

## The South Olympic Tree Farm

*The evolution and administration of a large commercial tree farm are described in this article. It is an example of long range planning that integrates management of several ownerships into a productive forest unit, and is a type of undertaking of great import to future management of privately owned forest lands.*

IN APRIL 1943, the Simpson Logging Company made application to the Joint Committee on Forest Conservation of the Pacific Northwest Logger's Association and West Coast Lumbermen's Association for certification of the company's second growth lands as a tree farm. On July 8, 1943, Certificate 15 was issued, the area to be known as the South Olympic Tree Farm. Shortly thereafter, Simpson was joined by the Weyerhaeuser Timber Company and the Milwaukee Land Company, and jointly incorporated as a non-profit organization under the laws of the State of Washington as the South Olympic Tree Farm Company.

The member companies jointly listed 140,000 acres within a boundary area of 250,000 acres, located in eastern Grays Harbor County, western Mason County, and northwestern Thurston County; or more generally, in western Washington on the south part of the Olympic Peninsula between Puget Sound and Hood Canal on the east, and westward to the Wishkah River, or approximately 25 miles inland from the Pacific Ocean.

The original acreage has been enlarged through acquisitions by the member companies and by new members to more than 176,000 acres within the present boundary area of 350,000 acres.

ASSESSED ACREAGE, 1953	
Simpson Logging Company	115,000
Weyerhaeuser Timber Company	59,180
Milwaukee Land Company	2,349
Mrs. Dorothy White Simms	5
Bruce Elmore	110
	<hr/>
	176,644

The purpose of the tree farm is to secure, foster, and advance the reproduction of forest growth; to protect the regrowth from damage by fire, insects, disease, or otherwise; to secure such reproduction where necessary and advisable by the planting of seedlings, direct seeding, and aiding natural reproduction; and, generally, to do all

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things necessary to assure the continuous growth and proper management of commercially utilizable forest.

### Climatic

For all general purposes the South Olympic Tree Farm area may be divided into two weather zones. The eastern half is the dry zone, receiving an annual average precipitation of 62 inches. The western half is the wet zone, with an annual average precipitation of 116 inches.

The rainy season usually extends from mid-October to the early part of March. Snow fall forms but a comparatively small portion of the annual precipitation and is includ-

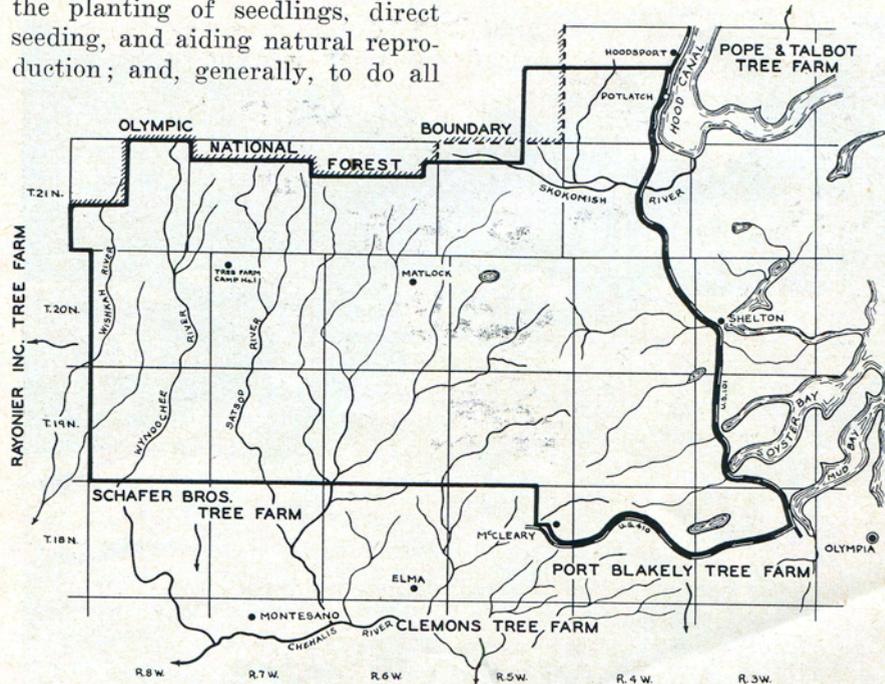


FIG. 1.—Location of the South Olympic Tree Farm, Washington, in relation to neighboring tree farms and the Olympic National Forest.

ed as a water equivalent in the total volume. There is a comparatively small amount of mid-summer precipitation, July and August having the least. This condition has an important bearing on the inflammability of forest materials and the protection problem.

