

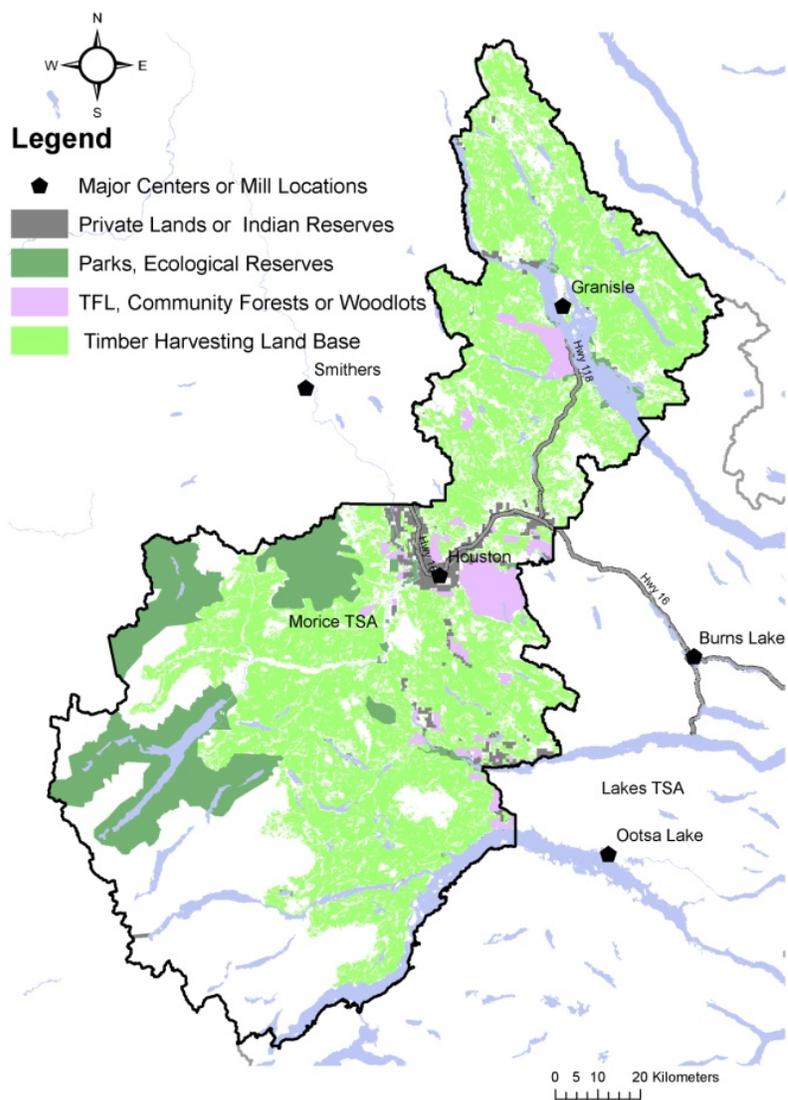


Mid-Term Timber Supply

June 8, 2012

Morice Timber Supply Area

Background



The Morice Timber Supply Area covers 1.5 million hectares:

- 63% considered productive forest (outside of Indian Reserves, private lands, woodlots and community forests)

- 32% of productive forest is not available for timber harvesting - reserved for riparian zones (2.8%), roads (1.2%), parks and protected areas (2.7%), sensitive areas (4.3%), non-merchantable forest types (5.4%), inoperable areas (4.2%), sites with low timber productivity (9.2%), wildlife tree patches (2.1%), unstable terrain (0.3%).
- Current timber harvesting land base is 648,600 hectares; 43% of the timber supply area

Communities: Houston, Topley and Granisle.

First Nations:

There are no First Nations communities in the Morice Timber Supply Area; however, Lake Babine Nation and Wet'suwet'en First Nation have reserves in the timber supply area.

First Nations with interest but located outside of the timber supply area include: Carrier Sekani Tribal Council, Cheslatta Carrier Nation, Kitselas First Nation, Lake Babine Nation, Nee Tahí Buhn Band, Office of the Wet'suwet'en, Skin Tyee Band, Stelat'en First Nation, Moricetown Band Council, Takla Lake First Nation, Tl'azt'en First Nation and Yekooche First Nation

Status of Land Use Plans

- Morice Land and Resource Management Plan (approved in 2008)
- Ungulate winter ranges and wildlife habitat areas
- Provincial old growth order
- Draft legal objectives to fully implement the land and resource management plan have been developed but are not yet approved

Past Allowable Annual Cut

- 1.986 million cubic metres between 1996 and 2001
- Reduced to 1.961 million cubic metres in 2002
- Adjusted to 2.165 million cubic metres in 2008 to account for the inclusion of endemic dead potential volume (based on 2006 changes to the Interior log grades)
- Currently 2.165 million cubic metres (set February 1, 2008), with 550,000 cubic metres attributable to non-pine species.

