Timber in Humboldt County

economic appraisal of forest conditions undertaken to investigate development and use of main resource

Henry J. Vaux

The following article is based on the forthcoming Bulletin "Timber in Humboldt County" by the same author.

Seventy per cent of all economic activity in Humboldt County now originates, directly or indirectly, in forest industries. These industries provide jobs for 8,726 people—almost twice as many jobs as the wholesale and retail trades; two and a half times as many jobs as business, personal, and professional services; and over four times as many jobs as agriculture.

Because Humboldt's annual output of timber products has tripled during the past eight years certain local residents have become increasingly aware of the economic dependence of Humboldt County on forests. They have recognized the need for careful study of the present and future impact of the recent expansion of the timber industries.

As a result of this local interest and concern, Humboldt County has been looking carefully into its timber situation during the past few years. Through the County Forestry Department—established in 1953—the county government has stimulated investigation of many important questions affecting forest development and use. An economic appraisal of current forest conditions is an essential part of these investigations.

Lumber manufacture—the oldest and largest of the forest industries—began on Humboldt Bay in 1851, and production rose steadily until 1920. Although expansion virtually ceased during the following quarter century, further changes began to take place in 1946 when nationwide demand for lumber soared to the highest levels in 40 years. Easily available old-growth timber in the Pacific Northwest was being rapidly depleted; wood supplies elsewhere were limited; and lumbermen had to look for undeveloped timber areas to meet the demand. Many of them came to Humboldt County, attracted by its untapped stands of Douglasfir. By 1953, lumber production in the county exceeded 1⅓ billion board feet per year—four and a half times as great as it had been in 1940. The number of sawmills had increased from 22 to 180.

Douglasfir production rose from 11% of the county's total before 1940 to more than 60% of the total after 1948. The long-established redwood industry was suddenly joined by a younger but bigger fir industry producing a different type of lumber product with different markets, different manufacturing problems and techniques, and a different pattern of industry organization.

At about the same time, the first Douglasfir plywood plant in Humboldt County was built. Seven more plywood and veneer plants soon went into operation so that this industry now ranks second in importance to lumbering. Together, the sawmills and plywood and veneer plants now use more than 1½ billion board feet of old-growth timber each year—97% of all timber cut in Humboldt County.

To reach the markets on which they depend, most sawmills are located on a railroad or a main highway. Approximately 70% of Humboldt's lumber production is shipped to market via rail; 25% goes by truck; and the remainder by ship from Humboldt Bay.

Redwood lumber is sold throughout the United States. One fourth of all redwood lumber shipments in 1953 went to the Central and Plains states and an additional 20% went to southern, eastern, and export markets. Humboldt's redwood mills are the biggest single source of supply for a long-established, high-quality product with nationwide market acceptance.

In contrast to redwood, three fourths of the Douglasfir produced in Humboldt County is consumed in California. Humboldt fir mills are in direct competition with fir producers in Washington and Oregon, but they have a geographic advantage over these older mills on the large California construction market.

The broad trends of nationwide demand and supply suggest that, between now and 1975, the outlook for the products of Humboldt's forest industries is good. The markets are based on fundamental needs of the entire American economy. If stability of the Humboldt timber supply can be assured and if production costs can be kept at levels which are competitive with other areas, the prospects for prosperous forest industries are good.

Present timber supply in Humboldt County measures 47½ billion board feet of mature timber. One fourth is redwood, and the remainder largely Douglasfir. The adequacy of this supply depends in part on accessibility of the timber, how it is owned and marketed, and how fully it is utilized.

The principal stands of old-growth timber are located in northern and eastern Humboldt County. In many of these areas, future logging will require longer truck hauls and the construction of many miles of new roads. A better developed public road system would allow loggers to reserve the more accessible operating areas for the rainy season and permit prompt operation of overmature stands before they lose much high-quality volume by further decay of the timber. Thus, road construction will have an important influence on how much timber is available to the mills and how efficiently the existing mature timber inventory can be handled.

Operating companies owning enough timber to maintain their own log supplies for the next 10 years account for about 40% of the present level of timber products output. These firms control about two thirds of the mature redwood and one fourth of the mature Douglasfir. They appear to be fairly well fixed for log supplies during the next decade.

The mills responsible for the remaining 60% of present production are dependent for their logs on timber owned either by ranchers and other small owners or by the Federal government. Even if more roads permit fuller access to public timber, about 800 million board feet of the industry's annual wood needs will apparently have to be met from some 15 billion feet of timber on nonindustrial private holdings. Much of this volume is not yet tapped by roads and a significant proportion is in high-cost or low-quality stands. These facts suggest strongly that many mills without large timber supplies of their own may have to curtail operations within 10 years due to the increasing tightness of timber supplies.

