

The Environmental State of Canada

2013 Update

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Executive Summary

Canadians view the protection and preservation of the natural environment as one of the most important functions of their governments.

This paper provides an overview of the major developments in Canada's environmental performance over the past several decades. We examine major indicators of environmental sustainability in a range of different areas including conventional air pollution, greenhouse gas (GHG) emissions and water pollution with the objective of identifying important trends and assessing whether Canada's natural environment is generally becoming more or less healthy over time.

Our review shows that despite a considerable amount of rhetoric suggesting otherwise, Canadians have much to celebrate concerning this country's natural environment. Over recent decades, Canada's air has become cleaner, ecosystems and timberlands have been preserved and our agricultural soil has become better protected from erosion. When it comes to water quality, at least one important indicator suggests that Canada has remained a world leader. All this has occurred while Canada's population and economy have grown strongly. While certain regions of the country continue to face significant local environmental challenges and nationally there is always more that can be done to improve the country's environmental performance, the data presented in this report suggest that Canada's natural environment is generally growing cleaner and greener.

Specifically, we examine Canada's environmental performance in the following areas:

- **Conventional air pollution.** Ambient levels of sulphur dioxide have declined steadily in recent years. Ambient concentrations of this pollutant in Canada's urban centres decreased by 57 per cent between 1996 and 2009. Ambient levels of nitrogen dioxide and volatile organic compounds (VOC) also decreased substantially in Canada's towns and cities.
- **Greenhouse gas emissions.** Over the last 20 years, Canada's total greenhouse gas emissions have increased, while some peer countries have achieved significant reductions. This is largely attributable to Canada's strong population and economic growth during this period. In fact, there is significant evidence that economic activity in Canada has become less GHG-intensive in recent years. GHG emissions per capita declined by 5 per cent between 1990 and 2010. GHG emissions per unit of Gross Domestic Product (GDP) showed an even larger decrease, dropping by 27 per cent over the same period.
- Freshwater quality. According to environment Canada's Freshwater Quality Indicator (WQI), 41 per cent of water quality measurement stations in Canada received ratings of excellent or good in the last reporting period compared with just 20 per cent that received a rating of marginal or poor. According to the internationally respected Environmental Performance Index (EPI), Canada is a world leader in terms of water quality. The EPI awarded just one country (Sweden) a better water quality rating than it did Canada.

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• **Soil quality.** Canada's agricultural soil is much better protected from erosion than it was three decades ago. Agriculture and Agri-Food Canada's Soil Erosion Risk Indicator (SoilERI) provides a measure of the extent to which different parcels of cropland are at risk from erosion. In 1981, 47 per cent of cropland was at very low risk of erosion, which is the safest possible rating. By 2006, this number had grown to 80 per cent of Canada's cropland. When examining specific types of erosion, we see that Canada's soil is better protected from wind, water and tillage erosion (the three major types). In addition, Canada's soil is healthier and more productive than it was decades ago.

• Forestry. Canada is a world leader in forest conservation. Its forest cover has been maintained over recent decades; there has been no reduction in overall forest cover. Canada is the leading international participant in a third-party certification system that uses rigorous standards to certify that forestland is managed sustainably. The share of Canada's forest that has been certified by respected third parties has grown steadily over recent decades, and Canada has more certified sustainable forestland than any other country.

The Annual Allowable Cut (AAC) sets out a maximum percentage of wood that can be harvested sustainably each year. Both hardwood and softwood resources have consistently stayed below the AAC. Underlining this sustainable achievement is the fact that Canada's 397.3 million hectares of forest have not decreased over recent decades. Third-party certification of forests has seen a large increase with Canada far exceeding the runner-up country in a global context. Where Canada has 151 million hectares of certified forest, the United States comes in second with 49 million hectares.

Some critics frequently excoriate Canada's environmental record and imply that our country is becoming more polluted and less environmentally healthy. The evidence presented in this report refutes such claims. In fact, Canada's natural environment is becoming cleaner and greener.

