The Relationship Existing Between Education, Land-Use, Stable Land Ownership, Forest Fire Insurance and Fire Prevention

by

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INTRODUCTION

Fires have long been prevalent in our forested areas. They have been calamitous but they have been soon forgotten. Major John D. Guthrie of the Forest Service in his publication, "Great Forest Fires of America" says, "to stage a forest fire you need only a few things—a forest, the right atmospheric conditions, and a spark, either from a lightning bolt or a match in the hands of a fool or knave. The formula is simple; the wonder is that we do not have more and bigger fires."

Thus it has always been and thus it will continue to be. However, there has been a change in the attitude of the public toward the forests and toward the fires. The early settlers believed the forest to be unlimited. Outside of its value for the building of homes it was worthless and the early settlers were concerned chiefly with the destruction of the forests. Today we believe and hope that the attitude of the public has changed to a policy of conservation of our forest resources.

It is the purpose of this paper to illustrate by a summary of the history of the major forest fires in western Oregon when this change in attitude began. To show by a discussion of forest fire education, of land-use, stable land ownership and forest fire insurance, the relation of these factors to fire prevention. With the exception of education these factors are not usually considered in fire prevention. It is the contention of the writer that these things have an important bearing on the problem and should be considered.

The information for this paper has been gained from current periodical literature, historical studies of the subjects involved, and from interviews with authorities.
CHAPTER ONE

A Hundred Years of Fire
Western Oregon

From evidence present in the forest today we know that fires have devastated many thousands of acres during the past century. When land in western Oregon is burned and left untouched it, in a few years, will produce a new stand of timber almost uniform in age. The acreage of timber present today in the 40, 50, 60, and 70 year age classes indicates that forest fires have destroyed more and more lands since the white settlers came into western Oregon. From these areas and the tales of the Indians and the very early white settlers we can reconstruct some of the early fire history. (2)

David Douglas, the botanist for whom Douglas fir was named, made the first printed record of extensive forest fires in western Oregon. In his Journal of the years 1823 to 1827 he mentions time after time the recently burned-over areas he encountered in his travels. In those days there were no white men in the Willamette Valley so the fires were attributable to the Indians. The Indians each fall set great broadcast fires for the dual purposes of keeping down underbrush so that hunters might see game for a great distance and to prevent hostile war parties from approaching unseen. These were the chief objectives but they also made the burning an occasion for a grand hunt to secure their winter's supply of meat. However, the Indians seemed to realize the value of the forests and in the main protected their greenness.

(2) This history taken chiefly from "Fires of the National Forests of Oregon and Washington" by Wm. G. Morris.
Published records tell of great fires in western Oregon in the 1840's. These statements are subject to error because they were gathered from interviews with Indians many years later. These interviews, together with the evidence present in the forest, form these early histories.

The "Oregonian" of August 25, 1894 printed a story describing a great fire around Nestuoca Bay in 1845. This fire, fanned by a hot, dry wind day and night, spread to the summit of the Cascade mountains and in the other direction spread to the Pacific ocean. The dense smoke was said to have made navigation of the Oregon coast so dangerous that ships remained at the mouth of the Columbia River.

Along the highway between Willamina and Hebo the vast deforested area today marks the course of a fire known from the tree ages to have burned over about 1845. The exact area of this fire is uncertain, due to subsequent fires, but it is known to have covered better than 320,000 acres. The date given by the Oregonian as the result of an interview, the approximate location and the tree ages are in agreement.

John B. Horner, in "Oregon, Her History, Her Great Men, Her Literature" says, "Indians tell us that a forest fire in 1846 devastated the country from Tillamook to Coos Bay. An Indian who was accustomed to weigh his words carefully, bore witness that the fire was so great in the Yaquina Bay region that the flames leaped across the river, that many Indians perished and that only those were saved who took refuge in the water." A study of the great stands of second growth timber from the Siletz River to Coos Bay indicates that fire at one time and another has affected most of this area, but the age of the present trees shows it to be impossible that a continuous fire swept from Tillamook to Coos Bay in 1846. This fire is generally
known as the Yaquina fire, burning what as probably as heavy stands of Douglas fir, spruce, and western red cedar as could be found on the Pacific coast.

