be released. Industry therefore had the opportunity to fast track logging of high value old growth areas in their tenures and licenses before they were deferred. Whether and how this occurred is the focus of ongoing research, but the losses during this period have not been reported publicly by government (see Figure 1).

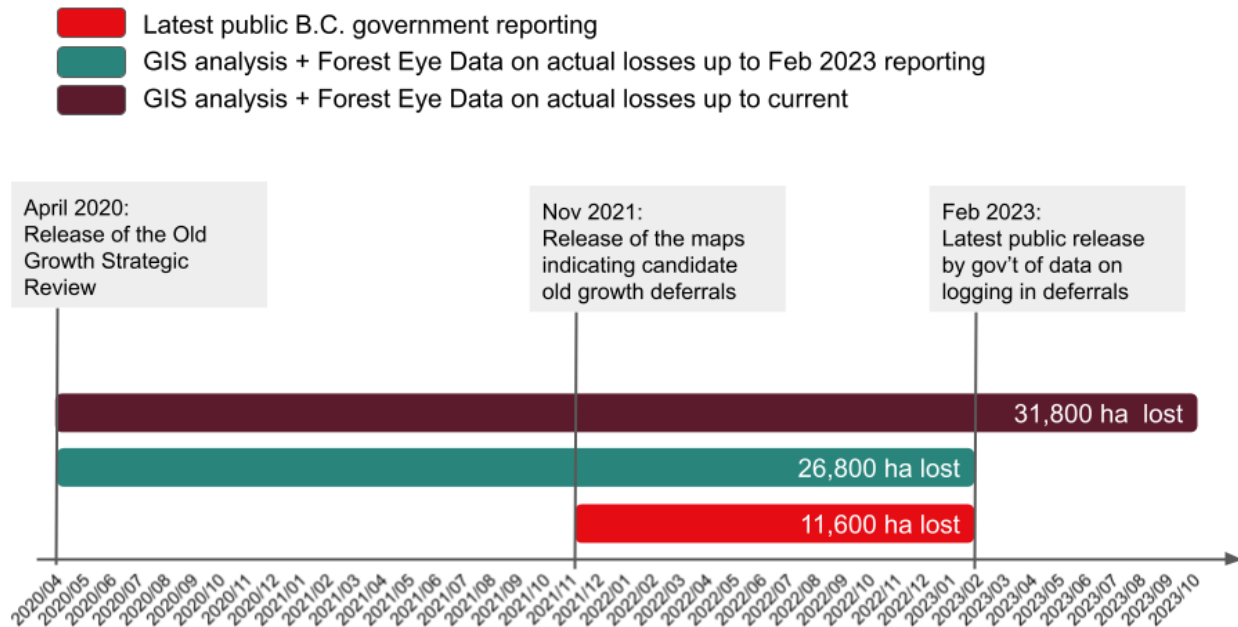


Figure 1. Timeline of old forest loss from TAP deferral maps. Government reporting as recent as February 2023 only counts deferrals logged since November 2021, when maps of candidate deferrals were released. However, the majority of losses occurred between the April 2020 release of the Old Growth Strategic Review and the November 2021 release, suggesting that the B.C. government missed reporting the majority of losses. All numbers are estimates, rounded to the nearest thousand.

What is the true picture of old growth deferral loss?

There are three important numbers that are important to understanding the true picture of deferral loss:

1. In the most recent published figures, the government reported that an estimated **11,600 hectares** of candidate old growth deferrals had been destroyed between November 2021 and February 2023 (see Figure 1).⁴
2. However, this estimate excludes logging of the highest value old growth that occurred in the run up to the deferrals announcement – a period between April 2020 and October 2021. If this

⁴ B.C. Government News. 2023. "B.C. introduces new measures on old growth, innovation, forest stewardship" News Release. Feb 15, 2023. <https://news.gov.bc.ca/releases/2023FOR0009-000191>

period is included, the total loss by February 2023 is actually an estimated **26,800 hectares of the most value-able old growth**. This includes areas identified as logged through GIS analysis of government data as well as those identified by Forest Eye. Comparing this to the 11,600 hectares reported by government in February 2023 reveals that B.C. underreported old growth deferral loss by 57%.

