

Grade 9 Geography

STATION A: INTRODUCTION TO FOREST MANAGEMENT

Activity:

Go to the Library Website, Subject Support, Geography, Grade 9 Geography
Download and watch the [Video: Forest Management](#)



Answer the questions on your worksheet.

STATION B: THE IMPORTANCE OF FORESTS

Activity:

Read the following article.
Answer the questions on your worksheet.

Forests are one of Ontario's most valuable assets. Forests provide the raw material to maintain important industries in Ontario. They also provide habitat for a variety of wildlife, help prevent flooding and erosion, and offer unique recreational opportunities.

Ontario's forests are managed to take all these forest values into consideration. Timber management guidelines specify ways to protect important wildlife habitat and prime recreation areas. This process of managing, by taking into account all resource values, is known as **integrated resource management**.

Ecology

Forests capture solar energy and create oxygen. They clean the air and soil, reduce the wind, store and recycle nutrients, and prevent flooding and soil erosion. Forests moderate climates and reduce the effects of global warming. Birds, fish and other wildlife depend on forests for shelter and food. Forests add to the planet's biodiversity.



Effective forest management ensures that ecosystems are protected. Harvesting techniques can be modified to ensure logging activities do not interfere with wildlife habitat. After harvesting, trees can be replanted to reflect the original natural diversity.

Recreation and Scenic Beauty



People travel to Canada's forests throughout the year to relax. Hiking, camping, skiing, photography, bird watching and canoeing are a few of the recreational opportunities the forest provides. More and more, people are traveling to Canada's natural areas specifically to enjoy the scenery, the wild plants, the animals, as well as cultural aspects. Ecotourism is the fastest growing area of Canada's tourism industry.

In addition, forests are the source of wood for recreational products such as hockey sticks, guitars, baseball bats, and much more.

Economics

In 2014, about 152 700 people were employed either directly or indirectly by forest industries of Ontario. These include professionals such as foresters, pilots, surveyors, cartographers, marketing analysts, economists, planners, administrators, engineers and research scientists. Forestry also employs truck drivers, mechanics, heavy equipment operators and mill workers.



Wood Products

More than 5 000 products can be made from wood. Many are well known: lumber, pulp, all kinds of papers, furniture, toothpicks, and matches. Other products are not so well known. These include vanillin (a flavouring in food and pharmaceuticals), shatterproof glass, adhesives, furniture upholstery, rayon clothing and turpentine.

Paper is an extremely valuable forest product. Wood is chemically broken down and reconstituted into paper and paper fibre products. Canadians are, per capita, one of the largest consumers of paper products. Roughly 35 per cent of municipal waste consists of paper and paperboard products. Recycling programs, however, are reducing the amount of wastepaper going to landfills and turning it into new products.

Non-Wood Forest Products

Many useful products may be obtained from forests without harvesting trees. These non-wood products include floral greens, fragrances and flavours, medicinal plants, and foods.

Leaves, mosses, cones, branches, and dried grasses are used in flower arrangements. Fragrant potpourri is made out of herbs, petals, cones, bark, and berries. The perfume industry and the food flavouring industry use essential oils extracted from leaves and boughs. Ginseng is used in teas to promote long life, while echinacea root is used to build healthy immune systems. Lastly, mushrooms, blueberries and maple syrup are all popular foods harvested from forests.



Traditional Uses

For many of Canada's aboriginal peoples, the forests are their home, their hunting grounds, their ceremonial lands. First Nations peoples have survived for thousands of years on the bounty of the forest. Today, the forest industry employs many aboriginal people. Traditional activities such as trapping, commercial fishing, wild rice harvesting, berry and mushroom picking, collecting medicinal plants, guiding and outfitting rely on a healthy forest environment.

STATION C: ECOSYSTEMS

Activity:

Go to the Library Website, Subject Support, Geography, Grade 9 Geography
Download and watch the [Video: Ecosystems](#)



Answer the questions on your worksheet.

STATION D: FOREST SUSTAINABILITY

Activity:

Go to the Library Website, Subject Support, Geography, Grade 9 Geography
Download and watch the [Video: Forest Sustainability](#)



Answer the questions on your worksheet.

STATION E: THE WHAT, HOW, AND WHY OF FOREST MANAGEMENT

Activity:

Read the article below.
Answer the questions on your worksheet.

In the early days of Ontario's history, it seemed as if our forests were endless. Today, we know that even though the forest is a **renewable** resource (one that we can use time and time again), it must be managed wisely. Ontario's old natural forest, in many areas of the province, is gradually being replaced by a new forest, which is planned and managed by professionals.

Today, forest managers are planning the forest that will be maturing 50 to 100 years from now. Forest managers are working to ensure that the forests of Ontario continue to contribute to the economic well-being, as well as social and environmental health of Ontario.

Forest managers, wildlife biologists, and land-use planners are all involved in managing the forest. They plan not only for the harvest and renewal of the forest, but also for conserving the forest environment to provide suitable wildlife habitat and recreational areas. A large part of a forest manager's job is to protect forests from fire, insects, and disease. Every year, these enemies destroy more wood than is harvested.