A strong link in the chain of historical records of fire in the middle 1800's is the diary of Lieutenant Theodore Talbot who traveled through much of western Oregon in 1849. He wrote that after leaving Kings Valley on August 26, 1849, "We passed through one tract of burnt forest several miles in extent." A week later at Yaquina Bay he recorded that he had been enveloped in "heavy, smoky fog—since leaving the Willamette Valley." A bit of present day evidence adds weight to this report: the timber from the headwaters of Mary's River and the southern bend of Siletz southward through Lincoln County to the Siuslaw River indicates that it was established following a fire of the late 1840's.

For the next seventeen years the country was relatively free of fire. Although the coverage of local events in this period was becoming more and more complete, no reference is made to any large fires. However, every fall fires occurred in the many different localities.

In 1853 "The Oregon Statesman" of August 23rd states that a man returning from the Rogue River War near Willow Springs reported that the timber was on fire for eight or nine miles along the road. This fire was set by the retreating Indians to cover their trail.

The "Oregonian" of August 25, 1855, reported a very smoky atmosphere, sufficiently thick to prevent ship movement.

The next fire news comes in 1857 in notices of smoke and fires along the lower Columbia River and the Willamette Valley. The most of these notices dealt with the discomforts caused by the smoke rather than the value of the timber destroyed. Much sickness was attributed to the smoke and dry weather.
A million acres is said to have been burned over by the Silverton fire of 1865. Eight to ten inches of ashes were found on the burned area. It is recorded that settlers in Silverton "read newspapers at night by its light." (1)

The next allusion to forest fires in the records indicates that southern Oregon experienced several in 1867. The disagreeable effects of the smoke was again the main topic. However, the development of fire consciousness amongst the more forward-looking people began to make itself known about this time. This is illustrated by an editorial from "The Dalles Mountaineer," reprinted in the "Oregon City Enterprise" on October 5, 1867.

"Save the timber. "The Mountaineer" protests against the wanton waste of timber in the Coast Range. The day is not far distant when every green bough...will have its future claimant and we believe it would only be justice to future generations, for the government to establish posts of Wood Rangers at intervals through the forest to control the American appetite for rousing fires of destructive tendency."

Not only were they becoming fire conscious but they were being very prophetic.

Dangerous fire weather prevailed in September of 1868 and fires sprang up all over western Oregon. The good luck of the many previous years seems to have vanished. The largest continuous fire area was in the Coos Bay Region northeast to Douglas County comprising some 125,000 acres. In all more than 300,000 acres were burned over in southern Oregon in this year.

For the next three decades western Oregon was relatively free from large forest fires but in 1902 fires sprang up with such suddenness that the news items in the "Oregonian" increased from practically nothing on September 7th, to column after column on September 12th. The fires of 1902 were memorable in that it was here that the first organized protective agencies sprang up. There were many fires in west-
ern Washington and Oregon in this year of which the Lewis River fire in Washington was the greatest. The loss of farm structures and homes was almost numberless in the area near Portland. Many mills were destroyed and many lives were lost although the numbers were not given. The more fortunate towns and cities which escaped, sent relief funds to provide food, clothing and shelter to the fire swept communities.

1910 is a year remembered by many as one in which forest fires destroyed large amounts of timber and many human lives. The most of these fires were in Idaho and Montana and Oregon escaped widespread fires in that year.

In 1918 and again in 1929 western Oregon experienced some bad fire years. The total area burned was large but the fires were scattered and not of as great a size as most of the fires considered herein.

One of the most spectacular fires of modern times was the big Wilson River fire of August, 1933, better known as the Tillamook fire. On a hot and windy day the friction of a steel cable passing around a stump started it off in dry slash nearby. The logging crew saw the fire at once but their tools were a half a mile away. It traveled across the logged off land driven by a north wind and entered an unbroken stand of old growth Douglas fir—a tract considered to be the safest timber store for Portland’s future sawmill supply. Nearly 250,000 acres were burned of which all but 30,000 acres were privately owned. The amount of timber killed was estimated to be 10,257,517,000 feet of which 8,000,000,000 was old growth Douglas fir. The total number of man days devoted to suppression is placed at 20,873. Only one life was lost in the fire, that of a C.C.C. fire-fighter killed by a falling green tree.
At the instigation of private agencies such as the Chambers of Commerce, the County and Federal officials took steps to salvage the timber. A corporation was formed to finance a transportation system and the State Highway Commission built the Wilson River highway into the west side of the burn.

