The Lumber Industry and the Scientific Forestry Movement in California, 1885-1925

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In recent years historians have been reevaluating the processes of social and economic change in late 19th and early 20th century America. Led by the synthetic efforts of Samuel Hays [25] and Robert Wiebe [67], they have recast much of our thinking on the nature of American society, culture, politics, and business during this period. These studies stress the problems Americans faced in coming to grips with the accelerated industrialization of their nation and suggest that much of the American experience between the Civil War and World War I can best be understood as an attempt to reorder American life in the wake of social and economic disruption.[1] An examination of the evolution of the movement for scientific forestry in California between the mid-1880s and the mid-1920s should add to our understanding of how businessmen coped with changes in their economic environment in this period.[2] In particular, it should help illuminate the complexity of the roles businessmen played in state politics, as they sought political solutions for their economic problems.

In California, as was often the case elsewhere in the nation, the scientific forestry movement revolved around two major related issues: the prevention and extinction of forest fires and the reforestation of cut-over timberlands.

It was farmers requiring irrigation and urban dwellers in water-poor regions, not lumbermen, that began the fight for scientific forestry in California. They did so out of a concern for their state's watersheds. Farmers in the Sacramento and San Joaquin valleys and orange growers in southern California depended upon irrigation and viewed the destruction of forest watersheds by fires and logging as a threat to their livelihood. Trees, they rightly believed, aided agriculture by absorbing rainfall, retarding steam run-off, and reducing soil erosion. City dwellers in the arid regions around Los Angeles, worried about municipal water supplies, employed similar arguments and joined the farmers in their quest for scientific forestry. These advocates of scientific forestry concentrated upon winning approval

for legislation designed to prevent forest fires. Reducing the fire danger, they argued, should take precedence over reforestation and other conservation measures, since it would be futile to replant cut-over lands only to have them consumed in a holocaust a few years later.

Most lumbermen initially resisted forestry legislation as uneconomical, given the nature of their industry. In the late 19th and early 20th centuries California lumbermen operated in an industry plagued by chronic overproduction and low prices (see the table). This situation proved especially troublesome as the costs of production began to rise because of the expenses of acquiring increasingly complex logging and milling machinery and of growing demands by labor for higher wages [2]. Many lumbermen recognized that their logging methods and forest fires were wasteful but pointed out that as long as low prices prevailed and stands of virgin timber lasted, it would be impractical for them to adopt more efficient techniques [44]. Lumbermen also opposed forestry legislation, because they feared that state intervention in this sphere of activity might broaden to include other aspects of their businesses.

Despite the opposition of lumbermen, California led the rest of the United States in setting up a board of forestry in 1885. Created by the actions of a loose coalition of agriculturalists, sportsmen, and nature lovers, the board accomplished little. Hamstrung by a lack of funds and technical knowledge, the agency passed out of existence eight years after its formation as a result of reductions in the state's budget [36 and 46].

Scientific forestry advocates redoubled their efforts in the opening years of the 20th century. The annual convention of the American Forestry Association, meeting in Los Angeles in 1899, stirred up new interest and at about the same time California's agricultural and horticultural societies formed several organizations dedicated to winning governmental support for conservation policies. The most important of these, the California Water and Forest Association, claimed 5,000 members. In 1903, this body secured a legislative appropriation of $100,000 for an examination of California's forest resources. The United States Forest Service, paid with these state funds, undertook the survey. Inaugurated personally by Gifford Pinchot, the investigation studied reforestation methods, ways to prevent forest fires, and cutting practices [19 and 36].

The California Water and Forest Association next turned its attention to the formation of a new state board of forestry. At their annual meeting in the summer of 1904, the association's members directed their executive council to draft a fire protection bill. The council, in turn, referred the matter to E. A. Sterling, a national forester who had taken part in the 1903 survey. After conferring with representatives of the United States Forest Service and the Sierra Club as well as with members of the