During the average year, the number of days with maximum temperatures of 80° or higher varies from 30 to 43. The number of days during the growing season (between killing frosts) is slightly in excess of 200 and may be as many as 230. The number of days with relative humidity of 35 percent or less varies from 26 to 36.

Since the fuel moisture indicator sticks and weighing scales came into use more than a decade ago, records and experience have made them an integral part of fire prevention and control measures. The number of days annually with fuel moisture readings of 18 percent or less varies from 115 to 125. Under normal fire weather conditions a fire may be prevented and more easily controlled in green timber when the stick moisture content shows a reading of 18 percent or higher.

### Personnel

The organization is headed by a

managing forester and an assistant managing forester, both with professional education in forestry. Their work is supervised by a board of three trained foresters from the staffs of the member companies.

The office of the managing forester is located in Shelton, Wash. At the field headquarters, which functions under the direction of the assistant managing forester, there is maintained a year-round construction crew who serve as a fire suppression crew when needed. These men also serve as tree planting crew foremen, and operate the forest tree seed extracting plant seasonally. During the more hazardous summer months, an enlarged suppression crew of high school and college students, seeking practical experience in forestry, is employed.

During the late fall, winter, and early spring months, from 40 to 60 men and boys, local farmers, are profitably employed planting trees for a period of 3 or 4 months. Regular planting crews are sometimes augmented by college and high school students during vacation periods and weekends.

### The Program

In July 1943 the managing for-

ester was charged by the board of directors with setting up a 10-year development and protection plan for the tree farm area, including a program that would bring it to a state of maximum protection against fire, within the then acceptable allowable acreage burn loss of one-quarter of one percent annually. The forester was also charged with the following assignments.

1. Make a reconnaissance of all member lands, and prepare a map of areas proposed for artificial reforestation.

2. Establish a forestry camp at a strategic location on the area for the housing of the fire suppression, construction, and tree planting crews, with storage facilities for fire fighting and construction equipment.

3. Institute a program of services to the member landowners. These services fall into two classifications, general and specific. The general services consist of progressive forestry developments which affect the welfare of the individual member's lands, such as increased fire protection, policing against trespass, management advice, and periodical reports. These general services are covered by an assessment cost per acre annually. The specific services include jobs which an owner may require from time to time, over and above the general services on his particular lands. Such specific services include harvesting and processing forest tree seed, tree planting and direct seeding, rodent and animal predator control, timber marking, technical planning, inspection, marketing reports and supervision, and other activities which are individual in nature. Such specific services are carried out at actual cost to the members.

4. Inaugurate a program of experiments and research to cover those phases of technical and practical development most applicable to the tree farm area.

