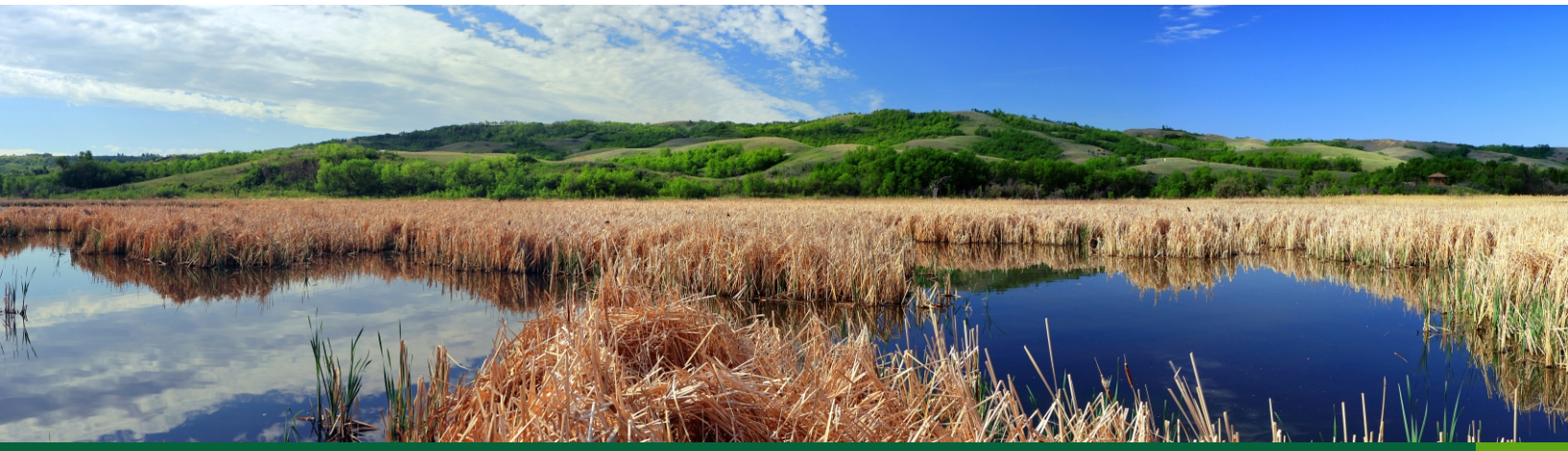

2025 State of the Environment Report

air | land | forest | water

saskatchewan.ca/environment

Saskatchewan

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Minister's Message

Hon. Travis Keisig
Minister of Environment

I'm pleased to present the 2025 State of the Environment Report.

Saskatchewan's rich natural resources and diverse ecosystems are not only essential to our economy, but also to our identity and the quality of life we enjoy in the province. We have a lot to be proud of in Saskatchewan, and our commitment to protecting our natural resources is a standout example.

We are seeing the outcome of our collective efforts in many parts of this report. Some of the highlights include:

- The average pollution levels for most pollutants have been dropping over time. Sulphur dioxide and nitrogen dioxide levels have declined from 2000 to 2022;
- In 2019, the Government of Saskatchewan introduced the Methane Action Plan, a Saskatchewan-made plan to reduce the amount of methane emissions. The plan was supposed to reduce methane-related emissions by 40 to 45 per cent by 2025, but exceeded expectations by reducing methane emissions by 60 per cent in the first three years;
- In 2021 forestry was the largest industry and a major employer in northern Saskatchewan, representing approximately one per cent of the provincial gross domestic product. Forestry provides economic development and employment opportunities, resulting in improved quality of life for the people of northern Saskatchewan.
  - ~ Approximately 30 per cent of the provincial timber supply is allocated to Indigenous businesses, by far the largest of any province;
- The risk of mountain pine beetle infestation has declined significantly;
- We are seeing some great numbers when it comes to recycling in our province. For example, Saskatchewan people recycled 85 per cent of all deposit-paid, ready-to-serve beverage containers in 2023; and
- Our partners at the Water Security Agency note that with a growing population, there is increasing pressure on Saskatchewan's water resources. However, they're reporting a general decrease of usage rates.

Of course, there is always more to be done. As we continue to follow the direction established in our *Prairie Resilience* strategy – and report on regularly in the Climate Resilience Measurement Framework – we should expect to see even more positive trends in the coming years. I look forward to seeing this work evolve and to seeing these actions contribute to a stronger Saskatchewan.

About the Report

The State of the Environment Report is a requirement in *The Environmental Management and Protection Act, 2010,* with the specific purpose of producing a report "concerning the current condition of the environment in Saskatchewan and the relationships between the condition of the environment and the economy of Saskatchewan." It is updated every two years.

The Government of Saskatchewan continues to improve its reporting to offer accessible and comprehensive information to enhance our understanding of the environment. The most recent data is reported in each measure, and often depends on the availability and frequency of reporting from third parties. As such, some information may be from years prior.

Indicator ranking

State
(what is the current situation?)

good	fair	poor	unknown

Trend
(what does trend over time indicate?)

improving	mixed or no change	deteriorating	unknown

Information
(was there adequate information to assess this indicator?)

adequate	partial	inadequate	unknown

Note: A subject matter expert makes the decision on the indicator rankings
Note: Extent means area of the province to which the indicator was assessed

air

Air pollutant concentration

Why we measure this

The Ministry of Environment monitors ambient air quality in Saskatchewan. The concentration of various air pollutants is measured to ensure Saskatchewan has a healthy and resilient environment.

Measuring and evaluating the concentration of air pollution across Saskatchewan is a vital activity. These measurements provide the public with real-time air quality information and the government with long-term trends, making it easier to identify and track changes in our environment.

What is happening

Indicator	State	Trend	Information	Extent
$PM_{2.5}$ (fine particulate matter)	fair	deteriorating	The concentration of fine particulate matter generally increased since 2005 primarily due to wildfire smoke. The provincial annual average in 2023 was greater than the annual Saskatchewan Ambient Air Quality Standard due to a particularly bad wildfire smoke season.	province
O_3 (ozone)	fair	deteriorating	The trend for provincial annual average O_3 concentrations is increasing. However, the Saskatchewan Ambient Air Quality Standards for O_3 are rarely exceeded at provincial monitoring stations.	province
NO_2 (nitrogen dioxide)	good	improving	The trend for provincial annual average NO_2 concentrations is decreasing. The annual average is below the annual Saskatchewan Ambient Air Quality Standard.	province
SO_2 (sulphur dioxide)	good	improving	The trend for provincial annual average SO_2 concentrations is decreasing. The annual average is below the annual Saskatchewan Ambient Air Quality Standard.	province

Air quality across Saskatchewan is generally a low risk to human health. Average pollution levels for most parameters have been dropping over time. Sulphur dioxide (SO_2) and nitrogen dioxide (NO_2) levels declined between 2000 to 2023.

Fine particulate matter (FPM or $PM_{2.5}$), defined as airborne particles less than 2.5 micrometres in diameter, has been increasing since 2010. This is mostly due to the impacts of wildfire smoke. These fires are considered exceptional events and cause short-term reductions in air quality.

The improvements we have seen in Saskatchewan's overall air quality do not extend to ozone (O_3). Ozone levels continue to increase, despite the reduction in pollution concentrations that contribute to ozone formation. Several reasons could explain this, including a rise in average background ozone concentrations and cross-border impacts. Background ozone includes naturally occurring

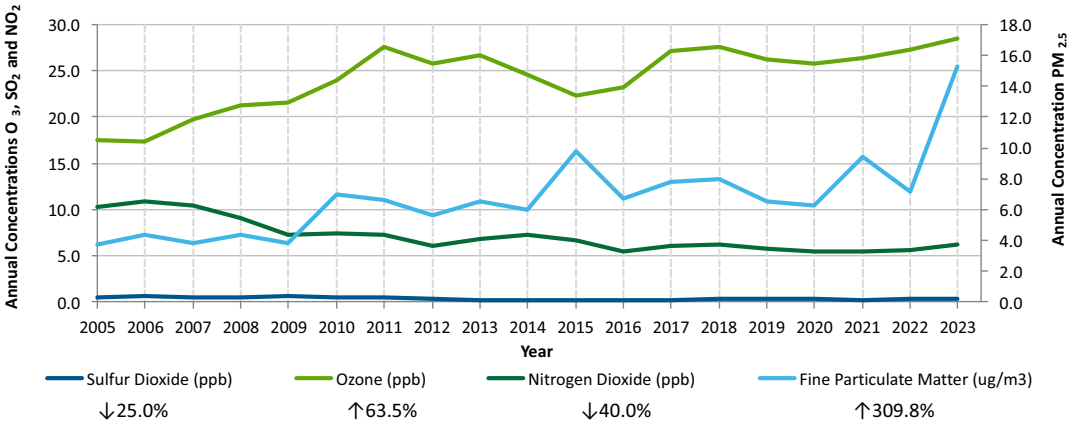
Quick facts

- The ministry conducts long- term, continuous ambient air quality monitoring in six locations across our province: Regina, Saskatoon, Prince Albert, Swift Current, Estevan and Buffalo Narrows.
- Air zone associations have been established in three of the six air zones: Southeast Saskatchewan Airshed Association, Western Yellowhead Air Management Zone and Great Plains Air Zone.

ozone. The formation of ozone is complex and is dependent on a chemical reaction involving nitrogen oxides (NO_x) and hydrocarbons in the presence of sunlight. There is an inverse relationship between O_3 and NO_x, meaning that as NO_x levels decrease, O_3 tends to increase and vice versa. So as the NO_x emissions are improving through better technology in vehicles, heating sources and best management practices, there is less NO_x to destroy the O_3 molecule, resulting in higher O_3 values.

Air quality in Saskatchewan is typically low risk and pollution levels are improving for most pollutants.

Saskatchewan air pollutant concentrations (annual averages)



What we are doing

Saskatchewan is committed to the Air Quality Management System established by the Canadian Council of Ministers of the Environment. This system is a national approach to managing air quality in Canada. The driver of the system is the Canadian Ambient Air Quality Standards (CAAQS), which are federal standards developed to protect human health and the environment. Saskatchewan contributes to the system by reporting on the federal goals and developing plans to assign progressively more rigorous actions to prevent air quality deterioration as the air quality comes closer to exceeding the federal standards.

As part of the system, Saskatchewan has identified six air zones, which are areas that exhibit similar air quality characteristics, issues and trends. These air zones form the basis for monitoring, reporting and acting on air quality issues. Saskatchewan will continue to improve its collaborative efforts with the air zone associations to review trends and assess air quality issues.

The Ministry of Environment operates six ambient air monitoring stations, one in each air zone, under the National Air Pollution Surveillance (NAPS) Program. Continuous air quality monitoring takes place in six locations across our province: Regina, Saskatoon, Prince Albert, Swift Current, Estevan and Buffalo Narrows. NAPS is jointly operated and maintained by the provinces, territories and Environment and Climate Change Canada. The NAPS ambient air monitoring program is operated by the provincial government in Saskatchewan and provides accurate, long-term air quality data. Real time information from these monitoring sites is available to the public.

Air zone associations have been established in three of the six air zones, where higher industrial activity and population density are found: Southeast Saskatchewan Airshed Association, Western Yellowhead Air Management Zone and Great Plains Air Zone. These associations provide additional monitoring in areas not monitored by the provincial monitoring program. For more information on air zone management in Saskatchewan, please see the latest Saskatchewan Air Quality Report.

Saskatchewan also has two mobile air quality stations used to supplement the continuous monitoring network. The Mobile Air Quality Station and the Rapid-deployment Air Quality Station are specially designed trailers equipped to supplement the ministry's air monitoring capabilities anywhere in the province accessible by road.

As the CAAQS for O_3 has yet to be exceeded, Saskatchewan will continue to use the monitoring tools mentioned above to ensure that Saskatchewan continues to enjoy good air quality and a healthy environment.

Air pollutant volume

Why we measure this

To evaluate air quality in Saskatchewan, it is important to know the total volume of air pollution produced. That volume is influenced by the particular characteristics of individual emissions and other factors, such as weather. In this section, we examine the total amounts of three primary air pollutants – fine particulates ($PM_{2.5}$), sulphur oxides (SO_x) and nitrogen oxides (NO_x).

Emission source location and volume are important factors to consider in evaluating and adjusting the provincial air monitoring network. The information collected from our air monitoring network will help inform provincial actions and policies that ensure air quality is safe for people and the environment.

Levels of sulphur oxides (SO_x) and nitrogen oxides (NO_x) have been dropping or stable in Saskatchewan since 2013.

What is happening

State	Trend	Information	Extent
$PM_{2.5}$ fine particulate matter	improving	In 2022, there were approximately 352,643 tonnes of $PM_{2.5}$ released in Saskatchewan. The most common cause was open sources such as agriculture and road dust.	province
SO_x (sulfur oxide)	improving	In 2022, there were approximately 122,674 tonnes of SO_x released in Saskatchewan. The most common cause was power generation and oil and gas activities.	province
NO_x (nitrogen oxides)	improving	In 2022, there were approximately 109,138 tonnes of NO_x released in Saskatchewan. The most common cause was mobile sources.	province

Emissions in Saskatchewan come from industrial sources, non-industrial sources, open sources and mobile sources. Industrial sources include oil and gas activity, and mining and industrial facilities. Non- industrial sources mainly consist of power generation. Open sources include wildfires, agricultural operations, construction and road dust. Mobile sources include vehicle emissions.

Generally, SO_x and NO_x emissions have been dropping or stable in Saskatchewan since 2013. In 2020, 2021 and 2022 we saw a decrease in fine particulates ($PM_{2.5}$) emissions, mainly due to relatively quiet wildfire activity. Even though wildfire activity has lead to deteriorating $PM_{2.5}$ levels to our air pollution concentrations, $PM_{2.5}$ emissions from industry is improving, likely due to better industrial practices and improved pollution abatement equipment

What we are doing

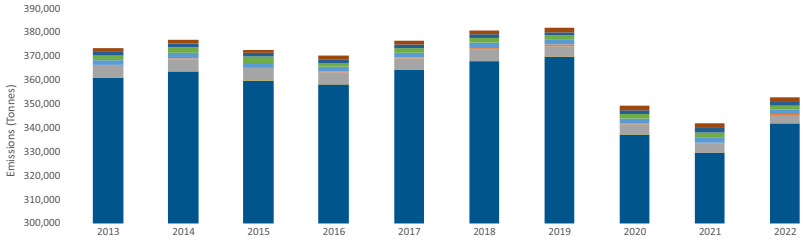
Saskatchewan has several tools available to ensure air quality is safe for people and the environment. *The Environmental Management and Protection Act, 2010,* requires an environmental protection plan for major industrial emission sources. Companies must make sure their operations meet Saskatchewan's air quality standards to ensure they are safe for human health and the

environment. The Ministry of Environment has a compliance assurance program in place to ensure environmental protection plans are being followed.

The ministry supports Canada's National Pollutant Release Inventory (NPRI) Program. NPRI collects, stores and distributes annual air emissions figures from all reporting sources.

