

Inventory Data Uncertainty Affecting Forest Biodiversity Ratings in the Cassiar Timber Supply Area (TSA)

Skeena Stikine Natural Resource District
Doug Lewis - September 05, 2025

Concern Identified

Recent review of the 2025 Cumulative Effects Framework (CEF) Forest Biodiversity outputs for the Skeena-Stikine District has identified unexpectedly high and moderate biodiversity risk ratings in several Spruce Willow Birch (SWB) biogeoclimatic subzone variants within the Cassiar TSA, specifically:

- SWB moist cool (SWB mk)
- SWB undifferentiated (SWB un)
- SWB undifferentiated shrub (SWB uns)

These elevated ratings are not consistent with expectations based on known disturbance history and differ from similar subzones in neighboring TSAs (e.g., Fort Nelson, Mackenzie, Prince George), with the discrepancy appearing to follow the Cassiar TSA boundary (see Figure 1).

Key Drivers of Elevated Risk Ratings

The high and moderate Forest Biodiversity Risk ratings are primarily driven by low amounts of mature and old forest, which directly affect the following CEF indicators:

- Percent mature and old forest
- Habitat connectivity (percent of mature and old forest in patches >250 ha)
- Species disturbance (percent of mature and old forest interior area)

These indicators collectively contribute to the elevated biodiversity risk ratings in the Cassiar TSA.

Importantly, in the Cassiar TSA area we suspect these ratings are not due to recent disturbances, such as, Land use activities (which are limited in the area) and Natural disturbances (e.g., wildfires in the last 10–20 years, which are captured in the disturbance update process)

Instead, the primary driver appears to be the large proportion of mid-seral forest (40–80 years old) in the Vegetation Resource Inventory (VRI) data.

Inventory Data Uncertainty

The source of the mid-aged forest classification in the Cassiar TSA remains uncertain. Two primary explanations have been considered:

1. Historic disturbance events (e.g., from the 1950s–1970s) could plausibly explain the presence of mid-seral forest. However, no records of such events have been found, and our understanding of the region suggests there were no major disturbances during that period that would account for the observed age distribution.
2. Inventory misclassification is a more likely explanation. Smaller trees in the region may have been interpreted as younger stands due to limitations in age inference methods used in the Vegetation Resource Inventory (VRI) and Landscape Vegetation Inventory (LVI) processes.

We suspect that inventory misclassification is the primary driver of the elevated Forest Biodiversity Risk Ratings. The Cassiar TSA inventory was originally compiled in the 1970s using 1950s aerial imagery and was later updated in 2019 using satellite-based LVI methods. This LVI update was specific to the Cassiar TSA, and the boundary of the unexpected risk ratings closely aligns with the extent of the LVI project—further suggesting that the inventory update process may have skewed the age distribution.

Additional context supports this concern: in January 2024, a Chief Forester Order postponed the AAC determination for the Cassiar TSA until 2030, citing inaccurate inventory ages and the need for independent validation through LiDAR and ground sampling. See: [Chief Forester Order concerning the AAC Determination for the Cassiar Timber Supply Area](#)

Guidance for Interpreting CEF Forest Biodiversity Ratings

Users of the CEF Forest Biodiversity protocol should exercise caution when interpreting results for the Cassiar TSA:

- The elevated biodiversity risk ratings are likely driven by inventory data uncertainty, not actual landscape-level ecological conditions.
- While the CEF uses the best available inventory data, the age classification inaccuracies in the Cassiar TSA are known to affect assessment outcomes.
- If forest age has been underestimated, this leads to inflated hazard and risk ratings in the biodiversity assessment which do not reflect on the ground landscape conditions.
- Accurate assessment of Forest Biodiversity Risk Ratings in the Cassiar TSA depends on improvements to forest inventory data—an issue currently being addressed by the Ministry of Forests. The Forest Analysis and Inventory Branch (FAIB) is actively conducting LiDAR surveys and ground sampling to validate and refine forest age classifications. These efforts are expected to reduce uncertainty in inventory data, leading to more reliable biodiversity assessments and supporting future AAC determinations.

