
Forest, Conservation, and Logging Workers

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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.
- Little to no change in overall employment is expected.

Nature of the Work

The Nation's forests are a rich natural resource, providing beauty and tranquility, varied recreational benefits, and wood for commercial use. Managing and harvesting the forests and woodlands require 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 to 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 in reforesting 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 to reduce competing vegetation. In private industry, forest workers usually working under the direction of professional foresters, paint boundary lines, assist with controlled burning, aid in marking and measuring trees, and keep tallies of trees examined and counted. Those who work for State and local governments or who are under contract with them also clear away brush and debris from camp trails, roadsides, and camping areas. Some forest workers 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 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 hand-tools, 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 chemicals.

Logging workers are responsible for cutting and hauling trees in large quantities. The timber-cutting and logging process is carried out by a logging crew. A typical crew might consist of one or two tree fallers or one tree harvesting machine operator to cut down trees, one buckler to cut logs, two logging skidder operators to drag cut trees to the loading deck, and one equipment operator to load the logs onto trucks.

Specifically, *fallers*, commonly known as *tree fallers*, cut down trees with hand-held power chain saws or mobile felling machines. Usually using gas-powered chain saws, bucklers 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, saw logs, 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 chippers* sort, mark, and move logs, based on species, size, and ownership, and tend machines that chip up logs.

Logging equipment operators use tree harvesters to fell the trees, shear the limbs off, and then cut the logs into desired lengths. They drive tractors mounted on crawler tracks and operate 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 also operate grapple loaders, which lift and load logs into trucks. Some logging equipment operators, usually at a sawmill or a pulp-mill woodyard, use a tracked or wheeled machine similar to a forklift to unload logs and pulpwood off of trucks or gondola railroad cars. Some newer, more efficient logging equipment has state-of-the-art computer technology, requiring skilled operators with more training.

Log graders and scalers 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 devices 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.

Most crews work for self-employed logging contractors who have substantial logging experience, the capital to purchase equipment, and the skills needed to run a small business successfully. Many contractors work alongside their crews as supervisors and often operate one of the logging machines, such as the grapple loader or the tree harvester. Some manage more than one crew and function as owner-supervisors.

Although timber-cutting and logging equipment has greatly improved and operations are becoming increasingly mechanized, many logging jobs still are dangerous and very labor intensive. These jobs require various levels of skill, ranging from the unskilled task of manually moving logs, branches, and



Logging workers use increasingly productive machinery to harvest logs.

equipment to skillfully using chain saws to fell trees, and heavy equipment to skid and load logs onto trucks. To keep costs down, many timber-cutting and logging workers maintain and repair the equipment they use. A skillful, experienced logging worker is expected to handle a variety of logging operations.

Work environment. 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 and has generally made tasks much safer. Workers in some sparsely populated western States, as well as northern Maine, commute long distances between their homes and logging sites. A few logging camps in Alaska and Maine house workers in bunkhouses. In the more densely populated eastern and southern States, commuting distances are shorter.

Most logging occupations involve lifting, climbing, and other strenuous activities, although machinery has eliminated some heavy labor. Loggers work under unusually hazardous conditions. Falling branches, vines, and rough terrain are constant hazards, as are the dangers associated with tree-felling and log-handling operations. Special care must be taken during strong winds, which can even halt logging operations. Slippery or muddy ground, 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, humidity, and extreme cold are everyday occurrences where loggers work. The use of hearing protection devices is required on logging operations because the high noise level of felling and skidding operations over long periods may impair one's hearing. Workers must be careful and use proper safety measures and equipment such as hardhats, eye and ear protection, safety clothing, and boots to reduce the risk of 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 accomplish their work tasks.

Training, Other Qualifications, and Advancement

Most forest, conservation, and logging workers develop skills through on-the-job training, learning from experienced workers.

Education and training. Generally, a high school diploma is sufficient for most forest, conservation, and logging occupations. Many forest worker jobs offer only seasonal employment during warm-weather months, so many students are hired to perform short-term, labor-intensive tasks, such as planting tree seedlings or conducting precommercial tree thinning.

Through on-the-job training, logging workers become familiar with the character and dangers of the forest environment and the operation of logging machinery and equipment. Safety training is a vital and required part of the instruction of all logging workers. Many State forestry or logging associations provide training sessions for tree 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 common in many States. These training programs also include sessions on encouraging the health and productivity of the Nation's forests through the forest product industry's Sustainable Forest Initiative program. Logger training programs vary by State but generally include classroom or field training in a number of areas, including best management practices, environmental compliance, wetlands, safety, endangered species, reforestation, and business management. Some programs lead to logger certification.

Logging companies and trade associations, such as the Northeastern Loggers Association, the American Loggers Council, and the Forest Resources Association, Inc. also offer training programs for workers who operate large, expensive machinery and equipment. Often, a representative of the equipment manufacturer spends several days in the field explaining and overseeing the operation of newly purchased machinery.

Some vocational and technical schools and community colleges offer courses leading to a 2-year technical degree in forestry, wildlife management, conservation, and forest harvesting, all of which are 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. Additionally, a few community colleges offer training for equipment operators.

Other qualifications. 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 when hazards arise. Mechanical aptitude and coordination are necessary for operators of machinery and equipment, who often are responsible for repair and maintenance. Self-employed loggers need initiative and managerial and business skills to be successful as logging contractors.