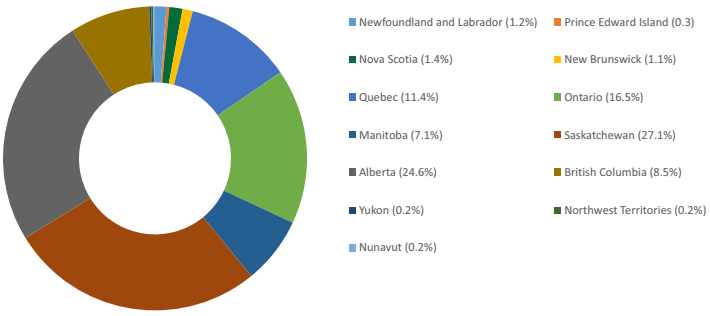
Saskatchewan has committed to an Air Quality Management System established by the Canadian Council of Ministers of the Environment. This management system will help the ministry identify and resolve potential air quality issues, including issues related to pollutant sources.

Saskatchewan $PM_{2.5}$ emissions by sector, 2022

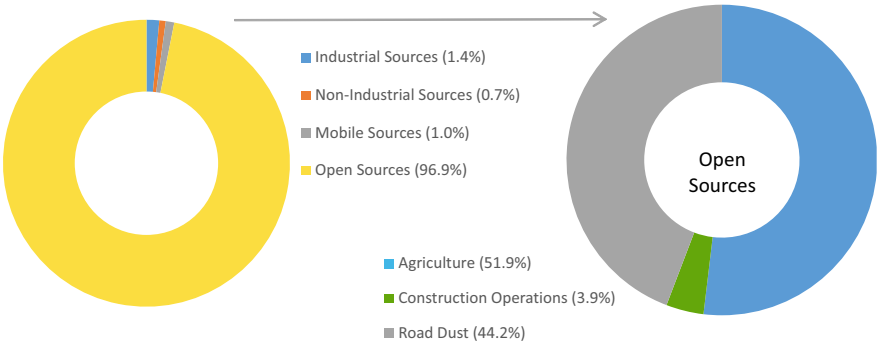


	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Commercial/Residential/Institutional	1,471	1,448	1,309	1,451	1,692	1,844	1,880	1,811	1,801	1,916
Manufacturing	1,316	1,548	1,660	1,397	1,446	1,534	1,425	1,600	1,900	1,350
Oil and Gas	1,987	2,378	2,341	1,909	1,941	1,827	1,723	1,784	1,848	1,724
Ore and Mineral Industry	2,067	2,270	2,008	1,942	2,054	2,214	2,118	2,135	2,412	1,971
Electrical and Power Generation	286	282	301	297	302	726	555	522	634	617
Mobile Sources	5,295	5,382	5,278	4,787	4,825	4,870	4,406	4,020	3,736	3,381
Miscellaneous Sources	29	30	32	30	29	28	30	32	33.1	36.1
Open Sources	360,702	363,408	359,668	358,306	364,318	367,855	369,825	337,232	329373	341648

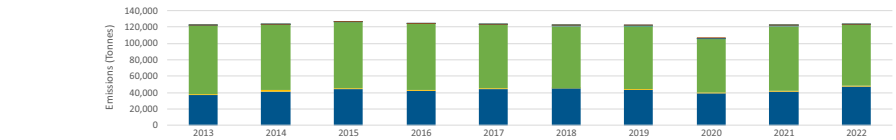
$PM_{2.5}$ emissions across Canada, 2022



Saskatchewan $PM_{2.5}$ emissions by sector, 2022

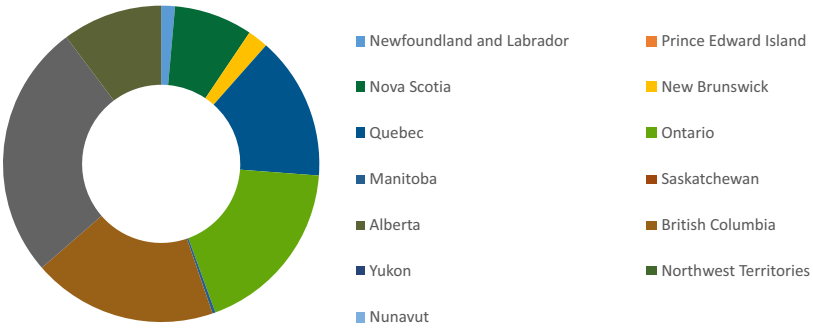


Saskatchewan SO_x emissions by sector, 2022

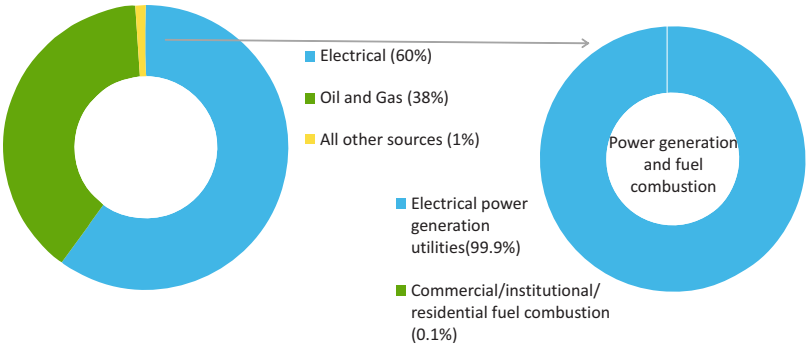


	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Open Sources	7	9	10	4	7	7	3	2	3	2
Miscellaneous Sources	7	9	8	9	70	44	54	153	123	117
Commercial/Residential/Institutional	394	339	417	207	80	68	70	53	43	53
Manufacturing	89	91	51	52	55	34	79	45	62	74
Mobile Sources	87	87	103	111	130	110	82	48	48	60
Electrical and Power Generation	83,602	79,536	80,381	80,515	77,191	75,592	76,964	65,736	79637	73662
Ore and Mineral Industry	1,043	1,433	1,284	995	1,179	848	811	814	982	1149
Oil and Gas	36,735	41,505	43,829	42,468	44,465	44,855	43,323	39,030	40686	47557

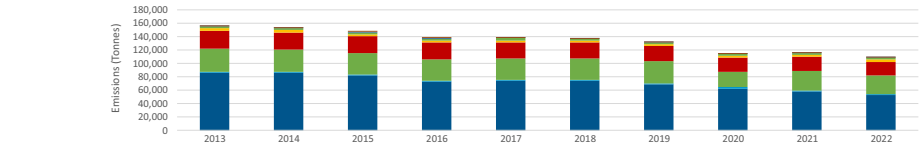
SO_x emissions across Canada, 2022



Saskatchewan SO_x emissions by sector, 2022

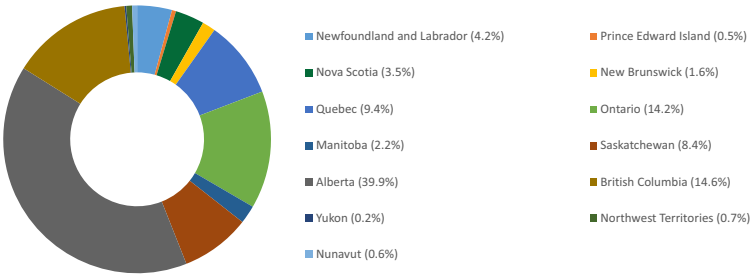


Saskatchewan NO_x emissions by sector, 2022

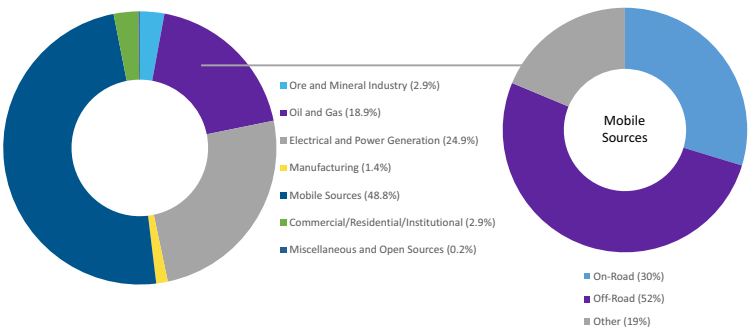


	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Open Sources	287	397	408	258	258	171	110	105	129	113
Miscellaneous Sources	549	582	658	640	569	40	37	74	69	64
Commercial/Residential/Institutional	2,694	2,714	2,605	2,703	2,925	3,184	3,313	2,982	2,918	3,187
Ore and Mineral Industry	3,245	3,422	3,176	3,088	3,059	3,037	2,919	2,846	3,108	3,159
Oil and Gas	26,830	25,692	24,889	24,961	23,901	23,101	22,587	20,390	20,342	20,636
Electrical and Power Generation	34,067	33,231	32,305	31,875	31,701	32,131	33,074	23,833	29,685	27,189
Manufacturing	1,348	1,422	1,502	1,532	1,591	1,345	1,279	1,540	1,545	1,488
Mobile Sources	86,595	85,670	81,849	72,994	74,206	74,483	68,459	62,667	57,858	53,302

NO_x emissions across Canada, 2022



Saskatchewan NO_x emissions by sector, 2022



All data in the graphs are sourced from Environment and Climate Change Canada (ECCC). The most recent data available from ECCC is from 2022

Disclaimer

As of March 19, 2024, ongoing improvements or future corrections may result in updates. As part of the quality control process, ECCC conducts several data checks to ensure the data is of the highest possible quality. Data is also available on ECCC's Open Data Catalogue website for both air pollutant and black carbon.

Significant recalculations were conducted for the most recent data release, as presented in Canada's Air Emissions Inventory Report 2024: Annex 3

Greenhouse gas emissions

Why we measure this

The Government of Saskatchewan monitors greenhouse gas (GHG) emissions intensity to track progress toward increased carbon efficiency of our economy.

GHG emission intensity is measured as the number of GHG emissions (in CO_2e) per dollar of gross domestic product (GDP), reflecting our ability to grow the economy while reducing environmental impact.

Saskatchewan's GHG emission intensity dropped 30 per cent since 2005.

What is happening

State	Trend	Information	Extent
good	good	good	province

Saskatchewan has made significant strides in reducing emissions intensity, while demonstrating a commitment to sustainable economic growth. Even during the economic downturn caused by the COVID-19 pandemic, emissions intensity continued to decrease – dropping by nearly eight per cent from 2021 to 2022 – underscoring the effectiveness of Saskatchewan's long-term emissions reduction strategies across all sectors of the economy.

GHG Intensity 2005 to 2023

What we are doing

Saskatchewan's economy relies on industries like agriculture, mining (e.g. potash and uranium), and oil and gas – sectors that are inherently energy-intensive but produce goods the world needs. Many of these resources contribute to global sustainability such as uranium for nuclear energy and potash for global food production, with lower emissions intensity than many industries worldwide.

Saskatchewan's uranium exports fuel nuclear power plants around the world that prevent the emission of 459 million tonnes of CO_2e. If operating at full licensed capacity, Saskatchewan's existing uranium mines and mills could produce enough uranium to offset almost all of Canada's emissions. Through its focus on providing carbon-efficient essential goods including food, fuel, fertilizer and the critical minerals the world needs, Saskatchewan supports local economic prosperity while embracing innovative solutions that reduce overall global emissions.

Saskatchewan's southern croplands, northern forests, stable geological formations and technological innovation support the adoption of a wide range of emissions management solutions that contribute to reducing the overall emissions intensity of the provincial economy. These solutions have been applied effectively to enhance sustainable production across a variety of emissions-intensive sectors including agriculture, oil and gas production, and electricity generation.

Saskatchewan agricultural producers have sequestered a significant amount of carbon in their soil – an average of 15 million tonnes of carbon annually since 2005. With the adoption of cutting-edge technologies such as zero and minimum tillage, diversifying crop rotations, converting annual cropland to perennial cover, and investing in research, Saskatchewan is home to some of the most sustainable agricultural practices in the world. In fact, approximately 95 per cent of land seeded to annual crops in Saskatchewan is farmed using either minimum or zero tillage – the largest percentage in Canada.

Notably, recent research from the Global Institute for Food Security at the University of Saskatchewan found Saskatchewan's net carbon footprint for canola and non-durum wheat production is more than 60 per cent lower than competitive jurisdictions. For dry field peas, it is 95 per cent lower.

Furthermore, emerging modelling analysis is highlighting the lower emissions intensity of irrigated crops compared to the already carbon-efficient dryland agriculture. This finding promotes expanded irrigation as an emissions management approach that enhances economic growth while supporting food security and climate resilience.

Saskatchewan has invested in emissions reduction technologies and industrial facilities have adopted more energy-efficient processes through the Saskatchewan Technology Fund. Since the Saskatchewan Technology Fund's launch in 2023, the projects that have been awarded funding are expected to eliminate more than 4.5 million tonnes of CO_2e, attract more than $277 million in additional investments and support energy savings of nearly five million gigajoules. Saskatchewan has also successfully improved the emissions intensity of the industrial sector through the Output-Based Performance Standards Program. This is in addition to the reductions required by the Methane Action Plan, which achieved a 67 per cent reduction in methane-related emissions by 2023, exceeding the 40 to 45 per cent reductions required in 2025 from 2015 levels.

Saskatchewan is a world leader in enhanced oil recovery (EOR), which emits 37 per cent fewer emissions than traditional oil extraction methods. Over the last 25 years, Saskatchewan's EOR projects have sequestered more than 40 million tonnes of CO_2.

SaskPower is committed to achieving a reliable and affordable electricity grid. The province has rapidly increased its share of renewable energy generation growing from 25.2 per cent in 2017 to 35 per cent in 2023. As work continues toward that goal, the province will maintain an energy mix that ensures reliable base load power and affordable rates for businesses and households. SaskPower also pioneered the development of carbon capture and storage (CCS) through its Boundary Dam 3 project, the world's first power station to use CCS technology to capture CO_2. Boundary Dam 3 has captured over 6.5 million tonnes of CO_2 since the system began operating in 2014.

Overall, Saskatchewan has established itself as a responsible producer of sustainable goods. The province has significantly improved the emissions intensity of the economy, decoupling emissions from economic growth, while continuing to grow the economy and address the effects of a changing climate.

land

Agriculture land cover

Why we measure this

By area, agriculture is the dominant form of land use in southern Saskatchewan. Agricultural lands -— or lands used for the production of crops and livestock — occupy most of the province south of the commercial forest. They also encompass land not exclusively dedicated to production, including wetlands and woodlands.

Good agricultural land management not only keeps land healthy and productive, it contributes to biodiversity, soil conservation and habitat availability for wild species. While the main intent of farming is food and forage, land management impacts natural processes necessary to sustain adequate water supplies, a stable climate and other important benefits for people and the economy.

Saskatchewan will continue to monitor trends in agricultural land management to ensure we are keeping agricultural landscapes healthy and productive, and sustaining joint biodiversity benefits.

