

Professional Affairs

TRENDS AND OUTLOOK FOR FEDERAL SUPPORT FOR UTILIZATION RESEARCH¹

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ABSTRACT

Wood is extremely important to our economy and well-being, and there is a critical need for the federal government to fund research for forestry in general, including forest products. Newly funded programs in competitive grants and direct funding to universities will probably continue. There will probably not be any substantial increases in the Forest Service utilization research budget in the near future. However, the long-term prospects for funding should be good. Support for utilization research will come from broad-based support for major initiatives such as new opportunities for hardwood utilization and the exciting field of biotechnology.

Keywords: Trends, outlook, federal support, funding, utilization research, forestry, forest products, wood products.

INTRODUCTION

I strongly believe that the federal government has a major responsibility to finance and lead forestry research. In their recent report, *University-Based Forestry Research: Unlocking the Future*,³ the National Association of Professional Forestry Schools and Colleges and the Cooperative State Research Service summarize the importance of forestry to the United States. Forests occupy 33% of the land area in the United States, with over 20% of the total land base being classified as commercial forests. These commercial forests supply the raw material for about five hundred products and \$62 billion to the U.S. economy each year. They generate one out of every thirteen dollars in manufacturing. In addition, forest products companies employ one out of every eleven manufacturing employees. Each American consumes over 1 ton of wood and wood-based products each year for the necessities and comforts of life. Therefore, wood is extremely important to our economy and well-being, and there is a critical need for the federal government to fund research for forestry in general, including forest products.

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³ *University-Based Forestry Research: Unlocking the Future*, National Association of Professional Forestry Schools and Colleges and Cooperative State Research Service, U.S. Department of Agriculture, February 1985.

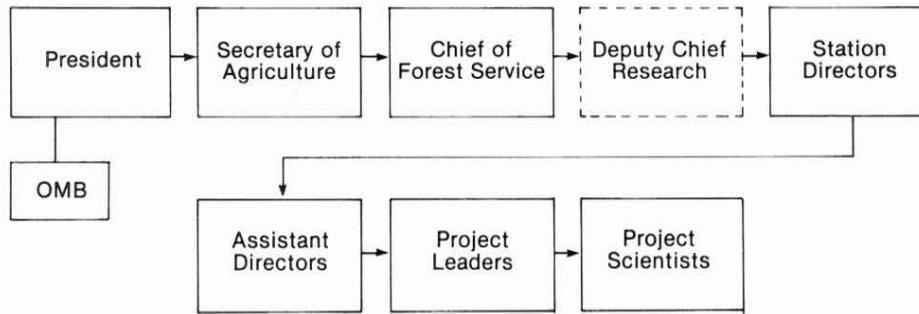


FIG. 1. The directions for USDA Forest Service research budget.

FEDERAL ROLE IN UTILIZATION RESEARCH

In the federal government, research on forest products utilization is concentrated in the United States Department of Agriculture (USDA)—principally in the Forest Service (FS), and also in the Cooperative State Research Service (CSRS). Other agencies, such as National Bureau of Standards, Housing and Urban Development, National Aeronautical and Space Administration, and Department of Defense, are also active. These latter agencies carry on limited programs for their own purposes, but often cooperate and support studies with the FS and universities. In the FS, the major laboratory with a national mission is the Forest Products Laboratory (FPL). Other FS laboratories are located at Forest Experiment Stations. Whereas research programs at these stations are aimed primarily at regional problems, their research findings often have national and international application. The main mission of all of this utilization research is to provide 1) options for improved forest management decisions on timber removals, 2) knowledge of wood properties, 3) information necessary to improve the performance of wood in service, and 4) processes that increase the yield of useful products from each harvested tree.

The need for the FS to conduct research on wood and wood products stems largely from its role as manager of a large share of the commercial forests. These forests produce timber for structural purposes, fiber for pulp and paper products, and cellulose and other chemicals from wood for fabrics, plastics, and liquid fuels. In addition, the FS has the major federal role in supplying information for managing all of the nation's forests in the public interest, regardless of ownership.