3. In addition, Forest Eye estimates that from February 2023 to October 2023, a further 5,000 hectares of candidate deferrals were logged.⁵ This is likely a conservative estimate that will be revised as Forest Eye continues to surveil the logging industry. In total, an estimated **31,800 hectares** of deferrals have been destroyed since the Strategic Review recommended pausing logging in these forests (see Figure 1). This is 50% of the old growth that our earlier research has identified as at immediate risk from forest harvest permits.⁶

These numbers reveal that in the time between the public recommendation for deferrals in April 2020 and the start of that process in November 2021, several thousand hectares of rare and at-risk old growth were logged by the industry. The numbers also highlight how the government has presented statistics that shed the best possible light on the deferrals process. Even as recently as October 2023, Premier Eby touted that just 0.4% of old growth was logged in 2022.⁷ But hidden in that statistic is a lot of old growth that was never at risk of logging in the first place.

The intent of deferrals is to avoid logging. Therefore, only candidate deferrals that are at imminent risk of logging, as indicated by forest harvest permits, can be a reliable measure of the industry's restraint. Forest Eye reveals that rather than restraint, industry has continued to log the most valuable and at-risk old growth.

Where are losses occurring?

The B.C. government has not released maps showing where old growth deferral losses have occurred. But through Forest Eye, the losses in each region can finally be explored. According to our data, the rate of loss is highest in the Northern Interior, followed by the Southern Interior – where many of the big losses are related to salvage logging after fire. On the Coast the losses have important implications for remaining old growth cedar.

1. Northern Interior

Between April 2020 and October 2023, **50% of all losses in candidate old growth deferrals were in ecological zones dominated by Sub-boreal Spruce** between Terrace and Prince George in the Skeena

⁵ Research conducted by Stand.earth Research Group using data collected by Forest Eye (adjusted using government reported losses) and GIS analysis of consolidated cutblocks. For a complete methodology please see Appendix 1.

⁶ Research conducted by Stand.earth Research Group using deferral areas and the Forest Tenure Cutblock data from the B.C. government, based on the total area of deferrals overlapping with active and pending logging permits as of February 2023. For a complete methodology please see Appendix 1.

⁷ Cox, Sarah. 2023. "The money that's needed": B.C. announces \$300-million Indigenous conservation fund to protect old-growth forests", The Narwhal. Oct 26, 2023. <https://thenarwhal.ca/bc-old-growth-indigenous-conservation-funding/>

and Omineca regions in the Northern Interior (see Fig. 2). This is a massive majority over other regions, and indicates how much the forest industry is targeting interior forests in B.C. **Forest Eye data suggests that just three logging companies – Sinclar Group (Winton Global), Canfor, and West Fraser – are responsible for the majority (estimated to be more than 70%) of the loss in candidate old growth deferrals in this zone.**