5. Initiate a program of public relations directed toward those who inhabit or use the area for business or recreation.

### Fire History

From time immemorial, but more

Michael Sol Collection

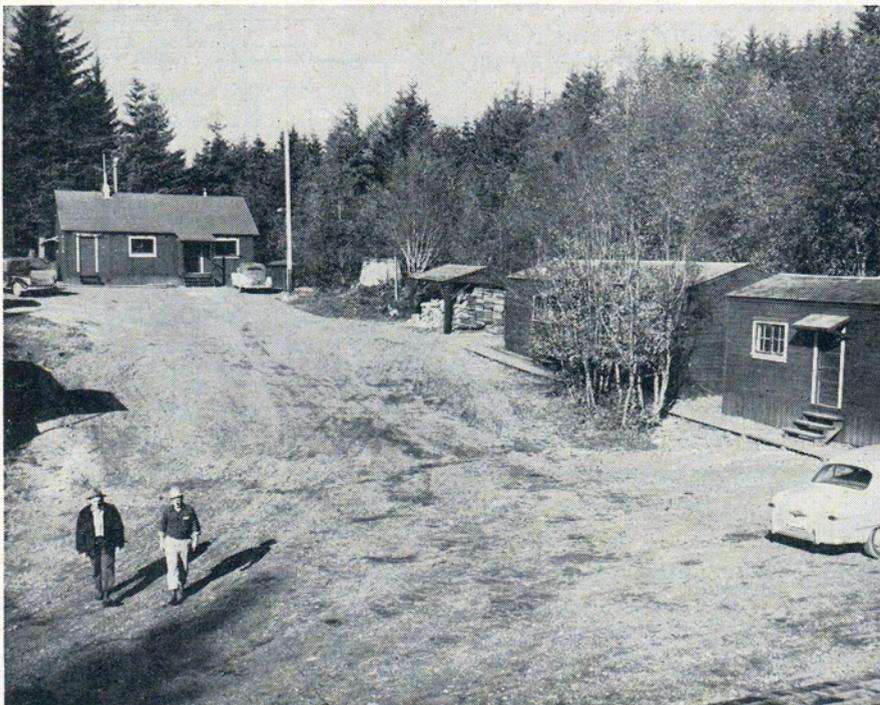


FIG. 2.—Some of the buildings at the forestry camp, where are maintained operating crews and their machinery and equipment, and the tree seed extractory.

especially since the beginning of active settlement in western Washington, about 1850, forest fires have occurred. The result has been the destruction of billions of feet of standing timber, an incalculable loss of other property, and millions of acres of forest land rendered unproductive for variable periods. Historical records contain frequent reference to the occurrence and destructiveness of forest fires on the Olympic Peninsula, but no complete or accurate figures are available prior to the past quarter-century.

What was possibly the most damaging and extensive fire to occur within the present tree farm area took place on September 11, 1902, over an area west from Matlock and across the Satsop, Wynooche, and Wishkah Rivers to the Hump-tulips River. Early settlers estimated that the "dark day" fire burned over nearly 200,000 acres of old growth stands.

Logging companies were forced to extend their operations prematurely into the burned area to recover salvable material. During the forty years after the fire, nearly 90 percent of the area had restocked satisfactorily from the remaining seed sources.

During the past ten years, there have been only 14 fires on the tree farm member lands, with a total area of 64 acres. The total estimated damage to the 64 acres was \$2,000.

### Protection Setup

In 1943, the major protection forces in the area were the State Division of Forestry, the Washington Forest Fire Association, and the U. S. Forest Service which was concerned with the protection of the Olympic National Forest to the north and contiguous to the tree farm area. The Simpson Logging Company maintained an auxiliary protection organization covering its logging operations and second-growth stands of timber.

Now the first two agencies operate largely in areas of mixed state and private ownerships; to avoid overlapping and, at the same time, to intensify their coverage their services are pooled. The Forest

Service also cooperates in the general protection scheme contiguous to our common boundary.

There are six lookout towers within the boundaries of the South Olympic Tree Farm. One of these lookouts is operated by the Forest Service, three are operated by the State Division of Forestry, and two are operated by the state, jointly, with the South Olympic Tree Farms, each of which will overlook an average of 60,000 acres.

Fire fighting costs are borne by the State Division of Forestry, except that our tree farm crews are paid out of our own funds, voluntarily, when assisting farmers or cooperators in controlling fires on their lands.

At the forestry camp are three telephone circuits. One line connects with the State Division of Forestry system and lookout towers over the west portion of the tree farm. The second system is the Simpson Logging Company railroad dispatcher's line, connecting with Shelton and Simpson's logging camp and operations; this line also gives a connection with the U. S. Forest Service protection organization and the eastern part of the tree farm. The third system is a toll line connecting with the Pacific Telephone and Telegraph Company system.

