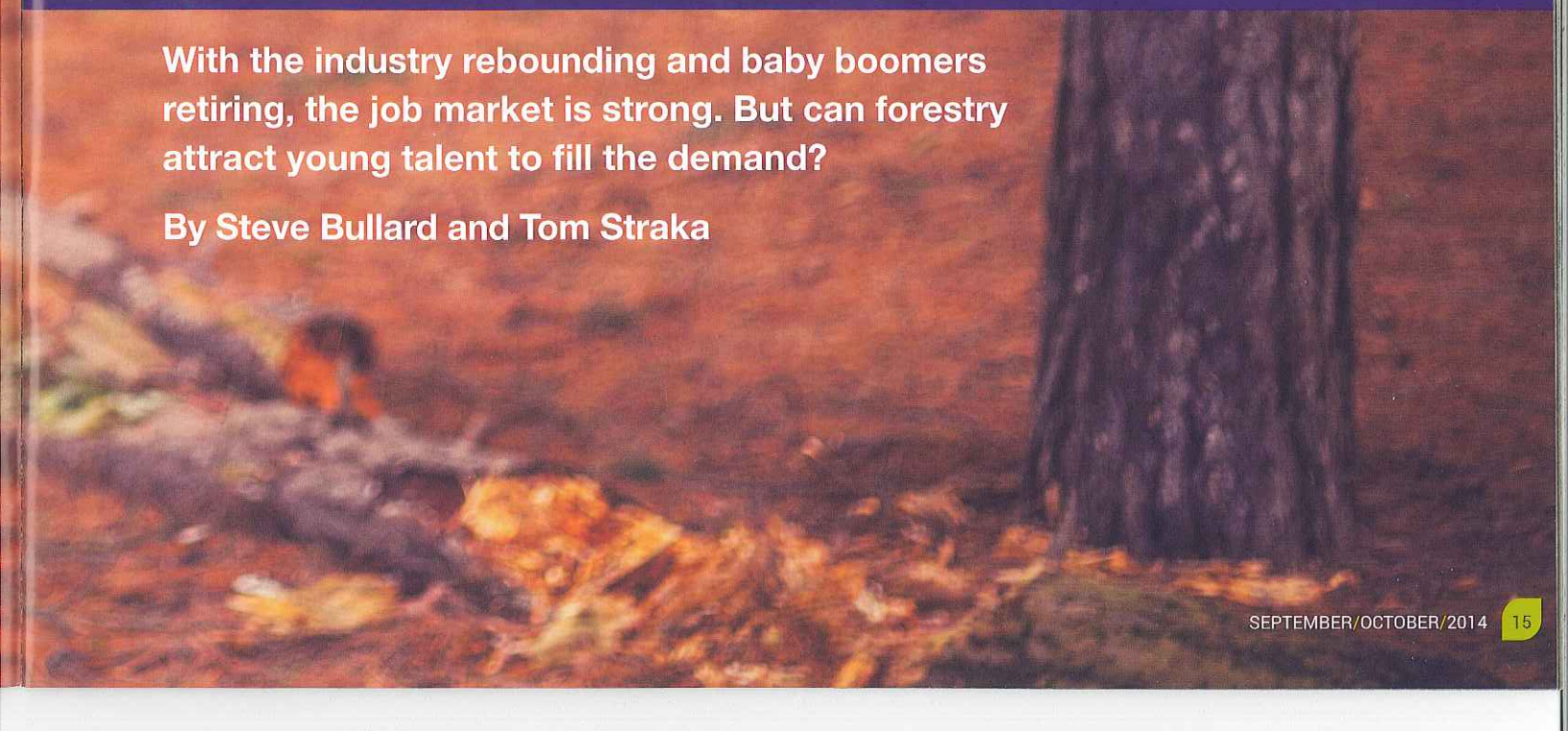


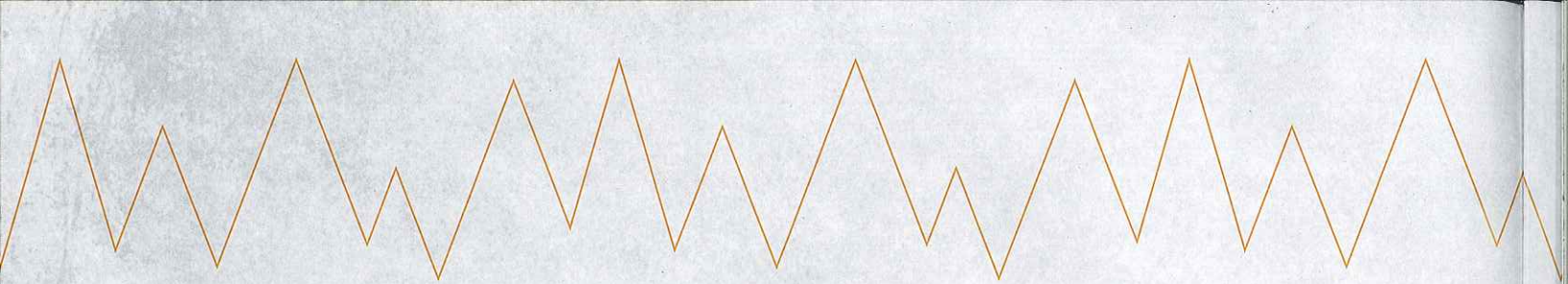


BULLISH ON FORESTRY CAREERS



With the industry rebounding and baby boomers retiring, the job market is strong. But can forestry attract young talent to fill the demand?

By Steve Bullard and Tom Straka



During the next decade, baby boomer-aged foresters, those born from 1946 to 1964, will be retiring in large numbers. This retirement trend is true for all sectors of forestry employment, from state and federal agencies to private firms and industries.

Forestry employers in both public and private sectors are clamoring for more graduates, as well as for more diverse graduates, from forestry degree programs. With looming retirements and industry growth, employers can project the number of positions opening, and they are aware that U.S. forestry schools are not producing sufficient graduates to fill the positions.

Also, since forestry jobs often are tied directly to natural resources that must be managed “on the ground,” the jobs cannot be outsourced to lower-wage countries. Jobs in professional forestry, especially in the public sector, tend to be secure, stable positions. Starting salaries vary widely, typically between \$35,000 and \$55,000 per year for entry-level positions with a bachelor’s degree. For students willing to get a graduate degree, specialization can create opportunities for especially well-paying niches in the forestry job market, like geographic information systems or timberland appraisal.

The role of the forester, of course, is just one component of having healthy, productive forest. Other factors include forest landowners who are committed to long-term management and stewardship; viable markets for timber and other forest-based goods and services; accurate, science-based knowledge to guide forest management plans and actions; and a regulatory environment that allows active, science-based management.

But the availability of well-trained professionals who specialize in forestry, wildlife, and related disciplines cannot be understated. There’s a pressing need for well-trained professionals to guide the practice of forestry on public and private lands across the United States. Forestry extension specialists, for example, provide new information on specific aspects of science-based forest management.

Forestry professionals also include public agency foresters at state and local levels, private consulting foresters, and others who provide critical, on-the-ground advice to meet landowners’ objectives for specific properties.