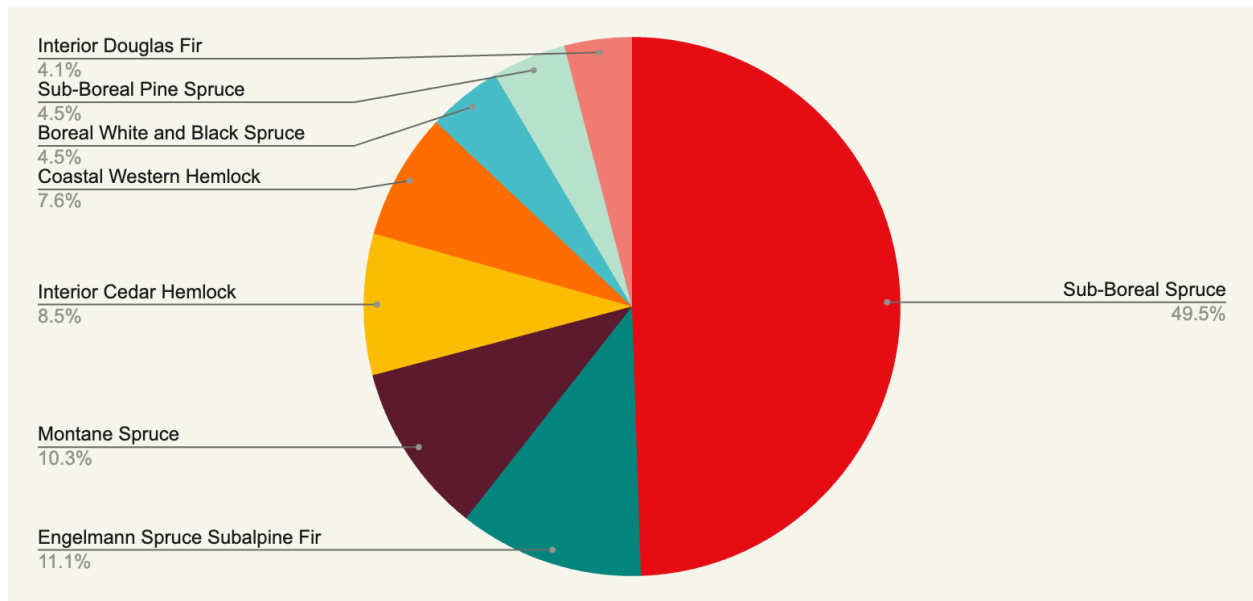


Figure 2. Area of candidate old growth deferrals lost (ha) by ecological zone

For example, Forest Eye detected that:

- [Canfor logged 142 hectares of big-treed old growth](#) in February 2023 on Captain Creek near Arctic Lakes Provincial Park in the Omineca region
- [Apollo Forest Products \(Sinclar Group\) logged 50 hectares of big-treed old growth](#) deferrals in May 2023 near Witch Lake in the Northern Interior
- [West Fraser logged 115 hectares of big-treed old growth](#) in March 2023 near Harold Price Creek in the Skeena Region.



Figure 3. West Fraser’s old growth logging in the Skeena Region as captured by Planet Labs on June 22, 2023. The area was logged in March 2023. Image from Planet Labs.

2. Southern Interior

In the Southern Interior, the old growth forest loss is highest in Montane Spruce ecological zones. Forest Eye shows that major old growth losses in the Similkameen Valley and in Teepee Creek (near Merritt) are related to harvesting after forest fires. Salvage logging in old growth forests after fire may include taking out the large trees that can withstand low and medium intensity fires, leaving the growing forest more susceptible to future fires.⁸

For example, in Figure 4 (below), the first image is the Garrison Lakes area on July 20, 2021, the day the Garrison Lakes fire was ignited (cause unknown). The second image is the same area in September 2023, after the fire swept through in August 2021 and salvage logging had occurred in October 2022. During salvage logging, 103 hectares of candidate old growth deferrals (outlined in red) were logged by Weyerhaeuser. High-grade spruce was the dominant species by volume according to the harvest billing report for the operation, suggesting that high-quality older trees survived the fire but were lost to logging anyway.

Salvage logging old trees that survive fire means more clear cuts in an area already recovering from a burn, and this may further exacerbate the fire risk because it increases fragmentation. In addition, old trees provide canopy cover and biodiversity to aid in resistance and recovery.⁹

⁸ Daniel, Gavin. 2020. “In Oregon’s 2020 fires, highly managed forests burned the most.” Firefighters United for Safety, Ethics and Ecology (FUSEE). Accessed November 3, 2023.. <https://fusee.org/fusee/oregons-2020-fires-highly-managed-forests-burned-the-most>

⁹ Wood, Peter. 2021. “Intact Forests, Safe Communities. Reducing community climate risks through forest protection and a paradigm shift in forest management”. Sierra Club. <https://sierraclub.bc.ca/wp-content/uploads/2021-Forest-Climate-Risk-Assessment-Report-final-February.pdf>

