State of the Environment

Prince Edward Island
CANADA

State of the Environment
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Cover Photo: New Glasgow, Prince Edward Island
Cover Photography: Airscapes Prince Edward Island

The leaves depicted on the cover and throughout the report are from the Red Oak which was adopted as the provincial tree in 1987. At one time, the Red Oak was widely distributed in the hardwood areas of the province. It is now confined to small scattered areas.

MESSAGE FROM THE PREMIER AND THE MINISTER

With its pastoral landscapes and beautiful seascapes, Prince Edward Island's environment has enormous appeal to residents and tourists. It is also the source of much of the economic wealth of the province. Our health, the well-being of our economy, and our quality of life are all dependent on clean water and air and well-managed soil resources. That it why it is vital that we protect these resources - and to effectively do that, we must have the ability to measure our progress.

This State of the Environment report is the first for Prince Edward Island. It contains indicators that provide a snapshot of the environment. For example, the presence of *E. coli* in private water wells, protected land area, and the volume of pesticides used. The report is not the complete picture and it may not reflect the results of more recent actions taken to protect and enhance our Island environment. However, it is an important tool to help identify areas where we are doing well and those where we need to work harder.

We believe we are making progress. Prince Edward Island has been a leader in many initiatives that will have positive environmental impact. We were the first jurisdiction to implement buffer zones and crop rotation. We are a leader in wind energy research with the North Cape Wind Test Site. We are the first jurisdiction to have a province-wide source separation waste management system, diverting 65 per cent of waste from burial. We have implemented a Drinking Water Strategy to protect our water resources. We were the first jurisdiction to regulate the installation and replacement of home heat tanks. We lead the country in environmental farm planning. We have adopted an action plan to lessen the impacts of climate change. And, we have implemented a Sustainable Resource Policy to chart the future direction for our primary industries. These are all steps in the right direction and they will all have a positive impact over time.

Protecting and enhancing our environment is a work in progress. We recognize that change is not always as swift as we would like, however, we must remember that human activity has impacted on the environment over a period of decades, even centuries. It will take time to lessen those impacts. We hope that information in this first State of the Environment report will generate discussion and inspire further action. As individuals, business owners, and communities, we all have the power to bring about change. We make choices every day that impact on our environment - either positively or negatively. As you read this report, please consider ways you can help advance progress. Working together, we can make a difference.

Pat Binns
Premier

J. Chester Gillan
Minister of Environment

> **"As people living on an island, we are acutely aware that our resources are finite, fragile and limited. Ensuring the sustainability of our Island and its natural resources for present and future generations must be a priority for all Islanders and their government."**
>
> - Speech from the Throne 2002

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INTRODUCTION

This first State of the Environment report is part of a broad initiative to create a sustainable future for the Province of Prince Edward Island. The Island's economic potential is firmly rooted in sectors which rely on natural resources. The quality and sustainability of these resources is critical to agriculture, aquaculture, tourism, forestry and the fishery. It is also an important factor in quality of life for Islanders. Reporting publicly on environmental quality has tended to happen in reaction to a pollution incident or community issue. The objectives of this report are to contribute to public awareness about the state of the environment and allow for informed decision making in all sectors of society.

WHAT ARE INDICATORS?

Indicators are pieces of information which reflect the workings of large complex systems. They can be symptoms, trends, warnings or simply unanalyzed measurements. They don't tell us everything but they should provide enough information to tell a credible story and help make good decisions. For example, a fever indicates that the body is fighting an infection. Having this information enables that person to decide the best course of action. By monitoring the health of our environment we can understand how policies, programs and individual decisions are contributing to sustainability. Indicators provide a baseline of information which will allow us to judge whether decisions need to be re-assessed.

CRITERIA FOR INDICATORS

A good indicator should meet a number of criteria:

- should provide links by being related to economic and social concerns and benefits;
- should be relevant, especially to policy decisions and to the values and familiar issues in the population;
- should be understandable and easy to interpret by the target audience;
- should be accurate whether based on scientific, community or traditional knowledge;
- should be long term and derived from information that is collected in a comparable manner from year to year and which will be available in the future; and
- should be outcome based and measurable where possible.

These criteria guided the selection of the indicators in this report. Many of the indicators recommended in the report of the Round Table on Resource Land Use and Stewardship in 1997 meet these criteria and many are included in this report.

USING THE REPORT

The indicators are grouped according to a resource (e.g. air, soil, water) or other category (pesticides, waste management). The relevance of each indicator is explained and then data - current and in some cases historical - is reported to indicate a trend. Several indicators are linked directly to the goals of the Government's Sustainable Resource Policy. An objective is included where there is a measurable target to achieve. The sources of the data are referenced and can be accessed through the appropriate agency.

In selecting indicators and looking for data, it was tempting to limit the process to the availability of data. There is certainly plenty of data related to the state of the environment but much of it does not meet enough of the criteria to be selected as an indicator. However, in the case of some topics such as biodiversity or environmental stewardship, although it is difficult to get "true" indicators, we felt that it was important to report on the status. Therefore, sometimes survey data is used in lieu of real data sets; and in other cases, proxy measures are reported. For example, numbers of species is a proxy indicator for biodiversity.

This publication is intended to be the first of a series of regular reports on the state of Prince Edward Island's environment. It is important to recognize that this is work in progress; it is not a definitive statement. It combines quantitative and qualitative measures for indicators which meet at least some of the desirable criteria. This first edition is intended to stimulate a broad discussion in the community on how best we can measure and report progress toward stated goals in sustainable resource management. How can those indicators guide our decision making? We want this report to challenge the public, the academic community, the business community and governments to determine better ways to assess the environmental impact of our choices and actions. This will enable us to devise ways to reduce our negative impact.

We want to hear from you. Please take a moment to fill out the feedback form at the back of the report or go to our online version at <www.gov.pe.ca/go/soe>.

SUMMARY OF INDICATORS

Drinking Water Quality

Measured as the concentration of nitrate and the presence of *E. coli* bacteria in private water wells, as well as the number of homes serviced by central water and wastewater systems.

Surface Water Quality

Measured as the amount of nitrate in three streams and the percentage of total classified shellfish growing areas that are not open for harvest.

Climate Change

Measured as the rise in sea level at Charlottetown and the amount of greenhouse gases produced.

Energy Use

Measured as the average monthly household use of electricity, the amount of gasoline consumption, and the amount of wood burned for heating purposes.

Air Quality

Measured as the sulphur dioxide concentration in Charlottetown, the acidity of rain and amount of particulate matter.

Pesticides

Measured as the active pesticide ingredient used on row crops, compliance with the *Pesticides Control Act*, public opinion on pesticides, and the number of reported fish kills in rivers.

Waste Management

Measured as the percentage of solid waste diverted from disposal by burial.

Biodiversity

Measured as the number of species in Prince Edward Island, the amount of land protected under the *Natural Areas Protection Act*, and the forest cover type. These are proxy indicators.

SUMMARY OF INDICATORS

Environmental Stewardship

Measured as the number of people driving to work, the amount of citizen participation in environmental stewardship projects, the weeks of casual employment in conservation projects, the number of violations under environmental legislation, and percentage of citizens in compliance with the standards for home heat tank installation.

Soil Quality

Measured as the amount of potato land in three-year or greater crop rotation, the amount of row crops under engineered soil conservation management, organic matter in soil, and the amount of land in certified organic production.

Land Use

Measured by the number of farms with environmental farm plans, the percentage of agricultural land cultivated for crop production, and the area of forest cover.

HIGHLIGHTS

This is the first State of the Environment report for Prince Edward Island. It has been undertaken to establish indicators of progress toward goals and objectives. In many instances, progress is being made such as an increase in the amount of solid waste diverted from disposal, and the amount of land receiving environmental protection. There are other trends that cause concern such as the rise in sea level due to climate change, and the number of pesticide-related fish kill events during heavy rain storms.
Following are highlights from each category of indicators.

Drinking Water

Prince Edward Island is totally dependent on groundwater sources for its drinking water. The water supply is generally good. However, average nitrate levels in private wells have increased steadily since 1984-85; and in 2002, 5.2% of wells exceeded the 10 mg/L guideline in the Guidelines for Canadian Drinking Water Quality. Central servicing for water and wastewater has increased by 7.3% and 7% respectively since 1998. Water provided through central systems has lower rates of positive bacteria tests than water from private wells. In 2001, a Drinking Water Strategy was launched to protect water supplies.

Surface Water

The Island's streams, ponds and estuaries are important for aquatic life and associated terrestrial wildlife. They are threatened by soil erosion and excess nutrients. Nitrate concentration has more than doubled in the last 20 to 30 years and corresponds with the amount of cleared land and increased row crop production. From 1995 to 2000, the percentage of area closed to shellfish harvest remained relatively the same.

Climate Change

There is evidence that climate change has been occurring. In Charlottetown, there has been a relative sea-level rise of 12 centimetres over 87 years. The province, especially the coastline, stands to be heavily impacted by sea level rise and more frequent storm surges. There has also been an increase in greenhouse gas emissions in Prince Edward Island. In 2001, this was 5.1% compared to the base year of 1990.
Prince Edward Island has prepared an action plan to take specific measures to lessen the impact of climate change and, at the same time, derive an economic benefit.

Energy Use

Like all Canadian jurisdictions, Prince Edward Island has a high per capita energy demand. The average household use of electricity increased about 14% from 1995 to 2001 and the amount of gasoline used has increased approximately 24% from 1965 to 2000, in spite of a dip in the 1980s due to more fuel-efficient engines. The amount of wood used for household heating has been reflective of the cost of heating fuel, as more wood is burned when the oil price is high. Renewable energy sources such as wind energy are being tested and the Province is pursuing natural gas.

Air Quality

Monitoring of air quality has increased in order to provide better data. Three monitoring stations are part of the National Air Pollution Surveillance Network. The results show that air quality, in spite of a few summer smog related incidents, is very good. For sulphur dioxide, Prince Edward Island's numbers are significantly below national maximums. From 1984 to 1990, there was a significant drop in the acid rain rate, but there has been a relatively small change in the last seven years. The particulate matter levels are also better than national standards. Prince Edward Island participates in Canada-wide Standards and is a signatory to the Acid Rain Action Plan of the New England Governors and Eastern Canadian Premiers.

HIGHLIGHTS

Biodiversity

We can infer from historical information and from settlement and land use data that biodiversity has been impacted significantly by the introduction of plants which flourish in an agricultural environment. There is also known to be a significant loss of mammal species related to loss of large tracts of mature forest. The land area protected under the *Natural Areas Protection Act* has been steadily rising, but remains well below the nationally recommended standard for Prince Edward Island of 7% of total land mass. The Province approved a Wetland Conservation Policy in 2003 and will continue to encourage land management practices which increase biodiversity.

Pesticides

While pesticides are used in agriculture, parks, golf courses and domestically, 90% of pesticides sold are used on row crops, primarily potatoes. Statistics from 1993 to 2003 show the volume of pesticides used has fluctuated depending on weather and the amount of land under potato production. However, there has been a trend toward increasing numbers of pesticide-related fish kills during the same period. The Province has made a commitment to reduce pesticide use as part of its Sustainable Resource Policy; and Prince Edward Island is working with the industry and other governments to develop an integrated pest management system for potatoes. The level of enforcement of the *Pesticides Control Act* has increased in the past three years. Enforcement of buffer zone requirements under the *Environmental Protection Act* has also increased and fines for violations were raised substantially in 2002.

Waste Management

The Waste Watch™ source separation waste management program became fully operational throughout the Island in late 2002 after a seven-year pilot project. It has resulted in a substantial increase in the diversion of waste materials from burial. The objective is to achieve 65% diversion by the end of 2003. This was achieved in the pilot area in the mid 1990s.

Environmental Stewardship

Environmental stewardship is reasonably high with 47% of respondents in a survey indicating they participate in environmental improvement activities. However, Prince Edward Island has the highest percentage in Canada of workers driving to work. Citizen compliance with environmental legislation is generally good, but there is room for improvement, especially in regard to roadside litter and illicit dumping and burning of garbage. The enforcement effort will remain high with priorities selected each year.

Soil Quality

Prince Edward Island soil is not inherently fertile, but can be managed to be productive. Soil quality ranks alongside water quality as a major environmental issue. Soil erosion is a threat to soil and water quality as well as the economic viability of agriculture. Efforts are being made to improve soil management through conservation practices encouraged by financial incentives, the *Agricultural Crop Rotation Act*, and other measures in the Sustainable Resource Policy. In 2001, 40% of potato land was in a rotation of less than three years and, therefore, potentially not in compliance with the *Agricultural Crop Rotation Act*. In 1999-2001, 68% of soil samples had an organic matter content of 3% or greater. The objective is to have 90% of samples at 3% organic matter or greater by 2010. As well, a target has been set to have a minimum of 2,025 organically managed hectares (5,000 acres) by 2006. In 2001, there were 607 hectares (1,500 acres) under organic production.

