

History of the Tillamook Burn...

The Tillamook State Forest Rises Like the Phoenix From the Charred Ashes of the



Photo by Author

Rolling hills of green timber now greet visitors to the Tillamook State Forest. During the last 50 years the previously snag-covered country has been replanted with trees in one of the largest rehabilitation projects in the nation.

Fifty years ago — on August 14, 1933 — a logger's fire on Gales Creek, northwest of Forest Grove, seared a flaming chapter in the recorded history of Oregon's disastrous forest fires. Pushed by a dry east wind that fed flames through forest fuels sucked dry by low humidity, the small blaze soon became a galloping wildfire. It leaped quickly to the

tall crowns of Oregon's finest stands of old growth Douglas fir. The puny efforts of men and primitive equipment were futile in checking the onslaught of the fire tornado as it hopscotched on its deadly sweep to the Oregon coast.

By late August, the most awesome, dramatic and violent holocaust in Oregon history had devastated 240,000 timbered acres in the rough and mostly inaccessible mountains between the lower Willamette Valley and the Pacific

1933 Tillamook Burn

by Albert Arnst

Coast. Timber cruisers surveying the charred mortality estimated that the endless miles of blackened snags contained a total volume of nearly 13 billion board feet of prime lumber. Literally overnight, the state had inherited a bleak landscape studded with dead trees, devoid of fish and wildlife,

History of the Tillamook Burn...

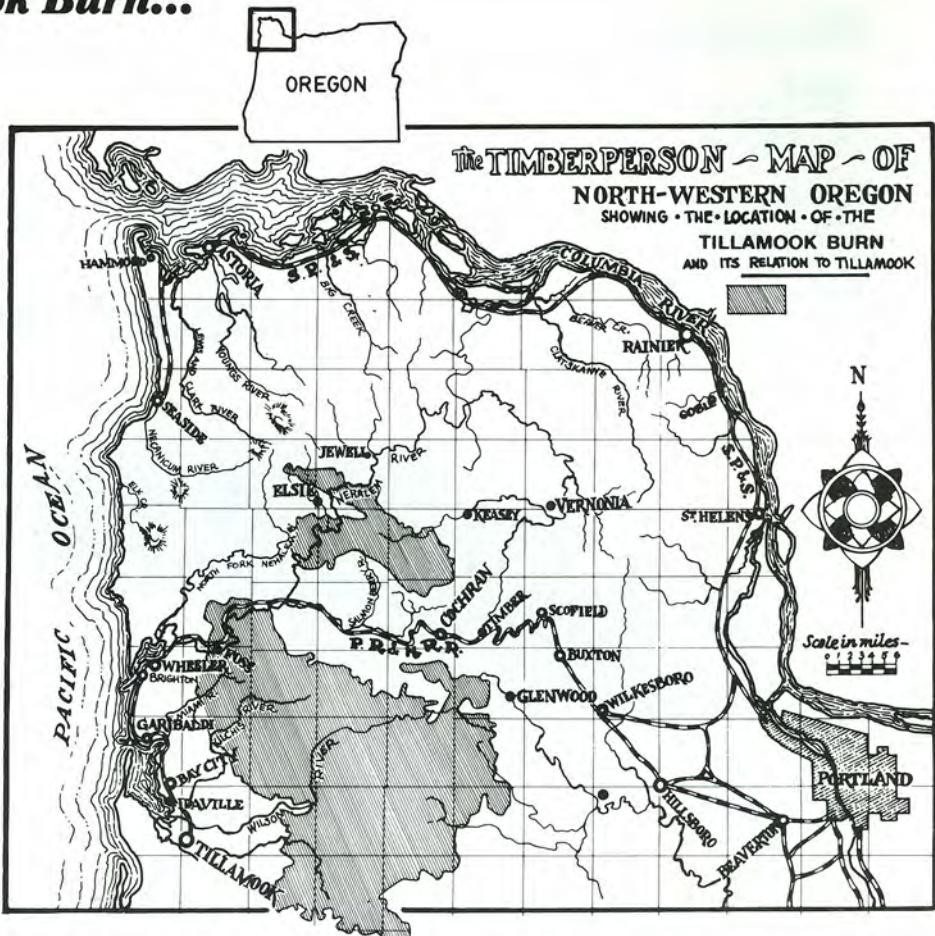
and with no apparent economic future.

