



# STATE FOREST NOTES

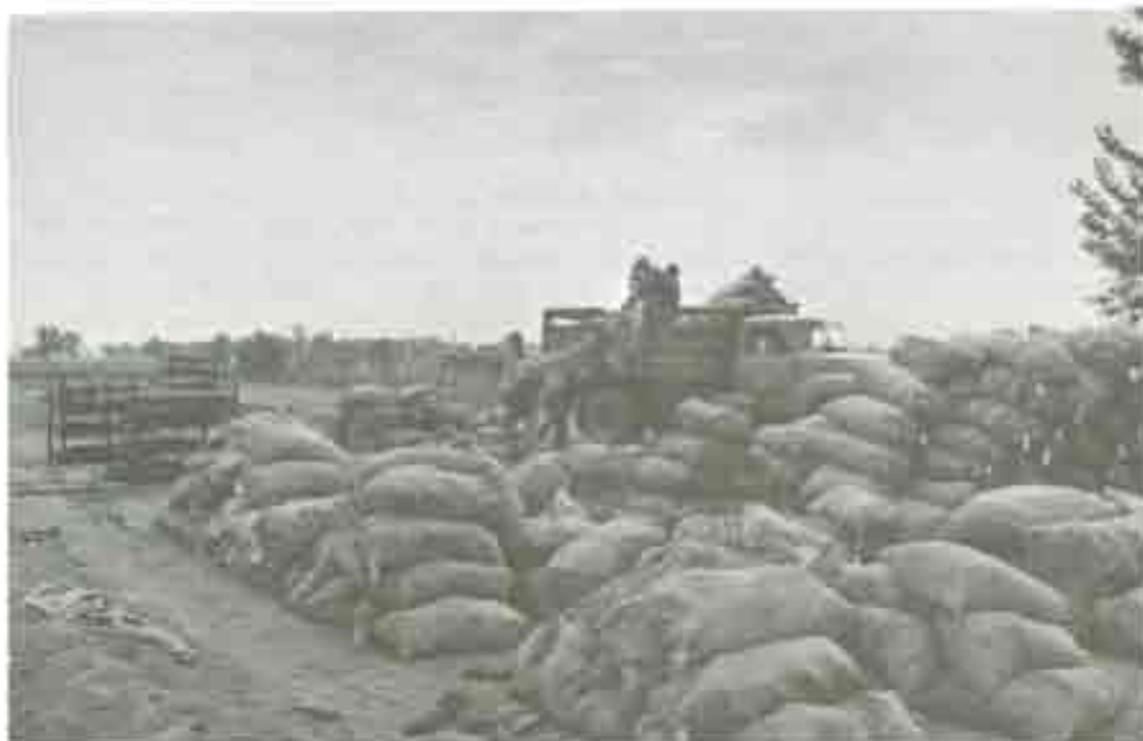
Office of the State Forester  
Sacramento

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## CALIFORNIA CONE CROP FOR 1971<sup>1/</sup>

Annual cone crop data are compiled from reporting forms completed by California Division of Forestry and U. S. Forest Service, Region 5, personnel. One report form is requested from Division field units for each State Forest and forested county, and from each Ranger District of the Forest Service.



Unloading of cones at Davis Headquarters Forest Nursery during a bumper crop year.

<sup>1/</sup> This report was compiled and summarized by G. J. Eden, Forester II, California Division of Forestry, Davis Headquarters Nursery.

## Cone Reporting System

Fowells and Schubert<sup>2/</sup> showed that most cones are borne on dominant and codominant trees. Dominant trees, 12 or more inches diameter breast height (d.b.h.) were selected as indicator trees for a cone crop rating system devised in 1960 by the Pacific Southwest Forest and Range Experiment Station and California Region of the Forest Service. Ratings are based on ocular estimates of cone quantities. The following five classes are used:

1. None--no cones on any seed trees.
2. Very light--few cones on less than one-fourth of the seed trees.
3. Light--few cones on more than one-fourth of the seed trees.
4. Medium--many cones on one-fourth to one-half of the seed trees.
5. Heavy--many cones on more than one-half of the seed trees.

