

Smokey's other problems

American forests have become the battleground between environmentalists and industrialists with the Forest Service caught in the middle

by John H. Douglas

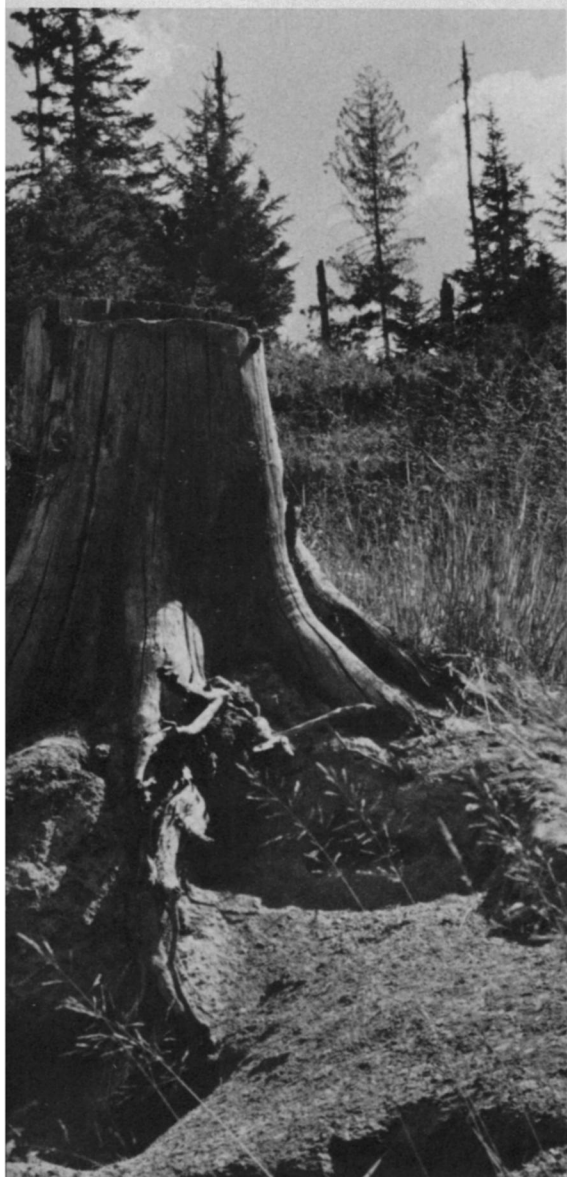
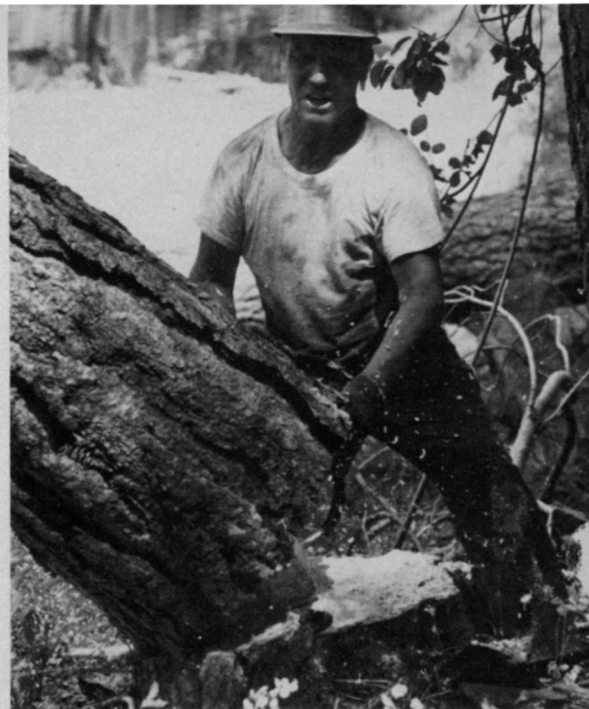
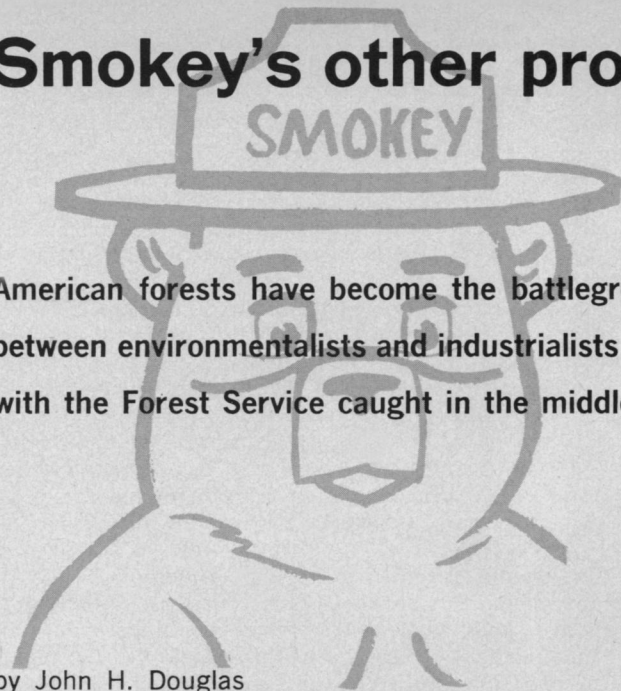