Land Use

Land use patterns have changed over the years due to social, economic and environmental circumstances. The proportion of agricultural land that is cultivated for crop production increased from 56% in 1981 to 67% in 2001. From 1900 to 1995, the amount of the province under forest cover increased from 31% to 48%. Farmers have become active in developing environmental farm plans. By 2003, 70% of farmland in Prince Edward Island was under environmental farm plans.

DRINKING WATER

PRESENT SITUATION

Prince Edward Island is totally dependent on groundwater for drinking water.

In 2000, the Sierra Club of Canada and University of Waterloo published "A Survey of the Quality of Municipal Supplies of Drinking Water From Groundwater Sources in Prince Edward Island". The survey results indicate water from municipal wells is of good quality.

Bacterial contamination is the most common drinking water problem and nitrates are a growing concern. Pesticides are rarely detected in drinking water.

WHAT CAN BE EXPECTED?

The presence of nitrate in drinking water is a potential health concern as is the presence of *E. coli* bacteria.

With nitrate, we may not yet have seen the full impact, and mitigation is a long-term process that will involve development of nutrient management plans, especially for agricultural crops which are the heaviest users of fertilizer.

With the Drinking Water Strategy and investment in infrastructure for central servicing, the detection of *E. coli* should decrease.

INDICATOR: Nitrate Concentrations in Private Wells

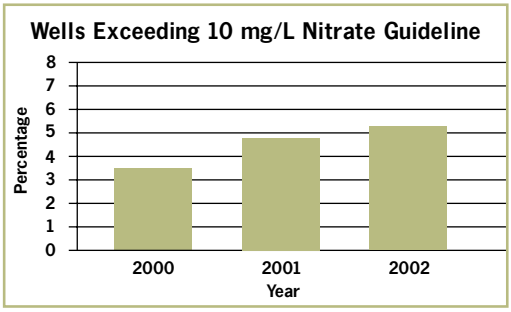
Description: Nitrate is the dominant form of nitrogen in groundwater and is measured in milligrams per litre (mg/L).

Importance: The level of nitrate in groundwater can be taken as a measure of agricultural impacts on groundwater and can be a potential health concern, possibly leading to "blue baby" condition in infants being fed formula made with water that has high nitrates. Over 57% of the Island population (the highest proportion in Canada) depend on private wells. These wells are tested on a voluntary basis.

Objective: To have all wells below the 10 mg/L nitrate guideline recommended by the Guidelines for Canadian Drinking Water Quality.

Status and Trends:

Year	Number of Wells Tested	Mean Nitrate Level (mg/L)	% of Wells Exceeding 10 mg/L
1984-85	792	3.2	N.A.
1995-96	1,227	3.5	N.A.
2000	2,410	3.6	3.5%
2001	3,447	3.7	4.9%
2002	3,111	3.9	5.2%



Interpretation: The nitrate concentrations in private wells have increased steadily since 1984-85. In 2000, 3.5% of wells exceeded the 10 mg/L guideline; 4.9% exceeded the guideline in 2001; and 5.2% of tested wells exceeded the 10 mg/L Canadian guideline in 2002.

Nitrate is present due to decay of vegetation, manure, and sewage, but the dominant source is fertilizer. Nitrate concentrations representative of "pristine" conditions are typically in the range of 2 mg/L or less. The average Island-wide nitrate concentration is in the range of 3.9 mg/L.

Response: The Sustainable Resource Policy and Environmental Farm Plan Program are addressing nutrient management.

The Water Management Division will work with municipalities and land owners in development of a strategy for municipal wellfield protection.

Data Source: PEI Department of Fisheries, Aquaculture and Environment

> **Given the well established link between land use and nitrate concentrations in groundwater, recent expansion of potato acreage in the province could be expected to result in an even greater frequency of elevated nitrate levels in domestic water supplies and... has considerable significance for surface water quality.**
>
> - PEI Water Quality Interpretive Report 1999

INDICATOR: Escherichia coli in Private Wells

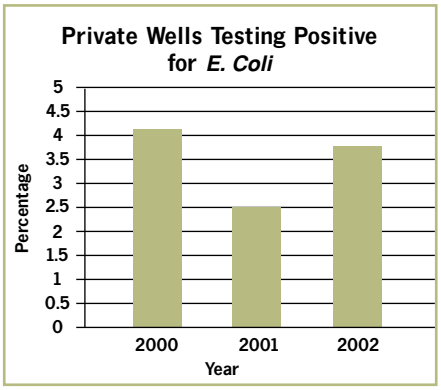
Description: The presence of Escherichia coli (*E.coli*) in private wells is an indicator of contamination by faecal material.

Importance: *E. coli* is an indicator of bacterial contamination of water by such material as sewage or manure. Both are potential sources of harmful pathogens. There are over 100 types of *E. coli*; a handful can be harmful to humans, even leading to death.

Objective: To maintain the number of wells testing positive for *E. coli* at 3% or lower.

Status and Trends:

Year	Number of Wells Sampled	% of Wells With *E. coli* Detected
2000	5,139	4.2 %
2001	8,424	2.5 %
2002	9,523	3.7 %



Interpretation: The detection of *E. coli* is a measure of the integrity of water and sewer systems rather than the quality of the overall groundwater resource. Approximately 3% of private wells test positive for *E. coli* each year. Bacteria levels in contaminated wells can fluctuate widely so the frequency of detection of *E. coli* is used as an index, rather than a measure of its concentration.

Response: To protect both municipal and private water supplies, the Province has committed to a 10-point Drinking Water Strategy "Clear From the Ground to the Glass". It includes a broad range of initiatives to protect water at the source, improve system design and operation, and ensure adequate monitoring and reporting.

Data Source: PEI Department of Fisheries, Aquaculture and Environment

> **We need to pay special attention to what goes into groundwater and how we extract it. Most drinking water problems relate to issues with how we handle water, from well construction through to wastewater treatment.**
>
> - Clear from the Ground to the Glass, 10 Points to Purity

INDICATOR: Water and Wastewater Central Servicing

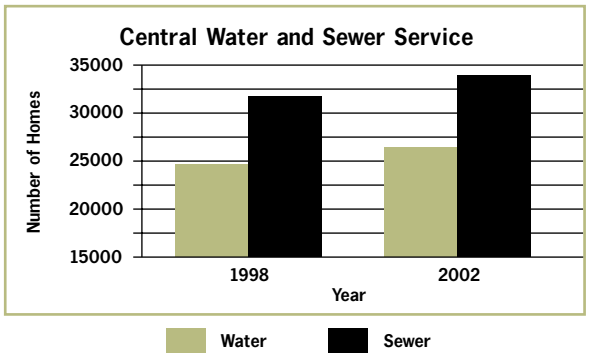
Description: This summarizes the number of single family homes that are serviced by a central water supply system and a central wastewater collection and treatment system. This is based on residential and commercial customers expressed as equivalent single family homes.

Importance: Water provided through central water supply systems is safer (lower rate of positive bacteria tests) than water provided through private water supply systems. As well, with expansion to wastewater collection systems, the incidence of groundwater contamination in these centrally serviced areas decreases dramatically.

Objective: To increase the number of homes with central servicing.

Status and Trends:

	1998	2002
Homes with Central Water	24,600	26,400
Homes with Central Sewer	31,600	33,900



Interpretation: The number of single family homes serviced by central water and wastewater systems has increased by 7.3 % and 7.0 % respectively since 1998. This increase can be translated into improved drinking water quality for these homes.

Response: Prince Edward Island will continue to work with the federal and municipal governments to provide funding for water and wastewater central servicing.

Data Source: PEI Department of Fisheries, Aquaculture and Environment and Island Regulatory and Appeals Commission

SURFACE WATER

PRESENT SITUATION

Soil erosion is a threat to aquatic systems and can result in siltation of streams and infilling in estuaries and ponds.

Nutrient enrichment of aquatic systems is a key concern. Nutrients affect estuaries which act as giant sinks reflecting activities throughout the watershed. They lead to a high rate of primary production and oxygen depletion. One nutrient of particular concern is nitrogen.

Bacterial contamination of bays and estuaries is also a concern because of the threat posed to fisheries and aquaculture and possible economic effects this could have due to areas being closed to shellfish harvest.

WHAT CAN BE EXPECTED?

Soil erosion and runoff of nutrients from land could increase if more measures are not taken to practise sound land management. More estuaries will experience anoxia, an event that occurs when there is a severe lack of oxygen in the water and which is characterized by a milky white colour and foul odours.

Surface water quality will improve if land management practices are undertaken to reduce nutrient and bacteria inputs to streams.

These habitats will remain important for aquatic life, terrestrial wildlife associated with wetlands, the fishery, and recreational pursuits.

INDICATOR: Nitrate Concentrations in Surface Water

Description: Fertilizers and animal and human waste can influence nitrogen levels in the aquatic environment, resulting in concentrations which may be several times greater than background levels. Nitrate has been measured in some streams for more than 30 years.

Importance: The CCME (Canadian Council of Ministers of Environment) Water Quality Guideline for the Protection of Aquatic Life states that nitrate concentration in freshwater should not exceed 2.9 mg/L. Direct toxic effects are possible above this level and eutrophication, which is nutrient enrichment often resulting in reduced water quality, is possible below this level.

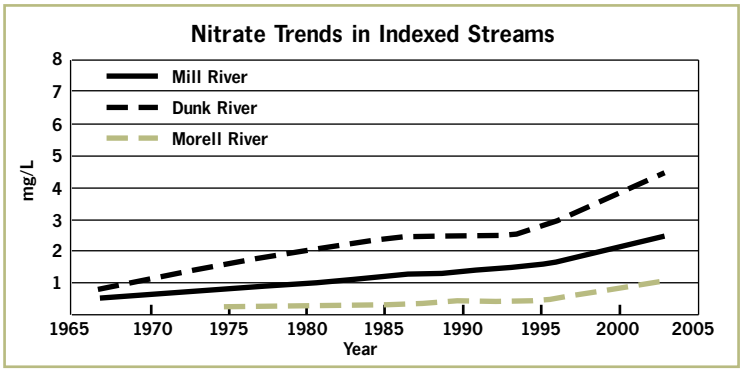
Objective: To maintain nitrate concentrations below 2.9 mg/L and below levels that cause eutrophication.

Status and Trends:

Mean Nitrate Concentration (mg/L)

Period	Mill River	Dunk River	Morell River
1971-75	0.77	1.46	N.A.
1976-80	0.70	N.A.	0.24
1981-85	1.23	2.24	0.29
1986-90	1.26	2.26	0.37
1991-95	1.43	2.32	0.44
1996-00	1.67	3.40	N.A.
2001-02*	2.78	4.73	1.00

* up to September 2002 only



Interpretation: Nitrate concentrations have been increasing in the Mill, Dunk and Morell Rivers. Nitrate levels have more than doubled during the last 20 to 30 years, and concentrations correspond with the amount of cleared land in each watershed and the increase in row crop production.

There are instances in all three streams where individual samples exceed the guideline of 2.9 mg/L. Mean nitrate values for the Dunk River now exceed 4 mg/L. The values shown for both the Mill and Dunk Rivers are high enough to be associated with eutrophication. Marked improvement will only occur with nutrient management and other techniques designed to reduce losses of nitrate to the environment.

Response: Some progress has been made through riparian buffer zones, watercourse alteration permits, habitat improvement projects and improved construction techniques. However, this progress may be offset by increases in row crop production in the 1990s. Prince Edward Island streams are spring-fed and it takes time for groundwater to show the impact of actions taken.

Data Source: Environment Canada and PEI Department of Fisheries, Aquaculture and Environment.

> "Fresh surface water was found to be influenced by land use activities to varying degrees. Where these influences are not large, the water was generally cool and well oxygenated as is typical for PEI. However, where the influence of land use was more evident, a trend of increasing nitrogen concentrations was observed in all three (monitoring) stations with a 20-30 year period of record."
>
> - PEI Water Quality Interpretive Report 1999

INDICATOR: Shellfish Closures

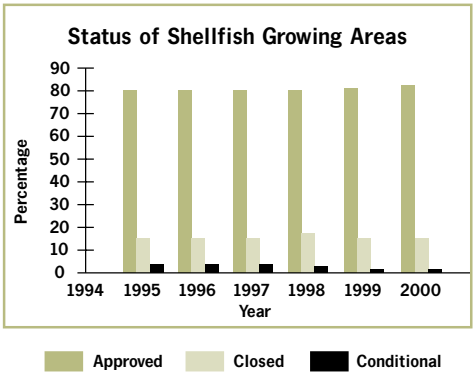
Description: Recent trends are shown in percentage of total shellfish growing areas classified as approved (open), closed or conditional.