Our FM radio system is on the same frequency as that of the Simpson Logging Company. We have a base station at the tree farm camp with four mobile units used on patrol and work detail trucks.

During 1949, the use of radio possibly paid for the entire cost of this equipment, as action on a series of lightning fires brought in men and equipment from nearby logging operations in less than an hour, whereas by other means of communication they would have been considerably delayed.

At the forestry camp there are four tank trucks, a D-6 Cat with dozer blade, 6,000 feet of 1½-inch hose, and 1,000 feet of 1-inch hose, together with hand tools, pack-pumps, and equipment for 50 men. During the summer months, a protection crew of at least 10 men is trained and periodically drilled in

fire fighting methods and use of equipment.

On the whole, the tree farm area did not have a serious snag problem. However, we have carried on a snag falling program during the 10-year period, confining these operations to tree planting areas and along fire protection roads. The felling of snags along the roads and back a distance of 400 feet reduces the fire hazard. Moreover, tall snags adjacent to frequently travelled roads are a source of danger to persons and equipment. Two-man crews using power saws have felled snags from one to six feet in diameter on the stump, and up to 125 feet high. Salvable material from the snags has been used in bridge and culvert construction and for fuel at the forestry camp.

Seventy water holes for fire protection have been developed at road crossings over streams that have a year-round flow and at springs, small streams, and in swamps. Beaver flowages have been protected against trappers and a network of natural water-holes is available in some very remote spots. The slight damage to the hardwood trees is far outweighed by the year-round water supply.

To supplement the existing public and private roads over the area, we have constructed 160 miles of roads as access for fire protection, tree planting, and general administration purposes. Road maintenance in this area and climate is practically a year-round job. It requires keeping the heavy bracken fern and red alder growth down for six months of the year, and fighting mud and water the other six months.

During the period July 15-October 15, certain areas of high fire hazard are closed to the public. Only residents or persons on official business may enter these designated and posted areas. At the entrances from public roads to our protection road systems are placed the Wisconsin-type railroad iron gates with protected locking devices.

Within the closed areas, however, are certain streams and lakes with corridors for fishermen and

recreationists with camp grounds provided. As small and big game hunting seasons open before October 15, we have managed each year to open part, or all, of our closed areas to hunters under certain easily applied and accepted restrictions, fire weather conditions being the prevailing factor. As will be explained later, sportsmen and forest users have been our greatest and best cooperators in fire prevention.

### Tree Planting

In the Pacific Northwest and, in particular, on the South Olympic Tree Farm area, the tree planting season is longer than in most sections of the country because of more favorable climatic conditions. Intermittent rains and little soil freezing allow a planting season extending from early November into April, in normal years, according to elevation of planting sites.

Need for an adequate tree-planting program, foreseen by farsighted wood-using industries in this region more than a decade and a half ago, led to the establishment of the Forest Industries Tree Nursery at Nisqually, Wash., midway between Olympia and Tacoma, where more than 10 million seedlings are produced annually.

During 1943, a reconnaissance of lands in the South Olympic Tree Farm was made to determine reforestation needs and the estimated cost to members. Some 17,000 acres were found to need some degree of artificial regeneration at the time of examination.

Planting of one-year Douglas-fir seedlings has been discontinued in favor of hardier two-year Douglas-fir seedlings from seed of known origin. The planting of western hemlock, western redcedar, Sitka spruce, and other native conifers has not been necessary, as natural stocking of these species has been sufficient for the balanced forest stand.

Ten to twelve-man crews, headed by a foreman, plant in rows 8 feet apart and about 6 feet apart in the rows. An average of 700 trees is planted per acre and one

TABLE 1.—NUMBER OF ACRES AND TREES PLANTED, NOVEMBER 1943 THROUGH MARCH 1954

Company	Acres	Trees
Simpson Logging Company .....	11,466	7,409,600
Weyerhaeuser Timber Company .....	5,776	3,508,200
Milwaukee Land Company .....	353	243,600
Miscellaneous (other lands) .....	550	435,000
	18,145	11,596,400

TABLE 2.—THE INCREASE IN PLANTING COSTS, 1943-1953

	Cost per acre 1943-1944	Cost per acre 1952-1953
Preplanting .....	\$ .08	\$ .20
Stock .....	1.61	2.95
Planting Labor .....	7.99	12.68
Supervision .....	.52	1.12
Transportation of Stock .....	.10	.23
Transportation of Men .....	.85	1.55
Other: taxes, etc. ....	.68	2.40
	\$11.83	\$21.13

planter will put in about 800 trees per day.

