

# Forest-Related Careers



## Activity Information

**Level:** grade 6, 7, 8

**Subject:** guidance and career planning

**Skills:** research, observing relationships, analysis, communication, art

**Duration:** 2 classes

**Group size:** individual and small groups

**Setting:** classroom

**Preparation:** Copies of the career descriptions for each student.

Paper or a bulletin board and art materials to produce the visual career web.



## Summary

Students will brainstorm the wide range of jobs dependent on Canada's forests and will produce a visual career web to show their relationships. They will discuss the impacts of sustainable forest management and the type of people who should be involved in making these decisions.



## Learning Outcomes

Students will:

- investigate the variety of careers associated, directly and indirectly, with the management and use of forest resources including those of: an urban forester, a forest biologist from Manitoba, a GIS [Geographic Information Services] computer researcher from British Columbia and a family owned timber business in Ontario
- recognize that decisions made about the long-term sustainable management of forest resources can have far-reaching impacts

*Adapted from materials produced by the British Columbia Forest Association, the Canadian Pulp & Paper Association and others.*



## Background

It is estimated that, directly or indirectly, one in sixteen Canadians is employed in a forest-related job.

Direct employment would include jobs in:

- pulp and related industries
- solid wood products
- logging
- Christmas trees
- maple syrup

These include not only the traditional occupations, for example cutting, moving and processing forest products, but numerous jobs in planning and managing the forests sustainably. Foresters, biologists, GIS technologists, silviculturalists, researchers [in hydrology, soils, entomology, land use planning, ecology, economics] and others bring together their skills to manage today's forests. Others are employed in support services, for example the airplane pilot who helps control the spruce budworm or put out fires, or the person who plants seeds to produce new trees.

There are careers that relate to other forest values, for example the conservation officer who enforces regulations to protect wildlife, the park superintendent who manages trails for hikers, or the outfitter who leads anglers into a wilderness area. Smaller forest-based industries may include traditional First Nation careers such as wild rice harvesting and trapping, or other careers, for example producers of nature product handicrafts [e.g. log furniture, moccasins, woven baskets] or wildlife artist.

The link between these careers and the forests are clear. Less clear, are the jobs that depend more indirectly on Canada's forests. For example, 350 Canadian communities are forestry based and the people who work directly in forest-related jobs require food, accommodation, clothing and other support services. The waitress in a restaurant located near a paper mill, the factory-worker who manufactures safety boots, or the educator who teaches local children each depend, to differing degrees, on the forest or forest industry.

## Part One

1. **Ask the students to read** through the enclosed career profiles. As a class, discuss each career and generate a list of the type of skills and training that each would require. Talk about the kind of things that you imagine this person might do as part of their job.



2. **Ask each group to select one of the career profiles** to look at in greater depth or you may wish to use examples from your local community. Option: Invite in a guest from your local community to discuss their job [see "Background" for some ideas of the type of people you might contact]. Based on the selected profile, the students should begin to brainstorm the types of people and services that relate to that person's [or company's] forest-related job.

*Example:* The biologist would work with a forester to do planning but she might also need safety boots and binoculars; the lumber company owner employs a hundred people — what effect would this have locally? The GIS researcher needs a computer and computer programs, and so on.

3. **Using their ideas and the personal career profile** or local forest as the focal point, ask the group to create a **visual career web** on a very large piece of paper or, if space allows, on a bulletin board. They may choose to illustrate the web with clippings from magazines, collage art, illustrations or other.

4. **When they have completed their career web**, ask them to explain it to the rest of the class.

## Part Two

5. **Lead a class discussion** highlighting the students' findings. Make sure to include some of the other forest-related jobs outlined in the background to this activity if they have not been brought up by the students.