Introduction

Canadians care deeply about their natural environment and view the prevention of environmental pollution as one of the most important functions of their governments. Multiple polls taken over the years have shown that large numbers of Canadians view the preservation of the natural environment as a public policy priority.¹

In 2009, the Frontier Centre undertook an examination of the long-term trends surrounding the health and vitality of Canada's natural environment across a wide range of indicators.² Our objective was to provide an overview of Canada's environmental performance and to help citizens gain a better understanding of the condition of Canada's natural environment.

Our study concluded that while some areas required further improvement, the dominant theme that emerged from examining the relevant data was that Canada's natural environment had become considerably cleaner and greener over the previous 30 years. We wrote:

Canadians have a great deal to celebrate when it concerns their environment. Over the past 30 years, Canada has cleaned up its air and water, preserved ecosystems and timberlands and protected the soils that feed not only its people but also many others worldwide.

Our research showed that Canada made significant strides toward sustainability across a number of dimensions of environmental health. With a few exceptions, the data showed that Canada had a strong medium-term record of progress toward environmental sustainability.

This paper is a follow-up and an update to the 2009 paper. It presents data that have become available since 2009 and re-examines Canada's medium-term environmental performance in light of the most recent information.

Largely, the newly available data confirm the conclusions of our 2009 paper. While some environmental advocacy groups and commentators insist that environmental pollution is getting worse and that Canada's track record in this area should be a source of national shame, an objective examination of the data across a broad range of indicators tells a very different story. Over the past four decades, Canada has made impressive environmental progress. The health and vitality of the country's natural environment have improved steadily. This has made Canada a healthier place for its inhabitants, while also helping to ensure that future generations will enjoy a healthy natural environment and benefit from Canada's tremendous natural resource endowment.

To measure Canada's progress, we examined a number of indicators across several dimensions of environmental sustainability. Specifically, we examined urban air pollution, GHG emissions, freshwater withdrawals, freshwater quality, agricultural soil quality and forestry.

In assessing Canada's environmental performance, we will detail its great achievements in protecting its environment. However, we will also show where Canada as a whole and some provinces can improve.

Conventional air pollutants

The quality of the air we breathe significantly influences our health. Extensive research has demonstrated that prolonged exposure to high levels of air pollution can cause poor health and, specifically, serious respiratory problems.³ For this reason, reducing air pollution in urban centres has long been identified as one of the government's highest priorities in environmental policy.

Happily, urban air quality has improved dramatically in recent decades. Despite rapid population growth and strong economic growth, the recent past saw remarkable declines in the ambient levels of many air pollutants in Canada's cities and towns.

In our 2009 report, we showed that there was a multi-decade trend toward cleaner air in Canadian cities. For example, one indicator that showed progress was the level of ambient sulphur dioxide in the cities and towns. Sulphur dioxide is a pollutant with significant negative health effects for humans and is linked to increased instances of respiratory disease. In 1977, more than 40 per cent of air quality monitoring stations across Canada collected readings with one-hour averages above the government's maximum level. By 2001, this number dropped to just 15 per cent. Using the less stringent maximum acceptable standard, only 5 per cent of stations in 2001 failed to meet the standard compared with 20 per cent in 1977. We observed similar trends when we examined data for several other pollutants including nitrogen dioxide (NO₂) and VOC levels.⁴

Clearly, there is a long-term trend toward cleaner air in Canada's urban centres. The most recent data from the government of Canada suggest that this trend is in large measure continuing. Environment Canada tracks ambient levels of five different types of air pollution for its Environmental Indicators series, which monitors environmental performance in Canada. These pollutants are fine particulate matter, ground-level ozone, sulphur dioxide, nitrogen dioxide and VOC. All five pollutants can cause serious health problems if concentrations exceed dangerous levels in urban centres.

