THE APPLICATION OF ARTICLE X TO
FORESTRY IN OREGON AND WASHINGTON

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THE APPLICATION OF ARTICLE X TO FORESTRY
IN OREGON AND WASHINGTON

FORWARD

This thesis will discuss Article X of the NRA Lumber Code and its application in the Douglas fir region. The Ponderosa pine region will be referred to only insofar as to make a comparison with forestry conditions in the West Coast region.

INTRODUCTION

Legislation creating the National Industrial Recovery act gives all industry the permission to regulate itself on a more stable basis and correct such economic and social evils as unemployment, unfair division of profits, child labor, destructive and wasteful competition. The Lumber Code as approved by the Lumber Code Authority on May 17, 1933 is the first attempt of the lumbering industry, one of the four major industries in the United States, at industrial self-regulation. This temporary emergency legislation designed to control by law the activity of an industry was enacted in the attempt to lift the industry out of a condition of economic stagnation and depression.

The declared purpose of the Lumber Code as defined in Article I is to reduce unemployment, improve standards of labor, maintain a reasonable balance between production and consumption, restore prices to levels which will further avoid depletion and destruction of capital assets, and "to
conserve forest resources and bring about sustained yield from the forests".

In attaining these goals the objectives are listed according to articles. Articles II, III, and IV of the code define the scope of the industry affected, set up administrative functions and declare its policy on code reports and fees. Labor provisions, hours of labor, and minimum wages are covered in Article V, VI, and VII respectively. Article VIII on production control has recently received a severe test legally in the Belcher case which unofficially has resulted in its discard in the same manner as Article IX, the price fixing or cost protection article of the code, and recently the entire Code in the West Coast Region. Article X recognizes that the conservation and sustained production of forest resources is the dual responsibility of industry and the public in solving forestry problems. Following this, Articles XI to XIX refer to details of the administration of provisions in the Code.

THE CREATION OF ARTICLE X

When the forty representatives of the 30,000 timberland owners and operators in the United States met at Washington D. C. for the expressed purpose of creating the lumber code, they had one objective in mind--to stabilize the forest using industries in their region by securing financial aid from the federal government. Their industry had felt the depths of economic stagnation and depression as had all in-
dustry, and they were willing to try any social or economic experiment in self-government to overcome a very trying situation. These forty men were industrial leaders and public spirited citizens representing all lumbering regions in the nation.

At these Lumber Code conferences were forestry advisees representing the U. S. Forest Service, states, and private concerns. The foresters in recognizing the social and economic values of forests to the public welfare realized that the opportune time had come to put to reality the forestry doctrines which they had advocated for many years. Backed by a forestry-minded administration the forestry advisees of the industrial representatives pushed through the legislation which created "the rules of forest practice" which was later known as Schedule C. These forestry measures were adopted by the representatives of the 30,000 lumbermen with the assurance and the promise of governmental cooperation and aid.

For contracting with the government to establish labor provisions, minimum wages, hours of labor and "to carry out such practicable measures of the code in respect to conservation and sustained production of forest resources", the industry was to receive federal aid through loans at low rates of interest, relief from tax burdens, financial aid by price fixing, production control, and the elimination of destructive competition. The industrial representatives, although they objected to some measures of Article X, were influenced by the expressed request of forest conservation by President
Roosevelt, the pressure of business conditions in their industry, and the possibilities of federal aid and cooperation. The lumbermen and timberland operators in the nation had focused their attention mainly on other provisions of the code and temporarily disregarded the conservation article.

Even the drafting of Schedule C, the rules of forest practice, by a joint committee composed of nine industry members and six public, non-voting advisory representatives on forest conservation in each region caused little excitement on the whole by industry members.

It was not until the effect of an attempt at partial application of the code did the "shoe begin to pinch", and the first rigid test of Lumber Code brought forth indignant wrath from many of the operators on the West Coast. Some operators accepted the code, others disregarded it, some misunderstood it, and others openly opposed it.