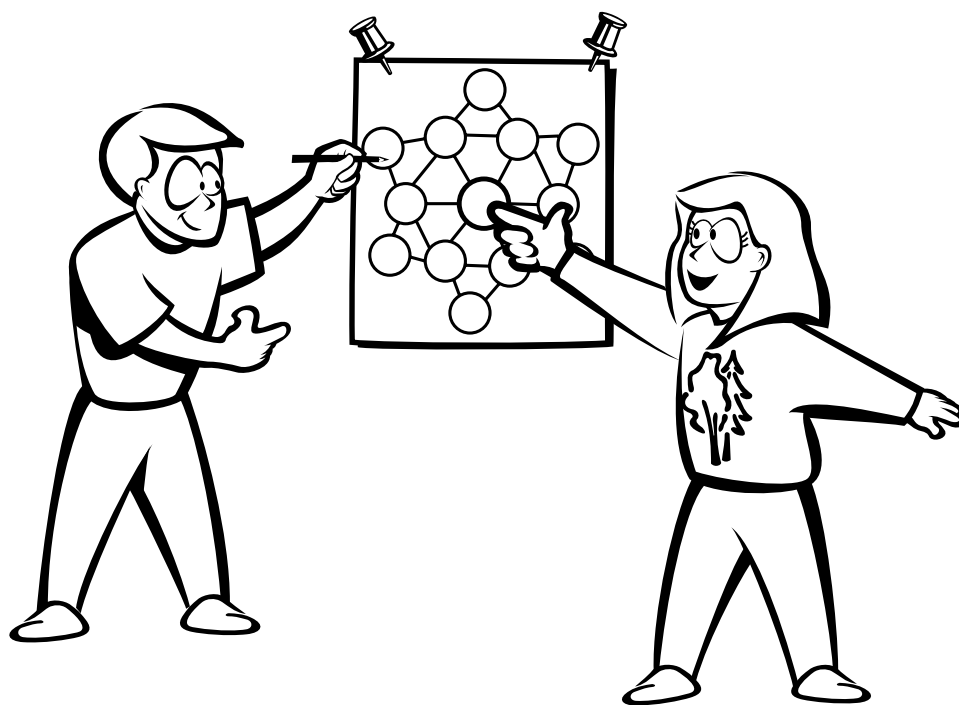
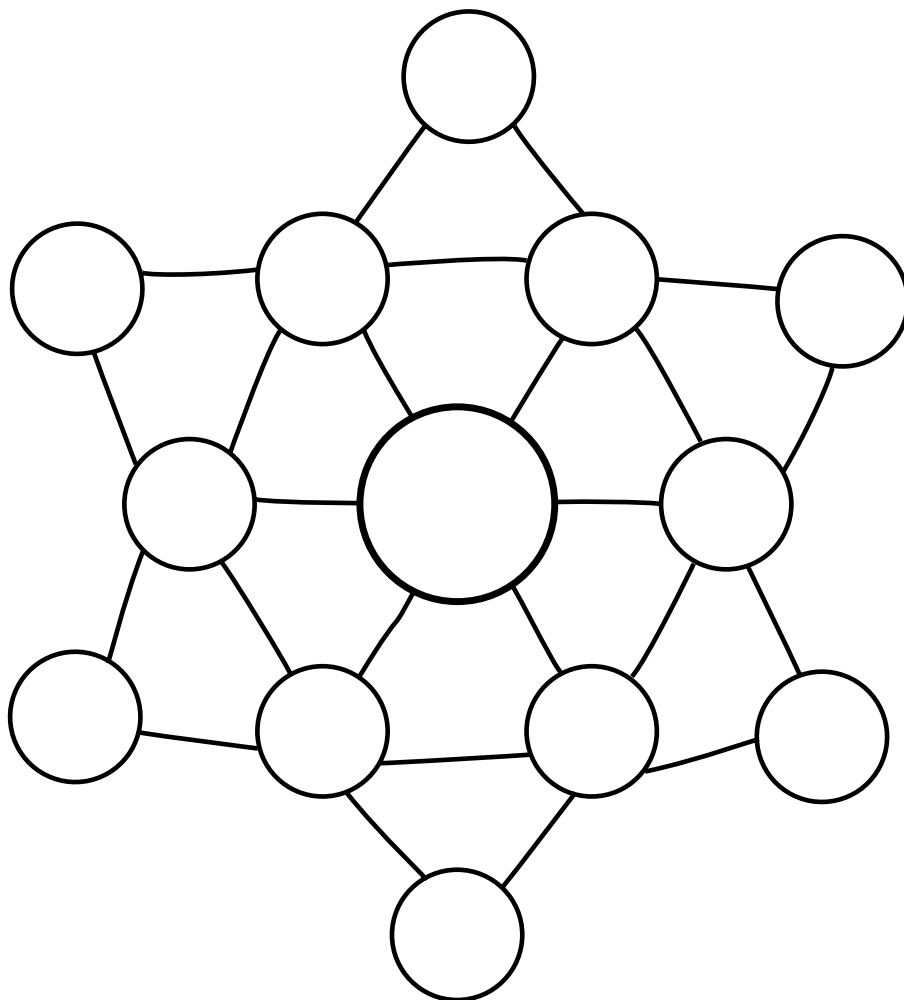
6. **Based on their previous work**, ask each group to discuss the following and report back to the class.

- Who should have input into planning the management of a the local forest? [You may want to point out that there are different levels of decision-making requiring different skills.]

- What might the impact be of poor forest management decisions locally?

7. **Futurists estimate** that almost 50% of all future jobs facing today's elementary students have not yet been invented and many of the jobs that currently exist will have changed dramatically. Technology has changed many jobs — compare the modern office with its fax machines, computers, scanners, electronic tracking devices and high-speed colour photocopiers to the office of the 1960s. The forest industry has seen many similar changes and, no doubt will undergo many more.

- What forest-related jobs do students think will change?
- What ones will remain the same?





Left to right: John Shaw IV, Donald, John V, Herb, and Dana Shaw.