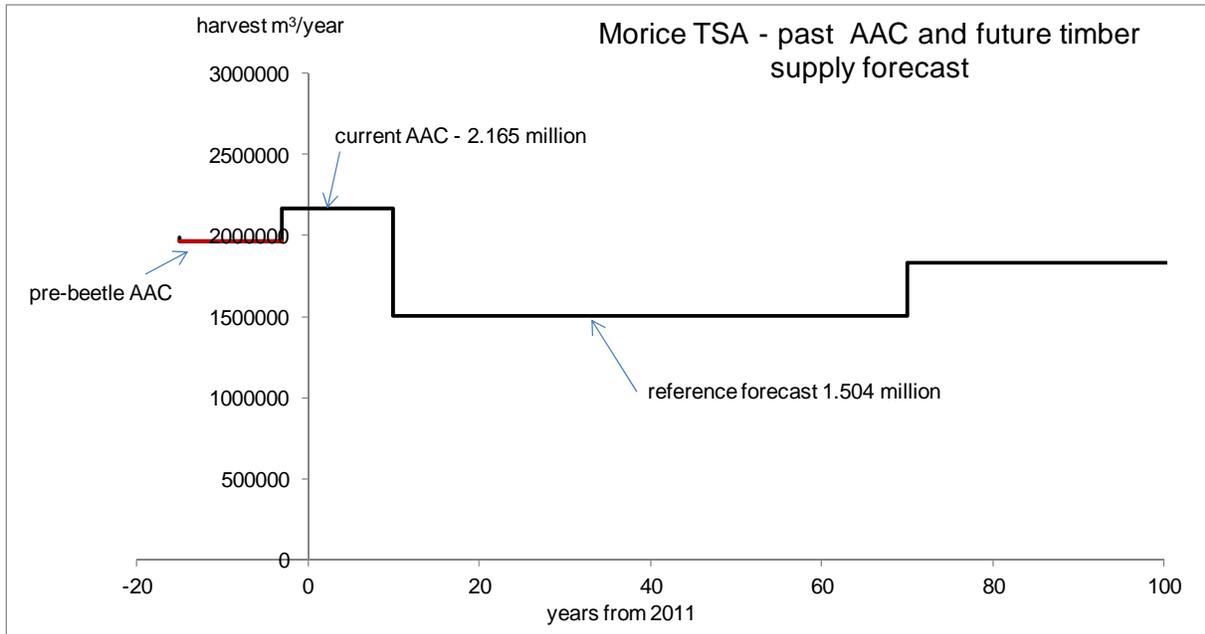
From 2007 to 2011 about 71% of this harvested volume was pine.

Mid-Term Timber Supply Forecasts

The mid-term timber supply forecasts were prepared by the Forest Analysis and Inventory Branch to examine options for mid-term timber supply mitigation. Mitigation scenarios were compared to a

reference scenario that models current practices. The forest management assumptions applied in the reference scenario was compiled for the timber supply review currently in progress for the Morice Timber Supply Area. These assumptions include accounting for all existing land-use decisions and non-timber constraints, focusing harvesting in pine-leading stands and assuming dead pine will have economic value for 10 more years.

All forecast results presented here are preliminary and are subject to change before an in-depth quality assurance review is completed.



- Maintain current harvest level of 2.165 million cubic metres a year for 10 years.
- Then falls to 1.504 million cubic metres per year, and remains at that level for 60 years.
- Increases to a long-term level of 1.828 million cubic metres a year.
- Part of the decline from the pre-epidemic level in the above graph is due to two Community Forest Agreements issued after the epidemic started, in 2008 and 2011, with a current total allowable annual cut of 26 000 cubic metres. These areas no longer contribute to the timber supply of the Morice Timber Supply Area.

The reference forecast does not necessarily reflect today's conditions, which have been seriously affected by the economic downturn since 2008. As harvest forecasts project timber supply over a long timeframe, "current performance" is generally assumed to reflect performance during a market cycle, including both market highs and lows. The current prolonged economic downturn makes it increasingly uneconomic to harvest deteriorating dead pine. The mid-term timber supply forecast presented here assumes that timber supply area licensees will carry out timber harvesting throughout the entire timber profile identified in the previous timber supply review.