Photo: John H. Douglas
Idaho forest lost to the bark beetle.

Paul Bunyan lives. He's beginning to show his age, sports a definite beer belly, hasn't carried an ax in years and in the winter he rides around on a blue snowmobile named "Babe," but that exaggeration of the American spirit of hard work and independence that the last century called "Paul Bunyan" lives on in his descendants in the tall timber country of the Pacific Northwest.

Paul's boss has changed even more. From the handful of men once called "Lumber Barons" have grown a small army of forester-executives who commute from backwoods holdings to urban corporate centers in private jets feeling equally at home in both environments.

To bring in a daily load of timber that most lumberjacks once thought could only be felled by Paul Bunyan, the modern logger uses his ever-present chain saw. But to meet conflicting problems of soaring demand and environmental constraints, forest industrialists, private landholders and the Federal Government have yet to find satisfactory solutions.

Of the world's great natural resources, only wood is renewable. Timber provides 20 percent of America's nonfuel industrial materials, produced with less pollution than those of almost any other resource. As building materials, steel siding for a house requires three times as much energy to produce as wood; concrete blocks require eight times as much. But forests take from 30 to 200 years to regenerate, depending on the species and environment, and as populations expand, world forests retreat. Will they survive?

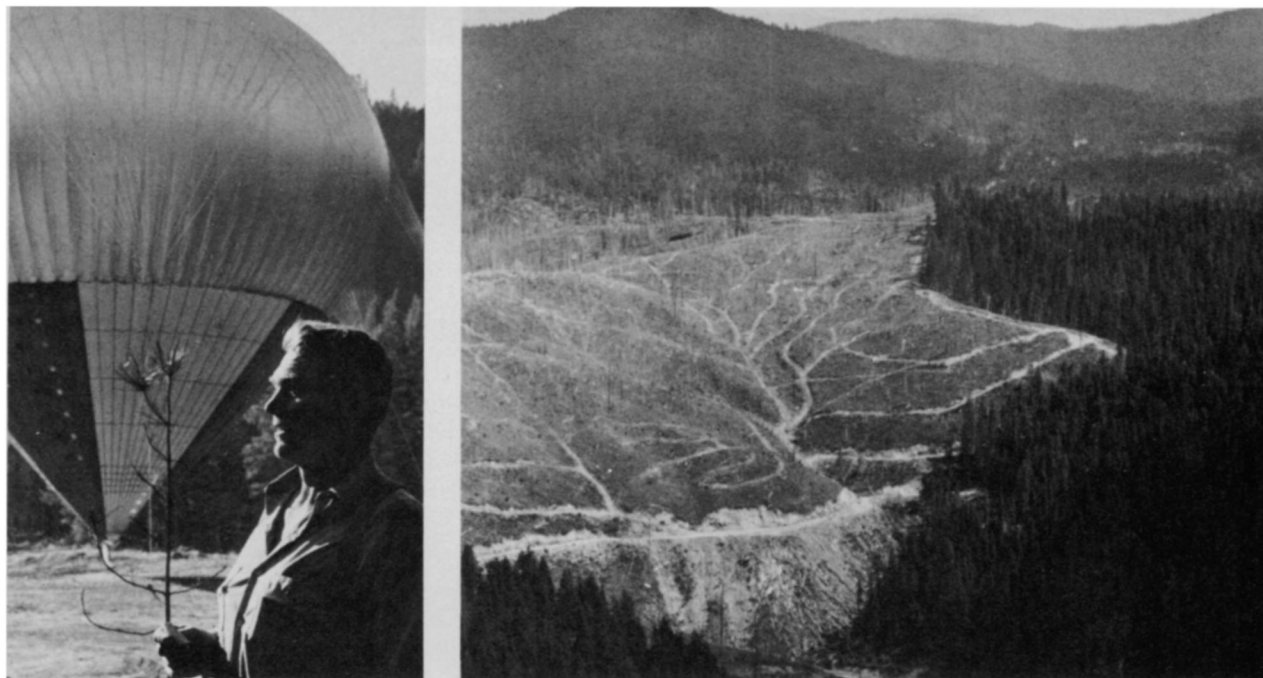
At first glance, forests of the United States seem to have survived pretty well. About three-quarters of the woodlands present when Columbus landed

are still forested. Domestic lumber demand has remained relatively constant since the turn of the century and annual timber growth exceeds the annual cut. But such statistics can be misleading. The annual "growth" is mostly in small, newly planted trees. Production of the critical softwood sawtimber (timber large enough to be milled into lumber) has fallen 20 percent behind growth in recent years. Total timber demand is expected to double by the year 2000 while loss of wooded land to towns and agriculture now runs at about a million acres a year. In addition, forests provide shelter for animals, recreational areas for rapidly growing numbers of urban dwellers and an irreplaceable supply of oxygen and soil nutrients to sustain life.