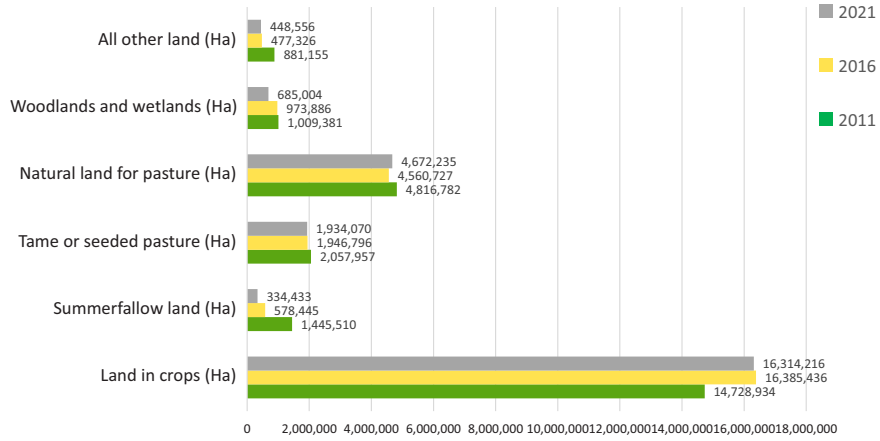
What is happening

Saskatchewan farmland

State	Trend	Information	Extent
mixed/fair	decreasing	adequate	agricultural zone

NOTE: Census of Agriculture information indicates cultivated cropland has increased, pasture land has remained relatively stable and summer fallow, wetlands, woodlands and grasslands have decreased as a proprotion of all agricultural land since 2011.

Agricultural land use in Saskatchewan



Note: Due to abnormally wet growing seasons in 2010 and 2011, land that couldn't be seeded because of excess moisture was reported to the Census of Agriculture as too wet to seed and is categorized in this figure as all other land.

Quick facts

- Saskatchewan has more than 16 million hectares of agricultural crop land.
- Flying insects such as bees and flies are responsible for pollinating several crop species popular in Saskatchewan, including canola, flax, mustard, buckwheat and coriander.
- Wildlife benefits farmers through crop pollination, breakdown of organic matter to provide nutrients for crops, and agricultural pest control.

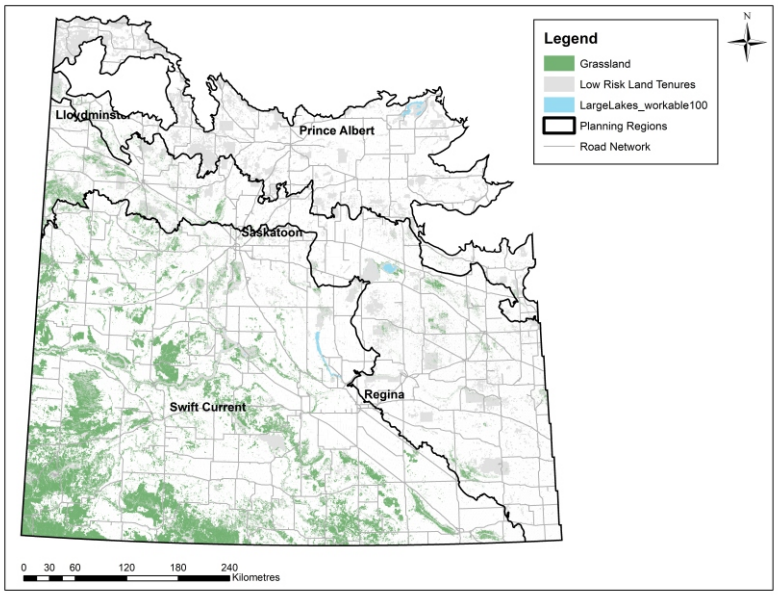
Area of grassland

State	Trend	Information	Extent
			
mixed/fair	unknown	unknown	agricultural zone

NOTE: This indicator was baselined in 2020 and new data is not available to assess trends.

Temperate grasslands are one of the most endangered ecosystems in the world. Most estimates suggest somewhere between 19 and 24 per cent of grassland cover remains in Saskatchewan. Many grassland wildlife species are experiencing population declines and many federally listed species at risk in the province rely on remaining patches of managed grassland. Grasslands also support Saskatchewan's beef industry. As such, it is important to conserve remaining grassland habitat for wildlife and people alike. Increasing the area of permanent cover, including grasslands, is a component of the Government of Saskatchewan's *Prairie Resilience* framework. This measure will increase resilience and help mitigate climate change.

Area of grassland



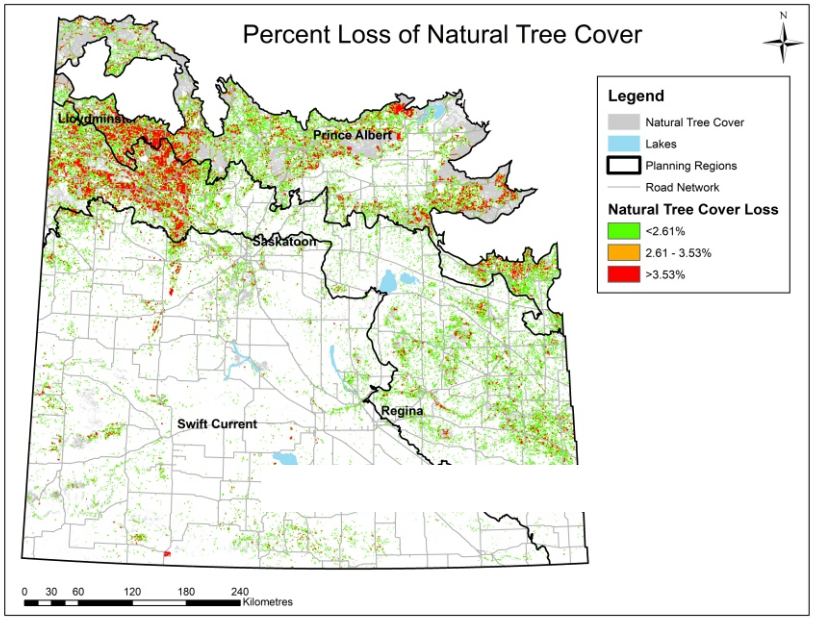
Natural tree cover

State	Trend	Information	Extent
			
mixed/fair	unknown	partial	agricultural zone

NOTE: This indicator was baselined in 2020 and new data is not available to assess trends.

Conservation of tree cover provides important habitat for forest-associated wildlife species, including economically important species such as white-tailed deer. Like other natural land covers, trees in agricultural landscapes retain stored carbon and improve resilience to climate change.

Per cent loss of natural tree cover



Natural tree cover is the percent loss of natural tree cover per quarter section between 2012 and 2017.

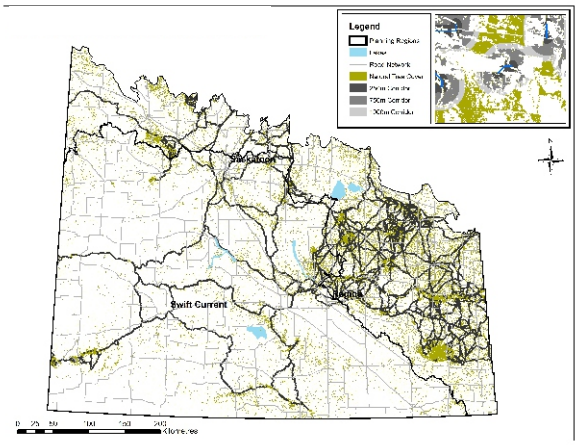
Natural tree cover connectivity

State	Trend	Information	Extent
mixed/fair	unknown	partial	agricultural zone

NOTE: This indicator was baselined in 2020 and new data is not available to assess trends.

Fragmentation of movement corridors for wildlife can occur when woodland patches are removed. The closer neighbouring patches are together, the more readily wildlife species can travel to find food, mates and living space. Conserving movement corridors helps facilitate dispersal and maintain resilience among populations of wide-ranging species.

Woodland movement corridors



Pollinator accessible cropland

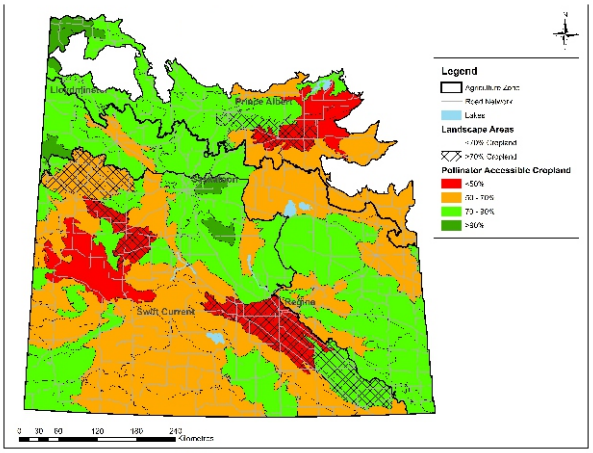
State	Trend	Information	Extent
mixed/fair	unknown	partial	agricultural zone

NOTE: This indicator was baselined in 2020 and new data is not available to assess trends.

Pollinator-accessible cropland is the proportion of cropland within 200 metres of natural land covers in landscape areas dominated by agriculture.

Flying insects such as bees and flies are responsible for pollinating several crop species popular in Saskatchewan, including canola, flax, mustard, buckwheat and coriander. Cross-pollination by insects can increase crop yields by up to 30 per cent. Natural land cover patches adjacent to cropland facilitate cross-pollination by providing nesting and foraging sites for insect pollinators. This is especially important in agriculture-dominated landscapes where the maximum benefit of cross-pollination is jeopardized by increasing isolation from natural patches where insect pollinators reside. Maintaining natural patches dispersed across agriculture-dominated landscapes will continue to facilitate cross-pollination by insects.

Pollinator accessible cropland



What we are doing

Land management remains a priority for Saskatchewan.

Government is continuing to support programs and services such as the Fish and Wildlife Development Fund, the Environmental Sustainability and Climate Change component of the Federal-Provincial Canadian Agricultural Partnership, the Agricultural Water Management Strategy and lease arrangements with private Agricultural Crown Land lessees and pasture patrons. This also includes collaborating with agricultural producers to achieve targets identified in the *Prairie Resilience* climate change strategy and Climate Resilience Measurement Framework.

Impacted sites

Why we measure this

An impacted site may be a piece of land or a body of water that has been affected by a chemical or substance as a result of human activities that may harm or alter the environment.

In Saskatchewan, environmentally impacted sites are typically associated with transportation, manufacturing, industrial, commercial or mining activities.

The Ministry of Environment's role is to manage the health of Saskatchewan's environment in a manner that supports sustainable growth through objective, transparent and informed decision-making and stewardship. Managing impacted sites allows the ministry to identify areas in the province that are a potential risk to the health and safety of the public and the environment.

What is happening

State	Trend	Information	Extent
fair	improving	adequate	province

In accordance with Section 9 of *The Environmental Management and Protection Act, 2010* (EMPA, 2010), there is a duty to report any discoveries of a substance that may cause, or is causing, harm to the environment.

What we are doing

The ministry maintains a registry of more than 3,200 reported impacted sites, including information on contaminants, location of the site, involved parties and the environmental status. The registry not only helps the ministry keep track of and monitor impacted sites and regulate parties responsible for remediation of the site, but it also helps to prioritize and focus on sites that present an immediate threat to human health and the environment.

As these sites are reported, responsible parties and the ministry assess the degree of impacts. Every time a discovery is reported, the ministry obtains valuable information and acquires a better understanding of the impacts in the province.

Since the last State of the Environment Report in 2023, the ministry has received an additional 217 historical discovery reports. Every time a discovery is reported, the ministry obtains valuable information and acquires a better understanding of the impacts in the province.

Quick facts

- From Jan. 1, 2021 to Dec. 31, 2022:
  - ~ 492 historical discoveries were entered into the impacted sites registry; and
  - ~ 47 notices of site conditions were filed.
- In 2022, the ministry launched an online public registry of environmentally impacted sites.

In response to stakeholder feedback, the ministry updated the Saskatchewan Environmental Quality Guidelines (SEQG), Endpoint Selection Standard, and the Discharge and Discovery Reporting Standard in April 2024. The guidelines were adopted from Alberta's soil and groundwater remediation guidelines. Additionally, changes were made to align the exposure pathways listed in the Endpoint Selection Standard with the pathways outlined by Alberta.

The Government of Saskatchewan Impacted Sites Fund provides financial support to municipal governments to assess and remediate orphaned impacted sites so they can be used for future economic or social development opportunities. The fund ensures municipalities do not become burdened with the costs to address impacts at the sites. For example, one municipality has received approximately $72,000 to complete site assessments at a former car dealership that was abandoned in tax arrears. The ministry continues to review applications as they are submitted each year. As of January 1, 2025, there was approximately $1.5 million available in the fund.

The Government of Saskatchewan offers several sources of data for the public including the Environmentally Impacted Sites website, where users can access information on historically impacted sites and spills, and the Saskatchewan GeoHub that houses maps of known environmentally impacted sites and discharge locations in the province.

By maintaining a registry, the ministry can prioritize sites based on risk and focus on sites that present an immediate threat to human health and the environment.

Intact boreal forest

Why we measure this

An intact boreal forest ensures diverse habitats are available for boreal wildlife species and provides a massive store of carbon. The boreal forest is important for the forestry and mining sectors. At the same time, forest harvest practices that emulate the patterns of natural disturbance and minimize the footprint of development are critical. Prompt renewal after timber harvesting and active reclamation and restoration of disturbed habitat from mineral and other sectors is necessary to ensure sustainable use of these landscapes for generations to come.

As energy, mineral exploration, forest harvest and other activities expand in the boreal region, we can expect the associated network of human disturbance (e.g. seismic, geophysical lines, forest roads) to expand as well. These features can involve clearing forest cover along corridors or expansive areas, and may be used intermittently, temporarily or permanently. These effects influence habitat suitability by altering behavioural responses among a broad array of forest-associated species. The temporary nature of human disturbance may imply lower ecological effects, but when effects are aggregated across broader landscapes, their impacts on biodiversity may be cumulative and substantial, especially where they occur in high densities.