## Cone Collection Areas

Cone crops are reported from eighty-seven tree seed zones in California<sup>3/</sup>. An attached map outlines the zones. Larger scale (1:1,000,000) maps and explanatory publication may be obtained free of charge from the office of the State Forester, Resources Building, 1416 Ninth Street, Sacramento, California 95814, or Regional Forester, U. S. Forest Service, 630 Sansome Street, San Francisco, California 94111.

## Reporting of the 1971 Crop

Cone crop surveys were made in June and early July 1971. One hundred fifty-two report forms were received from field stations. A summary of the information indicates a light (#3 rating) over-all cone crop (table 1). Nowhere in the State are there species with over-all heavy (#5) crops. Western hemlock is reported to have a medium (#4) crop. Monterey pine, Douglas-fir, and Sitka spruce average slightly under a medium crop. Red fir, grand fir, lodgepole pine, Coulter pine, Jeffrey pine, sugar pine, Bishop pine, ponderosa pine, coast redwood, western white pine, and Digger pine average light (#3) crops. Heavy cone crops are reported for red fir in Zones 371, 372, and 524; lodgepole pine in Zone 526; Coulter pine in Zone 996; Jeffrey pine in Zone 525; sugar pine in Zones 322, 340, 351, and 772; ponderosa pine in Zones 534 and 771; Douglas-fir in Zones 331 and 332, and bigcone Douglas-fir in Zone 996.

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<sup>2/</sup> Fowells, H. A., and G. H. Schubert 1956. Seed crops of forest trees in the pine region of California. U. S. Dept. of Agr. Tech. Bul. 1150. 48 pp. illus.

<sup>3/</sup> Buck, John M., Ronald S. Adams, Jerold B. Cone, M. Thompson Conkle, William J. Libby, Cecil J. Eden, & Michael J. Knight. 1970. California tree seed zones. California Region U.S. For. Ser., and State of Calif., the Res. Agency. Dept. of Cons., Div. of For. 6 pp.

Some insect damage was reported in Douglas-fir and red fir on the Klamath National Forest, in red fir on the Sierra National Forest, and in ponderosa pine on the Modoc National Forest. Possible frost damage was also reported in a few cones.

#### Seed Lot Coding System

A universal coding system for seed lots is detailed in the leaflet describing the California tree seed zones<sup>4/</sup>.

#### Seed Certification

A program for certification of the source of collection for seed has been formulated for California. The California Crop Improvement Association is the Certifying Agency. Inspection for compliance is to be administered by the County Agricultural Commissioners. A committee representing U.S. Forest Service, California Division of Forestry, California Department of Agriculture, Extension Service, forest industry, and seedsmen will provide advisory services.

During the 1971 collection year the program will operate on a limited basis in Del Norte, Humboldt, and Mendocino Counties. A few private companies and California Division of Forestry will collect or buy cones under the program.

Earlier release of the Cone Crop Survey Report will be attempted in the future. If the Report is to be a useable tool for collectors and buyers of cones, especially of Douglas-fir, it must be available at an earlier date than August. Participation in the seed certification program for Douglas-fir will require knowledge of the cone crop by the first of June. Since the cone crops of many species cannot be evaluated until July, a preliminary report for Douglas-fir will be released around June 1. To overcome potential losses from insects it will be necessary to determine collection areas by the middle of March. These collection areas can then be placed under a preventative maintenance program for protection of the cone crop.

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<sup>4/</sup> Op. Cit.

Table 1. Summary of California cone crops for 1971, by species and tree seed zones.