This failure to apply the Article in the Douglas fir region, due in part to misunderstanding and indifference on the part of operators in the drafting of the Code, resulted in its discardment in May of 1935.

RULES OF FOREST PRACTICE (SCHEDULE C)

Before discussing the application of the Code, a thorough knowledge of the contents is necessary to understand its operation.

Schedule C as drafted by the Joint Committees provides that the assurance of conservation and sustained production
of forest resources shall include practicable measures to be taken by the operators to safeguard timber and young growing stock from injury by fire and other destructive forces, to prevent damage to young trees during logging operations, to provide for restocking the land after logging if sufficient advanced growth is not already present, and where feasible, leave some portion of merchantable timber (usually less mature trees) as a basis for growth and the next timber crop".

The rules of forest practice in the Douglas fir region and also in the Ponderosa pine region merely requires operators to leave their lands in a productive condition. It encourages this by recommending partially cutting in both regions. It rewards the effort of maintaining a sustained yield operation with a 10% additional allocation of cut.

The rules of forest practice in the Douglas fir region are listed under eight headings—(1) fire protection during and immediately following logging, (2) extension of cooperation in protection against fire, insects and disease, (3) conservation of immature trees and young growth, (4) provisions for restocking the land after cutting, (5) partial or selective logging, (6) leases and timber cutting rights, (7) industrial management plans, (8) sustained yield.

I. Fire Protection During and Immediately Following Logging.

"All logging operators shall make adequate provision for protecting from fire the forest lands under their ownership or control, for the protection during and immediately following logging of trees and groups of trees, mature or otherwise,
to be left for seeding purposes or as the basis for a new crop, and for the disposal or protection of the slash created by the logging operation." To attain and accomplish adequate fire protection during and following logging the goal set up by the following State Forest Fire Codes and Code measures is the reduction to one per cent of the annual loss in cut-over areas burned by forest fires.

To reach this goal they require the following:

1. Spark arrestors, fire tools, fire fighting equipment, protective devices, follow-up patrols, railroad tank cars (in the case of large operations) on all logging railroad lines.

2. The purchase of power pumps on large operations and hand pumps on small operations.

3. An adequate communication system on the operation.

4. The prohibition of the use of fuses in blasting during fire weather.

5. Rigid rules for smoking and using fires in the woods.

6. Fire plans giving consideration to fire prevention, detection, and suppression.

7. Attention to fire weather forecasts.

8. Felling at any season of the year all snags on the area over 25' high and 16" in diameter.


10. The submitting of plans for burning slash broadcast showing areas to be burned, methods and precautionary
measures in slash disposal contemplated. (If from the stand-
point of the forest engineer burning broadcast would do more
damage than not burning at all--then with permission of state
forester--no burning will be necessary.)

11. The fighting of fires on logging operation by
employees which are necessary and available to bring fire to
a patrol basis.

12. The correlation but not replacement of each
operator's plan with the general system of fire protection
but in no way to relieve the operator of his responsibility
in protecting his own operating area.

II. Extension of Cooperation in Protection Against Fire,
Insects, and Disease.

This portion of the Code states that the industry shall
endeavor to secure cooperation from all timberland owners and
public agencies in combating fire, insect epidemics and
disease infestations.

III. Conservation of Immature Trees and Young Growth.

On uncut areas, clear cut areas in which there are trees
reserved from cutting, and on partially logged areas special
care is to be taken or, in words of the code, shall be taken in
the protection of growing stock from logging damage by avoiding
damage from falling trees, by unnecessary swampings, and by
keeping skidding trails to a minimum width.

IV. Provisions for Restocking the Land After Cutting.

"On all areas which are clear cut there shall be adequate
provision for reseeding the cutover area either from adjacent
uncut areas, groups of seed trees or from single seed trees in defective stands." The general standard is to be that no area clear cut shall be more than a quarter mile from any body of timber which will furnish an adequate amount of seed.