The Forest Management Cycle

Forest managers follow **six important steps** to ensure healthy forests now and for the future.



1. Planning

Unlike farm crops which can be harvested every year, trees take 50 to 100 years to reach maturity. In addition, trees cover millions of hectares and have value for many different users. To ensure a healthy, productive forest, forest managers must decide how much and where to cut. They also must consider maintaining or enhancing the value of certain areas for other users. For example, cutting practices may be modified to create wildlife shelter and feeding areas.

2. Harvesting

Depending on tree species, size and location of the area being cut, and the type of regeneration planned, different methods are used to harvest the trees.

There are four main harvesting techniques:



Clear cutting involves cutting down every tree from an area at the same time. This technique is used where all trees are of similar age. The area is either replanted or left to regenerate naturally.



Strip cutting involves removing trees in strips or blocks. This technique has less impact than clear cutting.



Shelterwood cutting involves harvesting trees individually or in small groups, but leaving residual trees to provide tree seed and cover for new seedlings.



Selective cutting is often used in deciduous woodlots of southern Ontario. This involves the harvesting of selected mature, unhealthy or undesirable trees, leaving most trees standing.

There are two main methods to harvest trees:

1. The **cut and skid method** uses chain-saws and skidders (tractor-like vehicles) to pull logs out of the forest.
2. **Mechanical harvesting** uses large mechanized equipment to cut and carry wood to the roadside.



3. Site Preparation

Once the wood is cut and hauled away, the regeneration plan is put into action. To prepare the site for seeding or planting, bulldozers are used to remove logging debris (**slash**), and reduce the moss and needles that cover the soil. Sometimes, the forester uses fire to reduce a heavy slash load. This type of planned fire is known as a **prescribed burn**.

4. Regeneration

A cutover area may be regenerated naturally (by natural seed sources, root or stump sprouts, seedlings from nearby forests) or artificially (by seeding and tree planting.) Although artificial regeneration is more costly, foresters can choose the species of trees to be grown, thereby allowing the site to grow back more quickly.



5. Tending

After the new seedlings have been established, foresters tend the forest to promote good growth. This may involve the use of herbicides to kill competing herbs, grasses, and undesirable hardwood species on the site. It also involves periodic thinning or removal of some of the poorer, slow growing trees to make room for others to grow. Tending trees in this way ensures a more vigorous forest, which is more resistant to pests and disease.

6. Protection

Even once a forest is well established and on its way to maturity, it must be continually watched over and protected against fire, insects, and disease.

Fire can quickly sweep through a forest, killing the trees and damaging the soil. Routine aircraft checks and lightning detectors are used in areas where forest fires are most likely to occur. In Canada, lightning causes three out of every 10 forest fires; careless people start the rest.



Forests also need protection from a variety of insects. For example, the spruce and jackpine budworm, gypsy moth, and forest tent caterpillar all feed on the leaves of trees. To control these damaging pests, biological control using natural parasites (bacteria or virus) is used, as well as mechanical removal of the infested tree, chemical spraying, and breeding resistant tree species.



Once the trees have reached maturity, they are harvested and the cycle begins again.

We're All Responsible for Forest Management

Everyone can make important contributions to managing Ontario's forests. We can care for the trees that grow around us, help prevent forest fires, clean up wooded areas, repair vandalism, encourage others to respect the environment, and increase awareness among the general public of the need for conservation and responsible attitudes.

STATION F: CLEARCUTTING

Activity:

Go to the Library Website, Subject Support, Geography, Grade 9 Geography
Download and watch the [Video: Clearcutting](#)



Answer the questions on your worksheet.

STATION G: CHANGES AND CHOICES

Activity:

- Read the scenario, background information, and letter to the Council of Ourtown.
- You will be assigned one of the roles by your teacher.
- Write a paragraph to express the perspective of your assigned role and give the reasons why. Be sure to look at the issue both in terms of your job / industry, as well as the needs of your family for accessibility, recreation, etc.
- Rehearse your role presentation with a partner. Be ready to present your argument to the rest of your peers during a town meeting.

Scenario:

You live in a small community called Ourtown, in a river valley in the Greenplace Forest. The forest stretches along the Oftenflow River and up the valley walls. A few houses are located on the side of the valley but most are in town. The townsfolk enjoy skiing and hiking in the forest and wetlands, and fishing in the river. A number of businesses, including the furniture maker, riding academy and private lumber company also rely on the forest's resources.

The town council has just received a letter from the provincial/territorial government informing them of a proposed highway development that will impact the townsfolk – both positively and negatively.

NOTE: Balancing the positive and negative socio-economic impacts of such a development is complex. A conclusion of either “No highway is good” or “A highway is good” is both simplistic and inaccurate. Sometimes it is appropriate for a community, province/territory or country to keep things as they are, while at other times change is necessary.



