

NORTHERN CALIFORNIA BLOWDOWN  
COMMITTEE REPORT

April 1, 1963

## Introduction

On November 1 the Chairman of the California Forest Pest Control Action Council appointed a Northern California Blowdown Committee under the Chairmanship of George Stegall, Deputy State Forester, to appraise the insect hazard from timber blowdown in the Columbus Day storm. This Committee, composed of public and private representatives, met in Redding on December 4 to decide on a course of cooperative action to evaluate the situation and take steps needed to minimize the insect damage. The Committee felt that there was a need to gather more information about the amount and extent of blowdown, progress in salvage, and evidence of insect buildup. This resulted in the submission of a questionnaire to all major timber landowners or managers in the Sierra-Cascade area on December 18, 1962, with a request that the questionnaire, together with detailed maps of blowdown areas be returned by February 1, 1963. No questionnaires were sent to the north coast because they planned to handle the survey needs on a local basis.

On February 4, Ralph Hall from the Regional Office of the U. S. Forest Service met with Dan Dotto from the California Division of Forestry, at the Division of Forestry headquarters in Redding where an analysis of the questionnaire was made in cooperation with the local Division personnel. There follows a resume of the analysis:

### Questionnaire Response

The overall response to the questionnaire was excellent. One hundred percent of the major landowners or managers contacted in the Sierra-Cascade area responded. Questionnaires were returned from 15 major private timber landowners or managers and one State agency covering a gross timbered area of 1,682,033 acres. Six National Forests, one National Park, and the Bureau of Land Management reported for a gross timbered area of 9,191,000 acres making a total of 10,873,033 acres for the pine region. Some of the maps were not as detailed as had been hoped, but overall, most of the information requested was supplied. Most of the confusion in detailed mapping was the designation between concentrated and scattered blowdown and some interpolation was necessary in the analysis.

## Total Estimated Blowdown

The previous estimate on total volume of timber blowdown in all of Northern California was 430 million board feet. The new estimate resulting from the questionnaire is 583 million board feet. The previous estimate for the pine region was 271 million, and it now stands at 424 million on 1.5 million acres.

Broken down by ownership, the previous estimate for State and private in the pine region was 159 million board feet; this has now almost doubled to 286 million. This, together with estimated private timber blowdown in the Douglas-fir region, totals 437 million board feet for private ownership.

The original estimates for the Forest Service in early November was 77 million. These estimates were revised upward in late November to 109 million. The questionnaire covering the pine region, plus the old estimate for the Six Rivers National Forest, shows the present loss estimates to be 138 million. In addition to the National Forest estimates, an estimated 2.4 million was reported blown down on National Park and Bureau of Land Management lands, bringing the current estimates for Federal lands to 145.4 million.

## Species Composition

The questionnaire shows that of the 424 million feet blown down in the pine region, 46 percent is estimated to be in the true fir types with most of it white fir. Ponderosa pine loss was second, comprising 28 percent of the total, Douglas-fir was third with 14 percent, and sugar pine fourth with 9 percent. Incense cedar and other species make up the remaining 3 percent.

## Where the Blowdown Occurred

The questionnaire shows that the highest loss occurred on cut-over lands with major concentrations on areas cut over during the last five years. In the pine region, 40 percent of the loss occurred in virgin timber areas and 60 percent in cut-over stands. Some of the blowdown in virgin stands was around the edge of cuttings.

On private property the loss in cut-over lands amounted to 154 million board feet, or 54 percent of the total private blowdown. On National Forest lands the loss on cut-over areas amounted to 100 million or 73 percent of the total.

## Progress in Salvage

Real progress has been made in the salvage of blowdown in the pine region. On private lands 100 million or 35 percent had been salvaged by February 1. On National Forests an additional 18 million or 13 percent has been removed. This makes a total of 118 million or 28 percent overall which has been salvaged by February 1. In addition, the Forest Service has sold 38 million, bringing their total salvaged or sold to 41 percent. Additional salvage has been in progress all winter and it is expected that ultimately 361 million or 85 percent will be salvaged in the pine region.

