



## LAND

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The Region's Land Resources

Stresses on the Region's Land Resources

The Current Condition of the  
Region's Land Resources

Benchmarks of Health



## The Region's Land Resources

The Region contains a rich variety of land-based resources. These include its soils and landforms (including the Oak Ridges Moraine), aggregates, the Regional Greenlands System, wetlands, vegetation including forests, and agricultural lands.

### Landforms and Soils

In geologic time, the landforms and soils in the Region are relatively young. They are the legacy of the last ice age that blanketed Ontario with a sheet of ice as recently as 12,000 years ago. The glaciers shaped the topography in the area, carved out kettles, and deposited the till soils that cover the ground. The Region contains what are considered to be some of the most complex and environmentally sensitive geological landforms in Ontario and can be divided into seven quite varied terrain units.

The most prominent terrain unit and geological formation is the Oak Ridges Moraine, the high ridge of land that extends 160 kilometres from the Niagara Escarpment in the west to Northumberland County in the east. The Moraine covers 500 square kilometres, or 28% of the Region's land base. It is an "interlobate" moraine, formed by the convergence of two opposing lobes of ice. Where these met, ice and glacial meltwater deposited an immense amount of glacial debris, which has resulted in one of the thickest and most complex glacial deposits in Ontario.

Topographically, the Oak Ridges Moraine is often hummocky and rough; its soils are predominantly sands and gravels, with some areas of silt and glacial till. The Moraine plays a vital role with respect to groundwater. Rain falling on the Moraine percolates through its soils and recharges (or replenishes) the aquifers below it. These aquifers provide drinking water for a significant percentage of the Region's residents and they also form the headwaters, and provide baseflow for, more than twenty rivers and streams that start in the Moraine. Because of its rolling topography and gravelly soils, large parts of the Moraine are unsuitable for agriculture, and have remained in, or have been restored to forest cover. These large woodland areas support an abundance of plants and animals and provide refuge for species displaced from more developed areas.

The Region contains significant quantities of aggregates that are used primarily in the construction industry. In 1998, there were 40 licensed pits in the Region, with most of these located in the Oak Ridges Moraine. These pits produce 2.1 million tonnes of aggregate annually.



Oak Ridges Moraine is York Region's most prominent terrain unit, accounting for 28% of the Region's land base.



The Regional Greenlands System contains remnants of the natural areas that existed 200 years ago.

## Natural Areas

The Region contains many diverse natural areas that perform important ecological functions and are the "green infrastructure". In 1994, a Regional Greenlands System was identified that contains the remnants of the natural areas that existed in the Region 200 years ago. The components of this system - 19 unique Greenlands Management Units - perform many important ecological functions (such as recharging groundwater and retaining stormwater), have significant ecological attributes (such as the presence of rare plant or animal species), and provide ecological linkages (such as providing wildlife corridors between blocks of habitat).

### ESAs and ANSIs

There are 72 Environmentally Significant Areas (ESAs) in the Region. These are areas that have been designated by a Conservation Authority as having outstanding natural values because of what they contain or the ecological functions they perform. The Province has also identified 35 Areas of Natural and Scientific Interest (ANSIs) that in most cases overlap with ESAs.

### Wetlands

Wetlands are lands that are seasonally or permanently covered with shallow water, or lands where the water table is close to the surface. Wetlands (including swamps, marshes, bogs and fens) provide many vital functions including storing surface waters, filtering pollutants from water, and supporting birds, mammals, reptiles and amphibians. As of 1998, there were 52 Class 1 to 7 wetlands in York Region identified by the Ministry of Natural Resources,

### Forests

Forest once covered an estimated 90% of the Region. Today, forested areas make up only 15% of the land base and many of these areas are small and fragmented, or disconnected from each other. The York Regional Forest was established in 1924 to address the environmental impacts of deforestation. Today its 18 tracts cover 2,032 hectares or 1.2% of the Region's land base.

### Green Space

About 9.6% of the Region's land is publicly owned Green Space. These lands include crown-owned lands, conservation lands, provincial parks, the Regional Forest, and municipal parklands, all of which provide opportunities for recreation, conservation, education and nature appreciation.