Salvage began a little over a year after the burn and since that time about 15% of the burned, forested area has been cut-over and 1,000,000,000 board feet salvaged, practically all of which has been Douglas fir. About 50% of the original cruised volume on the lands that have been cut-over has been recovered.

The Pacific Northwest Experiment Station made an examination of the area in 1935 to determine whether the area was restocking naturally. They found a fairly good distribution of two year old Douglas fir seedlings on areas previously supporting virgin timber. One year old seedlings were limited to the areas near islands of green timber. From this examination the Experiment Station drew the conclusion that there was seed on the trees at the time of the fire that were not harmed and falling on bare ground germinated in 1934. But for the 1939 reburn destroying the islands of green timber and the seedlings the area would have restocked satisfactorily.

The amount of future salvage depends upon the progress of the deteriorating agencies. From the 6th to the 10th year after a burn in Douglas-fir timber the salvage value becomes critical. Probably about two-thirds of the total that will be salvaged from the area has already been recovered.

On September 26, 1936, a brush fire, which had started in slashings seven miles away, approached the town of Bandon. There had been early fall rains and farmers and stockmen had been given permission to burn but the temperature rose, the humidity fell and the fire was off.
The fire traveled rapidly but the town was not considered seriously menaced until 8 P.M. It spread from the timber to the gorse or Irish hedge which extended into the town, destroying the residential section in an hour and then spread into the business district near the river. By 1 A.M. of September 27th the town was almost completely destroyed.

Eleven persons lost their lives and tragic as this was, it seems remarkable that more people did not lose their lives. About 160 automobiles were destroyed and the losses to buildings and contents was estimated to be $1,250,000.

Following the disastrous fire which practically destroyed the town, it was decided immediately to rebuild the community in accordance with a sound plan. At a meeting of the City Planning Commission and other civic leaders a planning program was discussed, and it was decided to ask property owners to enter into a pooling agreement of their private holdings to make replanning possible. The community responded wholeheartedly and now Bandon has a pool of practically all of its property, an adopted plan which it is carrying out and a commitment for a loan adequate for rebuilding in accordance with the adopted plan. (4)

The success of Bandon's pooling efforts may inspire similar action as the need arises in other localities. The Bandon project may seem insignificant but every city faces the problem of rebuilding obsolescent and slum areas and it is from such examples as this that much information will be taken. The assembling of land for replanned cities in the interests of general welfare will receive increasing attention as a form of pioneering in civic development. Forest fires are usually considered as harmful but here is one instance where a great deal of good has resulted from such a calamity.
The 1939 Tillamook fire started at midday August 1st, a few miles south of the 1933 point of origin. The heavy slash and snags made control extremely difficult. It is estimated that the 1939 fire covered 200,000 acres and that all but 30,000 acres were within the boundaries of the 1933 burn. (3)

The chief damage of the 1939 burn is that it destroyed many acres of natural reforestation. In addition it burned many of the islands of green timber that escaped the 1933 fire and were supplying seed for the surrounding areas. A very special fire protection policy must be solved if this area is to become anything but a deforested waste. As soon as the area becomes covered with the inflammable herbage to furnish tinder for the snags the area will burn again further impoverishing the soil, speeding up erosion, and lessening chances of natural restocking.

Conclusions:

In following the history of Northwest forest fires from 1840 to 1940 a great change is noted. At the first of this century the Indians were burning off the valleys each year. Then the white men drove the Indians from the fertile valleys and prevented annual burning where crops or buildings would be endangered. But at the same time the white men, traveling at a distance from the settlements, was not as careful with fire as the Indians and often left campfires burning or even intentionally setting the woods afire. In addition land clearing fires were kept burning near the settlements and often spread beyond control during bad fire weather.