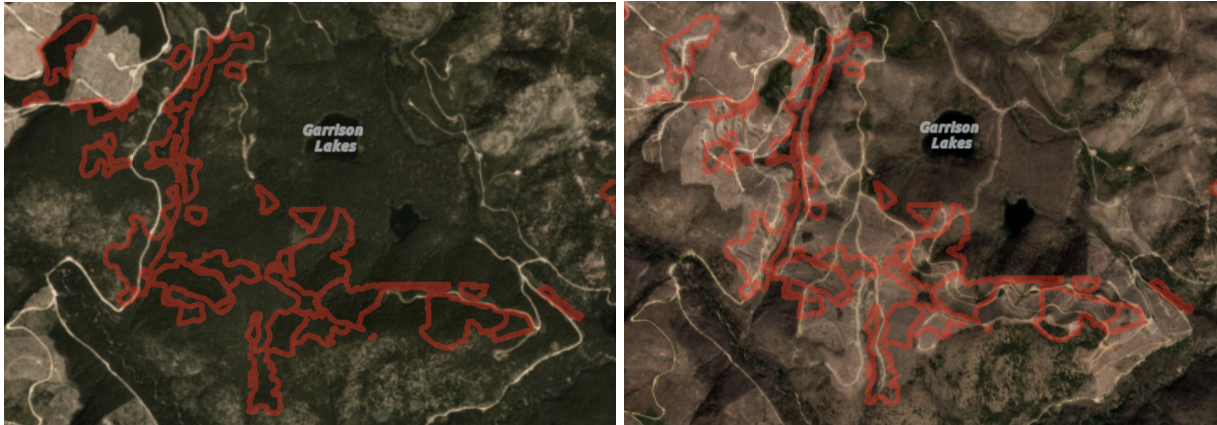


Figure 4. Image 1 is the area on the day the fire broke out (July 20, 2021). Image 2 is the same area after fire and salvage logging (September 2022). Old growth deferrals are outlined in red. Images from Planet Labs.



Forest fragmentation due to logging can also intensify forest fires because clear cuts open up the canopy and dry out the forest and the soil, making the landscape more susceptible to hotter burns. For example, Forest Eye identified that in the Kettle Valley, Weyerhaeuser logged 26 hectares of old growth deferrals in September 2022 (see Figure 5). According to harvest billing data for the operation, these forests were dominated by high quality douglas fir and larch. In the Montane Spruce ecological zone, fir and larch grow to big trees due to their fire resistance.¹⁰ Removing these trees can make the forest more susceptible to higher intensity fire because the forests are drier, and it also may affect forest recovery after a fire because all the big fire-resistant trees are gone.

Figure 5. A 26 hectare clear cut of big-treed old growth on Saunier Creek in the Kettle Valley. Weyerhaeuser logged this forest in September 2022. According to harvest billing, the forest was dominated by high-grade larch and fir - typically towering old growth species in this area due to their resistance to fire. Image from Planet Labs.

¹⁰ B.C. Ministry of Forests. 1999. "The Ecology of the Montane Spruce Zone," Province of British Columbia. <https://www.for.gov.bc.ca/hfd/pubs/docs/bro/bro62.pdf>; citing: Ecosystems of British Columbia Special Report Series #6 D. Meidinger and J. Pojar Ministry of Forests Research Branch, Victoria, B.C.

3. The Coast

The majority of old growth losses on the Coast are in the Coastal Western Hemlock ecological zone. While logging of deferrals on the Coast is much less than in the interior (see Figure 6), there are some notable losses, especially for old growth cedar. For example, Interfor logged 15 hectares of old growth deferrals in Barkley Sound between February and April 2023, including high-value old growth cedar, according to their harvest billing. Interfor is also responsible for over 100 hectares of old growth deferral losses in Kashutl Inlet on Vancouver Island. Between 2021 and 2023 the company logged 12 areas inside deferrals, including a 12 hectares harvest in February 2023. In March 2023, the company transferred the license to Cape Mudge Forestry.¹¹