## Wildlife

A wide variety of wildlife can be found in the Region, but complete, recent information on the number of species was not readily available. The most recent reports document 32 species of mammals, 31 species of amphibians and reptiles, and 170 species of breeding birds found in the Region. The number of species and the populations of many species have decreased significantly over the last 200 years as humans have changed the landscape. Information on species at risk was also collected. In York Region, there are 11 vulnerable, 3 threatened, and 3 endangered animal species found. This list includes 12 species of birds, 2 species of fish, one turtle, and three species of snake.

## Agricultural Land

A hundred years ago, farming was the most dominant occupation in York Region and the Region's farms played a major role in supporting the growth and economic development of Toronto. Although parts of the Region have undergone recent, rapid urbanization, agriculture still plays an important role in the economy and lifestyle of many residents.

The Canada Land Inventory for Agriculture classifies mineral soils into seven categories based on their suitability and limitations for agricultural use. Class 1 to 4 soils are considered the best for farming and are capable of sustained field crop use. Extensive areas of Class 1 to 4 soils are found in much of the area south of the Oak Ridges Moraine and in the central part of York Region north of the Oak Ridges Moraine. The organic soils of the Holland Marsh, while not rated under the Canada Land Inventory, nevertheless support one of the most productive vegetable farming areas in Canada.

The agricultural lands in York Region remain an important resource. In 1996, farmers in York Region produced over \$170 million in gross farm receipts. This represented 2.2% of Ontario's total gross farm receipts and 29% of the total gross farm receipts from the combined Regions of York, Durham, Peel, and Halton. With only 1.4% of Ontario's total farmland, York Region contributes 5.8% of Ontario's vegetable producing area. Farms in the Region accounted for 39% of the celery, 24% of the onions, 34% of the carrots, 27% of the lettuce, 16% of the spinach and 15% of the broccoli produced in the province. Many dairy farms still remain in the Region, and it is home to approximately 18,000 horses, the most in any county or region in Ontario.

## Recreational Resources

The diverse landforms and natural areas in York Region provide many opportunities for outdoor recreation for its residents and visitors. These are found in many places: crown-owned lands, conservation lands, provincial parks, regional forest tracts and municipal parklands. Outdoor recreational activities such as hiking,



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The Region's landforms and natural areas provide many opportunities for outdoor recreation.

cross-country skiing, and nature appreciation can be pursued at Conservation Areas, on the Oak Ridges Moraine Trail, as well as in the York Regional Forest Tracts. The Region has more than 50 public and private golf courses

The Region attracted 1.7 million visitors in 1994. It is estimated that tourism generates \$180 million annually in the Region's economy.

### Values of the Resource

The Region's land resources - its soils, landforms and natural areas - provide many values. Major human use values include industrial and construction use of aggregates, farming, recreation, and aesthetics. These resources also provide many ecological functions including the prevention of erosion and flooding, retention of stormwater, recharging aquifers, maintaining baseflow in streams and lakes, cooling streams, filtering pollutants from overland runoff, cycling of nutrients, providing habitat for wildlife, contributing to regional biodiversity, allowing wildlife movement and improving air quality.

## Stresses on the Region's Land Resources

### Agriculture

Agricultural practices can be a significant stress on the environment. Poor agricultural practices can lead to erosion of the soil and contamination of ground and surface waters with nitrates, bacteria and pesticides. The Ontario Soil and Crop Improvement Association has been working with area farmers since 1987 on a number of programs aimed at reducing the environmental impacts of farming. For example, seventy-two farmers in York Region have completed an Environmental Farm Plan, which provides a comprehensive analysis of the producers' farming methods. The high number of non-resident land owners, the large number of cash crop farmers who have land in different areas, and the difficulty of planning long term in a rapidly developing region are barriers to more farmers completing these Plans.

Over the past two decades soil management practices have improved markedly in the Region. Between 1991 and 1996, the number of acres of conventional tillage decreased by 27% while the number of acres of minimum tillage and no tillage increased by 59 and 176%, respectively. Tillage is used to control weeds but it may increase soil erosion. Minimum or no tillage minimizes soil erosion and increases the organic content of the soil, but often relies on herbicides for weed control. Optimal practice would minimize tillage and herbicide use.

To achieve the high level of agricultural productivity that York Region currently enjoys, irrigation, fertilizers and pesticides are extensively used.

### Community Land Use

The Region's population has grown dramatically from 166,000 people in 1971 to 713,000 by year end 1999. The period of rapid growth began in the 1970s with the linking of the Region to Metropolitan Toronto's drinking water system and the construction of the York-Durham Sewage System. Land use in York Region has shifted from the 1960s when it was a mix of agriculture, rural and small towns. By 1993, 15% of the land base was urban, with agriculture making up 45%, natural areas making up 20%, and rural and other uses making up 20%.

