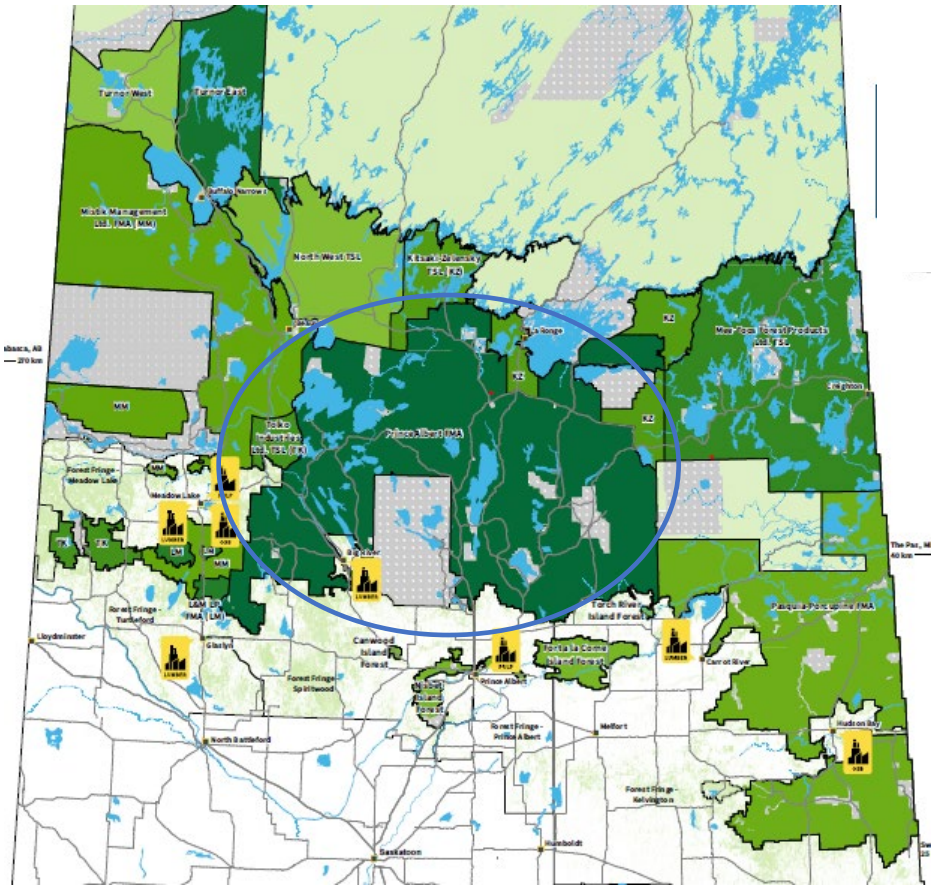
Facts & Figures

Forest Management in the Prince Albert Forest Management Agreement Area

Spring 2021



Sakaw Askiy holds the PA Forest Management Agreement that provides the rights to harvest wood, as well as the obligation to manage the forest resources in the area sustainably. Sakaw facilitates forest management within the forest area for seven shareholders.

Five forest companies and two First Nations are shareholders of Sakaw Askiy. They have each been allocated wood to harvest from within the FMA area. That wood is used to support forest products mills in Glaslyn, Meadow Lake, Big River and Carrot River, as well as several smaller facilities operated by third parties. The shareholders are Agency Chiefs (AC) Forestry, Carrier Forest Products, Edgewood Forest Products, Meadow Lake Mechanical Pulp, Montreal Lake Business Ventures, NorSask Forest Products, and Tolko Meadow Lake OSB Division.

Indigenous involvement One of the objectives when forming Sakaw was to create economic opportunities for First Nations in the forest industry. Forestry jobs are important in the north where opportunities are limited. Three Sakaw shareholders are Aboriginal owned companies (AC Forestry, Montreal Lake Business Ventures, and NorSask). The NorSask sawmill in Meadow Lake is the largest 100% First Nations owned and operated sawmill in Canada. There are also Aboriginal owned companies involved in harvesting operations as contractors.