## Intensity of Loss by Ownership

The questionnaire furnished an estimate of acres of timber blown down by ownerships and intensities. On private land covering a gross timbered area of 1,682,033 acres, 87,392 acres had concentrated blowdown and 169,824 acres had scattered blowdown for a total of 257,216 acres or 15 percent of private timberlands with a blowdown problem. On Federal land covering a gross timbered area of 9,191,000 acres it was estimated that 148,752 acres had concentrated blowdown, and an additional 1,098,744 acres with scattered blowdown for a total of 1,247,496 acres or 14 percent of Federal timberland with a blowdown problem.

The total for all ownerships was 236,144 acres with concentrated blowdown and 1,268,568 acres with scattered blowdown for a total of 1,504,712 acres or 14 percent of the timberland in the pine region with a blowdown problem.

The questionnaire also showed that the loss per acre on blowdown areas varied considerably by ownerships. On the private 257,216 acres of blowdown it was estimated that there was 286 million board feet blown down for an average 1,110 board feet per acre. The estimate on Federal land was considerably less with an estimated 138 million board feet on 1,247,496 acres or only 110 board feet per acre. The total for all ownerships was 424 million board feet blowdown on 1,504,712 acres with an average of 282 board feet per acre.

## The Problem Ahead

The action taken by private, State and Federal interests are commendable and much has been done during a four-month period. However, if we are to complete the salvage on schedule much more remains to be done.

Why should rapid salvage operations be stressed? One reason, of course, is economics in order to get the material out of the woods before deterioration starts. Another is the potential insect and disease

buildup. Still another is to minimize the fire hazard. The potential for insect buildup varies by both tree species and insect involved. For example, ponderosa pine not salvaged by May 1963, is a prime target for attack by the western pine beetle. Broods from the first attack will emerge during June 1963 and will attack standing green timber for the beginning of a potential blow up. Results of the questionnaire show that there will be 48 million board feet of ponderosa pine which will not be salvaged by July 1, 1963. It shows further that there is an estimated 14 million board feet which will never be salvaged.

The mountain pine beetle will attack sugar pine blowdown in May of 1963 and partial broods may emerge in August of 1963 but the main tree killing will be delayed until June of 1964. The questionnaire shows that there is an estimated 7 million board feet of sugar pine which cannot be salvaged.

The Douglas-fir beetle will attack Douglas-fir blowdown in late May of 1963 and broods will emerge and start killing standing trees during the same period next year. The estimate is that there will be 14 million board feet of Douglas-fir which cannot be salvaged.

We have little past experience on the buildup potential of insects in most of the other tree species. Our best guess is that white fir will constitute a potential hazard because of the heavy volume blown down and the extremely high populations of fir engraver beetles which are overwintering throughout the blowdown area. If such a problem develops we can expect tree killing about June 1964. The questionnaire shows an estimated 28 million board feet of white fir which cannot be salvaged.

Past experience has shown that knobcone pine blowdown is a real hazard in building up Ips confusus. This beetle is a real threat not only to knobcone but also to ponderosa pine in the near vicinity. The ips threat is imminent and we can expect tree killing by early summer this year. No estimates are available of the number of knobcone blown down but since the blowdown occurred on a mass basis over many acres the threat is a very real one. We do not expect the lodgepole pine blowdown to create a hazard in the buildup of the mountain pine beetle; however, we have never before experienced the situation where lodgepole, like knobcone, blew down over vast areas with such high concentrations.

If insects build up in the unsalvaged material at the rate we expect, we are going to be faced with a serious problem in the next two or three years unless further steps are taken to minimize the hazard. The questionnaire shows that there are about 200,000 merchantable trees containing about 63 million board feet of timber on about 523,000 acres which will never be salvaged.

One measure being recommended which we think will help minimize the hazard in ponderosa pine and sugar pine is to sever trees from the roots where the roots still remain in the ground. The reason such trees are such good bug fodder is due to the fact that the vigor of the tree is reduced and the roots that remain active keep the cambium area green, thus providing an ideal insect environment. By cutting off the moisture supply from the roots the resultant stem should not be any more hazardous than normal logging slash or cull logs. In order for this method of hazard reduction to be most effective the trees should be severed from the roots or the tree girdled as soon as possible. The timing here should be as early in the spring as possible.

The other measure of insect hazard reduction is to keep a very close watch on the windthrown and damaged trees for evidence of bark beetle attack. If they fill up with primary bark beetles they should be treated by spraying with insecticides. Direct control is a very costly operation and we should do everything in our power to increase our salvage effort. Every tree salvaged, if properly timed, means one less tree to build up insects.