#### Housing Density and Type

Housing density can be defined as the number of housing units per hectare of land. Higher density housing uses less land and thereby reduces pressure on agricultural and natural areas. Higher density housing is more efficient, costing less in terms of providing services such as roads and electricity. In the 1980's, single detached dwellings on large lots was the norm in York Region. Higher densities recently



The Region's population has grown considerably from 166,000 in 1971 to 713,000 by year end 1999.



With an additional 583,000 people expected in the next 25 years, growth is being directed to defined urban areas.

seen in York Region are a result of the trend to build compact communities using less space and offering a more complete mix of housing forms. New developments in York Region offer a wider variety of single family house forms and much smaller lots, resulting in an overall increase in density.

### Growth Management

Between 1981 and 1997 about 12,900 gross hectares of land was approved for residential growth. These lands include parks, schools, roadways, as well as some ravines, open space and other amenities. Approximately 50% of the 12,900 hectares was used for actual residential building lots: this resulted in approximately 16 units per net developable hectare.

With an additional 583,000 people expected in the next 25 years, growth is being directed to defined urban areas to protect agricultural land, greenlands and rural areas as well as provide infrastructure efficiently. Most of the required new urban lands have already been identified and designated in the Region's Official Plan and in municipal plans. As this development takes place, the total proportion of agricultural lands will decrease from 45% to approximately 40% of the Region's land base.

### **Industrial and Business Use**

Historically, the primary industry in York Region was agriculture and the Region's manufacturing and service industry has developed relatively recently. In comparison to the other Regions in the GTA and Hamilton, York Region has a higher proportion of "high tech" industry and a lower proportion of heavy industry. Most of York Region's manufacturing, retail and service industry is located in the southern part of the Region.

There were 21,000 employment establishments in the Region in 1998 (not including farm based and home based work places). The largest employment sectors in the Region are manufacturing with 78,000 jobs, retail trade with 35,000 workers and wholesale trade with 31,000 workers. There were 330,000 jobs in the Region in 1998 and 350,000 by 1999. The Region's growth in employment has kept pace with population growth. The fastest growing sector in recent years has been business services that increased from 5.8% of employment in 1988 to 12% in 1998.

Between 1981 and 1997 approximately 9,000 acres of land was approved for industrial use. It is anticipated that the Region's employment will almost double to 625,000 by the year 2021; this will require additional lands for offices and industry.

## Transportation

An effective, multimodal transportation system is as vital to a community as safe drinking water or sewage treatment. In York Region, people get around in many ways (walking, bicycling, driving, on public transit, by boat and by airplane) and goods are moved by road, rail and air. The number of motor vehicles and the number of trips made continues to rise in the Region, with traffic volumes increasing at a rate that is slightly higher than the rate of population and employment growth. All this transportation has an impact on the environment: reduced air quality, increased vehicle noise and more land and aggregates needed for streets and roads. Vehicle collisions also continue to impose a large toll on human and animal life in spite of the fact that road and vehicle design continually makes roads and vehicles safer.

### Vehicle Use

In comparison to the average Ontario resident, the residents of York Region have to go longer distances to get to work, they drive cars more often, and use public transit, cycle and walk less.

Between 1990 and 1997, the number of active registered vehicles in York Region increased 24% from 377,144 to 468,045. The average number of vehicles per household and the average number of trips per household have remained the same since 1986 but the number of households has increased. This has meant an increase of 79% (or 555,000 more) "trips per day" by York Region residents from 1986 and 1996. These figures do not include trips originating from outside York Region and travelling through York Region. Between 1983 and 1995, the number of people crossing both ways between Toronto and York Region increased 122% from 405,000 to 900,500. The number of people crossing the other three York Region boundaries combined increased 48% from 151,300 to 223,400 over the same time period.

Vehicle occupancy has been declining significantly over time in the Region. This means there are about 5% more cars on the road for the same number of person-trips resulting in increased pollution and congestion. Vehicle occupancy levels tend to be higher in the northern part of the Region than in the south. This reflects the fact that people tend to car pool more frequently for longer trips to Toronto as well as the relative lack of transit services in the north. In 1995, average vehicle occupancy for all of York Region was 1.19 people per vehicle.