Economic benefits from SK Forest Industry[1] Saskatchewan has a well-established forest industry, which is northern Saskatchewan's 2nd largest industry. There are:

- 7 large forest products mills that produce lumber, pulp and panels
- 210+ small businesses that produce a variety of forest products (such as posts, flooring, custom sawn lumber)
- 230+ supply chain businesses ranging from timber harvesting, road construction, trucking and reforestation.

In normal market conditions the forest industry in SK generates about $1 billion in forest products sales annually and supports nearly 8,000 direct and indirect jobs. Full development of the sector has the potential to generate over $2 billion in forest products sales annually and support nearly 12,000 jobs.

The typically return on investment (profit) from a forest products mill is 5-10%. This means that 90-95% of the sales revenue is spent in wages, taxes, royalties, capital investments etc., and stays in the province.

Harvested wood goes to mills that make products people use daily, such as lumber and panels for homes, pulp for paper and tissues, wood pellets for heating, and biomass for energy.

Dues Paid on Timber Harvested Almost all of Saskatchewan's forests are on publicly owned land. The royalties paid on wood harvested from these Crown forests are made up of two parts – base dues, and incremental dues based on markets. When markets are good, the rate paid is higher. For example, in early 2021 when the markets were high, dues on trees larger than 15 cm (6 inches) used for lumber were $56.93/$m^3$.

Dues are not paid on residues produced as a by-product of wood processing operations. This includes the tops of trees with a stem less than 10 cm (4 inches) in diameter, that are too small to be used by the current mills.

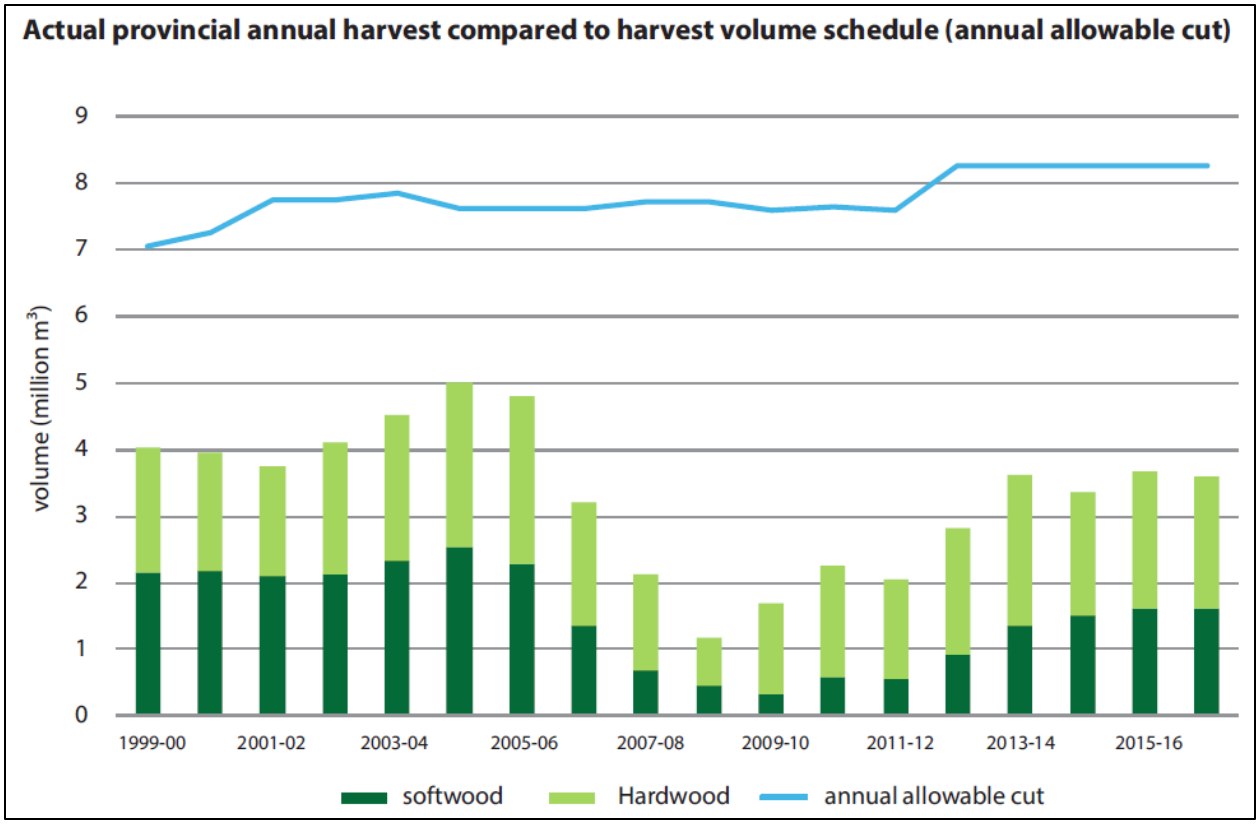
Area Harvested The amount of wood that can be harvested is like the interest on a bank account. If you want to keep what's in the account for future generations, you live off the interest the account is generating. In forestry, you calculate the growth of the trees, and don't harvest more than what is growing.

