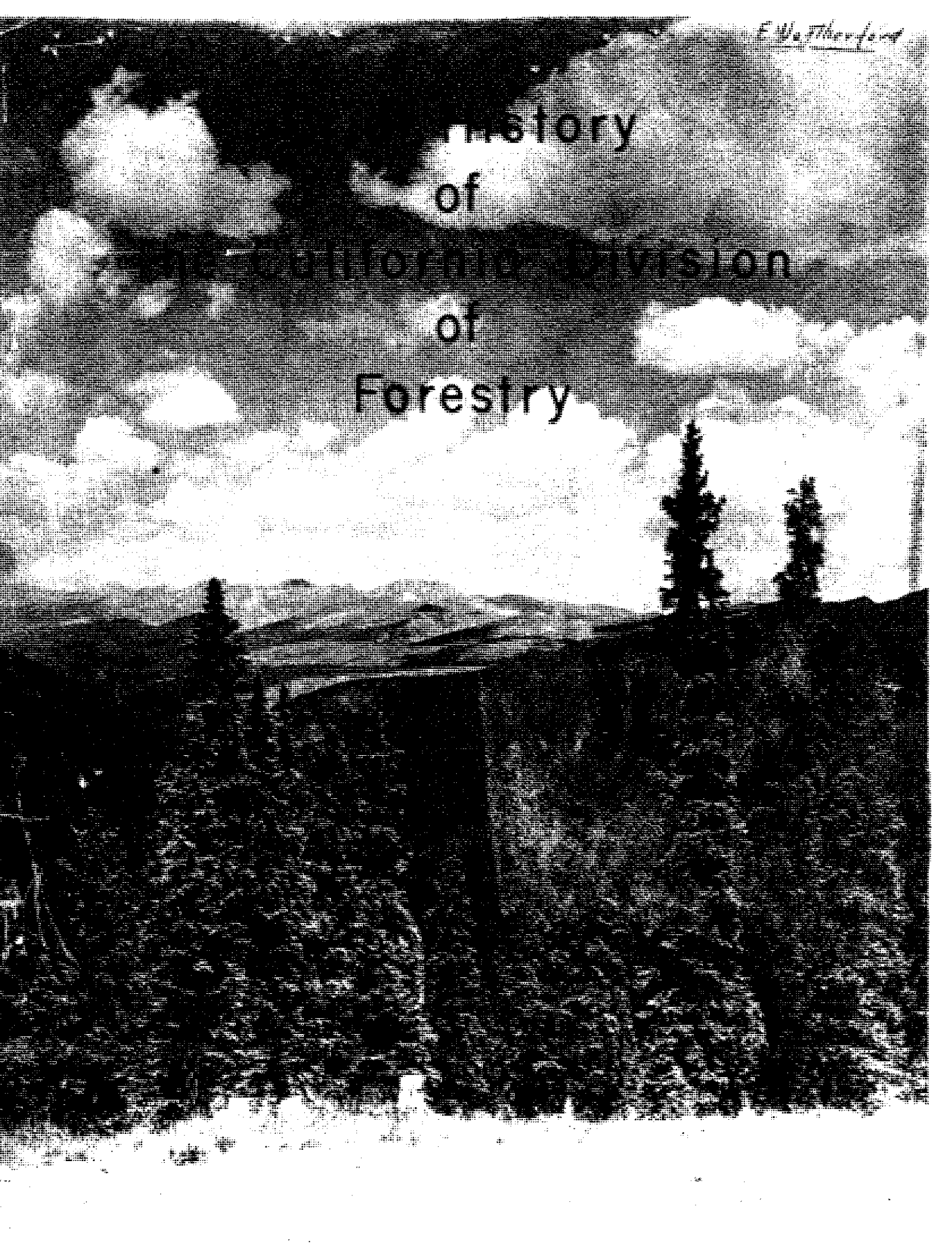


History
of
California Division
of
Forestry



TO PAT MICHAEL M/M R.U.			ROOM/STA. NO.
FROM SOIAN WETHERFORD R.U.			ROOM/STA. NO.
REPRESENTING			
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STD 7 (REV. 11-79) *Modesto* STATE OF CALIFORNIA
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MESSAGE

OSP

Goodwin J. Knight
Governor

DeWitt Nelson, Director
Department of Natural Resources

BRIEF HISTORY OF THE CALIFORNIA DIVISION OF FORESTRY

By C. Raymond Clar

Sacramento

1957

F. H. Raymond
State Forester

THE STATE BOARD OF FORESTRY

W. S. Rosecrans

John Baumgartner, Jr.
Russell H. Ellis
E. Domingo Hardison

J. J. Prendergast
Wendell T. Robie
Kenneth R. Walker

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BRIEF HISTORY OF THE CALIFORNIA DIVISION OF FORESTRY
WITH EMPHASIS ON GOVERNMENTAL AUTHORITY.