Plantations established during the past ten years show survival of well over 70 percent.

The South Olympic Tree Farm organization plants at actual cost to its members.

### Experiments and Research

Experiments and studies have been carried on in tree planting, direct seeding, rodent and animal damage and controls, insect and disease surveys, thinnings of second growth stands, fire fighting techniques and new equipment, cone harvesting and seed extraction and, last but not least, human relations with the public and employees.

In 1944 a start was made to secure tree seed of local known origin, by selecting Douglas-fir trees in stands 30 to 50 years old. Such "superior" trees, healthy and vigorous, have small limbs and grow according to the site index.

Since 1949, all seed harvested by the South Olympic Tree Farm has been certified by the Forest Industries Association as to locality of origin, year, species, elevation, age class, and site and processing date.

A seed extractory was built at the tree farm camp in 1949. It has electrically heated kilns and powered machinery. The output for the five years of operation has been as follows.

The cones were processed for co-

Year	Bushels of Cones
1949 .....	5,344
1950 .....	4,481
1951 .....	1,434
1952 .....	786
1953 .....	300

Total .....

12,345

operating members of the Forest Industry Nursery at Nisqually, Wash. The species processed are Douglas-fir, Sitka spruce, western hemlock, western redcedar, and white fir. Cleaned seed recovery from a bushel of cones varies from 1/4 to 1 pound, according to species. The decline in number of bushels processed, 1951-53, was due to light cone crops.

### Bear Damage and Control

During the summer of 1945, a road crew reported unusual damage to young Douglas-firs on an area between the Wynooche and Wishkah Rivers. It was unlike the damage done by deer or elk when rubbing the velvet off their antlers. The bark was torn from the lower parts of the trunk, sometimes completely girdled, with evidence of claw and teeth marks, indicating the native black bear. Biologists confirmed that the damage was definitely that of bear, which is a game animal in Washington and protected during closed seasons.

The following summer, the same crew, working in the same area, observed that the trees girdled the previous year were dead, and that other Douglas-firs in the same general area had been girdled during the past spring months. Similar damage was found on other areas.

During the summers of 1947 and 1948, stands of 20- to 30-year-old Douglas-fir in the upper Wynooche and Satsop Rivers were becoming pockmarked and streaked with brown-needled trees. The direction of the damage was to the east and south. In the spring of 1949 and 1950, new damage continued, reaching what might be called epidemic proportions.

Bear damage was reported in various other places in western Washington. However, the Olympic Peninsula seemed to be suffering the greatest injury.

Early in 1951, the Puget Sound Section of the Society of American Foresters instituted action to control bear damage to young timber by appointing a Bear Facts Committee. Headed by William Larson as chairman, the committee gathered data on bear damage, and presented its case to the State Game Commission, which took the following favorable action.

1. Bears were declared predators in the five counties of the Olympic Peninsula outside the national parks and forests.

2. Where tree damage was being inflicted by bear, control measures would be under special permit.

3. A study would be undertaken by government biologists in cooperation with the Society committee to determine the reasons for this excessive damage, and, if possible, what measures would best solve the problem.

In 1951, the author succeeded William Larson as chairman of the Society's Bear Facts Committee, since the South Olympic Tree Farm was in the heart of the damage area. That spring, a 30,000-acre experimental control area was set up, and forestry students of the University of Washington recorded the bear damage to Douglas-fir stands.

