

Forest, Conservation, and Logging Workers

(0*NET 45-4011.00, 45-4021.00, 45-4022.01, 45-4023.00)

Significant Points

- Workers spend all their time outdoors, sometimes in poor weather and often in isolated areas.
- Most jobs are physically demanding and can be hazardous.
- A small decline in overall employment is expected in the occupation.

Nature of the Work

The Nation's forests are a rich natural resource, providing beauty and tranquility, varied recreational areas, and wood for commercial use. Managing forests and woodlands requires many different kinds of workers. Forest and conservation workers help develop, maintain, and protect the forests by growing and planting new seedlings, fighting insects and diseases that attack trees, and helping to control soil erosion. Timber-cutting and logging workers harvest thousands of acres of forests each year for the timber that provides the raw material for countless consumer and industrial products.

Forest and conservation workers perform a variety of tasks to reforest and conserve timberlands and maintain forest facilities, such as roads and campsites. Some forest workers, called tree planters, use digging and planting tools called "dibble bars" and "hoedads" to plant seedlings to reforest timberland areas. Forest workers also remove diseased or undesirable trees with power saws or handsaws, spray trees with insecticides and fungicides to kill insects and to protect against disease, and apply herbicides on undesirable brush and trees to reduce competing vegetation. Forest workers in private industry usually work for professional foresters and paint boundary lines, assist with prescribed burning, and aid in marking and measuring trees by keeping a tally of those examined and counted. Forest workers who work for State and local governments or who are under contract to the Federal Government also clear away brush and debris from camp trails, roadsides, and camping areas under their employers' jurisdiction. Some clean kitchens and rest rooms at recreational facilities and campgrounds.

Other forest and conservation workers work in forest nurseries, sorting out tree seedlings and discarding those not meeting prescribed standards of root formation, stem development, and condition of foliage.

Some forest workers are employed on tree farms, where they plant, cultivate, and harvest many different kinds of trees. Their duties vary with the type of farm. Those who work on specialty farms, such as farms growing Christmas or ornamental trees for nurseries, are responsible for shearing treetops and limbs to control the growth of the trees under their care, to increase the density of limbs, and to improve the shapes of the trees. In addition, these workers' duties include planting the seedlings, spraying to control surrounding weed growth and insects, and harvesting the trees.

Other forest workers gather, by hand or with the use of handtools, products from the woodlands, such as decorative greens, tree cones and barks, moss, and other wild plant life. Still others tap trees for sap to make syrup or to produce chemicals.

The timber-cutting and logging process is carried out by a variety of workers who make up a logging crew. *Fallers* cut down trees with hand-held power chain saws or, occasionally, axes. Usually

using gas-powered chain saws, *buckers* trim off the tops and branches and buck (cut) the resulting logs into specified lengths.

Choke setters fasten chokers (steel cables or chains) around logs to be skidded (dragged) by tractors or forwarded by the cable-yarding system to the landing or deck area, where the logs are separated by species and type of product, such as pulpwood, sawlogs, or veneer logs, and loaded onto trucks. *Rigging slingers* and *chasers* set up and dismantle the cables and guy wires of the yarding system. *Log sorters, markers, movers, and debarkers* sort, mark, and move logs, based on species, size, and ownership, and tend machines that debark logs.

Logging equipment operators on a logging crew perform a number of duties. They use tree harvesters to shear the tops off of trees, cut and limb the trees, and then cut the logs into desired lengths. They drive tractors mounted on crawler tracks called crawlers, and self-propelled machines called skidders or forwarders, which drag or transport logs from the felling site in the woods to the log landing area for loading. They operate grapple loaders, which lift and load logs into trucks, and tree fellers or shears, which cut the trees. Some logging equipment operators use tracked or wheeled equipment similar to a forklift to unload logs and pulpwood off of trucks or gondola railroad cars, usually in a sawmill or a pulp-mill woodyard. Some newer, more efficient logging equipment is now equipped with state-of-the-art computer technology, requiring more skilled operators with more training.

Log graders and *scalars* inspect logs for defects, measure logs to determine their volume, and estimate the marketable content or value of logs or pulpwood. These workers often use hand-held data collection terminals to enter data about individual trees; later, the data can be downloaded or sent from the scaling area to a central computer via modem.

Other timber-cutting and logging workers have a variety of responsibilities. Some hike through forests to assess logging conditions. Some clear areas of brush and other growth to prepare for logging activities or to promote the growth of desirable species of trees.

The timber-cutting and logging industry is characterized by a large number of small crews of four to eight workers. A typical crew might consist of one or two fallers or one feller machine operator, one buckler, two logging tractor operators to drag cut trees to the loading deck, and one equipment operator to load the logs onto trucks. Most crews work for self-employed logging contractors who possess substantial logging experience, the capital to purchase



Most forestry and logging jobs are physically demanding and often require the use of dangerous equipment.

equipment, and the skills needed to run a small business successfully. Most contractors work alongside their crews as supervisors and often operate one of the logging machines, such as the grapple loader or the tree harvester. Many manage more than one crew and function as owners-supervisors.