Importance: Increasing closures in shellfish growing areas can impact the province economically by reducing the area available for harvesting shellfish. Classification is determined by the levels of faecal coliform bacteria in the water. An increasing trend in percentage of total area closed can indicate worsening water quality, while a decreasing trend may indicate improving water quality.

Objective: To increase percentage of approved area by 1% (7.5 sq. km or 2.9 sq. miles) by 2005.

Status and Trends:

Year	1995	1996	1997	1998	1999	2000
% Approved	80.9	80.9	80.9	81.0	81.9	82.6
% Closed	15.9	16.0	15.9	16.8	16.0	15.4
% Conditional	3.2	3.2	3.2	2.2	2.1	2.0



Interpretation: The increase in approved percentage between 1995 and 2000 may reflect an increase in the total area classified rather than changes in water quality, while the decrease in conditional percentage during this time reflects a move away from approving this type of classification for enforcement reasons. During these six years the percentage of closed area remained relatively the same. Periodic or temporary closures, caused by the bacterial contamination of shellfish or water, or by other factors such as the presence of toxins, are not reflected here.

Response: Cattle are no longer permitted in streams. Fencing and alternate watering projects have been initiated with financial assistance from the Agricultural Environmental Resource Conservation Program and successor programs.

Data Source: Environment Canada

CLIMATE CHANGE

PRESENT SITUATION

Climate change is occurring and has serious implications for our health and economy. Human activities including the use of fossil fuels for heating, transportation and electricity, release greenhouse gases (GHG) which are causing global warming.

Average global temperatures are rising. The 20th century was the warmest in 1,000 years, and the 1980s and 1990s were the warmest decades on record.

Rising sea levels have been a predicted impact of climate warming with major implications for coastal communities around the world. An examination of tide gauge data indicates that sea level has been rising around Prince Edward Island.

While Prince Edward Island generates only 0.3% of Canada's total greenhouse gases, we plan to do our share to reduce GHGs. Prince Edward Island has proposed measures related to agriculture, forestry, electricity, transportation and private business, and the Province is part of the National Implementation Strategy on Climate Change.

WHAT CAN BE EXPECTED?

Over the next 100 years, temperature increases of 3°C to 4°C are projected for the Atlantic provinces. Changes in precipitation patterns and extreme events are also anticipated. These climate changes are expected to be the largest and most rapid of the last 10,000 years and will have a profound effect.

Agriculture, Prince Edward Island's largest industry, will experience a longer, warmer growing season, but there will be more droughts. The range and abundance of insect pests will increase. Extreme weather events such as storms and hail will damage crops and livestock.

In the aquaculture industry, oysters grow and reproduce best in a long, warm summer, but mussels prefer cooler water. Fish species may be affected in that fish are extremely sensitive to temperature changes. The coastline will experience sea-level rise with increased erosion, rapid migration of beaches and flooding of coastal freshwater marshes. As well, extreme storm events will impact fisheries and aquaculture structures such as wharves, docks, and mussel and oyster culture gear, and lead to destruction of fish habitat.

Electrical power lines and municipal infrastructure (storm sewers, for example) may also be impacted by extreme weather events.

CLIMATE CHANGE

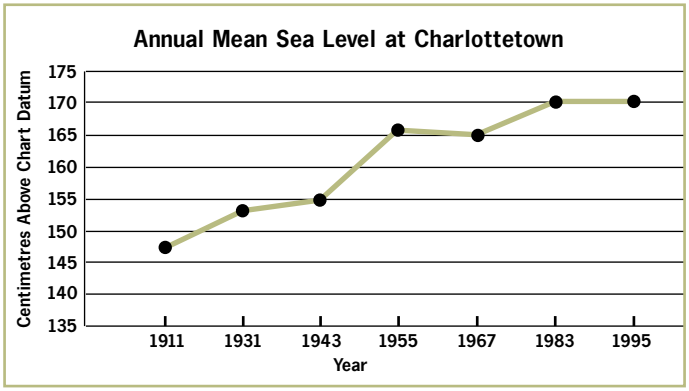
INDICATOR: Rise in Sea Level

Description: The average sea level has been measured at Charlottetown for almost a century. It is presented as the annual mean in centimetres above chart datum (a centimetre equals 0.4 inches). Chart datum refers to the lowest predicted water level averaged over several years.

Importance: Rising sea level is recognized around the world as an impact of climate warming. As a coastal province, Prince Edward Island stands to be impacted by climate change due to sea-level rise and increased frequency of storm surges which impact the coastline.

Status and Trends:

Year	1911	1931	1943	1955	1967	1983	1995
cm	147	153	155	166	165	170	170



Interpretation: The tide gauge data indicates that the mean sea level at Charlottetown has been rising at a rate of 32 centimetres per century since records began in the first decade of the 1900s. About 20 centimetres is due to post-glacial adjustment of the earth's crust, but the other 12 centimetres is a signal of regional sea-level rise. Geological evidence indicates that the relative sea-level rise has increased from a rate of approximately 2 millimetres per year over the past 2000 years to 3.2 millimetres per year since 1911.

Response: Prince Edward Island has prepared an action plan to take specific measures to lessen the impact of climate change. It has also been working through the New England Governors and Eastern Canadian Premiers on the Climate Change Action Plan implementation since 2001.

Data Source: Environment Canada

> **Climate change is one of the greatest environmental challenges we face in Canada today. It has the potential to impact on our water supply, sea levels, agriculture, fish habitat, plant and animal life - in short, to bring about significant changes in our daily lives.**
>
> - Curbing Climate Change, Prince Edward Island Climate Change First Business Plan

CLIMATE CHANGE

INDICATOR: Greenhouse Gas Emissions

Description: GHGs are measured in kilotonnes of carbon dioxide ($C0_2$) equivalents.

Importance: Gases such as carbon dioxide and methane are called greenhouse gases. They act like a greenhouse roof as they build up in the atmosphere, allowing in sunlight but trapping the heat.

Objective: To achieve Prince Edward Island's share of Canada's commitment to GHG reduction as per the Kyoto Protocol (6% below 1990 levels averaged over the period 2008 - 2012).

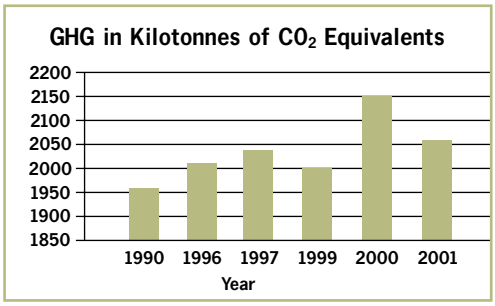
Status and Trends:

Interpretation: The year 2000 showed the largest increase in greenhouse gas emissions, 9.7% compared to the base year of 1990. However, this dropped down to 5.1% in 2001. The biggest emitters of GHG in Prince Edward Island are cars/light duty trucks (24.5%), agriculture (19%) and residential heating and electricity (14.5%).

Response: Prince Edward Island is preparing to enter into agreements with the Government of Canada for climate change initiatives. A strategy will be developed on alternate energy sources such as wind and ethanol, and on energy efficiency, transportation and agricultural sinks.

Data Source: PEI Department of Fisheries, Aquaculture and Envrionment

Year	1990	1996	1997	1998	1999	2000	2001
GHG	1960	2010	2040	2000	2000	2150	2060
% Change from 1990	-	2.6	4.1	2	2	9.7	5.1



> **Being an island with highly erodible soils, PEI is at risk from the effects of climate change and has a considerable stake in national and international initiatives to limit greenhouse gas emissions.**
>
> - Curbing Climate Change, Prince Edward Island Climate Change First Business Plan

ENERGY USE

PRESENT SITUATION

Like elsewhere in Canada, Prince Edward Island is a heavy per capita user of energy. The amount of gasoline and electricity used in Prince Edward Island has jumped substantially in recent years.

Renewable energy sources are being tested and implemented such as the wind test site and the wind energy farm at North Cape. Presently, the province's use of renewable energy represents 8.5% of total energy supply.

Households that burn oil for heating use about 3,500 litres a year, and an average 6,821 kWh of electricity a year as of 2002. Most electricity is imported with only 4.6% coming from on-Island generation in the years 2000 and 2001.

WHAT CAN BE EXPECTED?

In the near term, energy use will continue to rise until measures are taken in response to the Kyoto Protocol to reduce the production of greenhouse gases. This could include public transit, alternate-fueled vehicles and more efficient home energy use. In Canada, the demand for gasoline is expected to decline by 15% as a result of Protocol implementation measures.

New policy instruments will come into effect, such as domestic emissions trading, incentives, regulations or possibly fiscal measures.

Consumers and industry will be encouraged to employ the best practices to reduce energy use and production of greenhouse gases.

ENERGY USE

INDICATOR: Household Electrical Use

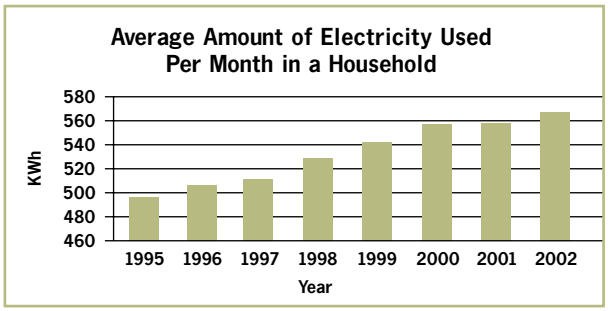
Description: The average amount of electricity used per household in a month is expressed in kilowatt hours (kWh).

Importance: Electricity is a dominant form of energy used. Every family is dependent on it. Prince Edward Island's energy is generally purchased from New Brunswick. Bunker C oil is used for electrical generation at the Maritime Electric plant in Charlottetown, which is generally used on a back-up basis. Production of electricity from fossil fuels contributes to global warming.

Objective: To reduce per capita consumption of energy.

Status and Trends:

Year	1995	1996	1997	1998	1999	2000	2001	2002
kWh	497	507	511	528	541	554	556	568



Interpretation: The average amount of electricity used per month in a household increased 14% from 1995 to 2002. This could be due to a number of reasons, the most likely being an increase in the number of electrical appliances per household such as multiple television sets, and the number of hours the lights are left on. Electricity use has continued to rise in spite of improved energy efficiency in some appliances such as refrigerators and freezers.

Response: The Prince Edward Island Energy Corporation established a 5.28 megawatt wind farm at North Cape in November 2001. The eight 660 kW turbines are supplying approximately 2% of the Island's electricity needs. Plans are underway to double the capacity of this facility. Federal and provincial government offices are purchasing "green power", at a premium, from the wind farm. Similarly, customers of Maritime Electric are purchasing blocks of green power from the utility for an extra fee of $1.75 per 50 kWh block per month, to a maximum of five blocks. As of 2003, 1,097 blocks were being purchased by 389 residences and 32 general service customers.

Vestas-Canadian Wind Technology, which supplied the turbines to the Energy Corporation, is in the process of constructing a 3.0 megawatt prototype wind machine near the North Cape site to test new wind technology.

The province is pursuing access to natural gas which produces fewer harmful emissions than other conventional energy sources.

Data Source: Maritime Electric

> **"For an economy based on the primary industries, finding a solution to the Province's energy problems is an essential part of being competitive. While the industries of the new economy may be less sensitive to energy costs, those based on the primary industries remain energy intensive. Alternative sources of energy must be found."**
>
> - Bridging Tradition and Technology: An Economic Development Strategy for Prince Edward Island

INDICATOR: Gasoline Consumption

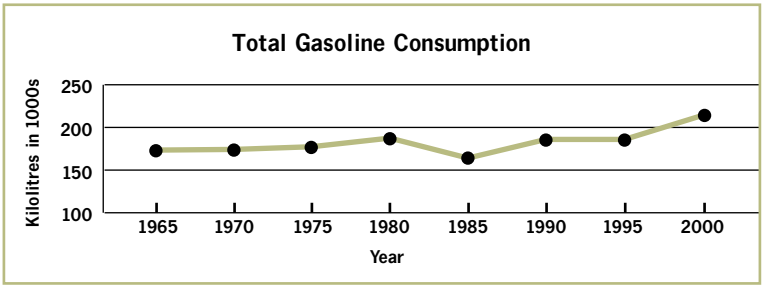
Description: The total amount of gasoline consumed in the province is measured in 1,000s of kilolitres (million litres) per year (1 kilolitre equals 220 gallons).

Importance: Gasoline is a major contributor to greenhouse gas production, and consequently to climate change.

Objective: To reduce the amount of gasoline consumed.

Status and Trends:

Year	1965	1970	1975	1980	1985	1990	1995	2000
Kilolitres in 1,000s	172	177	180	196	165	190	191	214



Interpretation: The amount of gasoline consumed in the province increased 24% from 1965 to 2000. There was a decrease in the mid-1980s due to more energy-efficient vehicle engines becoming available in 1979. Gasoline consumption increased again as the turn of the century approached. This is due to Islanders owning more vehicles and driving more kilometres. As well, the number of summer visitors rose when the Confederation Bridge opened in 1997.