California Lumber Production and Prices

	Redwood		White pine[c]		Sugar pine		Total production
	Production[a]	Price[b]	Production	Price	Production	Price	
1899	360,167	$10.12	285,306	$10.87	52,108	n.a.	737,035
1904	519,267	12.83	388,623	12.75	n.a.	n.a.	1,077,499
1905	411,689	n.a.	363,932	n.a.	120,002	n.a.	1,061,608
1906	659,678	16.64	347,249	13.90	130,231	n.a.	1,348,599
1907	569,450	17.70	405,610	18.30	108,747	n.a.	1,345,943
1908	404,802	15.66	318,406	16.17	92,500	n.a.	996,115
1909	521,630	14.80	364,748	18.51	88,822	n.a.	1,143,507
1910	543,493	15.52	399,067	15.04	101,561	n.a.	1,254,826
1911	489,768	13.99	390,173	14.40	115,470	n.a.	1,207,561
1912	496,796	14.13	365,169	13.85	128,376	n.a.	1,203,059
1913	510,271	n.a.	317,053	n.a.	147,023	n.a.	1,183,380
1914	535,199	n.a.	409,953	n.a.	132,368	n.a.	1,303,183
1915	418,824	13.54	389,991[d]	14.89	114,494[d]	n.a.	1,119,458[d]
1916	490,828	13.93	494,973[d]	15.40	165,461[d]	n.a.	1,413,541[d]
1917	487,458	21.00	478,565[d]	22.50	127,951[d]	n.a.	1,417,068[d]
1918	443,231	24.30	357,351[d]	21.28	108,423[d]	n.a.	1,277,084[d]
1919	410,442	30.04	444,150	30.38	129,155	n.a.	1,259,363
1920	476,003	46.90	509,471[d]	37.50	141,134[d]	n.a.	1,482,102[d]

Source: US Department of Agriculture, "American Forests and Forest Products," *Statistical Bulletin 21* (Washington, 1927), pp. 130-31, 221-22, and 260-61.

[a]Thousands of board feet.
[b]Per thousand board feet at the mill.
[c]Also called ponderosa or western yellow pine.
[d]Includes Nevada.

Water and Forest Association, Sterling drew up a measure calling for a four-man board of forestry headed by a professionally educated forester appointed by the governor. The state forester's main duty would be to prevent and extinguish forest fires, and for these purposes the bill empowered him to appoint an assistant forester and 10 salaried district firewardens. The state and the counties were to split the expenses of fire fighting and maintaining fire patrols [51, 54, 60, and 63].

Sterling's proposal received ardent backing from a wide variety of sources outside of the lumber industry. Officers of the Water and Forest Association emphasized the necessity for halting the devastation of California's mountain watersheds. They asserted that soil erosion resulting from forest fires and poor logging practices had already clogged many streams with silt and that rainfall, instead of seeping into the soil to be gradually released for agricultural use, was flowing out to sea in torrential floods [62]. Agricultural societies endorsed the stand of the Water and Forest Association and sent lobbyists to Sacramento to work for Sterling's measure. Chambers of commerce in towns and cities throughout Southern California, concerned about their water supplies, passed resolutions favoring the bill and support came from mining groups, worried about the depletion of lumber supplies essential for their industry [41, 42, and 61]. The proposal's advocates, taking their cue from Gifford Pinchot, stressed that they had no intention of injuring the lumber business. Sterling, for instance, repeatedly asserted that scientific forestry advocates desired not "to preserve in park form the trees now existing, but to cut them to supply the needs of civilization" [63, p. 12].

Such assurances failed, however, to satisfy lumbermen, and most of them opposed Sterling's measure. Confusion about forest fires kept some from backing the bill. A large number believed that small fires, whether set on purpose or accidentally, were beneficial, because they eliminated underbrush upon which larger conflagrations might otherwise feed. Many lumbermen also feared that the costs of the board of forestry would require increases in their property taxes and they worked against the proposal for this reason. Still others, although willing to accept the expenses of fire protection, opposed Sterling's measure because they viewed it as the opening wedge for state regulation of all aspects of their business [17; 52, p. 303; 54, p. 270; and 62, p. 8].