Foresters and loggers knew that August 14 was to be one of extreme risk for forest fires. In the foothills of the Coast Range west of Portland, temperatures rose into the high 90-degree range. Humidity plummeted to 22 percent. A drying east wind quickened its pace.

Because of two months of exceptionally dry weather, Governor Julius Meier already had closed down state forests in southern and eastern Oregon. He asked loggers working on largely private lands in the northwestern counties — Clatsop, Tillamook, Yamhill and Washington — to do likewise. But during the early 1930s such action was voluntary, because state laws did not require closedown during fire weather.

Fifteen miles northwest of Forest Grove, a gypo logger sent his crew back to work after lunch, to get "just one more turn." At 1:15 P.M. the choker-setters had hooked the cables to a big one and signalled the steam donkey up on the landing. The log started its climb up the steep slope.

Then it happened! The ponderous moving log ground its thick bark against a tinder-dry windfall. The friction-spawned spark took instant life and tongued out for more cellulose food. It became the Dracula that was to rob life from a living forest.



Prior to 1933, nearly all of the land that came to be known as the Tillamook Burn was in private ownership. In the period following the fires about 255,000 acres came under state ownership, mostly by transfer from the counties. Most of the remaining 100,000 acres is owned by five private timber companies and the federal Bureau of Land Management. These other owners have also carried out a rehabilitation program and most of their land is roaded, cleared of snags and reforested.

Map courtesy Bill Roy, TIMBERPERSON.



A 1951 view of the Tillamook Burn.

Before the aroused loggers could grasp the tools in their fire cache, the fire already was out of control. It leaped to the tall Douglas fir crowns and escaped the useless efforts of ground crews. Roosting only briefly in a tall snag, the hungry flames took wing and soared into more green forest.

On August 16, temperatures soared to 102.4 degrees in Portland. Several hundred men were on the fire lines. But by August 22, some 1500 men were battling the original Wilson River fire. The fire didn't attract much media attention; on August 23, the *Oregonian* ran its first pictorial coverage.

By August 24, a Thursday, 1800 men were on the fire lines. The blaze had been fought for 10 days, with forces losing fire lines, backing up, and again putting in



Snag patches like this marked the areas ravaged by the Tillamook Burn. Snags had to be felled before tree planting could start. Many of the snags were salvaged and used to make lumber and plywood, during World War II.

new lines. Fire strategists were encouraged by a slight rain. They hoped they could hold the restless flames to the 40,000 acres scorched up to August 24. But it was not to be! With daylight on

August 24, everything changed on the weary fire lines. A new east wind surged in. Humidity was the lowest ever. Loggers and foresters realized the threat;

they ordered fire fighters away from the blaze's advancing west side.

With a fury similar to that of the 1980 eruption of Mt. St. Helens in Washington, the initial Wilson River fire and its flaming satellite conflagrations advanced greedily on a wall of leaping fire 18 miles across. The merged blazes became a Dante's Inferno. A massive and terrifying cloud of black smoke 40 miles wide mushroomed 40,000 feet into the sky. The fire belched a witch's brew of smoke, ashes and debris. The litter dropped on ships 50 miles at sea. The Pacific Ocean regurgitated its surface deposit of leaves, ashes and debris and cast the offal along 30 miles of beaches, in piles up to two feet deep.

In Tillamook, residents watched in fear as the angry fire topped the Coast Range and raced toward the ocean. It was night all day long. Lights were turned on in houses and on vehicles. Chickens roosted early. The patter of falling needles from torched trees sounded like soft rain on a roof. Cars crept slowly in valleys filled with a smoke cloud thicker than fog.

In just 20 hours, the lethal combination of fires that was to be called

The Four Tillamook Fires

All Four Tillamook Fires

Perimeter area	360,882 acres
Unburned area within perimeter	5,946 acres
Burned area	354,936 acres
Timber killed	13,102,917,000 bd. ft.
Lives Lost	Three

1933 Fire

Perimeter area	261,222 acres
Unburned area within perimeter	21,527 acres
Burned area	239,695 acres
Timber killed	11,828,712,000 bd. ft.