1957

The creation of an agency in California government to represent forestry affairs occurred early in the State's history; that is, among what might be called service agencies as opposed to the basic constitutional offices. This is a statement of some importance when it is considered in the light of legislative history. A scrutiny of the trend of grants of authority leads one to believe that it was practically a tenet of early government that agencies to perform a service or conduct industrial regulation had no place in State government. The backdoor entry of such a vital agent of service as the Department of Agriculture through the early corporation of local citizen agricultural societies is a prime example.

Forest conservation as an issue practically thrust itself upon the attention of the Legislature from the first days of statehood in California. This was because of the vast area of Federal public domain and the crying problem of what to do with it. Four major facts of life emphasized the issue.

These were:

1. The rapidly rising demand for lumber starting immediately upon the discovery of gold, not only in the expanding local economy but as an article of out-of-State commerce.
2. The vulnerability to the natural forest heritage to wasteful exploitation and the unusual forest fire hazard to which California is exposed because of climate.
3. The early recognized importance of the vegetative cover as a watershed protection, especially in Southern

3. (Cont'd)

California and the Sierra Nevada above the San Joaquin Valley.

4. The accepted need for planting trees to reforest demuded areas and afforest treeless brush and grasslands. One major impetus to planting was the early quest for locally produced hardwood species to substitute for the valuable tool and implement woods common to the Eastern States. This particular interest led directly to the eventual eucalyptus boom which terminated about 1912. Two other phases of State tree nursery development or interest followed in due course. These were what might be termed (1) the shade and ornamental tree production era, and then (2) tree production for commercial forest planting.

As might be expected, the earliest laws of a forestry nature enacted by the Legislature pertained to the prevention and suppression of fire. In fact, the first session in 1849 passed such an act. These few laws were gathered into the Penal Code when it was created in 1872 and modified or added in that category until most of them were transferred bodily into the Public Resources Code which was created in 1939 (Chapter 93).

The early laws providing for authority and leadership in the civil job of fire protection were of necessity directed toward local sub-divisions of government and local officers, such as sheriffs, county surveyors, road masters and later, local wardens appointed by the State Forester generally upon the request of the Board of Supervisors. The burden of fire protection cost was, of course, to be borne locally.

In passing it might be noted that the first authority to establish rural fire protection districts as legal entities was not granted by the Legislature until 1923 (Chapter 191). (Note: the creation of Tamalpais Forest Fire District in 1917 was a specific, not general, grant of authority. Note 2: the fire district act of 1881 was a law providing only for small town fire departments until amended sometime after 1923).

* * * * *

In nomenclature the State forestry agency has passed through the following phases. The designation does not in each case indicate the sole authority; rather the dominant entity is emphasized:

1. Board of Forestry, 1885 - 1893
2. State Forester, 1905 - 1919
3. Board of Forestry, 1919 - 1927

during this era the awkwardness of the term was so self-evident as to cause the adoption of the term "Forestry Department".

4. Division of Forestry of the Department of Natural Resources, 1927 -

* * * * *

The first agent of a forestry nature established in California government (excluding the creation of the Yosemite Valley and Mariposa Big Trees State Park Commission of 1865) was a Lake Bigler Forestry Commission of 1883, created to report upon the possibility of preserving for posterity the recreational attractions of the Lake Tahoe area (Assembly Concurrent Resolution 31).

At the next session of the Legislature the author of the above resolution and subsequent chairman of the commission, Assemblyman James V. Coleman of San Mateo, was successful in obtaining passage of the law creating the first State Board of Forestry in the United States. This law provided for a three-man commission appointed by the Governor (Chapter 11, approved March 3, 1885). Mr. Coleman was appointed and made chairman of the Board.

The authority of the Board of Forestry was confined to collecting and disseminating information and making investigations regarding tree culture and forestry. In 1887 a very important Chapter 35 was enacted. This gave to the Board members and assistants power of peace officers to make arrests for violations of "any law applying to forest or brush lands within this State, or prohibiting the destruction thereof". Such laws were meager indeed in 1887. Yet the declaration of State interest was an important event. This was especially so because of the failure of the Federal government to make its own determination as to the disposition of the great forested public domain.