## A 150-year-old Family Tradition in Ontario

Sometimes you don't choose a career, a career chooses you. In 1847, a young Scottish miller, his wife, and their two-year old son left the comforts of Bytown [now Ottawa] for the wilds of the Upper Ottawa Valley. It is hard to imagine the dreams they must have had and the challenges they must have faced, but today their legacy lives on in Herb Shaw & Sons Ltd., a lumber business still run by their descendants more than 150 years later.

In the early years, John Shaw operated a grist mill and a sawmill in Renfrew County [Ontario] but by the 1880s his sons had set up their own sawmills in Portage du Fort [Quebec], Portage La Prairie [Saskatchewan] and Dauphin [Manitoba]. Although the western operations closed down in the 1920s, today family members operate a vibrant Ottawa Valley operation employing more than 100 workers. Each year, Shaw's produce 14 million board feet of white and red pine, 45,000 utility poles, and 500,000 bales of wood shavings. Shaw's is the longest continually run lumber company in Canada.

Communities across Canada have been based on forestry and related industries for generations. Community and family traditions can often play a role in your career choice. Who do you know who has chosen to work in a family business or follow a traditional family career?



## Protecting Forests in Manitoba and B.C.

Margaret Donnelly wanted to be a wildlife biologist from age 12, and she pursued this goal, first at Lakeland College [Alberta] where she obtained her Fish and Wildlife Technology Diploma, and then at the University of Guelph [Ontario] where she completed her B.Sc. in Resource Management. She has done field work, spent several years at Ontario's Centre for Northern Ecosystem Research and, for the past three years, she has been part of a team that works to study and manage the forests for Louisiana-Pacific Corporation, a large forest company.

As a biologist, Margaret is concerned with the health of all living things that make up the forest and she always looks at the forest as a whole — trying to understand how the ecosystem operates, both now and in the future. In looking at the whole picture, Margaret and other team members try to project what the effect of cutting trees will be on the area's water systems, they study the needs of forest birds, fish and wildlife, and are constantly looking for ways to improve the growth of a healthy forest.

"I don't get out in the field as much as I would like to now but depend on the research of others, including more than twenty specialists we bring in to study the forest firsthand. What I like about my job is the ability to apply my knowledge practically and to know that you are creating change for the better. Today, as forest managers, we work for the continuous improvement of the forests."

**CAREER PROFILE: Dr. François Gougeon, Computer Image Analysis Researcher, Canadian Forest Service**



With today's modern technologies it is hard to realize the dramatic changes that have taken place in the tools we use to understand our forests. In one century we have moved from an understanding based strictly on our on-the-ground observations, to a more sophisticated system using aerial photographs, to today's high-tech methods using satellites and airborne sensors. Forest maps, which were once painstakingly drawn by hand, are now generated almost automatically by computers using special computer programs.

Canada has always been at the forefront of these new technologies. But, these tools do not come out of thin air. They are created and fine-tuned by people like Dr. François Gougeon and his colleagues at the Pacific Forest Centre and other research centres across Canada.

"For humans it only takes a single glance to interpret what we see — an apple, a road sign, an elephant or whatever" explains Dr. Gougeon. "We have no idea how complex this is until we try to make a computer do the same thing. This is especially tricky when we deal with natural objects like trees which can have millions of variations. My job is to work with computers to try to teach them how to recognize trees in an image. Every time I come up with a new idea to help the computer, I can program it and see immediately what happens. Who wouldn't want to work all day with such beautiful space-age images?"

Dr. Gougeon has degrees in Electrical Engineering from the University of Ottawa and a Ph.D. in System Engineering from the University of Waterloo.

**CAREER PROFILE: Bob Baker, Forester, Credit Valley Conservation, Mississauga**



Bob Baker practices forestry near Canada's largest urban centre, the GTA [Greater Toronto Area]. Through his work with landowners, local governments and volunteers, he is responsible for the planting of over 3 million trees in the Credit River watershed, since the 1970s. This area now has more trees per hectare than it did when it was first settled due, in part, to Bob's efforts.

Bob works for a conservation authority, an organization that manages a river system and the water that flows through it. Trees are a vital part of this system. Among many things, they help to prevent erosion, cool the water, help to maintain the natural balance of the ecosystem, and support wildlife. As Bob explains, "A big part of my job is working to help improve the health of the areas located along the edges of rivers and streams and to help to create links between the pockets of natural areas, such as woodlots and wetlands, that are scattered through this region."

Bob does more than plant trees. Until recently, he had supervised the growth of each tree from seed. Today, he still plans the number and type of seedlings that other nurseries need to grow to meet his needs and he still grows thousands of native shrubs that are used to naturalize the river's shorelines. Bob provides interested groups and landowners with advice on managing their own land or in developing their own planting project.

In his private life Bob owns and manages his own woodlot and produces trees in his own nursery. He also manages his family's "cut your own" Christmas tree operation.

He is passionate about his career and says that "To me trees are oxygen. They are life. They enable us to have a better quality of life and to live in an environment that nurtures us as living beings."

