

# Summary of Current Condition Report for Old Growth Forest on Vancouver Island | 2019 Analysis

The Current Condition Report for Old Growth Forest on Vancouver Island was developed as part of the provincial [Cumulative Effects Framework](#) (CEF). The CEF identifies and assesses how values are impacted by cumulative effects<sup>1</sup> across the province. Results from current condition reports help to understand the current state of values and help to manage cumulative effects.

Old Growth Forest is a value that is assessed under the CEF as they are important to the conservation and maintenance of landscape biodiversity at all scales. Functioning old growth forests deliver ecosystem services as well as provide cultural and spiritual values.

The purpose of this summary is to highlight results from the Current Condition Report for Old Growth Forest on Vancouver Island; and, to inform collaborative discussions among government, First Nations, natural resource industries, and other community stakeholders when managing old growth forests. Note that this assessment provides quantitative reporting on the legal targets and does not discuss the overall effectiveness of the Orders or provide management direction.

*Disclaimer: This summary and current condition report was developed solely by the Province of British Columbia. This summary and report is based on GIS information and has not been ground-truthed. There will be opportunities for First Nations and the Province of British Columbia to collaborate on future current condition reports, monitor the condition of cumulative effects values, and validate the outcomes of these assessments.*

## Assessment Area on Vancouver Island

Vancouver Island is located in southwest B.C. within the West Coast Natural Resource Region. It covers about 3.35 million hectares and represents about 3.5% of the land area of the province.

Vancouver Island has some of the wettest ecosystems in B.C. and is dominated by Coastal Western Hemlock (CWH) and Mountain Hemlock (MH) biogeoclimatic zones in the west, and CWH and Coastal Douglas Fir (CDF) in the southeast.

On Vancouver Island, there are three Natural Resource Districts: the Campbell River District, South Island District and North Island District.

There are four distinct planning areas in West Coast Region: Vancouver Island Land Use Plan (VILUP) area, Clayoquot Sound, Great Bear Rainforest, and Haida Gwaii.

This assessment focuses on the VILUP area and Clayoquot Sound (Figure 1) and all Crown land within that area is included. This includes the total amount of old growth forest on the Crown Forest Landbase (CFLB) and includes conservation designations like Parks and Protected Areas, Ungulate Winter Ranges, and Wildlife Habitat Areas.

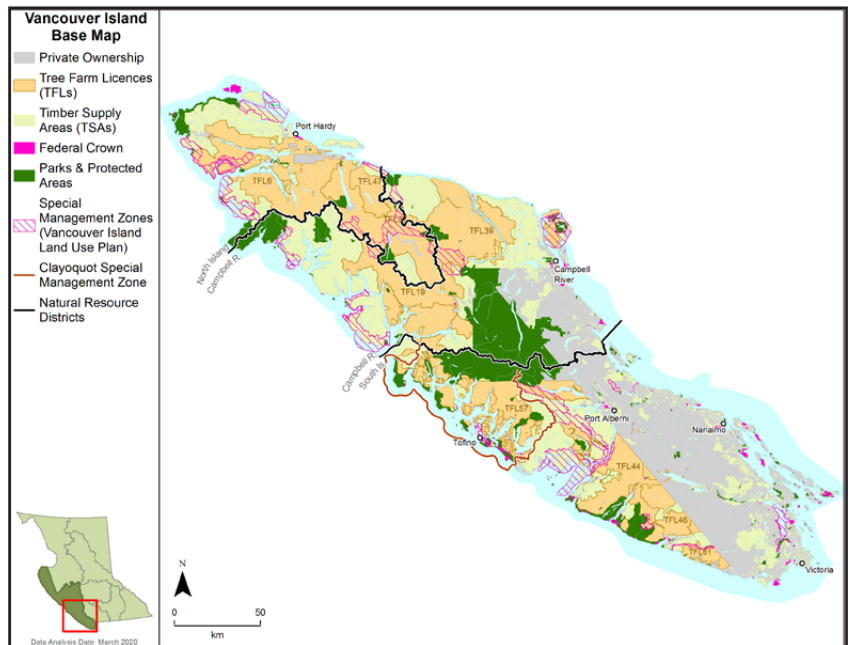


Figure 1. Vancouver Island Assessment Area

## Cumulative Effects on Vancouver Island

Old growth forests are susceptible to cumulative impacts from various historic, present, and future human activities and natural disturbances. The predominant resource-based activities within the West Coast Region include forestry, agriculture, and fisheries. Many areas within West Coast Region are popular recreation areas for activities including fishing, hunting, camping, hiking, skiing, mountain biking, and ATV/off-roading. In recent years, liquefied natural gas development, residential development, tourism, and recreational activities have been increasing within the region.