For three out of the five pollutants, the most recent data show a significant mediumterm trend toward cleaner air. As the charts below show, there was a statistically significant reduction in ambient levels of sulphur dioxide, nitrogen dioxide and VOC between 1990 and 2010. These data sets are based on the annual average of daily concentrations recorded at stations across Canada. (For some measures, stations are weighted differently depending on their proximity to major population centres.) The Environment Canada data show:

- Average ambient concentrations of sulphur dioxide dropped from 4.2 parts per billion (ppb) in 1996 to 1.8 ppb in 2010. This is a reduction of 57 per cent.
- Average ambient concentrations of nitrogen dioxide dropped from 17.7 ppb in 1996 to 10.8 ppb in 2010. This is a reduction of 39 per cent.
- Average ambient concentrations of VOC dropped from 138 ppb in 1996 to 57.5 ppb in 2010. This is a reduction of 58 per cent.⁵

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There is some variation between regions of the country in terms of precisely how much progress has been made toward a reduction in ambient levels of these air pollutants, but all regions have made significant progress. The following charts illustrate the progress made in controlling the ambient levels of these three important pollutants.



Source: Environment Canada

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Source: Environment Canada

The picture is somewhat more complicated for the two remaining pollutants reported upon by Environment Canada. For fine particulate matter, Environment Canada notes that there was no statistically significant change in average ambient levels between 2000 and 2010. 2010 saw a significant uptick in fine particulate matter levels compared with 2009 thanks largely to forest fires in several regions of the country and a warmer, dryer year in most of Canada.⁶

Even with the higher 2010 levels, however, no statistically significant trend in either direction existed over the past decade. Canada has not had as much success in reducing fine particulate matter levels as it has in cutting some other pollutants. Similarly, ground-level ozone levels have remained stubborn in recent years. In fact, there has been a mild but statistically significant increase in ambient levels of ground-level ozone over the past 20 years in Canada's towns and cities. The following chart shows population-weighted, warm season average, ambient ozone concentrations between 1990 and 2010.

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Source: Environment Canada

Ground-level ozone can harm human health by creating and aggravating respiratory disease and by reducing lung function.⁷ However, it is noteworthy that the increase in ground-level ozone has been very small relative to the large reductions that were achieved for other types of air pollution.

Overall, the data for these five indicators show that the air Canadians breathe is significantly cleaner and healthier than it was just three decades ago.

This dramatic improvement in Canadian air quality seems even more impressive in light of the population growth in the cities in recent decades. Canadian towns and cities have grown quickly over the past 30 years due to natural population growth, immigration and the significant urbanization of the population. In addition to increasing populations, cities and towns have experienced significant per person economic growth. Together, these trends mean the urban centres have larger populations and are more economically productive than they were in the 1970s. As urbanization and economic growth unfold, there is a simultaneous improvement in urban air quality. This should be seen as significant evidence of environmental progress.

Greenhouse gas emissions

Over the past century, there has been a slight increase in average global temperatures. Many scientists think this change is caused primarily by the actions of human beings, specifically the emission of GHG into the atmosphere. Further, some scientists warn that computer models suggest that if GHG emissions are not reduced, this warming trend may accelerate and cause major environmental and economic disruptions.

There are scientists who are skeptical of this opinion and suggest that the sensitivity of the climate to greenhouse gasses is not alarmingly high. According to this camp, only modest warming (or the suppression of cyclical cooling trends) should be expected in the decades ahead.⁸

Without wading into this highly politicized debate, it is sufficient for the purposes of this paper to state that given the fact that many scientists predict serious negative effects from increased GHG emissions, we can assert that rising global GHG emissions should be recognized as posing environmental risks and that reducing Canada's emissions would help mitigate these risks.

Certain environmentalist groups and critics of the current government's environmental performance frequently excoriate Canada's record in this area.⁹ These criticisms usually rely on the following two arguments: Canada's per capita GHG emissions are among the highest in the world, and Canada's total emissions have increased over the past 20 years while many other affluent countries have achieved reductions. However, a careful look at the relevant data show that the narrative of Canada as a laggard in this area is something of an oversimplification. In fact, once economic and population growth are accounted for, Canada's performance compares favourably



Source: Environment Canada

with many peer countries. This section will put Canada's recent record on GHG emissions in context.

Critics of this record frequently point out that Canada's total GHG emissions have increased since 1990 (the year the Kyoto Protocol was signed), while many comparably affluent countries have achieved significant reductions. And it is true, as Chart 5 shows, Canada's emissions have grown over the past two decades. Total emissions began to decline over the past few years. However, total national GHG emissions in 2010 were 17 per cent higher than was the case in 1990. By way of comparison, total annual emissions for the EU-15 countries have decreased by approximately 13 per cent over the same period.