[1] Forestry in Saskatchewan. Forestrydevelopmentbranch@gov.sk.ca. Accessed May 2021.

An average of 16,330 hectares per year were harvested between 2009 and 2018. On average, less than a quarter of one percent (0.21 percent) of forested lands within Saskatchewan's commercial forest zone are harvested each year. During that same period the largest disturbance type in the commercial forest zone was from insects at 253,739 hectares per year on average, and the second largest disturbance type was from wildfires, at 128,370 hectares burned per year on average[2].

The areas identified in Operating Plans encompass twice the annual volume of wood that can be harvested. This is because extra contingency areas are included, since factors such as weather, markets, wildfires, contractor and equipment availability, and stakeholder concerns change even the best laid plans.

Despite this additional wood volume being included in the plan, there is no risk of unsustainable harvest. The amount harvested can fluctuate from year to year, but companies are not permitted to exceed the sustainable harvest over any five-year period, and never have.



Province-wide harvest levels compared to the allowable harvest levels (the blue line)[2]

[2] State of the Forest Report 2019. Saskatchewan.ca/environment.

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Harvest method The harvest of trees is clustered in an area and carried out relatively quickly so the area can be reclaimed and the time over which it is impacted is minimized.

On average 9% of the trees, within or between the harvest areas, are left uncut. The proportion of trees retained in a harvested area can range from 3 to 15%, as long as the average for a harvest event is 9%. In many areas, the retention is higher due to non-merchantable areas and stakeholder commitments. This range considers (but does not match) the variability of fire, and can be used to take factors such as the forest type, topography and visual aesthetics into account.

Harvest events also purposely range in size, with most events falling in the 100 - 1,500 ha range.

This method of harvesting considers the variation in natural forest patterns that occurs in Saskatchewan's fire-driven forests. It does not try to totally match wildfires due to the need to manage for other values important to society (recreation, outfitting, trapping), as well as the limitation of only harvesting forests that are merchantable. For example, harvest events will not be as large as the big fires responsible for most of the area burned.

In summary, this harvest method is ecologically appropriate for the fire adapted stands that grow here, is an economically efficient method of harvesting, and includes variability that can be used as a tool to help take society's needs into account.

Utilization Unfortunately the current configuration of mills in the province is out of balance with the forest, and sometimes not all the wood in a stand can be used. Specifically, there is no user for the tops of conifer trees used for lumber. There are also more deciduous trees than the existing mills can use, which makes the trees farthest from those mills less attractive sources of raw material.

Given this imbalance companies only enter stands where most trees are the type they use to make products from. However there may still be incidental trees, small tops, and dry wood (from standing dead trees) leftover from those stands. In that case the incidental trees that meet green tree retention guidelines are left uncut whenever possible. And where the slash left on site is enough that it could impede regeneration, it is piled and burned during the winter.

In some areas companies can work with local communities to set some of the unusable or dry wood aside as firewood. Safety and timing are important considerations in how well this can work. Roads are reclaimed within 2 years, and people should not be in the harvest areas picking up firewood when heavy equipment is working and trucks that haul the wood to the mills are being loaded.

Deforestation vs Reforestation Forest harvesting is not deforestation. A forest that has been harvested is still a forest. The trees start to grow back immediately and the forest life cycle starts again, through a combination of root suckering, natural seeding in and planting. The reforestation of all harvested areas is a fundamental prerequisite to having the rights to harvest timber. To maintain biodiversity we ensure that in the overall balance, the new forest replaces the species that were harvested.