It was against the law to set fires maliciously by 1902 but many people continued to burn slashings during the periods of dangerous fire weather. There were few organizations to fight forest fires,
particularly on private lands, and the attempts to salvage timber killed by the widespread fires of 1902 were very few. It was from this fire, however, that organized forest fire protection agencies of the Pacific Northwest date their origins. It aroused timber owners, operators, foresters, and others to such an extent that legislative steps toward the protection of the forests followed soon after. And the various organizations to prevent and fight forest fires came into existence.

By the 1930's logging operations had become so extensive with the corresponding large areas of slashings that they were recognized as a great fire hazard and it became unlawful to burn these slashings in dangerous fire weather. Now only fires set unintentionally by man or by lightning, or in defiance of the law could endanger the country. Men and equipment were organized and ready to fight such fires as soon as they appeared. When one big blaze did get beyond control (1933 Tillamook Fire), salvage plans were put into operation very shortly and a portion of the original wealth will be regained for the surrounding communities and industries.

Thus, from the days when timber was wantonly destroyed, we have advanced to the stage in which it is vigorously protected and is quickly salvaged when killed by accidental fires. But we need to progress further. Suppression is not enough. The following chapters deal with the problem of fire prevention and its related factors.
CHAPTER TWO

Education—A Primary Factor in
Fire Prevention

The primary factor in the problem of forest fire prevention is that of education—education of landowners; of forest land users or frequenters; of local, county, and state officials; of those who operate equipment likely to set fire to the forest; of those who set fires on their own volition; of school children; and of anyone connected in any way with the forests.

CAUSES OF FOREST FIRES

A simple grouping of the causes of forest fires consists of (1) those caused by natural agencies beyond human control, and (2) those caused by agencies over which man has a direct influence regarding their existence. (5)

LIGHTNING FIRES

About one-third of all fires in Oregon are caused by lightning. (6) Although at present it is impossible to prevent lightning from starting fires, future advances of science may make this assumption ridiculous. Until that time comes, if at all, the reduction of the damage so caused is the main field. Such reduction is not strictly prevention but it seems logical to be mentioned here.

MAN CAUSED FIRES

Two-thirds of Oregon’s forest fires are man-caused and therefore preventable. (6) Education is the most important method of making man-caused forest fires preventable. The users of the forests must be persuaded to conduct themselves at all times so that fires will not result from any of their acts.

INCENDIARISM

The incendiary forest fire is deliberately set in defiance of forest fire laws and property rights. The reasons back of such a law-
less act may range from malice to playfullness. The people usually connected with these kind of fires are of a shiftless, backward type.

It is the problem of education to ferret out these reasons, analyze them and apply the proper methods of education. These have been some of the weakest points in the education program. In the past the foresters as educators have skipped this group of people entirely of if the education program has reached them at all it has concerned itself only with the adults. To be effective an education program must reach both adults and juveniles. Fire prevention is a never-ending task because there is always the new generation to educate. (5)

A good educational program for the incendiary must be presented to him on his own level. This statement means that the high powered movies and lectures are not reaching the incendiary. Qualified men must present the education propaganda to them in small groups and in a way that they can understand. It is a job peculiar to the regions concerned.

The most fertile field here is youth education and such contacts as are made through vocational agricultural schools, scout organizations, and similar clubs are conducive to good results among the juveniles. Since incendiaryism at present is the cause of approximately one-eighth of all forest fires in Oregon this field is an especially productive one for educators, psychologists, and sociologists. (6) The average forester is not well enough trained in any of these fields to capably undertake this job.

SMOKER AND CAMPER FIRES

Fires from this source have not been decreasing in numbers in recent years in spite of all the various measures that have been taken. Today approximately one-third of all forest fires in Oregon are
attributable to this cause. (6) These fires are caused unknowingly by the recreationists and are chiefly due to carelessness.

Such means as signs, rules, laws, lectures, and pictures to educate the people away from carelessness should not only be continued but intensified. Keeping these things constantly in the public eye will go a long way toward the objectives. But in addition, research is needed into the vagaries of carelessness in order to more fully understand how to combat it. Means must be found to get people to acquire and use the right habits in the woods.