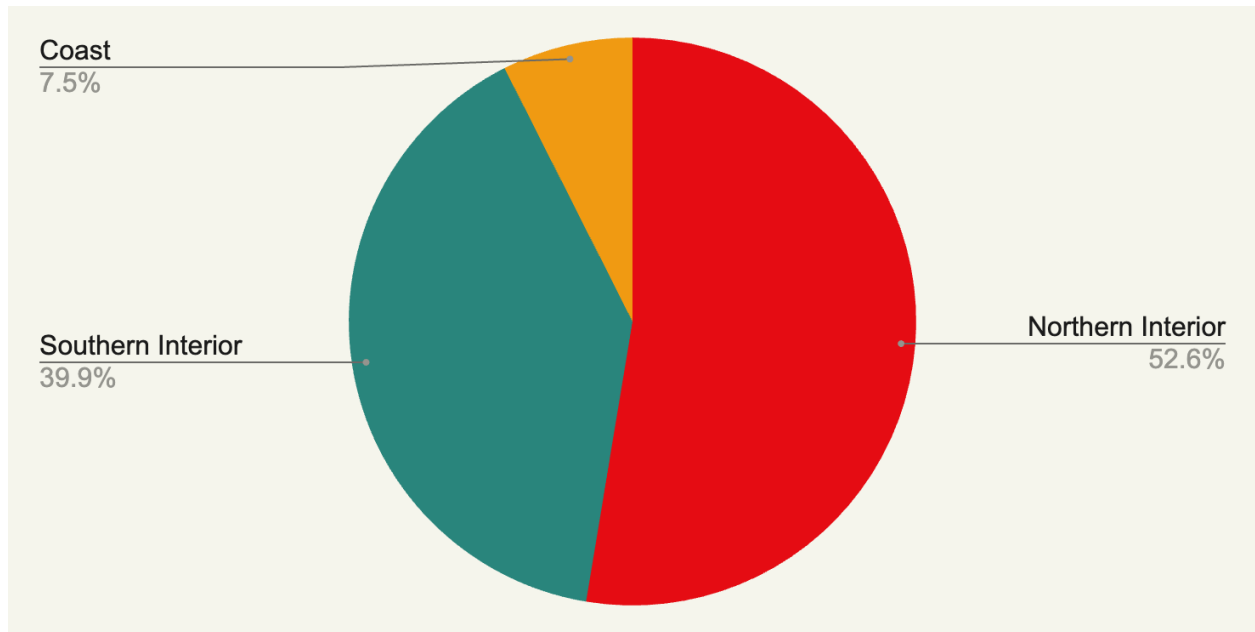


Figure 6. Breakdown of candidate deferrals lost by major region of B.C.

Other developments through Forest Eye

Tracking logging in BCTS operating areas

B.C. Timber Sales (BCTS) has come under intense scrutiny in recent months, due to the release of a May 2023 memo enabling operations – including logging and road-building – to proceed in certain candidate old growth deferrals, even without First Nations consent.¹² This direction was a departure

¹¹ Province of British Columbia. 2023. "Interfor Corporation Proposed Tenure Disposition in the North Island Timber Supply Area," March 29, 2023. Accessed Nov 6, 2023 from: https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/timber-tenures/transfers/interfordispositiondetailnitsa_march29.pdf

¹² B.C. Ministry of Forests. 2023. "Guidance on BCTS Implementation of Technical Advisory Panel (TAP) Old Growth Deferral Polygon Recommendations," May 15, 2023. Accessed Nov 6, 2023 from: https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/bc-timber-sales/policy/may_15_2023_guidance_on_bcts_management_of_old_growth_deferrals.pdf

from the province's position laid out in 2021, which publicly celebrated BCTS operating areas that overlapped TAP mapped deferrals as off limits to development. Forest Eye has found blocks auctioned by BCTS after the announcement that deferrals would be off-limits, including in the Omineca region where [a massive 280 hectare cutblock](#) made the landscape more vulnerable to a devastating wildfire that later swept through the area. Forest Eye is also currently tracking BCTS operating areas to identify any uptick in old growth logging resulting from the memo.

Sharpening the focus on road-building

Forest Eye has documented 60 instances where roads are being built to access old growth, threatening over 1,000 hectares of forest. Additionally, in over 650 alerts where road-building and logging dates were analyzed, there is only an average of 2 months after road-building before the forest is cleared. New roads such as these are being built into old growth stands throughout the province, and logging soon follows. Figure 5 is an example where the roads were identified in Forest Eye and the logging was picked up a month later.



Figure 5. A recent example of road-building detected by Forest Eye. In the first frame, from September 25, 2023, Interfor has just built the roads into the candidate old growth deferrals (outlined in red). In the second frame, from October 25, 2023, Interfor has logged the old growth candidate deferral areas.¹³ All imagery from Planet Labs.

Looking at the impact of Premier Eby's pledge

Of the total estimated loss of 31,800 hectares of candidate old growth deferrals, 27% has happened since David Eby took office as Premier in November 2022 and made his pledge to “accelerate action on old growth.” Despite this promise, Forest Eye’s documentation of ongoing old growth logging suggests that the rate of loss has not decreased under Eby’s leadership (see Figure 8). As more recent logging is exposed – and imminent logging is identified through the construction of new roads – so is the full extent of the province’s failure to deliver on its old growth commitments. Without an immediate

¹³ B.C. Ministry of Forests. 1999. “The Ecology of the Montane Spruce Zone,” Province of British Columbia. <https://www.for.gov.bc.ca/hfd/pubs/docs/bro/bro62.pdf>; citing: Ecosystems of British Columbia Special Report Series #6 D. Meidinger and J. Pojar Ministry of Forests Research Branch, Victoria, B.C.

change in course, Forest Eye’s capacity for monitoring and documenting old growth destruction will, unfortunately, continue to be relevant.