Due to almost non-existent public transit, the amount of transportation provided by personal passenger vehicles is high.

Response: The City of Charlottetown is investigating the development of a public transit system.

The Department of Fisheries, Aquaculture and Environment is testing alternate-fueled vehicles in its fleet.

Data Source: Statistics Canada

INDICATOR: Wood Burned for Heating

Description: The amount of wood used for heating purposes is documented since 1965 in 1,000s of cords per year.

Importance: Wood is a long-term renewable resource and displaces the use of a non-renewable resource, imported oil, for heating purposes.

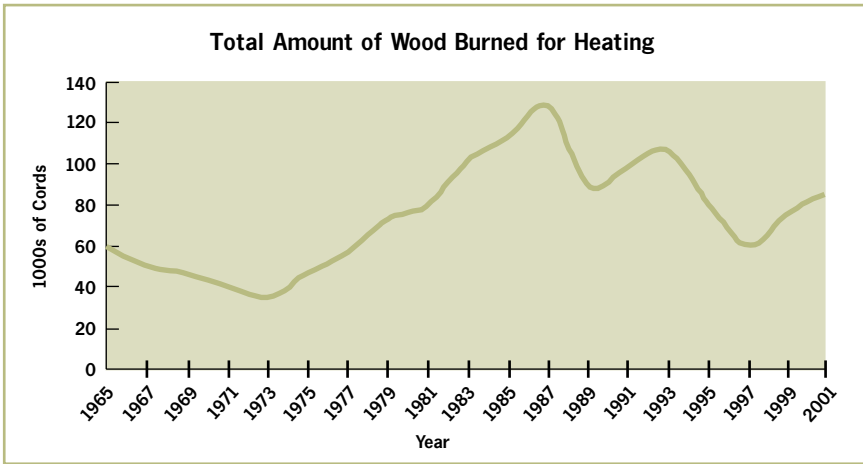
Status and Trends:

Year	1965	1973	1987	1989	1993	1996	2001
Cords (in 1,000s)	60	36	129	90	107	60	87

Interpretation: Since 1965, when 60,000 cords were burned for heating purposes, there has been a 45% increase in the amount of wood used. There were variations along the way which are primarily a reflection of the price of heating oil. In the mid-1980s and early 1990s many resorted to using wood again since it was cheaper to use. However, it is more labour intensive which also contributes to the fluctuations.

Response: Woodlots providing fuel wood should be managed to allow for a harvest which is sustainable. Information for consumers is provided on the Department of Agriculture and Forestry web site.

Data Source: PEI Department of Development and Technology



> **Past examples of developed alternate energy projects in the province include a district heating system in Charlottetown that sources 90 per cent of its energy from municipal garbage and sawmill residue, the (PEI Energy Corporation wind farm) at North Cape and methane capture and utilization equipment at the major agri-food processors.**
>
> - Curbing Climate Change, Prince Edward Island Climate Change First Business Plan

AIR QUALITY

PRESENT SITUATION

Air quality in Prince Edward Island is good, and consistently better than the Canadian standards.

Air quality is affected by local activities as well as emissions carried into Prince Edward Island from the eastern United States and other parts of Canada. Some local emissions that affect air quality are incinerators, large heavy oil-burning facilities, asphalt plants and motor vehicles.

Prince Edward Island has endorsed the Canada-wide Standards for particulate matter and ozone, and mercury, and dioxins and furans from combustion. Prince Edward Island's air quality monitoring stations are part of the National Air Pollution Surveillance Network.

Data are not collected for odour, an issue which can cause public concern but is relatively short-lived, such as the odour of liquid pig manure spread on fields.

Stack emissions testing is required for many companies with air quality permits and they must meet provincial emission limits.

WHAT CAN BE EXPECTED?

Human and environmental health are likely to remain issues of concern, especially in light of reports in the media related to large cities and industrial centres. However, it is expected that Prince Edward Island's air quality will remain good.

Air quality will improve in Canada as a result of the new Canada-wide Standards and availability of lower-emission vehicles and cleaner fuels. Efforts undertaken by the eastern Canadian provinces and the New England states will make a positive difference as well.

Better data will be available as a result of continuing upgrades to Prince Edward Island's air quality monitoring network.

AIR QUALITY

INDICATOR: Sulphur Dioxide

Description: Sulphur dioxide ($S0_2$) concentration in Charlottetown is measured in parts per billion (ppb) on a continuous basis and average monthly and annual levels are determined. The National Air Quality Objectives indicate that the desirable level is under 10 ppb and that up to 20 ppb of $S0_2$ is acceptable.

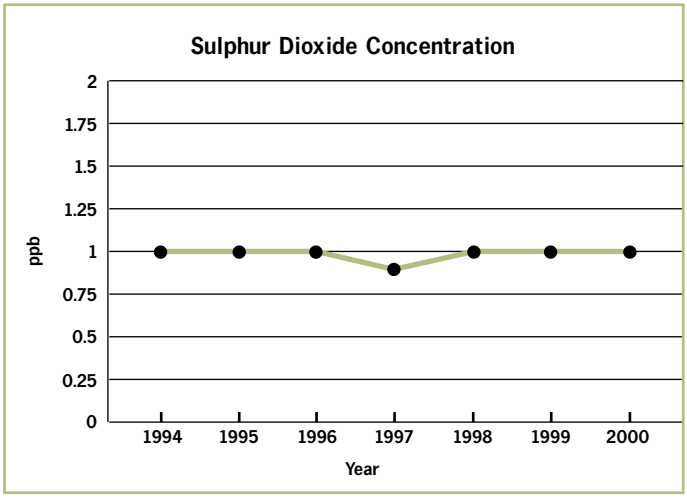
Importance: Human exposure to particulate matter, including sulphate and acidic aerosols, leads to increased respiratory problems.

Objective: To continue to be better than the National Air Quality Objectives' desirable level of under 10 ppb $S0_2$.

Status and Trends:

Year	1994	1995	1996	1997	1998	1999	2000
SO_2 (ppb)	1	1	1*	0.9*	1	1	1

* not enough data in '96 and '97 to be statistically accurate



Interpretation: From 1994 through 2000, the average sulphur dioxide concentration in Charlottetown remained constant at approximately 1 ppb, despite reductions in the eastern United States, New Brunswick, Nova Scotia and Ontario. Prince Edward Island's numbers are already significantly better than the national objective. No data is available for 2001-02.

Response: Prince Edward Island is part of the Acid Rain Action Plan of the New England Governors and Eastern Canadian Premiers to reduce sulphur dioxide in the region by 50% by 2010.

Sulphur dioxide is being measured again in 2003 at the air quality monitoring station in Charlottetown after a two-year lapse caused by a lack of equipment.

Data Source: PEI Department of Fisheries, Aquaculture and Environment

> **It is My Government's objective to ensure safe drinking water, surface water protection, soil conservation, improved air quality and environmentally sustainable development. My Government continues to attach a strong priority to these initiatives.**
>
> - Speech from the Throne 2002

INDICATOR: Acid Rain

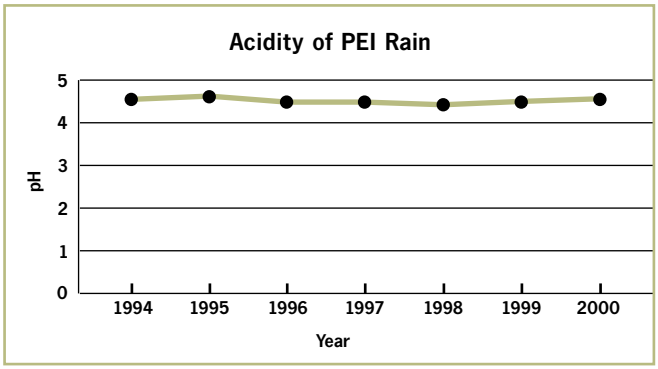
Description: Acidity of rain in Prince Edward Island is measured in pH (pH 7 is neutral; lower pH is more acidic).

Importance: High levels of acidity in rain can harm tree growth, acidify lakes and streams, and cause metals to leach from soil into water. It can eventually impair the ability of water bodies to support life, and cause deterioration of building materials such as cement.

Objective: To maintain or improve upon the current acidity (pH 4.5) of rain.

Status and Trends:

Year	1994	1995	1996	1997	1998	1999	2000
pH	4.6	4.7	4.5	4.5	4.4	4.5	4.6



Interpretation: Typically, pH is measured as an indicator of the level of acidity in rainfall. During the period 1994 to 2000, there was little overall change in pH values in Prince Edward Island. However, another indicator, wet sulphate deposition (the weight of sulphate deposited to the earth's surface by precipitation), dropped significantly. Monitoring sites in Atlantic Canada (none in PEI) recorded reductions of 24% to 54% from the early 1980s to 2000.

Response: In the 1970s, concerted action was undertaken by governments and industry to reduce acid rain causing emissions. Prince Edward Island is implementing acid rain reduction actions as a result of commitments made at the 1998 Conference of New England Governors and Eastern Canadian Premiers.

Acid rain is being measured again at the air quality station in Southampton after a two-year lapse due to lack of equipment.

Data Source: PEI Department of Fisheries, Aquaculture and Environment

INDICATOR: Particulate Matter

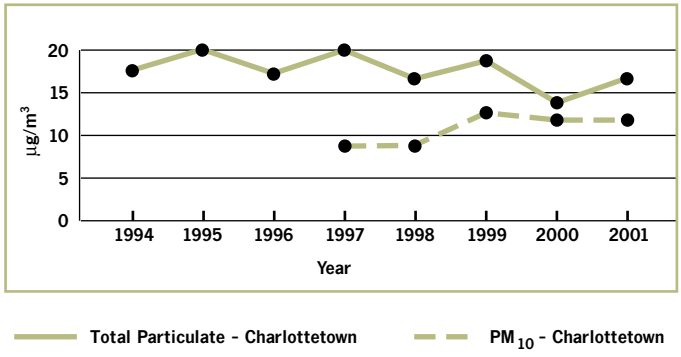
Description: The average PM_{Total} (total particulate matter) and average PM_{10} (particles which are 10 micrometres in diameter or less) concentrations in Charlottetown are measured in micrograms per cubic metre ($\mu g/m^3$). The average $PM_{2.5}$ (particles that are 2.5 micrometres in diameter or less) concentration in Southampton is also measured.

Importance: Airborne particles small enough to be inhaled can significantly affect health. Of greatest concern are fine particles that can penetrate deeply into lungs and which have been linked to increases in asthma symptoms, hospital admissions and even premature death.

Objective: To meet or exceed the Canada-wide Standard's objective for particulate matter ($PM_{2.5}$) of 30 $\mu g/m^3$ averaged over 24 hours, to be achieved by 2010.

Status and Trends:

Year	1994	1995	1996	1997	1998	1999	2000	2001
PM_{Total} ($\mu g/m^3$)	18	20	17	20	16	19	14	16
PM_{10} ($\mu g/m^3$)	N.A.	N.A.	N.A.	9	9	13	12	12



Interpretation: The Canada-wide Standard for Particulate Matter only deals with $PM_{2.5}$ although it presents an optional PM_{10} value of 60 $\mu g/m^3$, over a 24-hour period by the year 2010. Prince Edward Island's PM_{10} and $PM_{2.5}$ numbers are significantly lower as the air is relatively clean, and so, we have already achieved the Canada-wide Standard. Although not specifically measured, pollen is part of the collected particulate that includes combustion related particles, road salt, sea salt, etc.

Response: Particulate matter is measured at the air quality stations in Charlottetown and Southampton. The stations were upgraded in 2002. Prince Edward Island is a signatory to the Canada-wide Standard on Particulate Matter and Ozone.

Data Source: PEI Department of Fisheries, Aquaculture and Environment

BIODIVERSITY

PRESENT SITUATION

Biodiversity is the total complexity of all life, plants, animals and micro-organisms. Healthy habitats generally have greater biodiversity than unhealthy ones. The value of biodiversity to people is expressed in landscape, in cultural identity and in the abundance of wildlife and plant life that we enjoy.

We can infer from historical information and from settlement and land use data that biodiversity has been impacted significantly by the introduction of plant species which flourish in an agricultural environment and by the loss of animal species related to loss of wilderness habitat.

Prince Edward Island data are collected on individual species for specific purposes. For biodiversity we have selected some proxy indicators.

WHAT CAN BE EXPECTED?

As the most densely populated province in Canada, Prince Edward Island will continue to experience stress on native species, while new exotic species, especially plants and insects, will continue to arrive.