1939 Fire

Perimeter area	209,690 acres
Unburned area within perimeter	19,030 acres
Burned area	189,660 acres
Timber killed	834,220,000 bd. ft.
Additional area burned over	
Green timber	28,180 acres
Logged over	6,384 acres
Previously burned by other fires	15,527 acres
	50,091 acres

Saddle Mtn. Fire

Perimeter area	189,660 acres
Unburned area within perimeter	834,220,000 bd. ft.
Burned area	
Timber killed	
Additional area burned over	
Green timber	28,180 acres
Logged over	6,384 acres
Previously burned by other fires	15,527 acres
	50,091 acres

1945 Fire

Perimeter area	182,370 acres
Unburned area within perimeter	2,240 acres
Burned area	180,130 acres
Timber killed	439,985,000 bd. ft.
Additional area burned over	
Green timber	12,571 acres
Logged over	36,211 acres
Previously burned by other fires	10,899 acres
Hemlock looper kill	5,469 acres
	65,150 acres

1951 Fire

Burned area	32,700 acres
Total area was burned by 1933 & 1939 fires	
No green timber or reforested areas burned	
30 million bd. kft. of felled and bucked snags were burned (less than 1/2 destroyed)	
Additional area burned over	None

Wilson River Fire & Salmonberry Fire

Perimeter area	182,370 acres
Unburned area within perimeter	2,240 acres
Burned area	180,130 acres
Timber killed	439,985,000 bd. ft.
Additional area burned over	
Green timber	12,571 acres
Logged over	36,211 acres
Previously burned by other fires	10,899 acres
Hemlock looper kill	5,469 acres
	65,150 acres

North Fork Fire and Elkhorn Fire

Perimeter area	32,700 acres
Total area was burned by 1933 & 1939 fires	
No green timber or reforested areas burned	
30 million bd. kft. of felled and bucked snags were burned (less than 1/2 destroyed)	
Additional area burned over	None

History of the Tillamook Burn...

the Tillamook Burn had scoured over 240,000 acres, an area one-half the size of Rhode Island. Thus, on August 24 and 25, Oregon acquired the unenviable record of having had its largest historical forest fire of modern times. The acreage blackened by the Tillamook Burn was added to previous acreages burned: the Nestucca Fire of 1848, the Yaquina Fire of 1853, and the Coos Bay fire of 1868.

But the worst was yet to come! On August 1, 1939, tragedy again stalked the Burn. A second fire, starting in almost

the same place in Gales Creek Canyon, rekindled portions of the 1933 burn. In July 1945, the six-year jinx struck again. More reburns occurred and some green timber was lost. In 1951, the jinx made another stab. But this time the fire fighting forces of the Oregon's Department of Forestry were ready and well organized. They halted the fire quickly.

Newspaper, radio and TV reporters covered the 1945 fire intensively and gave it prominent publicity. Moreover, many people had become increasingly aware of the unsightly Tillamook Burn as

they drove to the beaches in the summer. Editors joined en masse in a swelling public demand that something be done — soon — to repopulate this desolate cellulose cemetery with living green trees.

Aroused by the public reaction, the late Governor Earl Snell in 1945 appointed a special 10-man committee to recommend a plan for handling future fire-killed areas such as the Tillamook Burn.

In January 1946, the late Nelson S. Rogers, state forester, presented to the Committee a detailed plan jointly



Special recognition for transformation of the thrice-burned Tillamook Burn into a new and vigorous forest should go to J.E. (Ed) Schroeder. He climaxed his 38-year career with Oregon's Department of Forestry by serving as State Forester from 1965 until his retirement in 1979.

Ed accepted the challenge from the late Nelson S. Rogers, State Forester from 1940 until his untimely death in 1949. It became Schroeder's responsibility to translate into action the rehabilitation program planned by Rogers and his staff and authorized by the voter-approved bond issue of 1948.

Ed earned recognition on the firelines during the disastrous third Tillamook Fire in 1945. Rogers asked Ed to take over the district warden's job at Forest Grove right after the 1945 fire.

Schroeder's test came in 1951 when the fourth fire in the six-year jinx series

broke out in the Tillamook Burn. His well-organized crews hit the fire hard and fast. The lines held. Ed had won out with a well-blended team of loggers, foresters and citizen volunteers.