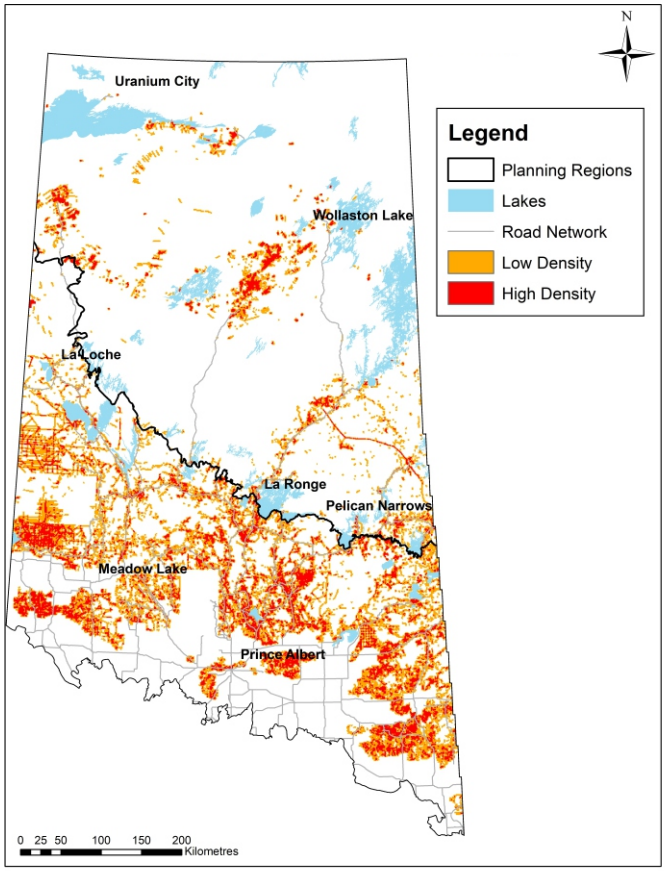
What is happening

State	Trend	Information	Extent
mixed/fair	 unknown	partial	 boreal plain and shield/taiga shield

Quick facts

- Saskatchewan's woodland caribou range planning is a significant cumulative impacts program, aiming to manage habitat for woodland caribou and other forest-dwelling species by reducing disturbance and fragmentation on the landscape.
- Forestry companies use practices such as natural forest harvest patterns to emulate natural disturbance.

Temporary linear feature density



Temporary linear feature density - total square kilometres containing low density (<1 km/km2) or high density (>1 km/km2) of temporary linear features with footprints that can be reclaimed to viable wildlife habitat (see Figure above).

What we are doing

Saskatchewan's woodland caribou range planning is a significant cumulative impacts program, aiming to manage habitat for woodland caribou and other forest-dwelling species by reducing disturbance and fragmentation. The program will document disturbance, prioritize reclamation, set standards for industry and designate areas of important habitat.

Forest harvest is an important tool for managing forest health. The boreal forest has evolved with disturbance, particularly fire, and requires disturbance to maintain ecological health. Forestry companies are using natural forest harvest practices to emulate natural disturbance patterns. Other sectors, such as mining, are working to minimize their impact on the landscape by keeping exploration and development footprints to the minimum required to operate.

Private land stewardship

Why we measure this

Land stewardship involves managing soil, air, water and biodiversity resources wisely and in a way that keeps land healthy and productive — now and into the future. Many landowners already practise good land stewardship. Several private conservation organizations and government programs support private stewardship actions through voluntary incentive-based programs. A number of private conservation agencies also contribute directly by buying, restoring and managing land for conservation purposes.

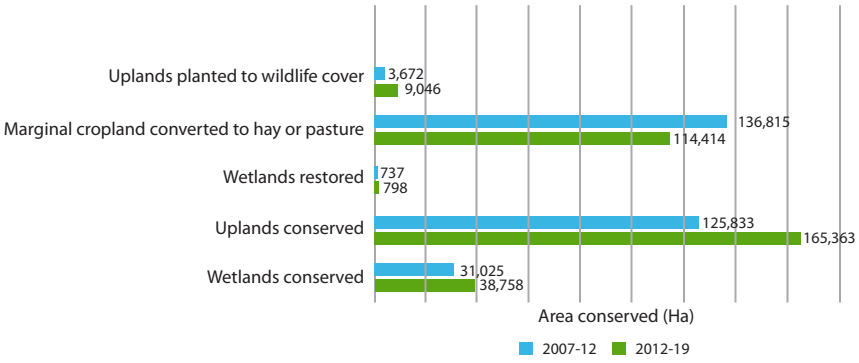
To maintain a sustainable and healthy environment, the Government of Saskatchewan needs assistance from conservation organizations and private land managers. These stewards play an important role in maintaining and conserving natural areas. Good stewardship is key to conserving our natural assets and the values they provide to Saskatchewan people.

What is happening

State	Trend	Information	Extent
mixed/fair	slight decrease	partial	agricultural zone

Private land stewardship in the State of the Environment Report is the area of private and Crown land enrolled in specific programs delivered by Prairie Habitat Joint Venture partner agencies in Saskatchewan. This expands on the 2017 indicator, which was based on the number of participants enrolled in a subset of programs managed by the Water Security Agency, Agriculture and Agri-Food Canada, and Ducks Unlimited Canada.

Area conserved through private land stewardship



Quick facts

- Since 1989, the North American Waterfowl Management Plan-Prairie Habitat Joint Venture partnership has supported private land stewardship on an estimated two million hectares of land in southern Saskatchewan.
- As of 2017, Statistics Canada estimates that 28 per cent of Saskatchewan farms had developed a formal Environmental Farm Plan, while an additional eight per cent of farms were in the process of developing one.
- Agricultural land provides important habitat to a variety of wildlife species, with natural land for pasture, woodlands and wetlands having the highest habitat value. An estimated 19.3 per cent of agricultural land in Saskatchewan is pasture while wetlands and woodlands make up four per cent.

What we are doing

Directed by the Saskatchewan Growth Plan, the Ministry of Environment will work with private land stewards to achieve targets identified in the Climate Resilience Measurement Framework for preserving natural lands, enhancing soil organic matter, promoting nutrient stewardship and achieving economic resilience and crop diversification. Additionally, government will strive to align regulations, policies and programming to support and reward producers who provide habitat by maintaining natural areas.

Government will also continue to support private land stewardship through programs such as the Fish and Wildlife Development Fund, Environmental Sustainability and Climate Change component of the Federal-Provincial Canadian Agricultural Partnership, Agricultural Water Management Strategy and through lease arrangements with private agricultural Crown land lessees and pasture patrons.

Saskatchewan is also a key partner in the Prairie Habitat Joint Venture, a multi-agency conservation partnership under the North American Waterfowl Management Plan (NAWMP) agreement between Canada, the United States and Mexico. Through their participation, Saskatchewan and other prairie provinces support implementation planning and enable funding support for important private land stewardship programs through NAWMP.

Protected and conserved areas

Why we measure this

In support of the Prairie Resilience strategy, Saskatchewan has committed to protecting 12 per cent of the province's terrestrial areas and inland waters - areas that represent our diverse natural ecosystems.

What is happening

State	Trend	Information	Extent
mixed/fair	increasing	adequate	province

Protected areas are added to the provincial Protected and Conserved Areas Network each year. To date, 6,354,385 ha or 9.76 per cent of Saskatchewan's land and waters are contained within the network.

A range of approaches is used for conservation — from traditional tools such as parks and ecological reserves to working landscapes conserved through *The Wildlife Habitat Protection Act* and conservation agreements with ranchers.

A multi-ministry working group assesses and prioritizes areas for conservation by:

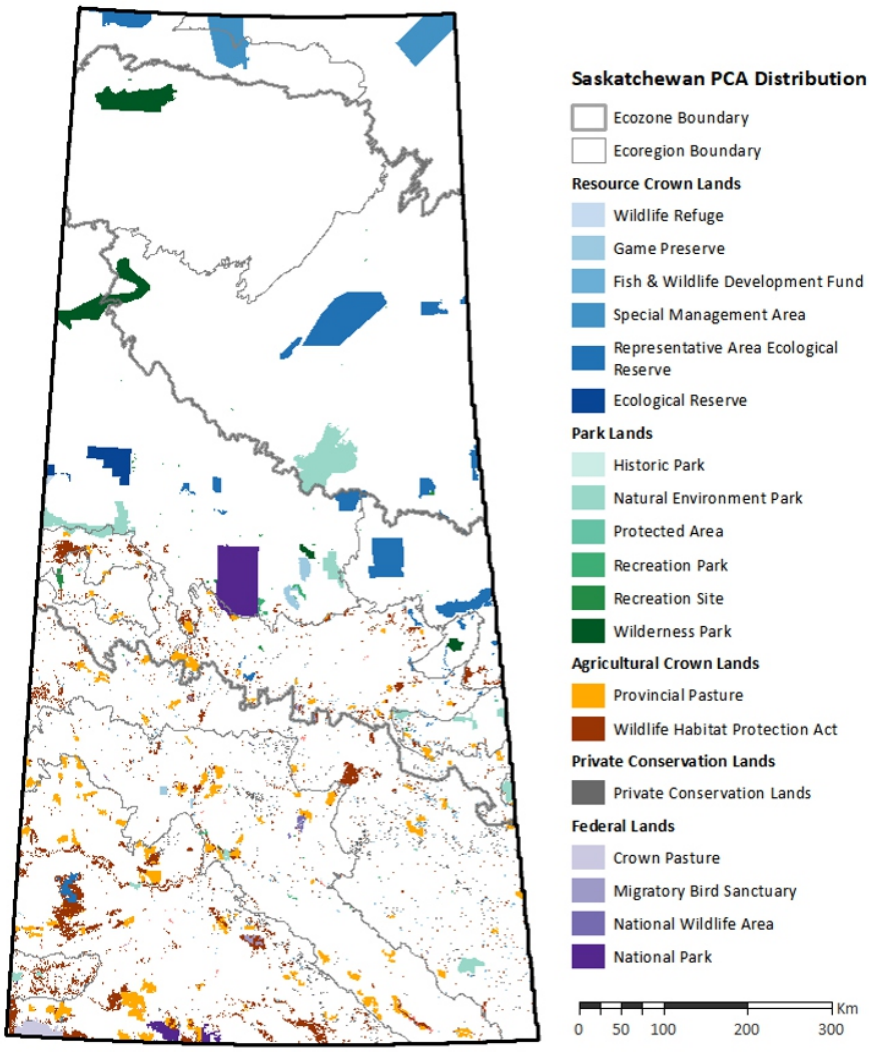
- Identifying appropriate tools for protection based on ecological value, land tenure, economic potential and cultural significance;
- Establishing a work plan to achieve provincial goals for biodiversity conservation; and
- Identifying actions and challenges associated with meeting provincial and national targets.

What we are doing

The Protected and Conserved Areas Working Group is a multi-ministry committee that developed the Protected and Conserved Areas Roadmap. The roadmap identifies desired outcomes and goals, as well as the significant steps needed to reach and maintain protection of 12 per cent of the province's land and waters. Saskatchewan is currently working to implement the outcomes, goals and actions identified in the roadmap.

Through the Ministry of Environment, Saskatchewan is exploring tools such as other effective area-based conservation measures (sometimes called OECMs), where biodiversity conservation is not necessarily the primary goal, yet they are managed over the long term in ways that results in effective and enduring protection of biodiversity and ecosystems. This expands the conservation of biodiversity into areas with low to moderate human use levels, but with safeguards to ensure significant components of biodiversity have long-term protection.

Saskatchewan protected and conserved areas network, December 2020

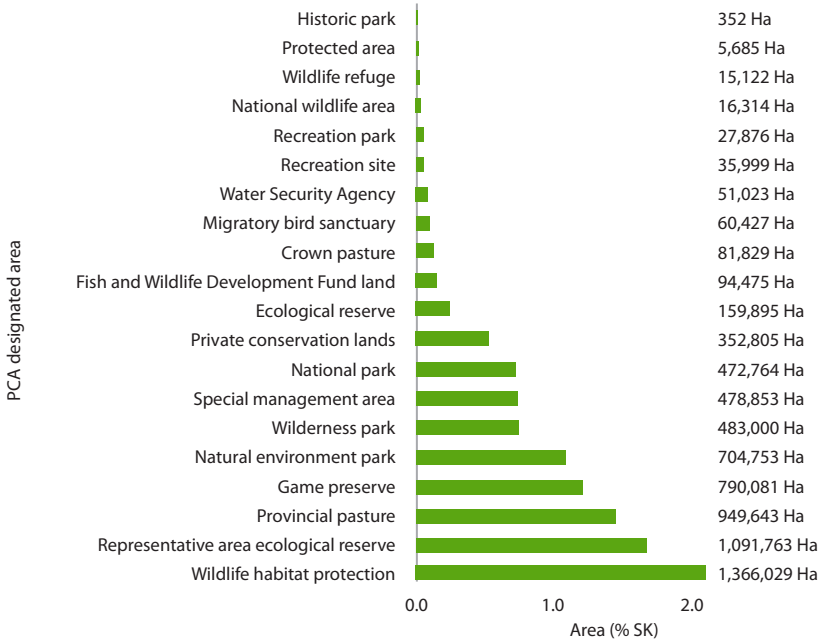


Protected and conserved areas (PCAs) by ecoregion (Ha, % total ecoregion area, % total SK area)

Ecoregion	PCA area (Ha)	PCA area (% Ecoregion)	PCA area (% SK)
Cypress Upland	107,735	21.46%	0.17%
Mixed Grassland	1,347,466	15.59%	2.07%
Mid-Boreal Lowland	329,977	15.26%	0.51%
Tazin Lake Upland	253,534	14.10%	0.39%
Mid-Boreal Uplands	1,329,561	13.05%	2.04%
Selwyn Lake Upland	337,069	11.80%	0.52%
Boreal Transition	497,452	9.18%	0.30%
Churchill River Upland	942,911	8.32%	1.45%
Moist Mixed Grassland	466,445	6.88%	0.72%
Aspen Parkland	527,880	6.46%	0.81%
Athabasca Plain	208,197	2.82%	0.32%
N/A	6,158	N/A	0.01%
TOTAL	**6,354,385**		**9.76%**

Note: N/A indicates PCAs outside of the ecoregions listed, as Saskatchewan's Ecoregion Boundary dataset excludes a small portion of Saskatchewan's total area.

PCA designated area (Ha) as a proportion of total Saskatchewan area (%)



Note: Individual Designated Area statistics do not account for overlap within the PCAN; therefore, hectare values should not be summed within this figure.

Waste reduction and recycling

Why we measure this

Saskatchewan has committed to reducing the amount of waste generated per person by 30 per cent by 2030 and 50 per cent by 2040, based on 2014 baseline levels. Finding ways to enhance and expand waste diversion across Saskatchewan will be key in meeting our goals.

Waste management includes reducing, reusing and recycling our waste to prevent it from ending up in Saskatchewan's landfills. Waste reduction or prevention is the preferred approach to managing waste, as it avoids creating additional waste through product design and consumer purchasing habits. Reusing or repurposing an item can give products a second life before they become waste, while recycling is one of the final options available to responsibly manage waste before disposal.

Recycling uses time, energy and resources to reprocess waste materials into new products or materials. Saskatchewan has several regulations and programs that use the extended producer responsibility (EPR) model to encourage reducing, reusing and recycling products and materials. EPR is a policy in which responsibility for the end-of-life management of products and materials shifts to the producers of these materials (i.e. brand owners, first importers or manufacturers) and away from municipalities and general taxpayers. The Ministry of Environment maintains regulations for EPR programs in Saskatchewan for used oil and antifreeze, scrap tires, waste paint, electronic equipment, printed paper and packaging, agricultural plastics, batteries and household hazardous waste. The ministry also works with SARCAN Recycling through a contract to manage the province-wide depot system for the collection and recycling of beverage containers.