During the mid-term, timber harvesting in the Morice Timber Supply Area will be in non-pine stands and in advanced pine plantations. Non-pine stands are stands where pine is less than 70% of the total stand volume, as well as spruce stands and balsam (subalpine fir) stands.

Mountain Pine Beetle Forecast

Version 9 of Provincial-Level Mountain Pine Beetle Model was used to predict the current and future pine mortality for the Morice Timber Supply Area mid-term analysis. This version of the model predicted that 35.6 million cubic metres in the timber supply area would be killed by 2021, which is 62% of the mature pine that was on the timber harvesting land base in 1999.

Current Practices/ Silviculture Investments

- Target harvest in pine – accounting for 71% of total harvest
- Fertilize young plantations under Land-Based Investment Strategy
 - Since 2006, 2,495 hectares of spruce stands fertilized
 - In next 10 years, an additional 3,000 hectares a year are expected to be fertilized
 - If 3,000 hectares are fertilized every year, after 10 years this will generate an additional 40,500 cubic metres of volume each year for 10 years (total volume 405,000 cubic metres)

Economic Profile in the Houston Area/Morice TSA

The Morice Timber Supply Area and the Lakes Timber Supply Area are located in the Nadina District. The report *2006 Economic Dependency Tables for Forest Districts* does not contain information solely for the Morice Timber Supply Area so information for the Nadina District is provided here.

- In the Nadina District, the forest sector accounts for 46% of basic employment – the single most important sector. The forest vulnerability index¹ for the Nadina District is 100, one of the highest in the province.
- Employment for other sectors in the Nadina District: public sector (29%), mining and mineral production (3%), agriculture and food (5%); tourism (11%); construction (5%) and other (1%).

Workforce Considerations

- 1,882 person-years of total direct, indirect and induced employment before the uplift in 2008 and before two Community Forest Agreement areas were taken out of the timber supply area

¹The magnitude of the forest vulnerability index indicates the vulnerability of each local area to potential downturns in the forest sector – a community is vulnerable if its forest sector dependence is high and its diversity is low. It is worth emphasizing that a high index value does not mean that the wood-based manufacturing facilities in that area are more likely to shut down than in other areas. Rather, a high value means that if forest sector activity in the area declines then the area will experience greater economic difficulties than other areas in the province would under the same circumstances.

- declined slightly to 1,862 post-outbreak as a result of efficiency gains by industry although harvest levels increased as pine was salvaged
- expected to drop to 1,192 by 2021 without mitigation scenarios (the community forests are expected to contribute about 26 additional direct person-years)
- about 34% of total forest sector jobs involved with harvesting and silviculture, 46% in timber processing and 20% indirect plus induced jobs generated by the forest sector

Mills:

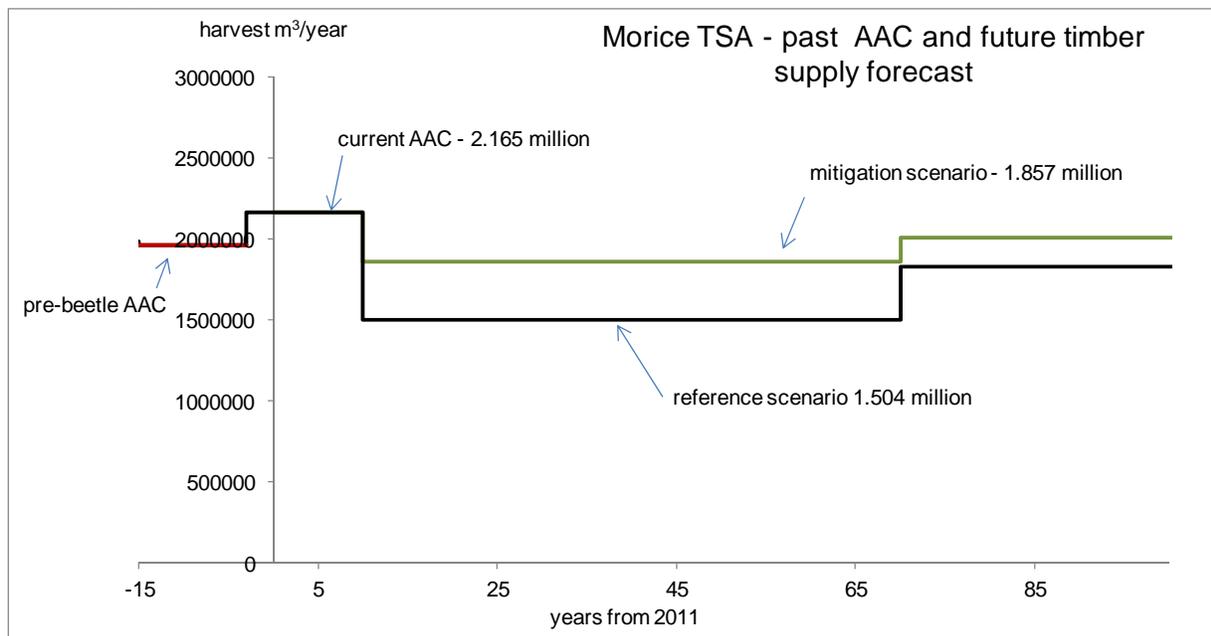
- Mills utilizing timber from Morice Timber Supply Area include West Fraser Mills (Pacific Inland Resources (PIR), Canfor in Houston, West Fraser Mills (Houston Forest Products).