Vancouver Island has been impacted by the vast amount of private land ownership on the southern and eastern portions of the Island, where a large population lives. The continuing conversion of provincial Crown land to private holdings for municipal growth, industrial development and commercial tourism expansion has resulted in cumulative effects on old growth and mature forest stands. Natural disturbances including historic and recent wildfires have also caused shifts in seral stage distribution and ecosystem composition, and climate change impacts will further negatively affect old growth forests in the region in the future.

## Old Growth Forest Management on Vancouver Island

There are 84 Landscape Units (LUs) on Vancouver Island. Old growth forest on Vancouver Island is managed through several planning processes and legal orders. These include:

- Vancouver Island Summary Land Use Plan (2000) – defines management zones and provincial management intent for all of Vancouver Island, except Clayoquot Sound.
- Old Growth Targets: Provincial Non-Spatial Old Growth Objective Order (PNOGO) – identifies legal targets for old growth forest by landscape unit (LU) and biogeoclimatic ecosystem classification (BEC) variant, including LU/BEC variants in SMZs.<sup>1</sup> The PNOGO applies in LUs where there are no legal OGMA.
- Mature-plus-old policy targets: Biodiversity Guidebook (BDG) – There are no legal mature-plus-old targets are identified by the PNOGO; therefore, for this assessment, targets from the [Biodiversity Guidebook](#) (BDG) are used which are set by LU for each NDT, BEC, and BEO combination with targets defined by seral stage. The BDG targets are not legal but can be considered as guidance for mature-plus-old targets and retention.
- Old Growth Management Areas (OGMAs) – 20 LUs across Vancouver Island are managed with legal OGMAs. Once established, the retention of the legal OGMAs becomes the legal requirement, rather than meeting the targets specified in the PNOGO.
- Clayoquot Sound Land Use Order – includes objectives to manage old growth forest within Watershed Plans (rather than LUs) through spatially defined watershed reserves and retention targets by BEC, tree species, and age class.

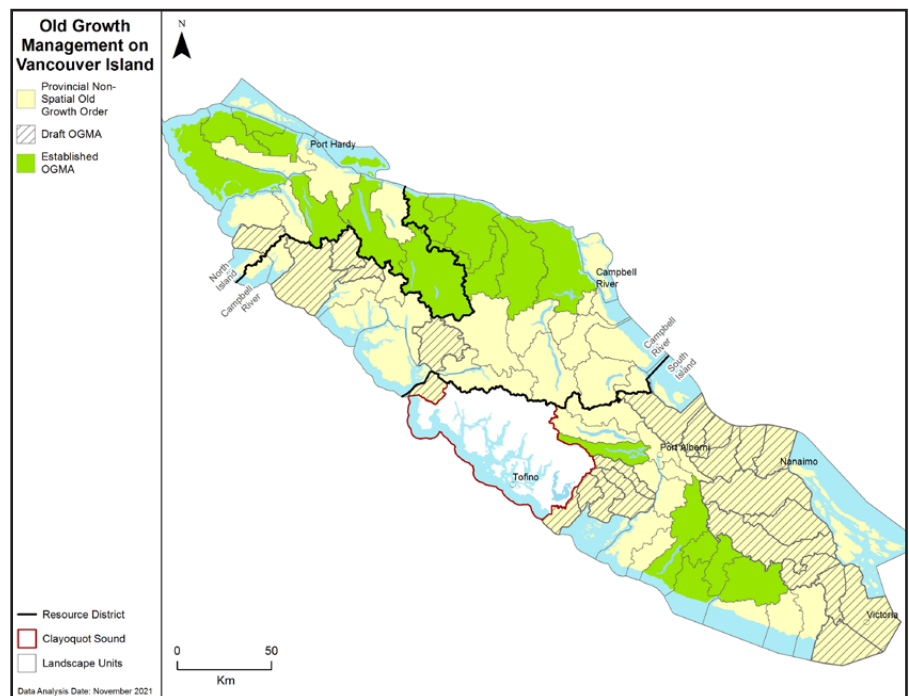


Figure 2. Old Growth Management across Vancouver Island

<sup>1</sup> As SMZs are portions of LUs, the target applies to the LU/BEC combination which will overlap the SMZ.

