CALIFORNIA DIVISION OF FORESTRY

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF CONSERVATION

STATE FOREST NOTES

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CALIFORNIA CONE CROP FOR 1964[1/]

Surveys in the early summer of 1964 indicate a fair to good cone crop should occur in the fall and winter of 1964. Reports showed many counties, particularly in the northern part of the state, with medium to heavy crops of cones on forest trees. The southern Sierra appear to have only a very light to light crop of cones. Sugar pine shows a

Fig. 1. Picking Douglas-fir cones from a portable truck-mounted scaffold.[2/]

1/ This report was compiled and summarized at the Davis Headquarters Forest Nursery by C. J. Eden from information supplied by California Division of Forestry personnel throughout the state.

2/ PETERSEN, Donald M. Use of portable scaffold in Douglas-fir cone collection. Calif. Div. of For. State Forest Notes No. 13, 3 pp. Nov. 1962

medium to heavy crop in many areas of the state. The ponderosa pine crop is medium in the northern Sierra and Riverside County. Douglas-fir is heavy in Mendocino and Lassen counties, medium in Nevada and Yuba counties, and none to light in the remainder of the state. The white fir crop is light to medium throughout the state, excepting some portions where it is medium to heavy. Jeffrey pine appears to have a light to medium crop in most zones. The red fir crop is rated only as light. A summary of the 1964 crop is given in table 1.

Very few reports of insect activity in the 1964 cone crop were received. Insect activity was reported in Douglas-fir cones in Zone X but no appraisal of its significance was made because of the earliness of the season. Many sugar and ponderosa pine cones have aborted in the lower elevations in Butte County but no diagnosis has been made of the cause.

Crop Rating System

Fowells and Schubert[3/] have shown that most of the cones are borne on codominant and dominant trees. In 1960 the Pacific Southwest Forest and Range Experiment Station and Region Five of the U. S. Forest Service devised a rating system based on ocular estimates of cones on indicator trees (dominants over 12 inches d.b.h.). The five following 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 -- a 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 half of the seed trees.

Cone Collection Areas

The forested areas of California have been divided into forest tree seed collection zones. Originally thirteen zones were delineated[4/]. These zones did not cover the entire state. The need to include all areas of the state under a zone classification became apparent. Therefore, in 1961 seed zone additions were set up. At the present time the entire state is covered by the seed collection zone system. Fourteen zones and five subzones now exist and cone crops are reported on the basis of these nineteen zones and subzones (see attached map).

3/ FOWELLS, H. A., and G. H. SCHUBERT. Seed crops of forest trees in the pine region of California. U. S. Dept. Agr. Tech. Bul. 1150. 48 pp. illus. 1956.

4/ FOWELLS, H. A. Forest tree seed collection zones in California. U. S. Forest Service. California Forest and Range Experiment Station. Forest Research Note 51. 5 pp. illus. 1946.

Reporting of 1964 Crop

The annual cone crop is appraised from information gathered by Division of Forestry personnel primarily in the Division's zones of responsibility. Information on the 1964 crop was submitted on a cone crop report form. Copies of this form were transmitted to the field in early June 1964. This was earlier than in the past and caused some difficulty in evaluations of the crop because cones of all species had not developed fully and insect damage could not be assessed accurately. One report form was requested for each forested ranger unit. Table 1 summarizes the information compiled from field reports. The cone crop rating system as described earlier was used.

Evaluation of 1963 Crop

The 1963 cone crop survey indicated a poor crop was to be expected statewide. Only a few species in scattered areas were reported as having medium crops. Division of Forestry cone collections in 1963 were below quotas for some species in some areas based on the early season survey. This may have been due in part to an over evaluation of the cone crop or the loss of cones between the time of survey and collection due to insects, weather or other factors. In general, however, the actual cone collections made by the Division of Forestry in 1963 did substantiate the early evaluation of the crop.

Table 1. Summary of reported California cone crop for 1964, by species, seed zone, and county.

