

Land-based greenhouse gas emissions and removals

Canadian Environmental Sustainability Indicators



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Land-based greenhouse gas emissions and removals

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Land-based greenhouse gas emissions and removals

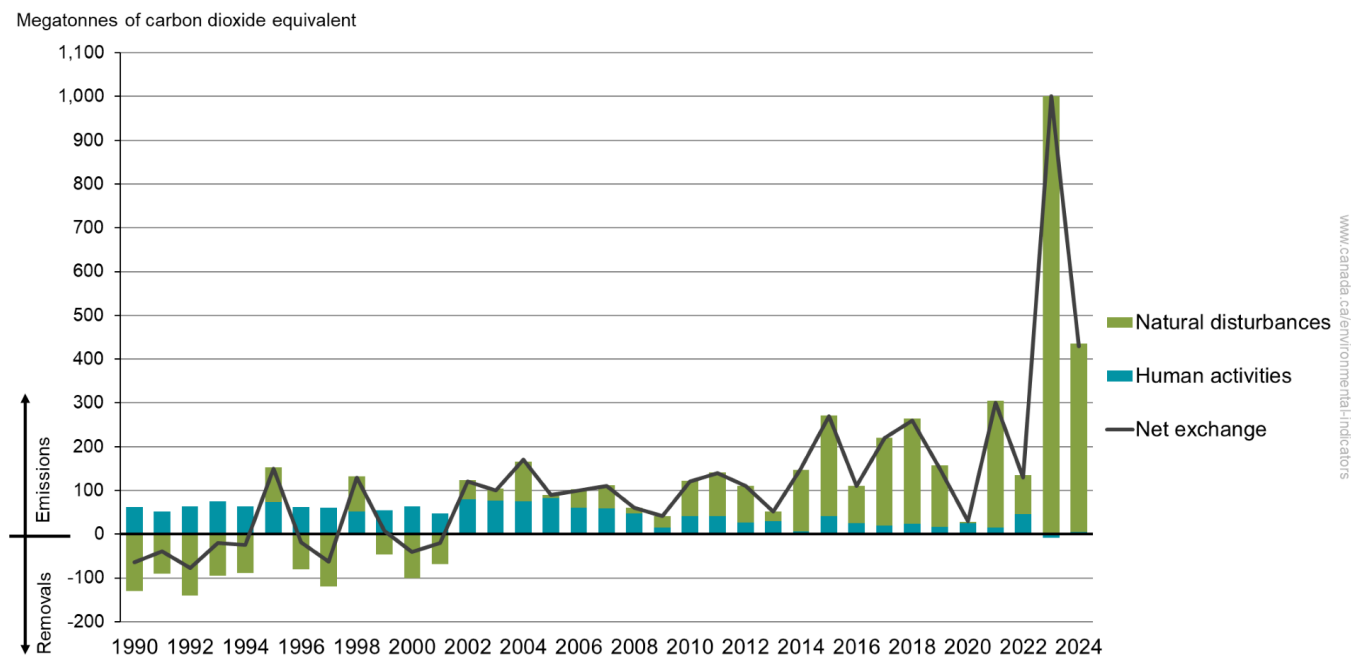
Greenhouse gas (GHG) emissions are the major drivers of climate change. Land use activities (such as timber harvesting and land conversion) as well as natural disturbances (such as forest fires and insect infestations) result in GHG emissions. Land use activities can also result in GHG removals. For example, as forests grow or recover, carbon is removed from the atmosphere and converted into biomass by trees. Tracking the trends in Canada's land-based GHG emissions and removals can help us understand how land management decisions could reduce emissions and increase removals over time.

The indicator provides annual estimates of Canada's GHG emissions and removals from managed lands. These are lands influenced by human intervention to perform production, ecological or social functions. Examples include agricultural land, wetlands, settlements, and managed forests.

Key results

- In 2024,
 - Natural disturbances accounted for net emissions of about 430 megatonnes of carbon dioxide equivalent (Mt CO₂ eq)
 - Human activities accounted for net emissions of 4.7 Mt CO₂ eq
- Between 1990 and 2001, estimates of land-based GHGs showed more removals than emissions in all years except for 1995 (net emissions of 150 Mt CO₂ eq), 1998 (net emissions of 130 Mt CO₂ eq) and 1999 (net emissions of 8.0 Mt CO₂ eq)
- Since 2002, estimates show net emissions ranging between 29 Mt CO₂ eq and 1,000 Mt CO₂ eq, driven mainly by wildfire emissions

Figure 1. National land-based greenhouse gas emissions and removals, Canada, 1990 to 2024



[Data for Figure 1](#)

Note: Natural disturbances refer to emissions and removals related to wildfires and large insect infestations of the forest. Human activities refer to emissions and removals from managed lands (such as settlements, forested lands, agricultural land and wetlands) as well as transfers to harvested wood products. For more information, see the section on [emissions and removals from human activities](#).

Source: Environment and Climate Change Canada (2026) [National Inventory Report 1990-2024: Greenhouse gas sources and sinks in Canada](#).

Natural disturbances, such as forest fires and large insect infestations, have occurred in Canada's forests for thousands of years. These disturbances are part of the natural life cycle of the forest and generally help the forest renew itself. However, evidence demonstrates that climate change is driving an increase in natural disturbances.

These disturbances can contribute to emissions of large amounts of GHGs into the atmosphere through the burning and decaying of dead trees, as well as significant removals as the forest regenerates over time.¹

For the past 20 years, the total managed forest's net GHG exchange (that is, the land-based GHG emissions minus removals) has been significantly impacted by these natural disturbances. In 2002, the net exchange shifted from removals to emissions as a result of an increase in emissions from [natural disturbances](#).

In managed forests, emissions and removals due to natural disturbances are associated with human activities under specific circumstances. These circumstances are described in the [methods](#) section.

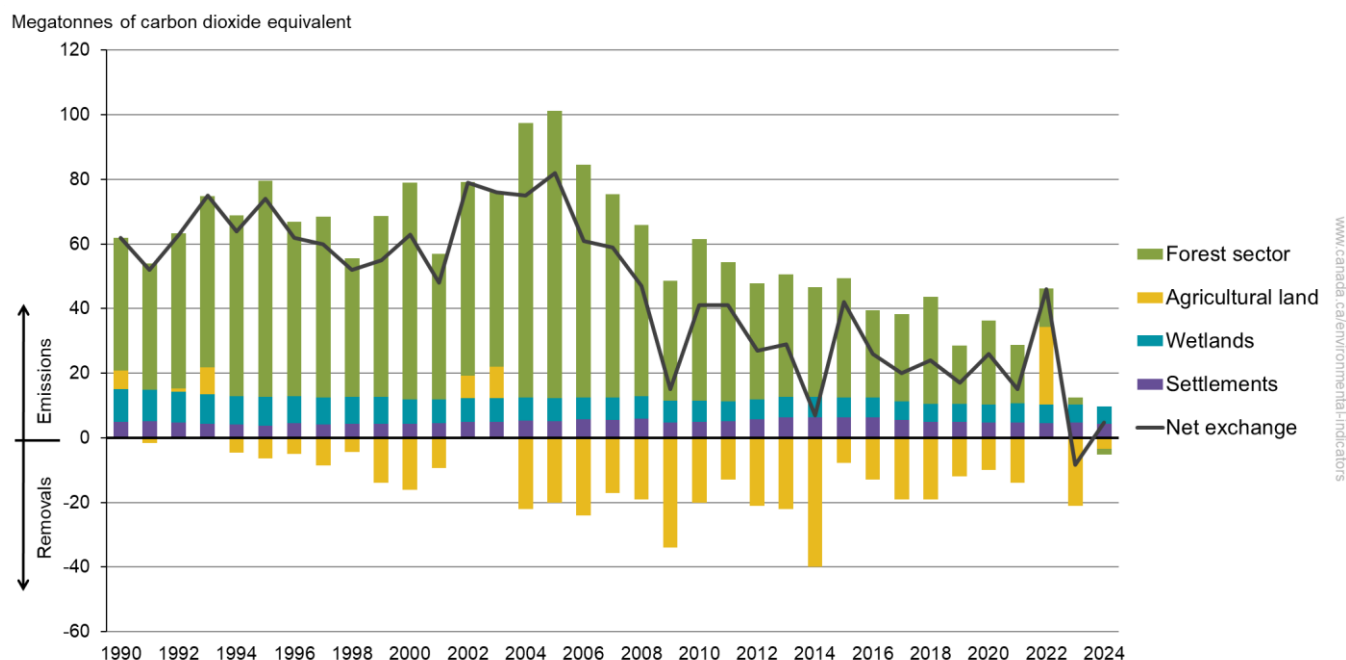
Land-based GHG emissions and removals from human activities

Land-based GHG emissions and removals from human activities are commonly referred to as land use, land-use change and forestry (LULUCF) according to international standards.