In order to furnish a reasonable source of seed where clearcutting is practiced and in the absence of suitable seed trees, logging may be conducted in such a practical manner as to attain the objective by:

a. Leaving marginal long corners between settings (to be selectively logged if desired.)

b. Leaving strips of timber along creeks, across valleys, along ridges, or natural firebreaks.

c. Leaving immature timber wherever it occurs under conditions which permits its preservation.

d. By such methods of logging as staggered settings and the leaving of uncut settings for as long a period as practicable.

Where financially advantageous planting or direct seeding may be substituted for the above measures.

V. Partial or Selective Logging.

Partial or selective logging as recognized in its various forms of tree, group, and area selection is advocated by the code as a method particularly adapted to maintain forest growth and to result in favorable conditions for restocking. The Code takes the responsibility through its forest engineer to advise operators with regard to economic selective logging and to further the adoption of this method where practical.
VI. Industrial Management Plans.

Industrial management plans concerning the methods with which each operator proposes to achieve the declared objective of the Article X is recommended by the code authority who, incidentally, accepts and approves of the plans of each operation.

VII. Sustained Yield.

"The west coast rules of forest practice recognizes that sustained yield is the most important ultimate objective in bringing about proper forest management and regulation within the industry and pledges itself to take such measures within the industry to attain the goal of sustained yield. In the attainment of this goal factors of major importance are fire protection of cutover and young growth stands and their maintenance in the highest possible productive condition.

LOGGING PRIOR TO THE CODE

The Lumber Code was an experiment in industrial self-regulation of which the "conservation of forest resources" was a part. Before one can fairly discuss its application in the line of forest conservation an understanding of logging prior to the enactment of the Code with its Article X is essential.

The tapping of the Douglas fir region for timber began in the establishment of the first sawmill in the Douglas fir region in 1827 by John McLoughlin. From that historic moment the West Coast region with its 29,001,910 acres of forest land (82% of the total land area in Oregon and Washington west of the summit of the Cascades) became recognized as the greatest
lumber producing region in the world. In attaining this recognition the industry stripped of its forest cover some eight or nine million acres of forest land of which about three million acres was converted into agricultural land.

The logging practice developed from an unintentional selective logging system in the ox team days to a heavy machinery, high speed, logging system. To meet the rapidly rising demand for lumber prior to 1920 a mobile heavy machinery, high speed system was necessary so that an operator could enter an area, clear cut the timber, yard out quickly all logs which would produce lumber, broadcast burn the slash to remove for a time at least an excessive fire hazard and also to comply with state law, and then move on to another logging chance. With the demand for lumber rising and lumber prices at a peak, operators constructed costly milling and logging units which would take care of the demand. Then, suddenly, the demand for lumber decreased, prices dropped and operators were left with large logging and milling units on their hands with high depreciation costs and carrying charges to meet. Their policy following the decline of the demand was that of a "cut out and get out" or a forced liquidation policy. Consequently, inventories piled up in their yards and price of lumber dropped even lower. As a result mills were forced out of business and all but a few operators were operating sub-marginal concerns. This liquidation policy did not lend itself to forestry practices. The only measures adhered to in most operations were State Forestry Laws.
As a result of forced liquidation the some 2,100,00 acres logged after 1920 were left, in the main, in a non productive condition as indicated in the following table:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Acres</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>well stocked</td>
<td>260,038</td>
<td>12%</td>
</tr>
<tr>
<td>medium stocked</td>
<td>1,166,438</td>
<td>57%</td>
</tr>
<tr>
<td>poorly stocked</td>
<td>665,515</td>
<td>32%</td>
</tr>
<tr>
<td>non restocked</td>
<td>42%</td>
<td></td>
</tr>
</tbody>
</table>

Forest survey of the Douglas Fir Region, 1933, Pacific Northwest Forest Experiment Station.