FIRES FROM INDUSTRIAL OPERATIONS

Great progress has been made in reducing the number of fires from the above cause but there is still room for improvement. The operators have recognized their part in the fire prevention program and are acting accordingly.

Some progress has been made in measuring and rating the factors that contribute to fire danger but the biggest contribution to be made here is to determine with certainty when it is and is not safe to carry on industrial operations in the woods. The advance in fire danger rating accuracy will enable any legal action taken to enforce the practice of logging only during safe fire periods to rest upon a sound basis.

SUMMARY

Briefly, it may be stated that the more effectively the educational aspect is handled the less difficult the other factors in fire prevention will be to handle. The big weaknesses in the education program are in the methods of presenting the facts and in the training of the people who present these facts.
CHAPTER THREE

Land-Use and Fire Prevention

DEFINITION

Common sense calls for a systematic study of our lands, determination of the type of service for which they are most useful, and the formulation of practicable measures for obtaining these services, both now and in the future. This, in brief, is the definition of land-use planning.

PROBLEM IN WESTERN OREGON

People in western Oregon in their search for new frontiers have settled in areas that are definitely submarginal for agricultural purposes. In their attempts to wrest a living from these submarginal areas they have adopted the practice of burning over their cleared lands to keep down reproduction and to keep the lands clear for grazing purposes. By so doing they create an important fire hazard and fire prevention problem. The forester believes that fire should only be used to reduce the fire hazard to a point consistent with protective standards while the grazer wants to have the maximum amount of debris and brush removed so that the full acreage may be devoted to the use of livestock. (7)

The Pacific Northwest Experiment Station has found that practically all the land involved in this controversial issue is classed as Site I and II and hence will produce our best forests. It is also true these sites produce the best grazing. This debatable issue resolves itself into a problem in economics on which additional research is necessary before it can be solved. (7)

IMPORTANCE OF PROBLEM

The importance of the incendiary problem on these submarginal agricultural areas is shown by the following figures. On an area protected by the Coos County Fire Patrol Association, consisting of over
a million acres there were 128 fires in the summer of 1936, burning over an area of 139,368 acres at a loss of $1,642,858. On the submarginal areas within this same unit there were 109 fires, burning over 116,075 acres with a loss of $1,606,358. Thus we see that 85% of all fires, 83% of the acreage and 98% of the loss were on these submarginal lands. (7)

This incendiary problem has been on the increase in the past decade due to the influx of the depression victims and dust bowl refugees into the Pacific Northwest in a "back to the land" movement on the submarginal agricultural areas.

The question may arise here as to why the conflicting users of these cut-over submarginal areas have not attempted to cooperate. The answer is not known. This lack of cooperation is a public responsibility that the public has failed to recognize with the result that instead of it being a voluntary project it has become one that is being forced upon the public and the agencies concerned. If the private owners and the public agencies interested in fire prevention had cooperated in handling these areas the incendiary problem would be of minor importance. A prominent grazer has made the statement that if satisfactory assistance in burning were given the grazing owner the number of incendiary fires would drop at least by 80%. Thus, a group of grazers, who are in the minority, by their lack of cooperation have created a situation which threatens the future industrial life of western Oregon—the forests and forest industries. (7)

METHODS OF SOLVING THE PROBLEM

The solution to this problem of land use and fire prevention may be approached in any one of four ways. (11)

1. The quick and dramatic method of public acquisition and proper management of these submarginal agricultural areas. This method
is contrary to the American policies of private rights and should be used only as a last resort.

2. The voluntary adoption of proper land-use policies by the private landowners concerned. This is probably the best method but it is slow and the policies adopted are apt to be extremely variable.

3. The regulation of land-use policies by the policing powers of the state. This method is the one that is being most commonly adopted by the states.

4. The adoption of land-use policies through assistance in the form of favorable credit and/or taxation by the public agencies.

OREGON'S SOLUTION

Oregon has recognized this incendiary problem and has adopted the use of the policing powers of the state in its solution. The Oregon legislature in its County Forest Land Classification Committee Act (Chapter 381, Oregon Forest Laws, 1939) opened the way for committees to be established in the counties requiring them, and the work of segregating three classes of use from the one major type of forest lands has progressed appreciably. These three classes are as follows: (9)

Class One—Lands primarily suited for the production of timber where it will be the policy to give primary consideration to timber production and reforestation in preference to grazing and agricultural use.