FOREST SERVICE UTILIZATION RESEARCH PROGRAM SELECTION PROCESS

To properly address how utilization research programs are funded, I would like to review the planning and priority setting process in the FS. Forest Service utilization research is conducted in twenty-six individual research work units—seventeen at the FPL. These research work units have charters that are reviewed at least every 5 years. At that time, the problem areas to be addressed are selected. This process includes input from a broad cross section of interested groups and people through formal and informal methods. Continuation, termination, redirection, or revision of the research work units as proposed by the field units are reviewed by Washington office research staffs and approved by the Station Di-

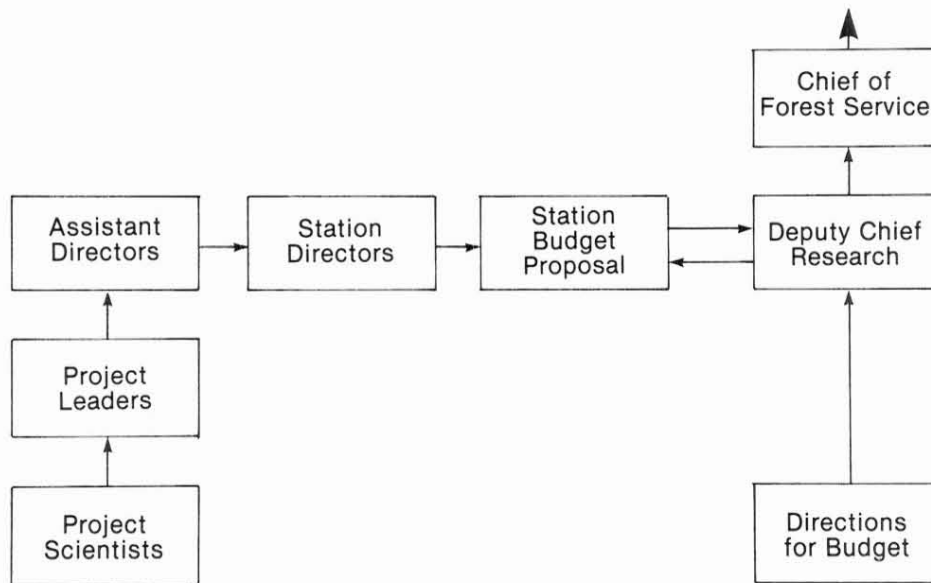


FIG. 2. The development of USDA Forest Service research budget.

rectors and concurred upon by the Deputy Chief of Research. This entire planning effort is linked to the budgeting process.

The directions for the FS research budget are passed down from the President through the Office of Management and Budget, to the Secretary of Agriculture, and then to the Chief of the FS, who sends them to the field units (Fig. 1). This process establishes the Administration's funding levels at the field level. To develop the FS research budget, the Deputy Chief of Research aggregates the Station and FPL budget proposals (Fig. 2). Station Directors and the FPL Director determine funding levels for each research work unit. Although these priorities are established internally, they are influenced by recommendations from industry, universities, and others (Fig. 3). During this process there is considerable discussion between the Office of the Deputy Chief of Research, his research staffs, and the Stations and FPL. Obviously, there is internal competition for the available funds. The goal, of course, is to fund the highest priority research. New research initiatives come through this budget and planning process or they may come as a mandate from Congress. An example of this Congressional action is the increased funding for acid deposition and forest survey research in the FY 1985 budget.

COORDINATION BETWEEN FS/UNIVERSITIES/INDUSTRY

There are many levels of formal and informal research coordination that help direct utilization research programs. Informally, the individual scientists have continuous contact with peers, cooperators, and users. Also, research administrators at the field level and in the Washington office have continuing contact with various interest groups and interested users of the research.