Deforestation is a permanent loss of forests because of a change in land use (such as agriculture, roads, communities).

Most forestry roads (located in and between harvest areas) are temporary and reclaimed after use. There are also some long-term roads that will eventually be reclaimed. Until that time they may be removed from use (decommissioned) until they are needed again to access future wood. Road construction is minimized as much as possible to reduce the impact on wildlife habitat, construction and maintenance costs, and exposure to environmental and financial liabilities.

A target of <300 ha/yr converted to other land uses (e.g. long-term roads, landing strips/pads, gravel pits, etc.) has been set and is reported on each year.

Managed Forest Area & Harvest Restrictions Only 39% of the PA FMA area is available for forest harvesting – not the whole area. The rest of the area is non-forest (water, wetlands), non-merchantable forest, inoperable areas, and non-FMA lands such as communities, reserves, and roads and utilities.

On the 39% of the landbase that is managed for harvesting there are ecological, economic and social considerations that restrict where and when harvesting can occur. Strategies for taking those considerations into account were established in a long-term Forest Management Plan for the area. The harvesting plans developed each year are driven by those Forest Management Plan strategies, as well as the fact that a forest must be mature before it can be used to make products such as lumber.

Strategies for maintaining biological diversity and ecosystem function include spatially distributing the harvest by forest type, maintaining high potential caribou habitat zones in an undisturbed condition, and ensuring old and very old forests of all types are distributed across the landscape.

Social considerations that affect where harvesting can occur include leaving buffers around special places and considering visual impacts around lakes and rivers

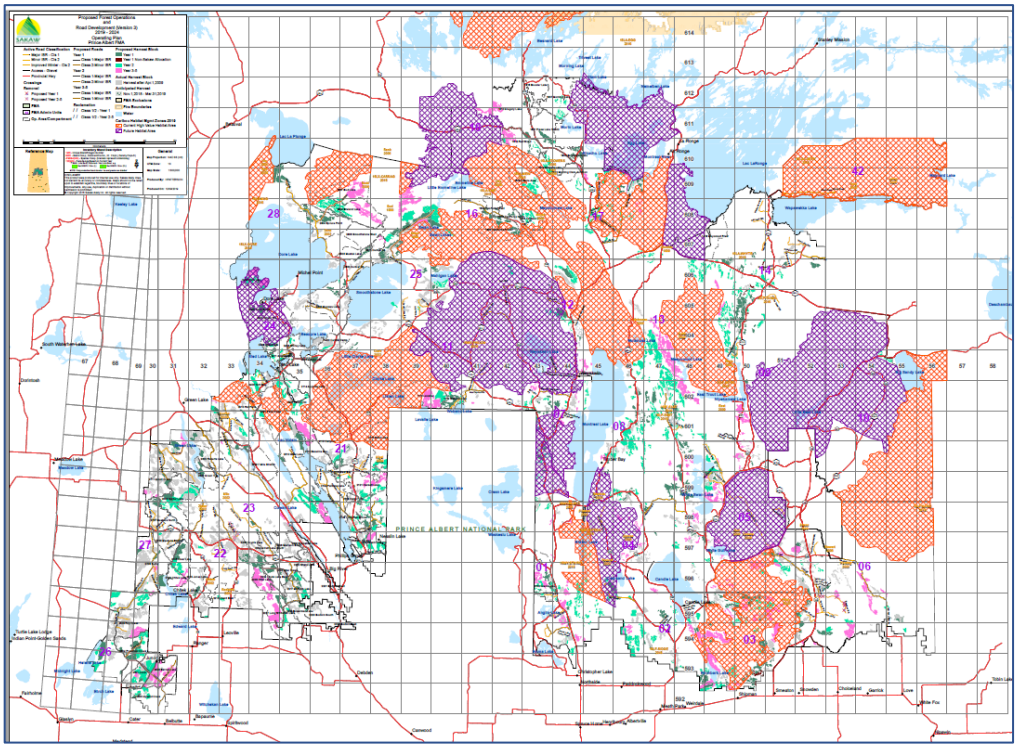
Logistical considerations include being able to get to an area, work in it without rutting the soil, and the markets that exist at the time for particular wood products.