Legislative committees emasculated Sterling's bill. The arguments of lumbermen before the committees proved effective and few of the measure's original provisions remained intact. Many legislators agreed with the lumbermen that the proposal tried to do too much too quickly. The provisions for state taxation to support the forester's work came under especially heavy fire, for legislators outside of timbered regions objected

to charging all Californians for services which they felt would benefit only certain areas. The amended version of Sterling's bill still provided for a state board of forestry headed by a professional forester, but it severely restricted the forester's ability to combat fires. It contained no provisions for state firewardens, and strictly limited the funds the state could expend for fire fighting. Instead, the forester was instructed to cooperate with county officials and depend upon voluntary firewardens [50; 28, p. 224; 24; 47; and 54, p. 272].

With the enactment of the Fire Protection and Forest Management Law, California again took a place in the forefront of the nationwide movement for scientific forestry through state legislation. In all, by 1905 some 12 states possessed forestry commissions of varying effectiveness [20, p. 87; 22, pp. 122-40; 24, pp. 22-48; 27, Ch. 20; 29, pp. 442-61; and 33, p. 342]. Even with the changes made by the California legislature, Sterling's act surpassed those of most of the other states in scope and power [47 and 68]. Gifford Pinchot found ample praise for it: "If the counties will take advantage of the authority contained in the bill and appropriate a reasonable amount to pay for fire fighting, it will rank in its practical effect higher than any other state forest law" [65]. California conservationists, though worried about the delegation of power to the counties, also approved the law. Thus, members of the Water and Forest Association asserted that with it California "takes first place among the states that have attempted to deal with the problems of forest fires and forest management" [54, p. 269; and 64].

The course of events, however, soon shattered these high expectations. By 1912, 22 counties were cooperating in some manner with the state forester but these efforts proved ineffective. The counties, strapped for funds, spent a minimal sum for fire protection. In 1912, for instance, they appropriated a total of only $11,000, and as a result fires blackened nearly 300,000 acres of brush and timberlands [37, 39, 40, and 48]. Lumber companies, operating independently of the forestery commissioner, also made only minimal progress in the direction of scientific forestry in these years. Some of the major pine firms instituted or expanded fire protection programs and a few of the larger redwood companies began constructing fire lanes and clearing out underbrush. Lumbermen also set up cooperative associations to fight forest fires and, by 1913, three such bodies existed. Yet even the actions of the most advanced firms were inadequate. Surveys undertaken by the state forester in 1914 and 1917 revealed just how spotty the progress was. They demonstrated that all but a handful of the largest firms failed to take even the simplest precautions against forest fires. As several forestry analysts pointed out, lumbermen could not yet absorb the costs of scientific forestry. Excess mill capacity and overproduction continued to depress prices and, as a result, few

lumbermen felt that they could afford to experiment with fire prevention or efficient logging methods [3; 21; 12, pp. 3 and 6-7; 35, p. 427; 43; and 49].

Recognizing the lack of progress, the state forester, prodded by agricultural groups, worked for extensions of the Fire Protection Act. In 1907, the Water and Forest Association and the state forester prepared measures designed to regulate the disposal of logging slash and increase the board of forestry's powers. However, lumbermen and large landowners asserted that they could not afford the expense of the bills and kept them from becoming law [21, p. 48; 19, pp. 271-74; and 34, pp. 280-82]. Despite continued pressure from farm bodies, virtually the same scenario was repeated in the legislative sessions of 1909 and 1911 [4; 21, pp. 97-98 and 105-6; 17; and 19, pp. 290-91 and 314-17].

During the following two years agitation for forestry measures centered upon the work of the California Conservation Commission established by Governor Hiram Johnson in 1911. Inspired by the conservation efforts of Theodore Roosevelt and stemming indirectly from the conference of governors held in 1908, the commission investigated forestry proposals for the Golden State. In March 1912, its secretary drew up a fire protection bill modeled upon British Columbia law, and later in the month the commissioners met with representatives of the state's lumber companies to discuss logging methods and fire protection [38].