## Age Definitions

The definition of old growth forest age used for this assessment is greater than 250 years for those areas outside of Clayoquot Sound (Table 1). For areas within Clayoquot Sound, old growth forest age is defined for this assessment as greater than 140 years. This is consistent with the definition used in the Clayoquot Sound Land Use Order.

The definition of mature-plus-old forest age used in this assessment is either greater than 80 or greater than 120 years old, depending on the natural disturbance type (NDT) and BEC zone (Table 2).

**Table 1.** PNOGO Legal Targets for Old Growth Forests on Vancouver Island (outside Clayoquot Sound)

NDT	BEC zone	PNOGO Target: % Old Growth Forest Retention			Old Forest Age Definition (years)
		Low BEO	Int. BEO	High BEO	
NDT1	CWH	13	13	19	>250
	MH	19	19	28	>250
NDT2	CDF	9	9	13	>250
	CWH	9	9	13	>250

**Table 2.** Biodiversity Guidebook Policy Targets for Mature-Plus-Old Forests on Vancouver Island

NDT	BEC zone	Policy Target: % Mature + Old Retention			Mat + Old Forest Age Definition (years)
		Low BEO	Int. BEO	High BEO	
NDT1	CWH	18	36	54	>80
	MH	19	36	54	>120
NDT2	CDF	17	34	51	>80
	CWH	17	34	51	>80

## Assessment Results

The current condition of old growth forest on Vancouver Island was assessed using indicators outlined in the *Interim Assessment Protocol for Old Growth Forest in British Columbia (2017)*. Assessment units (AUs), which are defined by a combination of LU, BEC, BEO and NDT are used to report on the current condition of old growth forests and mature-plus-old forests on the CE-CFLB.

### Indicator #1: Amount of Old Forest in OGMA and Protected and Reserved Areas (for LUs with Legal OGMA)

**Indicator Description:** This indicator assesses the current amount of old growth forest, as a percentage of total area, that exists within legal OGMA and Protected and Reserved Areas.

#### Vancouver Island (Outside Clayoquot Sound)

##### Assessment Results:

Of the 84 assessment units with legal OGMA:

- 17% units have <30% of the area in OGMA and Protected/Reserved Areas consisting of old forest
- 13% units have 30-50% of the area in OGMA and Protected/Reserved Areas consisting of old forest
- 25% units have 50-75% of the area in OGMA and Protected/Reserved Areas consisting of old forest
- 44% units have 75-100% of the area in OGMA and Protected/Reserved Areas consisting of old forest

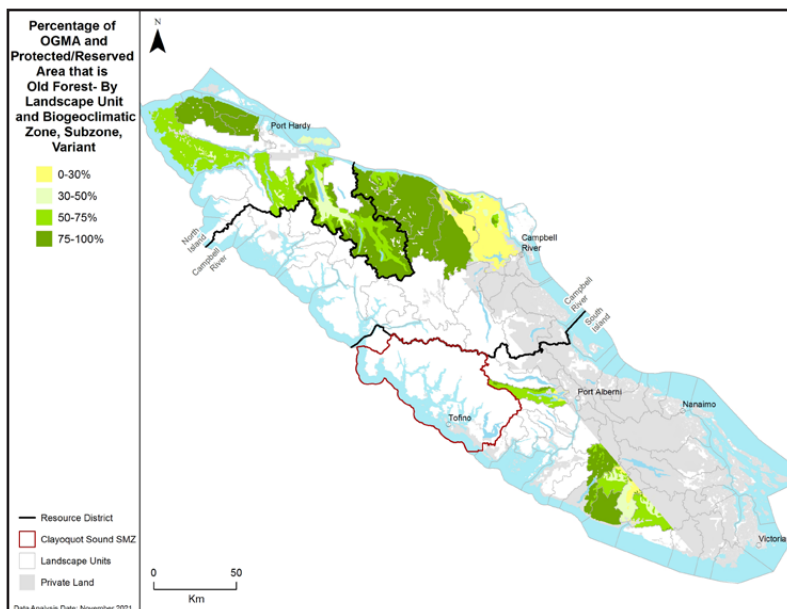
Old growth forests have higher disturbance rates in the south portion of Vancouver Island compared to the north.