Major Species	Seed Zone	Average Rating[a/]	County-Zone Ratings[b/]
Pinus lambertiana (sugar pine)	I	3.5	Lassen (5)
	II	4.0	El Dorado, Yuba (5) Shasta-Trinity, Amador, Nevada, Placer (4) Butte, Tehama (3)
	III	4.2	Nevada, Placer (5) Shasta-Trinity, El Dorado (4) Amador (3)
	IV	3.2	Calaveras, Tuolumne (4) Mariposa, Madera (3)
	V	4.0	Calaveras, Tuolumne (5) Tulare (4) Fresno, Madera (3)
	VII	4.0	El Dorado, Sierra (4)
	IX	3.5	Riverside, San Bernardino (5)
	X	3.3	Siskiyou (5) Tehama, Shasta-Trinity, Lake (Boggs) (4)
	XIII	4.0	Mendocino (5) Sonoma (3)
Pinus ponderosa (ponderosa pine)	I	3.7	Lassen (5) Shasta-Trinity (4)
	II	3.9	Shasta-Trinity, Amador, El Dorado, Nevada, Placer, Yuba (4) Butte (3)
	III	3.4	Shasta-Trinity, Sierra (4) Yuba, Placer, El Dorado (3)
	IV	3.3	Calaveras, Tuolumne (4) Mariposa, Tulare, Fresno, Madera (3)
	V	1.4	All counties less than (3)
	VI	4.0	Mono (4)
	IX	2.7	Riverside (4) San Bernardino (3)
	X	4.0	Mendocino (5) Tehama, Shasta-Trinity (4) Siskiyou, Lake (Boggs) (3)
	XI	5.0	Mendocino (5)
	XIIIA	3.3	Santa Cruz (5)
	XIV	3.0	Mariposa (3)
Pseudotsuga menziesii (Douglas-fir)	I	4.0	Lassen (5) Siskiyou (5)
	II	3.3	Nevada, Yuba (4) Shasta-Trinity, Butte, Placer, El Dorado (3)
	III	2.4	Nevada, Sierra, Placer (3)
	IV	1.3	All counties less than (3)
	X	2.0	All counties less than (3)
	XI	4.0	Mendocino (5) Humboldt-Del Norte (3)
	XII	2.0	All counties less than (3)
	XIII	3.5	Mendocino (5)
	XIIIA	2.2	San Mateo (3)

(table continued)

See footnotes at end of table.

Table 1 (continued)

Major Species	Seed Zone	Average Rating[a/]	County-Zone Ratings[b/]
Abies concolor (white fir)	I	3.6	Lassen, El Dorado (5) Siskiyou (Yreka) (4) Placer (3)
	II	3.0	Tehama (5) Butte, Shasta-Trinity, Nevada (3)
	III	3.4	El Dorado, Sierra, Yuba (4) Amador, Shasta-Trinity, Placer, Nevada (3)
	IV	2.5	Calaveras, Tuolumne (3)
	V	2.8	Calaveras, Tuolumne (5)
	VI	4.5	Alpine (5) Mono (4)
	VII	3.8	Alpine, El Dorado, Nevada, Placer, Sierra (4) Amador (3)
	VIII	3.0	Alpine, Tuolumne (3)
	IX	2.3	San Bernardino (4)
	X	2.0	All counties less than (3)
Pseudotsuga macrocarpa (bigcone Douglas-fir)	IX	1.5	All counties less than (3)
Pinus jeffreyi (Jeffrey pine)	I	3.5	Lassen (4) El Dorado (3)
	II	4.0	Amador (4)
	III	3.0	Nevada (4) El Dorado, Amador, Placer (3)
	IV	2.0	All counties less than (3)
	V	2.6	Calaveras, Tuolumne, Fresno (3)
	VI	4.0	Alpine, Mono (4)
	VII	3.5	El Dorado, Sierra (4) Alpine, Amador (3)
	VIII	3.0	Amador, Tuolumne (3)
	IX	3.5	Riverside (5) San Diego (Julian), San Bernardino (4)
	X	3.0	Siskiyou (3)
Abies magnifica (red fir)	I	2.0	Lassen (3)
	II	3.0	Shasta-Trinity (3)
	III	3.4	Yuba (4) Amador, El Dorado, Nevada (3)
	V	2.3	Calaveras, Tuolumne (3)
	VII	3.7	El Dorado, Sierra (4) Amador (3)
	VIII	2.7	Amador, El Dorado (3)
	X	3.0	Siskiyou (3)
Pinus coulteri (Coulter pine)	IX	3.2	Riverside (5) San Diego (Julian)(4) San Bernardino (3)
	XIIIA	2.7	Monterey, Santa Clara (3)
	XIV	2.0	All counties less than (3)