Ten sections, or over 6,400 acres, were examined intensively for bear damage. We found that the stocking averaged 35 conifers per acre over 6 inches d.b.h., of which 20 were Douglas-fir. The dead or damaged Douglas-fir averaged 51

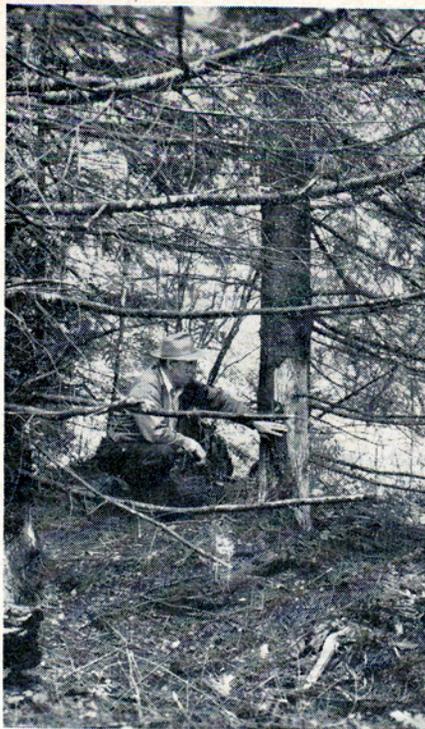


FIG. 3.—Managing Forester Oscar Levin inspects typical damage to 30-year-old, second growth, Douglas-fir caused by black bear. During the past five years the South Olympic Tree Farm lost one hundred trees from damage by bear to one by fire.

percent; other conifers less than one percent.

Damage was particularly severe in open stands of 20- to 30-year age classes, which were coming into the seed bearing age. The killing of this age-group was eliminating a seed source that could complete the restocking of the area and was thus retarding the rotation period.

One fully stocked section of Douglas-fir second growth showed extensive damage to trees from 10 inches to 18 inches d.b.h. There was little damage at the base, but above the rough bark and heavy limbs severe damage was found at heights of 8 to 30 feet above the ground. The bears preferred to work on the thinner bark.

A control program of hunting and trapping under the supervision of the State Game Department was undertaken in 1951. During the past two years, more than 300 animals have been taken from eight townships where biologists estimate that the bear population averaged close to 4 bear per 640 acres. Recent field checks on the control areas indicate that the

removal of the bear from the heavily damaged areas during the past two years has lessened the damage more than fifty percent.

The bear's love of sweets is well known. Over the years, woodsmen from Alaska to California have mentioned in their cruising reports that bear have been observed girdling trees during the spring months, but not extensive enough to cause great damage. It was common knowledge that when the bear removes the bark of certain trees and scratches the delicate cambium layer, a sweet juice oozes out. As the damage spread, the bears changed their appetites. Although preferring Douglas-fir, they damaged hemlock, cedar, spruce, and red alder.

Few bear are killed during the open hunting season as hunters prefer deer and elk. The increase of bear population over the years through protection undoubtedly caused a food shortage during the spring season. Studies conducted during the control program revealed that 75 percent of the bear had cambium strippings in their stomachs during the months of May, June, and July. Moreover, analysis of stomach contents showed that one out of twenty bears had killed fawn during the early season.

Based on records during the past five years our tree farm lands have lost 100 trees to bear for one by fire.

### Rabbit Damage

Because of extensive damage to newly established plantations during the past three years, primarily to Douglas-fir seedlings, the Puget Sound Section of the Society of American Foresters has again taken the lead by setting up a Rabbit Control Committee, of which the author is chairman also. Working on the committee are foresters from industry and public agencies whose lands have suffered excessive damage.