Areas with <30% old forest in OGMA and Protected/Reserved Areas have historic disturbance, resulting in limited old growth forests available for OGMA selection.

In the Sayward area, (yellow units in the Campbell River District), the lack of old growth forest is a result of a forest fire that occurred in the early 1900's, which converted a large portion of the forested area to younger seral stages.

Dry variants (CWHxm1, CWHxm2) generally have lower amounts of old forest within OGMA and protected/reserved areas compared to the moist and wet variants.

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**Figure 3.** Percentage of OGMA and protected/reserved area that is old forest, by LU and BEC subzone variant

## Indicator #2: Amount of Old Forest for Landscape Units Managed under PNOGO and Clayoquot Sound Land Use Order

**Indicator Description:** This indicator assesses current amount of old forest (as defined in the legal Orders) for LUs managed under the PNOGO in relation to the targets for old growth forest within each LU and BEC subzone variant or watershed planning unit (for Clayoquot Sound).

### Vancouver Island (Outside Clayoquot Sound)

#### Assessment Results:

Of the 219 Assessment Units that are managed under PNOGO, 67% are meeting targets for old growth forest. This is equivalent to 88% of the CFLB area managed under PNOGO.

The southeast portion of the South Island District and eastern portions of Campbell River District have less old growth forest than the target amount. This is due to forest harvesting that occurred in these areas since the landbase is operable, accessible, and close to mills. Historical land use and Crown land conversion to support development has also impacted old growth forests, particularly in the South Island District.

Very little old forest remains in the dry variants (CDFmm, CWHxm1 and CWHxm2) in any LUs on Vancouver Island. Private land dominates the LUs where these variants occur. However, the moist and wet BEC subzone variants have enough old forest available to meet most or all the targets with old forest.

### Clayoquot Sound

#### Assessment Results:

In Clayoquot Sound, the criteria is to retain 40% of late successional forest (>140 years) in each Watershed Planning Unit. All Watershed Planning Units have sufficient amounts of old growth forest to meet targets.

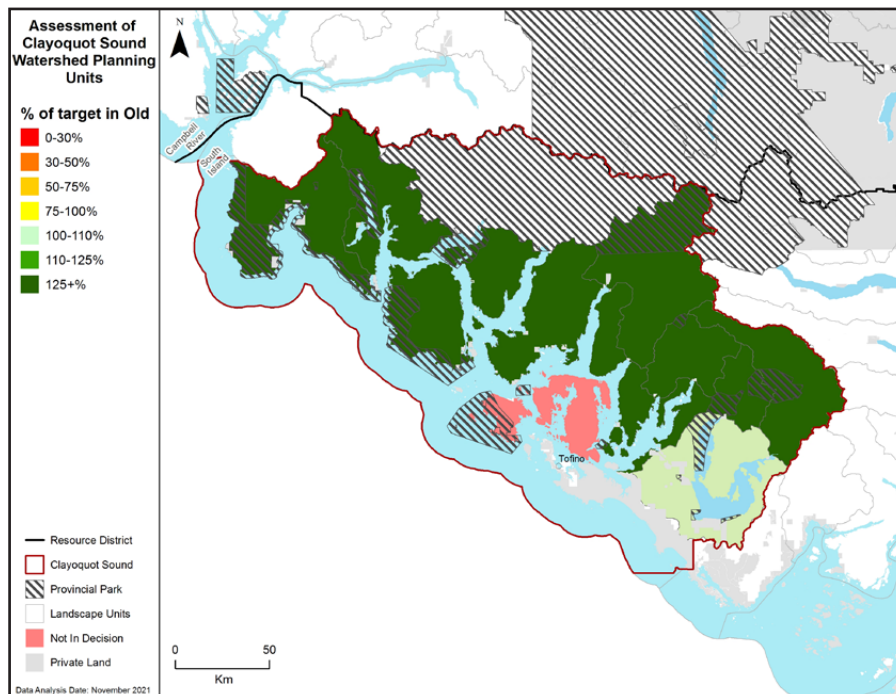


Figure 4. Percent of watershed plan unit target met with Old (>140 yrs) in Clayoquot Sound