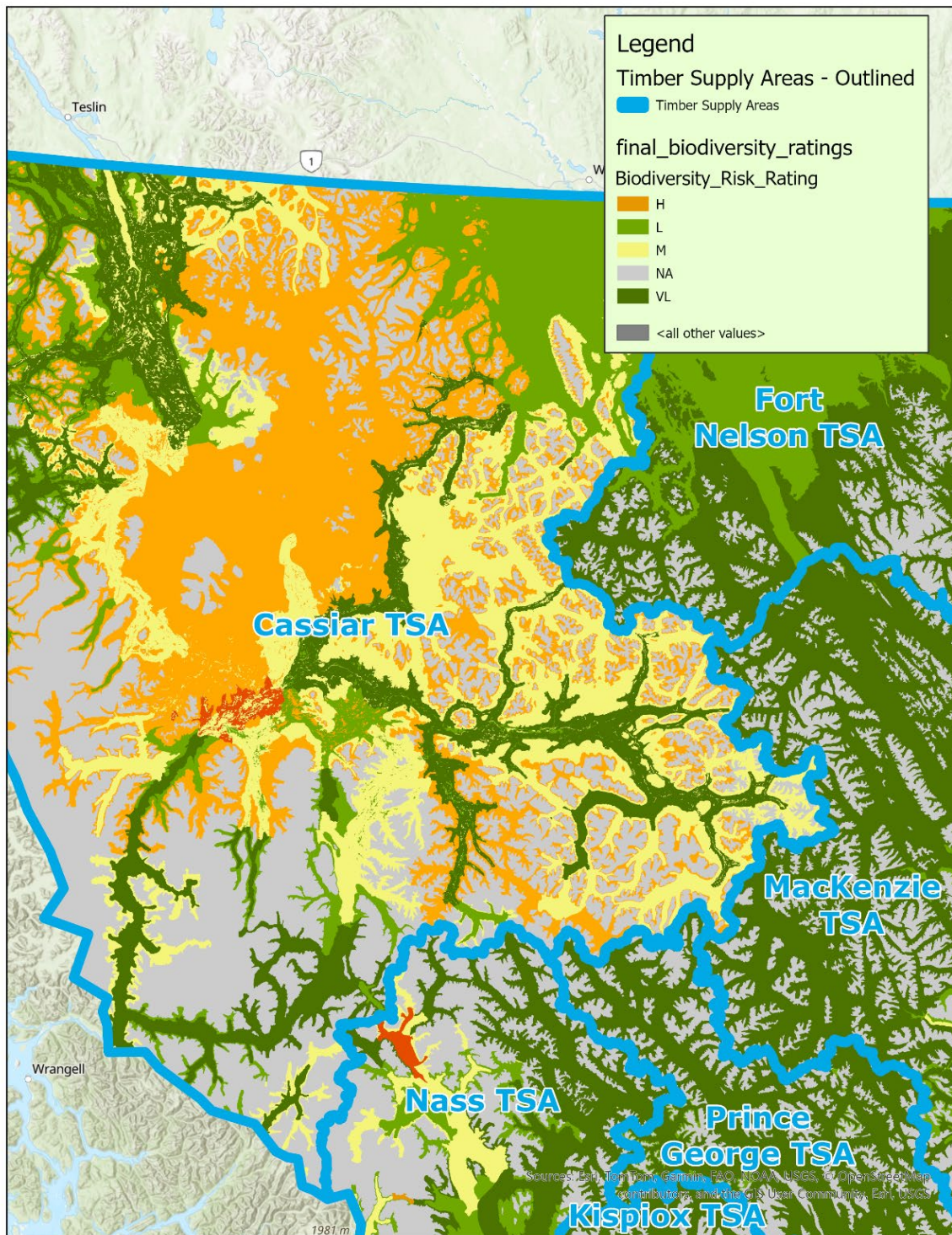


Figure 1. Forest Biodiversity risk rating outputs in the Cassiar TSA – Skeena Stikine natural resource District.