Key results

- In 2024,
 - Most of the categories of land use activities emitted GHGs, with the [Wetlands](#) being the largest emitter (5.4 megatonnes of carbon dioxide equivalent [Mt CO₂ eq])
 - [Agricultural land](#) recorded the largest removals of GHGs (3.4 Mt CO₂ eq)
- Between 1990 and 2024, human activities on managed lands resulted in net emissions for all years (except 2023), ranging between 4.7 Mt CO₂ eq and 82 Mt CO₂ eq
- Human activities accounted for net emissions of 4.7 Mt CO₂ eq in 2024, which is lower than the level observed in 1990 (62 Mt CO₂)

Figure 2. Land-based greenhouse gas emissions and removals from human activities by activity sector, Canada, 1990 to 2024



[Data for Figure 2](#)

Note: Greenhouse gas exchange from the forest sector considers emissions and removals from managed forests and transfers to and from the harvested wood products pool. Harvested wood products originate from forest trees with contributions of bioenergy from urban trees and

¹ Warren FJ and Lemmen DS, editors (2014) [Canada in a Changing Climate: Sector Perspectives on Impacts and Adaptation](#). Government of Canada, Ottawa, ON, 286p. Retrieved June 29, 2026.

agricultural land. As such, the reported forest sector emissions may differ at times from some information presented in the National Inventory Report. For more information, see Chapter 6.4 of the [National Inventory Report](#).

Source: Environment and Climate Change Canada (2026) [National Inventory Report 1990-2024: Greenhouse gas sources and sinks in Canada](#).

Forest sector

The forest sector category refers to emissions and removals from forest management activities such as timber harvesting, thinning and replanting and ecological processes, such as tree growth and decomposition. It also includes transfers to and disposals from the harvested wood products pool, which are the wood materials removed from the harvested site and turned into consumer products, such as timber for construction, furniture or paper products. The carbon removed from the atmosphere by trees is stored in the harvested wood products and eventually emitted back into the atmosphere or transferred into the waste stream where the product is disposed.

In 2024, the human-driven GHG flux from the forest sector was a net removal of 1.7 Mt CO₂ eq. While overall forest growth on managed lands typically removes carbon from the atmosphere, disturbances – including harvest and decomposition – can result in net emissions from forests. For example, in 2024, natural ongoing ecological processes in Canadian forests resulted in net removals of 1.2 Mt CO₂ eq. At the same time, 0.63 Mt CO₂ eq. of carbon was stored in harvested wood products. Refer to Table 6-1 of the [National Inventory Report](#) for more information (ECCC 2026).

GHG flux from the forest sector varied between 1990 and 2024, peaking at 89 Mt CO₂ eq in 2005 and since, decreasing to a removal of 1.7 Mt CO₂ eq in 2024. These variations are related to harvest rates over the past several decades, particularly in the Mountain and Boreal regions, and had also increased indirectly due to a rise in natural disturbances. Natural disturbances indirectly impact GHG emissions in the forest sector through the decomposition of trees killed by low-level insect disturbances and through the reduction of managed land area where commercially growing trees remove carbon.

As forest harvest expanded in Canada, in the decades prior to 2005, increasing areas were converted to emissions sources. When forests are harvested, the sites act as emission sources over many years following the disturbance because of the decaying debris left on the site and the slow regrowth of woody biomass. Furthermore, large proportions of harvested wood were used for short-lived products (such as paper) where the carbon is rapidly transferred out of the harvested wood product pool to the waste stream or used for bioenergy. These emissions were not fully offset by the removals from the regrowth of the historically harvested areas.

Since 2004, the rate of area harvested in Canada has leveled off, and in recent years removals from the land that was historically harvested are increasing at a greater rate than the emissions resulting from new harvests. Forest carbon emissions peaked in 2005 and have since decreased. This decreasing trend in emissions happened as carbon stocks in solid wood products have continued to increase, while those in paper products have declined since 2005. Additionally, since the early 2000s, most wood waste has been used for bioenergy production (converting biomass to energy), reducing transfers of wood to solid waste disposal where it is a source of methane.

The forest industry and carbon

'Canada's forest industry is important and understanding how tree harvesting impacts emissions and removals of carbon dioxide (CO₂) to and from the atmosphere supports better decision making. Harvesting is part of a larger set of forest management activities, such as forest inventory and planning, planting, thinning, fire control, and pest management, which are carried out by provinces and territories applying sustainable practices. Because these activities are connected and part of the forest planning process, the effects of harvesting 'can't be measured on their own. Instead, changes in forest carbon in the managed forests are tracked as a whole, in accordance with international guidelines.

When trees are harvested, the existing dead material on the ground and new harvest residues break down, releasing CO₂. As trees grow back, the new tree growth removes little carbon at first, but removals increase over time. After a period of time, CO₂ removals resulting from tree growth equal and become greater than the emissions from the decomposing material and harvested sites become carbon sinks again.

The trees that are harvested contain carbon that becomes forest products such as building lumber and paper, but also produce wood waste. Carbon stored in wood products can stay locked away for decades, adding to a global supply of stored carbon. Waste wood is burned for energy in homes and industries,

releasing the carbon stored in wood as an emission. Wood products and bioenergy also help reduce fossil emissions by replacing more carbon intensive materials like coal, oil, concrete and steel.

The carbon in forests is cycled between the trees, the wood products, the soil and the atmosphere. While the harvested forest regrows, it absorbs and stores carbon. When wood products reach the end of their use, whether short- or long-lasting, their carbon is reported as an emission.² Wood waste in landfills produces methane, a powerful GHG, but these emissions are counted in the Waste sector of the country where the wood products are buried. Since trees take in carbon from the air through photosynthesis, releasing it later doesn't add new CO₂ like burning fossil fuels does.

Like many industries, forest harvesting and the transformation of harvested trees into forest products involves a wide range of activities that result in fossil fuel emissions that are reported in different parts of 'Canada's National Inventory Report (NIR): Energy, Industry, and Waste. Where possible, the emissions from these activities are reported separately in Table 2–12 of the [National GHG Inventory Report](#) along with all emissions and changes in carbon associated with harvest. Fuel used by machines during tree harvesting is counted in the Energy-Transport sector. However, fuel used to transport the harvested wood away from the site 'isn't reported because the fuel used specifically by transport trucks for wood transport cannot be isolated in national fuel-use data.

Agricultural land

The agricultural land category reports emissions and removals from annual and perennial cropland, as well as from forest lands and grassland converted to cropland. Cropland includes lands in annual crops, [summerfallow](#)³ and perennial crops. Managed agricultural grassland refers to rangeland that is used only for grazing domestic livestock.

Since 1990, agricultural land has typically contributed to GHG removals and consistently did so between 2004 and 2021. Removals by agricultural land has ranged between 1.6 Mt CO₂ eq to 40 Mt CO₂ eq. These removals are due to changes in agricultural practices, such as the adoption of conservation tillage,⁴ increases in crop yield, and the reduced use of summerfallow. However, the removal rate from agricultural land has been decreasing in recent years due to a decline in the adoption rate of conservation tillage and the area of land used to grow perennial crops as well as increases in the conversion of forested land to agricultural land. The shift from net removals to emissions in 2022 was primarily driven by a significant drought in 2021, which reduced crop yields and carbon inputs from residues resulting in a very small loss of soil carbon over large areas of the Prairies. In 2023, crop yields were more consistent with recent harvests and soils returned to a net carbon sink again.