Although critics of Canada's record frequently cite this national emissions growth, it is a crude measure of environmental progress that does not account for the impact of economic growth or even different rates of increase in population among countries. All else being equal, an increase in a country's population will lead to an increase in national fossil fuel consumption and GHG emissions. To conduct a meaningful evaluation of emissions reductions, it is necessary to control for these differences, since it is much harder for a rapidly growing country to achieve absolute emissions reductions compared with a country that is experiencing little or no growth.

Canada has experienced much more rapid population growth than most other affluent countries in recent decades. For example, between 1990 and 2009, Canada's population increased by 22 per cent compared with just 9 per cent in the EU-15. Since the economic activity of human beings creates a portion of GHG emissions, population growth is a major driver of national emissions growth. Examining GHG emissions growth per capita helps account for this important variable. When population growth is considered, we see that Canada's per capita emissions *actually went down* by 5 per cent between 1990 and 2010. Although there has been an increase in Canada's total emissions since 1990, this increase is primarily a function of population growth, as per capita emissions have been reduced.

Population growth has been highly correlated with higher rates of GHG emissions growth in affluent countries over the past two decades. The same is true of economic growth. Economic activity often includes the consumption of fossil fuels. All else being equal, higher levels of economic activity lead to higher levels of GHG emissions. Therefore, countries with booming economies generally find it much harder to control GHG emissions than do countries with slowly growing economies. Canada has enjoyed relatively strong economic growth over the past 20 years, and this is a major factor in its inability to achieve the absolute emissions reductions that have occurred in countries where the economies have not grown as quickly.

The effect of economic growth can be taken into account for evaluating Canada's performance by examining GHG emissions per unit of GDP. This indicator measures the GHG emission intensity of economic activity by comparing the total amount of activity that takes place in a year with the total amount of GHG emitted. This is a useful statistic because it helps measure GHG emission trends in a way that does not punish economic growth.

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Canada has made significant strides in reducing its GHG intensity in recent years. GHG emission intensity per unit of economic activity (adjusted for inflation) dropped by 27 per cent between 1990 and 2010. Chart 6 shows this progress. This statistic means that substantially more goods were produced and more economic activity occurred per unit of GHG emitted in 2010 compared with 1990.



Despite this improvement, Canada's emission intensity is still relatively high when compared with most of its peers in the Organisation for Economic Co-operation and Development. Some explanations for this discrepancy include Canada's cold weather, its large geographic size and the type of natural resources that are located in different countries. However, the fact that Canada's per capita emissions and its GHG emission intensity have dropped significantly since 1990 shows that the notion that Canada has not made progress in this area is misleading.

Throughout much of the past 20 years, Canada's GHG emissions continued to rise before starting to drop during the past several years. Although some countries have managed to achieve more-impressive reductions, Canada's record in this area is not unusually poor compared with peer countries that have experienced comparable levels of economic and population growth.¹⁰

Freshwater quality

TABLE 7

Freshwater loses its utility and value when polluted. Many types of water pollution can render freshwater resources useless for most economic purposes and dangerous for human consumption. This pollution can have negative health effects on human beings and animal life. For example, the release of large quantities of plant nutrients including phosphorus and nitrogen can create toxic algal blooms in fresh water. Large concentrations of mercury and industrial chemicals can have negative effects on human health and threaten the survival of marine life.¹¹

Measuring water quality is not completely straightforward. Aquatic ecosystems are complex, and there are many factors to consider in the assessment of water quality. For this reason, a number of international organizations and governing bodies have developed composite measures designed to provide an overall assessment of water quality. Using this data, we can compare Canada's performance with peer countries.

Among the most widely respected and cited measures used in cross-country analysis of water quality is the Environmental Performance Index of Water Quality (EPI). Academics at Yale and Columbia developed the EPI, which assigns each country that it monitors a rating based on measurements from water sites.¹² As the chart below illustrates, the quality of fresh water in Canada as measured by the EPI is among the best in the world. This chart compares Canada to nine other similarly affluent countries.