This three-day conference uncovered divisions of opinion between the pine and redwood lumbermen. Officers of many of the larger pine firms voiced a growing willingness to accept an increase in the state forester's powers. Although not completely breaking away from their past opposition to mandatory scientific forestry legislation, they did at least began to see its value. Pine timber was particularly prone to fire damage, and pine lumbermen had just suffered through several bad fire seasons. As a result, the manager of the Sugar and White Pine Manufacturers Association in California, the largest trade association of its sort in the state, pledged his organization's backing to additional legislation designed to prevent forest fires. Clinton Walker of Thomas Walker and Company and George Hoxie, who owned 20,000 acres of pine lands in Northern California, joined him in calling for new laws. The spokesman for the Southern Pacific Railroad, which had earlier opposed forestry measures, reversed his company's stand and also requested further legislation. The redwood men, however, refused to sanction such a heightened role for the state. They asserted that their timber was less susceptible to fire damage than pine and that state legislation was, therefore, unnecessary for them. Redwood operators also defended their use of fire to dispose of slash even during the dry season, despite the fact that these fires sometimes ran out of control. Finally, they felt that, since the rivers running through their timberlands served few farms, the protection of their watersheds

was not a legitimate concern of the state. Redwoods, they concluded, should be exempt from any legislation dealing with forest fires [10, 25, and 11].

Largely because of the publicity aroused by the hearings of the conservation commission, forest fire prevention measures again became major issues in the state legislature just prior to the outbreak of World War I. In 1913 the conservation commission and the California Fire Protection Association, the state's most important voluntary association of lumbermen devoted to preventing forest fires, jointly drafted a new fire protection bill. Although the measure increased state funding to extinguish forest fires, it continued the state forester's dependence on county officials and voluntary associations and restricted his freedom of action in other ways as well. State Forester George Homans condemned this proposal and countered with a much stiffer measure of his own. The introduction of these two bills in the legislature resulted in a stalemate. This same deadlock, pitting the state forester against the lumbermen and the conservation commission, remained unbroken in the next two legislative sessions and, as a result, no significant forestry measures won approval [6; 12, pp. 4-5 and 9-10; 19, pp. 350-59, 384-92, and 406-9; 13; 15; and 56].

It was the outbreak of World War I, more than any other single event, that made scientific forestry and, in particular, forest fire prevention measures, acceptable to California lumbermen. Throughout the prewar years most lumbermen opposed strict scientific forestry legislation as too expensive, given the overproduction and low prices endemic to their business. The war dramatically changed this situation. It boosted demands for lumber and caused a sharp rise in the prices California lumbermen received for their products (see the table). These price increases made it possible, as lumbermen themselves pointed out, for lumber companies to afford at least rudimentary scientific forestry practices. The war furthered the cause of scientific forestry in other ways as well. Most important, it riveted attention on forests as resources essential for national security and made the prevention of their destruction a matter of public concern. Even lumbermen came to realize that the virgin stands of timber might be exhausted and began expressing alarm at the rate at which forests were disappearing before fires and the woodsman's axe.

In California officials from the United States Forest Service, lumber industry representatives, and faculty members of the University of California formed the Forest Industries Committee of California to deal with forestry problems arising in the war years. Working with State Forester Homans, who was its chairman, this group set up county fire-fighting organizations throughout the state. When these county associations failed to prevent particularly bad fire losses in 1918, lumbermen took the

unprecedented step of joining the state forester in calling for remedial legislation [6; 8; 19, pp. 414 and 416-23; 45; and 58].

During the 1919 legislative session lumbermen and the state forester finally reached agreement on effective forest protection measures. The bills they jointly agreed upon passed both houses of the legislature unanimously and fundamentally altered California's fire protection laws. Under their terms the state forester divided California into fire districts watched over by rangers employed by the state and the state assumed the major costs of combatting blazes. The new laws did what Sterling's original measure of 1905 had envisioned. They gave the state forester the authority and funds to provide fire protection for the entire state and ended his dependence upon cooperation with county officials [14, pp. 1945 and 1954; 8, p. 8; 19, pp. 427-35; 16; and 57].

The links between the state forester and the lumbermen, forged in the heat of the war years, grew stronger in the 1920s. By this time most lumbermen recognized that unless they adopted scientific forestry practices they would soon exhaust their timber. The desire to avoid strict federal laws also pushed lumbermen into the arms of the state forester. Though discussed earlier, measures to regulate the lumber industry won serious consideration from Congress only in the postwar period. Many lumbermen hoped to block national legislation by demonstrating that they could work harmoniously with state officials and some probably also felt that they could in this way gain the support of state foresters in their drive against federal legislation.