(table continued)

See footnotes at end of table.

Table 1 (continued)

Major Species	Seed Zone	Average Rating[a/]	County-Zone Ratings[b/]
Pinus muricata (bishop pine)	XII	3.0	Humboldt-Del Norte (3)
	XIII	3.0	Mendocino (3)
	XIIIA	3.0	Marin (3)
Sequoia sempervirens (coast redwood)	XII	2.0	All counties less than (3)
	XIII	2.5	Sonoma (3)
	XIIIA	3.0	Santa Cruz, San Mateo (4)
Sequoia gigantea (Sierra redwood)	V	3.0	Tulare (3)
Pinus radiata (Monterey pine)	IXA	3.0	San Luis Obispo (3)
	XIIIA	3.3	San Mateo (4) Monterey, Santa Cruz (3)
Pinus contorta var latifolia (lodgepole pine)	I	3.0	El Dorado (3)
	II	2.0	All counties less than (3)
	III	3.6	Nevada, Yuba, Placer (4) Amador, El Dorado (3)
	V	2.0	All counties less than (3)
	VI	3.0	Alpine, Mono (3)
	VII	3.4	Sierra, Nevada (4) Alpine, Amador, El Dorado (3)
	VIII	2.3	El Dorado (3)

Minor Species	Seed Zone	Average Rating[a/]	County-Zone Ratings[b/]
Pinus monophylla (singleleaf pinyon)	VI	4.0	Mono (5) Alpine (3)
	VIII	4.0	Alpine (4)
Pinus species (pinyon pine)	IX	2.5	San Bernardino (4)
Abies grandis (grand fir)	XIII	5.0	Mendocino (5)
Juniperus occidentalis (western juniper)	III	4.0	Placer (4)
	VI	3.0	Alpine, Mono (3)
	VII	3.0	Alpine, El Dorado (3)
	VIII	3.3	Amador, El Dorado (4)
Pinus monticola (western white pine)	III	2.0	All counties less than (3)
	V	3.0	Calaveras (3)
	VI	3.5	Mono (4) Alpine (3)
	VII	3.8	Sierra, El Dorado, Placer (4) Alpine(3)
	VIII	3.0	Alpine, Amador, El Dorado (3)

(Table continued)