Biodiversity The landbase is managed to provide forest ages, stand types, and spatial patterns that approximate those produced historically by natural disturbances. This is expected to address the habitat needs of most plant and animal species on the FMA area.

Where this is not expected to provide sufficient habitat for a specific species, a detailed habitat strategy is developed for species may be endangered or at risk of becoming extinct.

Woodland Caribou in the boreal forest is a species whose survival is deemed to be at risk in Canada. The federal and provincial governments have developed recovery strategies. The goal is to have self-sustaining woodland caribou populations by managing their habitat, while allowing for continued economic activity in northern Saskatchewan.

This has translated into a strategy for the PA FMA area aimed at providing a mosaic of suitable habitat across the landbase over time, because the forest is never static. Activity is limited in specific areas deemed to be high value habitat now (shown in orange below) while replacement areas (in purple) are identified for future.



Other strategies that help caribou recovery:

- Cluster the harvest in harvest events, instead of being everywhere all the time, and minimize the time an area is affected by road construction, harvesting, renewal, and reclamation activities.
- Harvest in patterns that create the shapes and sizes stands that natural disturbances would
- Retain 9% of the trees in a harvest event
- Mitigate any disturbances in high potential caribou areas

Climate Change Forest management considers long-term outcomes, including the impacts of a changing climate.

Predicted changes in the climate of the PA FMA area are warmer winters, more precipitation in winter and spring, longer drier summers, and an increase in storm intensity and frequency. On the positive side, this could result in more favourable growing conditions where sites are not moisture limited, there is a longer growing season, and growth is enhanced from the presence of more carbon dioxide. On the negative side this could mean increases in fire frequency and intensity, drought stress for vegetation on moisture limited sites, insect and disease outbreaks, wind and mechanical damage (ice and snow), and flooding.

These expected changes could negatively impact the ability to achieve some of the long-term forest management objectives and strategies for forests in the PA FMA area. Those risks are being monitored by tracking progress against targets set under forest management strategies, reporting on them annually, and adjusting accordingly.

For example, an increase in fire on the landscape could impact the ability to achieve targets for forest ages and wood volumes. A change in tree growth rates (due to drought on moisture limited sites) could also change the harvest rates that are considered sustainable.

Those risk are being addressed by revisiting sustainable harvest levels every 10 years using updated information, or sooner if significant areas and wood volumes are burned. This includes monitoring the tree growth rates used in calculating sustainable rates of harvest.

<u>Carbon in Forests</u>

Wildfire is a natural disturbance that replenishes the forest and releases large amounts of carbon quickly. Harvesting is a managed disturbance after which the forest is also replenished. Both harvesting and fire result in young forests that capture more carbon than old forests where growth has slowed or even reversed through decadence.

Forest greenhouse gas emissions (carbon release) come from physical disturbances which include harvesting, land use changes, natural disturbances (wildfire, insects and disease) and forest decline. Depending on the accounting system used, Saskatchewan's forests could be considered a small source of carbon, or a small carbon sink.[3]

For more information visit Natural Resources Canada and Saskatchewan's indicator on *Managed Forests and Greenhouse Gas Emissions* in Saskatchewan's State of the Environment 2019 report.[3]

Do I have a say? Yes. Forest companies are open to revising draft operating plans after hearing concerns from people and communities. That is why public engagement is done while the plans are in draft form, well ahead of the submission deadline. Hundreds of changes are made each year based on where other land users are and their concerns. Land uses can conflict with each other and our record of finding acceptable solutions is good. If there is a case where we can't come to an agreement, it falls to the government to make a decision on the proposed plan.

There is also ongoing communication with people throughout the year about forestry plans (roads, harvesting, renewal, reclamation) but the fall is the busiest time because that is when the next Operating Plan, that will start on April 1st of upcoming year, is being developed. The plan is submitted to the government for review by December 1st.

To contact us:

Sakaw Askiy Management Inc.
219 - 1061 Central Ave.
Prince Albert, SK S6V 4V4
(306) 953-2021
gm@sakaw.ca

[3] https://www.saskatchewan.ca/residents/environment-public-health-and-safety/state-of-the-environment/state-of-the-environment-2019-a-focus-on-forests/productivity-and-resilience/managed-forests-and-greenhouse-gas-emissions