Canada's Freshwater Quality in a Global Context (Environmental Performance Index Rating)

Source: Environment Canada

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Within this peer group, Canada has the second-highest EPI rating, trailing only Sweden. Canada's performance in this area is better than a number of countries that enjoy strong reputations for environmental protection including Germany, France and Japan.

These numbers suggest that Canada's performance in maintaining the environmental health of its lakes and rivers is among the best in the world.

To provide a straightforward way to make an overall assessment of water quality in Canada and the extent to which water quality is changing, the federal government uses a composite measure known as the Water Quality Index (WQI). The WQI allows experts to convert a wide variety of complex water-quality data into a single rating for specific freshwater sites. The WQI measures how often pollutant levels exceed government guidelines and by how much, and it is a useful overall measure of water quality.

The WQI rates freshwater sites as excellent, good, fair, marginal or poor. High ratings (excellent and good) mean pollutant measurements rarely exceed water quality guidelines, and when they do, it is usually by a small margin.¹³

For this indicator, Environment Canada examines freshwater quality in rivers in populated regions. One hundred and seventy-three stations were measured in 16 drainage regions where human activity is especially intensive.¹⁴ As the chart below shows, the majority of stations across Canada were assigned a score of either fair or good, the second- and third-highest ratings on the five-level scale for 2007 to 2009.

TABLE 8 Status of Freshwater Quality at Sites in Canada (2007-2009)



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Freshwater quality in populated parts of Canada was rated either excellent or good at 71 monitoring stations, which constituted 41 per cent of all stations. By comparison, water quality was assessed as either marginal or poor at only 35 stations, which represented 20 per cent of the total. This means that twice as many stations across Canada received a positive score as received a negative score.

According to the WQI, there was little change in national freshwater quality since the last set of measurements in 2003 to 2005 (which were reported upon in the 2009 FCPP environmental indicators study). Only seven stations showed a significant improvement in water quality from the last measurement period, and only four stations showed a significant decline in water quality. For the remainder, there was no significant change. This is to be expected, given that freshwater quality indicators tend to change slowly over time.¹⁵

Canada has enormously abundant freshwater resources. Protecting this extraordinarily valuable environmental endowment should be a top priority for Canadian policymakers. Happily, the data suggest that Canada is a world leader in terms of freshwater quality. According to the most recent EPI statistics, Canada has the cleanest fresh water in the G8. There is no evidence that Canada's high level of water quality is declining, as Canada's strong performance in this area is mostly unchanged since the last major measurement period overseen by Environment Canada.

While the status of Canada's fresh water is very good by international standards, there is still reason to hope water quality will continue to improve. Major steps have been taken to reduce the harmful impact of municipal wastewater, a major source of water pollution.¹⁶ In 1983, fully 20 per cent of the population's wastewater received no treatment whatsoever. By 2009, this was reduced to just 3 per cent. Secondary and tertiary treatment can further reduce the likelihood of environmental harm from wastewater. In 1983, 40 per cent of the Canadian population benefitted from at least secondary wastewater treatment. By 2009, this number had grown to 68 per cent.¹⁷

Canada has made significant progress in providing thorough treatment to a larger percentage of wastewater. As more of Canada's municipal wastewater systems receive superior treatment, the potential for water contamination by wastewater continues to decline.

Canadians should view the preservation of this country's abundant fresh water as one of the most important ways of ensuring the continued environmental sustainability of our natural environment. Canada's strong record in this area indicates that its fresh water is protected from pollution in a way that is likely to ensure the continued quality and utility of its freshwater resources for future generations.

Soil quality

Canada has urbanized rapidly over the past several decades. Nonetheless, agriculture remains a significant contributor to economic activity. The agricultural sector directly employs more than 2 per cent of the workforce, and agricultural products constitute a significant share of Canada's exports.¹⁸ Clearly, the environmental sustainability of agricultural practices is necessary to guarantee the long-term vibrancy of this important sector of the economy.

Many factors determine the environmental health of Canadian agriculture. Among the most relevant indicators area are the quality and health of the soil used for agricultural activity. Soil quality is an important determinant of productivity. When soil quality is low, yields can be substantially smaller. Analyzing the trends surrounding soil quality and the protection of soil from erosion provides us with significant information about the sustainability of Canadian agriculture.