Opportunities for Diversification

- Extension of the Huckleberry Mine (copper/molybdenum) near Houston is anticipated to extend the mine life to 2021. Currently employs up to 260 people in Houston and Smithers area, 15% of them are First Nations. This seven-year extension will preserve 230 full-time and 30 contract positions, and create about 70 new positions.
- The proposed Morrison Mine near Granisle is expected to employ 251 people over the projected mine life of 21 years. The project is currently in the environmental assessment review.

Opportunities for Mitigation

The mountain pine beetle epidemic will result in a drastic decrease in timber supply in some areas, which is expected to have significant economic and social ramifications. Analyses were undertaken to explore opportunities for potentially mitigating this projected decrease in the short- and mid-term timber supply.



The mitigation opportunity scenario depicted above has the potential of increasing mid-term harvest levels by up to 353,000 cubic metres per year when a specific set of mitigation measures is assumed – for a projected total of 1.857 million cubic metres. This increase is projected to maintain 274 more direct, indirect and induced person-years of employment within the Morice Timber Supply Area.

The specific mitigation measures assumed in the above forecast are as follows:

- Relax visual constraints in areas with visual quality objectives (VQO) of preservation, retention and partial retention. Eliminate visual constraints in areas with VQO of modification.
- Relax the constraint for the provincial non-spatial old-growth order by assuming that all stands older than 120 years of age are old in all biogeoclimatic zones.
- Reduce stand-level biodiversity requirements by at least one-half.
- Eliminate cutblock adjacency constraints.
- Increase the timber harvesting land base 3% by adding marginally economic stands.

These scenarios were designed to illustrate the potential magnitude of timber supply affected by these objectives. This information is intended to inform the discussion on whether to initiate a process to review and/or amend objectives. It is anticipated that any decision to revise the objectives will need to be supported by transparent public dialogue and by consideration of the full spectrum of social, economic and environmental values and other effects.

Administrative Implications:

- *Government Actions Regulation* process would be needed to change visual quality objectives.
- *Forest Planning and Practices Regulation* amendments would be needed to address changes in stand-level biodiversity requirements, and cutblock adjacency requirements.
- Changes to the provincial Non-Spatial Old-Growth Order would be required to allow for stands down to 120 years of age to count towards old-growth retention targets.
- All of these changes would require public and First Nations consultation, and would take at least a year to complete once started.
- Possible impacts on forest certification commitments and softwood lumber agreement.

Resource Implications

Visual Quality - Scenic Areas and Visual Quality Objectives (VQO) are established on the landscape in response to public input and land use plans. Harvesting is allowed but the VQO classes provide direction with respect to size and scale. Removal or relaxation of VQOs may decrease public acceptance of forest harvesting, and could significantly impact tourism and outdoor recreation opportunities.

Further details – Resource Values Assessment: Visual Quality

Water – Loss of forest cover allows more precipitation to reach the ground, reduces evaporative losses, increases soil moisture and, when forest cover loss is extensive, results in more water leaving the watershed. This can lead to more flooding and erosion, deterioration of aquatic habitat and water

quality, changes to plant communities and ecosystems, and risks to community safety, infrastructure and property, fish and fisheries.

Further details – Resource Values Assessment: Water

Riparian Management Areas: Riparian areas – lands adjacent to wetlands or bodies of water such as swamps, streams, rivers or lakes – frequently contain the highest number of plant and animal species found in forest, and provide critical habitats, home ranges, and travel corridors for wildlife. Streamside vegetation protects water quality, stabilizes streambanks, regulates stream temperatures, and provides a continual source of woody debris to the stream channel. Reducing the size of riparian management areas can affect ecosystem resilience, lead to habitat fragmentation and reduce connectivity. Potential deterioration of terrestrial and aquatic habitat and water quality could increase risk to fish, fish habitat and listed species, and increase the instability of streams, putting infrastructure and productivity of forests at risk.

