



# STATE FOREST NOTES

Office of the State Forester  
Sacramento

No. 54

August, 1974

## CALIFORNIA CONE CROP FOR 1974 <sup>1/</sup>

Cone crop surveys were made in June and early July, 1974. Ninety-four report forms were received from field stations. This number is considerably less than the number of reports received in the past (148 were received in 1973). Therefore, many areas of the State were not covered under the survey.

A number of reports did not give figures on incense-cedar, Douglas-fir, and the true firs because the cones were not yet visible at higher elevations. Insect activity was reported in Jeffrey pine cones on the Beckworth Ranger District of the Plumas National Forest. It was also reported in incense-cedar, sugar pine, ponderosa pine, western white pine, and Douglas-fir cones at the 1-2,000 feet elevation in Humboldt County.

A summary of the information indicates a light (3.0 rating) overall crop (table 1). No heavy (5.0 rating) crops were reported for any species. Sitka spruce, Monterey pine, and singleleaf pinyon pine were reported with medium (4.0 rating) crops.

Average heavy (5.0 rating) cone crops were reported for several species in specific zones as follows:

<u>Species</u>	<u>Zone(s)</u>
Jeffrey pine	782, 783
Sugar pine	525, 997
Singleleaf pinyon pine	782, 783
Ponderosa pine	321, 322, 747

<sup>1/</sup> This report was compiled by C. J. Eden, Forester II, California Division of Forestry, Supervisor and Reforestation & Nursery Specialist, at the Davis Headquarters Nursery.

Medium (4.0 rating) crops were reported for the following species and zones:

<u>Species</u>	<u>Zone(s)</u>
Incense-cedar	732
Beach pine	390 <sup>a/</sup>
Coulter pine	997, 998
Jeffrey pine	522, 533, 732, 751, 994
Sugar pine	526, 533, 732, 997
Western white pine	525, 772
Bishop pine	092, 092 <sup>a/</sup> , 390 <sup>a/</sup>
Ponderosa pine	312, 331, 522, 532, 533, 731, 752, 994, 997,
Monterey pine	092 <sup>a/</sup> , 093 <sup>a/</sup> , 097, 110, 130, 390 <sup>a/</sup>
Digger pine	303
Bigcone Douglas-fir	994
Douglas-fir	521
Sierra redwood	534

<sup>a/</sup> Plantation

#### Cone Reporting System

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

Fowells and Schubert<sup>2/</sup> showed that most cones are borne on dominant and co-dominant trees. Dominant trees, 12 or more inches diameter breast height (d.b.h.) were selected as indicator trees for a cone 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.

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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.

### 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 an 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. A universal identification coding system for seed lots is detailed in the explanatory publications.

### Seed Certification

A voluntary 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 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 operated in Del Norte, Humboldt, and Mendocino counties. A few private companies and California Division of Forestry collected or bought cones under the program. In 1972 the program was to be expanded to Shasta, Siskiyou, Lassen and Modoc counties. However, no cones were collected under this program in that area in 1972 or 1973 because of the extremely poor cone crops.

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<sup>3/</sup> Buck, John M., Ronald S. Adams, Jerold B. Cone, M. Thompson Conkle, William J. Libby, Cecil J. Eden, & Michel 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.

Table 1. Summary of California Cone Crops for 1974, by species and tree seed zone.

Species	Tree Seed Zone	Average Rating <sup>a/</sup>	Species	Tree Seed Zone	Average Rating <sup>a/</sup>
<u>Abies concolor</u> (white fir)	091	2.0	<u>Abies magnifica</u> (red fir)	524	2.3
	092	2.0	Continued	525	2.3
	301	2.3		526	2.8
	302	2.0		531	2.5
	303	2.3	Overall	532	3.3
	312	3.0	rating 2.5	533	3.0
	321	3.0		732	3.0
	322	3.0		741	3.0
	331	3.0		742	3.0
	340	2.0		771	1.0
	371	2.0			
Overall	522	2.0	<u>Calocedrus</u>		
rating 2.2	523	1.5	<u>decurrens</u>		
	524	1.5	(incense-cedar)	301	2.0
	525	2.0		302	2.0
	526	1.5		303	2.3
	531	2.0		340	2.5
	532	2.0		380	2.0
	533	2.5		390	2.0
	534	2.0	Overall	522	3.5
	732	3.5	rating 1.9	524	1.0
	741	3.0		525	2.0
	742	3.0		531	2.0
	772	2.0		532	1.0
	993	2.0		732	4.0
	994	2.0		993	1.0
	997	1.0		994	2.0
	998	1.0		997	1.0
				998	1.0
<u>Abies grandis</u> (lowland white fir)	091	2.0	<u>Chamaecyperis</u>		
	092	2.5	<u>lawsoniana</u>		
	390	2.5	(Port-Orford-cedar)	091	2.5
Overall				092	2.5
rating 2.3				093	3.5
			Overall	303	3.0
			rating 2.9		
<u>Abies magnifica</u> (red fir)	321	3.0	<u>Cupressus</u>		
	322	3.0	<u>macrocarpa</u>		
	522	1.0	(Monterey cypress)	091	3.0 <sup>b/</sup>
	523	1.5		092	3.0 <sup>b/</sup>
				093	3.5 <sup>b/</sup>
			Overall	390	3.0 <sup>b/</sup>
			rating 3.1		