Prior to 1920 the condition of the 3,214,435 acres is summarized in the following tabulation:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Acres</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>well stocked</td>
<td>900,038</td>
<td>28.0%</td>
</tr>
<tr>
<td>medium stocked</td>
<td>1,166,438</td>
<td>30.3%</td>
</tr>
<tr>
<td>poorly stocked</td>
<td>482,444</td>
<td>15.0%</td>
</tr>
<tr>
<td>non restocked</td>
<td>665,515</td>
<td>20.7%</td>
</tr>
<tr>
<td><strong>total</strong></td>
<td>3,214,435</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

R. W. Cowlin, "No Trees for Old"--1935 ANNUAL CRUISE

Even though the acreage logged prior to 1920 has had a longer period to restock naturally the condition of these lands from a productive standpoint are even in poorer shape than those logged after 1920. However, in the fir region that on the average every acre is likely to be burned once every 25-30 years clearly indicates the cause for non productivity of our logged lands. On the face of these figures it is not fair to say that all operators are devastators working to the detriment of public welfare. Unquestionably some operators were and still are devastators, but the financial state of the lumbering industry on the West Coast today does not lend itself to intensive forestry practice.
THE ENFORCEMENT OF ARTICLE X

The Lumber Code Authority has delegated the West Coast Lumbermen's Association to carry out the provisions of the Code. The association appointed Russell Mills, a logging engineer; and two assistants, also loggers, in charge of carrying out the Rules of Forest Practice which may be divided into two major provisions—protection and restocking future growth on the areas logged.

These forest engineers contact the 2,450 mills in the region to sell operators the idea of sustained yield and selective logging as well as requiring absolute observance of the fire provisions of the code. Their approach is that of an educator and salesman of forestry measures provided in Schedule C. Without any power except to recommend Code authorities the withdrawal of the Blue Eagle and making the operator subject to a fine, they confine their attempt at enforcement of only the minimum requirements in regards to fire protection.

THE APPLICATION OF ARTICLE X ON THE WEST COAST

In the problem of fire prevention and fire protection Article X has accomplished one of its main purposes—requiring all operations both large and small to be adequately equipped with fire tools and equipment. Last year's fire record shows a definite decrease in the number of fires started on logging operations. This is the result of this requirement which has made many operators "fire conscious" and has forced the small operator to purchase fire fighting equipment if it expects to operate.
In attaining results on other provisions of the Code, the Rules of Forest Practice have failed in their application on most operations. One operator, the Weyerhauser operation, has applied for sustained yield with a planned annual cut of 325,000,000 board feet a year and operating on an area of 521,000 acres. To approach a sustained yield unit the Forest Service departed from a traditional policy in letting an optional contract on a large block of timber and to this company.

A number of restocking plans have been submitted. Crown-Willamette Paper Co. has developed selective logging operations on a nearly pure spruce stand on Siltcoos Lake and in an over-mature fir, spruce, and hemlock stand on the Klatskanine tract near Astoria. These operations were developed before Article X came into existence.

At Westfir, Oregon, the Western Lumber Company operating on a Forest Service sale is securing its restocking of logged lands by leaving single seed trees. The defective seed trees are left and even though some are felled by wind there remains an ample number to restock the area satisfactorily. Snoqualmie Falls Lumber Company, Long-Bell's operation and the Polson Logging Company have submitted restocking plans to the Code Authorities. One Washington operator is selectively logging not because of Code provisions but because of conk.

On other operations in the region little attention is paid to restocking plans, care in logging for the prevention of
damage to remaining standing trees or protection of young growth. However, except where it is financially impossible the provision providing for the felling of snags is adhered to.

**Reaction of the Forest Service, the Code Authorities, the Operators to Article X of the Lumber Code.**

The author has discussed the application of Article X in the Douglas fir region with many forest service advisory members of the code, forest engineers of the West Coast region and Ponderosa pine region, and many managers, superintendents, and operators of representative small and large operations.

The United States Forest Service.

The position which the Forest Service assumes in the application of the Article is that of an observer and advisor. The Service also approves of sustained yield plans, aids operations in attaining sustained yield through timber sale contracts, recommends forestry practices, and carries on research in forestry measures recommended by the code.