When the bond issue was approved in 1948, Schroeder's 2700-square-mile district became the busiest area in the state. It became a proving ground for many innovations: helicopters used in aerial seeding, experiments with new chainsaws, testing new varieties of seeds and seedlings, and trying out speedier tree planting methods and tools.

When Schroeder was asked to move up

as state forester in 1965, he was sure the rehabilitation program was well established. He took great pride in seeing the fresh green of new forests reclothe the once-barren slopes. "He loved that Burn," said one of his former Board of Forestry members.

A grateful state has honored Ed Schroeder by naming the state's Forest Tree Seed Orchard near St. Paul after him. Genetically improved trees from it will help enhance the forestry future of Schroeder's other living legacy: the rehabilitated Tillamook Burn.



Rogers Memorial State Forest was dedicated in May 1955 at Rogers Camp, the headquarters for much of the reforestation work on the Burn. Plaque shown in top photo on page 27 is at right of platform, covered with a sheet.

Photo by author

developed by the staff of Oregon's Department of Forestry, and approved by the State Board of Forestry.

The plan included three major projects:

1. To continue the intensive salvage of fire-killed timber, started in 1933;
2. To create vast fire-breaks or snag-free corridors along ridge tops and at other natural barriers;
3. To create smaller blocks, remove many of the snags, and start to replant these blocks with nursery-grown seedlings or by direct seeding.

Estimated time for completion: 10 years. Estimated cost: as high as \$7.5 million for the decade. Estimated financial returns: an initial thinning in 35 years and an initial sawlog harvest in 60 to 80 years.

The 1947 Legislature provided for a comprehensive state forestry program. It consisted primarily of (1) research in wood utilization, forest management, and rehabilitation, to be financed by a five cents per thousand board feet timber severance tax; (2) reforestation of deforested burns such as the Tillamook area by referring to the people of Oregon



One of the highlights of the massive reforestation project was the participation of school children from surrounding communities. Many schools dedicated one day annually to tree planting on the Tillamook Burn. This group is from the former Washington High School in Portland.

Photo by Author



In May 1955 the 3700 acres N.S. Rogers State Forest was dedicated to honor the late State Forester Nels Rogers, who is considered the architect of the rehabilitation plan for the Burn.

for approval, at the November 1948 general election, a constitutional amendment that would authorize issuance of general obligation bonds to be issued in amounts as needed. The State Forester fixed the maximum to be used in any one year at \$750,000.

People approved the bond measure. The Oregon Department of Forestry was authorized to proceed with the program developed by the staff of Mr. Rogers.

Snag removal was of highest priority. Aiding in this effort were loggers who had begun salvage logging immediately after the initial 1933 burn. Organized as the Consolidated Timber Company, headed by the late Lloyd Crosby, a consortium of timber companies pooled their equipment resources. From 1933 until about 1945, Consolidated's crews alone removed over four billion board feet of usable timber. Other firms took out another two billion board feet.

World War II stimulated still more demand for the sound wood covered by the charred bark of fire-killed timber. Among the more active in this effort was the late Roy Gould, who headed Diamond Lumber Company. By the time rehabilitation work started in 1949, an estimated seven billion board feet of the

History of the Tillamook Burn...

estimated 13 billion board feet had been salvaged, a tremendous conservation accomplishment by itself.

A proud generation of Oregonians watched as the scarred land was planted and tended, and the trees finally thrived despite attacks by wildlife and encroachment by brush. Many school children, conservation organizations, and Boy Scout and Girl Scout troops helped plant seedlings on the rugged and steep slopes.

The impressive result was the largest reforestation project ever undertaken by a single state. The bonds financed rehabilitation of the Burn until 1973. In 1973, the major work was completed. Funding by revenue bonds ended; management is now being funded by revenues from all state forests.

On July 18, 1973, exactly 24 years to the day after the bonding program was authorized, the "Tillamook Burn" was

Tillamook State Forest is now an attraction for many tour groups. They can look at green hillsides covered with growing trees planted by people. A few of the old snags remain in this stand of vigorous second growth.