The primary mechanism for forestry research planning and coordination of university and FS programs is the National and Regional Planning Groups (NPG/

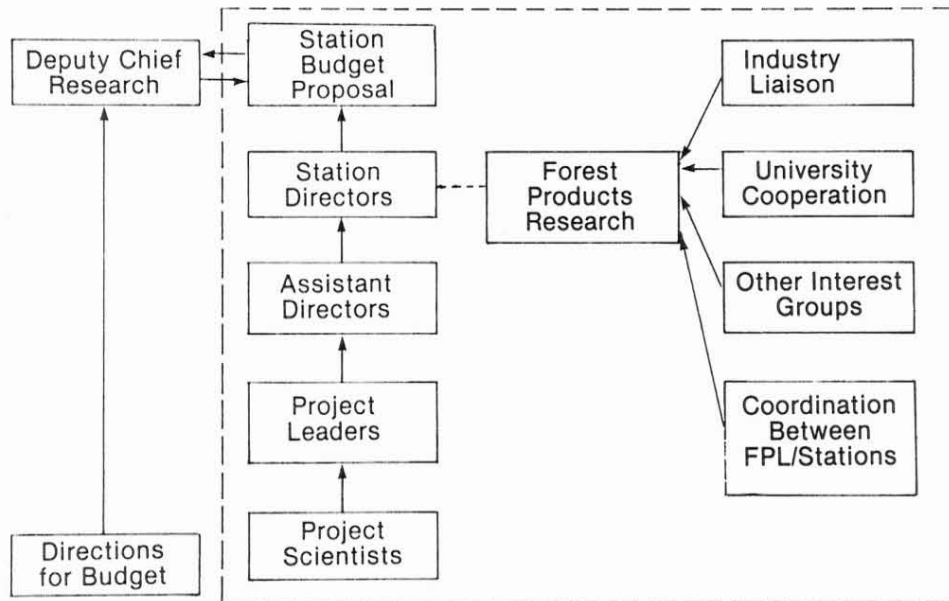


FIG. 3. External and internal input to establish USDA Forest Service program and budget.

RPGs) (Fig. 4). The NPG/RPG forestry research planning efforts are incorporated into the overall agricultural research planning process. The planning group provides program and budget documentation covering FS and university forestry research, both nationally and regionally. This process provides the Administration with a more complete picture of the total research effort in forestry and the opportunity to present a coordinated program to Congress for their consideration.

A special NPG subcommittee on forest products research was formed to adequately incorporate the varied aspects and interests of wood utilization research into the NPG/RPG planning process. This subcommittee has also become central to the Forest Products Research Conference held each fall at FPL. This annual conference is the primary means of coordinating FS and university utilization research programs. In addition, a meeting is held in Madison each spring with the National Forest Products Association, the American Paper Institute, and the Technical Association of the Pulp and Paper Industry to coordinate utilization programs with them. These cooperative efforts are extremely important in the budgeting process. Priority research needs are identified and spelled out in program planning documents on which the Administration and Congress can act.

FEDERAL SUPPORT FOR UTILIZATION RESEARCH

Total support for forest products research and development probably approaches \$200 million annually (Fig. 5). The major portion of this support is in industry and can generally be characterized as applied, short-term, and developmental in nature—primarily in technical services. Although this expenditure is low compared to other industries (based on total sales), it is roughly six times that shown by universities and federal laboratories.