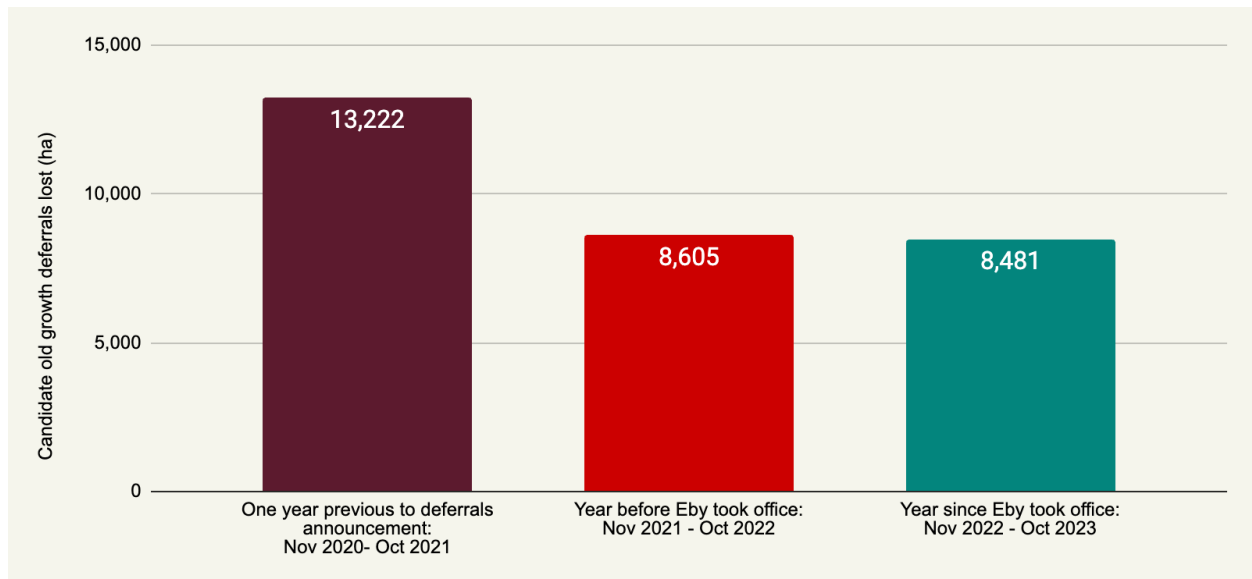


Figure 8. Comparing estimated old growth loss (in hectares) in candidate deferrals between the year before the November 2021 announcement, the year after, and the year since David Eby became Premier. While the graph suggests a drop in losses after the deferrals announcement, no discernable drop in losses has occurred since Premier Eby took office.

Conclusions

In just the first few months since its launch, Forest Eye data has made it abundantly clear that old growth logging and road-building are continuing at an alarming scale throughout British Columbia. So far, through Forest Eye alerts, over 9,000 hectares of old growth destruction has been documented in forests that were supposed to be candidates for deferral. Moreover, these losses are predominantly because of industrial logging by companies such as Canfor, West Fraser, and Sinclar Group. Furthermore, by combining this surveillance with government data a comprehensive picture emerges of the estimated 31,800 hectares lost since the Old Growth Strategic Review was submitted to government in April 2020. This counters the government’s efforts to obscure the facts about ongoing old growth logging, and reveals that more than 50% of deferral losses have gone unreported to the public. Given the volume of alerts that Forest Eye receives, that number will continue to grow.

Even so, our estimates continue to be conservative, and this is only a portion of the old growth losses in the province. Despite the clear, growing threat to communities from climate change – including record-breaking fires, floods and drought – the evidence suggests that the province has, so far, failed to ensure old growth forests remain standing to mitigate climate impacts. What’s more, B.C. has also failed to be forthcoming about ongoing logging, which is further exposing communities to disasters. Exposing the ongoing destruction of remaining old growth forests is vital for all people living in British Columbia. Communities deserve to know where old growth exists, and especially where these rare

forests are threatened by logging and other resource extraction. Statistics dressed up to make the picture rosier than it really is, and information that leaves out key facts such as location and risk of logging, only serves to under-prepare people to face the changes that the climate crisis brings.

In order to plan for the future, we must ensure that the forests we are counting on are not lost before they can be valued beyond just their contribution to the economy. That requires planning, restraint, and resources. Recently announced funding agreements could help create enabling conditions for a long-lasting paradigm shift in old growth management. But the government must also restrain the current appetite in the industry for old growth timber and on this account, Forest Eye underscores how far off from that goal Premier Eby still is.