Class Two—Lands suited for joint use for timber production and the grazing of livestock where it will be the policy to give equal consideration and value to timber production and the development or maintenance of grazing, either as a temporary use in the interim between logging and reforestation or as a permanent or semi-permanent use.

Class Three—Lands suited primarily for grazing or other agricultural use where it will be the policy to give primary consideration to grazing or other agricultural use in preference to timber production.
It is on the Class Two and Three lands that this incendiary problem exists. Class One lands enter the picture only as they are endangered by fires from the other two land classes. Oregon's Land Classification Committees also have authority to provide for the reseeding of burned-over forest land and to regulate the removal of fire hazards or obstructions from classified lands.

The clause regarding the removal of fire hazards is especially significant. Here the state, in place of making it illegal to burn and knowing the owner is going to burn anyway, has provided for cooperation. The forester or warden will supervise burning operations with the assistance of the landowner. In other words the state will know when such burning will take place and can be properly prepared for it.

Only limited areas have been classified so far and the development has not progressed as was anticipated at the time of passage. This lack of progress is due to a combination of a lack of funds, a growing realization of the cost of such a project, and the responsibilities of the private owner in connection with fire damages.

### TABLE I

Acreage and percentage of Present Land-Use in Each Land Class in Coos County, Oregon (12)

<table>
<thead>
<tr>
<th>Land-Use Types</th>
<th>Agriculture %</th>
<th>Grazing %</th>
<th>Forest %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber from 0&quot; to over 20&quot; DBH</td>
<td>15,228</td>
<td>27</td>
<td>72,939</td>
</tr>
<tr>
<td>Cutover Lands and deforested</td>
<td>1,549</td>
<td>2</td>
<td>28,934</td>
</tr>
<tr>
<td>Agricultural Uses</td>
<td>43,428</td>
<td>60</td>
<td>5,270</td>
</tr>
<tr>
<td>Grazing and Waste Land</td>
<td>11,895</td>
<td>16</td>
<td>43,092</td>
</tr>
</tbody>
</table>

*Does not include state and national forests.

The above table shows the importance of the land-use problem in a typical western Oregon county.
To profit by the experience of such states as Michigan and Wisconsin where land-use planning is farther advanced it would seem that Oregon needs the following items.

1. Adequate appropriations to carry out existing and proposed legislation basic to sound land-use planning.
2. Intensive study of the economics of the problem of forestry versus grazing through experimentation and observation.
3. Distinct division of individual and public financial aid should contribute to such development.

SUMMARY

Proper land-use is an important step towards fire prevention. The classification and zoning of lands will move these people living in areas definitely not suited to the present use, thus eliminating one fire hazard. The restricted and regulated burning of grazing lands either temporary or permanent, affords an excellent control over these areas. With the increasing education of the individuals involved, the perfecting of the land-use laws, increased knowledge of the economics of the issue, and with better cooperation of the individuals and agencies concerned, the solution of one of the major incendiary problems will have been approached.
CHAPTER FOUR

Stable Land Ownership and Fire Prevention

PROBLEM IN OREGON

As Oregon's western counties were cut-over a serious problem arose. After the timber was removed the lands were allowed to go tax delinquent as they had no other use and it would be some time before a second forest crop could be harvested. This situation has caused a crucial maladjustment between the tax revenue received by the counties prior to and following timber removal. The counties with their tax structure built upon the basis of the tax revenue from the timber lands found themselves with greatly curtailed tax revenues after logging. The seriousness of this problem is attested by the fact that the average county along the western seaboard of the state consists of 75% potential forest lands, the remaining 25% is composed of urban settlements, semi-permanent agricultural and permanent agricultural lands. (14)