One of the most important measures of the sustainability of agricultural soil is the extent to which it is protected from the threat of erosion. Soil erosion is the movement of soil from one area to another. Soil erosion occurs mainly through three processes: wind erosion, water erosion and tillage erosion. Water and wind erosion are natural processes that can be accelerated by some farming practices, and tillage erosion is caused by the practice of tillage. All three are threats to agricultural sustainability, because they remove fertile topsoil, reduce organic matter in soil and contribute to the breakdown of soil structure.¹⁹ Erosion can lead to losses in soil fertility, crop yields and agricultural productivity. Soil erosion is therefore one of the most serious threats to agricultural sustainability, and trends in erosion are among the best indicators of sustainability in Canadian agriculture.

The government of Canada studies the threat posed by erosion by identifying areas at risk of significant erosion and analyzing how this risk has changed over time. There are separate analyses for each of the three major types of erosion. Risk levels are expressed through a five-level scale that ranges from very low risk to very high risk. Agriculture and Agri-Food Canada measures performance primarily by examining the percentage of cropland classified as being at very low risk, as the other four classes represent potentially unsustainable conditions with each of the four categories representing a different level of risk.

Over recent decades, Canada has made marked progress in reducing the risk presented by all three types of erosion. The most recent statistics released by Agriculture Canada on this subject, which analyzed trends in soil protection between 1981 and 2006, confirm this progress.

As the chart below illustrates, the percentage of cropland that falls into the very low risk classification for all three types of erosion has risen significantly since 1981.



Percentage of Cropland at Very Low Risk of Erosion



• The share (percentage) of cropland classified as being at very low risk of water erosion increased from 87 per cent in 1981 to 90 per cent in 1995.

- The share of cropland classified as being at very low risk of wind erosion increased from 85 per cent in 1981 to 97 per cent in 2006.
- The share of cropland classified as being at very low risk of tillage erosion increased from 78 per cent in 1981 to 95 per cent in 2006.

The share of Canada's farmland deemed to be at very low risk of each type of erosion has increased significantly since 1981. Agriculture and Agri-Food Canada has also developed a composite measure, the SoilERI, which assesses the risk of erosion on cultivated agricultural lands from all three types combined.²⁰ According to this measure, the risk of soil erosion on cropland has "steadily declined between 1981 and 2006."²¹ In 1981, just under half (47 per cent) of cropland was in the very low risk class for this composite indicator. By 2006, fully 80 per cent was classified as being at very low risk of erosion. The cropland in each of the four higher risk classes dropped by approximately half during this period and stood at a cumulative total of 20 per cent in 2006.²²

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Source: Agriculture and Agri-Food Canada

As Canada has successfully reduced the risk faced by its agricultural soil from erosion, it has also experienced an improvement in soil quality over the past three decades. The measurement of soil quality, much like the measurement of water quality, is complex. However, a number of indicators provide useful information about general soil health. One such indicator is the Soil Organic Carbon Change (SOCC). Organic carbon matter in soil affects many aspects of the quality, and high levels of organic matter are needed for good soil health and productivity.

The SOCC estimates changes in organic carbon levels in agricultural soil. Although no single indicator can provide a complete picture of soil quality, Agriculture and Agri-Food Canada uses the SOCC as a primary tool in assessing the health of Canadian soil.²³ While the indicator is relatively complicated, its interpretation is comparatively straightforward. Net gains in soil organic carbon indicate likely improvements in soil quality, whereas net losses indicate likely deterioration in soil quality.

According to this indicator, Canada has made significant gains in terms of soil health. Agriculture and Agri-Food Canada notes that a "dramatic shift" from neutral soil organic carbon during the 1980s to a healthier situation in which a majority of farmland had increasing SOCC by 2006. According to the SOCC indicator, Canada's soil became considerably healthier during this period. The department credits improvement in farm management practices for these gains.²⁴

Agriculture Canada also notes that this progress means that cropland has become a larger soil sink for carbon dioxide that would otherwise be released into the atmosphere. Whereas soil was a net source of one megaton of CO_2 per year in 1981, it was a net sink of almost 12 megatons of CO_2 by 2006.²⁵