Appendix 1: Detailed Methodology

Forest Eye data collection

Forest Eye is a tool that uses near infrared (NIR) remote-sensing to detect vegetation loss. This service is provided through subscription to Upstream Tech's LENS software. When vegetation loss is detected in candidate old growth deferral areas, LENS sends an alert to Forest Eye. These alerts are manually screened by researchers at Stand.earth Research Group (SRG) and compared to satellite images from Planet Labs and GIS databases of B.C. government data built by SRG.

The tool is designed to detect logging in areas identified as candidate deferrals, per the current view deferrals map available from the B.C. government data catalogue (Map 1 from the Old Growth Technical Advisory Panel (TAP)), updated by government, available [here](#). It also detects logging in all old growth areas outlined in "Map 8" from TAP, which refers to the map provided by the that shows all old growth, including areas selected as candidate deferrals, available [here](#).

Screened alerts are published to the [Forest Eye website](#) weekly, including the area logged, if it was a candidate deferral or other old growth, and which company (licensee) was responsible. First Nations company names are not published, respecting ongoing processes and decisions regarding old growth made by each Nation.

Data analysis

Forest Eye data is a representative sample of the total area of deferrals loss since November 2021, both by overall count and by sub-categories such as region and BEC zone and trends are accurate with a +/- 5% margin of error.

However, for the April 2020 - November 2021 period highlighted in the report, the research relied on an analysis of historic cutblock data, also from the B.C. government data catalogue, which was deemed accurate up to March 2022 due to lags in reporting.

By intersecting the historic cutblock layer from the B.C. government data catalogue (called "[Consolidated Cutblocks](#)") with the [map of priority deferral areas](#) in GIS, a map of the old growth deferrals that had been logged up to March 2022 was created. The attribute table for this spatial analysis was downloaded and analysed.

The historic cutblock data has two data sources: RESULTS and Landsat. RESULTS data includes the start and end date of logging, while Landsat data only includes the harvest year. To plot the old growth loss as a total per month, both dates were tested for accuracy against the harvest year, with the start date being accurate 100% of the time and the end date being highly inaccurate. Therefore, in order to examine deferral losses on a monthly time trend, the month indicated in the start date was used for all RESULTS entries (the majority of entries). To get month data for the rest of the data set, three techniques were used:

1. The entries were aligned with Forest Eye data using the Landscape Unit name and biogeoclimatic (BEC) zone/subzone/variant to see if Forest Eye had captured that loss, in

which case the year and month of logging was used as long as it matched the harvest year of the Landsat data entry.

2. The remaining entries indicated harvest year only. The totals per year were divided by 12 to get a total per month per year, which was then allocated according to the BEC zone/subzone/variant for all entries in that month to ensure as accurate a breakdown as possible. Any remaining data points that could not be allocated this way (approximately 5% of total) were omitted from the analysis.

In order to combine the data from the historic cutblock analysis with the more current data from Forest Eye, Forest Eye data had to be scaled by a factor applied to the raw monthly totals. The factor was created by dividing the hectares of loss collected by Forest Eye by the total loss reported by the government, both summed over the period November 2021 - February 2023. The resulting scaling factor of 47% was applied equally to all months by dividing the raw monthly Forest Eye totals by the factor. This potentially distorts the real monthly breakdown, since the government number is a sum total over the period and not a dataset of monthly sums. However, the margin of error on the scaled total from Forest Eye versus the 11,600 hectares reported by government over the period was +/- 8%. For broad analysis applied in this report, this is sufficient to draw general trends where the Forest Eye data is a minor (

The final data set is a per month sum of the hectares of old growth deferrals lost, including those that were logged prior to the map being released. It includes the region, district, and landscape unit per entry, as well as the BEC zone, subzone, and variant. It identifies various data sources and priority deferral types.

Identifying where logging is occurring

The final dataset used for the timeline analysis does not include companies, cutblock IDs, or timbermarks, so trends on who is logging were not possible. However, overall geographies of loss were possible to analyze, and examples of companies and majorities were extrapolated from Forest Eye data and previous risk mapping. Major trends in each of the three broad geographies (Northern Interior, Southern Interior, and Coast) were identified and examples of losses that illustrate trends were extracted from the Forest Eye database.