Wetlands

The wetlands category includes activities such as peat extraction for use in horticulture, peatland disturbances due to resource extraction activities, and flooding of land for reservoir development.

Trends in wetlands are mainly driven by the creation of large hydroelectric reservoirs occurring before 1990, resulting in higher emissions in the early 1990s. Emissions from reservoirs declined from 1990 to 2024 as emissions from submerged biomass and soils decreased over time. Emissions from drained and excavated wetlands for peat extraction increased, while emissions from disturbances related to resource extraction have remained relatively small but have increased slightly over time. Overall, during this period, total emissions declined from 10 Mt CO₂ eq to 5.4 Mt CO₂ eq.

² If wood is disposed of in landfills, the carbon can also be stored for decades, but the carbon is reported as an emission at the end of the product's useful life.

³ Fallow (also called summerfallow) is the practice of not planting a crop for one growing season. This helps build soil moisture reserves and can help control weed infestation. However, fallow also contributes to environmental degradation by causing soil erosion, organic matter loss, carbon dioxide emissions, leaching of water and increased surface water runoff.

⁴ The adoption of conservation tillage (examples include no till or minimum till practices) reduces soil disturbance and prevents the release of stable carbon that has built up in soils from past plant growth.

Settlements

The settlements category refers to emissions and removals occurring on developed lands (such as urban environments, transport infrastructure, oil and gas infrastructure and mining) and from the conversion of land to settlements.

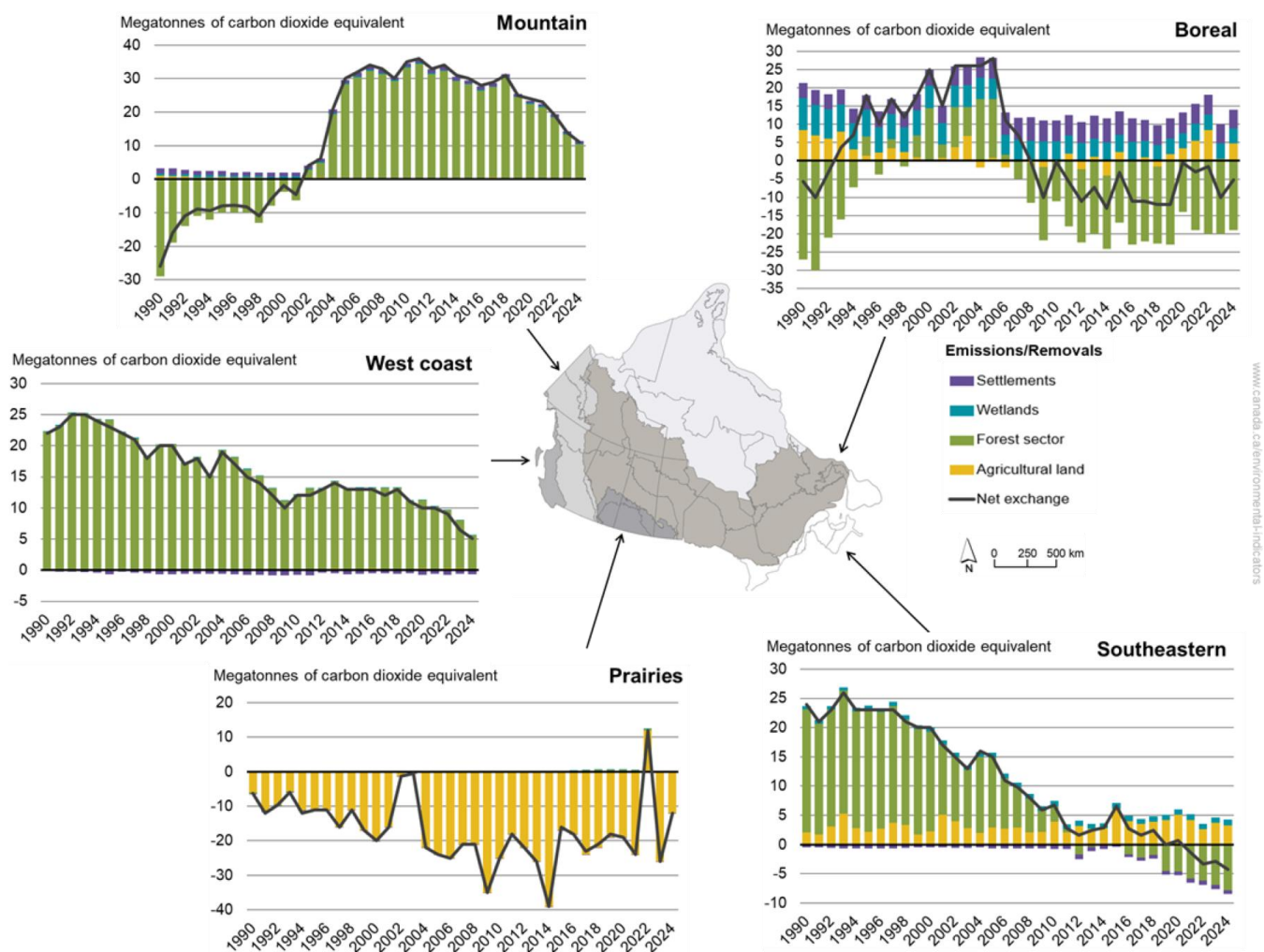
Total emissions for settlements fluctuated between 3.8 Mt CO₂ eq and 6.4 Mt CO₂ eq over the time series. Emissions were mainly driven by rates of forested land converted to settlements, with smaller contributions from wetlands linked to resource extraction activities and native grassland in northern Canada (tundra), both associated with urban and industrial expansion. These emissions are partially offset by the storage of carbon in urban trees, which provide average annual removals of about 4.0 Mt CO₂ eq. Refer to Section 6.8 of the [National Inventory Report](#) for more information.

Regional land-based GHG emissions and removals from human activities

Key results

- From 1990 to 2024,
 - The West coast region consistently emitted GHGs, but showed a decrease in emissions from 22 megatonnes of carbon dioxide equivalent (Mt CO₂ eq) to 5.1 Mt CO₂ eq
 - The Mountain region, which is important for forestry, shifted from removals to emissions. It had been the region contributing the most to removals in 1990 (26 Mt CO₂ eq) but switched to emissions in 2002 onward, with emissions peaking in 2011 (36 Mt CO₂ eq)
 - The Boreal region showed fluctuations in the net exchanges, switching from removals prior to 1993, to emissions until 2008, then back to removals after that
 - The Prairies region consistently showed removals from 1990 to 2021 (ranging between 0.5 Mt CO₂ eq and 39 Mt CO₂ eq) and experienced emissions for the first time in 2022 (12 Mt CO₂ eq) as a result of the 2021 drought
 - The Southeastern region shifted from emissions of 24 Mt CO₂ eq to removals of 4.2 Mt CO₂ eq

Figure 3. Regional land-based greenhouse gas emissions and removals from human activities, Canada, 1990 to 2024



Data for Figure 3

Note: Regions are based on the location of the human activities across the country. Forest sector regional estimates provided do not include the long-term impact of emissions from forest harvest or deforestation prior to 1990.

Source: Environment and Climate Change Canada (2026) [National Inventory Report 1990-2024: Greenhouse gas sources and sinks in Canada](#).