### Trucks

Most goods in York Region are moved by truck. Generally, 5 to 6% of the total traffic on regional roads is medium and heavy trucks. Commercial vehicles account for about 14% of all the traffic entering or leaving the Region. In 1995, this represented 122,350 trucks. Because of changes in the industry, the proportion of small vehicles is increasing and the proportion of heavy vehicles is decreasing.



The number of motor vehicles and the number of trips made continues to rise in the Region.



In 1997, the Region's overall diversion rate on a weight basis was approximately 25%.

### Transit

Transit use in the Region is not keeping up with population growth. Between 1986 and 1996, the Regional population grew by 75%, but transit use grew only by 40%. In 1996, 9% of people in the Region used public transit to travel to work; this was less than the Ontario average of 12%.

### Motor Vehicle Accidents

Between 1990 and 1995, the annual number of personal injury accidents, people injured, fatal accidents and people killed were stable or decreased. During this same period, the number of vehicles and number of people transported in York Region markedly increased, indicating safer driving, vehicles and roads.

### **Solid Waste**

Effective management of solid waste is vital for health, environmental and economic reasons. Management of solid waste includes diversion from disposal (through reduction, reuse and recycling), collection, transfer and ultimate disposal. In York Region, each area municipality is responsible for the collection of residential solid waste. Some municipalities also collect solid waste from select businesses, institutions, apartments and condominiums as well as their own municipal buildings and maintenance operations. This waste stream is "municipally-collected solid waste". The other major source of solid waste is institutional, commercial, and industrial (ICI) establishments. Most ICI establishments engage private waste management contractors to provide collection service. In 1997, half of the Region's total solid waste delivered to the Keele Valley Landfill Site was municipally-collected and half was ICI waste.

### Waste Diversion

The diversion of waste from disposal decreases the need for landfill sites and decreases the amount of energy needed to collect and transport waste to the landfill. In 1997, the Region's overall diversion rate on a weight basis was approximately 25%. This only considers municipally-collected waste and recyclable materials. In 1998, Markham and Georgina reported diversion rates of 38 and 56% respectively, but the method of calculation needs to be taken into account. Area municipalities are responsible for the collection of recyclable materials from residential sources. This is accomplished primarily through the "blue box" curbside collection program and municipal recycling depots located in Aurora, East Gwillimbury, Georgina, Markham, and Whitchurch-Stouffville.

Residents are encouraged to compost organic waste such as vegetable peelings, grass clippings and leaves. Area municipalities collect yard waste at the curbside for composting at one of the two centralized composting facilities in the Region.

### Landfill Sites

There are two active landfill sites in the Region. The Keele Valley Landfill Site in Vaughan has been operated by the former Metro Toronto (now the City of Toronto) since 1983. By agreement, the Region's municipalities dispose of their municipally collected waste at the facility. About 19% (or 322,000 tonnes) of the 1.7 million tonnes of solid waste received by the site in 1997 came from York Region. It is projected that the site will be full by late 2002. The Region is currently developing a solid waste management strategy to provide disposal capacity to replace the Keele Valley Landfill Site. The Township of King continues to operate its own landfill but it only receives a small quantity of King's solid waste since all municipally-collected solid waste is sent to Keele Valley.

According to the MOE, as of 1998, there were 44 known closed landfill sites in York Region. Prior to 1971, waste disposal sites or landfills were operated by municipalities and businesses with no provincial regulation or control. As a result, there is little information on these sites. Many of these sites were established in ravines, wetlands, pits, quarries, and flood plains. The major concern with closed waste disposal sites is the potential for the production of leachate and landfill gases.

### Private Waste Management Facilities

In 1998, there were about 40 privately owned and operated waste management facilities in York Region. These facilities primarily receive waste from ICI sources, and include transfer stations, material recovery facilities, composting facilities, and waste processing facilities.

## **Hazardous Materials**

### Hazardous Wastes

Hazardous solid, liquid and gaseous wastes may be generated by industrial, commercial, institutional and household sources. These wastes can create a threat to human health and the health of the environment if they are not properly stored, transported or disposed. The Ministry of the Environment monitors generators, carriers and receivers of hazardous waste and liquid industrial waste.

In 1995, there were 583 generators of hazardous and liquid industrial waste in York Region registered with the MOE. They generated at least 13,000 tonnes of hazardous waste. In addition, there were 84 carriers and 25 receivers of hazardous waste and liquid industrial waste in York Region registered with the MOE.