LANDS IN PROCESS OF TAX DELINQUENCY

Lands in the process of going tax delinquent and reverting to county ownership serve as a sort of "no-mans' land" in which the original owner is not interested and which the counties have not taken over as yet. No fire prevention and little fire protection and suppression is afforded these areas. The counties want the land to remain in private ownership for the tax revenue it may provide and are thereby reluctant to foreclose. In addition the counties are not financially able to adequately protect and manage the lands when they become tax reverted. The private owner has reaped his harvest off of the lands and does not have assurance enough of future incomes to warrant keeping the lands. This problem has broad social and economic aspects that affect public as well as individual welfare.
POSSIBLE SOLUTIONS

The possible solution to this problem of stable land ownership may be approached in any one or combination of the following methods: First, the tax load may be shifted to other forms of property; second, public expenditures may be curtailed; or third, taxable values may be increased through land development. In the counties which are in the most critical financial condition the first two methods have been carried almost to the limit. The result is that these counties have started definite land-use planning hoping to develop new uses for idle cut-over lands that will produce greater current income for local citizens and thus keep the lands on the tax rolls.

REFORESTATION LAW OF 1930

Since the first two approaches have not solved the problem completely the Oregon Legislature passed the Oregon Reforestation Law (§) as a step toward the goal of aiding the owners of denuded forest lands in retaining their holdings in private ownership. It is a tax law and provides for a yield tax as a substitute for the property tax. With the exception of the annual fee of 4 or 5 cents per acre depending upon whether the land is east or west of the Cascades, it stipulates that $12\%$ of the stumpage value is to be paid to the county when the crop is harvested. This operates as a direct stimulus to the far sighted owners to keep his lands in private hands and to properly protect and manage such lands. Since this law was passed in 1930 approximately one million acres of forest lands, owned by 1,100 private owners have been placed under this law. This serves in a mild fashion as a land-use program. (14)

COUNTY FOREST LAND CLASSIFICATION COMMITTEE ACT

An increase of land values as a result of new uses is another method of approaching the solution of the tax reverted lands problem and keeping the lands in private ownership. The Oregon County
Classification Act of 1937 (9) recognizes the grazing use of Class II and III lands and makes provisions for seeding and burning on such areas. This new use would provide a source of revenue for the counties and would be an important influence in keeping the lands under private ownership with proper management and fire protection.

It has already been demonstrated that grazing has possibilities on certain relatively small areas but whether it can be extended to include a large part of the marginal cut-over lands is so far unknown. The Northrup Creek Experiment Station established in the fall of 1936 through the cooperation of State Forestry Department, the Clatsop County Court, and the Extension Division of Oregon State College should prove beneficial in reaching the answer. (10)

TAX REVERTED LANDS

For those cut-over and burned-over lands that have reverted to county ownership some other solution must be found in order to establish fire protection and management as an aid to fire prevention on tax reverted county owned lands.

The importance of this problem is shown by the following table on tax reverted lands in an average western Oregon county.

**TABLE II**

<table>
<thead>
<tr>
<th>Type of Land</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber</td>
<td>19,215</td>
</tr>
<tr>
<td>Reforestation</td>
<td>9,216</td>
</tr>
<tr>
<td>Non-tillable</td>
<td>30,099</td>
</tr>
<tr>
<td>Tillable</td>
<td>289</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>58,809</td>
</tr>
</tbody>
</table>

* Assessed Valuation | $1,257,344 *
* Total Charge Against Property | 2,634,096 *
* Total Acres in County | 525,475 +
It is estimated by authorities that when the tax reversion process is complete there will be approximately 200,000 acres in Clatsop County off of the tax rolls. (13)

EXPERIENCES OF OTHER STATES

Wisconsin—In this state tax delinquent lands revert to the counties who are authorized to black land so acquired and list such lands under the forest-crop law which entitles the counties to 10 cents per acre from the state. Wisconsin also has a zoning law which prevents the return of the land to an unsatisfactory use after its tax reversion. This state is somewhat tardy in acquiring tax deeds and in coordinating land-use programs. (13)

Michigan—In Michigan the laws are so constructed as to give absolute title to the state six months after the time of the recording of the deed to the lands to the State Department of Conservation. Thirty-four percent of the area of lands acquired through tax delinquencies are reserved for forest, park and game refuge uses. On these lands the state pays a tax of 25 cents per acre to the counties and an annual tax of 10 cents an acre from the game protection fund. The remainder of the lands are subject to homesteading, sale or exchange at the discretion of the Department of Conservation. The policy is to block up the state holdings. (13)

Oregon—In Oregon the state board of forestry is authorized to acquire these tax reverted lands for the development of state forests. From the moneys and revenues derived from such lands above the costs of management the state gives 10% to the State Forestry Development Fund and the remaining balance is paid annually to the counties in which the land is situated.