A technical advisory group is carrying on studies with rabbits in pens and in the field to determine seasonal food habits in western Washington, and trying out vari-

TABLE 3.—ACCOMPLISHMENTS AND COSTS

	Number of unit	Average cost per unit	Total
Snag Falling	1,527	\$ 4.17	\$ 6,375
Camp Construction	14 bldgs.	-----	14,351
Water Holes	75	22.26	1,669
Road Maintenance	100 mile av./yr.	33.47	33,473
Fire Road Construction	160 miles	285.31	45,649
Bridges	8	393.52	3,148
Fire Road Gates	30	135.50	4,078
Pre-suppression	10 years	6,449.93	64,499
Sign Posting	10 years	273.25	2,732
Experiments—Research	10 years	677.60	6,775
Fire Fighting	14 fires	-----	196
Administrative	10 years	6,250.25	62,502
<b>Total</b>			<b>\$245,447</b>

ous repellents and baits. Both the State Game Department and the U. S. Fish and Wildlife Service biologists are cooperating in this program.

#### What's the Cost?

The cost of running the South Olympic Tree Farm during the 10-year period from July 1, 1943, to June 30, 1953, is tabulated in Table 3.

#### Public Relations

Public relations has been well defined as "the process of finding out, and making known, the factors in an enterprise which are of public interest." The public relations of forestry may, therefore, be said to be the finding out and making known the facts and principles of forestry which are of interest and value to the public.

All public relations work must necessarily have an objective. In forestry, it is to awaken public interest and quicken public understanding of forestry, with the motive that there may be built up and retained a support for the cause of forest conservation. The great need is to make and keep forestry popular with the public.

Ninety percent of the entire land area within the boundaries of the South Olympic Tree Farm is forest. Hence, our neighbors, knowingly or not, are in this tree-growing business with us.

Starting in 1943, we of the South Olympic Tree Farm stepped into an area where considerable ground work had been done in forest protection by the Simpson Logging Company and the Weyerhaeuser

Timber Company, on their own initiative and in cooperation with the recently inaugurated "Keep Green" and "Tree Farm" programs. Also, the state and federal Forest Services had become partners with the forest industries and civic groups in the rapidly growing forest protection consciousness of the people.

#### Keep Green

The first county "Keep Green" unit in the United States was formed in Mason County, Washington, in 1944. This movement spread to neighboring counties, then throughout the state and nation.

Of the population of some 15,000 urban and rural residents within the confines of our tree farm, it is safe to wager that the proverbial 99-plus percent is aware that there exist Keep Green organizations in Mason, Grays Harbor, and Thurston Counties.

The county committees are run, not by foresters or persons engaged in the forest products industries, but by officers and committeemen and women for the most part in nonrelated industries wholly or partially dependent on the forest community for a livelihood.

The county committees function the year around in their process of education through advertising, publicity stories, public talks, school and youth group talks, illustrated talks and movies, radio talks, signs and posters, exhibits, and letters. There is no seasonal let-up; every month is a forestry month.

#### Mason County Forest Festival

The Mason County Forest Festival had its first showing in April 1945. Our country was still engaged in World War II.

Mason County has 400,000 acres of junior forests and old growth timber. The annual fire loss, although on a gradual decline during the past decade, was still too high, averaging nearly 200 acres a year, with only 5 percent of some 50 fires a year caused by lightning.

A group of forest-community minded citizens developed the first forest festival, and now function as a Festival Association jointly with the County Keep Green Committee and the Shelton Chamber of Commerce. Shelton's 5,000 inhabitants are joined by some 10,000 from the rest of the county in staging the three-day observance.

Briefly this is what goes on.

On Thursday night a pageant "The Magic Tree" is presented by a cast of 500 school children. The script for the pageants is written by James Stevens. As the Shelton High School stadium has a seating capacity of 5,000, it is necessary to put on a repeat performance for another audience of equal size the following night.

On Saturday morning a mile-long Paul Bunyan Parade of prize-competing floats stressing the theme "Keep Washington Green" is viewed by over 20,000 people from all parts of the Pacific Northwest. On Saturday afternoon some 15,000 persons watch loggers and woodsmen demonstrate their skills. The contestants perform in the following events: log truck and trailer driving contest, tree planting demonstration, Christmas tree tying and bundling contest, tree climbing contest, log chopping contest, cable splicing contest, log bucking (hand) contest, tree topping demonstration, tree falling contest, power saw demonstrations (falling and bucking).