About 19% of the solid waste received at the Keele Valley Landfill Site in 1997 came from York Region.



To protect the environment and health, household hazardous products require special disposal.

### Hazardous Wastes in the Home

Hazardous waste is also generated in the home. Household hazardous waste (HHW) includes consumer products such as paint, solvents, cleaning fluids, motor oil, pharmaceuticals, and pesticides. To protect the environment and health, these materials require special disposal: they should not be disposed of in regular garbage or poured down drains. The City of Toronto has operated a HHW depot at the Keele Valley Landfill Site since 1988. York Region has also provided special HHW "public drop-off days" from 1990 to 1997 at various sites across the Region. In 1998, the Region constructed two permanent HHW depots in Georgina and Markham. An additional depot began operating in East Gwillimbury in 1999.

### PCB Storage

In 1977, manufacturing, importation, and most non-electrical uses of Polychlorinated Biphenyls (PCBs) were banned in North America because of their toxicity and persistence in the environment. Electrical uses of PCBs are now being phased out, and there are stringent requirements for handling and disposal. Currently, PCBs are stored safely until they can be properly destroyed by high-temperature incineration. In York Region, there are 38 sites that store PCBs.

### Spills

Spills of hazardous materials can have harmful effects on the air, land and water. When spills take place, they are reported to the MOE. The Ministry then investigates to determine the nature and extent of environmental damage, to ensure that cleanup takes place, and to ensure that any damage to the environment has been repaired. In York Region, there were 1,548 spills reported to the MOE from 1988 to 1996, with a peak of 224 spills in 1995.

### Pesticides

Overall, pesticide use in Ontario is decreasing, in part because of concerns about its effects on human health and the environment. There were 117,955 kilograms of pesticides used for agricultural purposes on field crops, fruits and vegetables in York Region in 1993. Most (70%) of this was herbicides and these were applied to 18% of York Region's land area. The amount of pesticides used by licensed applicators in the Region for non-agricultural applications (residential lawns, golf courses, parks, playgrounds, cemeteries, commercial/industrial properties and forests/woodlots) is not known.

Two area municipalities in York Region carry out mosquito spraying on a large scale. Georgina has been using Malathion, an organophosphate type of insecticide, since 1979. East Gwillimbury uses *Bacillus thuringiensis israelensis* (B.t.i.), a biological insecticide considered to be very safe.

## Energy

Energy is both vital to our existence, and a huge stress on the environment. We use energy in every facet of our lives: to heat, cool and light our buildings, propel our cars and power our appliances. Yet almost every part of the energy use cycle - building dams, mining, processing, shipping, combustion and waste disposal - causes an impact on the natural environment.

York Region is a net importer of energy, depending on electrical power, natural gas and gasoline produced elsewhere. Per capita figures on energy consumption in the Region are not available. As a nation, Canada is the world's sixth largest user of energy. In 1993, with 0.56% of the world's population, Canada consumed 2.6% of the global energy used.

The average Ontario resident uses about 2.9 litres of gasoline per day. For York Region, the average consumption is likely higher because of the high number of commuters and its underdeveloped, underused transit system. Average vehicle fuel efficiency has increased over the last decade, but the environmental gains from increased fuel efficiency have been offset by an increase in the number of vehicles and the number of kilometres traveled, increasing numbers of large vehicles, and the existence of poorly maintained vehicles.

A small amount of renewable energy is harnessed in the Region. This comes from 2 wind generators, an unknown number of buildings that use passive solar, and about 1200 active solar units that are used to provide hot water, heat swimming pools, heat buildings and pump water for livestock. Harnessing methane gas at the Keele Valley Landfill Site generates electricity.



Only a small amount of renewable energy is harnessed in York Region.



Studies on Oak Ridges Moraine are needed to determine whether development has adversely affected its functions, vegetation and wildlife.

## The Current Condition of the Region's Land Resources

### Landforms and Soils

#### Oak Ridges Moraine

The Oak Ridges Moraine is the most important landform in the Region and plays a vital role with respect to groundwater and wildlife habitat. There is concern that the Moraine's ecological functions, attributes and linkages are being adversely affected by the development that has taken place over the last 200 years.