Biodiversity is the basis of the earth's productive capacity. Although we can produce food and fibre with diminished biodiversity, it is evident that the financial and ecological costs are not sustainable.

Land management practices which increase biodiversity will be encouraged.

INDICATOR: Species Numbers

Description: Numbers of species in Prince Edward Island.

Importance: Species numbers is one measure of biodiversity; another is the degree of genetic diversity within each species.

Status and Trends:

Group of Wildlife	Number of Species*
Flowering plants	1,627
Mosses/lichens	N.A.
Reptiles and amphibians	12
Birds	342
Mammals	37
Freshwater fish	25
Insects	N.A.

* as of June 2002

Interpretation: Compared to neighbouring provinces of Nova Scotia and New Brunswick, Prince Edward Island has only half to two-thirds of the species numbers in each category. These provinces have more variety of habitats and, therefore, more species. The high human population density, small size of natural sites, intensive land cultivation, and the topography have a significant effect on the number of species in Prince Edward Island.

Agriculture resulted in introductions of plants in open field habitats, some of which escaped into the remaining native habitats including woodlots. But, it also resulted in a reduction of habitat for native plants and animals. There are no quantitative data on species during early European settlement but reports written by colony administrators and travelers indicate the dominant habitat until the late 19th century was a mixed forest usually referred to as the "Acadian forest". The dominant species were sugar maple, beech and yellow birch. There are no data on genetic diversity within species in Prince Edward Island.

Response: Prince Edward Island will continue to support the work of the Atlantic Conservation Data Centre with funds and expertise. A comprehensive technical book on the flora of Prince Edward Island is in preparation.

Data Source: Atlantic Conservation Data Centre

> **The very livelihood of Prince Edward Island depends on a healthy environment. The economy depends on the fertility of our soil and the purity of our waters. Our attractiveness and way of life depend on clean air and natural beauty. Each component of the environment is often dependent on the others, as damage to one can damage the others. Preserving the environment and the entire ecosystem is everyone's responsibility.**
>
> - Bridging Tradition and Technology: An Economic Development Strategy for Prince Edward Island

INDICATOR: Protected Land Area

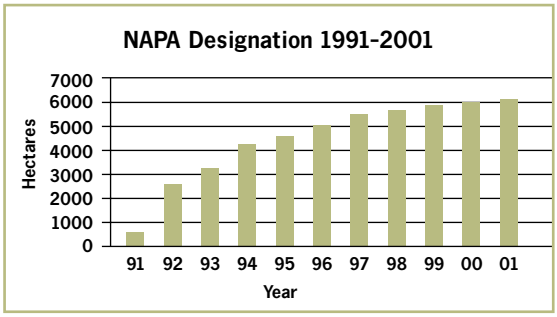
Description: Area of land designated under the *Natural Areas Protection Act* (NAPA), measured in hectares (ha).

Purpose: Natural areas are protected in perpetuity from various types of development and are, therefore, more likely to maintain biodiversity than land devoted to residential, agricultural or industrial uses.

Objective: To achieve 12,749 ha (31,500 acres), adequately representative of habitat types, as natural areas.

Status and Trends:

Year	1991	1993	1995	1997	1999	2001
Hectares	500	3,400	4,600	5,500	5,900	6,100



Interpretation: The land area protected under the *Natural Areas Protection Act* has been steadily rising. More importantly, the protected lands include significant areas of each of the different natural habitats, namely bogs, salt marshes, freshwater marshes, sand dunes and forests. Protecting land that has not been developed does not in itself contribute to biodiversity, but it helps preserve it. The quality of the habitat and its distribution in relation to developed land are important. The total area protected is still well below the nationally accepted standard for Prince Edward Island of 7% of total land mass, and below the targets set for each habitat type by the Island Nature Trust as summarized in the table on the following page.

Status of Natural Areas Protection in Prince Edward Island to October 1998 (Hectares)

Habitat Type	Total Area in PEI[1]	Target Area[2]	Area Designated[3]	% of Total	% of Target
Offshore island	2,043	774	186	9.1%	24.0%
Bog	8,195	1,871	1,054	12.9%	56.3%
Sand dune	3,471	2,256	1,687	48.6%	74.8%
Natural pond	2,399	2,288	377	15.7%	16.5%
Forest	280,015	1,104	781	0.3%	70.7%
Salt marsh	5,357	1,262	411	7.7%	32.6%
Freshwater wetland	N.A.	2,030	508	N.A.	25.0%
Riparian zone	N.A.	1,164	756	N.A.	64.9%

1. Offshore islands calculated from the 1977 Offshore Islands Study; bogs, dunes, ponds and wetlands taken from the Prince Edward Island Wetland Inventory; woodland taken from the 1990 Prince Edward Island Forest Inventory.
2. This is the area of each habitat targeted for protection under the *Natural Areas Protection Act*. The total for all habitat types is 12,749 ha (31,500 acres).
3. This is the area of each habitat protected under the *Natural Areas Protection Act* as of October 1998.

The degree of ecosystem diversity on Prince Edward Island has been affected greatly by human activity and, consequently, examples of near-pristine ecosystems are rare. The Island Nature Trust, with the assistance of the provincial government, has attempted to identify sites with significant features worth preserving.

- Cultivating Island Solutions, Report of the Round Table on Resource Land Use and Stewardship

Response: There are other lands which have some form of protection such as the approximately 3,116 hectares (7,700 acres) in agricultural buffer zones along watercourses and 7,200 hectares (17,784 acres) in Wildlife Management Areas. In February 2003, the Province approved a Wetland Conservation Policy to ensure no net loss of wetland or wetland function.

Prince Edward Island has a Significant Environmental Areas Plan which provides the basis for decisions to designate sites under the *Natural Areas Protection Act* as they become available. The Province has given property tax relief to owners of sites it agrees to designate under the *Natural Areas Protection Act* or *Wildlife Conservation Act*.

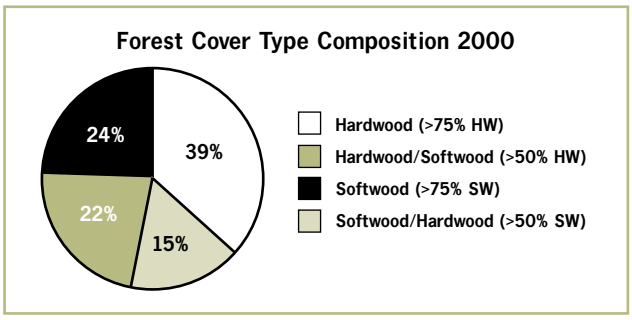
Data Source: PEI Department of Fisheries, Aquaculture and Environment and Island Nature Trust

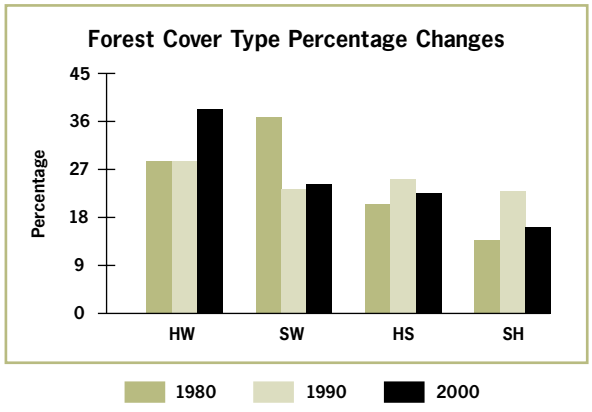
INDICATOR: Forest Cover Type

Description: PEI forest can be categorized by cover type. Cover type refers to whether the forest is predominantly softwood, hardwood or a mixture.

Importance: Forest varies in its ecological and economic value according to cover type, species composition and age.

Status and Trends:





HW - Hardwood
SW - Softwood
HS - Hardwood/Softwood
SH - Softwood/Hardwood

Interpretation: 61% of the forest is dominated by hardwoods. There have been significant changes in cover type over the past two decades.

Interpreting the contribution of forests to biodiversity must go beyond statistics on cover type. Age class and species composition are critical. The increase in hardwood dominance may seem to be positive but much of this is attributable to red maple and poplar regeneration on harvested sites, not to long-lived tolerant hardwoods. Hardwood volume has actually decreased. From a biodiversity standpoint, a variety of cover types in uneven age stands is preferable.

Response: Realizing the broader environmental values of forests as well as higher economic value will require different approaches to forest management. In 2003, the Province published a State of the Forest Report. It is produced every 10 years.

Data Source: PEI Department of Agriculture and Forestry

PESTICIDES

PRESENT SITUATION

In a province where agriculture dominates the economy and the landscape, pesticides are a critical issue for many sectors of society. Pesticides are used in agriculture, parks, golf courses, public buildings and domestically in homes and on lawns.

In the short term, pesticides offer an economical, efficient and convenient solution to pest problems in agriculture, but they can also have negative effects on the environment and on human health and safety.

Complaints registered by the public under the *Pesticides Control Act*, fish kills and other reports of detrimental effects have led the Province to make a commitment to reduce pesticide use.

WHAT CAN BE EXPECTED?

Integrated pest management, which typically results in less application of pesticides to crops, will be practised by more producers.

Other measures will be sought to reduce pesticide use.

Environment Canada and the Government of Prince Edward Island will increase monitoring of the impact of pesticides on the environment.

Policy instruments such as tax incentives and the introduction of cross-compliance will increasingly be used to achieve reduction in pesticide use and to accomplish other goals of the Sustainable Resource Policy.

PESTICIDES

INDICATOR: Pesticide Use

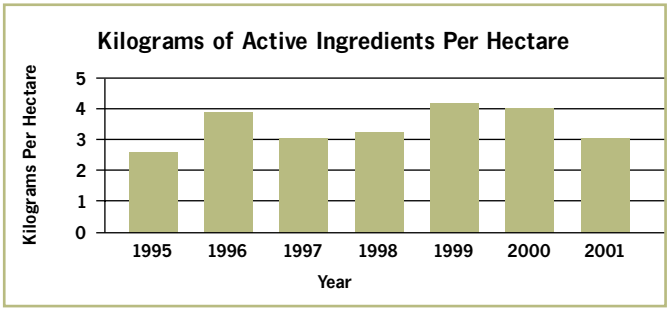
Description: Active ingredient used per hectare is measured in kilograms (1 kilogram equals 2.2 pounds; 1 hectare equals 2.47 acres).

Importance: 90% of pesticides sold are used on row crops, primarily potatoes. Total sales are influenced by amount of land under potato production, and disease and pest status. Pesticides can have a negative effect on the environment and on human health and safety.

Objective: To reduce pesticide use, and in particular the application of high toxicity products by 25% by 2003 and 50% by 2011, as compared to the baseline year (2000) when pesticide use was 4 kilograms per hectare (kg/ha).

Status and Trends:

Year	1993	1995	1996	1997	1998	1999	2000	2001
kg/ha	2.8	2.6	3.9	3	3.2	4.1	4	3



Interpretation: Weather and the amount of land under potato production are the two main influences on total pesticide use. In 1996 there was more potato blight than usual. 1999 was the first year that the insecticide Admire was used to control Colorado potato beetle. 2001 was a dry year, which meant low levels of blight and therefore reduced fungicide use. This resulted in a decreased need to apply foliar insecticide product.

Response: An objective of the Sustainable Resource Policy is to reduce pesticide use. In 2002, soil fumigants and products containing azinphos-methyl were restricted and permits are required for their use. As well, Prince Edward Island is participating in the development of an integrated management plan for potatoes, in association with the Pest Management Regulatory Agency (Health Canada), the Province of New Brunswick and the potato industry. The PMRA is re-assessing pesticide products and is phasing out those that are particularly harmful to the environment.

Data Source: PEI Department of Agriculture and Forestry

> **As stewards of our land, water and air, it is incumbent on Islanders to protect them for future generations. Events in the past have shown the interdependence and fragility of the Island environment. Agricultural sprays protect crops and increase yields; however, later soil runoffs deplete the soil, poison waterways and kill fish.**
>
> - Bridging Tradition and Technology:
> An Economic Development Strategy for Prince Edward Island

INDICATOR: Compliance with *Pesticides Control Act*

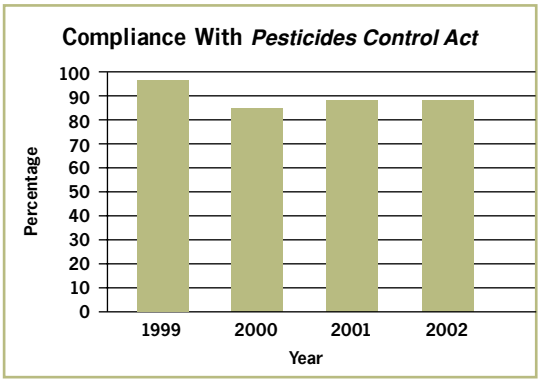
Description: Percentage of inspected pesticide users in compliance with the legislation.