The extent to which the potential timber volumes are utilized is another important factor influencing the real supply of timber. Where markets are well developed and diversified, a high proportion of the total wood contents of the standing tree may be utilized. Where they are not, substantial volumes of wood

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may remain unused in the form of residues left in the woods, and slabs, edgings, and sawdust resulting from manufacture.

In 1953 about 175 million cubic feet of such wood residues were produced in Humboldt County. About two fifths of the total was left in the woods—the bulk of it in the form of pieces too small or of too low a quality for use in sawmills or veneer plants. Much of this type of unused raw material is suitable for pulping. But unless an active local market for pulpwood is established, such logging residues cannot be considered part of the effective wood supply.

Substantial progress has recently been made in using coarse sawmill and plywood plant residues for pulp chips. Twelve plants in the county are now equipped with chippers, producing raw material for pulp mills located elsewhere in the State. Large volumes of unused mill residues remain, however.

These limitations on the volume, accessibility, and utilization of timber mean that Humboldt County is approaching the most difficult part of its transition from old-growth timber liquidation to permanent timber management. The county still has time to do many things that will help in mitigating future raw material shortages which would inevitably result if present trends continue. Permanent stability of timber industries can only be obtained if the forest land in the county is under effective management. Moreover, such management is needed now if the county is to avoid in the future the sort of crisis which has wrecked the economies of many other timber-dependent areas.

At present, net timber growth in the county is estimated at about 440 million board feet per year, or a little over 250 board feet per acre annually. Almost four times as much—960 board feet per acre—would be needed to balance the 1951 level of cutting.

Commercial timber growth in the redwood stands can be increased by cutting mature stands selectively. This means removing now only the bigger, overmature trees and leaving a fairly heavy reserve stand of thrifty younger trees. Such cutting increases annual growth substantially on redwood areas. Although selective cutting is now an established practice in Humboldt County, there is still much need to increase the area so treated and to leave heavier reserve stands.

Management of Douglasfir stands for increased timber growth would require cutting only those patches of timber in the stand which are now overmature, and leaving untouched those areas now occupied by thriftily growing trees. The current practice of clearcutting Douglasfir stands over a large area of 100 or more acres has resulted in destroying much small timber which would have grown rapidly if left on the ground and has not led to satisfactory restocking of the land.

The cutting practices needed to build up timber growth will only be widely adopted if certain existing economic obstacles to forest management are removed. Among the most important of these obstacles are taxation policies which discourage timber growing, the difficulty of providing adequate technical forestry advice for the large number of landowners with small forest holdings, unfamiliarity of many owners with timber markets, and the need for better fire protection. Problems such as these cannot be solved by the timber owners and operators alone.

To use the timber resources fully and to realize their potential economic benefits will require efforts by all citizens: efforts to understand the forest situation; to recognize the potential benefits from improving it and the costs of failing to do so; and to put into effect practical measures of general county policy which seem likely to be essential for continued timber prosperity.

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POPULATION

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butter, and eggs are prominent examples—have shifted to the import category. As these deficits occurred, they were filled by inshipments from other states. Meanwhile, the production of export commodities—many of which California is the nation's principal or sole supplier—has continued without regard to the size of the state's market. Thus, the dominant influences governing the agricultural output of California have been those of demand outside of the state rather than within it.

Influence of Markets

Of the few commodities for which the state is on a self-sufficing basis, market milk is the most important and most likely to adjust to the needs of an expanding state population.

There would appear to be no compelling reasons for expecting a state market based on 20 or 25 million people to have much more influence on what California agriculture produces—other than such commodities as market milk—than a market based on 12 million. Hence, there appear to be no reasons for an expanding population, in and of itself, to induce a trend toward a more self-sufficing agriculture.

Flexibility and adaptability have always been outstanding characteristics of California's agriculture. Future changes —even if the state continues its rapid growth—are likely to be influenced much more by national and world markets than by the size of the state's markets or by the need of an expanding occupational base to absorb its mounting population.

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COTTON

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measured, have always been the source of most reliable information. With the complexity of modern farming, diversity of soil conditions, variety of crops and management practices, field testing becomes a difficult and time-consuming task.

In experiments conducted to date, the most reliable and easily applied diagnostic guide in cotton fertilization is the sodium bicarbonate test for available phosphorus.

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have continued to make satisfactory progress during the second year of growth.

Most growers prefer to replace old vineyards immediately following their removal, but it is likely that a rotation program—followed by soil fumigation—will be essential to obtain productive vineyards for the length of time necessary to make them profitable. The minimum time for such rotations has not been determined, but in this case, three years seem to be sufficient.

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L. A. Lider, Assistant Professor of Viticulture, University of California, Davis, has cooperated in rating the vines and evaluating their growth.