Species	Tree Seed Zone	Average Rating <sup>a/</sup>	Species	Tree Seed Zone	Average Rating <sup>a/</sup>
<u>Abies concolor</u> (white fir)	301	3.7	<u>Abies Magnifica</u> (red fir)	301	3.5
	303	3.5		302	3.0
	311	1.0		321	3.0
	321	3.0		322	3.0
	322	2.0		331	3.0
	331	3.0		371	4.9
	332	2.0		372	5.0
	351	3.0	Overall	516	3.0
	371	3.0	rating 3.1	522	3.5
	372	2.0		523	2.0
Overall	516	3.0		524	5.0
rating 2.6	521	3.8		525	3.2
	522	3.3		526	2.4
	523	2.0		531	2.5
	524	2.0		532	2.5
	525	3.9		533	3.7
	526	2.0		732	3.0
	531	2.0		741	2.5
	532	1.0		771	3.0
	533	3.5		772	4.0
	732	2.8		782	2.0
	741	2.0			
	742	1.5	<u>Juniperus occi-</u> <u>dentalis</u>		
	771	1.0	(western		
	772	4.0	juniper)	731	4.0
	993	1.0	Overall		
	994	1.5	rating 4.0		
	997	1.5			
	998	2.0			
<u>Abies grandis</u> (grand fir)	091	3.0	<u>Libocedrus</u> <u>decurrens</u>		
	092	4.0	(incense-cedar)	301	3.0
	093	3.0		302	4.0
Overall	094	3.0		321	1.0
rating 3.2			Overall	332	1.0
			rating 2.4	340	4.0
				371	2.0
				372	2.0
				380	2.0
				521	1.5

<sup>a/</sup> See footnote at end of table

Species	Tree Seed Zone	Average Rating <sup>a/</sup>	Species	Tree Seed Zone	Average Rating <sup>a/</sup>
<u>Libocedrus decurrens</u> (incense-cedar) (Continued)	523	2.0	<u>Pinus jeffreyi</u> (Jeffrey pine)	301	2.0
	525	2.0		302	2.0
	526	1.7		311	2.0
	531	3.0		312	2.0
	532	4.0		321	3.0
	533	3.0		322	4.0
	534	4.0		331	3.0
	732	4.0	Overall	516	5.0
	742	1.0	rating 3.0	521	2.5
	994	1.8		522	3.0
	998	2.0		523	4.0
				524	2.3
				525	3.5
				526	2.7
<u>Picea sitchensis</u> (Sitka spruce)	091	3.0		531	2.9
	092	4.0		532	2.7
Overall	094	4.0		533	3.7
rating 3.7				534	3.4
				540	2.9
				550	3.0
				560	4.0
<u>Pinus contorta</u> var. <u>contorta</u> (beach pine)	091	2.0		732	3.8
	092	3.0		742	3.0
Overall	094	2.5		752	4.0
rating 2.6	095	3.0		771	3.5
				772	4.0
				782	2.0
				993	1.0
				994	1.8
<u>Pinus contorta</u> var. <u>latifolia</u> (lodgepole pine)	524	2.0		997	2.5
	526	5.0		998	2.5
	533	2.0	<u>Pinus</u>		
Overall	732	3.5	<u>lambertiana</u>		
rating 3.0	994	2.0	(sugar pine)	095	2.0
				301	4.0
<u>Pinus coulteri</u> (Coulter pine)	162	1.0		302	3.0
	163	4.0	Overall	303	3.0
	164	4.0	rating 3.4	311	1.0
Overall	994	3.2		312	1.0
rating 3.2	996	5.0		321	3.0
	997	3.0		322	5.0
	998	2.0		332	3.5
				340	5.0