Importance: The *Pesticides Control Act* regulations are enforced to minimize negative impact on human health and the environment.

Objective: To achieve 100% compliance by 2005.

Status and Trends:

Year	1999	2000	2001	2002
% Compliance	97	85	89	89



Interpretation: The level of enforcement of the *Pesticides Control Act* has increased in recent years. In 1999, warnings were most often issued to operations in violation. By 2000, summary offence tickets and suspension orders were more frequently issued by inspectors. These figures reflect changed enforcement practices as much as the level of compliance.

Public opinion on enforcement collected in 2003 shows that there has been a sharp drop in the percentage of people who believe that pesticide regulations are adequately enforced.

Response: On April 1, 2003, administration of the *Pesticides Control Act* was transferred from the Department of Agriculture and Forestry to the Department of Fisheries, Aquaculture and Environment. Current legislation will be reviewed and updated to be more enforceable as indicated in the Speech From the Throne in November 2002.

Data Source: PEI Department of Agriculture and Forestry

INDICATOR: Public Opinion on Pesticides

Description: Public opinion on pesticide use, pesticide effects and pesticide regulations has been measured through surveys.

Importance: Public opinion on pesticide use provides important data for policy makers, enforcement personnel and pesticide applicators.

Status and Trends:

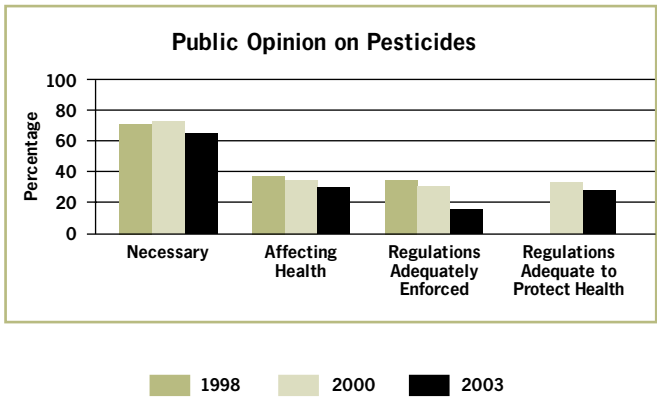
Year	1998	2000	2003
% of Islanders who believe that pesticides are a necessary part of modern agriculture	72	73	63
% of Islanders who believe that pesticides are affecting their health	38	34	28
% of Islanders who believe that pesticide regulations are adequately enforced	36	31	17
% of Islanders who believe pesticide regulations are adequate to protect human health	N.A.	36	25

Interpretation: A majority of people agree that pesticides are a necessary part of agriculture but the percentage has dropped from 73% in 2000 to 63% in 2003. The percentage of Islanders who believe that pesticides are affecting their health dropped from 34% to 28% during the same period. However, public opinion on enforcement shows that only 17% of Islanders think that pesticide regulations are adequately enforced; and 25% think that pesticide regulations are adequate to protect human health and the environment.

These results on public opinion probably reflect the increased awareness of pesticides and their impacts. Statistics on the *Pesticides Control Act* show that the level of enforcement actually increased in recent years.

Response: Public opinion will continue to be monitored to assist in policy and program planning.

Data Source: PEI Department of Agriculture and Forestry



> **Some groups are calling for the complete elimination of pesticides while farm organizations claim they can do nothing of the sort. There is a more moderate view - held by many - that the answer lies in more research, better applicator education, better pest control techniques and, where necessary, stronger enforcement.**
>
> - Cultivating Island Solutions, Report of the Round Table on Resource land Use and Stewardship

INDICATOR: Fish Kills

Description: Numbers of suspected pesticide-related fish kills in Island rivers.

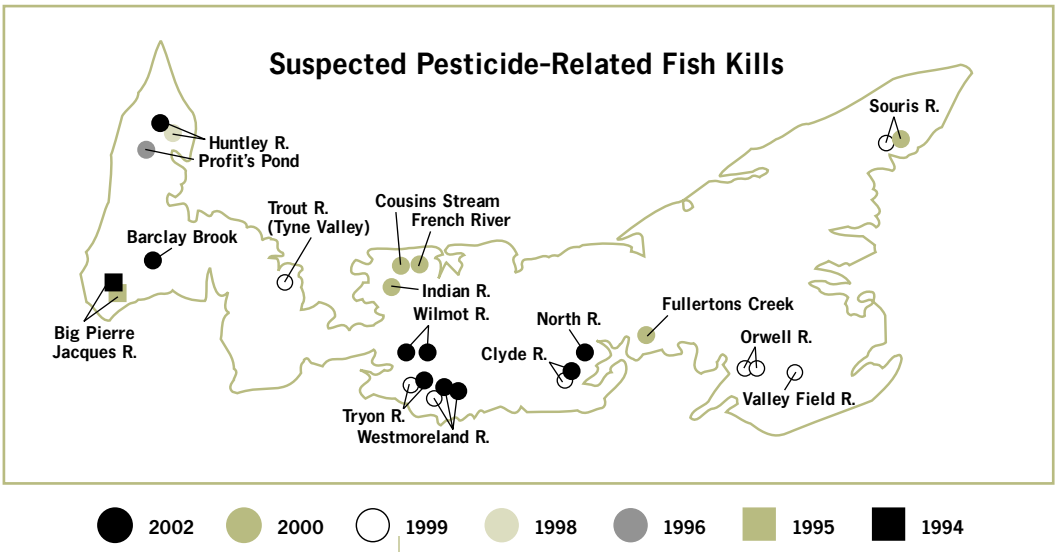
Importance: There are a number of potential reasons for fish mortalities including natural causes; anoxia or severe lack of oxygen which smothers life within the aquatic system; and land use activities. Pesticide runoff is a significant cause in this category.

Status and Trends:

Interpretation: When heavy rainfall occurs shortly after spraying, contaminated water runs off fields into streams that are not adequately protected. In 2001, there were dry weather conditions with few heavy rain events. The trend toward increasing numbers of fish kills is linked to several factors: the amount and toxicity of pesticides used; an increase in the amount of land under potato production, and production on more marginal lands; and the frequency and intensity of heavy rainfall events, a possible side effect of global warming. There is also increasing vigilance on the part of the public to report fish kills.

Year	1994	1995	1996	1997	1998	1999	2000	2001	2002
Number of Fish Kills*	1	1	1	0	1	8	5	0	9

* suspected pesticide-related



Response: An agricultural buffer zone for watercourses has been established under the *Environmental Protection Act* and the level of enforcement has increased. In 2002, the fines for infractions were increased from $200 to $3,000 for an individual and from $1,000 to $10,000 for a corporation.

The Department of Fisheries, Aquaculture and Environment will hire a freshwater fisheries biologist who will work with industry to find solutions to short and long term impacts of land use activities on aquatic life and aquatic habitat.

Data Base: PEI Department of Fisheries, Aquaculture and Environment

> **The numbers of fish kills experienced in recent years are indicators of more fundamental issues related to land use and stewardship. The Ministry of Fisheries, Aquaculture and Environment will hire a dedicated freshwater fisheries biologist to provide an ecological perspective on these unacceptable incidents.**
>
> - Speech from the Throne 2002

WASTE MANAGEMENT

PRESENT SITUATION

The amount of solid waste has been growing steadily, giving rise to concerns about the amount of land used for disposal sites and the impact of these sites on the environment.

As of January 1, 2001, the Waste Resource Management Regulations control the design, construction and operation of all disposal, composting, recycling and construction and demolition debris sites.

Prince Edward Island has been a leader in the management of beverage containers for beer and soft drinks with significant reductions in waste by the requirement for refillable containers.

Since 1984, a district heating plant in Charlottetown has reused the heat generated by burning 31,000 tonnes of garbage per year. This has reduced the amount of waste material going to disposal to between 9,000 to 10,000 tonnes of ash.

WHAT CAN BE EXPECTED?

It is expected that the goal of 65% diversion from disposal will be surpassed in 2003, the first year the Waste Watch™ program is fully operational throughout the province.

The need for additional final disposal sites will be minimized, resulting in fewer controversies normally associated with selection of waste management sites.

Efforts will increase to better utilize waste from shellfish processing and other material from the aquaculture and other resource based industries.

WASTE MANAGEMENT

INDICATOR: Solid Waste Diverted From Burial

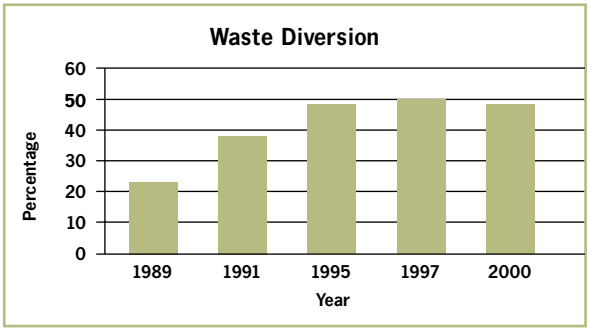
Description: Percentage of solid waste diverted from disposal by burial.

Importance: The amount of waste composted, reused or recycled, as compared to the total amount of solid waste generated by Islanders, is an indicator of the amount of waste diverted from burial. Responsible management of waste resources helps protect our water, soil and air quality.

Objective: To achieve 65% diversion by the end of 2003.

Status and Trends:

Year	1989	1991	1995	1997	2000
% Diversion	22	38	48	50	48



Interpretation: The Waste Reduction Program announced in 1990 made a major improvement in waste diversion. By 1995, Waste Watch™ was operating for homes and businesses representing approximately 25% of the population. Prince Edward Island has undertaken other measures to reduce waste including recovery of tires, used oil, and white goods such as stoves; recycling of derelict autos and lead acid batteries; and use of refillable containers for pop and beer.

Response: Waste Watch™ expanded throughout the entire province by late 2002. All Island homes and businesses must participate, and this will result in an increase in the diversion of waste materials from disposal.

The Island Waste Management Corporation was established in 1999 to assume responsibility for solid waste operations.

Data Source: PEI Department of Fisheries, Aquaculture and Environment

> We owe it to ourselves and our children to take care of our waste in a manner that preserves and protects the environment we live in.
>
> - The Waste Watch Times

ENVIRONMENTAL STEWARDSHIP

PRESENT SITUATION

All of our major industries - agriculture, tourism, fisheries, aquaculture and forestry - are dependent on a healthy environment and are interdependent on each other operating in a sustainable manner.

Legislation which protects people and the environment can be found in several acts including the *Environmental Protection Act, Pesticides Control Act, Agricultural Crop Rotation Act, Wildlife Conservation Act* and the *Natural Areas Protection Act.*

Compliance with environmental legislation is generally good. New regulations and increased enforcement have resulted in improvements in problem areas such as leaking home oil tanks. As well, we are moving more into integrated resource management.

While many citizens are involved in environmental stewardship efforts, there is still a lot of roadside littering, illicit dumping of garbage and far too many passenger vehicles with only one person in them.

WHAT CAN BE EXPECTED?

With greater enforcement efforts and the establishment of approved construction and demolition disposal sites, it is anticipated that illicit garbage dumping will decrease.

Citizen involvement in local environmental stewardship efforts is likely to remain high, especially if financial and other resources remain available.

Unless a public transit system is established, it is unlikely that there will be much change in the low ridership per vehicle.

INDICATOR: People Driving to Work

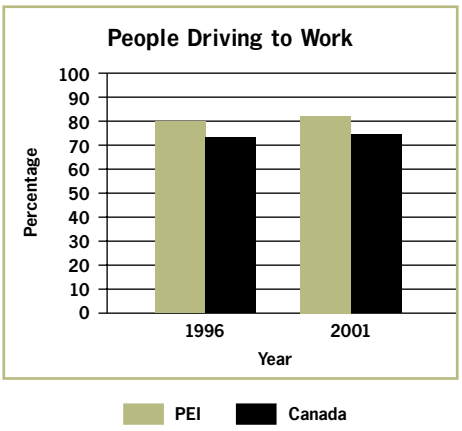
Description: People who individually drive to work have more environmental impact than if they car pooled, walked or bicycled to their place of work.

Importance: Transportation efficiency, including the decrease of the number of vehicles traveling with only one person, is necessary to decrease the amount of automobile exhaust. The exhaust produces greenhouse gases which contribute to global warming.

Objective: To reduce the percentage of people individually driving to work to below 82%.

Status and Trends:

People Driving to Work	1996	2001
PEI	80%	82%
Canada	73%	74%



Interpretation: Prince Edward Island has the highest percentage in Canada of people driving to work. At 82%, this is 11% higher than the Canadian average. A further consideration is that most vehicles have only one person. Other Atlantic provinces do not fare much better. The numbers improve significantly in Ontario and Quebec where there are larger cities and more public transit. Public transit is lacking in Prince Edward Island and promotion of car pooling has not been high.