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

<sup>b/</sup> Plantation

Species	Tree Seed Zone	Average Rating <sup>a/</sup>	Species	Tree Seed Zone	Average Rating <sup>a/</sup>
<u>Picea breweriana</u> (brewer spruce)	091	2.0	<u>Pinus jeffreyi</u> (Jeffrey pine)	302	2.0
	301	2.0	Continued	303	2.0
Overall				340	2.0
rating 2.0				390	2.0
				522	4.0
<u>Picea sitchensis</u> (Sitka spruce)	091	3.5		523	2.3
	092	3.5		524	2.0
Overall	093	3.0		525	3.0
rating 3.3	390	3.0	Overall	526	2.7
			rating 3.0	531	2.3
<u>Pinus attenuata</u> (knobcone pine)	091	3.0		532	3.0
	301	3.5		533	4.0
Overall	302	3.5		534	3.5
rating 3.3				732	4.0
				733	4.0
				751	4.0
				752	3.5
				771	3.0
<u>Pinus contorta</u> var. <u>contorta</u> (beach pine)	091	3.0		772	3.0
	092	2.0		782	5.0
Overall	093	3.5 <sup>b/</sup>		783	5.0
rating 3.1	390	4.0 <sup>b/</sup>		993	2.0
				994	4.0
				997	3.5
<u>Pinus contorta</u> var. <u>latifolia</u> (lodgepole pine)	524	2.0	<u>Pinus lambertiana</u> (sugar pine)	091	2.5
	772	1.0		092	2.0
Overall				301	2.7
rating 1.5				302	2.5
				303	2.7
				321	3.0
				322	3.0
<u>Pinus coulteri</u> (Coulter pine)	163	3.0		340	2.2
	164	3.0		371	3.0
Overall	994	3.7		380	2.0
rating 3.5	997	4.0		390	2.0
	998	4.0		522	3.5
				523	1.0
				524	2.0
<u>Pinus jeffreyi</u> (Jeffrey pine)	091	2.0		525	4.8
	093	2.0		526	4.3
	301	2.0		531	3.0
				532	2.7
				533	3.7

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

<sup>b/</sup> Plantation

Species	Tree Seed Zone	Average Rating <sup>a/</sup>	Species	Tree Seed Zone	Average Rating <sup>a/</sup>
<u>Pinus lambertiana</u> (sugar pine)	534	3.0	<u>Pinus ponderosa</u> (ponderosa pine)	302	2.0
Continued	732	4.0	Continued	303	1.7
	741	3.5		312	4.0
	742	3.5		321	5.0
Overall	772	3.5		322	5.0
rating 3.0	993	3.0		331	4.0
	994	3.5		340	1.7
	997	4.5		351	2.0
				352	2.0
<u>Pinus monophylla</u> (singleleaf pinyon pine)	782	5.0		371	2.0
	783	5.0		380	2.0
	994	3.0		521	2.5
Overall			Overall	522	3.8
rating 4.3			rating 3.1	523	2.3
				524	2.0
<u>Pinus monticola</u> (western white pine)	092	2.0		525	3.4
	301	2.0		526	3.3
	302	2.0		531	3.7
Overall	303	2.0		532	3.8
rating 2.5	523	1.0		533	4.0
	525	4.0		534	3.0
	533	3.0		731	4.0
	772	4.0		732	3.7
				741	5.0
				742	3.7
<u>Pinus muricata</u> (Bishop pine)	091	3.0 <sup>b/</sup>		751	3.0
	092	4.0 <sup>b/</sup>		752	3.8
	092	4.0		772	2.5
	093	3.5 <sup>b/</sup>		993	2.0
Overall	095	3.0		994	4.7
rating 3.4	096	3.0		997	4.0
	301	3.0 <sup>b/</sup>		998	2.0
	303	3.0 <sup>b/</sup>	<u>Pinus radiata</u> (Monterey pine)	091	3.0 <sup>b/</sup>
	340	3.5 <sup>b/</sup>		092	4.0 <sup>b/</sup>
	390	4.0 <sup>b/</sup>		093	4.0 <sup>b/</sup>
				097	4.0
<u>Pinus ponderosa</u> (ponderosa pine)	091	2.0	Overall	110	4.0
	092	2.0	rating 3.7	130	4.0
	097	2.5		301	3.0 <sup>b/</sup>
	301	2.0		303	3.5 <sup>b/</sup>
				340	3.0 <sup>b/</sup>
				390	4.0 <sup>b/</sup>

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

<sup>b/</sup> Plantation

Species	Tree Seed Zone	Average Rating <sup>a/</sup>	Species	Tree Seed Zone	Average Rating <sup>a/</sup>
<u>Pinus sabiniana</u> (Digger pine)	303	4.0	<u>Sequoiadendron giganteum</u> (Sierra redwood)	534	4.0
<u>Pseudotsuga macrocarpa</u> (Bigcone Douglas-fir)	994	4.0	<u>Thuja plicata</u> (western red cedar)	091 092 093	3.0 3.0 3.5
<u>Pseudotsuga menziesii</u> (Douglas-fir)	091 092 093 094 095 096 097 301 302 303 312 321 322 331 340 351 352 360 380 390 521 523 524 525 526 732 741 742	2.0 2.3 2.3 3.0 3.0 3.0 2.5 2.2 3.5 1.7 3.0 3.5 3.5 3.0 1.7 2.0 2.0 3.0 2.0 2.5 4.0 1.0 1.0 3.3 1.5 3.0 3.5 3.5	Overall rating 3.3	390	3.5
			<u>Tsuga heterophylla</u> (western hemlock)	091 092 093	2.7 3.0 3.0
Overall rating 2.6			Overall rating 2.5	301 302 390	2.0 2.0 2.0
<u>Sequoia sempervirens</u> (coast redwood)	091 092 093	2.0 2.0 2.0			
Overall rating 2.5	095 096 097	3.0 3.0 3.5			

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

<sup>a/</sup> Plantation

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