A meeting of California's major lumbermen with State Forester Homans in late 1920 foreshadowed the course that forestry would take in succeeding years. The lumbermen unanimously passed resolutions calling upon the legislature to increase funds for the state forester's fire protection efforts and both pine and redwood operators agreed to adhere to new strict guidelines on the disposal of slash. The same conference condemned the Capper Bill, a federal measure which would have established nationwide standards for lumbering, and called for its defeat by Congress. The state forester praised the lumbermen for their backing of his work and, in turn, went on record as opposing the Capper Bill. State officials cooperating with lumbermen could, he asserted, accomplish more in the way of scientific forestry [8; and 20, pp. 138-41].

By 1920, then, lumbermen had drastically altered the position they had once held on fire prevention legislation. Although they had once opposed fire prevention measures as uneconomical, lumbermen came to accept and work for them. Blessed with good prices but threatened by the depletion of their virgin timber, lumbermen became leaders in the movement to prevent forest fires.

Developments in the campaign to reforest California's logged-over lands closely paralleled the evolution of the state's drive

for fire protection legislation. Although not at the time as important to proponents of scientific forestry as the movement for fire protection, it was perhaps even more significant than fire protection in the long run.

When scientific forestry advocates began calling for reforestation in California in the opening years of the 20th century, they considered two approaches to the problem. First, the state could purchase cut-over lands from private owners and reforest them or, second, the state could through tax incentives encourage reforestation by the lumber companies. A third option -- state management of virgin forest reserves with reforestation as trees were cut, an option being tried elsewhere at this time -- received little consideration in California, mainly because the state had already sold most of its timberlands to lumber companies.[3]

The state forester, backed by agriculturalists, opened the drive for reforestation in California. As early as 1904, members of the Water and Forest Association recognized the hurdle which the state's tax system placed in the way of reforestation. Each year lumbermen, rather than pay the annual property tax on their cut-over lands forfeited thousands of acres to the state. They simply felt they could not afford the expense of an annual tax on vacant land or second-growth timber which might require 30 or more years to mature [61, p. 6]. Rather than alter the tax laws, however, spokesmen for the association suggested that the state take over and replant lands abandoned for the nonpayment of taxes. The state forester backed this proposal and repeatedly called upon the legislature to appropriate funds for the reforestation of tax-delinquent lands and the purchase of cut-over tracts still in private hands. Little, however, came of these ideas. Concerned mainly with fire protection measures, neither the state forester nor the agriculturalists spent enough time or effort to get their proposals through the legislature and they perished in committees [21, pp. 66-74].

From these beginnings, lumbermen assumed the leadership of the reforestation movement. A survey undertaken by the state forester in 1912 showed that many of California's larger lumbermen disliked the state's annual property tax and desired instead a yield or severance tax which would be levied on timber only when it was cut. Lumbermen also denounced the assessment of timberlands by county officials. This practice, they said, led to numerous inequities which only statewide audits could abolish. Condemning the yearly levy on timberlands, the state forester endorsed the lumbermen's petitions. Several of California's leading lumbermen, again backed by the state forester, repeated their requests at hearings before Governor Johnson's conservation commission and added that they now also favored state reforestation efforts [5; and 10, pp. 52, 57-60, 76-77, and 82-87].

During the war years the lumbermen turned to Sacramento for aid. In 1915 the assemblymen from California's major redwood area introduced a bill appropriating funds for the state to buy cut-over lands for forest reserves. As amended in committee, the measure also instructed the state forester to develop a comprehensive plan for managing all state-owned timberlands along the lines of scientific forestry. Backed by the state forester and members of the conservation commission as well as lumbermen, the proposal passed both houses of the legislature, only to die at the hands of an inexplicable pocket veto from Governor Johnson [19, pp. 393-94]. Thwarted on this front, lumbermen turned their attention to tax reform. In 1917 they supported a bill to shift the power for setting assessments from county to state officials. This change would, they said, end differences between counties and result in uniform, predictable collections by the state. Opposition from county tax assessors and other local officials, however, defeated the measure [55, pp. 28-29; and 56, p. 48].