Photo by Author

The Rehabilitation Scoreboard

The statistical summary of work accomplished in the rehabilitation area is impressive. It includes the following accomplishments:

Planting and Seeding

- 325 square miles replanted.
- 116,000 acres successfully reseeded with 36 tons of seed, beginning in 1949. Costs: from \$4.06 to \$8.45 an acre.
- 108,000 acres successfully planted with 72 million two-year-old seedlings, beginning in 1949.

Snag Falling

- 220 miles of snag-free corridors, from 1000 feet to 4000 feet wide, depending on topography.
- 1.5 million snags felled to reduce fire hazards.

Road Construction

- 165 miles of roads built to provide 30-minute access to most of the hazardous areas. These roads supplement logger-built

roads already in place as a result of salvage logging.

Fire Control

- Aerial surveillance, lookout stations, and inspection of industrial and recreational vehicles help prevent and detect fires.
- Fire crews stationed within the Forest Grove and Tillamook Districts provide initial action on fire.

Recreation and Wildlife

- Eleven parks constructed and hiking trails and viewpoints developed.
- Population of deer and elk increased. Fishlife restored in streams.

Manpower Resources

- Fifty-man forest work camp established in 1951 on the

South Fork of Wilson River. It is manned by inmates from the Oregon State Penitentiary. In 1959, camp strength was increased to 66 men; two 20-man firefighting crews organized and made available on state-wide basis. Camp strength increased to 75 in 1960 and 85 in 1983.

Cost

- Twelve million dollars.

Financial Return

- In terms of forest products derived from sound management, the Tillamook Forest is expected to return over \$2 billion in revenue from its initial crop in 2010, based on 1979 stumpage prices.

officially dedicated as the "Tillamook State Forest" by the late Governor Tom McCall. The new name symbolizes the new life given to the forest through the cooperative efforts of state and county organizations and private citizens.

Located in Portland's backyard and flanking a major arterial to Pacific Coast beaches, the forest has become a major recreational area. The Oregon State Department of Forestry has developed 11 parks for picnicking and camping. A 23-mile series of scenic trails is available for hikers.

Forest roads for sightseeing are also attractions. An 18-mile tour starts at Rogers Camp, about 43 miles west of Portland on the Wilson River Highway (State Highway 6). Plantations, wagon roads, railroad trestles and sites of old logging camps can be seen.

S.A.F. Meets In Portland

Members of the Society of American Foresters will hold their annual convention in Portland, Oregon from October 16 through October 20. Reports on rehabilitation of the Tillamook Burn will be included in program discussions. Optional tours of the Tillamook State Forest are included in the schedule of events. Registration information is available from General Chairman Ron Smith, Oregon State Department of Forestry, Salem, Oregon.



Two views of the Coast Range Summit on the Wilson River Highway. Top—As it appeared in 1951, and Bottom—the exact area (photographed from the same position as 1951) as it appears today—1983.



An intensive long-range forest management continues in the forest today. Management now involves precommercial thinnings, stand release, road maintenance, replacement of bridges, recreation activities, planting of small areas, and woodcutting and cedar sales.

State Forester H. Mike Miller announced in March 1983 that the first commercial harvest of trees planted in the original burn may occur this year. The two-year contract calls for the removal of about 100 trees an acre on the 110-acre sale, leaving another 160 trees an acre to grow for about another 30 years.

The thinning, located 30 miles west of Forest Grove, sold for about \$35,000. Sale price was \$75 a thousand board feet for Douglas fir. The harvested trees will likely produce some small dimension lumber, pulp chips and hog fuel.

The Tillamook State Forest now includes about 364,000 acres of forest land in Tillamook and Washington counties. Most of these privately-owned lands were deeded to the Board of Forestry by the counties who had acquired them through tax foreclosure following the fires. In exchange, the counties normally receive about two-thirds of the revenue from the sale of forest products. With the Tillamook rehabilitated lands, the counties will

History of the Tillamook Burn...

receive about one-half of the revenues until the rehabilitation bonds are paid. The first 20 percent of the counties' revenues will pay off the reforestation bond debt.

Thus financial payoff of the bond issue will be far greater than foresighted voters in 1948 could have foreseen.

In the 1980s the annual cut from the forest will be about nine million cubic



About Albert Arnst . . .