One way to reduce pressure on the environment and sustain scarce resources is to divert waste before it gets to landfills. It's important to remember that much of what we describe as waste or trash could be a valuable resource. Less waste means better landfill management and less pressure on natural resources. Recycling is an indicator of public commitment to share in the responsibility for environmental stewardship.

What is happening

State	Trend	Information	Extent
			
good	improving	partial	province

Since 2014, waste generated in Saskatchewan has decreased from 845 kilograms/capita in 2014 to 729 kilograms/capita in 2022. A significant and decreasing trend has been observed since 2010. Reducing the amount of waste going to landfill increases their longevity and reduces some of the negative impacts on the environment.

In 2023, Saskatchewan citizens recycled 85 per cent of all deposit-paid, ready-to-serve beverage containers sold in the province, for a total of more than 490 million beverage containers collected.

Quick facts

- In 2023, 970,000 tires (more than 21,000 tonnes) were collected through the province-wide tire recycling program.
- In 2023, the used oil recycling program collected and recycled more than 17 million litres of used oil, over 300,000 litres of used antifreeze, 1.8 million oil filters and almost 440 tonnes of plastic containers.
- Saskatchewan launched an agricultural plastics recycling program under *The Agricultural Packaging Product Waste Stewardship Regulations* in 2018. The program is the first of its kind in Canada and provides a responsible option for producers to return plastic grain bags for recycling. In 2023, the program collected and recycled over 1,700 tonnes of grain bags.

Since 2020, the average number of containers recycled and recovery rate has been trending upward.

The Saskatchewan Paint Stewardship Program collected over 370,000 litres of waste paint and over 130 tonnes of paint cans and containers in 2023. Leftover household paint is also collected at all 73 SARCAN locations for customers to take free of charge and reuse. Over 82,000 litres of paint were collected and reused under the paint reuse program.

Saskatchewan established the first industry-led electronics recycling stewardship program in North America. In 2018, the program was expanded to incorporate additional products, including net-top computers, external disk drives, desktop scanners, e-book readers, floor-standing printers and countertop microwaves. In 2023, the Recycle My Electronics Program collected and recycled more than 1,900 tonnes of end-of-life electronics.

The Household Packaging and Paper Stewardship Program Regulations came into effect in 2013, requiring industry and municipalities to share the cost of operating municipal blue box programs. In 2023, more than 35,000 tonnes of printed paper and packaging materials were recycled. From 2021-22, the ministry reviewed the regulations and program and conducted stakeholder engagement on proposed regulatory amendments. New regulations came into force in March 2023 and key changes included shifting to a program fully funded and operated by producers, changing business exemptions and adding packaging-like products to the list of collected materials. SK Recycles is implementing the new province-wide program on behalf of obligated producers using a phased-in approach to transition municipalities to the new program. Phase 1 was launched on December 1, 2024, and focuses on transitioning larger municipalities with curbside and multi-family collection to the new program. Phase 2 planning is underway and is scheduled to begin in winter 2025-26 focusing on curbside and multi-family collection in smaller communities. Phase 3 is scheduled to begin in winter 2026-27 and includes implementing staffed depots in eligible communities for the collection of flexible plastics and foam packaging. SK Recycles launched the collection of flexible plastics, plastic foam and glass in communities with SARCAN depots in December 2024, ahead of schedule.

What we are doing

Plastic waste management continues to be a significant and rapidly evolving public issue putting pressure on municipal recycling programs in Saskatchewan and throughout Canada. In November 2018, through the Canadian Council of Ministers of the Environment (CCME), federal, provincial and territorial governments approved the Canada-wide Strategy on Zero Plastic Waste. Building on the Ocean Plastics Charter, the CCME strategy takes a circular economy approach to plastics and provides a framework for action. The key areas in the strategy include product design, single-use plastics, collection systems, markets, recycling capacity, consumer awareness, aquatic activities, research and monitoring, clean up and global action. Activities under the strategy are nearing completion, and future directions for supporting waste management in Canadian jurisdictions are now being considered. Work completed by the CCME complements other waste reduction efforts in the province, such as the development of the Solid Waste Management Strategy.

The Government of Saskatchewan continues to work with partners and stakeholders to implement the actions in the Solid Waste Management Strategy, which was released in January 2020. The strategy strives for a practical, sustainable and integrated solid waste management system in Saskatchewan, and serves as a roadmap for waste reduction and management. It outlines six goals and several commitments to raise public awareness, encourage regional collaboration, modernize rules and regulations, enhance waste diversion, foster innovation and demonstrate government leadership.

Saskatchewan's strategy adopts and supports the targets set in the CCME's Strategy on Zero Plastic Waste – to reduce the amount of waste generated per person by 30 per cent by 2030 and 50 per cent by 2040. The Solid Waste Management Strategy also supports the Saskatchewan Growth Plan, ensuring economic growth is balanced with responsible management of our waste and protection of our environment.

Most of the waste we generate is actually a resource that can be used more than once. A thriving Saskatchewan economy is a circular economy, where the value of materials is recaptured by reuse and recycling programs.

Quick facts

- In 2023, the program for household hazardous waste collected and responsibly managed over 13,000 litres of flammables, corrosives or toxic household waste, and over 15,000 units of aerosols and other physically hazardous products.
- In 2023, the program for household batteries collected and recycled over 120 tonnes of single use and rechargeable batteries.

forest

Annual timber harvest

Why we measure this

Healthy forests provide benefits such as clean air, fresh water, wildlife habitat and materials for building homes. A key forest management consideration is how forests change over time – young trees grow to maturity, decline and eventually die. Throughout this lifecycle a forest may be harvested for wood products, burned in wildfires or continue growing until it becomes old and collapses or is killed by insects and diseases.

Forest management plans are one tool used by professional foresters to care for our forests. When trees are harvested according to these plans, the harvest levels will be sustainable and the forests and the benefits they provide will continue. In Saskatchewan's managed forests, the growth rate exceeds the rate of harvest. This means that some areas will age past maturity and more harvesting may be necessary to keep the forest healthy.

What is happening

State	Trend	Information	Extent
fair	mixed	partial	commercial forest and forest fringe

For each timber supply area in the commercial forest and fringe forest (Crown agriculture lands) zones, an annual allowable cut (AAC) is calculated. The AAC is determined from computer modelling and analysis of forests over a 200-year period. To ensure sustainable forest management, the amount of harvest must not exceed the AAC over a specified term. Harvesting on private and federal lands is not regulated in Saskatchewan, but for the purpose of this indicator, timber harvested from private and federal lands have been included and their AAC have been estimated.

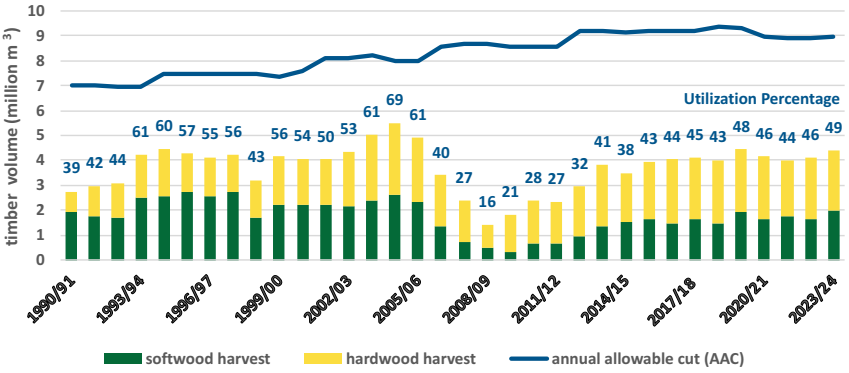
Comparing the AAC to the realized annual harvest is a key performance indicator of sustainable forest management. The comparison provides information on the over- or under-utilization of the wood supply and how the forestry industry is performing relative to its allocation of timber. Additionally, it may highlight potential investment opportunities for Saskatchewan's forestry sector. A higher utilization percentage may indicate that the forest industry is performing well, whereas a lower utilization percentage may indicate a downturn.

For example, the low realized annual harvest to AAC utilization percentages observed between 2006 and 2009 in Saskatchewan coincided with a period of global economic recession. Since then, as the forest industry has recovered, the utilization percentage has increased and stabilized. However, the utilization percentage has not returned to pre-recession levels. In 2023-24, of the 8.94 million cubic metre provincial AAC, 4.39 million cubic metres of timber were harvested. This represents a 49 per cent utilization. As a consequence of not achieving a higher utilization percentage, Saskatchewan's forests may age past healthy maturity and be more susceptible to natural disturbances, such as wildfires, insects and disease.

Quick facts

- In 2023-24, timber harvest from Saskatchewan's forests was 4.39 million cubic metres (49 per cent of the sustainable annual allowable cut).

Timber harvest and annual allowable cut in Saskatchewan



What we are doing

Overharvesting is not permitted in our Saskatchewan forests. Harvest allocation holders are required to ensure their harvest levels do not exceed the sustainable AAC for their harvest area.

Annual harvest levels are further tracked and verified by the Ministry of Environment. This indicator is intended to provide stakeholders with evidence that the harvest at the provincial scale is being conducted in alignment with the principles of sustainable forest management.

For more information on the forest sector in Saskatchewan, visit [saskatchewan.ca/forestry.](saskatchewan.ca/forestry)

Forest sector contributions to the province

Why we measure this

This indicator measures the economic benefits derived from harvesting timber and manufacturing forest products in the province.

Sustainable forest management includes balancing social, economic and environmental benefits from forest management activities. Full use of the annual allowable cut has the potential to generate more than $2.2 billion in forest products sales annually and support more than 8,000 direct and indirect jobs.

Quick facts

- Forest product sales were $1.21 billion in 2023.
- The forestry sector supports nearly 8,000 direct and indirect jobs.

What is happening

State	Trend	Information	Extent
good	improving	adequate	entire province

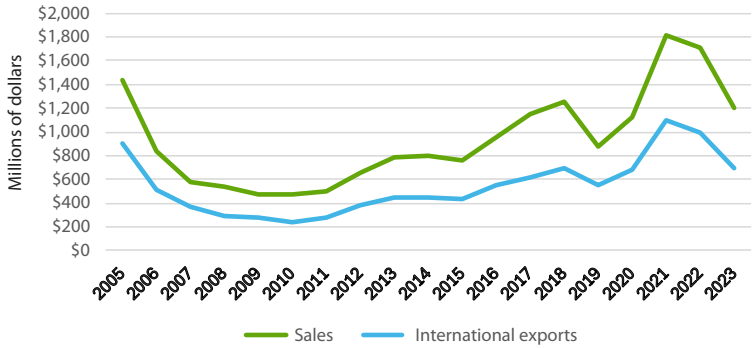
In 2023, forestry was the second largest industry and a major employer in northern Saskatchewan, representing approximately one per cent of the provincial gross domestic product. Forestry provides economic development and employment opportunities, resulting in an improved quality of life for the people of northern Saskatchewan.

Saskatchewan currently has six large primary forest products manufacturing facilities (one pulp mill, two oriented strand board mills and three sawmills), as well as many smaller primary and secondary forest products manufacturing facilities.

What we are doing

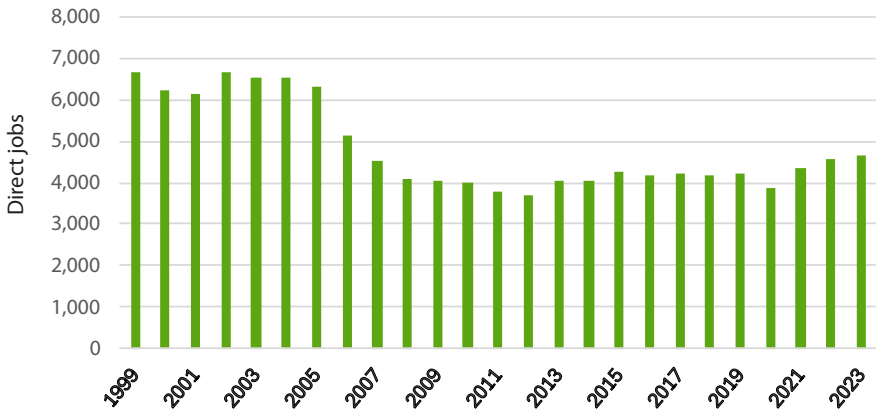
In 2023, the forestry sector sold $1.21 billion worth of forest products, 58 per cent of which was exported to other countries.

Saskatchewan forest products



In 2023, the forest sector supported nearly 4,645 direct jobs.

Forestry sector direct employment



Forest type and age

Why we measure this

Healthy forests provide many benefits, such as clean air, fresh water, healthy soils, habitat for plants and animals, materials for building homes and paper products. Forest management is based on the idea that forests change over time, young trees grow until they reach maturity. During this time, a forest may be cut for wood products, burn in wildfires or continue growing until trees become old and fall over or are killed by insects and disease.

Forest management plans are used by professional foresters to care for the forest. When trees are cut down following these plans, the harvest is sustainable, meaning that forests and the good things they provide will always be there. In Saskatchewan's managed forests, there is a mix of different forest types, and there are more mature and older trees than would be expected naturally. Protecting forests from fires, insects and disease is one of the reasons why our forests are now older. As a result, tree cutting is needed to help the forests stay healthy.

The type and age of forests are important factors to consider when managing Saskatchewan's natural resources. Aging forests are more vulnerable to wildfire, insects and disease. Forest management in Saskatchewan is designed to result in a forest age structure that emulates natural disturbance. By emulating natural disturbances, the natural range of ecosystems should be maintained, resulting in a more resilient system.

What is happening

State	Trend	Information	Extent
			
fair	mixed	partial	province, provincial forest* and greater commercial forest zone*

The province of Saskatchewan covers an area of approximately 65.2 million hectares. The northern half of the province is largely covered by upland forests, wetlands and water. Grass and agricultural lands cover 36 per cent of the province, mainly in the south.

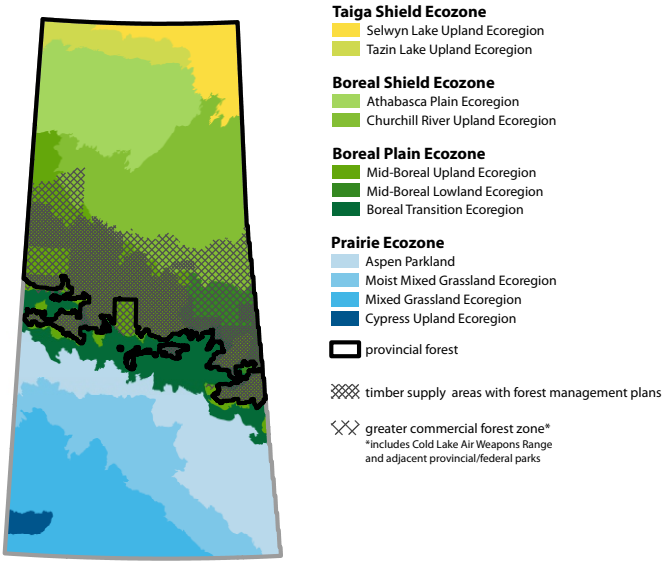
Four ecozones are found within the province: Taiga Shield, Boreal Shield, Boreal Plain and Prairie. The provincial forest is a region defined in *The Forest Resources Management Act* covering approximately 34 million hectares within the Taiga Shield, Boreal Shield and Boreal Plain ecozones.