Consulting foresters work mainly on private lands and many of their clients are family forest owners. Family forests often are small, but together they account for more than one-third of the nation’s forestland. Consulting firms range from one-person to huge corporations; all are run as a business with clients who need their forests and other natural resources managed to achieve objectives.

Other private-sector foresters work managing timberland or procuring timber for a mill. Some of these industry foresters work in landowner assistance programs that aid family forest owners in managing their timber. Huge amounts of American timberland are managed as investments and those foresters need the financial skills to grow timber as an asset and make a profit.

Professional foresters provide many types of advice and guidance to landowners, including management planning for entire properties, and also including specific stand-level silvicultural practices like thinning, and prescribed burning. They also provide critical advice for dealing with forest health threats from wildfire, diseases, and invasive plants and insects.

Like a doctor’s prescription, foresters provide management recommendations that help landowners achieve their objectives. Such forest resource management plans cover all aspects of managing the forest, from maps and aerial photographs to the stand-by-stand actions needed to achieve the forest owner’s objectives.

Most landowners want to ensure a long-term legacy of good stewardship, but there is much variation in goals and objectives. Some forest owners want to attract more white-tailed deer or quail, for example, while others focus on recreation or other amenities. Forest owners might want commercial timber production, and

Figure 1

THERE ARE MANY TYPES OF FORESTRY EMPLOYERS, WITH MANY CAREER OPTIONS

private forestland often is managed with a financial focus. Timber harvested produces cash, and involves professional advice on issues like taxes and estate planning. Having the resources to pass a forest on to the next family generation takes financial planning as well as good forest management.

A WORLD OF FORESTRY OPPORTUNITIES

Forestry and natural resource professionals work in one of the first environmental careers. One bumper sticker popular with foresters says, "For a Forester Every Day is Earth Day." Bob Slocum the former executive vice president of the North Carolina Forestry Association noted, "Foresters spend their time living their environmental values every day. Values that include deep feelings about the land, the trees, and the communities they support." It is a mistake to confuse forestry with timber harvesting; while this is a highly visible part of the profession, it is just one of many responsibilities that fall within the forester's domain.