There are twenty-six universities with graduate programs in wood science and

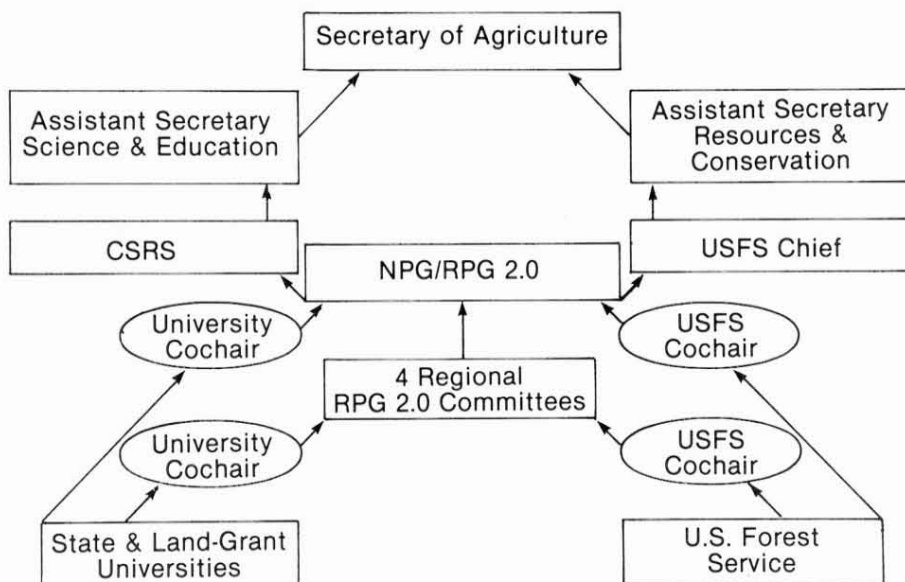


FIG. 4. USDA forestry research planning and coordination. Adapted from *University-Based Forestry Research: Unlocking the Future*, National Association of Professional Forestry Schools and Colleges and Cooperative State Research Service, U.S. Department of Agriculture, February 1985.

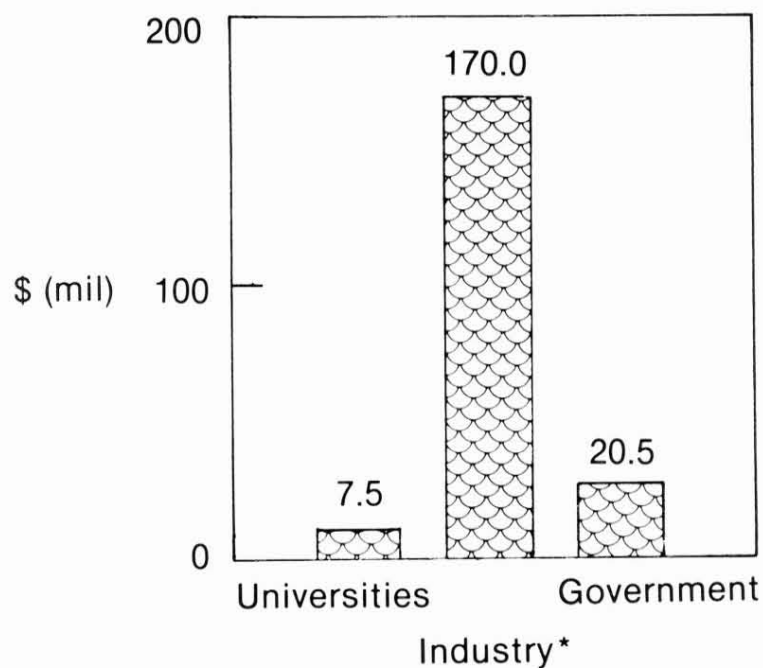
technology, all of which carry on research. A number of these are significant in size and have fairly diversified research capabilities. In addition, several of these research programs have strong ties with engineering colleges. The total expenditure for wood research by universities in 1980 was \$7.5 million.⁴ This includes funds received from foundations and industry, in addition to state funds. A recent report by the CSRS shows that universities and colleges spent approximately \$10.1 million for wood utilization research in 1983.

Meanwhile, CSRS has had a modest, but constantly increasing budget for wood utilization research in the past few years. In 1980 expenditures for this area, which included harvesting, processing, and marketing research, were \$1.4 million. In 1983 this grew to \$2.1 million and is expected to be about the same in 1986.

In 1985, federal funding levels for wood utilization research underwent a major change. First, Congress appropriated \$7.84 million to the FS for a competitive grants program to conduct basic research in harvesting, wood utilization, and forest biology. This program is administered by the USDA Office of Grants and Programs Systems. About \$3.8 million is available for harvesting and utilization. Second, \$3 million has been appropriated through the USDA budget process to support utilization research at Mississippi State University, Oregon State University, and Purdue University.

The FS receives the largest share of the federally appropriated funds for utilization research. Along with harvesting research, this represents about 17% of the total FS research budget. This has remained fairly constant in recent years. Utilization research, with harvesting removed, is about 14 to 15% of the total FS

⁴ Includes harvesting and marketing.