In the postwar years, lumbermen stepped up their drive for reforestation. In 1920 a meeting of pine and redwood men with the state forester urged the state legislature to appropriate $150,000 for the forester to begin reforestation work. The legislature, then dominated by elements trying to cut state expenditures, refused this request. In the same session Assemblyman A. F. Stevens, a redwood lumberman, sponsored a constitutional amendment to separate the taxation of land from timber and to provide for a yield tax on timber. County officials, fearing the erosion of their tax bases, fought the proposal. Lumbermen and the state board of forestry were themselves divided on details of the plan and it never came to a vote [8; 19, pp. 472-73; and 59]. Conferences between groups of lumbermen and the state forester smoothed over differences during the next few years and in 1925 lumbermen finally obtained their desires. A constitutional amendment to exempt second-growth timber, as distinct from the ground upon which it stood, from taxation easily passed the senate and assembly. Backed by lumbermen's organizations, the state forester, and the County Assessors Association, it won approval in the following general election. The measure made it economically feasible for lumbermen to begin large-scale reforestation projects, and with its enactment the lumber industry took a long step in the direction of efficient production [9; and 19, pp. 574-75].

By the 1920s the California lumber industry was rapidly modernizing. Reversing their earlier attitudes, lumbermen were adopting the principles of scientific forestry and supporting measures to prevent forest fires and reforest cut-over lands. As they did so, the nature of the scientific forestry movement changed. Originally a campaign undertaken by farmers and others concerned with their state's mountain watersheds, it became a drive to rationalize the lumber industry. As lumbermen came to

dominate the movement, the emphasis on watershed protection (which, for instance, the federal Capper bill would have furthered) yielded, for the most part, to considerations of continued profits within the lumber industry. As the prices they received rose after 1914 and as mounting demands threatened the last stands of virgin timber in the United States, lumbermen recognized the wisdom of sustained yield harvesting and worked to make it a reality. From a speculative and crudely exploitive industry, lumbering in California was emerging in the 1920s as a more rational business dominated by considerations of efficiency and order.

An analysis of the campaign for scientific forestry in California, beyond adding to knowledge of the conservation movement in the United States, may also suggest conclusions about the nature of American economic development, politics, and society between the mid-1880s and the mid-1920s.

First, in the most general terms, this essay indicates that on the local as well as upon the national level it may be most valuable to understand the ways Americans lived and thought in this period in terms of what historians are calling "the organizational synthesis" (on this school of thought, see [23 and 26]). That is, Americans reacted to the disruptions resulting from rapid economic growth by trying to reorder their lives in ways that stressed the need for stability, efficiency, and bureaucratic expertise. This was apparent in the scientific forestry movement in California, especially in its later years. This study may, however, in a limited way, alter one conclusion of historians of the "organizational synthesis" school of thought. Where many of these historians see political discontinuity between the Progressive Era and earlier periods, this paper stresses more the continuity between them. The movement for scientific forestry was one of long standing in California, and those major changes which did occur in it took place, not in the Progressive Era, but during the years of World War I.

Second, in more specific terms, this analysis suggests that government-business relations at the state level were quite complex. No single interest group ever completely dominated the movement for scientific forestry in California. Although lumbermen were most important after about 1914, other groups -- agriculturalists and state officials in particular -- initiated the movement and remained significant throughout its course. Moreover, lumbermen often found themselves in opposing camps, with the scientific forestry campaign pitting redwood men against pine men, and the larger companies against the smaller ones. Certainly, the historian Gabriel Kolko's thesis [32] that businessmen controlled the Progressive Movement for their own ends does not adequately explain the course of events in California's scientific forestry movement. The campaign -- both its successes and failures -- resulted rather from the complicated interplay of a number of different interest groups.

Perhaps only when more state and regional studies of this nature are available will it be possible to understand fully the intricacies of the relations between government, business, and society.

NOTES

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1. See [31] for a demonstration that the desire to bring order out of chaos animated Americans in many walks of life, from the medical profession to the diplomatic corps.

2. For quite different views on how businessmen reacted to economic change on the national level, see [18 and 32].

3. [24, pp. 27-47; 30, pp. 62-119; 33, Ch. 17; 53, pp. 70-72; and 66, pp. 63-80]. Of course, California did possess some national forests, and by the 1920s they were being managed along the lines of scientific forestry, including reforestation. On this topic see [1, pp. 42-52; 24, p. 24; and 53, p. 69].

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