SUMMARY

The most logical solution to the problem of tax reverted lands seems to rest in having the lands revert to any agency that has
sufficient financial ability to properly manage and protect the
lands. It is the policy being followed by the states where the
problem has become acute.

Stabilized land ownership ties in very closely with fire pre-
vention. With it comes management and protection thus reducing,
if not eliminating an important fire prevention problem. Until
these lands are brought under an agency that can properly care for
them they constitute a distinct fire hazard.

To properly care for the tax delinquent lands we need reor-
ganization of local governments for greater efficiency, more
equitable taxation of reforesting timberlands, and the development
of new uses for tax delinquent lands. For the lands already tax
reverted state acquisition and disposition appears to be the logical
answer.
CHAPTER FIVE

Forest Fire Insurance
and

Fire Prevention

Forest fire insurance while not ordinarily considered as a factor in fire prevention will have an important influence when such insurance becomes practical. Some people have expressed the opinion that if insurance is introduced protection will suffer. The owner, it is said, will become indifferent to fire loss and will withdraw support from the protection effort. One only has to look at other forms of insurance to get the answer. Insurance does not function that way as there is no decrease in responsibility when insurance is introduced. It is merely shifted from the shoulders of the owner to those of the underwriter. (16)

In most cases the insurance carriers would be in an excellent position to accept the responsibilities of a fire prevention program. This would be especially true of the educational part of fire prevention. Being well organized and equipped for the emission of propaganda for advertising purposes the underwriters could very readily put forth a fire prevention program that is likely to bear results. In the opinion of the writer forest fire insurance would be a forward step in fire prevention planning.

The chief detriment to the adoption of forest fire insurance is the high cost. In the past insurance always offered coverage to new businesses at high rates at a time when the new businesses were earning high profits and could afford to pay high rates. In the forest business the margin of profit is so low that the high rates would eliminate the demand for insurance, as has been the case so far. (16) Until the rates of coverage are reduced to a level
Consistent with the margin of profits received in the forest business it seems unlikely the forest fire insurance will be adopted.
CHAPTER SIX

Conclusion

It has been said that the fire that never gets started is the easiest to put out. This statement, paradoxical though it seems, is quite true. If an effective program of fire prevention can be instituted the fire suppression program will decrease in importance.

At present, however, the money and effort expended in fire suppression far exceed that which is given to fire prevention. The policies discussed in this paper would, if practiced and expanded, cause fire suppression to give way to fire prevention in our national consciousness. Education of the public in acquiring and using the right habits in the use of the forest has long been recognized as the primary factor. Along with it, however, the factors of land-use, stable land ownership, and forest fire insurance should be considered. The relation of these factors to fire prevention is close but has not usually been considered with it.

If we reach the point where the forest fire education program is of the right type and effectively presented; when proper land-use and the very closely related subject of stable land ownership are thoroughly studied and acted upon; and when forest fire insurance is made practical the solution of the fire prevention problem will have been approached.
BIBLIOGRAPHY

1. Great Forest Fires of America by Major John D. Guthrie
2. Fires of the National Forest of Oregon and Washington by Wm. G. Morris
3. Pacific Loggers Daily, October, 1939
4. Plan for a New Bandon, Oregon State Planning Board, November, 1937
5. Theory and Practice of Forest Fire Protection in the United States by A.D. Folweiler
6. What Can Research Contribute to the Prevention of Forest Fires? by Donald Navarre Matthews
7. Land-Use and Forest Protection in Southwestern Oregon by J. W. Ferguson
11. Land Planning by Lewis C. Gray
   Public Policy Pamphlet No. 19
12. A Land-Use Study of Coos County, Oregon
15. Forest Fire Insurance in Pacific Coast States by H.B. Shephard, USDA Technical Bulletin No. 551