Advancement. Logging workers generally advance from tasks requiring a lot of manual labor to those involving the operation of expensive, sometimes complicated logging equipment. Inexperienced entrants usually begin as laborers, carrying tools and equipment, clearing brush, performing

equipment maintenance, 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.

Some experienced logging workers start their own logging contractor businesses, but to do so they also need some basic business skills, which are essential in today's tight business climate.

Employment

Forest, conservation, and logging workers held about 88,000 jobs in 2006 in the following occupations:

| | |
|--------------------------------------|--------|
| Logging equipment operators | 40,000 |
| Forest and conservation workers..... | 20,000 |
| Fallers..... | 13,000 |
| Log graders and scalers..... | 7,100 |
| Logging workers, all others | 8,000 |

About 34 percent of all forest and conservation workers work for government, primarily at the State and local level. About 33 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. Self-employed forest and conservation workers make up nearly 15 percent of the occupation.

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. Seasonal demand for forest, conservation, and logging workers can vary by region and time of year. For northern States in particular, winter weather can interrupt forestry and logging operations, although some logging can be done in winter.

More than half of all logging workers work for the logging industry. Another 28 percent are self-employed, who mostly work under contract to landowners and the logging industry. About 10 percent work for sawmills and other businesses in the wood product manufacturing industry.

Projections data from the National Employment Matrix

| Occupational Title | SOC Code | Employment, 2006 | Projected employment, 2016 | Change, 2006-16 | |
|---|----------|------------------|----------------------------|-----------------|---------|
| | | | | Number | Percent |
| Forest, conservation, and logging workers | 45-4000 | 88,000 | 87,000 | -1,200 | -1 |
| Forest and conservation workers..... | 45-4011 | 20,000 | 21,000 | 1,100 | 6 |
| Logging workers | 45-4020 | 69,000 | 66,000 | -2,300 | -3 |
| Fallers..... | 45-4021 | 13,000 | 12,000 | -1,000 | -7 |
| Logging equipment operators | 45-4022 | 40,000 | 40,000 | -500 | -1 |
| Log graders and scalers..... | 45-4023 | 7,100 | 6,700 | -400 | -5 |
| Logging workers, all other..... | 45-4029 | 7,900 | 7,500 | -500 | -6 |

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

Job Outlook

Overall employment of forest, conservation, and logging workers is expected to experience little or no change through the year 2016. Most job openings will result from replacement needs because some forestry workers are young people who are not committed to the occupation on a long-term basis.

Employment change. Employment of forest, conservation, and logging workers overall is expected to decline slightly by 1 percent over the 2006-16 decade. Forest and conservation workers is the only occupation in this group that is expected to have job growth, increasing 6 percent over the 10 years. Demand for forest and conservation workers will increase as more land is set aside to protect natural resources or wildlife habitats. In addition, more jobs may be created by recent Federal legislation designed to prevent destructive wildfires by thinning the forests and setting controlled burns in dry regions susceptible to forest fires.

Logging workers are expected to decline by 3 percent from 2006 to 2016. New policies allowing some access to Federal timberland may create some logging jobs, and job opportunities also will arise from timber sales of owners of privately owned forests and tree farms. Nevertheless, domestic timber producers continue to 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, eliminating some jobs.

Increased mechanization of logging operations and improvements in logging equipment will continue to depress demand for many manual timber-cutting and logging workers. Employment of fallers, buckers, choke setters, and other workers whose jobs are labor intensive should decline as more laborsaving equipment is used. Employment of machinery and equipment operators, such as tree harvesting, skidding, and log-handling equipment operators, will be less adversely affected and should rise slightly as logging companies switch away from manual tree felling.

Job prospects. Despite the projection for little to no change in overall employment, prospects for forest and conservation workers should be good. Job openings will come from the large numbers of workers who leave these jobs on a seasonal basis and from an increase in retirements expected over the next decade. Also, many logging workers will transfer to other jobs that are less physically demanding, dangerous, and prone to layoffs.

But employment of forest, conservation, and logging workers can sometimes be unsteady. Weather can curtail the work of forest and conservation workers 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 cause slowdowns in logging activities in the short term. In addition, logging operations must be relocated when timber in a particular area has been harvested. During prolonged periods of inactivity, some workers may stay on the job to maintain or repair logging machinery and equipment, but others are laid off or forced to find jobs in other occupations.

Earnings

Earnings vary with the particular forestry or logging occupation and with experience. Many beginning or inexperienced workers earn the Federal minimum wage of \$5.85 an hour, but many States set minimum wages higher than the Federal minimum. Under Federal law, this wage will increase to \$6.55 in the summer of 2008 and to \$7.25 in the summer of 2009. Earnings range from the minimum wage in some beginning forestry and conservation positions to over \$26.00 an hour for the most experienced fallers.

Median hourly earnings in 2006 for forest, conservation, and logging occupations were as follows:

| | |
|--------------------------------------|---------|
| Logging equipment operators | \$14.28 |
| Log graders and scalers..... | 14.06 |
| Fallers..... | 13.80 |
| Forest and conservation workers..... | 10.01 |

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 contractor firms generally offer timber-cutting and logging workers few benefits beyond vacation days. 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 occupations and construction equipment 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:

➤ Forest Resources Association, Inc., 600 Jefferson Plaza, Suite 350, Rockville, MD 20852.

Internet: <http://www.forestresources.org>

➤ American Loggers Council. P.O. Box 966, Hemphill, TX 75948. Internet: <http://www.americanloggers.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 State land-grant colleges or universities also can be useful sources of information.