Their reply to the question of the reaction of the operator will be and is that the cooperation received has been excellent. The fire prevention and protection measures adopted by the operator has been an immediate and decided improvement and that in time the other measures in the Code will be accepted. As to the attainment of sustained yield and selective logging in this region the Forest Service believes that after a thorough study has been made of the operations in the region augmented by federal research and experimentation a solution to
these problems will result in their application.

The Lumber Code Authority

The forest engineers of the West Coast and Yellow pine region state that the first attempt in Code enforcement is fire protection and slash disposal. They cover their respective regions, talk with the operators about selective logging and sustained yield possibilities, ask them to make out management plans (see appendix) and see that fire protective measures are being enforced. Usually a field man of the Forest Service accompanies the engineer as they look over operations in the state.

To date the West Coast region has published a hand book of Forest Practice Rules which is the only publication of its kind in any division under the Code authority.

Russel Mills, Divisional forester for the region, in commenting on the Code states, "The Rules of Forest Practice, providing for each division the instruments through which the intent of Article X can be translated into woods action, are based on a principal which may prove of more importance than the rules themselves. This underlying principle makes it the duty of the logging operator to leave his timber lands so that they are in good productive condition when he has removed or harvested all or part of the original crop."

The Western Pine Division in Oregon and Washington has circulated to their operators Operation Maps (see appendix), questionnaires, and report forms. They have not been faced with the reactionary group to Code practices as have been felt by the fir division. Their operations in the past have been practicing a selective or reserve seed tree form of logging and the question of leaving logged areas productive is not such a difficult one. The pine division has gone ahead in a systematic
fashion to secure all pertinent data from operations in regards to fulfillment of Code Measures. Their accomplishments toward this end have proved their value in that recently the pine division operators voted to maintain and enforce the Code.

In summarizing the work of the Pine Division during the first five months of operation, C. S. Martin, Divisional Forest Engineer, states, "In the western pine division we have had real co-operation from practically all of the operators. They have in all cases met our field men more than half way, and there are few places where better fire protection has not been attained, more reproduction and small trees left on the ground, and a more careful and systematic disposal of slash areas been accomplished. Most men are reasonable, and when asked to do certain things because those things were good insurance, good business practice, and obligations which their own industry had undertaken voluntarily in an effort to improve the general situation, each was willing to do his part insofar as he was able. We cannot expect perfection in five short months, but we can report progress in all lines, a real interest and effort on the part of individual companies."

Reaction of the Large and Small Operator.

Most large operators will agree and are in favor of one thing—that the fire protection measures in the Code are a great benefit to the industry and that the measures should be enforced rigidly. On the angles of selective logging and sustained yield each operator has his own opinion and in every case this opinion differs. Some will say that to leave lands productive all that must be done in this region is to cut clear, broadcast burn and reproduction will spring up. Others will state that the disposal of slash is the greatest problem in the region. That immediate tax relief and federal loans at a low rate of interest will be necessary before sus-
tained yield will become a reality was mentioned by several operators. Statements such as these were discussed: "That 60% of the Douglas fir region will lend itself to selective
logging"; "operators let it (Article X) be crammed down their throats"; "we can't afford to pay attention to the Code"; "the good features of the Code will be enacted in state legislation"; "selective logging must be put to test before it will be adopted as good forestry practice"; "most operators are willing to cooperate if competitors in the south are willing to comply in a way that the spread of cost of execution will be equal"; "strict enforcement will mean the elimination of the small operator".

An agent for twenty small mills was interviewed by the author. The lumber agent believed that the Code was not applicable to the small operator. He stated that fire protection measures were complied with only insofar as to get by and not in spirit. Cost of fire tools come too high for the small operator who is asked to purchase so many axes, shovels, etc. even though there is more equipment than the number of men working on the operation. Some operators were required to have pumps although there was no water on the land. Most objections were those requiring a direct out-of-pocket expense. Selective logging by the small operator was declared impractical. The agent also declared that the few small operators have studied working units.