<sup>a/</sup> See footnote at end of table

Species	Tree Seed Zone	Average Rating <sup>a/</sup>	Species	Tree Seed Zone	Average Rating <sup>a/</sup>
<u>Pinus lambertiana</u> (sugar pine) (Continued)	351	5.0	<u>Pinus ponderosa</u> (ponderosa pine)	097	1.0
	371	4.3		301	2.5
	372	3.5		302	2.0
	380	2.0		303	4.0
	521	2.8		311	1.5
	522	3.3		312	2.8
	523	2.5	Overall	321	3.0
	524	3.0	rating 2.9	322	4.0
	525	4.3		331	3.0
	526	3.5		332	2.6
	531	4.0		340	3.0
	532	3.2		351	3.0
	533	4.5		352	3.0
	534	4.0		360	3.5
	540	3.8		371	3.3
	560	4.0		372	2.5
	732	4.0		380	2.5
	771	2.0		516	2.5
	772	5.0		521	3.0
	993	3.0		522	2.9
	994	3.3		523	4.0
	997	3.0		524	2.0
	998	2.0		525	3.3
				526	2.4
				531	3.3
<u>Pinus monophylla</u> (singleleaf pinyon pine)	994	1.8		532	4.0
				533	3.9
Overall				534	5.0
rating 1.8				540	3.0
				550	1.0
<u>Pinus monticola</u> (western white pine)	301	4.5		720	4.0
	302	3.0		731	2.5
	321	3.0		732	3.7
Overall	526	1.0		741	3.0
rating 3.1	732	4.0		742	3.1
				751	2.0
<u>Pinus muricata</u> (Bishop pine)	092	3.0		771	5.0
	094	2.5		993	2.0
Overall	095	3.0		994	1.8
rating 2.8	096	3.0		997	1.0
				998	1.0

<sup>a/</sup> See footnote at end of table

Species	Tree Seed Zone	Average Rating <sup>a/</sup>	Species	Tree Seed Zone	Average Rating <sup>a/</sup>
<u>Pinus radiata</u>			<u>Pseudotsuga</u>		
(Monterey pine)	092*	4.0	<u>menziesii</u>	096	3.5
	097	4.0	(Continued)	097	4.0
	120	3.5		301	4.5
Overall	130	3.5		302	3.9
rating 3.8			Overall	303	4.3
			rating 3.7	311	4.0
<u>Pinus sabiniana</u>				312	4.3
(Digger pine)	096	2.0		321	4.0
	303	3.0		322	4.0
	332	4.0		331	5.0
	352	3.0		332	4.9
Overall	360	2.5		340	3.8
rating 2.9	371	3.0		351	4.0
	372	2.0		352	4.0
	380	3.0		360	3.0
	522	3.0		371	3.7
	525	4.0		372	4.0
				380	4.0
<u>Pinus quadrifolia</u>				390	4.0
(Parry pinyon pine)	986	1.0		521	3.2
				522	3.0
Overall				523	3.0
rating 1.0				524	2.0
				525	2.7
				526	1.9
<u>Pseudotsuga</u>				531	1.0
<u>macrocarpa</u>				732	3.0
(bigcone Douglas-fir)	993	2.0		771	2.0
	994	3.0	<u>Sequoia gigantea</u>		
	996	5.0	(Sierra redwood)	534	4.0
Overall			Overall		
rating 2.6			rating 4.0		
<u>Pseudotsuga</u>			<u>Sequoia</u>		
<u>menziesii</u>			<u>sempervirens</u>		
(Douglas-fir)	091	3.0	(coast redwood)	091	3.0
	092	4.0		092	3.0
	093	4.0		093	2.5
	094	4.5			
	095	4.5			

<sup>a/</sup> See footnote at end of table

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Species	Tree Seed Zone	Average Rating <sup>a/</sup>
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<u>Sequoia</u>		
<u>sempervirens</u>		
(coast redwood)	094	2.5
(Continued)	095	3.0
	096	4.0
Overall	097	3.0
rating 3.0	360	3.0
<u>Tsuga</u>		
<u>heterophylla</u>		
(western	091	4.0
hemlock)	092	4.0
	093	4.0
Overall	303	4.0
rating 4.0		