The overall increase in removals of GHGs on the Prairies between 1990 and 2014 can be attributed to changes in agricultural land management practices, such as the adoption of conservation tillage, the proportion of annual and perennial crops, and the reduced use of [summerfallow](#). These changes in land management decrease soil disturbance and thereby lower releases of carbon from the soil. In recent years, the decline in the proportion of perennial crops on the landscape and the rate of conservation tillage practices have been offset by increasing yields contributing to increased inputs of crop residue resulting in variable, but stable GHG removals for croplands as a whole. The transition from net removals to net emissions in 2022 stemmed largely from a major drought in 2021, reflecting how weather-related impacts can significantly affect crop production and reduce carbon inputs from residues. When crop yields decline due to drought, there are fewer plant residues to decompose and add organic carbon to the soil, leading to increased emissions instead of carbon storage (removals). The return to average yields in 2022 returned the soils to a carbon sink in 2023.

The increase in GHG emissions in the Boreal region and the shift from removals to emissions in the Mountain region are related to increased forest harvesting (in part to salvage timber from trees killed by the Mountain Pine Beetle and prevent its spread) as well as a reduction in net carbon removals from forests. The latter is due to insect infestations and fires in managed forests. The Boreal and the Mountain regions account for over 70% of the

carbon transferred to harvested wood products. While timber harvesting transfers most of the carbon from stem wood to harvested wood products, it also results in emissions at the harvest site in the years immediately following the disturbance, primarily due to decomposition. The disturbances reduce the area of mature growing trees, which is already known to be slow in these regions and increase decomposition and salvage logging (the harvest of dead or dying standing trees). For more information, see the [Forest sector](#) in Land-based emissions and removals from human activities.

In the West Coast and Southeastern regions, forestry management practices (changes in harvest rates and forest regeneration) contributed to the reduction in emissions. That said, the West Coast still has the highest rate of carbon transfers to harvested wood products per hectare in Canada. In recent years, net GHG emissions have decreased in Southeastern region, due to forest growth.

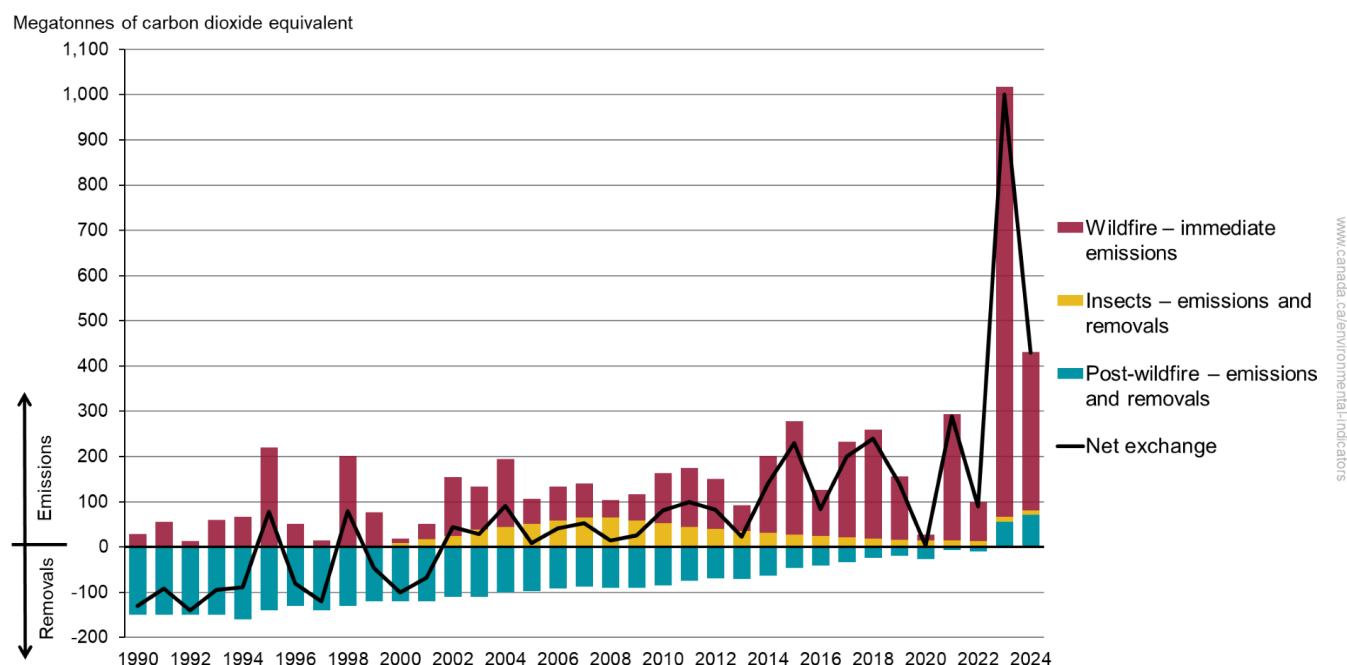
Land-based GHG emissions and removals from natural disturbances

Forests remove carbon from the atmosphere as they grow and release it along with other GHGs when they decay after dying or burning in forest fires.

Key results

- In 2024,
 - Emissions from wildfires (immediate emissions) contributed 350 megatonnes of carbon dioxide equivalent (Mt CO₂ eq). These emissions were roughly 12 times higher than observed wildfire emissions since 1990
 - Emissions caused by insect infestations were 10 Mt CO₂ eq
 - Emissions despite forest regrowth post-wildfires were 71 Mt CO₂ eq
- Since 2002, the net exchange from natural disturbances resulted in GHG emissions, ranging between 2.7 Mt CO₂ eq and 1,000 Mt CO₂ eq

Figure 4. Land-based greenhouse gas emissions and removals from natural disturbances in managed areas, Canada, 1990 to 2024



[Data for Figure 4](#)

Note: Wildfire emissions and removals are divided in 2 categories, (1) wildfire – immediate emissions and (2) post wildfire. Wildfire – immediate emissions include emissions from trees and soils from the burning of wildfires. Post wildfire includes emissions released by the decay of dead trees and soil organic matter and removals related to forest regeneration. Insect disturbances include emissions from the decay of organic matter and removals from natural regeneration.

Source: Environment and Climate Change Canada (2026) [National Inventory Report 1990-2024: Greenhouse gas sources and sinks in Canada](#).

Natural disturbances are an important factor in determining whether forests remove or release GHGs each year. These disturbances contribute to immediate emissions (for example, from the burning of trees), as well as post-disturbance emissions and removals. Post-disturbance emissions are from the gradual decay of dead organic matter. Post-disturbance removals are related to the natural regeneration and regrowth of forests.

The variability in emissions and releases from natural disturbances can vary greatly from year to year. For example, emissions from managed lands were lower in 2020 than in adjacent years because of the smaller area burned.⁵ However, since the mid-2000s, emissions from wildfires and insect disturbances have been increasing. In 2023, emissions from wildfires were greater than emissions from all other human emissions of GHGs in Canada. Additionally, severe insect infestations in the early 2000s are having an effect on today's net GHG exchange and are expected to influence GHG emissions over the next few decades.

About the indicator

What the indicator measures

The Land-based greenhouse gas emissions and removals indicator tracks exchanges of greenhouse gas (GHG) emissions and removals between the atmosphere and Canada's managed lands. Reported GHG emissions and removals are annual totals from:

- Land use and land-use change activities
 - Forest sector (managed forested land, afforestation and harvested wood products)
 - Agricultural land (cropland, agricultural deforestation and agricultural grassland loss)

⁵ Natural Resources Canada (2026) [The State of Canada's Forests 2025](#). Retrieved June 25, 2026.

- Wetlands (peat extraction, flooded land, wetland conversion and land conversion to wetland)
 - Settlements (developed land, wetland conversion and land conversion to settlement)
- Natural disturbances (insect infestations and wildfires)

The indicator does not report emissions from Canadian economic sectors: oil and gas, transport, buildings, electricity, heavy industry, agriculture (such as fuel use, and crop and animal production) and waste. For information on those GHG emissions, refer to the [Greenhouse gas emissions](#) indicator.

Why this indicator is important

GHG emissions and their increasing concentrations in the atmosphere are having significant impacts on the environment, human health and the economy. Tracking the trends in Canada's land-based GHG emissions and removals provides a useful context for understanding how different management activities could reduce emissions and increase removals over time. This indicator could also help identify opportunities for mitigating the impacts of climate change and the potential for enhancing carbon sequestration.