We might consider the possibility of hazard reduction in the mass knobcone blowdown areas through the use of fire during the early spring. This may be a drastic measure, but it could save headaches in the long run.

The questionnaire shows that a high percentage of the concentrated blowdown will be salvaged. We expect our major insect problems where single trees and small groups of trees have been blown down in inaccessible areas. One of our biggest problems is to find these scattered trees. Everyone has been so busy to date in finding, marking, and logging concentrated blowdown that too little attention may have been given to the scattered material. In order to get more detailed information on scattered trees, additional supplemental surveys may be needed.

In summary, three suggestions are offered in order to minimize the immediate problem ahead:

1. Continue an aggressive program of salvage and, if possible, expand the program to include scattered blowdown.
2. In areas where no salvage is possible, take steps to reduce the hazard by severing the roots from ponderosa and sugar pine and reduce the hazard in knobcone pine areas through the use of fire.
3. Conduct additional supplemental surveys to obtain more information on scattered blowdown.

TABLE 1

ESTIMATED BLOWDOWN TIMBER  
BY SPECIES, VOLUME AND OWNERSHIP - PINE REGION

<u>SPECIES</u>	<u>STATE &amp; PRIVATE</u>		<u>FEDERAL</u>		<u>ALL OWNERS</u>	
	Volume		Volume		Volume	
	<u>Million Bd. Ft.</u>	<u>Percent</u>	<u>Million Bd. Ft.</u>	<u>Percent</u>	<u>Million Bd. Ft.</u>	<u>Percent</u>
WF	126	44	68	49	194	46
PP	80	28	38	28	118	28
DF	40	14	20	15	60	14
SP	28	10	9	7	37	9
Others	12	4	3	1	15	3
<b>Total</b>	<b>286</b>	<b>100</b>	<b>138</b>	<b>100</b>	<b>424</b>	<b>100</b>

TABLE II

ESTIMATED VOLUME SALVAGED BY FEBRUARY 1, 1963

<u>SPECIES</u>	<u>STATE &amp; PRIVATE</u>		<u>FEDERAL</u>		<u>ALL OWNERS</u>	
	Volume		Volume		Volume	
	<u>Million Bd. Ft.</u>	<u>Million Bd. Ft.</u>	<u>Million Bd. Ft.</u>	<u>Million Bd. Ft.</u>	<u>Million Bd. Ft.</u>	<u>Million Bd. Ft.</u>
WF	45	6	51			
PP	26	6	32			
DF	13	4	17			
SP	14	2	16			
Others	2	0	2			
<b>Total</b>	<b>100</b>	<b>18*</b>	<b>118</b>			

\* An additional 38 million has been sold or advertised.

TABLE III

## ESTIMATED VOLUME WHICH CANNOT ULTIMATELY BE SALVAGED, BY SPECIES

<u>SPECIES</u>	<u>STATE &amp; PRIVATE</u>		<u>FEDERAL</u>		<u>ALL OWNERSHIP</u>	
	<u>Volume Million Bd. Ft.</u>	<u>Percent of Total Vol. Blown Down</u>	<u>Volume Million Bd. Ft.</u>	<u>Percent of Total Vol. Blown Down</u>	<u>Volume Million Bd. Ft.</u>	<u>Percent of Total Vol. Blown Down</u>
*WF	10	8	13	26	28	14
PP	5	6	9	34	14	12
DF	5	13	9	45	14	23
SP	2	7	5	55	7	19
Total	22	8	41	30	63	15

\* White Fir is estimated - no actual figures available from questionnaire.

TABLE IV

## ESTIMATED ACRES OF BLOWDOWN

<u>OWNERSHIP</u>	<u>CONCENTRATED</u>	<u>SCATTERED</u>	<u>TOTAL</u>
State & Private	87,392	169,824	257,216
Federal	148,752	1,098,744	1,247,496
All Ownership	236,144	1,268,568	1,504,712

TABLE V

## INTENSITY OF LOSS BY OWNERSHIP

<u>OWNERSHIP</u>	<u>ACRES</u>	<u>VOLUME BLOWN DOWN BOARD FEET</u>	<u>AVG. VOLUME PER ACRE BOARD FEET</u>
State & Private	257,216	286,065,000	1,112
Federal	1,247,496	137,936,000	110
All Ownership	1,504,712	424,001,000	282