To further complicate matters, the United States now exports more than a tenth of its wood harvest while in turn importing almost a fifth. Most of the import is pulpwood that comes from Canada into the Eastern part of the country to feed a mushrooming paper demand. Some 85 percent of the export goes to Japan in the form of sawtimber from the Pacific Northwest, but some 26 ships do nothing but carry wood chips for pulp from Western sawmills to Japan. The resulting price fluctuations (an 8 percent jump for softwood lumber in February alone) have begun to worry labor leaders and small American sawmill operators alike, and the export question has added the latest stick of fuel to the blazing feud between timbermen and environmentalists.

The feud has centered traditionally on the question of clear-cutting—removing all the trees from a particular section of land. When a hillside is thus denuded, the environmentalists con-

Modern loggers: Sawyer Robert Donley (left), a 33-year veteran, fells 100-foot tree; choker-setter Fred Fackrell (right), who once attached logs to horse teams, now sets the log line of a helium balloon, used to lift logs out of rough terrain. Clear-cut area (right) shows erosion-causing log-skid trails.



tend, small trees are more easily blown over by the wind, insects breed in unused "slash" (residue left after cutting), landslides and erosion can occur, soil fertility is lost by leaching and erosion, fire hazard increases because of the slash and, even if a new "even-age" stand of trees does grow, having all trees of the same species together increases the danger of disease or insect epidemics.

Industry foresters reply that even-age monocultures are a natural phenomenon, especially in the Northwest where fires have always "clear-cut" forests resulting in a progression of species during regeneration. The highly profitable Douglas fir, for example, grows only in such conditions. A young forest, industry contends, fights off infestations better than an old one and insects develop better in the dead wood of aged forests than in slash. The industry maintains that only a trained forester can decide on the spot whether clear-cutting a particular area would result in environmental damage, such as erosion or stream deterioration, and that no blanket policy should be set. All sides agree that clear-cutting is eminently cheaper.