### Indicator #3: Amount of Mature-Plus-Old Forest

**Indicator Description:** This non-spatial indicator assesses the amount of mature-plus-old forest as a percent of non-spatial targets from the Biodiversity Guidebook for retention by BEC subzone/variant within LUs. The indicator is non-spatial and unrelated to existing spatial designations on the land base such as OGMAs.

#### Vancouver Island (Outside Clayoquot Sound)

##### Assessment Results:

74% of assessment units currently have sufficient mature-plus-old forest to meet targets from the Biodiversity Guidebook.

Dry and moist ecosystems are furthest from meeting mature plus old targets, with 41% of LU's within BEC subzone variants meeting targets. Only 18% of the assessment units within the CDFmm have sufficient mature forest to meet targets, meaning that there is very little mature forest to recruit towards future old forest in this ecosystem.

The CWHxm1 is in a better state for recruitment, with about half of the assessment units having sufficient mature forest to meet targets; these units may achieve their old forest targets in the next 10 years. Most units in the very wet and high elevation variants meet targets.

All Special Management Zones (SMZs), managed under VILUP, contain more than the target amount (25%) of mature-plus-old forest except for the Upper Qualicum SMZ. The Upper Qualicum contains 3% mature-plus-old. Mature-plus-old forest was not assessed for Clayoquot Sound as there are no criteria for the management of this indicator.

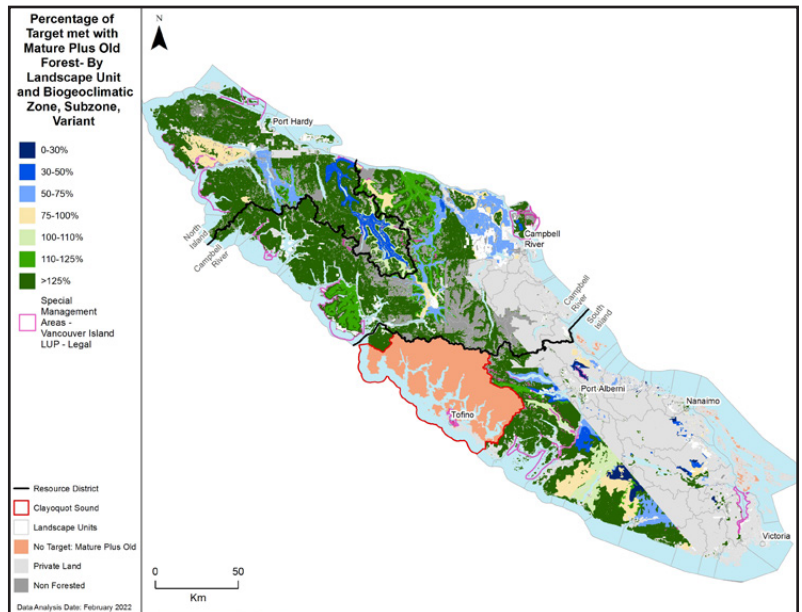


Figure 5. Amount mature-plus-old forest currently on the land base compared to targets from the Biodiversity Guidebook

### Indicator #4: Incursions into Legal and Non-Legal (Draft) OGMAs

**Indicator Description:** This indicator summarizes the area of human caused disturbance (i.e., incursion) in OGMAs by Landscape Unit.

##### Assessment Results:

There are 2,381 OGMAs on Vancouver Island. Of these OGMAs, 1% in the North Island District, 10% in the Campbell River District and 47% in the South Island District are non-legal.

In all LUs with legal OGMAs, the total area of OGMA incursion was 5% or less of the total OGMA area across the LU, with most being under 2%. Large incursions (5ha or 5% of an individual OGMA) occur in OGMAs in four LUs and make up less than 1% of the OGMA area across the LU.