Further details: Resource Values Assessment: Riparian Management Areas; Resource Values Assessment: Water; Resource Values Assessment: Biodiversity

Old Growth – Old growth management areas retain/recruit the old-growth structure needed to conserve ecosystems and species biodiversity. They are difficult to reproduce once lost. Old growth enhances ecosystem resilience, which means it is better able to respond to changing environmental conditions, e.g. climate change, wildfire, pests. Old growth management areas provide habitat and connectivity; some species depend on old growth for survival.

Further details – Resource Values Assessment: Old Growth

Biodiversity – Measures to conserve biodiversity include coarse filter and fine filter approaches, and both are important to maintain ecosystem resilience and increase options to respond to changing environmental conditions. Coarse filter approaches, such as old growth management areas, preserve ecosystems within their native composition, structure, and function so they can better retain most of the species that evolved within them. Fine filter approaches, such as ungulate winter ranges, meet the needs of a specific species or ecosystem.

Further details – Resource Values Assessment: Biodiversity and Resource Values Assessment: Old Growth

Species at Risk – B.C. is Canada's most biologically diverse province. Species at risk are provincially and/or federally designated Red and Blue species, populations and ecological communities classified by the Conservation Data Centre as Endangered, Threatened or of Special Concern. These designations use science parameters to determine potential extinction or extirpation risks, and whether special attention is needed. Accelerated harvest, excessively large young openings, high road densities, reduced forest stand retention, and increased human access can all exacerbate the threat to species at risk.

Further details – Resource Values Assessment: Species at Risk

Wildlife – Conservation strategies aim to maintain the mix of landscape conditions necessary to sustain all species. Management tools include protected areas and old-growth management, wildlife habitat

areas and ungulate winter ranges, wildlife tree patches, and landscape seral-stage targets. A full range of ecosystems is needed because many potential impacts are poorly understood, such as changes in predator/prey dynamics or effects of invasive species and climate change. Simplifying ecosystems can reduce resilience; leading to greater risk of future catastrophic pest infestations, susceptibility to climate change and trend towards species generalists.

Further details – Resource Values Assessment: Wildlife

Northern Caribou – Northern caribou represent some of the largest caribou herds found in the province; and are provincially significant for species conservation and recovery. Removal of wildlife habitat areas or ungulate winter ranges is likely to result in negative population implications for this species at risk, possibly resulting in locally and regionally depressed populations. In the worst case scenario, removal of habitat protection could lead to compromised population status and possibly local extirpation (long-term loss of caribou from the area).

Further details – Resource Values Assessment: Northern Caribou and Resource Values Assessment: Mountain Caribou

Resource Roads – Resource roads needed for timber harvesting provide access for backcountry recreation and fire management but can have negative terrestrial and aquatic environmental impacts such as dispersion of invasive plant and animal species that can put biodiversity and native species at risk; loss of habitat or habitat fragmentation; injury or death from vehicle collisions; modified animal behavior; more sediment in streams; increased predator effectiveness; and increased pressure on previously unmanaged fish and wildlife populations.

Further details – Resource Values Assessment: Access Management – Resource Roads

Recreation Sites and Trails – The provincial network of 1,319 recreation sites and 818 recreation trails on Crown lands outside parks and municipalities involve integrated management, with timber harvesting, range, commercial recreation, mining and other activities and uses. Overall, timber supply impacts are negligible because these represent a small part of the operable timber supply area. The public expects mature forest cover to be sustained in the few recreation sites and trails not affected by beetles, and there is greater demand for sites with forest cover.

Further details – Resource Values Assessment: Recreation

More information:

Mid-Term Timber Supply Project

www.for.gov.bc.ca/hfp/mountain_pine_beetle/#whatsnew

Land-Based Investment Strategy (Morice Timber Supply Area)

<http://lbis.forestpracticesbranch.com/LBIS/node/48>

Forest Analysis: Morice Timber Supply Area

www.for.gov.bc.ca/hts/tsa/tsa20/index.htm

Nadina Forest District

www.for.gov.bc.ca/dnd/

Omineca Beetle Action Coalition

www.ominecacoalition.ca/

Morice Land and Resource Management Plan

www.ilmb.gov.bc.ca/slrp/lrmp/smithers/morice/index.html