A 1931 graduate of the School of Forestry, Oregon State University, Arnst is a professional forester who turned journalist midway in a career spanning 44 years. He climaxed his varied editorial and public relations assignments with a 13-year stint with the U.S. Forest Service in Washington, D.C., serving as a public information officer. Arnst became managing editor of the Western Conservation Journal when he retired in 1975.

Arnst's experience includes 6 years with the Forest Service in the Pacific Northwest, 8 years with the Soil Conservation Service in the Pacific Northwest, 6 years with the Weyerhaeuser Company in Tacoma, Washington as public relations representative for Oregon and Washington, and 9 years in trade journal editorships of both The Lumberman and The Timberman in Portland, Oregon. He left Portland in 1962 for the Washington, D.C. assignment.

An active 50-year Golden member and Fellow in the Society of American Foresters, Arnst also edited the 50-year (1956) and 75-year (1981) published histories of the School of Forestry at Oregon State University. He has also served three different terms as President of the Portland, Oregon and Washington, D.C. chapters of International Association of Business Communicators and received several editorial awards for distinguished service.

feet of timber. As the forest matures, the annual harvest can increase to about 31 million cubic feet by the year 2015. Expressed in housing units, this impressive timber growth would build about 12,000 average-sized homes.

Conservative estimates are that the

\$12 million investment will return over \$1 billion in timber sales from the first crop of trees harvested. Other values with intangible monetary values include fish, wildlife, water, and recreation.

Oregonians in 1983 are proud to observe the 50th anniversary of the 1933 timber holocaust. They played an important role in the restoration of today's green forests. ☺

Tillamook State Forest To Get Commercial Thinning

The first commercial harvest of trees planted in the former Tillamook Burn may take place this year, the 50th anniversary of the first Tillamook fire, according to Oregon State Forester H. Mike Miller.

The Bigstick commercial thinning sale was sold by the Department of Forestry's Forest Grove District on Feb. 18 to Ken Risseew Logging of Sheridan. The two-year contract calls for the removal of about 100 trees an acre on the 110-acre sale, leaving another 160 trees an acre to grow for about 30 years, Miller said.

The thinning sale sold for about \$35,000. Sale price was \$75 a thousand board feet for the Douglas fir. Trees will likely produce some small dimension structural lumber, chips, and hog fuel.

The Bigstick sale was offered last year, but received no bids because of the poor market. This time, there were seven potential bidders.

The thinning is done to release the remaining trees for improved growth at a time when they will respond most vigorously, Miller explained.

The thinning area is located 30 miles west of Forest Grove, south of the Wilson River highway.

The 1933 Tillamook Burn covered some 240,000 acres in the Coast Range between Forest Grove and Tillamook. Other fires in 1939, 1945, and 1951 reburned some of this area and burned other forests until over 354,000 acres had burned. In 1948, Oregon voters approved a constitutional amendment authorizing the sale of bonds to finance the reforestation of these lands.

During the next 24 years, the Oregon State Department of Forestry undertook a massive reforestation job,

reforesting some 325 square miles of burned area with 72 million seedlings and 36 tons of seed. Road construction, felling of fire-killed snags, and other forest protection work was done to protect the \$12 million investment.

Conservative estimates are that this \$12 million investment will return over \$1 billion in timber from the first crop of trees, in addition to enhance other valuable resources, including fish, wildlife, water, and recreation, according to Miller.

In 1973, 24 years to the day that the reforestation work began, Gov. Tom McCall dedicated the former Tillamook Burn as the Tillamook State Forest.

The Tillamook State Forest includes about 364,000 acres of forest land in Tillamook and Washington counties. Most of these lands were deeded to the Board of Forestry by the counties who had acquired them through tax foreclosure following the fires. In exchange, the counties normally receive about two-thirds of the revenue from the sale of forest products. With the Tillamook rehabilitated lands, the counties will receive about one-half of the revenues until the rehabilitation bonds are paid. The first 20 percent of the counties' revenues will pay off the reforestation bond debt.

During 1983, a number of activities and informational programs are planned commemorating the 50th anniversary of the first Tillamook Burn. Next fall, some 2000 members of the Society of American Foresters, the national forestry profession organization, will meet in Portland with the new Tillamook State Forest as a major part of their program.