Because of concern over the integrity and health of the Oak Ridges Moraine, in 1991, the Ministries of Environment, Natural Resources and Municipal Affairs identified it as an area of Provincial Interest and began to develop long term management and protection strategies. These are still not in place, and applications for changes in land use are assessed against the Oak Ridges Moraine Implementation Guidelines that were released in 1991.

Because of changes to the *Planning Act* and restructuring of provincial ministries, the Region is now also responsible for implementing matters of Provincial Interest. In early 1999, the Region began discussions with the Regions of Durham and Peel on a regionally led process to develop a long term strategy for the Moraine. A joint research and policy options paper was prepared by Regional staff from York, Durham and Peel and endorsed by the three Regional Councils in the Fall of 1999. The paper also identifies a series of actions that would be required to protect the Moraine.

Studies on the Moraine resources were carried out by the Province between 1991 and 1994, and the Canadian Geological Survey is currently studying its groundwater resources. Ongoing studies on the Moraine are needed to determine whether the development that has occurred to date is adversely affecting the Moraine's ecological functions, vegetation and wildlife.

#### Aggregates

The Provincial Policy Statement dealing with Mineral Aggregates requires that mineral aggregate operations be protected from activities that would preclude or hinder their expansion or continued use. The Regional and local OPs contain policies to support this. Policies in the Regional OP encourage aggregate extraction in designated Mineral Aggregate Resource Areas, and also specify that it is subject to Regional and local OPs and by-laws. This allows Regional Council to weigh the merits of proposed aggregate extraction against environmental or residential impacts.

## Natural Areas

### Regional Greenlands System

While a Regional Greenlands System was identified in 1994, there has been little monitoring of its overall health. Fortunately many of the greenlands areas were, and still are outside of the path of urban development. In those that are within or adjacent to urban development, Regional staff conclude that there has been some loss of ecological function, attributes and linkages. In a small number of cases, some greenlands units have lost area to development since the Regional OP was approved. Many of these losses have occurred because of planning decisions that were made before the Regional OP was approved.

The Region is undertaking a “Greening of York Region Initiative”. This initiative has four components and will assist in turning policies related to the Region’s forests, greenlands and natural areas into action.

### ESAs and ANSIs

There are 72 ESAs and 35 ANSIs in the Region. Since 1994, the TRCA has updated ESAs in the Lake Ontario watershed and has evaluated other natural areas for their ecological significance. This has not been done in the Lake Simcoe watershed. Regional staff expect that there has been little loss in terms of size of ESAs and ANSIs, but where they are directly adjacent to urban development areas, there may have been some loss of biological function and biodiversity. Apart from the TRCA updates and sporadic environmental evaluations undertaken by development proponents, there has been little collection of data on ESA and ANSI health at the Regional level.

### Wetlands

Current provincial policies on wetlands are weaker than when the Regional Official Plan was developed in 1994. The current Provincial Policy Statement on wetlands does not permit development or alteration of provincially significant wetlands, but allows development in other wetlands provided no negative impact is demonstrated. The Region should continue to protect both provincially and locally significant wetlands from development and alteration. This is especially important on the Oak Ridges Moraine, where many of the smaller wetlands are found.

Over the last three years, MNR has been re-evaluating and complexing (consolidating) smaller wetlands in the Region. This work should be supported and where appropriate, amendments to the Regional Official Plan should be made to afford continued protection to wetlands as they are re-evaluated and complexed.



The Region should continue to protect wetlands from development and alteration.



The number of accidental interactions between wild animals and humans has been increasing, due to urban growth.

### Forests

Forest cover in York Region has decreased from 23% of the total land base in 1977 to 15% to 18% in 1991. The forest that remains suffers from being fragmented into more than 4,000 woodlots. Southern areas of York Region have much less forest cover than the more northerly areas of the Region. Cover ranges from 1.5% in Markham to 28.1% in Georgina.

Extensive tree planting has taken place. Between 1995 and 1998, there were 150,000 trees planted annually in the Region in greenlands areas and 5,000 trees planted annually near roadways.

In 1991, Regional Council enacted a by-law under the Trees Act to regulate the destruction of trees in the Region. The by-law applies to all woodlots 0.5 acres or more in size and regulates the number and size of trees that can be cut. Area municipalities have more extensive powers under the Municipal Act to enact tree conservation by-laws, but to date, none have done so.