About 64 per cent of the provincial forest is an upland forest (41 per cent softwood, eight per cent mixed wood, seven per cent hardwood, and eight per cent open productive/shrub forest types). Wetlands and water each account for 17 per cent of the provincial forest. Grass, barren rock/sand, agricultural and anthropogenic areas make up the remaining two per cent of the landcover.

Quick facts

- The northern half of Saskatchewan is the provincial forest. Of this area, 65 per cent is forested, an area roughly the size of the entire United Kingdom.

Ecozones and analysis areas

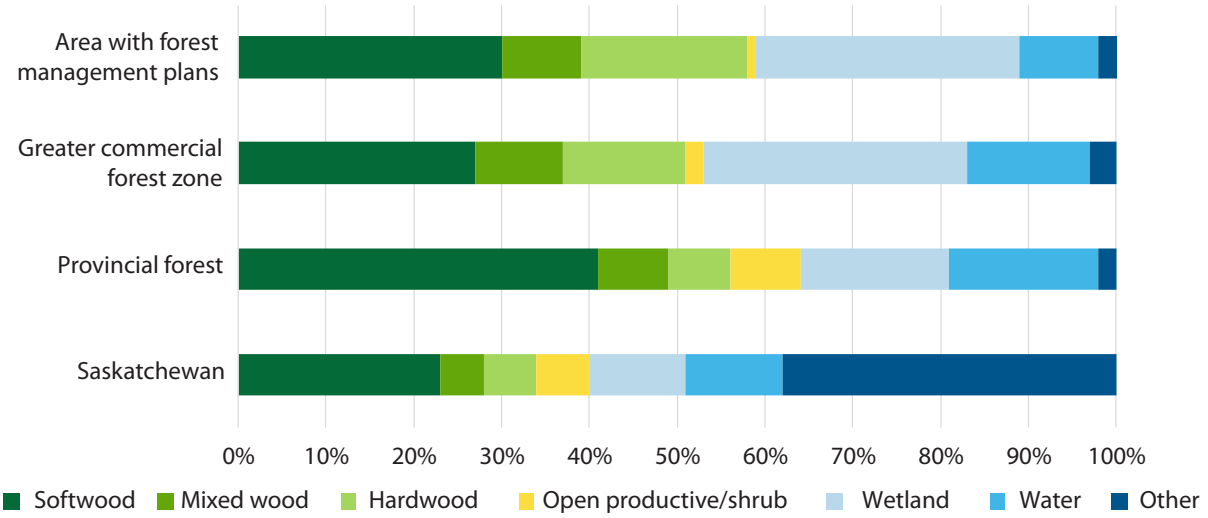


**For the purposes of this indicator, the 11.7 million-hectare commercial forest zone has been expanded to include the Cold Lake Air Weapons Range, and provincial and national parks within and adjacent to the commercial forest zone. Within the provincial forest, the greatest amount of human activity occurs within this 14.3 million-hectare area referred to here as the greater commercial forest zone.*

The greater commercial forest zone is largely softwood, but features a greater proportion of hardwood and mixed wood forest types compared to the provincial forest. Wetlands also feature prominently within the greater commercial forest zone, covering nearly a third of the area.

Most forest-based economic activity and fire suppression occurs within the greater commercial forest zone, which is subdivided into a number of timber supply areas. As of 2019, there are six active forest management plans, covering 8.3 million hectares.

Forest and non-forest landcover types within the province, the provincial forest, the greater commercial forest zone* and those timber supply areas with active forest management plans



*Including Cold Lake Air Weapons Range and provincial and federal parks within or adjacent to the commercial forest zone

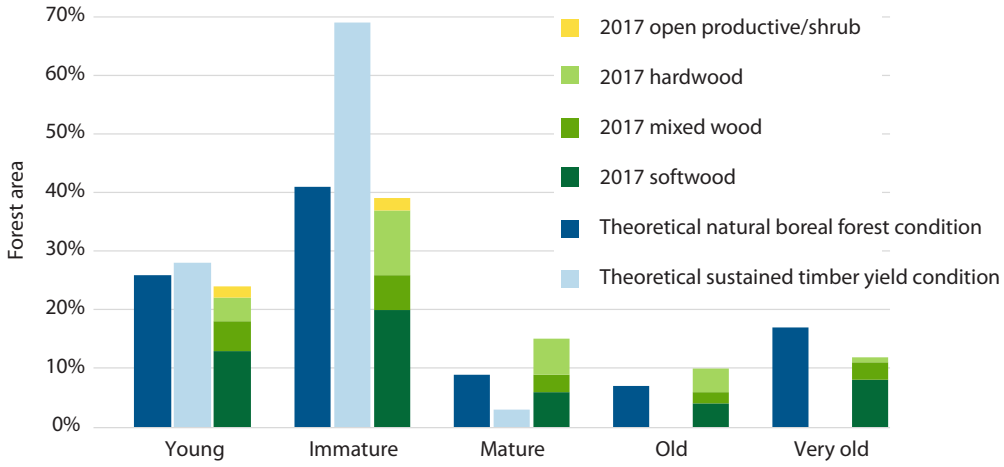
Boreal forests, when uninfluenced by human activities, are shaped by natural disturbances such as wildfire, insects, disease and wind. In theory, the greatest amount of forest area is typically found in the youngest forest ages, and the least amount of forest area is typically found in the oldest forest ages. In contrast, forests managed solely to sustain timber yield are evenly distributed among young, immature and mature forest ages, with very little area in the old and very old forest ages. The greater commercial forest zone's current forest age structure falls between these two theoretical patterns.

Where humans have been putting out wildfires for decades, the forest has become older than it would under natural boreal forest conditions. This can lead to more intense wildfires and more serious insect infestations. Letting wildfire play its natural role when safe and feasible is one way to address this age imbalance; carefully planned forest harvesting can be another.

Native plant and animal species are often associated with certain forest and wetland types and certain forest ages. The availability of habitat for various species may be partially assessed through the abundance and distribution of forest types, forest ages and wetlands. Maintaining the natural range of ecosystems results in a more resilient system, helping to sustain overall biological diversity. Ecosystem diversity, the variety and relative abundance of ecosystems and their plant and animal communities is necessary for species preservation.

The ideal distribution of forest ages for any management area depends on the ecology and management goals for that area. In reality, the target forest age structure is somewhere in between the natural pattern and that of a forest managed solely for timber. What is important is that wood fibre, habitat and ecosystems are maintained.

Forest area in the greater commercial forest zone* by forest age and type



*including Cold Lake Air Weapons Range and provincial or federal parks within and adjacent to commercial forest zone

More detailed information can be found in this technical report.

What we are doing

Saskatchewan's forest management planning process emulates natural disturbances – unlike a sustained timber yield approach – allowing ecosystems to be maintained. This results in a more resilient system, which sustains biological diversity, protects habitat, maintains recreational opportunities and ensures economic growth.

Forests must be managed to balance habitat needs, recreational opportunities and economic growth. Like a well-diversified financial portfolio makes it easier to adapt to economic market changes, biological diversity makes it possible for ecosystems and species to respond and adapt to environmental change. Generally, forest management practices over the last several decades in Saskatchewan have shifted the distribution of forest ages towards older classes in the greater commercial forest zone.

Indigenous involvement in the forest sector

Why we measure this

The Government of Saskatchewan is committed to promoting the use of provincial forest resources in an economically, socially and environmentally sustainable manner. Indigenous involvement is critical to the success of the forestry sector in Saskatchewan.

Northern Saskatchewan contains a significant population of Indigenous people. The largest industries in the region are forestry and mining. Saskatchewan has several large and small Indigenous forestry businesses that are major employers of Indigenous people in northern Saskatchewan.

Quick facts

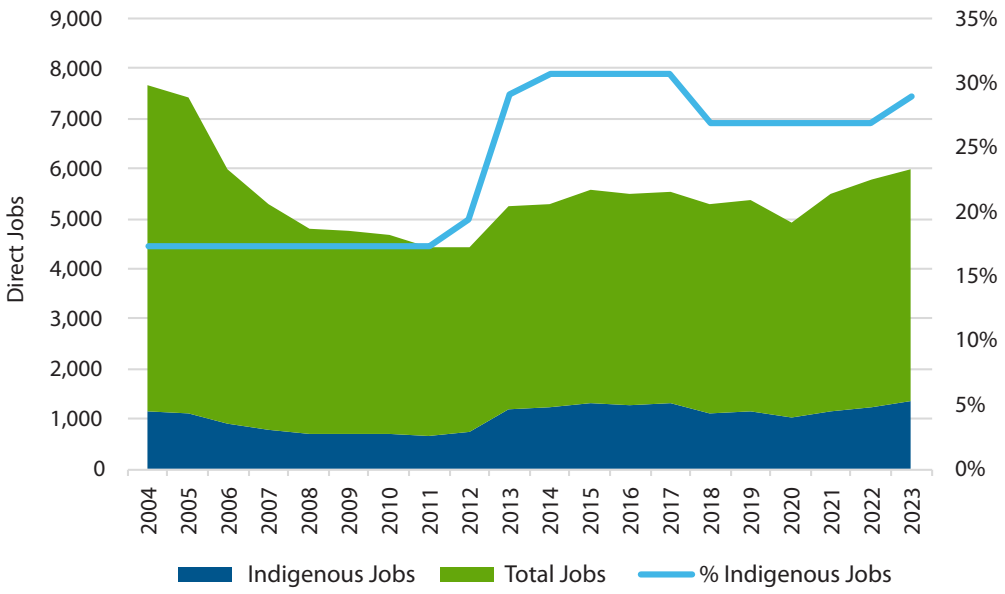
- Approximately 32 per cent of the provincial timber supply is allocated to Indigenous businesses, by far the largest of any province.

What is happening

State	Trend	Information	Extent
good	no change	adequate	provincial forest

Indigenous people represent approximately 30 per cent of the forestry sector workforce in Saskatchewan, which is by far the largest of any province.

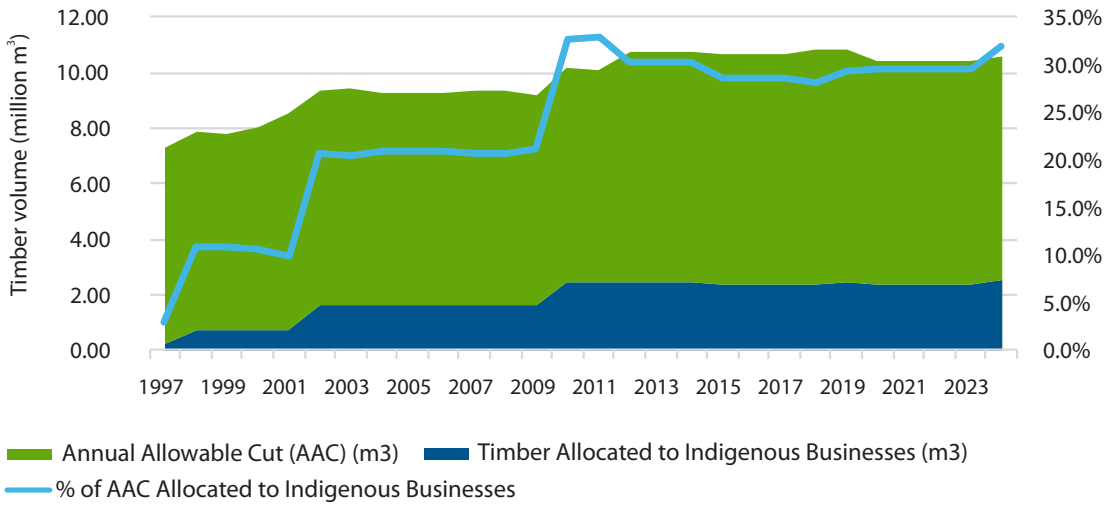
Indigenous involvement in the forest sector



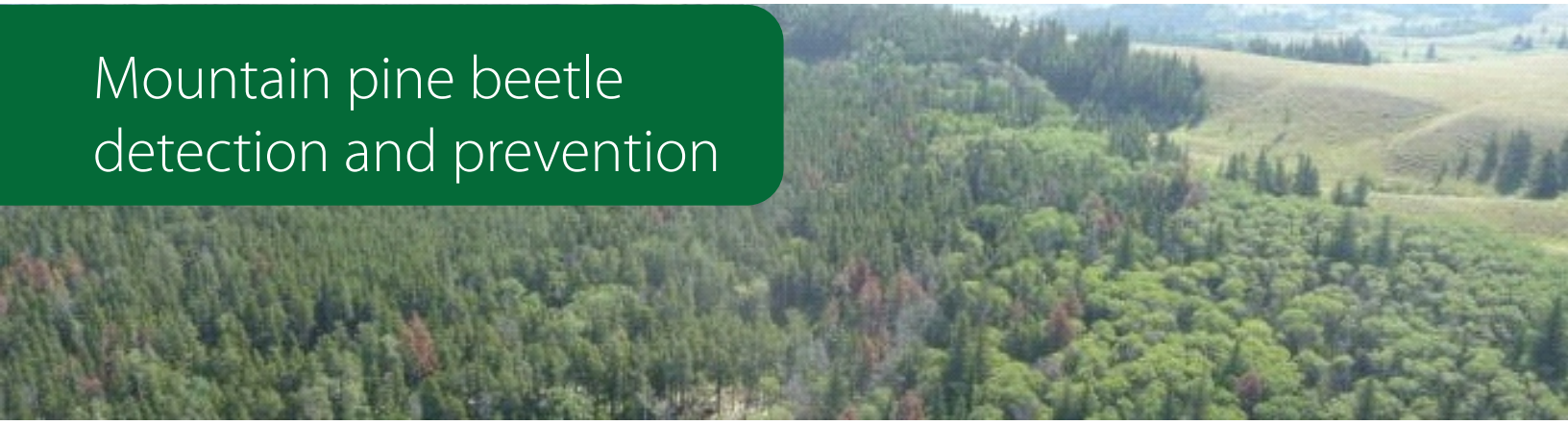
What we are doing

The annual allowable cut allocated to Indigenous businesses is one indicator of the level of economic involvement and benefits derived from the forestry sector by Indigenous people. NorSask Forest Products, located in Meadow Lake, is the largest First Nations-owned and operated sawmill in Canada.

Indigenous timber allocations in Saskatchewan



Mountain pine beetle detection and prevention



Why we measure this

The mountain pine beetle (MPB), or *Dendroctonus ponderosae*, is a small bark beetle about 4.0 to 7.5 mm in length – approximately the size of a grain of rice. MPB is the most significant pest threat to pine forests in North America. It can colonize and kill jack pine trees, posing a threat to pine forest ecosystems and sustainable development of the forest industry in Saskatchewan and across Canada.