Although timber-cutting and logging equipment has greatly improved and operations are becoming increasingly mechanized, many logging jobs still are labor intensive. These jobs require various levels of skill, ranging from the unskilled task of manually moving logs, branches, and equipment to skillfully using chain saws, peavies (hooked poles), and log jacks to cut and position logs for further processing or loading. To keep costs down, some timber-cutting and logging workers maintain and repair the equipment they use. A skillful, experienced logger is expected to handle a variety of logging operations.

Working Conditions

Forestry and logging jobs are physically demanding. Workers spend all their time outdoors, sometimes in poor weather and often in isolated areas. The increased use of enclosed machines has decreased some of the discomforts caused by inclement weather. A few lumber camps in Alaska house workers in bunkhouses or company towns. Workers in sparsely populated western States commute long distances between their homes and logging sites. In the more densely populated eastern and southern States, commuting distances are much shorter.

Most logging occupations involve lifting, climbing, and other strenuous activities, although machinery has eliminated some of the heavy labor. Loggers work under unusually hazardous conditions. Falling trees and branches are a constant menace, as are the dangers associated with log-handling operations and the use of sawing equipment, especially delimiting devices. Special care must be taken during strong winds, which can even halt operations. Slippery or muddy ground and hidden roots or vines not only reduce efficiency, but also present a constant danger, especially in the presence of moving vehicles and machinery. Poisonous plants, brambles, insects, snakes, heat, and humidity are minor annoyances. If safety precautions are not taken, the high noise level of sawing and skidding operations over long periods may impair one's hearing. Experience, the exercise of caution, and the use of proper safety measures and equipment—such as hardhats, eye and ear protection, and safety clothing and boots—are extremely important to avoid injury.

The jobs of forest and conservation workers generally are much less hazardous than those of loggers. It may be necessary for some forestry aides or forest workers to walk long distances through densely wooded areas to do their work.

Employment

Forest, conservation, and logging workers held about 81,000 jobs in 2002, distributed among the following occupations:

Logging equipment operators	43,000
Forest and conservation workers	14,000
Fallers	14,000
Log graders and scalers	10,000

Most wage and salary fallers and logging equipment operators are employed in logging camps and in the logging contractors industry, although some work in sawmills and planing mills. Employment of log graders and scalers is concentrated largely in sawmills and planing mills.

More than half of all forest and conservation workers work for government, primarily at the State and local level. Twenty percent are employed by companies that operate timber tracts, tree farms,

or forest nurseries, or for contractors that supply services to agriculture and forestry industries. Some of those employed in forestry services work on a contract basis for the U.S. Department of Agriculture's Forest Service. A small number of forest and conservation workers work in sawmills and planing mills. Although forest and conservation workers are located in every State, employment is concentrated in the West and Southeast, where many national and private forests and parks are located.

Self-employed forestry, conservation, and logging workers account for almost 3 of every 10 such workers—a much higher proportion of self-employment than in most other occupations.

Seasonal demand for forest, conservation, and logging workers varies by region. For example, in the northern States, winter work is common because the frozen ground facilitates logging. In the Southeast, logging and related activities occur year-round.

Training, Other Qualifications, and Advancement

Most forest, conservation, and logging workers develop skills through on-the-job training, with instruction coming primarily from experienced workers. Logging workers must familiarize themselves with the character and dangers of the forest environment and the operation of logging machinery and equipment. However, large logging companies and trade associations, such as the Northeastern Loggers Association and the Forest Resources Association, Inc., offer special programs, particularly for workers training to operate large, expensive machinery and equipment. Often, a representative of the manufacturer or company spends several days in the field explaining and overseeing the operation of newly purchased machinery. Safety training is a vital part of the instruction of all logging workers.

Many State forestry or logging associations provide training sessions for fallers, whose job duties require more skill and experience than do other positions on the logging team. Sessions may take place in the field, where trainees, under the supervision of an experienced logger, have the opportunity to practice various felling techniques. Fallers learn how to manually cut down extremely large or expensive trees safely and with minimal damage to the felled or surrounding trees.

Training programs for loggers and foresters are becoming common in many States, largely in response to a collaborative effort by the American Forest & Paper Association and others in the forestry industry. Such programs are designed to encourage the health and productivity of the Nation's forests through the Sustainable Forest Initiative program. Logger training programs vary by State, but generally include some type of classroom or field training in a number of areas: best management practices, safety, endangered species, reforestation, and business management. Some programs lead to certification as a logger.

Experience in other occupations can expedite one's entry into some logging occupations. For example, equipment operators, such as truckdrivers and bulldozer and crane operators, can assume skidding and yarding functions. Some loggers have worked in sawmills or on family farms with extensive wooded areas. Some logging contractors were formerly crew members of family-owned businesses operated over several generations.

Generally, little formal education is required for most forest, conservation, and logging occupations. Many secondary schools, including vocational and technical schools and some community colleges, offer courses or a 2-year degree in general forestry, wildlife, conservation, and forest harvesting, which could be helpful in obtaining a job. A curriculum that includes field trips to observe or participate in forestry or logging activities provides a particularly good background. There are no educational requirements for

forest worker jobs. Many of these workers are high school or college students who are hired on a part-time or seasonal basis to perform short-term, labor-intensive tasks, such as planting tree seedlings.