Foresters play a large role in protecting the environment. A forester wrote one of the bibles of the environmental movement, Sand County Almanac. The profession offers an array of attractive positions centered on environmental protection through sustainable forest management. The Society of American Foresters describes the fundamental function of forestry as sustaining vital environmental goods and services, and as a profession that "merges the science of managing and the conservation of natural resources - clean water, forest products, recreation areas, urban parks, and greener communities."

Forestry and natural resources professions offer attractive employment opportunities. One advantage of the profession is the chance to work at least part of the time outdoors, though work in some specialties can be office positions.

Forestry training at the university level provides a rigorous background in mathematics, biology, economics,

PUBLIC SECTOR EMPLOYERS

FEDERAL

- USDA Forest Service
- USDA Natural Resources Conservation Service
- USDI Bureau of Land Management
- USDI National Park Service
- USDI Fish and Wildlife Service

STATE

- USDA Forest Service
- USDA Natural Resources Conservation Service
- USDI Bureau of Land Management

OTHER PUBLIC

- USDA Forest Service
- USDA Natural Resources Conservation Service
- USDI Bureau of Land Management

PRIVATE SECTOR EMPLOYERS

INDUSTRY

- Timber Processing Firms
- Arborists/Tree Care Firms
- Timberland Investment Management Orgs
- Real Estate Investment Trusts
- Energy Companies

STATE

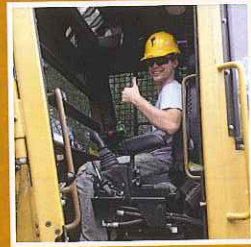
- Forest Management
- Wildlife and Recreation Management
- Environmental Assessment

OTHER PUBLIC

- Non-Governmental Organizations
- Youth Camps • Private Museums
- Banks • Real Estate Companies



LAND AND TIMBER MANAGEMENT



TIMBER HARVESTING AND PROCESSING



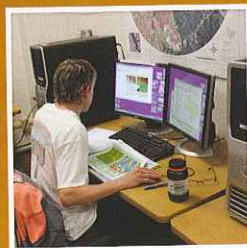
URBAN TREE EVALUATION



WILDLIFE MANAGEMENT



FOREST INVENTORY



GEOSPATIAL ANALYSIS

and the sciences. This broad curriculum allows graduate foresters to take on jobs across a range of fields. Foresters can have many job titles, and not all of them contain the word "forester." The website <http://www.forestrycareers.org> lists eight subdisciplines for forestry and natural resources, a list that could grow as the field evolves. Here are those eight subdisciplines and a few job titles for each:

- **MANAGEMENT AND CONSERVATION:** Forester, Urban Forester or Arborist, Research Forester, Forest Resource Administration, Conservation Biology, Wildfire Specialist, Range Manager, Environmental Protection, Silviculturist (forest biology or forest ecology), Timberland Financial Management and Appraisal, Geographic Information Systems Analyst, Forest Engineer, Surveyor, Forestry Consultant, Reforestation Specialist
- **FISH AND WILDLIFE MANAGEMENT:** Fisheries Biologist, Wildlife Biologist
- **PARKS, RECREATION, AND TOURISM:** Forest Recreation Manager, Naturalist, Park Administration, Wilderness Specialist
- **POLICY AND PLANNING:** Environmental Planner, Forest Policy Analyst, Forest Economist, Landscape Architect
- **FOREST AND NATURAL RESOURCE SCIENTIST:** Biologist, Microbiologist, Soils Scientist, Pathologist/Entomologist, Hydrologist, Naturalist, Ecologist, Archaeologist
- **WOOD AND PAPER SCIENCE:** Wood Technologist, Wood Science and Engineering, Pulp and Paper Specialist
- **GENETICS AND BIOTECHNOLOGY:** Forest Geneticist, Tree Improvement Specialist

The forestry profession enjoys an advantage of offering



SALARIES VARY WIDELY, TYPICALLY BETWEEN **\$35,000 AND \$55,000** PER YEAR FOR ENTRY- LEVEL POSITIONS WITH A BACHELOR'S DEGREE.

entry to a diverse set of employers. (See Figure 1). Many foresters work in the private sector for timberland investment management organizations, real estate investment trusts, landholding corporations, insurance companies, utility companies, and manufacturing firms that require wood or fiber as a raw material. Private sector forestry jobs and this sector continue to employ many forestry graduates.