*Exclusive of paper industry

FIG. 5. Support for forest products research and development.

research budget (Table 1). In 1977, the FS research budget was \$87.9 million. It grew to \$127.8 million in 1981. There was a sharp drop in 1982 to \$112.1 million, followed by another drop to \$107.7 million in 1983. It was modestly increased in 1984 to \$108.4 million and increased again in 1985 when it reached \$121 million. This \$121 million included the \$7.84 million in competitive grants that were passed on to the USDA Office of Competitive Grants and Program Systems. In constant dollars, however, there has been a steady decline in funding in recent years with the exception of FY 1985, which includes the Competitive Grants Program.

Support for wood utilization and harvesting research follows a similar pattern.

TABLE 1. Trends in appropriation levels for total USDA Forest Service and Forest Products and Harvesting Research, 1981 to 1986.

Year	Forest Service research		Forest Products Utilization & Harvesting Research	
	Appropriation	Constant ¹ \$	Appropriation	Constant ¹ \$
1981	127.8	69.3	21.8	11.8
1982	112.1	57.3	20.4	10.4
1983	107.7	53.3	17.9	8.9
1984	108.6	51.5	17.8	8.4
1985	121.0	54.7	18.4	8.3
1986 ²	104.2	44.9	18.0	7.8

¹ Based on 1974 CPI deflator.

² President's budget.

TABLE 2. *Trends in USDA Forest Service, Forest Products and Harvesting Research (FPHR), and Forest Products Laboratory, Madison, WI, funding, 1981 to 1986.*

Fiscal year	Forest Service research		Forest Products Laboratory		
	Total	FPHR ¹	Utilization	Other ²	Total
1986	104.2	18.0	11.0	3.6	14.6
1985	121.0	18.4	11.1	3.4	14.5
1984	108.6	17.8	10.6	3.3	13.9
1983	107.7	17.9	10.2	3.1	13.3
1982	112.1	20.4	11.0	3.7	14.7
1981	127.8	21.8	11.2	3.1	14.3

¹ FY 1981–1986 includes Utilization and Harvesting Research.

² Includes Forest Insect and Disease Research, Forest Inventory and Analysis, Renewable Resources Economics Research, and General Administration.

There was a major decrease in funding between 1981 and 1983 when the appropriation went from \$21.8 million to \$17.9 million. There was a small increase in 1985 to \$18.4 million and the figure has dropped slightly between the 1984 figure and that projected for 1986. The constant dollar effectiveness for wood utilization and harvesting research has dropped rapidly since 1981.

The effect of this erosion of research support can be illustrated by our experience at the FPL. While our total budget in current dollars in 1986 will be near the 1982 value (Table 2), the FPL staff has decreased from 365 to 307, with the scientific staff decreasing from 105 to 91.

The inflationary decline in buying power has also affected our ability to support extramural research. In 1982 about 6 to 7% of the FS utilization budget supported university research. This decreased to 3% in 1984 (Table 3).

PROSPECTS FOR FUTURE FEDERAL SUPPORT

The 1985 appropriations provided a major increase in federal support for utilization research—over 35%. This increase was in the form of competitive grants and directed funding to three universities. There was only a modest increase in the FS program budget. The questions that arise are: Will Congress continue to support competitive grants and the specially designated funds to universities, and will the Administration and Congress increase the FS utilization budget?

I am optimistic that the newly funded grants and the university-funded programs of 1985 will continue, but without increases. Also, the climate for competitive grants program appears to be good. I, therefore, believe that these programs will be supported in Congress.

On the other side of the coin, I do not believe that there will be any substantial

TABLE 3. *Extramural support to universities, 1982 to 1984.*

Year	Forest Products Utilization Research		Percent of appropriation in extramural research	
	Appropriation	Extramural research funding (\$1,000)	Forest products research	Total Forest Service research
			%	
1982	19,643	1,450	7	9
1983	17,049	711	4	8
1984	17,240	488	3	6

increases in the FS utilization budget in the near future. There may be modest increases. The problems of national deficits will continue to affect all programs. In the long term, I am optimistic that wood utilization research will have additional support. There are several reasons for this optimism, but it is due mainly to opportunities to expand our industrial base and the need for the United States to remain competitive in the world trade of wood products. Also, I believe that industry will increase their efforts to assure adequate budgets to support their long-term goals. It is important to point out that support for utilization research will come from broad-based support for major initiatives such as new opportunities for hardwood utilization and the exciting field of biotechnology.