### **Wildlife**

It is difficult to assess the condition of the Region's wildlife because information is limited. With increasing urbanization in York Region, the number of accidental interactions between wild animals and humans has been increasing. The Wildcare Wildlife Rehabilitation Centre, dedicated to the rescue, rehabilitation, and release of injured, sick, orphaned and displaced wild animals, admitted more than 1,100 animals in 1997.

### **Agricultural Land**

Provincial Policy requires that municipalities protect "Prime Agricultural Areas" for agriculture. These are defined as those areas where Canada Land Inventory for Agriculture classifications 1 through 3 predominate as well as Specialty Crop Areas. There are extensive areas in the Region that are classified as 1 to 3 soils, and the Holland Marsh is a Specialty Crop Area. Most of the Class 1 to 3 soils are found south of the Oak Ridges Moraine, and the central part of York Region north of the Oak Ridges Moraine.

In 1996, the Census of Agriculture identified approximately 45% of York Region as farmland. Between 1976 and 1996, the number of acres of land farmed decreased 22% from 99,045 to 77,475 hectares, or about 3 hectares (7.4 acres) a day. The number of Census farms in York Region decreased 45% between 1971 and 1996, from 2,190 to 1,211 farms. It was predominantly the smaller farms that decreased in number. While 96% of farm businesses were family owned in 1996, only 44% of the land

farmed was owned by the farmer. The trend, documented since 1986, has been toward decreased ownership of farmed land by the producer.

## Recreational Resources

The Region's land-based recreational resources - its Crown-owned lands, conservation lands, provincial parks, regional forests and municipal parklands - are protected from development. The greatest threat to these resources is likely the increased demand for access to them that can be expected as the population grows to meet the projected figure of 1.2 million by 2021.

## Benchmarks of Health

Proposed benchmarks of health for the Region's land resources follow. The table includes measures, targets and current measurement (or status). In some cases, the information needed has not been gathered for this SOE Report. Where this is so, it is indicated in the table.



There will be increased demand for access to the Region's recreational resources as the population grows.



Benchmarks of Health for the Region's Land Resources

Benchmarks	Measure	Target	Current Status
Oak Ridges Moraine	Protection of the Moraine's resources	Existence of a long term management and protection strategy for the Moraine	Interim Implementation Guidelines in place since 1991
	Amount of development occurring	Monitor	The amount of new Estate Residential development has decreased. development is being directed to Urban Areas and Towns
	Adverse impacts on ecological functions	None	Determine appropriate indicators and collect data as part of ongoing work
Regional Greenlands System	Health and area of system	No loss	Some losses in health and area since 1994
	Development of local greenlands studies	ROP requires municipalities to undertake greenlands studies and implement through local planning documents	Georgina, East Gwillimbury and King have all undertaken studies in response to ROP. Whitchurch-Stouffville is being done in 1999. Richmond Hill, Markham and Vaughan have pre-existing studies. (1999)
Aggregates	Amount of aggregate produced annually in the Region	Monitor	2.1 million tonnes (1998)
	Number of hectares of land used for aggregate extraction in the Region	Monitor	324 hectares (1998)
	Number of closed gravel pits requiring remediation in the Region	Monitor for reduction	Undertake collection of available data to determine status

Benchmarks of Health for the Region's Land Resources (cont.)

Benchmarks	Measure	Target	Current Status
Agriculture	Percent of the Region's land base classified by Census of Agriculture as farmland	Expected to be 40% by 2021 (ROP)	45% (1996)
	Number of hectares farmed	Monitor	78,442 hectares (1996)
	Number of farms in the Region	Monitor	1,211 farms (1996)
	Total gross farm receipts in the Region	Monitor	\$170 million (1996)
Agricultural Practices	Percentage of agricultural land tilled using minimum till or no till approaches	Increase	41.8% (1996)
Recreational Resources	Percent of the Region's land base that is publicly owned green space	Hold or increase	9.6% (1997)

Benchmarks of Health for the Region's Land Resources (cont.)