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This evidence suggests that the quality and sustainability of agricultural soil have been enhanced in recent years. Soil quality indicators have improved, while simultaneously there has been a significant reduction in the share of farmland that is vulnerable to erosion. This progress has been accompanied by major gains in farm productivity. Environmental progress and recent technological innovations have caused farm productivity to rise substantially along with overall crop quantity, variety and total cash income from agriculture and agricultural exports.²⁶ Canada is a highly urbanized country, but agriculture remains a major component of the economy and ensuring its sustainability is an important aspect of successful environmental policy. The fact that farm productivity has risen while the major indicators of soil health and sustainability have improved shows that major progress has occurred in the sustainability of Canadian agricultural practices.

Forestry

Canada is blessed with abundant forest resources. The sustainable management of these resources is an important priority of environmental policy in this country. The challenge facing governments is how to make sure that Canadians maximize the opportunities for economic activity provided by Canada's forests while simultaneously ensuring that the forests are managed sustainably so that future generations can benefit from them and enjoy them.

Balancing these two priorities is important for both Canada's short-term economic prospects and its long-term prosperity. Forestry represents a significant component of the national economy, and Canada is the world's single-largest exporter of forest products. The forest industry directly employs approximately 230,000 and constitutes roughly 2 per cent of Canada's GDP each year.²⁷

To achieve these priorities, provincial and territorial governments regulate the amount of wood harvested each year. The Annual Allowable Cut (AAC) specifies these regulations. Provincial forest managers try to establish the AAC at the maximum level of sustainable use. The AAC is set at the level at which forest managers are confident that harvested trees can be replaced, with the goal of sustaining the health and vitality of the provinces' and territories' forest resources over a long period of time.²⁸

Canada's provinces have stayed below the AAC consistently for both hardwood and softwood forest resources. In the case of hardwood lumber, harvests have generally been significantly below the AAC. In some years, the harvest has been equivalent to roughly 60 per cent of the AAC.²⁹ These numbers suggest that Canada's forests are not over-harvested and that some increases in forestry could be undertaken with no likely negative environmental consequences.

The evidence that Canada's forests are managed soundly is most clearly established by considering the fact that there has been no reduction in the overall level of forest cover in recent decades. Canada has 397.3 million hectares of forest, other wooded land and other land with tree cover.³⁰ This number, which represents 10 per cent of the world's forest cover, has not decreased over recent decades. The fact that Canada's forest cover is being maintained suggests that forestry activity in Canada is sustainable and is not leading to losses in tree cover.

Another indicator that suggests Canada's forests are managed sustainably is the recent large increase in forested areas certified by third-party certification organizations as being sustainably managed. Third-party certification by any of the three major internationally recognized certification systems requires that a specific forest area is managed according to strict criteria, including a high level of biodiversity and ecosystem resilience.³¹

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Source: Canadian Sustainable Forestry Certification Coalition

The chart above illustrates the progress Canada has made in obtaining sustainability certification for its forestland. In 2001, less than 21 million hectares of forestland were certified as sustainable. By 2011, this number had increased to 151 million. With this dramatic expansion of forest-area certification, Canada now has more total area of certified forest than any other country.

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That Canada has emerged as a world leader in forest sustainability certification provides further evidence that current forest-management practices are generally sustainable and that Canada is positioned to continue its strong record of forest conservation.



Source: Canadian Sustainable Forestry Certification Coalition

Conclusion

Canadians have a great deal to celebrate regarding the state of the environment. Over the past 30 years, Canada's air and water have become cleaner. Canada's agricultural land is healthier and better protected from erosion, and millions of hectares of forests are certified as being sustainably managed. All these improvements occurred while Canada's population and economy grew significantly. However, there is always more that can be done better in order to protect the natural environment. And, of course, individual regions of the country still face specific, local environmental challenges. However, overall, the evidence presented in this report strongly suggests that Canada's natural environment is becoming cleaner and greener.

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Further Reading

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The Myth of North American Carbon Reduction Laggards

By Ben Eisen, Jonathan Wensveen

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http://www.fcpp.org/publication.php/3989

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An Environmental Policy for the 21st Century

By Robert Sopuck

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