Response: The City of Charlottetown is investigating the feasibility of a public urban transit system.

The PEI Enerpool vans demonstrate the benefits of ride-sharing.

Data Source: Statistics Canada

> **Islanders can take action at home and on the road to reduce greenhouse gas emissions and save money.**
>
> - Curbing Climate Change, Prince Edward Island Climate Change First Business Plan

INDICATOR: Citizen Participation

Description: The results of a 2003 survey indicate the percentage of citizens participating in environmental stewardship activities. This includes participation in the annual Women's Institute Roadside Cleanup, watershed improvement projects and beach sweeps.

Importance: Individual actions have a large impact on environmental quality and landscape beauty. People who are involved in stewardship activities tend to have a greater appreciation of our natural environment and, in turn, are more likely to ensure their activities do not have a negative impact on the environment.

Objective: To maintain the percentage of citizens participating in environmental improvement projects at 47% or to increase participation.

Status and Trends:

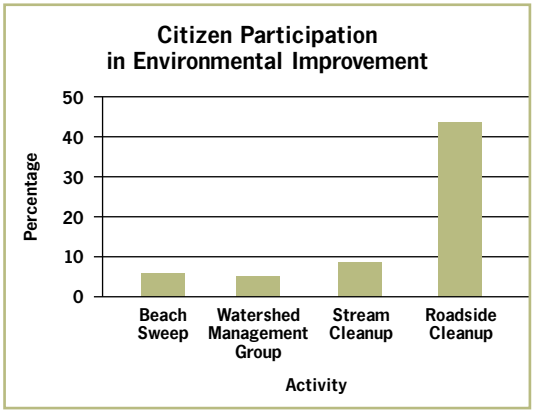
Activity	Citizens Participating
Beach sweep	6%
Watershed management group	5%
Stream cleanup	8.5%
Roadside cleanup	43%

Interpretation: 47% of citizens say that they participate in some form of environmental stewardship activities. Most of these people (43%) participate in the annual Women's Institute Roadside Cleanup; and some people participate in more than one form of environmental stewardship. No trends are available as this is the first time these data have been collected for Prince Edward Island.

It is encouraging that such a high percentage of Islanders participate in stewardship. People are demonstrating community-based responses to the societal habits of littering and damage to watersheds caused by land-based activities. The annual roadside cleanup has been in place since 1973. It attests to the ability of the Women's Institute to mobilize community effort for public good.

Response: Through the anti-litter campaign, Wildlife Habitat Improvement Program and other programs, citizens will be encouraged to continue to participate in stewardship activity or to begin if they are not already involved.

Data Source: PEI Department of Agriculture and Forestry



INDICATOR: Casual Employment in Conservation Projects

Description: Volunteer conservation groups employ workers to conduct wildlife habitat improvement projects. Due to lack of data on the total amount of volunteer citizen involvement, this proxy indicator was selected.

Importance: Projects employ students and other seasonal workers to improve habitat by cleaning silt and debris from rivers, to improve spawning conditions and to create public recreational and educational opportunities.

Status and Trends:

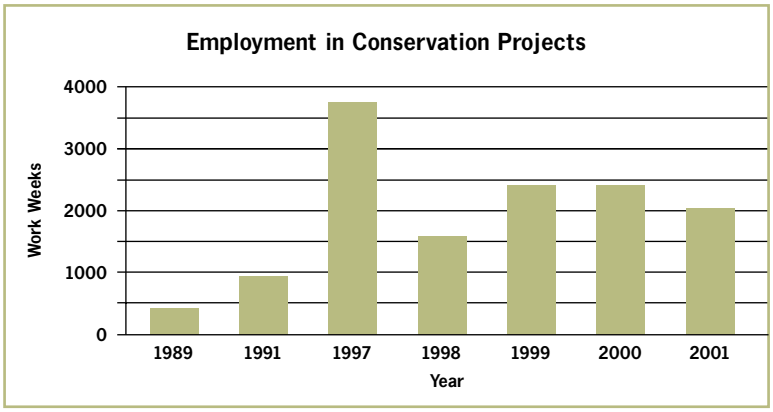
Year	1989	1991	1997	1998	1999	2000	2001
Work Weeks	400	900	3,698	1,603	2,370	2,393	2,014

Interpretation: Citizen involvement has ranged from 19 projects in 1989 starting with the Island Conservation Assistant Program, to a high of 98 projects in 1995 when federal funds were also contributed through the Watershed Improvement/Recreational Fisheries Development Program.

Many students and seasonal workers have benefitted from local community wildlife improvement projects, as has the environment. The funding has become relatively stable since 1998 when the Wildlife Conservation Fund was initiated to augment the Wildlife Habitat Improvement Program.

Response: The Wildlife Habitat Improvement Program and the Wildlife Conservation Fund will continue to provide grants and expertise to volunteer conservation groups.

Data Source: PEI Department of Fisheries, Aquaculture and Environment



> **A safe, healthy environment needs to be our legacy to future generations.**
>
> - Speech from the Throne 2002

INDICATOR: Environmental Violations

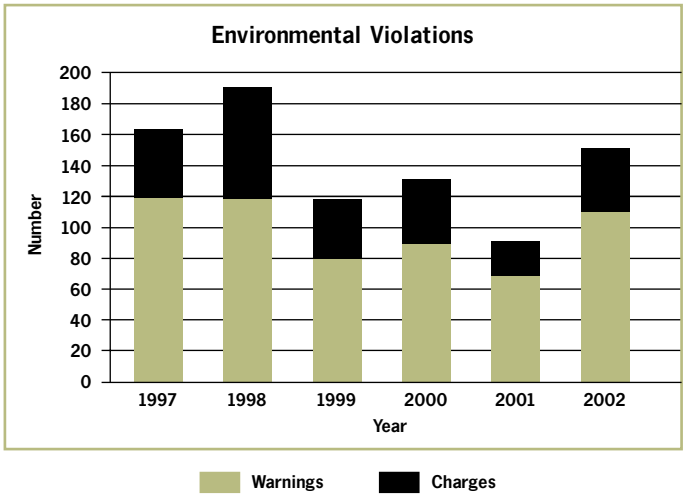
Description: The number of violations includes charges and warnings issued under provincial legislation as well as federal legislation enforced by the Province (see appendix).

Importance: The number of violations is an indirect indicator of the compliance being achieved under environmental laws.

Objective: To achieve 100% citizen compliance with environmental legislation.

Status and Trends:

Year	1997	1998	1999	2000	2001	2002
Violations	163	189	118	130	93	150



Interpretation: Since 1997, conservation officers have placed greater emphasis on achieving compliance under a wider variety of environmental legislation. In March 1998, there was an extra full-time aboriginal conservation officer for the period until March 2000. In 2002, more emphasis was placed on getting compliance with buffer zone provisions under the *Environment Protection Act*, and less on other activities such as fishing without a licence. The weakness of this indicator is that it may be a reflection of the amount of enforcement effort rather than the actual number of infractions that occur.

Response: The enforcement effort will remain high. Priorities are selected each year.

Data Source: PEI Department of Fisheries, Aquaculture and Environment

INDICATOR: Home Heating Oil Tank Compliance

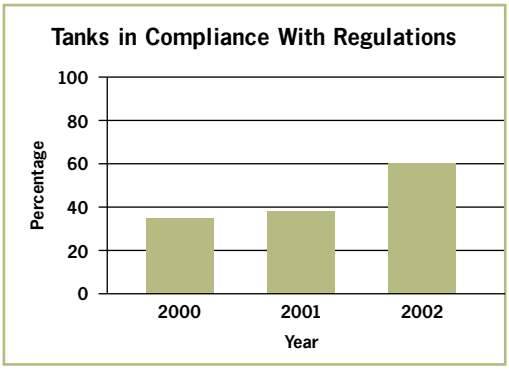
Description: An annual random survey is conducted to determine citizen compliance with the "Construction Standards for Installation of Aboveground Home Heat Storage Systems". As of September 2002, the Petroleum Storage Tanks Regulations require oil tanks to be installed by a licensed installer to this specified standard.

Importance: The Petroleum Storage Tanks Regulations are enforced to minimize heating oil spills which cause environmental damage including groundwater contamination.

Objective: To achieve 100% compliance with regulations by September 2006.

Status and Trends:

Year	2000	2001	2002
Compliance	36%	39%	60%



Interpretation: The regulations were amended in 2001. Existing home heat tanks must be inspected and brought up to installation standards by September 2006. After September 2007, home heating oil will not be delivered to tanks that do not have a valid identification tag with the tank replacement date.

During 2000, there was extensive media coverage of the number of oil spills due to heavy snow. As a result of increased awareness and the new regulations, the number of properly installed tanks increased significantly in 2002.

Response: Emphasis on homeowner education and enforcement of the Petroleum Storage Tanks Regulations will continue.

Data Source: PEI Department of Fisheries, Aquaculture and Environment

"With the help of concerned homeowners wanting to protect the environment, in 2002 Prince Edward Island experienced the lowest number of reported oil spills since the province began keeping statistics in 1990. With continued homeowner support, the number of oil spills will continue to decrease."

- Home Heat Tank Safety, A Homeowner's Guide

SOIL QUALITY

PRESENT SITUATION

Soil is one of our principle natural resources. It is the basis of all agricultural production and for the forests and fields which make up our valued and admired landscape.

Prince Edward Island soils are not inherently fertile. However, they possess some characteristics which, under skillful management, allow them to be productive and to support a variety of attractive and valuable crops and habitats.

One of the key challenges for managing the soil is keeping it in place - in other words, preventing or reducing erosion.

In recent years, more than $12 million has been invested in soil and water conservation projects to achieve environmental protection.

WHAT CAN BE EXPECTED?

The amount of land under soil conservation management will increase as the *Agricultural Crop Rotation Act* becomes fully operational, as producers implement their environmental farm plans, and as the financial incentives and cross compliance measures of the Sustainable Resource Policy are implemented.

Marketing of food produced from more environmentally friendly methods will increase under the Food Trust initiative.

There will be greater public demand for certified organically grown products, both for local consumption and for export.

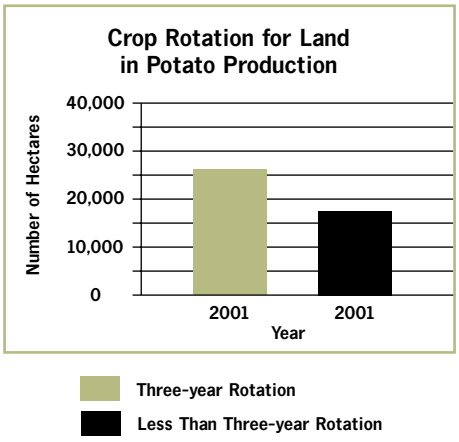
INDICATOR: Crop Rotation

Description: The amount of potato land in three-year or greater crop rotation, measured in hectares.

Importance: A three-year crop rotation is generally considered to be the minimum acceptable for potato and other row crop production. The rotation helps to maintain soil quality.

Objective: To achieve 100% of potato land in three-year rotation or equivalent soil conservation practices by 2005.

Status and Trends:



Interpretation: In 2001, almost 26,000 hectares (64,200 acres) or 60% of the land in potatoes was in three-year rotation. Although data on rotations were not collected regularly until recently, most potato land historically was in three-year and sometimes longer rotation because of mixed rather than specialized farming.

This data indicates that 40% of the potato acreage was in a rotation of less than three years and, therefore, potentially not in compliance with the *Agricultural Crop Rotation Act*. Shortening of the rotation has occurred since 1990 because of increasing pressure to produce and limited amount of agricultural land available.

Response: The *Agricultural Crop Rotation Act* was enacted in 2002 to ensure that adequate soil management occurred to protect the agricultural land base and to minimize impact to the environment from the Island's biggest environmental problem - soil erosion.

Data Source: PEI Department of Agriculture and Forestry

> **The practice of continuous row cropping without adequate crop rotation has degraded soils by depleting organic matter and by causing structural instability, fertility problems and accelerated water erosion.**
>
> - Cultivating Island Solutions, Report of the Round Table on Resource Land Use and Stewardship

INDICATOR: Soil Conservation

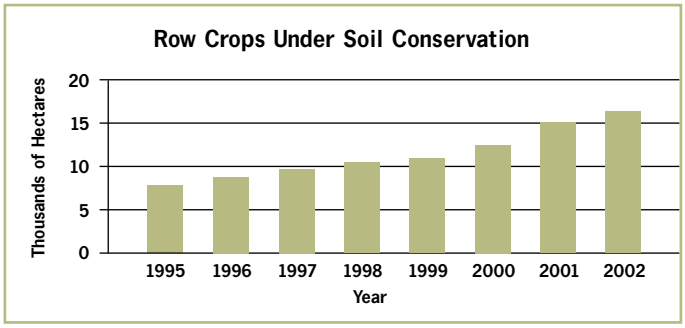
Description: Amount of row crops under engineered soil conservation management, as measured in hectares (1 hectare equals 2.47 acres).