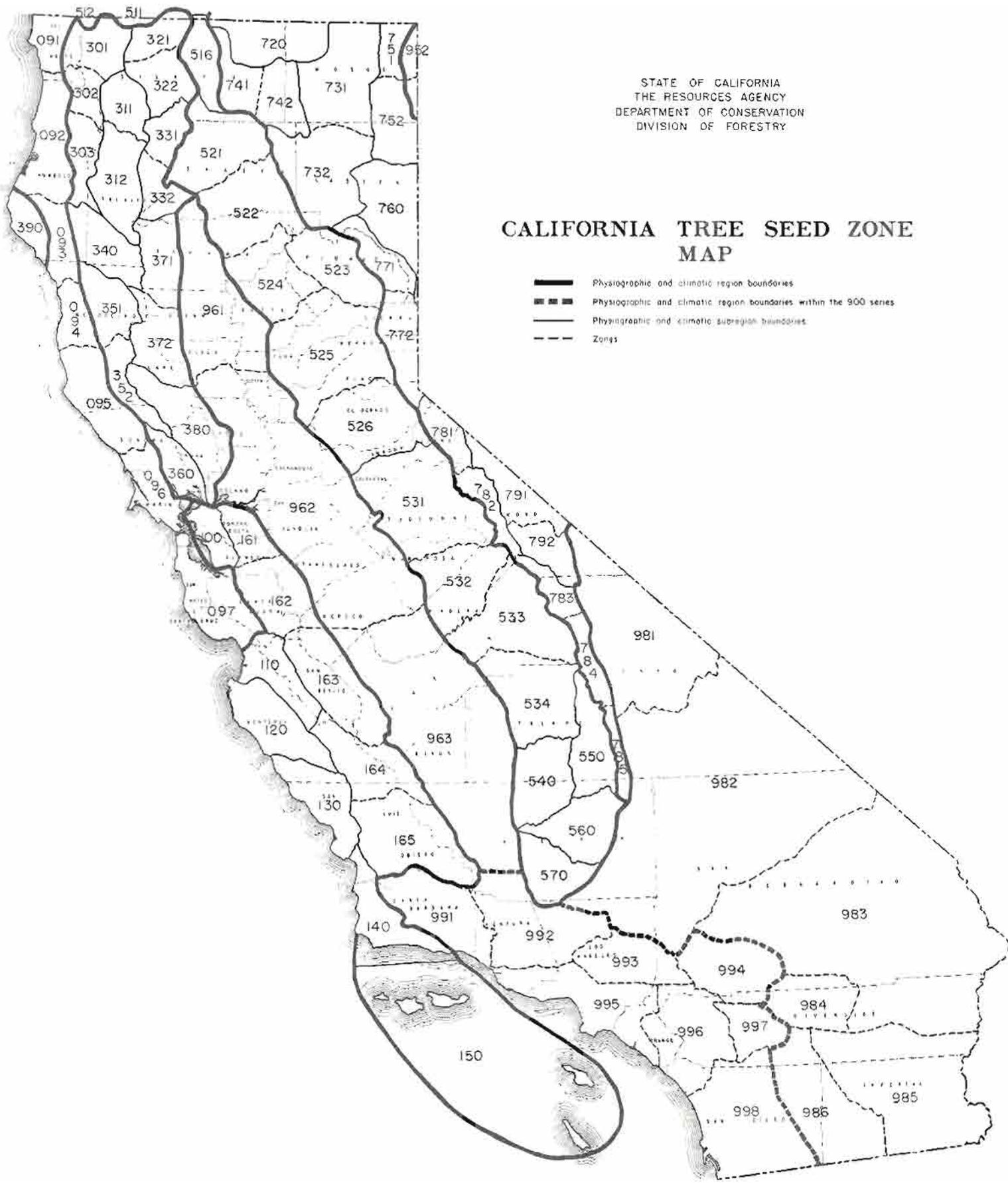
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<sup>a/</sup> Based on numerical scale - 1, 2, 3, 4, & 5 - of crop rating system.

STATE OF CALIFORNIA  
THE RESOURCES AGENCY  
DEPARTMENT OF CONSERVATION  
DIVISION OF FORESTRY

### CALIFORNIA TREE SEED ZONE MAP

- Physiographic and climatic region boundaries
- Physiographic and climatic region boundaries within the 900 series
- Physiographic and climatic subregion boundaries
- - - Zones



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