Saskatchewan is a critical barrier to stopping the spread of mountain pine beetles in Canada's boreal forest. If MPB spreads across Saskatchewan, the rate of spread will likely increase substantially because the distribution and density of pine forests increases in eastern forests. Confirming MPB (presence or absence) in the northern boreal is a significant measure, helping to guide the Ministry of Environment's risk assessment policies and subsequent response actions.

The MPB outbreak in British Columbia infested more than 18 million hectares and killed 731 million cubic metres, or 54 per cent, of the province's merchantable lodgepole pine. Those losses impacted forest-dependent communities.

Currently, no mountain pine beetles have been detected in the boreal monitoring area.

Forestry is the second largest industry in Saskatchewan's north. The forest industry depends on a sustainable supply of forest products. Jack pine represents 43 per cent of Saskatchewan's softwood timber supply. In 2023, Saskatchewan's forestry industry supported nearly 8,000 direct and indirect jobs and generated more than $1.2 billion in forest product sales. Losses of pine inventory would reduce the long-term sustainable timber supply available to existing mills, resulting in reduced manufacturing of forest products and job losses.

Many of Saskatchewan's most visited provincial parks (Cypress Hills, Meadow Lake, La Ronge, Narrow Hills, Candle Lake and Makwa Lake) have large pine forests that, if killed by the beetle, would have serious implications on visitation, experience and public safety.

The beetle has been designated under *The Forest Resources Management Act,* which makes it illegal to import, transport and store pine logs and pine forest products with bark attached if they originate from British Columbia, Alberta, an area in southwestern Saskatchewan around Cypress Hills Interprovincial Park and the United States.

What is happening

State	Trend	Information	Extent
			
good	improving	partial	entire province

Since crossing the Rocky Mountains in two mass dispersal events in 2006 and 2009, MPB has spread into lodgepole pine and jack pine forest ecosystems in central and eastern Alberta. Monitoring and early detection of the presence and severity of insects and diseases in the forest helps ensure timely detection and response.

The overall trend is improving as the risk of the eastern spread through Alberta has declined. Since reaching a peak in 2019, populations in Alberta collapsed by 94 per cent as of 2022. The decline can be attributed to sustained early and aggressive control efforts and climatic events that created unfavourable conditions for beetle development and survival. Extreme cold winters in 2019, 2020 and 2021, as well as a cool, wet summer in 2019, slowed population growth. Large populations that had been building in the Jasper and Hinton areas of western Alberta have now collapsed. The threat that MPB will spread east through central Alberta and into Saskatchewan's northwest boreal forest has declined. However, MPB populations can increase as quickly as they decrease, and the threat may return in the future if we experience climatically suitable conditions.

What we are doing

In Saskatchewan, MPB surveillance is currently conducted in the unique lodgepole pine forests in the Cypress Hills Interprovincial Park. As well, between 2011 and 2023, the ministry established a network of helicopter landing and tree-baiting sites to improve access and capacity to detect the leading edge of MPB infestation in the northern boreal forest. Trees, baited with MPB attractant chemicals were established in 57 areas where highly susceptible pine exists throughout northwest Saskatchewan. The purpose was to provide an early detection system to inform a quick response. These sites were located north and south of the Cold Lake Air Weapons Range, with seven sites located within the Air Weapons Range. These sites have been retired for now but can be readied to deploy tree baits if the MPB risk increases again in the future.

Survey and monitoring data support a framework that is crucial to the integrity of a long-term forest health management plan for Saskatchewan. The measure for MPB in the boreal forest is currently its presence or absence. Currently, no mountain pine beetles have been detected in the boreal monitoring area.

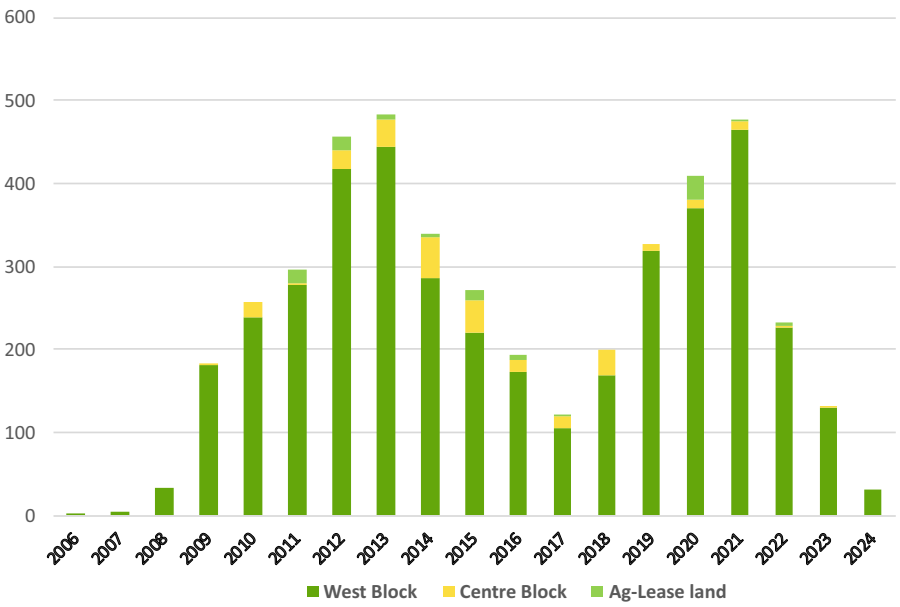
Quick facts

- Mountain pine beetles prefer lodgepole pine but can attack and kill all the pine species found in Canada.
- Mountain pine beetles affect pine trees by laying eggs under the bark. The beetles introduce a blue stain fungus into the sapwood that prevents the tree from repelling and killing the attacking beetles. The fungus also restricts movement of water and nutrients in the tree. If you see lumber with blue stains, it may have been salvaged from an MPB-infested stand.
- Mountain pine beetles can survive very cold temperatures, below -40°C. Mild winters and warm summers contribute to the spread of mountain pine beetle.

The MPB is a natural component of the lodgepole pine forest ecosystem in Cypress Hills Interprovincial Park in southwestern Saskatchewan and is actively managed through aerial and ground surveys. All lodgepole pine stands within Cypress Hills Interprovincial Park (Centre Block and West Block) and adjacent forested agricultural leased lands around the park (excluding Alberta) are surveyed. If beetles are found, surveyors expand their search area in a circle around infested trees to locate all the trees attacked in the current year.

Once infested trees are found and marked, the next step is a quick and aggressive control response. The most effective control method is to find the beetle-infested trees in the fall and winter months, cut them down and burn them before the beetles can leave and attack healthy pine trees in the late spring or early summer. MPB-infested trees are controlled within Cypress Hills Interprovincial Park by the Ministry of Parks, Culture and Sport. The recent decline in the number of MPB trees controlled as shown in the graph below is a direct correlation to the decline in MPB presence in the Cypress Hills Provincial Park.

Number of MPB trees controlled in Cypress Hills Provincial Park, 2006 to 2024



Natural forest disturbance

Why we measure this

Disturbances – such as wildfires – are natural and essential processes in Saskatchewan's boreal forests. They help keep the forest landscape healthy diverse and create a mosaic of habitat types that promotes biodiversity. Natural forest pattern harvesting, an element of sustainable forest management, aims to more closely approximate the sizes, shapes and structures of wildfires to create a mosaic of stand types and ages similar to what wildfire creates. Natural disturbance levels are closely tracked and monitored each year. These levels are then compared to natural disturbance thresholds established in each forest management plan, which are adjusted to ensure sustainable harvest levels where disturbance exceeds the threshold.

While natural disturbances are essential to forest health and renewal, they can also have a negative impact on communities, businesses and public safety. Wildfire can threaten human safety, property and infrastructure, and smoke often becomes a public health concern. Wildfires are also a large source of greenhouse gas emissions in our province.

What is happening

State	Trend	Information	Extent
Insect and disease fair	mixed	 adequate	 commercial forest

State	Trend	Information	Extent
Wildfire fair	 deteriorating	 adequate	 commercial forest

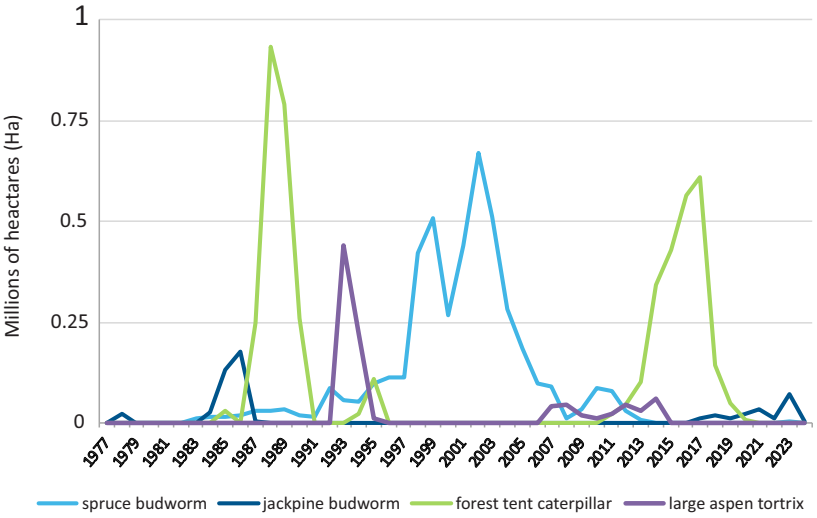
Natural disturbances are nature's way of shaping the boreal forest. Tree species that grow in the boreal forest have evolved over time to adapt to, and even require, periodic disturbance as part of their natural life cycles. These disturbances can provide forest managers with a guide for how to manage timber harvest sustainably and understand how the landscape is changing from year to year. To do this, natural disturbances need to be understood and measured over time.

Insect and disease disturbances are a natural part of the forest ecosystem but can become problematic when large outbreaks occur. Insects – such as spruce budworm, jack pine budworm, and hardwood defoliators like forest tent caterpillar and large aspen tortrix – feed on tree foliage and can cause tree mortality after repeated attacks. All of these insects are generally cyclic in their outbreak behaviors. The spruce budworm cycle is relatively long, with peak outbreaks affecting spruce and fir foliage currently believed to occur roughly 35 years apart. The most recent outbreak peaked in 2002. Forest tent caterpillar outbreaks affecting hardwood foliage typically occur every 10-12 years, with outbreaks lasting three to five years. The pattern of outbreaks has been quite regular – occurring in 1986 to 1991, 2001 to 2007 and 2013 to 2019. Periodic outbreaks of these disturbance agents result in loss of foliage leading to reductions in volume and, when outbreaks are severe, tree mortality.

Quick facts

- Compared to natural disturbances, such as wildfire and insect damage, forest harvesting is a relatively small landscape disturbance within Saskatchewan's commercial forest zone. Since 2015, the average area harvested annually for forestry purposes is 21,227 hectares, compared to an average of 212,358 hectares annually burned in wildfires.
- On average, less than half of one per cent of all productive forest land in Saskatchewan's commercial forest zone is harvested.
- A 10,000-hectare wildfire in the commercial forest burns roughly enough wood to build almost 10,000 homes.

Defoliation by insects in the Boreal Forest

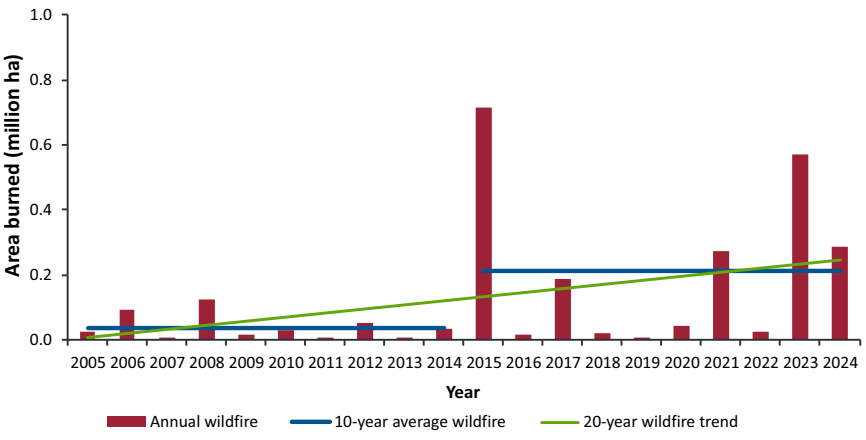


Aerial mapping data was unavailable for the early 2000s forest tent caterpillar outbreak and therefore the information does not appear on the graph.

Abiotic or environmental disturbances, such as drought, flooding and extreme wind events, contribute to a biologically diverse and healthy forest as well. These events can result in stand-replacing disturbances, tree mortality and changes to the forest ecosystem; however these types of disturbances can be harder to track and manage.

Wildfire is the largest driver of change in the boreal forest. The severity of fire disturbance depends on a variety of factors such as weather, moisture levels, stand age, composition and structure. Almost all stands of mature forest you see today in the boreal forest are the result of past wildfires. Fire prevention and suppression near communities, infrastructure and other values at risk have allowed forests in certain areas to escape wildfire and become older than they naturally would. However, even with wildfire management occurring, wildfires are still the most significant agent of change within the forest. The area burned varies from year to year and is greatly affected by weather. In recent years, the number and size of catastrophic wildfires in some North American jurisdictions has been noteworthy. In Saskatchewan's commercial forest, on average nearly six-times more area burned annually during the period 2015-24 (212,358 ha) than during the period 2005-2014 (37,203 ha). An increasing trend in area burned has been observed over this 20-year period, characterized by great interannual variability. A changing climate may extend the wildfire season, and the potential for more extreme weather events may be conducive to more wildfires that have a higher burn severity and intensity. We all play a role in preventing wildfires as 50 per cent of all wildfires are human-caused.

Commercial forest zone area disturbed by wildfire 2005 to 2024



Quick facts

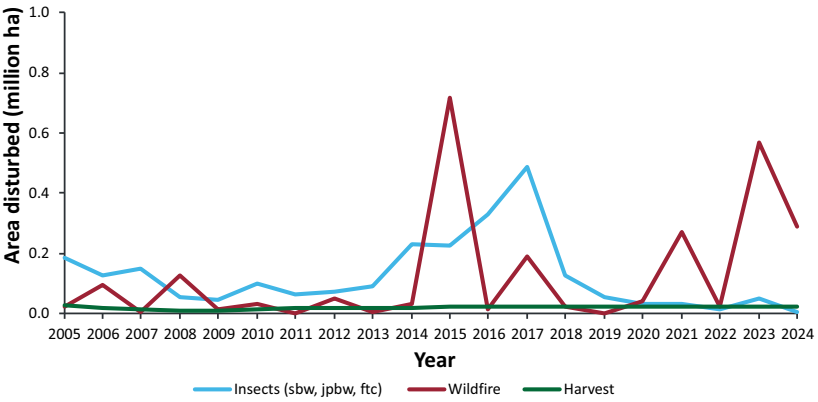
- Large wildfires have been the norm in the boreal forest for thousands of years. On average, a given area of forest will burn every 70 years in natural boreal systems. Over half of wildfires are larger than 10,000 hectares in size.
- Every year, about half of Saskatchewan wildfires are started by human activity. These include campfires, industrial activity, agriculture fires, vehicle and ATV exhaust, and arson.