Background Information

- The Oftenflow Valley is part of a migration corridor for birds.
- Its river, the Oftenflow, provides habitat for several varieties of fish.
- Greenplace Forest is a source of food and habitat for wildlife.
- The forest, wildlife and fish are the community's economic and recreational base.
- Oftenflow River provides the community's water source.
- Forests and wetlands border the riverbank.
- The river valley walls are thick with stands of cedar, oak and pine; several log homes are located here.
- Ourtown lies on the bottomlands or floodplain tucked away in Greenplace Forest and east of the Oftenflow River.
- Ourtown is a small community with twelve east-west streets and ten north-south streets. People moving west during a land rush settled it about 150 years ago.
- A small two-lane road connects Ourtown to Big City and Upnorth.
- Big City and Upnorth are also located along the river.
- Big City has shown the most growth, and now has a population of 1 million people (potential customers).

Letter to the Council of Ourtown From the Department of Highways

Re: Notice of Application #448
Construction of a Four-Lane Highway in the Oftenflow Valley

Dear Mayor and Council,

On January third of this year, the city of Big City submitted an application for the construction of a new four-lane highway along the forested lands that border the eastern boundary of the Oftenflow River. This highway will extend from Big City to Upnorth, with a bypass connecting to the west side of Ourtown.

Approval of the new four-lane highway will require clearing a 100-metre wide stretch of land through the Greenplace Forest.

We are beginning our study to explore this matter and are accepting input from potential stakeholders. Comments or opinions must be submitted to us in writing within thirty days.

Sincerely,

I. M. Interested

I. M. Interested
Clerk
Department of Highways

Commuter

1

You live in town but you work in Upnorth. It takes you an hour to get to work each day. The new highway will mean that you can get to work ten minutes sooner.

Perspective: Supportive of highway, but may also have objections.

Road Worker

2

You live in town and have been out of work for a long time. You would love to have work again.

Perspective: Supportive of highway, but may also have objections.

Forest Worker

3

You live in town and realize that the highway will reduce the amount of forest, but you also know that in order to construct the highway the lumber company is going to hire loggers, and you'll most likely be one of them.

Perspective: Supportive of highway, but may also have objections.

Land Developer

4

You live in town and have been waiting for a new road to open so that more people will want to live here, allowing you to build a new housing development.

Perspective: Supportive of highway, but may also have objections

Department of Highways Official

5

You live in town and are concerned about how the highway development will affect drinking water quality. The highway will reduce the amount of forest, this means less natural filtering of rain and meltwater.

Perspective: Against the highway, but may also see benefits.

Gas Station Owner

6

You live in town and run your own gas station adjacent to the new highway development. The highway will be great for business.

Perspective: Supportive of highway, but may also have objections.

Drive-thru Restaurant Owner

7

You live in town and own a drive-thru restaurant in Big City. The highway project will provide you with a good location for another restaurant close to a ready supply of potential teenage employees. More business will increase your profits.

Perspective: Supportive of highway, but may also have objections.

Local Homeowner

8

You like the view from your house, and enjoy the peace and quiet. The highway will spoil the view, add noise and pollution, reduce the amount of forest and could negatively affect watersheds.

Perspective: Against the highway, but may also see benefits.

Artist**9**

You go into the valley and paint the scenery. You have sold many of your paintings to people in the city. The highway means damage and reduction of the forest and stream habitats for many living things – and your business.

Perspective: Against the highway, but may also see benefits.

Biologist**10**

You live in town and worry about destruction of the forest, that local water will not be filtered as much and salt runoff from the highway will go into the streams and river. You are also concerned about diminished biodiversity.

Perspective: Against the highway, but may also see benefits.

Small Fish Farm Owner**11**

You live in town but own a small trout farm on a nearby lake, downstream of the river. You feel the reduction of the forest will mean less water filtering, and that highway salt run-off will flow into the streams and river.

Perspective: Against the highway, but may also see benefits.

Riding Academy Owner**12**

You live outside of town and take local citizens and tourists into the valley and forest on horseback. The highway will mean more noise, dust and pollution, and the scenery will also be diminished to some extent. This will harm your business.

Perspective: Against the highway, but may also see benefits.

Local Cabinetmaker**13**

You live in town and make beautiful cabinets from local wood. The highway will reduce the amount of forest from where you can harvest wood. The image of your furniture coming from an unspoiled wilderness area will be lost.

Perspective: Against the highway, but may also see benefits.

Ecotourism Operator**14**

You live in town and use the forest as the ideal place to take your customers for viewing and photographing creatures in their natural habitat. The highway will destroy much of this habitat.

Perspective: Against the highway, but may also see benefits.

**Environmental Assessment
Chairperson****15**

You are running the meeting and must ensure that all people follow the rules of discussion.

Perspective: Neutral

Rules of Discussion

Chair welcomes everyone and outlines reason for the meeting.
Chair advises team members that each must speak for at least one minute, presenting their points of view.

Speakers indicate that they would like to speak by raising their hands.
If more than one speaker raises their hand, the Chair will call their names in the order in which they will speak.

Class cannot interrupt while someone is speaking.

Speakers must stand to address the group.

Chair calls time at the end of one minute and thanks the speaker.

Chair asks for the next speaker.

Chair calls an adjournment at the end of the meeting.