The distinction between emissions and removals from human activities versus natural disturbances allows for a better understanding of emissions that could be directly managed in the near to medium term. The [National Inventory Report](#) has made this distinction since 2017 in the 2015 National Inventory Report.

Related indicators

The [Greenhouse gas emissions](#) indicators report trends in total anthropogenic (human-made) GHG emissions at the national level, per person and per unit gross domestic product, by province and territory and by economic sector.

The [Global greenhouse gas emissions](#) indicator provides a global perspective on Canada's share of global GHG emissions.

The [Greenhouse gas emissions from a consumption perspective](#) indicator shows the impact of Canada's consumption of goods and services, regardless of where they are produced, on the levels of carbon dioxide released into the atmosphere.

The [Greenhouse gas emissions projections](#) indicator provides an overview of Canada's projected GHG emissions up to 2035.

The [Greenhouse gas emissions from large facilities](#) indicator reports GHG emissions from the largest GHG emitters in Canada (industrial and other types of facilities).

The [Greenhouse gas concentrations](#) indicators present atmospheric concentrations as measured from sites in Canada and at a global scale for 2 greenhouse gases: carbon dioxide and methane.

The [Forest management and disturbances](#) indicator presents a series of measures covering timber harvest, forest disturbances, and forest regeneration.

Data sources and methods

Data sources

This indicator is developed using data from Canada's [National Inventory Report](#) and includes emissions and removals associated with natural disturbances and with land use, land-use change and forestry (LULUCF) activity on managed lands. Managed lands are defined by the Intergovernmental Panel on Climate Change (IPCC) as "land where human interventions and practices have been applied to perform production, ecological or social functions."⁶ Information on the land category definition and representation of managed lands is available in Chapter 6 of the [National Inventory Report](#).

Land-based greenhouse gas (GHG) emissions and removals include emissions and removals of carbon dioxide (CO₂). It also includes emissions of methane (CH₄), nitrous oxide (N₂O), and indirect CO₂ from the atmospheric

⁶ Intergovernmental Panel on Climate Change (2006) [2006 IPCC Guidelines for National Greenhouse Gas Inventories, Vol. 4: Agriculture, Forestry and Other Land Use](#). Retrieved June 25, 2026.

oxidation of carbon monoxide (CO) due to controlled biomass burning; CH₄ and N₂O emissions from wetland drainage and rewetting due to peat extraction; and N₂O released following land conversion to cropland.

More information

Data used to develop the land-based emission and removal estimates presented in the [National Inventory Report](#) are drawn from published and unpublished sources from various government departments, industry sources and scientific papers.

Land-based GHG emission estimates are provided at the national level, by sector and by region. Annual GHG emission estimates are updated each year; the most recent edition of the inventory reported estimates for the period from 1990 to 2024. Complete details of the temporal coverage for each data source used for the indicators can be found in Chapter 6 of the [National Inventory Report](#). Details on the role of Forest harvesting on forest carbon emissions and removals can be found in Chapter 2, Section 2.3.4.1.1.

Preparation of the GHG inventory, including the land-based emission and removal estimates, takes almost 16 months from the end of the reporting year because of the time needed to collect, validate, calculate and interpret the data. In keeping with good practice guidance for managing national inventories, methods and data are improved on an on-going basis to reflect new knowledge and improved data or methods. Inventory estimates are prepared by Environment and Climate Change Canada's Pollutant Inventories and Reporting Division with input from numerous experts and scientists across Canada. Preliminary estimates and draft text are reviewed extensively by experts and officials, before they are finalized. The final report is submitted electronically to the United Nations Framework Convention on Climate Change (UNFCCC) no later than mid-April, as required.

Methods

Land-based GHG emissions and removals are quantified using methods that are consistent with an internationally agreed methodological framework set out in the [2006 IPCC Guidelines for National Greenhouse Gas Inventories](#) and [2019 IPCC Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories](#). The methodologies used to estimate emissions and removals are reviewed, updated and improved on a periodic basis. Collaborative work with sector experts from within and outside Environment and Climate Change Canada is undertaken to incorporate available expertise and the latest advancements in scientific knowledge. Further information on these methods is available through Environment and Climate Change Canada's [National Inventory Report](#).

More information

Land-based GHG emissions and removals are reported in carbon dioxide equivalents (CO₂ eq), determined by multiplying the amount of emissions of a particular GHG by the global warming potential of that gas. GHGs differ in their ability to absorb heat in the atmosphere due to their differing chemical properties and atmospheric lifetimes. For example, over a period of 100 years, the potential of methane to trap heat in the atmosphere is 28 times greater than that of carbon dioxide. Therefore, methane is considered to have a global warming potential of 28. The [UNFCCC Reporting Guidelines](#) (PDF; 259 KB) publish the global warming potentials and atmospheric lifetimes to be used for each GHG reported in national GHG inventories; these can be found in Table 1-1 of the [National Inventory Report](#).

Areas within managed forests are subject to both forest management and natural disturbances. Emissions and removals from these areas are associated with human activities under specific circumstances. All stands harvested or that have been affected by stand-replacing natural disturbances in the past but have reached commercial maturity, or a minimum operable age (for a given region) are recognized to be under human influence. Commercially mature stands subject to natural disturbances causing less than or equal to 20% biomass mortality (for example some insects that cause defoliation but low mortality) remain associated with human activities. Large, uncontrollable natural disturbances (for example wildfires or insect outbreaks causing more than 20% biomass mortality) are recognized to result from natural occurrences and the associated emissions and removals are reflected in the natural

disturbance category. See Annex 3.5 of the [National Inventory Report](#) for more information on the tracking and reporting of natural disturbances.⁷

Spatial aggregation

Estimates for the land use, land-use change and forestry (LULUCF) sector in the [National Inventory Report](#) are provided for 18 reporting zones (Chapter 6, Figure 6-1 Canada's [National Inventory Report](#)). These reporting zones are similar to the ecozones of the National Ecological Framework, a hierarchical, spatially consistent national ecosystem classification.

In this indicator, the reporting zones were grouped into regional categories that better reflect trends in management practices. Table 1 shows the indicator regional categories and the corresponding National Inventory Report reporting zones.

Table 1. Indicator regional categories and National Inventory Report reporting zones

Indicator regional categories	National Inventory Report reporting zones
Mountain	Taiga Cordillera
	Boreal Cordillera
	Montane Cordillera
Boreal	Taiga Plains
	Taiga Shield West
	Boreal Plains
	Boreal Shield West
	Hudson Plains
	Boreal Shield East (excluding Newfoundland)
	Taiga Shield East
West Coast	Pacific Maritime
Prairies	Subhumid Prairies
	Semiarid Prairies
Southeastern	Boreal Shield East (Newfoundland)
	Atlantic Maritime
	Mixedwood Plains
Not reported	Arctic Cordillera
	Northern Arctic
	Southern Arctic

Land-based greenhouse gas emissions and removals by land use categories

In this indicator, calculated emissions and removals data from the National Inventory Report are grouped into 4 broad classes. Table 2 shows the categories of Land-based GHG emissions and removals reported in the indicator compared with those reported in the National Inventory Report.

⁷ Kurz et al. (2018) [Quantifying the impacts of human activities on reported greenhouse gas emissions and removals in Canada's managed forest: conceptual framework and implementation](#). Canadian Journal of Forest Research 48: 1-14. Retrieved June 25, 2026.

Table 2. Land-based greenhouse gas emissions and removals categories

Land-based GHG emissions and removals categories reported in the indicator	Land-based GHG emissions and removals categories reported in the National Inventory Report
Forest sector	Forest land
	Harvested wood products (HWP)
Agricultural land	Cropland
	Agricultural grassland
Wetlands	Peat extraction and flooded lands
Settlements	Settlements

Note: Definitions for land-use change and forest land as reported in the [National Inventory Report](#) are consistent with the International Panel on Climate Change [land categories](#). Harvested wood product includes those that originate from forest trees, urban trees or agricultural land.