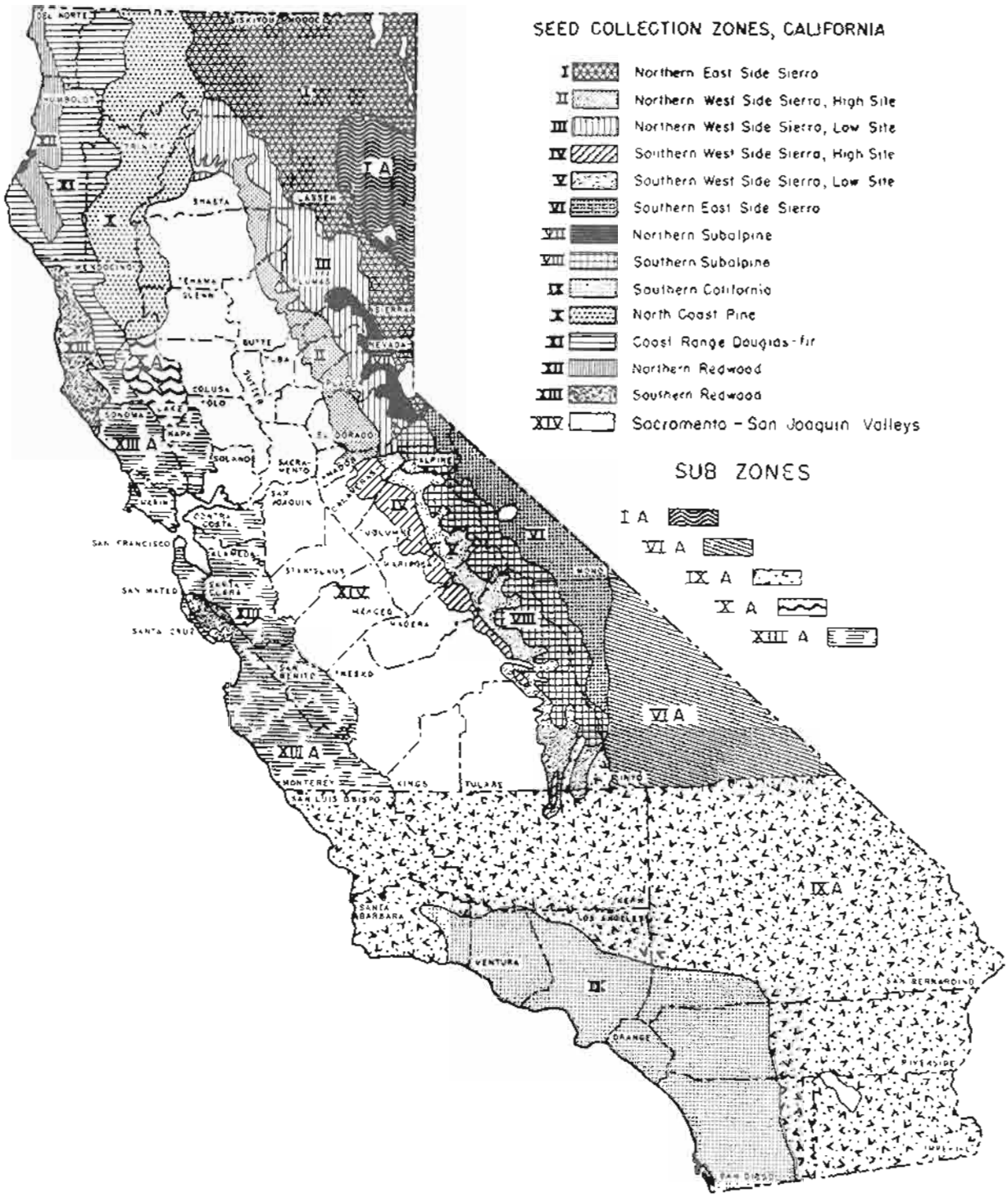
See footnotes at end of table.

Table 1 (continued)

Minor Species	Seed Zones	Average Rating[a/]	County-Zone Ratings[b/]
Pinus sabiniana (Digger pine)	II	2.0	All counties less than (3)
	III	4.0	Placer (4)
Tsuga mertensiana (mountain hemlock)	VII	2.0	Placer (3)
	VIII	1.0	All counties less than (3)
Picea sitchensis (Sitka spruce)	XII	2.0	All counties less than (3)
Pinus albicaulis (whitebark pine)	VIII	1.0	All counties less than (3)

a/ Based on numerical scale of crop rating system.

b/ Only counties with report of 3 or higher rating are shown.


SEED COLLECTION ZONES, CALIFORNIA
I Northern East Side Sierra
II Northern West Side Sierra, High Site
III Northern West Side Sierra, Low Site
IV Southern West Side Sierra, High Site
V Southern West Side Sierra, Low Site
VI Southern East Side Sierra
VII Northern Subalpine
VIII Southern Subalpine
IX Southern California
X North Coast Pine
XI Coast Range Douglas-fir
XII Northern Redwood
XIII Southern Redwood
XIV Sacramento - San Joaquin Valleys
SUB ZONES
I A
VI A
IX A
X A
XIII A