Forest harvesting for commercial timber products is a human disturbance. On average, over the last 10 years, 21,227 hectares were harvested annually within the commercial forest zone. This represents less than half of one per cent (0.31 per cent) of the commercial forest's productive forest lands.

Notably, in recent years, wildfires have become the dominant disturbance in the commercial forest zone. On average, over the last 10 years, wildfires burned 212,358 hectares annually. This represents 10 times the area harvested annually within the commercial forest zone over the same period.

While wildfires have become the dominant commercial forest zone disturbance agent, insects and diseases are still very impactful. The three most impactful forest insect pests (spruce budworm, jack pine budworm, and forest tent caterpillar) on average, over the last 10 years, defoliated 134,791 hectares annually within the commercial forest zone. It should be noted that insects and diseases generally do not result in immediate stand replacing events, such is often the case for wildfire and timber harvesting.

Commercial forest zone area disturbed by insects, wildfire, and harvest 2005 to 2024



Harvest areas for 2023 and 2024 were estimated based on the preceding 5-year average.

What we are doing

The Government of Saskatchewan closely monitors and tracks wildfire activity, tree diseases and insect outbreaks to ensure forest resources are being managed sustainably. Monitoring is a key component of sustainable forest management.

To assess the health of Saskatchewan's forests, the ministry conducts annual aerial surveys to monitor insects, diseases and weather events that cause major forest disturbances. Currently, the ministry is testing remote sensing technologies in two "proof-of-concept" projects to apply remote sensing and satellite technologies to detect disturbances and through change-detection monitor changes in disturbances on the landscape.

The ministry also monitors Climate Impacts on the Productivity and Health of Aspen (CIPHA) and Climate Impacts on the Productivity and Health of Spruce (CIPHS) to track the long-term health of aspen and spruce forests and monitor cumulative impacts and stand mortality resulting from forest disturbances and climate change (in particular changes in soil moisture). This work is done through a collaboration with Canadian Forestry Service Northern Forestry Centre.

All harvesting in Saskatchewan is closely monitored and measured, and harvest areas are mapped using satellite imagery. Forest managers use this information to guide their planning and decision making. Forest management plans are assessed annually to ensure forest conditions are healthy and harvest levels are sustainable. When natural disturbance levels exceed the re-planning threshold, long-term harvesting plans must be re-modelled.

Saskatchewan uses modern technology and decision-making systems to detect, monitor and suppress wildfires. Resources are also dedicated towards preventing and mitigating wildfires near communities through FireSmart activities.

Regeneration of timber harvest area

Why we measure this

An important indicator of long-term forest productivity and sustainable forest management practices is the area of harvested forest land sufficiently regenerated according to a measurable standard. Forests that are successfully regenerated are essential to a long-term sustainable flow of wood products and ecosystem productivity. They are also an important indicator of anticipated long-term forest productivity and sustainable forest management practices.

Quick facts

- 97 per cent of the area harvested from 2004 to 2016 is sufficiently re-stocked with healthy growing trees.

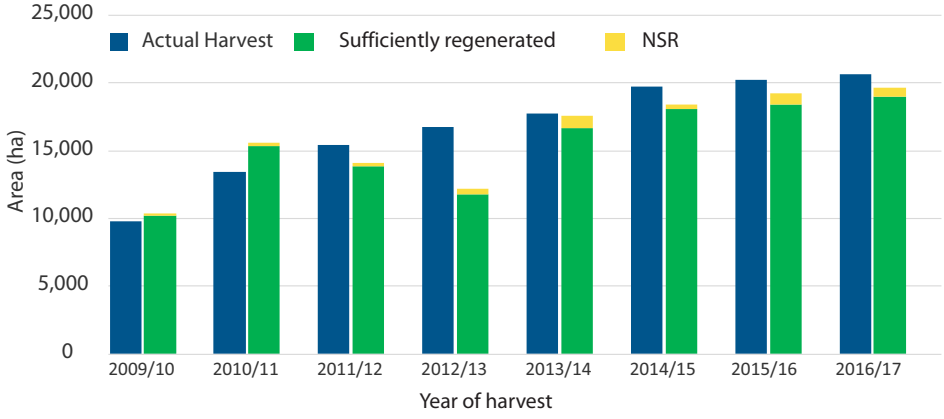
What is happening

State	Trend	Information	Extent
good	improved	partial	commercial forest

The harvested area does not always match the area surveyed by year of harvest because of the changing sources of the harvest and survey data. The area harvested and surveyed is reported by industry within 18 months of the activity being completed. While every effort is made to ensure data sets are correct at the time of reporting, there can be discrepancies. The reporting time period includes the harvest/fiscal years 2004-05 to 2016-17, as this is the most up-to-date regeneration survey data available from industry.

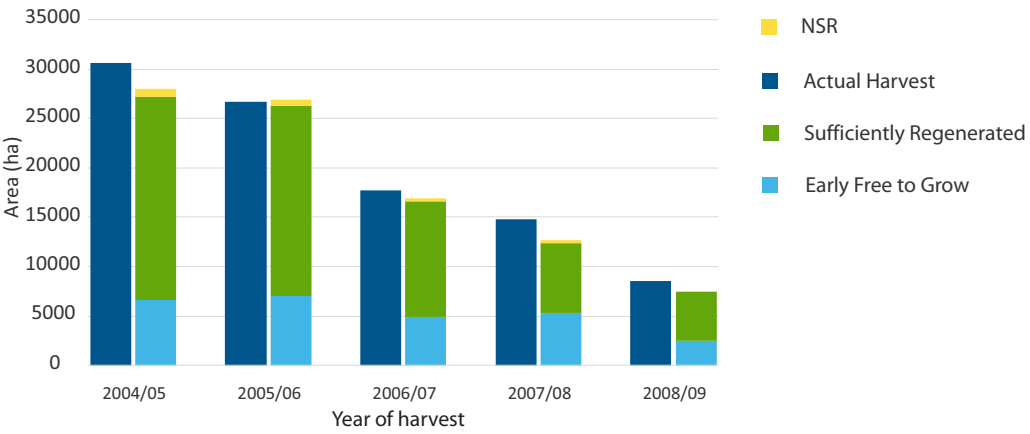
The establishment survey results demonstrate that the forest industry is renewing harvested areas in a timely manner and within acceptable growth standards to meet future forest conditions. The amount of area reported as not sufficiently regenerated (NSR) at establishment for the reported time period, 2009-10 to 2016-17, is four per cent.

Sufficiently regenerated area at establishment survey
(Four to seven years post-harvest)



The free-to-grow survey results also demonstrate that the forest industry is regenerating harvested areas in a timely manner and within acceptable growth standards to meet future forest conditions. The amount of area reported as NSR at free-to-grow for the reported time period, 2004-05 to 2008-09 is two per cent.

Sufficiently regenerated area at free-to-grow survey
(Eight to 14 years post-harvest)



What we are doing

Every major licensee (forest management agreement and area-based term supply licence holders) that harvests forest products in the province has a legal obligation to ensure that the licence area has also been reforested.

The Forest Regeneration Assessment Standard applies to blocks harvested after 2004 and provides assurance that the achievement of the desired forest condition is likely. There are two timeframes when regeneration is assessed:

1. Establishment: four to seven years post-harvest; and
2. Free-to-grow: eight to 14 years post-harvest.

water

Water allocations

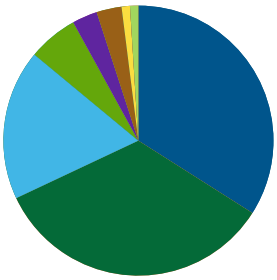
Why we measure this

A dependable water supply is crucial for Saskatchewan's ongoing economic growth and quality of life. Water is distributed for multiple uses, including agriculture, industry, municipalities and households. Managing water allocations helps ensure the province's water resources remain accessible for both present and future generations.

What is happening

State	Trend	Information	Extent
mixed/fair	mixed/no change	adequate	province

Surface allocations by sector



Irrigation
Power Generation
Municipal
Mining - Potash
Oil and Gas
Manufacturing
Mining - Uranium
Mining - Other

Quick facts

- Irrigation and municipal uses are the two largest users of water in Saskatchewan, accounting for almost 80 per cent of surface water use.
- The Water Security Agency operates 72 dams in Saskatchewan to ensure a sustainable and reliable quantity of water for municipal, industrial and agricultural use.

Usage by source and watershed, 2023

Source Watershed	Ground	Surface
Assiniboine River	8,967	2,117
Battle River	5,875	2,369
Beaver River	1,603	4,357
Big Muddy Creek	557	1,235
Black Lake	0	300
Carrot River	1,660	4,459
Churchill River	706	5,381
Cypress Hills North Slope	1,292	24,821
Eagle Creek	13,235	4,706
Lake Athabasca	0	166
Lake Diefenbaker	14,473	310,299
Lake Winnipegosis	1,882	3,048
Lower Qu'Appelle River	10,369	9,794
Lower Souris River	3,139	816
Milk River	2,016	37,655
Moose Jaw River	736	16,364
North Saskatchewan River	45,583	90,045
Old Wives Lake	3,885	44,272
Poplar River	6,324	8,252
Quill Lakes	6,829	5,062
Reindeer River / Wollaston Lake	388	6,255
Saskatchewan River	4,966	4,063
South Saskatchewan River	2,964	601,336
Swift Current Creek	0	481
Upper Qu'Appelle River	11,167	184,179
Upper Souris River	46,397	32,492
Wascana Creek	8,090	21,936

Cubic decametres (dam^3)

1 dam^3 = 1,000 m^3 = 1 million litres

The table offers an overview of the total volume of water allocated from surface water sources within each watershed. While it gives a general sense of development intensity, it does not necessarily reflect pressure on water resources. Each project is assessed individually based on the available water from the proposed source, with cumulative impacts from all uses also taken into account.

What we are doing

Water use and diversion in Saskatchewan are regulated by the Water Security Agency under *The Water Security Agency Act*.

Anyone requesting a water allocation for agricultural, industrial, municipal, or, in some cases, domestic use must go through a regulatory review. Allocations are subject to licensing and conditions to ensure responsible water management.

The review process begins with an assessment of water availability at the proposed diversion site. Using the best available data, the Water Security Agency evaluates whether the source can provide sufficient water under various climatic conditions, such as drought, without harming existing users, the watershed, or future water management. If the review is satisfactory and all legislative requirements are met, the agency may issue a Water Rights Licence and an Approval to Construct the necessary diversion infrastructure. Once construction is completed and compliance is confirmed, the Water Security Agency grants an Approval to Operate Works.

The Water Security Agency receives approximately 150 to 200 water allocation requests per year: 60 per cent of requests are for surface water use, 40 per cent are for groundwater use.

Water consumption and conservation

Why we measure this

As Saskatchewan's population grows, the demand for water resources continues to rise. Economic expansion, variable weather patterns, and competing priorities from users is making water conservation even more critical.

Water is becoming an ever more important resource for growing communities to support quality of life and economic growth so preserving water is not only environmentally responsible but also economically critical. Ensuring water resources are sustainable, adaptable, and reliable can reduce or eliminate the need for costly new reservoirs and pipelines. Additionally, treating and pumping water requires energy, so lowering the use of treated water helps decrease energy consumption and greenhouse gas emissions.

What is happening

State	Trend	Information	Extent
good	improving	adequate	province

Saskatchewan's overall water usage continues to trend down, with residents using an average of 307 litres per capita per day. Since some communities did not report their data, the Water Security Agency cannot determine an exact change in overall water consumption.

Over the past 30 years, total community water consumption has remained relatively stable, while per capita usage rates have generally declined. This decrease is likely due to technological advancements, such as upgraded water mains and high-efficiency plumbing fixtures, as well as changes in water usage behaviour.

Smaller communities tend to have more variable usage rates, with the smallest ones showing an upward trend. This increase may be attributed to improved water supply security or a shift to water treatment technologies with higher raw water demands, such as reverse osmosis. Additionally, as populations decline in small communities, per capita usage may appear to rise since municipal services and commercial operations continue using similar amounts of water, but across a smaller population.

Quick facts

Every time you shower, flush the toilet or wash vegetables, you have a chance to save water. Here are some simple and cost-effective ways to reduce water use at home.

Bathroom:

- Fix leaky taps and toilets.
- Install low flow faucets, shower heads and toilets.
- Take short showers.
- Fill bathtub halfway or less.
- Turn off water when brushing teeth, shaving or lathering hands with soap.

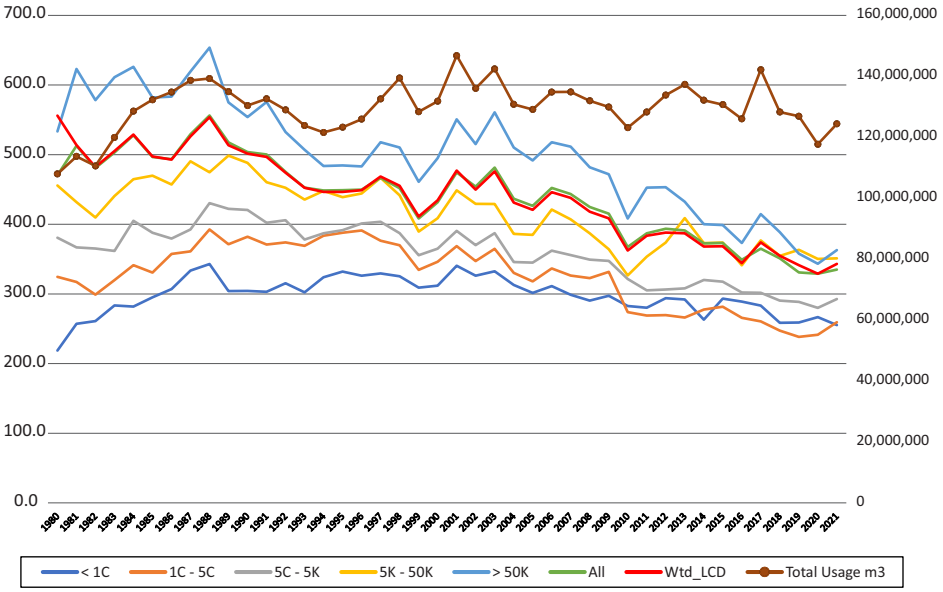
Kitchen:

- Invest in high efficiency appliances.
- Wash full loads.
- Scrape your plate.
- Fill a pot to wash vegetables.
- Keep a jug of water in the fridge.
- Read your meter.

Utility Room:

- Upgrade to a high efficiency appliance.
- Wash full loads and skip the extra rinse.
- Service and repair appliances.
- Read your meter.

Community water usage and rates, 1980 to 2021



What we are doing

The Water Security Agency encourages responsible water use through public education, partnerships, and various programs. Additionally, water rates established by waterworks owners that reflect the full cost of system design, construction, operation, and maintenance play a key role in promoting water conservation.