Recent changes

Recalculations occurred for the forest sector due to refinement of dead organic matter decay parameters through a Bayesian calibration of the Carbon Budget Model of the Canadian Forest Sector (CBM-CFS3) using National Forest Inventory plot data. Forest management activity data were also updated for clearcutting, commercial thinning, firewood collection and slash burning, including a -10% correction to 2023 harvest targets, resulting in a significant downward revision in 2023 emissions. For the Harvested Wood Products, methodological improvements to carbon allocation and residential bioenergy emission factors were implemented.

In Wetlands, updated activity data and emission factors, including improved representation of CH₄ and CO₂ and expanded reservoir coverage, resulted in revised emissions across the full time series. New estimates were also introduced for wetland conversion and management associated with resource extraction activities in Alberta's Oil Sands Region.

Additional updates included revised manure management emission factors, inclusion of impurities in lime application in agricultural soils, and a correction to crop residue carbon inputs to soils, which resulted in slight upward revisions across the time series. Refer to Chapter 6 of the [National Inventory Report](#) for more information.

Caveats and limitations

The methodologies for compiling land-based GHG emissions and removals improve over time. As a result, the land-based GHG emissions and removals data reported in the indicator may be different from previously published estimates.

Harvested wood products are not limited to those that originate from forests and include those from urban trees and agricultural land. As such, the reported emissions from the forest sector may differ from the National Inventory Report. For more information, see Chapter 6.4 of the [National Inventory Report](#).

Canada is a vast country with heterogeneous landscapes and climates. Factors such as geographic location, climatic conditions, plant species and age, and management activities all play a role in influencing the net amount of GHG that is removed or released back to the atmosphere from each location in Canada. The land-based emissions and removals data provide a simplified representation of the complex reality and may not account for all relevant ecological processes.

Current reporting of land-based GHG emissions and removals does not account for climate feedback other than what is captured through natural disturbances such as wildfires and insect infestations. Climate feedback mechanisms can either amplify (positive feedback) or diminish (negative feedback) the effects of a changing climate. For example, as rising concentrations of GHGs warm Earth's climate, permafrost begins to melt. This melting releases the organic carbon stored, contributing to GHG releases that cause more warming, which causes more melting, and so on, in a self reinforcing cycle.

For a complete discussion of the caveats and limitations with respect to land-based GHG emissions and removals data, refer to the methodological issues sections in Chapter 6 of Canada's [National Inventory Report](#).

Resources

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Related information

[Canada's Action on Climate Change](#)

[Climate Change](#)

[Land-based greenhouse gas emissions and removals infographic](#)

Annex

Annex A. Data tables for the figures presented in this document

Table A.1. Data for Figure 1. National land-based greenhouse gas emissions and removals, Canada, 1990 to 2024

Year	Natural disturbances (megatonnes of carbon dioxide equivalent)	Human activities (megatonnes of carbon dioxide equivalent)	Net exchange (megatonnes of carbon dioxide equivalent)
1990	-130	62	-64
1991	-91	52	-39
1992	-140	63	-77
1993	-95	75	-20
1994	-89	64	-24
1995	78	74	150
1996	-80	62	-18
1997	-120	60	-62
1998	80	52	130
1999	-47	55	8.0
2000	-100	63	-41
2001	-68	48	-20
2002	44	79	120
2003	29	76	100
2004	91	75	170
2005	8.0	82	90
2006	42	61	100
2007	53	59	110
2008	14	47	61
2009	26	15	41
2010	81	41	120
2011	100	41	140
2012	83	27	110
2013	23	29	52
2014	140	6.9	150
2015	230	42	270
2016	84	26	110
2017	200	20	220
2018	240	24	260
2019	140	17	150
2020	2.7	26	29
2021	290	15	300

Year	Natural disturbances (megatonnes of carbon dioxide equivalent)	Human activities (megatonnes of carbon dioxide equivalent)	Net exchange (megatonnes of carbon dioxide equivalent)
2022	89	46	130
2023	1,000	-8.4	1,000
2024	430	4.7	430

Note: Data are accurate to 2 significant figures. Net exchange is calculated by subtracting removals from emissions. Natural disturbances refer to emissions and removals related to wildfires and large forest insect infestations. Human activities refer to emissions and removals from managed lands (such as settlements, forested lands, agricultural land and wetlands) as well as emissions from harvested wood products. For more information, see the section on [emissions and removals from human activities](#).

Source: Environment and Climate Change Canada (2026) [National Inventory Report 1990-2024: Greenhouse gas sources and sinks in Canada](#).

Table A.2. Data for Figure 2. Land-based greenhouse gas emissions and removals from human activities by activity sector, Canada, 1990 to 2024

Year	Forest sector (megatonnes of carbon dioxide equivalent)	Agricultural land (megatonnes of carbon dioxide equivalent)	Wetlands (megatonnes of carbon dioxide equivalent)	Settlements (megatonnes of carbon dioxide equivalent)	Net exchange (megatonnes of carbon dioxide equivalent)
1990	41	5.9	10	5.0	62
1991	39	-1.6	9.8	5.1	52
1992	48	1.0	9.5	4.8	63
1993	53	8.4	9.0	4.4	75
1994	56	-4.6	8.6	4.2	64
1995	67	-6.3	8.8	3.8	74
1996	54	-5.0	8.4	4.5	62
1997	56	-8.5	8.2	4.2	60
1998	43	-4.4	8.2	4.4	52
1999	56	-14	8.3	4.4	55
2000	67	-16	7.5	4.4	63
2001	45	-9.4	7.3	4.6	48
2002	60	6.9	7.3	5.0	79
2003	54	9.8	7.3	4.9	76
2004	85	-22	7.2	5.3	75
2005	89	-20	7.0	5.2	82
2006	72	-24	6.8	5.7	61
2007	63	-17	6.9	5.6	59
2008	53	-19	6.9	5.9	47
2009	37	-34	6.8	4.8	15
2010	50	-20	6.6	4.9	41
2011	43	-13	6.2	5.2	41
2012	36	-21	6.2	5.7	27
2013	38	-22	6.4	6.3	29
2014	34	-40	6.3	6.4	6.9

Year	Forest sector (megatonnes of carbon dioxide equivalent)	Agricultural land (megatonnes of carbon dioxide equivalent)	Wetlands (megatonnes of carbon dioxide equivalent)	Settlements (megatonnes of carbon dioxide equivalent)	Net exchange (megatonnes of carbon dioxide equivalent)
2015	37	-7.7	6.0	6.4	42
2016	27	-13	6.1	6.4	26
2017	27	-19	5.8	5.5	20
2018	33	-19	5.6	5.0	24
2019	18	-12	5.6	5.0	17
2020	26	-10	5.6	4.8	26
2021	18	-14	6.0	4.7	15
2022	12	24	5.7	4.6	46
2023	2.1	-21	5.6	4.7	-8.4
2024	-1.7	-3.4	5.4	4.4	4.7

Note: Data are accurate to 2 significant figures. Net exchange is calculated by subtracting removals from emissions. Greenhouse gas exchange from the forest sector considers emissions and removals from managed forests and transfers to and from the harvested wood products pool. Harvested wood products originate from forest trees with contributions of bioenergy from urban trees and agricultural land. As such, the reported forest sector emissions may differ at times from some information presented in the National Inventory Report. For more information, see Chapter 6.4 of the [National Inventory Report](#).

Source: Environment and Climate Change Canada (2026) [National Inventory Report 1990-2024: Greenhouse gas sources and sinks in Canada](#).