During the course of the interview the question of small mills bring a destructive influence on lumber prices was discussed. The reply to this question was "can the tail wag the dog?". The agent estimated that less than 5% of the lumber on the market is produced by small mills (mills whose output is
30,000 board feet or less per day).

To check this statement the following figures on production of small mills in the West Coast region was supplied by Mr. Lodewick of the Pacific Northwest Forest Experiment Station:

<table>
<thead>
<tr>
<th>Mill capacity</th>
<th>1931</th>
<th>1932</th>
<th>1933</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-10,000 board feet</td>
<td>1.17%</td>
<td>2.11%</td>
<td>1.02%</td>
</tr>
<tr>
<td>11-20,000 &quot; &quot;</td>
<td>1.73%</td>
<td>2.77%</td>
<td>1.45%</td>
</tr>
<tr>
<td>21-35,000 &quot; &quot;</td>
<td>2.31%</td>
<td>3.15%</td>
<td>3.41%</td>
</tr>
</tbody>
</table>

CONCLUSIONS

The author is convinced that outside of the influence of other articles in the lumber code, the failure to apply Article X to the Douglas fir region is due to the following factors: (1) The operator's lack of careful study and analysis of the major provisions in the article; (2) the operator's lack of knowledge of his own operation in reference to its workability in applying Article X; (3) failure of the government to immediately respond to their part of the contract which assures the industry of federal cooperation and aid in securing loans at low rates of interest, tax relief, etc.; (4) the lack of salesmanship on the part of the code authorities and forest service in promoting the execution of the two major provisions of the code.

(1) The first cause for failure of application is evidenced by the many interviews with lumbermen on Article X. Their interpretation of the article varied in every respect. The industries in the West Coast region have not been cooperating and working towards one main objective—the leaving
of logged off lands in productive condition—because of a thorough misunderstanding of what is expected of them.

(2) The operators lack of knowledge of his own operation in reference to application of code measures seems to be the consensus of opinion of several operators who have stated that 90% of the operators have not studied their operations with the intent of forest management. It is said that 60% of the region lends itself to selective logging in either tree, group or area selection form. Yet less than 10% of the operators have surveyed their operation with the intentional objective of applying it to some form of selective cutting or seed tree method.

(3) The federal government has given little aid in relieving the financial burdens of the operators in any forms of loans at low interest rates, tax relief aid, etc. The cooperation of the Forest Service with the Code Authorities have in every case been commendable according to the operator and the code administrator in the West Coast region. The right of labor to organize, the snag disposal measure and other forestry measures recommended have created additional out-of-pocket expenses and labor difficulties which have become a difficult problem for marginal and sub-marginal operators to solve. W. B. Greeley has said, "We can not expect much forestry from industries in poor financial condition which compels their main effort in liquidation of their investments and the retirement from an unprofitable or uncertain enterprise."

(4) Lack of salemanship on the part of code administrators and the forest service has been a major factor in the failure of application of Article X. The author believes that this
failure of application was due in part to the misunderstanding of the operator as to what was expected of him. This misunderstanding was caused by an inrush of sustained yield demands instead of the presentation of the two major provisions of the code—protection from fire and provisions for restocking or promoting future growth on the area logged. The "cart must come before the horse" is truly analogous with the statement that before West Coast operators reach a sustained yield basis fire protection and restocking methods must supersede. Sustained yield requires fire protection and restocking methods, but before a sustained yield basis is secured the benefits of additional costs of maintaining an adequate fire protection system and using logging systems that will leave land productive must be realized.

The author contends that the West Coast Division is on a regional sustained yield basis and with the execution of the provisions which will leave logged land productive the region will maintain its regional sustained yield basis for some time to come. The annual lumber production in the West Coast region is 6,000,000,000 board feet. It is safe to assume that the production will remain fairly constant in the future. With this assumption as a basis, it will require 84 years to cut our standing merchantable volume of all species in the Douglas fir region in both private and public ownership.