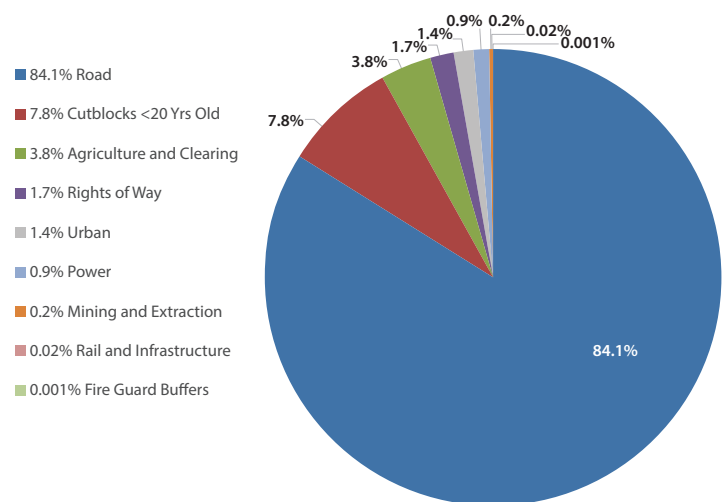
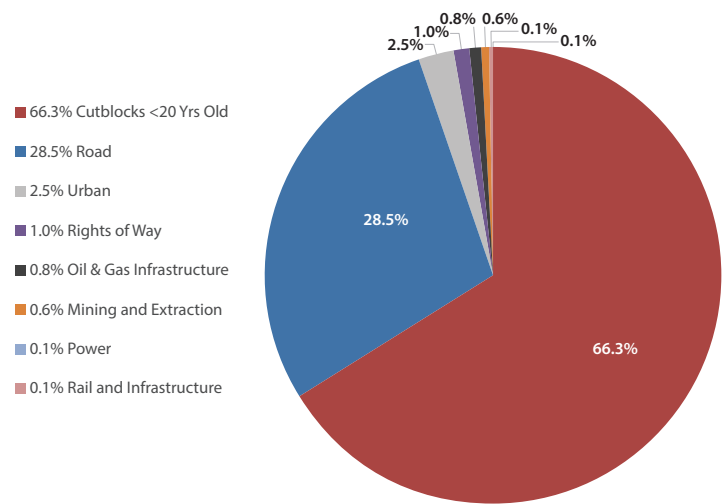


Figure 6. Amount and type of anthropogenic disturbances in Legal OGMAs

In LUs with non-legal OGMA all but three had less than 5% of the total OGMA area across the LU incurred; of the remaining three LUs, one had 6%, one had 7.5% and one had 24.6% of its total OGMA area incurred. Large incursions (5ha or 5% of an individual OGMA) occur in three LUs and make up less than 2% of the total OGMA area across the LU in two of those LUs, and 17.5% of the total OGMA area in the third.

Roads account for most of the incurred area in legal OGMA (84.1%), followed by cutblocks (7.8%). In non-legal OGMA cutblocks accounted for most of the incurred area (66.4%), followed by roads (28.5%)



**Figure 7.** Amount and type of anthropogenic disturbances in Non-Legal OGMA

## Opportunities

Opportunities related to old growth management include:

1. Ensure that appropriate recruitment strategies are in place, particularly for assessment units that have less old forest than target amounts,
2. Improve the currency and accuracy of the spatial OGMA layer to ensure accurate analysis of incursions, and improve transparent reporting of OGMA condition,
3. Pursue opportunities to use LiDAR data in OGMA establishment to increase the accuracy of old forest identification,
4. Improve the currency and accuracy of disturbance data (e.g., resource roads data) to improve the accuracy of this analysis,
5. Review existing spatial OGMA to assess if they are best capturing Old Forest values achieved and amend them as necessary improve the capture of Old Forest values.

## Limitations

The analysis provides a preliminary overview of the current condition of old growth forest and mature-plus-old forests on Vancouver Island. Various limitations to the assessment exist (see report), and further investigation is required.

Disturbance from roads was slightly underestimated in the analysis due to an error in the road dataset created for this assessment. However, the omission of these areas does not materially affect the results or conclusions of this report. See Section 4.3 (Assumptions and Limitations) of the report for more details. Future updates to this report will include a corrected roads layer to ensure the entirety of roads in the CE integrated roads layer are incorporated into the analysis.