Benchmarks	Measure	Target	Current Status
Environmental Policy Areas	Number, area and quality of ESAs in the Region	No loss of ESAs; healthy systems	72 ESAs; (1982)
	Number area, and quality of ANSIs in the Region	No loss of ANSIs; healthy systems	35 ANSIs (1998)
Vegetation	Percent of the Region's land base in forest cover	25% (ROP target)	15% to 18% (1991); monitor for future gains and losses
	Number of hectares of trees planted annually in the Region	Annual target needed	150,000 trees planted annually in greenland areas and 5,000 street trees planted annually (1998); number of hectares this represents is unknown
	Number of rare, vulnerable, threatened and endangered plant species in the Region	No loss of species; no additions to list	Seven rare species; of these 1 is vulnerable; 1 is threatened (1997)
Wetlands	Number, area and quality of wetlands in the Region	No net loss	52 Class 1 to 7 wetlands (as of 1998); MNR re-evaluating and complexing
	Amount of wetlands lost annually in the Region	None	Undertake collection of available data from diverse sources
Wildlife	Number of species of mammals, birds, reptiles and amphibians found in the Region	Healthy communities and individuals	Undertake collection of available data from diverse sources
	Number of rare, vulnerable, threatened and endangered animal species in the Region	No loss of species; no additions to list	18 species of rare animals; 11 of these were vulnerable, 3 were threatened; and 3 were endangered (1997)

Benchmarks	Measure	Target	Current Status	
	Annual number of building permits issued in the Region	Monitor	9,438 (1998)	
	Number of hectares of rural land converted to urban use in the Region	Monitor	12,897 hectares converted from 1981 to 1997	
	Mix of housing types built annually in the Region	ROP encourages housing forms that are affordable to moderate and lower income households	In the 1990's, 65% of housing built was single detached housing forms	
	Total mix of housing types in the Region	ROP encourages housing forms that are affordable to moderate and lower income households	In 1998, 76% of housing was single family detached, down from 85% in the 1980's	
	Density of new housing in the Region	ROP encourages higher densities for new communities;	Density of new housing in Markham, Vaughan, Richmond Hill, Newmarket and Aurora has increased over the last few years	
	Number of kilometres of bicycle trails in the Region	Increase	Undertake collection of data	
	Community Land Use	Average number of vehicles per household in the Region	Hold or reduce	1.8 (1996)
		Average number of vehicle trips per household per day in the Region	Hold or reduce	6.8 (1996)
		Average vehicle occupancy in the Region	Increase	1.19 (1995)
		Number of people car pooling in the Region	Increase	Undertake collection of data
		Number of people using public transit in the Region	ROP target is 30% by 2021	13% in urban areas including school busing (1995)
		Number of personal injury accidents and number of people injured in the Region from automobile accidents	Reduce	2,146 personal injury accidents and 3,527 people injured (1996)
		Number of fatal vehicle accidents and number of people killed in the Region from automobile accidents	Reduce	29 fatal accidents; 37 people killed (1996)

Benchmarks	Measure	Target	Current Status
Solid Waste	Amount of municipally-collected solid waste in the Region	Reduce	163,000 tonnes (municipally-collected) (1997)
	Per capita production of residential solid waste in the Region	Reduce	256 kg (1997)
	Rate of diversion from landfill in the Region	50%	25% (1997)
	Amount of municipally-collected "blue box" materials processed in the Region	Increase	34,000 tonnes (1997)
	Amount of municipally-collected yard waste centrally composted in the Region	Increase	14,000 tonnes (1997)
	Amount of waste from the Region disposed at Keele Valley Landfill	Reduce	322,000 tonnes (1997)
Hazardous Waste	Number of PCB storage sites in the Region	Reduce	31 sites store high level PCB wastes; 5 sites with low level PCBs; 4 sites store both (1995)
	Number of spills in the Region reported to the MOE	Reduce	About 160 (1996)
	Number of spills in the Region reported to the Region	Reduce	72 (1997)
Pesticides	Amount of pesticides used for agricultural use in the Region	Reduce	17,955 kg (1993)
	Amount of pesticides used for non-agricultural use in the Region	Reduce	1,302,086 kg (1993)
	Amount of pesticides used by the Region and area municipalities	Reduce	Not collected for this SOE Report
	Amount of pesticides used by the public in the Region	Reduce	Not collected for this SOE Report

Benchmarks of Health for the Region's Land Resources (cont.)

Benchmarks	Measure	Target	Current Status
Energy	Ontario Hydro municipal utility sales in the Region	Monitor	5,141,514 megawatt-hours sold to Regional municipal utilities in 1996
	Average per capita electricity consumption in the Region	Reduce	Not collected for this SOE Report
	Total natural gas consumption in the Region	Monitor	1,409 billion litres annually (1997)
	Average per capita natural gas consumption in the Region	Reduce	4,170 litres per capita per day (1996)