Importance: Soil conservation techniques such as terraces, grassed waterways and strip cropping reduce or eliminate soil erosion.

Objective: To achieve 100% of row crops managed to acceptable soil loss levels.

Status and Trends:

Year	1995	1996	1997	1998	1999	2000	2001	2002
Hectares	7,490	8,700	9,920	10,530	11,460	13,400	15,020	16,440



Interpretation: The data for this indicator refers only to engineered soil conservation techniques such as terraces and grassed waterways. Agronomic techniques such as straw mulching and cover crops are also used increasingly, either in combination with engineered techniques or alone. There are no current data on the number of hectares of agronomic soil conservation practices.

Although soil loss of 6.7 tonne/ha/yr is currently considered acceptable, it cannot be considered sustainable since soil is not formed that quickly.

Response: Government provides financial assistance and advice on soil conservation practices.

The *Agricultural Crop Rotation Act* is intended to address the objective for this indicator.

Data Source: PEI Department of Agriculture and Forestry

INDICATOR: Soil Organic Matter (OM)

Description: Organic matter levels in soil, measured in per cent.

Importance: Organic matter is a key indicator of the capacity of the soil to support plant growth. It is a contributor to soil structure and fertility.

Objective: To have 90% of samples at 3% OM or greater by 2010.

Status and Trends:

Organic Matter (in per cent)	Percentage of Province-wide Samples
1.5 - 2.0	2%
2.1 - 2.5	8%
2.6 - 3.0	21%
3.1 - 3.5	25%
3.6 - 4.0	18%
> 4.0	25%

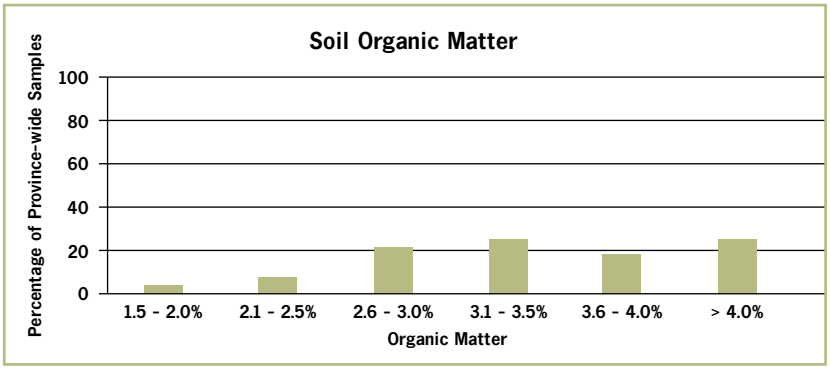
Interpretation: In 1999-2001, 68% of province- wide samples had an organic matter of 3% or greater. These were the first three years of data collection. There is no comparable data as that amount of time is required to complete province-wide sampling.

Organic matter of 3% or above is considered desirable for cropping practices and soil characteristics. Approximately 32% of samples do not meet this level.

Intensive row crop production tends to reduce organic matter. The majority of potato land is in the 2.6% OM to 3.0% OM range. The higher levels of organic matter are found on sites in pasture or where particular management practices are in place to build organic matter.

Response: Mandatory three-year crop rotation has been legislated. This will positively impact on the amount of organic matter in the soil.

Data Source: PEI Department of Agriculture and Forestry



> **The amount of organic matter in soil is affected by management. Excessive tillage and poor crop rotations speed the loss of organic matter.**
>
> - Soil Conservation for Potato Production, Best Management Practices

INDICATOR: Organic Agriculture

Description: Amount of farmland in certified organic production, measured in hectares.

Importance: Organic production techniques maintain and often improve soil quality. Organic agriculture is also an indicator of biodiversity since habitat diversity is a criterion for organic certification.

Objective: To have a minimum target of 2,025 organically-managed hectares (5,000 acres) by 2006.

Status and Trends: In 2001, there were 607 hectares (1,500 acres) under organic production. There is insufficient data to compare with previous years.

Interpretation: Organic agriculture is increasing in response to market demand and as an environmentally friendly alternative to conventional production.

Data regarding organic farms are conflicting. Provincial Agriculture and Forestry sources suggest that the amount of farmland in certified organic production could be 25-50% higher than 607 hectares. Other data from the Agriculture Census indicate 23 organic farms, but Certified Organic Growers report 33 organic producers. The difference is explained by the fact that the small organic producers are not reflected in the census.

Response: The Department of Agriculture and Forestry provides staff and financial support to organic producers.

Data Source: Statistics Canada

> **Growing public concern about pesticide usage, air and water quality and genetically altered foods is a serious matter in an agricultural economy. Consumer resistance to certain farm practices underscores the need to practice sound soil management techniques, and to experiment with alternative farming practices.**
>
> - Bridging Tradition and Technology: An Economic Development Strategy for Prince Edward Island

LAND USE

PRESENT SITUATION

Land use patterns reflect the constant adaptation of farmers/land managers to changing social, economic and environmental circumstances. While some land can only be used for a limited range of purposes, other land can accommodate many potentially competing uses. The amounts of land used for each purpose are constantly changing and the nature and extent of these changes are of crucial importance for those developing, implementing or monitoring land use policies.

Land management is influenced by environmental factors such as soil characteristics, climate, topography and vegetation. It reflects the importance of land as a key and finite resource for activities including agriculture, industry, forestry, energy production, settlement, recreation, and water catchment and storage.

Land is the foundation of production, and is tightly coupled to economic growth. As a result, control over land and its use is often an object of intense human interactions.

WHAT CAN BE EXPECTED?

Possible forces driving land-use and land-cover changes are property rights, the *Lands Protection Act,* and the structures of power from the local to the international level which influence access to or control over land.

Others forces such as population density and the level of economic and social development will affect the demands that will be placed on the land, while technology will influence the intensity of exploitation that is possible.

Still other forces such as agricultural pricing policies will shape land use decisions by creating the incentives that motivate individual decision makers.

INDICATOR: Environmental Farm Plans

Description: Percentage of farmland under environmental farm plans.

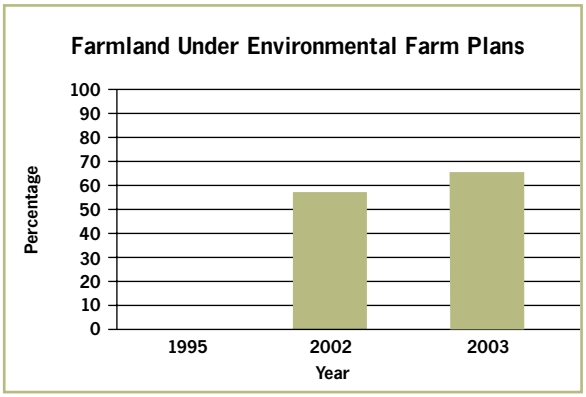
Importance: Environmental farm plans identify priority areas for actions to improve environmental performance on farms.

Objective: To have 95% of farmland under environmental farm plans by 2005.

Status and Trends: Prince Edward Island started environmental farm planning in 1996. Currently, 66% of farmland is under environmental farm plans. Over 1,100 farmers have participated in environmental farm planning workshops. This represents 60% of Island farms.

Year	1995	2002	2003
% of farmland under environmental farm plans	0	57%	66%
Number of farms with environmental farm plans	0	1,029	1,115

* Total number of farms in PEI is 1,845



Interpretation: Prince Edward Island leads Canada in environmental farm planning. The initiative is industry driven. Environmental farm plans are an environmental assessment of the farm operation and an action plan for addressing areas where environmental results need improvement. They are a requirement to obtain funding from certain government programs. Implementing action plans is voluntary.

Response: Prince Edward Island supports the industry-driven process of environmental farm planning. The high target set by farmers is an indicator of industry commitment to sustainability.

Data Source: PEI Department of Agriculture and Forestry

> **Accepting the sustainability challenge and projecting a public image of good environmental stewardship can provide producers with a competitive advantage. Many Island farms through their participation in the Environmental Farm Planning process have taken this first step in meeting the challenge.**
>
> - Soil Conservation for Potato Production, Best Management Practices

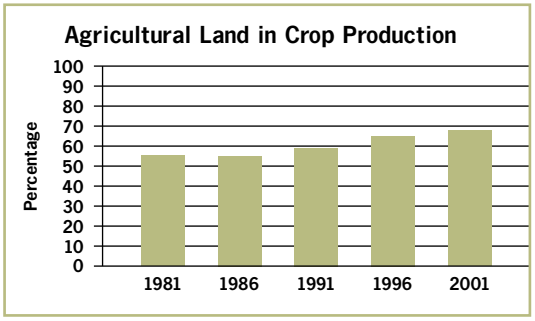
INDICATOR: Land Area in Crop Production

Description: Percentage of total agricultural land cultivated for crop production.

Importance: Land that is cultivated for crops is more susceptible to reductions in soil quality, through erosion and reduced biodiversity.

Status and Trends:

Year	1981	1986	1991	1996	2001
Hectares in agricultural use	283,145	272,549	258,985	265,330	261,594
Hectares in crop production	158,347 (56%)	156,565 (57%)	154,168 (59%)	170,434 (64%)	175,563 (67%)



Interpretation: The percentage of land in agriculture has declined slightly over the past 20 years, but the proportion of agricultural land that is cultivated for crop production increased from 56% in 1981 to 67% in 2001. This increase, which took place primarily during the 1990s, is indicative of intensification of production to meet the increased processing capacity.

Cultivation of land for crop production has implications for soil and water quality since cultivated land is more susceptible to erosion. Land in permanent forage or pasture or perennial crops may not be as lucrative in economic terms, but it is beneficial to the agricultural ecosystem.

Response: Environmental farm plans include practices which increase biodiversity and protect soil. Government recommends and supports crop production practices which minimize soil erosion.

Data Source: Statistics Canada

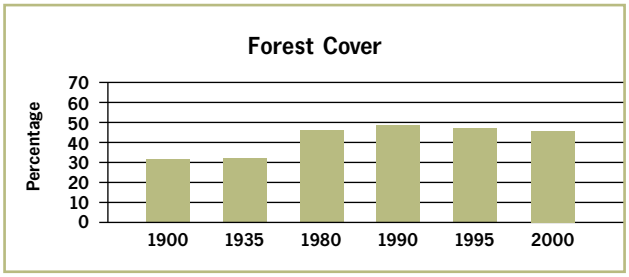
INDICATOR: Forest Cover

Description: Area of forest cover in the 20th century is measured in hectares (1 hectare equals 2.47 acres).

Importance: Prince Edward Island without trees would be a windswept, eroded landscape with serious water supply problems.

Status and Trends:

Year	1900	1935	1980	1990/92	1994/97	2000
Hectares	177,903	186,283	268,804	280,017	275,471	263,225



Interpretation: At the beginning of the 20th century, 31% of Prince Edward Island was in forest. Small woodlots and hedgerows were interspersed with cleared land in mixed and subsistence agriculture. The increase in forest cover in the 20th century resulted from the abandonment of farms which grew up in primarily white spruce. The recent decline is attributable to conversion to non-forest land such as agriculture and residential. Currently, forest harvest levels exceed the rate of reforestation. This is a weak indicator but is included as historical data for reference.

Response: Government recognizes the importance of forest cover to the environment and has included forestry in the Sustainable Resource Policy initiative.

The second State of the Forest Report was published in 2003. It is produced once every 10 years.

Data Source: PEI Department of Agriculture and Forestry

> **It is important to realize that forests are being increasingly appreciated for their non-timber qualities. Forests are integral to our landscape, wildlife, groundwater, air quality, recreational potential and many other values that matter to the people of this province.**
>
> - State of the Forest Report

APPENDIX

Environmental Legislation Enforced by Department of Fisheries, Aquaculture and Environment

Provincial:

Environmental Protection Act
Wildlife Conservation Act
Automobile Junkyard Act
Natural Areas Protection Act
Unsightly Property Act
Pesticides Control Act

Federal:

The Fisheries Act
Migratory Birds Convention
Wild Animal and Plant Protection and Regulation of International Trade Act

FEEDBACK FORM

The Department of Fisheries, Aquaculture and Environment invites your comments.

General comments about the report:

	Agree	Neither Agree Nor Disagree	Disagree
This report is easy to understand.	☐	☐	☐
It provides the right level of details.	☐	☐	☐

Please comment on how well you think the selected indicators provide information about the health of the Island's environment.

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How could the report be improved? What changes should be made if a similar report was published?

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_____

Are there specific actions that should be taken as a result of some findings in this report?

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_____

Optional: Your name and contact information, including e-mail address?

_____

_____

Return to: **Communications Officer**
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