According to the Forest Survey Statistics (see appendix) this region has 14,527,810 acres in coniferous timber types over about 20"DBH. Also about 7,046,504 acres of commercial
coniferous timber types under about 20" DBH. Assuming that 25% of the timber types above 20" DBH is over-mature and not producing wood—then the remaining area of 10,895,424 acres plus 7,049,504 acres are producing wood fiber. Further statistics show that in Oregon 79% of the commercial coniferous types are in I, II, and III site classes and in Washington 74.4% of the area in the same three site classes.

At 75% restocking and growing at the rate of 400-600 board feet per year (an average of 500 feet), the total area in sites I, II, and III will be equal to 13,908,248 acres producing 6,908,248,500 board feet of wood fiber annually. The remaining acreage of 5,394,328 acres in site classes IV and V and with a 50% restocking will produce 8,000,000 board feet. Combined with the 5,471,138 of restocking logged off lands growing at an average rate of 200 board feet a year and producing annually 1,094,760 board feet, the total annual growth of the Douglas fir region is 8,602,471,200 board feet.

With assurance that lands will be left productive and an adequate provision to regulate overproduction and promiscuous waste, the West Coast region can operate on a regional sustained yield basis for many years until the time has come for intensive forest management and individual sustained yield operations on the West Coast to pay their own way.

Although the Lumber Code has been discarded by the West Coast lumbermen, Article X has accomplished many definite objectives. Article X has made lumber operators "forestry-conscious" if not "forestry-minded"; it has forcefully brought to
their attention that their responsibility to the public lies in harvesting a great natural resource in a manner which will leave logged lands in a productive condition. The Code has united the industry in an attempt at industrial self-government. Although successful for a time, this first attempt may result in the salvation of the industry and forestry on the West Coast. If the industry fails in industrial self-regulation, a "forestry-minded" administration backed by a "forestry-conscious" citizenry will assume the responsibility of maintaining in perpetuity a great national resource for the mutual welfare and benefit of posterity.
APPENDIX, pages 20-32
OPERATION MAPS
WESTERN PINE DIVISION, LCA.

Company: ......................................................
Camp: ......................................................
Range: ......................................................
Meridian, Sections: ......................................

LEGEND
Main Line Railroads...........................................
Railroad Spurs...............................................+++
Truck Roads....................................................
Setting or Timber Boundary..............................--
Fire Lines or Trails..........................................--
Section Line..................................................*
Camps..........................................................

Area Logged..................................................
Area Slash Disposed of....................................
Area Reserve Stand........................................
Area Undisposed Slash....................................
Single Seed Trees..........................................
A SAMPLE RESTOCKING PLAN MAP

(1) Small, rough, mature Douglas fir and western hemlock.
(2) Defective Douglas fir seed trees.
(3) Nonmerchantable western hemlock and Douglas fir.
(4) Area logged and slash burned.
(5) Fire acres, 30-40 year old western hemlock with few defective, old growth Douglas firs.
(6) Hardwood river bottom, some second growth Douglas fir and western hemlock.
(7) and (8) Settings reserved 3 to 5 years till completion of logging on this line.
(9) Six acres defective, mature western hemlock, few defective Douglas firs.
(10) Five acres old homestead clearing, good stand 35-year Douglas fir.
(11) Nonmerchantable Douglas fir and western hemlock stand.
(12) Rocky canyon, some western hemlock and rough, old growth Douglas fir.
I. FOREST PROTECTION DURING AND IMMEDIATELY FOLLOWING LOGGING:

1. __________________________

2. (a) ________________________
(b) ________________________
(c) ________________________

3. __________________________

4. __________________________

5. __________________________

6. __________________________

7. __________________________

III. CONSERVATION OF IMMATURE TREES AND YOUNG GROWTH:

1. __________________________

2. __________________________

3. __________________________

4. __________________________

5. __________________________

6. __________________________

IV-V RESTOCKING LAND - SELECTIVE LOGGING:

VI. PREPARATION OF INDIVIDUAL FIRE AND MANAGEMENT PLANS:
<table>
<thead>
<tr>
<th><strong>Logging Operation Location</strong></th>
<th><strong>Township</strong></th>
<th><strong>Range</strong></th>
<th><strong>Section</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Camp Name or Number</strong></td>
<td><strong>Camp Superintendent</strong></td>
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<tr>
<td><strong>Destination of Logs</strong></td>
<td></td>
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<tr>
<td><strong>Source of Stumpage</strong></td>
<td><strong>Private</strong></td>
<td><strong>Indian</strong></td>
<td><strong>National Forest</strong></td>
</tr>
<tr>
<td><strong>Extent of Holdings (acres)</strong></td>
<td><strong>Owned</strong></td>
<td><strong>Under Contract</strong></td>
<td><strong>Tributary</strong></td>
</tr>
<tr>
<td><strong>Type of Operation</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Method of Cutting</strong></td>
<td></td>
<td><strong>Area Logged since June 1, 1934</strong></td>
<td></td>
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<tr>
<td><strong>Method of Slash Disposal</strong></td>
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<td></td>
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<tr>
<td><strong>Condition of Old Slashings</strong></td>
<td></td>
<td><strong>Area</strong></td>
<td><strong>Suggestions for Disposal</strong></td>
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<tr>
<td><strong>Fire History of Company</strong></td>
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<tr>
<td><strong>System of Fire Protection</strong></td>
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<tr>
<td><strong>Condition of Company’s Lands:</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>UNCUT - Beetle Infestation</strong></td>
<td><strong>Percentage of loss</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Fire Killed Timber</strong></td>
<td><strong>Acres</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Types of Stands</strong></td>
<td><strong>Mature &amp; Overmature</strong></td>
<td><strong>Acres</strong></td>
<td></td>
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<tr>
<td><strong>Growing</strong></td>
<td><strong>Vigorous</strong></td>
<td><strong>Acres</strong></td>
<td></td>
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<tr>
<td><strong>Ponderosa Pine Type</strong></td>
<td><strong>Acres</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>White Pine Type</strong></td>
<td><strong>Acres</strong></td>
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<tr>
<td><strong>Mixed Larch &amp; Douglas Fir</strong></td>
<td><strong>Acres</strong></td>
<td></td>
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<tr>
<td><strong>Lodgepole Pine</strong></td>
<td><strong>Acres</strong></td>
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<tr>
<td><strong>Sugar Pine Type</strong></td>
<td><strong>Acres</strong></td>
<td></td>
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<tr>
<td><strong>Other Mixtures</strong></td>
<td><strong>Acres</strong></td>
<td></td>
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<tr>
<td><strong>Recommended Methods of Logging</strong></td>
<td></td>
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<tr>
<td><strong>Reserve Stand - Per Acre</strong></td>
<td></td>
<td><strong>Type</strong></td>
<td><strong>Seed Trees Per Acre</strong></td>
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<tr>
<td><strong>Disposition of Cutover Lands</strong></td>
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<tr>
<td><strong>Logging and Mill Studies - Any such made?</strong></td>
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<tr>
<td><strong>Company Interested?</strong></td>
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</table>
(3) Single defective trees, which are found abundantly in certain parts of the Douglas fir region, give little if any profit to the logger, yet are a suitable source of seed if they survive the slash fire and initial windthrow.

(4) Long corners and islands of timber. In most logging shows in hilly country there are patches of timber either so inaccessible or so low grade that they may well be left standing as a seed source.
(5) Nonmerchable timber on upper slopes. In narrow valleys where the logged area extends up the slopes not over a quarter mile, the timber of the upper slopes can be counted upon to restock the lower slopes.

(6) Leaving patches of immature timber will furnish a source of seed supply for future crops.
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INTERVIEWS

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Mr. Tanner, Blodgett Lumber Company
Mr. Buoy, Lumber Wholesaler for small mills.
Mr. Bishoprick, Bishoprick Lumber Company

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