Table A.3. Data for Figure 3. Regional land-based greenhouse gas emissions and removals from human activities, Canada, 1990 to 2024

Region	Year	Forest sector (megatonnes of carbon dioxide equivalent)	Agricultural land (megatonnes of carbon dioxide equivalent)	Wetlands (megatonnes of carbon dioxide equivalent)	Settlements (megatonnes of carbon dioxide equivalent)	Net exchange (megatonnes of carbon dioxide equivalent)
Mountain	1990	-29	0.98	0.62	1.6	-26
Mountain	1991	-19	0.81	0.59	1.9	-16
Mountain	1992	-14	0.88	0.56	1.4	-11
Mountain	1993	-11	0.60	0.54	1.3	-8.8
Mountain	1994	-12	0.61	0.51	1.4	-9.4
Mountain	1995	-10	0.62	0.49	1.3	-8.0
Mountain	1996	-10	0.47	0.48	1.1	-7.7
Mountain	1997	-10	0.49	0.46	1.2	-8.3
Mountain	1998	-13	0.50	0.44	1.1	-11
Mountain	1999	-7.9	0.34	0.43	1.2	-5.9
Mountain	2000	-3.8	0.40	0.42	1.2	-1.8
Mountain	2001	-6.4	0.45	0.40	1.1	-4.5
Mountain	2002	2.3	0.40	0.39	1.0	4.1
Mountain	2003	4.3	0.51	0.38	1.0	6.2
Mountain	2004	19	0.35	0.37	1.1	21
Mountain	2005	28	0.29	0.36	1.0	30

Region	Year	Forest sector (megatonnes of carbon dioxide equivalent)	Agricultural land (megatonnes of carbon dioxide equivalent)	Wetlands (megatonnes of carbon dioxide equivalent)	Settlements (megatonnes of carbon dioxide equivalent)	Net exchange (megatonnes of carbon dioxide equivalent)
Mountain	2006	30	0.33	0.35	1.1	32
Mountain	2007	32	0.30	0.34	1.1	34
Mountain	2008	31	0.30	0.33	1.0	33
Mountain	2009	29	0.29	0.32	0.85	30
Mountain	2010	33	0.30	0.31	0.90	35
Mountain	2011	34	0.34	0.30	1.2	36
Mountain	2012	31	0.34	0.30	1.2	33
Mountain	2013	32	0.25	0.29	1.2	34
Mountain	2014	29	0.22	0.28	1.0	31
Mountain	2015	28	0.28	0.27	0.94	30
Mountain	2016	26	0.41	0.27	0.94	28
Mountain	2017	27	0.47	0.26	0.92	29
Mountain	2018	30	0.30	0.25	0.79	31
Mountain	2019	24	0.43	0.25	0.80	25
Mountain	2020	22	0.42	0.24	0.73	24
Mountain	2021	21	0.45	0.24	0.74	23
Mountain	2022	18	0.41	0.23	0.73	19
Mountain	2023	13	0.35	0.22	0.72	14
Mountain	2024	10	0.45	0.22	0.70	11
Boreal	1990	-27	8.5	8.7	4.1	-5.7
Boreal	1991	-30	7.0	8.3	4.1	-10
Boreal	1992	-21	6.1	8.0	4.2	-3.1
Boreal	1993	-16	8.0	7.5	4.1	3.7
Boreal	1994	-7.2	3.1	7.2	4.0	7.1
Boreal	1995	5.2	1.4	7.4	4.0	18
Boreal	1996	-3.7	2.2	7.0	4.4	10
Boreal	1997	2.5	3.5	6.8	4.2	17
Boreal	1998	-1.6	2.4	6.8	4.4	12
Boreal	1999	6.0	0.97	6.9	4.4	18
Boreal	2000	14	0.43	6.1	4.5	25
Boreal	2001	3.6	0.81	5.9	4.8	15
Boreal	2002	11	3.7	5.9	5.3	26
Boreal	2003	8.0	6.8	5.9	5.2	26
Boreal	2004	17	-1.9	5.8	5.5	26
Boreal	2005	16	0.87	5.6	5.7	28
Boreal	2006	1.7	-1.9	5.4	6.2	11

Region	Year	Forest sector (megatonnes of carbon dioxide equivalent)	Agricultural land (megatonnes of carbon dioxide equivalent)	Wetlands (megatonnes of carbon dioxide equivalent)	Settlements (megatonnes of carbon dioxide equivalent)	Net exchange (megatonnes of carbon dioxide equivalent)
Boreal	2007	-4.9	0.17	5.6	6.1	7.0
Boreal	2008	-11	-0.56	5.5	6.5	-0.08
Boreal	2009	-20	-1.7	5.4	5.7	-10
Boreal	2010	-11	0.19	5.2	5.7	-0.27
Boreal	2011	-18	2.0	4.9	5.7	-5.6
Boreal	2012	-20	-2.3	4.9	5.8	-11
Boreal	2013	-20	1.1	5.0	6.3	-7.3
Boreal	2014	-20	-4.1	5.0	6.7	-13
Boreal	2015	-17	2.4	4.7	6.4	-3.2
Boreal	2016	-23	0.40	4.8	6.4	-11
Boreal	2017	-22	0.96	4.5	5.7	-11
Boreal	2018	-21	-1.6	4.3	5.5	-12
Boreal	2019	-23	1.8	4.3	5.5	-12
Boreal	2020	-14	3.4	4.2	5.6	-0.53
Boreal	2021	-19	5.5	4.7	5.4	-3.0
Boreal	2022	-20	8.4	4.3	5.4	-1.5
Boreal	2023	-20	0.52	4.2	5.3	-10
Boreal	2024	-19	4.7	4.1	5.2	-5.2
West coast	1990	22	0.24	0.12	-0.08	22
West coast	1991	23	0.22	0.11	-0.24	23
West coast	1992	25	0.23	0.11	-0.21	25
West coast	1993	25	0.13	0.11	-0.28	25
West coast	1994	24	0.21	0.11	-0.42	24
West coast	1995	24	0.14	0.11	-0.64	23
West coast	1996	22	0.17	0.11	-0.24	22
West coast	1997	21	0.18	0.10	-0.39	21
West coast	1998	18	0.19	0.10	-0.45	18
West coast	1999	20	0.11	0.10	-0.69	20
West coast	2000	20	0.16	0.10	-0.68	20
West coast	2001	17	0.20	0.10	-0.57	17
West coast	2002	18	0.16	0.10	-0.59	18
West coast	2003	15	0.14	0.09	-0.58	15
West coast	2004	19	0.22	0.09	-0.60	19
West coast	2005	18	0.17	0.09	-0.68	17
West coast	2006	16	0.20	0.09	-0.75	15
West coast	2007	15	0.14	0.09	-0.76	14

Region	Year	Forest sector (megatonnes of carbon dioxide equivalent)	Agricultural land (megatonnes of carbon dioxide equivalent)	Wetlands (megatonnes of carbon dioxide equivalent)	Settlements (megatonnes of carbon dioxide equivalent)	Net exchange (megatonnes of carbon dioxide equivalent)
West coast	2008	13	0.16	0.08	-0.79	12
West coast	2009	11	0.22	0.08	-0.85	10
West coast	2010	12	0.14	0.08	-0.76	12
West coast	2011	13	0.16	0.08	-0.81	12
West coast	2012	13	0.19	0.08	-0.44	13
West coast	2013	14	0.26	0.08	-0.47	14
West coast	2014	13	0.20	0.08	-0.65	13
West coast	2015	13	0.21	0.07	-0.56	13
West coast	2016	13	0.28	0.07	-0.48	13
West coast	2017	13	0.23	0.07	-0.49	12
West coast	2018	13	0.21	0.07	-0.59	13
West coast	2019	11	0.21	0.07	-0.46	11
West coast	2020	11	0.27	0.07	-0.71	10
West coast	2021	10	0.24	0.07	-0.61	10
West coast	2022	9.4	0.26	0.07	-0.72	9.0
West coast	2023	7.7	0.28	0.07	-0.54	6.5
West coast	2024	5.4	0.24	0.06	-0.65	5.1
Prairies	1990	-0.47	-5.9	0.19	-0.14	-6.3
Prairies	1991	-0.53	-11	0.18	-0.15	-12
Prairies	1992	-0.47	-9.3	0.24	-0.15	-9.7
Prairies	1993	-0.36	-5.6	0.22	-0.15	-5.9
Prairies	1994	-0.16	-11	0.21	-0.15	-12
Prairies	1995	-0.05	-11	0.21	-0.16	-11
Prairies	1996	0.00	-11	0.20	-0.16	-11
Prairies	1997	0.01	-16	0.19	-0.16	-16
Prairies	1998	-0.12	-11	0.18	-0.16	-11
Prairies	1999	0.00	-17	0.17	-0.16	-17
Prairies	2000	0.05	-20	0.17	-0.16	-20
Prairies	2001	-0.06	-16	0.16	-0.17	-16
Prairies	2002	0.03	-1.3	0.16	-0.17	-1.3
Prairies	2003	-0.03	-0.42	0.15	-0.17	-0.46
Prairies	2004	0.05	-22	0.15	-0.17	-22
Prairies	2005	0.16	-24	0.14	-0.18	-24
Prairies	2006	0.14	-25	0.14	-0.18	-25
Prairies	2007	0.12	-21	0.13	-0.18	-21
Prairies	2008	0.12	-21	0.13	-0.18	-21