Forest, conservation, and logging workers must be in good health and able to work outdoors every day. They also must be able to work as part of a team. Many logging occupations require physical strength and stamina. Maturity and good judgment are important in making quick, intelligent decisions in dealing with hazards as they arise. Mechanical aptitude and coordination are necessary qualities for operators of machinery and equipment, who often are responsible for repair and maintenance as well. Initiative and managerial and business skills are necessary for success as a self-employed logging contractor.

Experience working at a nursery or as a laborer can be useful in obtaining a job as a forest or conservation worker. Logging workers generally advance from occupations involving primarily manual labor to those involving the operation of expensive, sometimes complicated, machinery and other equipment. Inexperienced entrants usually begin as laborers, carrying tools and equipment, clearing brush, and loading and unloading logs and brush. For some, familiarization with logging operations may lead to jobs such as log-handling equipment operator. Further experience may lead to jobs involving the operation of more complicated machinery and yarding towers to transport, load, and unload logs. Those who have the motor skills required for the efficient use of power saws and other equipment may become fallers and buckers.

Job Outlook

Overall employment of forest, conservation, and logging workers is expected to decline slightly through the year 2012. Most job openings will result from replacement needs. Many logging workers transfer to other jobs that are less physically demanding and dangerous, or else they retire. In addition, some forestry workers are youths who are not committed to the occupation on a long-term basis. Some take jobs to earn money for school; others work in this occupation only until they find a better paying job.

Employment of forest and conservation workers is expected to grow more slowly than the average for all occupations. Setting aside more land to protect natural resources or wildlife habitats helps to create demand for more forest and conservation workers. In addition, under the latest farm bill, small, private farmowners were offered incentives to convert all or part of their land to forest for ecological purposes. This conversion may indirectly cause the hiring of forest and conservation workers to work on the property.

Despite steady demand for lumber and other wood products, employment of timber-cutting and logging occupations is expected to decline, primarily because of increased mechanization and increasing imports. New federal policy allowing some access to federal timberland may moderate any decline, however, and job opportunities also will arise from owners of privately owned forests and tree farms. However, domestic timber producers face increasing competition from foreign producers, who can harvest the same amount of timber at lower cost. As competition increases, the logging industry is expected to continue to consolidate in order to reduce costs, thereby eliminating some jobs.

Increased mechanization of logging operations and improvements in logging equipment will continue to depress demand for many timber-cutting and logging workers. Employment of fallers, buckers, choke setters, and other workers—whose jobs are labor intensive—should decline as safer laborsaving machinery and other equipment are increasingly used. Employment of machinery and equipment operators, such as logging tractor and log-handling equipment operators, should be less adversely affected.

Weather can force the curtailment of logging operations during the muddy spring season and the cold winter months, depending on

the geographic region. Changes in the level of construction, particularly residential construction, also affect logging activities in the short term. In addition, logging operations must be relocated when timber in a particular area has been completely harvested. During prolonged periods of inactivity, some workers may stay on the job to maintain or repair logging machinery and equipment; others are forced to find jobs in other occupations or be without work.

Earnings

Earnings vary with the particular forestry or logging occupation and with experience. Earnings range from the minimum wage in some beginning forestry and conservation positions to about \$28.23 an hour for some experienced fallers. Median hourly earnings in 2002 for forest, conservation, and logging occupations were as follows:

Fallers	\$13.54
Log graders and scalers	13.08
Logging equipment operators	12.88
Forest and conservation workers	9.12

Earnings of logging workers vary by size of establishment and by geographic area. Workers in the largest establishments earn more than those in the smallest ones. Workers in Alaska and the Northwest earn more than those in the South, where the cost of living is generally lower.

Forest and conservation workers who work for State and local governments or for large, private firms generally enjoy more generous benefits than do workers in smaller firms. Small logging contractors generally offer timber-cutting and logging workers few benefits. However, some employers offer full-time workers basic benefits, such as medical coverage, and provide safety apparel and equipment.

Related Occupations

Other occupations concerned with the care of trees and their environment include conservation scientists and foresters, forest and conservation technicians, and grounds maintenance workers. Logging equipment operators have skills similar to material-moving equipment operators, such as industrial truck and tractor operators and crane and tower operators.

Sources of Additional Information

For information about timber-cutting and logging careers and about secondary and postsecondary programs offering training for logging occupations, contact either of the following sources:

- ▶ Northeastern Loggers Association, P.O. Box 69, Old Forge, NY 13420. Internet: <http://www.loggertraining.com>
 - ▶ Forest Resources Association, Inc., 600 Jefferson Plaza, Suite 350, Rockville, MD 20852. Internet: <http://www.forestresources.org>
- For information on the Sustainable Forestry Initiative training programs, contact
- ▶ American Forest & Paper Association, 1111 19th St. NW., Suite 800, Washington, DC 20036. Internet: <http://www.afandpa.org>

A list of State forestry associations and other forestry-related State associations is available at most public libraries. Schools of forestry at States' land-grant colleges or universities also should be useful sources of information.