Environmentalists condemn what they call outstanding examples of recent forest mismanagement. In Idaho's Payette and Boise national forests, they say, spawning grounds of salmon and steelhead trout were destroyed by clear-cutting. A highly publicized cutting program in Montana's Bitterroot National Forest led a university investigating committee to report: "Multiple-use management, in fact, does not exist."

The industry counters that its own land is better managed, from a production standpoint, than either publicly or

individually owned forests, replacing timber at a yearly average growth of 52 cubic feet per acre, compared with a national average of 32 cubic feet per acre. The forest products industry owns only 13 percent of American forest land (27 percent is public, 60 percent belongs to private individuals), yet it produces 26 percent of the nation's lumber, while growing more timber than it cuts by maintaining young forests. "A virgin forest has little growth," an industry executive told SCIENCE NEWS; "If a forest is static, it's wasted." Commercially available virgin timber, he added, will probably be cut by the end of the century, and replaced by new growth.

The executive did admit some lapses of judgment in corporate forest management, and spoke of a new industry sensitivity to esthetics and public opinion. Many of these lessons have been learned through bitter experience, as in a case he described in which a well-meaning industry planner purposely clear-cut 40 acres of virgin redwoods along California's scenic "Highway of the Giants" to demonstrate to the public how quickly the forest would regenerate. After 15 years, the executive said, he could no longer tell where the cut had been made, but it had earlier "looked so awful" that public outcry forced a hasty company retreat.

Caught in the middle of all the controversies is the National Forest Service of the U.S. Department of Agriculture—Smokey the Bear's people. Set up in 1905, the NFS for many years concerned itself primarily with protecting national forests, adopting "Smokey"—a real bear found as a cub after a forest fire and now living in the National Zoo in Washington—as its symbol. Suddenly, with the coming of

World War II, the NFS became a major timber producer as well as a custodian, and now accounts for about a third of the nation's lumber harvest. National forests contain about half the nation's timber resources.

To guide the Forest Service in its new role, Congress passed the Multiple Use Sustained Yield Act of 1960, charging NFS with administering national forests to provide timber, recreation, range, watershed and fish and wildlife development. Environmentalists charge that timber production has been greatly overemphasized and that "whatever plants and animals survive are considered multiple use."

A recent Congressional subcommittee report was only slightly more charitable, saying the service has made "perhaps somewhat defensive responses" to environmental problems and has had "difficulty communicating effectively with its critics." An internal NFS report emphasizes the need "to increase public confidence and trust," and the service chief admitted to Congressional hearings that "our program is out of balance."

As with so many other bureaucratic crises in Washington, at least part of the problem is money. Over the last decade, Congress has provided only about two-thirds the requested appropriations for reforestation. For the last three years or so the Forest Service has not even received the money it feels it needs to do a good timber sales job. The service limits exports of timber from national forests, but private companies merely exported their own timber while using NFS lumber domestically. Meanwhile the State Department has reportedly pressed within the Administration for more exports to help the balance of payments. The Treasury

Department too, reportedly without even consulting NFS, introduced a staff report recommending changes in national forest policies with increased cuts. Inevitably the cheapest method of clearing the timber—clear-cutting—has been used increasingly.

Last year, in the West, 30 percent of national forest harvest area was clear-cut, for 60 percent of the timber volume. In the East, 40 percent of the harvest land was clear-cut for 50 percent of the yield. Meanwhile the Administration impounded \$52 million from NFS' 1973 budget of \$561.8 million and then trimmed an additional \$117 million from its 1974 budget request—while ordering the service to increase national forest cutting 11 percent. As a result, the service has had to close some recreational areas, despite a 5 percent a year increase in their use. "This is quite a traumatic experience for us," one NFS ranger complained. "It's sheer lunacy!" snapped a timber industrialist.