#### Sportsmen and Forest Users

During the big and small game hunting season our 176,000 acres of tree farm lands are practically a free range to sportsmen. Only in a few instances, due to weather

conditions, have entrance restrictions been imposed. For the convenience of deer, elk, and bird hunters, we have in the past opened our closed areas in advance of October 15, to coincide with the deer and bird seasons early in October.

In the summer and fall of 1952 was possibly one of the longest drought periods western Washington had experienced in thirty years. The regular deer hunting season, scheduled to open on October 5, could not be opened due to the explosive condition of the forest areas. By agreement, the State Game Department, the Forest Service, and the forest industry together with a vast majority of the sportsmen's organizations postponed the opening for one week.

No rain fell during the week; however, the nights were getting cooler and morning fogs coming in from the Pacific partially relieved the situation. A conference among the protection organizations within our tree farm area granted hunting until noon of each day, with no smoking or camp fires. The resulting opening of the area made a volunteer forest warden out of every hunter. Not a fire resulted. The rains came on October 19.

In the fall when we open our gates and roads for the hunters' use, we remove the fire enclosure signs and replace them with a "Welcome Sportsmen" sign, tell-

ing them that this area has been opened for their use and pleasure, still cautioning against carelessness with fire and to travel at moderate speeds over the one-lane protection roads.

We allow fishing on all streams until July 15, after which date a few restricted high hazard areas are placed under fire closures until October 15, except that we have provided corridors along the best streams with conveniently located camp sites.

Trees and animals live together, so can sportsmen and foresters.

Berry pickers and scores of people engaged in the harvesting of minor forest products, such as huckleberry brush, sword fern, salal, and moss for the greenery trade, are seasonally in the area. The control of persons harvesting such products was solved by issuing permits at nominal charge per each forty-acre tract. As there are over 500 people on full and part-time employment seasonally in our area, this group provides us with another volunteer detection and suppression force.

Our member companies have been allowing the cutting of a limited number of Christmas trees. Reliable operators, under strict regulations and supervision of foresters, are doing an ultimate thinning job in young Douglas-fir stands. Over one million Christmas trees a year are produced from all lands in our area for ship-

ment to eastern markets. This seasonal employment totals about 400 persons.

### Our Tree Farm Neighbors

Surrounding the South Olympic Tree Farm are neighbor industrial tree farms. To the west, across the Wishkah River, we are joined by the large acreage of the Rayonier, Inc. Tree Farm. To the south is the Schafer Tree Farm, and across the Chehalis River is Weyerhaeuser's Clemons Tree Farm of some 200,000 acres. The Port Blakely Tree Farm joins our boundary on the southeast.

Requests from Mason County farm forest landowners prompted the American Forest Products Industries and the Industrial Forestry Association, as regional sponsoring organizations, to choose Mason County out of some 3,000 counties in the United States as the testing ground for the promotion of small tree farms and farmer-owned tree farms. A county committee was set up with representatives from private and public forestry organizations working up management plans to a level justifying designation as a tree farm. As a result of the cooperative efforts of the foresters serving on the County Tree Farm Certification Committee, 10 farmers with 2,300 acres committed to management are the forerunners of over 30 more applications being processed.



### Preservative Treatment For Paperboard Seed Traps

At Nacogdoches, Texas, a year's use of the kraft paperboard seed traps described by Easley and Chaiken (*Jour. Forestry* 49:652-653, 1951) showed that they are not only cheaper than standard wire traps (\$2.55 installed, as against \$4.20), but easier to find for pe-

riodic reexamination, easier to empty, and less likely to be stolen. Their lack of durability, however, reduced their price advantage over the wire traps for use beyond one season, and suggested the desirability of preservative treatments.

Twelve months' exposure of replicated brush-treated and untreated paperboard traps showed that any one of three treatments should extend the usefulness of such traps

at least through a second season. The brush treatments were: (1) 5 percent pentachlorophenol in linseed oil; (2) a saturated solution of paraffin in naphtha; and (3) clear shellac. The first seemed best because it prevented the formation of mold on the paperboard.

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