Region	Year	Forest sector (megatonnes of carbon dioxide equivalent)	Agricultural land (megatonnes of carbon dioxide equivalent)	Wetlands (megatonnes of carbon dioxide equivalent)	Settlements (megatonnes of carbon dioxide equivalent)	Net exchange (megatonnes of carbon dioxide equivalent)
Prairies	2009	0.14	-35	0.13	-0.18	-35
Prairies	2010	0.15	-25	0.12	-0.19	-25
Prairies	2011	0.13	-18	0.12	-0.17	-18
Prairies	2012	0.12	-22	0.12	-0.15	-22
Prairies	2013	0.05	-26	0.11	-0.11	-26
Prairies	2014	0.13	-39	0.11	-0.06	-39
Prairies	2015	0.15	-17	0.11	-0.01	-16
Prairies	2016	0.27	-18	0.10	-0.03	-18
Prairies	2017	0.45	-24	0.10	-0.05	-23
Prairies	2018	0.55	-22	0.10	-0.06	-21
Prairies	2019	0.54	-19	0.09	-0.13	-18
Prairies	2020	0.64	-19	0.09	-0.13	-19
Prairies	2021	0.37	-24	0.09	-0.13	-24
Prairies	2022	0.33	12	0.09	-0.14	12
Prairies	2023	0.13	-26	0.08	-0.14	-26
Prairies	2024	0.07	-12	0.08	-0.17	-12
Southeastern	1990	21	2.1	0.56	-0.52	24
Southeastern	1991	19	1.7	0.57	-0.51	21
Southeastern	1992	20	3.1	0.58	-0.55	23
Southeastern	1993	21	5.3	0.59	-0.64	26
Southeastern	1994	20	2.8	0.60	-0.64	23
Southeastern	1995	21	2.2	0.61	-0.67	23
Southeastern	1996	20	2.7	0.63	-0.64	23
Southeastern	1997	20	3.7	0.67	-0.68	23
Southeastern	1998	18	3.4	0.69	-0.54	21
Southeastern	1999	18	1.7	0.69	-0.46	20
Southeastern	2000	17	2.3	0.71	-0.49	20
Southeastern	2001	12	5.1	0.72	-0.50	17
Southeastern	2002	11	4.0	0.74	-0.56	15
Southeastern	2003	10	2.8	0.75	-0.54	13
Southeastern	2004	13	2.0	0.77	-0.50	16
Southeastern	2005	12	2.9	0.79	-0.63	15
Southeastern	2006	8.6	2.7	0.80	-0.66	11
Southeastern	2007	6.9	2.9	0.81	-0.67	9.9
Southeastern	2008	5.7	2.1	0.83	-0.67	8.0
Southeastern	2009	3.5	2.2	0.83	-0.68	5.9

Region	Year	Forest sector (megatonnes of carbon dioxide equivalent)	Agricultural land (megatonnes of carbon dioxide equivalent)	Wetlands (megatonnes of carbon dioxide equivalent)	Settlements (megatonnes of carbon dioxide equivalent)	Net exchange (megatonnes of carbon dioxide equivalent)
Southeastern	2010	2.7	3.9	0.85	-0.73	6.7
Southeastern	2011	0.53	2.1	0.85	-0.73	2.8
Southeastern	2012	-1.7	3.2	0.86	-0.78	1.6
Southeastern	2013	-0.43	2.7	0.86	-0.71	2.4
Southeastern	2014	-0.20	2.8	0.86	-0.60	2.9
Southeastern	2015	0.21	6.0	0.87	-0.42	6.6
Southeastern	2016	-1.7	4.0	0.88	-0.43	2.7
Southeastern	2017	-2.2	3.5	0.90	-0.62	1.6
Southeastern	2018	-1.8	3.9	0.90	-0.64	2.4
Southeastern	2019	-4.5	4.2	0.91	-0.66	-0.07
Southeastern	2020	-4.6	5.1	0.93	-0.67	0.74
Southeastern	2021	-5.8	4.2	0.95	-0.69	-1.4
Southeastern	2022	-6.2	2.6	0.96	-0.68	-3.3
Southeastern	2023	-6.9	3.7	0.97	-0.71	-2.9
Southeastern	2024	-7.8	3.3	0.98	-0.70	-4.2

Note: Data are accurate to 2 significant figures. Net exchange is calculated by subtracting removals from emissions. Regions are based on the location of the human activities across the country. Forest sector regional estimates provided do not include the long-term impact of emissions from forest harvest or deforestation prior to 1990.

Source: Environment and Climate Change Canada (2026) [National Inventory Report 1990-2024: Greenhouse gas sources and sinks in Canada](#).

Table A.4. Data for Figure 4. Land-based greenhouse gas emissions and removals from natural disturbances in managed areas, Canada, 1990 to 2024

Year	Wildfire – immediate emissions (megatonnes of carbon dioxide equivalent)	Post wildfire (megatonnes of carbon dioxide equivalent)	Insects (megatonnes of carbon dioxide equivalent)	Net exchange (megatonnes of carbon dioxide equivalent)
1990	29	-150	0.3	-130
1991	55	-150	0.4	-91
1992	12	-150	0.5	-140
1993	60	-150	0.5	-95
1994	67	-160	0.5	-89
1995	220	-140	0.6	78
1996	51	-130	0.6	-80
1997	14	-140	0.6	-120
1998	200	-130	1.0	80
1999	73	-120	3.5	-47
2000	10	-120	9.3	-100
2001	35	-120	17	-68
2002	130	-110	25	44

Year	Wildfire – immediate emissions (megatonnes of carbon dioxide equivalent)	Post wildfire (megatonnes of carbon dioxide equivalent)	Insects (megatonnes of carbon dioxide equivalent)	Net exchange (megatonnes of carbon dioxide equivalent)
2003	95	-110	39	29
2004	150	-100	44	91
2005	55	-98	51	8.5
2006	76	-91	58	42
2007	74	-88	66	53
2008	38	-90	66	14
2009	58	-90	59	26
2010	110	-84	53	81
2011	130	-75	45	100
2012	110	-69	40	83
2013	57	-70	36	23
2014	170	-63	31	140
2015	250	-47	28	230
2016	101	-41	25	84
2017	210	-33	22	200
2018	240	-23	19	240
2019	140	-19	16	140
2020	13	-26	15	3.0
2021	280	-7.0	14	290
2022	86	-10	13	89
2023	950	56	11	1,000
2024	350	71	10	430

Note: Data are accurate to 2 significant figures. Net exchange is calculated by subtracting removals from emissions. Wildfire emissions and removals are divided in 2 categories, (1) wildfire – immediate emissions and (2) post wildfire. Wildfire – immediate emissions include emissions from trees and soils from the burning of wildfires. Post wildfire includes emissions released by the decay of dead trees and soil organic matter and removals related to forest regeneration. Insect disturbances include emissions from the decay of organic matter and removals from natural regeneration.

Source: Environment and Climate Change Canada (2026) [National Inventory Report 1990-2024: Greenhouse gas sources and sinks in Canada](#).