Much forestland is owned by the public, so public agencies also are major employers of foresters. Federal agencies that employ the most foresters include the USDA Forest Service, USDA Natural Resources Conservation Service, and several agencies in the Department of Interior, including the Bureau of Land Management, the National Park Service, and the U.S. Fish and Wildlife Service.

Also, there are federal agencies that don't come to mind as employers of foresters, but offer significant job opportunities. These include the Department of Defense (civilian management of the many acres of forest land on military bases), the U.S. Army Corps of Engineers (there is much forest land surrounding Corps projects), the Environmental Protection Agency, and the Internal Revenue Service (someone has to audit timber transactions).

State and local governments also offer forestry job opportunities. Both own vast forestland and most states have a forestry agency that offers services to its citizens to encourage forest conservation. State forestry agencies employ foresters to manage state-owned forestland and to serve as county or district foresters. Sometimes

there is a broad natural resources agency in the state that handles forest management and other conservation issues like water quality, wildlife management, parks and outdoor recreation.

Local governments often employ foresters to manage local forests, or as urban foresters. The broad education provided to foresters allows them to work in many related governmental areas such as land use planning and even law enforcement. Dealing with issues like timber theft requires that some foresters wear a badge and carry a gun.

Forestry also attracts entrepreneurs and businessmen. These often become forestry consultants. Foresters own and work in one-person consulting firms, as well as huge corporate consulting firms. Timber is a valuable asset and foresters are the recognized experts in managing the resource. Virtually all of the timberland owned by investors and much of the family forestlands in the country (especially the larger holdings) are managed by consulting firms. The advantage of consulting forestry is that it offers self-employment, partnership, and corporate employment opportunities, whatever suits the temperament of the forester.

A PRESSING NEED FOR MORE FORESTERS AND WILDLIFE MANAGEMENT PROFESSIONALS

The minimum educational requirement to be a forester is a bachelor's degree in forestry. The "gold standard" is a Society of American Foresters (SAF) accredited B.S. or master's degree. (See Figure 2 for locations of the 46 SAF-accredited baccalaureate programs.)



TO KEEP **HEALTHY WORKING FORESTS** IN THE LONG TERM, WE MUST RECRUIT **FUTURE** **PROFESSIONALS** TO THE FIELD

Some foresters earn a master's degree, either a master's of forestry (M.F.) or a master's of science degree. In most cases, graduate students in forestry are supported financially, through research or teaching assistantships that are tied to the academic work of specific faculty members.

The M.F. degree is intended to provide additional education for someone who will practice forestry or it can supplement a non-forestry bachelor's degree to provide a professional training in forestry, while the M.S. usually provides some level of specialization. The M.S. graduate might be employed as a forest economist, forest entomologist, or forest hydrologist. The M.S. graduate could also teach, perhaps at a forest technician program.

Ph.D.'s in forestry are research specialists that are widely employed, often becoming university-level researchers and professors, or researchers with federal and state agencies. Even at the Ph.D. level, forestry offers ample opportunity for a job that allows for as much outdoor work as the forester wants. Forestry is a flexible profession.

THE ROLE OF FOREST LANDOWNERS

Forest landowners are ambassadors for forestry practices and principles, whether they choose to be or not. This role comes naturally, since others look to landowners for information about forests and their management. In this important role as ambassador, landowners are in a great position to spread the word about forestry careers.

A few years ago, a survey of 1,200 forestry students in the southern United States asked how they came to choose

their major. A high percentage reported that a key factor was having contact with someone who was a forest manager, which includes forest landowners. Without that contact, many high schools students and potential community college transfer students simply don't realize that there are career opportunities in forestry. Here is an excellent resource to share with potential students – <http://www.nxtbook.com/nxtbooks/saf/2013collegeguide/>

Forest landowners come in contact with many people and can speak to the need for professional foresters – highly-trained professionals who understand both the art and the science of forest management, and who can communicate effectively with diverse audiences on many issues.

Given the many challenges we face in forestry today, from invasive plants, diseases, and insects, to the continuing need for strong markets for forest-based goods and services, it is imperative that we apply science-based knowledge to on-the-ground forest management planning and operations. For this to happen and for us to keep healthy, working forests in our landscape in the long term, we must recruit outstanding future professionals to the field.

Forestry is a growing profession. Please help spread the word. ■

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SOCIETY OF AMERICAN FORESTERS



ACCREDITED BACCALAUREATE DEGREE PROGRAMS IN FORESTRY AND URBAN FORESTRY

(Map created by Jeff Williams, SFASU GIS Lab)

Figure 2.