As if America's foresters did not have enough problems, 1973 has been a particularly bad year for fire and insects, which annually claim more timber in the United States than is cut from national forests. In the East, the gypsy moth is devastating hardwoods, and in the West some of the worst fires in history are sweeping through dry timber ravaged by the bark beetles and the tussock moths.

The infestation of tussock moth, centered in the Blue Mountains of northeast Oregon, points up some of the dilemmas now facing forest managers, environmentalists and the Forest Service. Until recently, DDT was used effectively to control periodic outbreaks of the moth, but the chemical is now prohibited except with special permission from the Environmental Protection Agency. After urgent pleas from Oregon's governor to allow DDT use—pleas alternately supported and resisted by various factions of the Forest Service—the EPA decided against granting special permission, saying the pestilence would run its course as natural enemies took their toll of the moths.

Bitterly calling the crucial NFS recommendations "double talk," the Oregon state director of insect and disease air operations, Al Larsen says, tests so far indicate no substantial rise in the occurrence of the tussock moth virus that usually limits infestations to three years. He maintains that amounts of DDT as small as one pound per acre (compared with the 10 to 15 pounds per acre often used in agriculture) could help control the moth. Without it, he says, several hundred small landholders would be wiped out as their land decreases in value by half through loss of timber. He also reports some black market use of DDT.

A representative of the Boise Cascade Corp., the largest timber owner affected, complained that environmentalists had blocked salvaging of the dead timber by litigation over road building. Without salvaging, the forest would be ripe for total devastation by fire, he said. A poll taken of some 2,000 local residents showed about 98 percent of them favored using DDT. One resident wrote to the La Grande (Ore.) Observer: "The fires will come, and my cabin will be burned, and I will be gone, also, like the silly environmentalists want me to be!" [Ed. Note: As this article was in preparation, fires began devastating the area around La Grande].

A new independent study points the way toward a new timber-management policy that may help to relieve some of the problems associated with American forestry. The report by the National Commission on Materials Policy of the National Academy of Sciences and National Academy of Engineering emphasizes the need for more knowledge. "What is good practice in one place may be harmful elsewhere," NAS President Philip Handler advised; "Many of the forest management decisions are now perforce made in ignorance." As recent market swings indicate, knowledge of the economics of timber management is also inadequate, with many hidden costs such as soil erosion and silting of streams and lakes. Direction of national forest policy must be handled by a multidisciplinary group, the report concluded, with an input from ecologists, political scientists, economists and climatologists, as well as foresters.

Timber management decisions, the panel concluded, "must be made in the context of overall land use planning." Laws governing land use must be flexible, since "blanket prescription of environmental practices can lead to land management debacles." Enforcement should be based on monitoring a timber operator's own quality control system. Research must be conducted into the environmental effects of different logging practices, especially in view of recent indications that clear-cutting may remove potassium and phosphorous from the soil faster than nature can build them up. Finally, the United States must work with other nations to foster conservation on a global scale, since many tropical soils cannot support the kind of intensive cutting now practiced in temperate zones.

Though charging that the main institutional obstacle to forest growth investment is Federal miserliness, the report concluded optimistically that "we know enough to devise programs of public regulation of cutting practices that will be both effective and flexible."

Smokey Bear and Paul Bunyan can both cheer for that. □



Chief astronaut D. K. (Deke) Slayton.

A DECADE-LONG WAIT

A man with a mission

Skylab takes most of his time now, but Deke Slayton studies Russian, Soyuz

Deke Slayton is one of those rare men who in spite of fame and its pretentious trappings, is disarmingly honest and straightforward. Unlike some of the other astronauts, he does not appear to be taken up with his own self-importance or the importance of his job. He gives no speeches and makes no appeals to flag or country to justify his love of flying or his desire to go into space.

As first a pilot, then one of the original seven Mercury astronauts (the only one who has not flown in space), and, since 1963, director of astronaut selection and training, he has been at the center of the manned space flight for 14 years. Through all the hubbub and flap of White House visits under three Presidents and the attention of