Two tree nurseries were established by the Board and several other test planting sites were contemplated. The nurseries were at Chico and Santa Monica. There was great curiosity at this time in respect to the introduction of exotic tree species into California. Unquestionably there was a great deal of practical research in arboriculture that was worthwhile. Another very vital aspect of tree planting hinged upon the certainty of that day that about one-fifth of any broad geographical area must be tree covered or a successful agricultural industry could not be maintained. Some authorities were certain that trees caused rain to fall (and why not? where the heaviest forest grew, there was measured the highest rainfall). Nearly all were certain that a high forest watershed guaranteed an increased water production over a chaparral covered mountain range. The great Gifford Pinchot himself had said so. And already in these early years the dwellers on the southern California

flat lands were becoming restive about obtaining a permanent and adequate water supply.

It has been often said that this Board of Forestry became too absorbed in nursery development and then became involved in "politics". A disinterested scrutiny of evidence at hand indicates that something else happened. The Board of Forestry exerted all of its influence in decrying the rapid and sometimes wanton exploitation of the public domain, the destruction by fire, the little interest displayed by the Congress in the public lands, the dissipation of an empire in forested State school lands at a price of \$1.25 per acre and often for a single first payment of only 25 cents per acre.

It is respectfully submitted that in its first era the State Board of Forestry was strangled to death by Chapter 187, approved by Governor Markham on March 23, 1893.

The two nurseries were transferred to the control and supervision of the State University by terms of the law of dissolution.

In the meantime Congress set aside from private entry the great Sequoia and Yosemite reserves, not at all certain in its collective mind just what was to be done with the areas. By executive order after 1891, the President was permitted to set aside forest reserves. On December 29, 1892, President Harrison set aside the San Gabriel Reserve, thus indicating the dominant importance of watershed protection in the early stages of what became the National Forest system. And as yet there was no clear determination whatsoever as to the responsibility of the State of California for the protection or management of the Federal forest reserves within the State. Some authorities believed that the least the State could do would be to offer protection while the Federal government assumed the burden of managing the lands.

For a decade the State officially did nothing. Then the rather liberal and definitely conservation minded George C. Pardee was elected Governor in

1903. He soon communicated with Gifford Pinchot who was President Theodore Roosevelt's Chief Forester.

Pardee and Pinchot did something forceful but also most logical and practical. They arranged for a great joint survey of the forest situation in California. The survey began in July of 1903 and continued into 1907. Under Chapter 155 (1903) the sum of \$15,000 was appropriated by California for the joint forest study and in 1905 \$10,000 (Chapter 157) was added. (Water resources was also included as a vital part of this survey; however, appropriations and accounts are precisely segregated from those of the forestry project).

The joint forest survey formed the foundation for two important actions. The forest reserves were transferred to the supervision of the U. S. Department of Agriculture and thus the national Forest Service was born. A new Board of Forestry was established in California and the position of State Forester was created.

The Act of March 18, 1905 (Chapter 264) became the statutory cornerstone for the State forestry agency as it has existed through the ensuing years. There have been, however, numerous monumental alterations in this basic act.

The Legislature in 1905 made some drastic changes in the original draft of the bill, especially in respect to eliminating direct State entry into the work of forest protection at State cost. The burden was placed upon the several counties, functioning only to the limits of their own desires, under local firewardens appointed by the State Forester.

Among several aggravating aspects of the law resulting from emasculating portions of the bill in parts was the provision that the State Forester could maintain a fire patrol at places and times of fire emergency. This was all right except that the County was obliged to pick up the check.

The Board of Forestry was to consist of the Governor, Attorney General, and Secretary of State. No records of this agency of government acting as a unit are to be found anywhere in the papers of State government. Only one newspaper account relating to this type of Board has been discovered for the full fourteen years of its existence. That was the memorable first meeting on July 13, 1905, when the first State Forester, E. T. Allen, arrived to take up his duties.

In the new act the one State Park at Big Basin was transferred to the control of the Board of Forestry. No mention was made of nurseries.

One section of the act made it mandatory for lumber companies to eliminate logging slash by burning. This law was never enforced, primarily because of lack of funds to hire enforcement officers. During Governor Richardson's administration, however, emergency money was allotted by the State Controller for cooperative work with industry during the winter and spring months. In respect to enforcement of this (Section 19), it should be noted that it was easier to write a mandatory regulation than to develop a good silvicultural method of destroying debris by fire without destroying the forest at the same time.

In the meantime, the U. S. Forest Service was beginning to strengthen its organization on the ground. Little as the Federal budgets might have been they permitted the organization of a unified body of men with high esprit de corps. E. T. Allen remained only one year as State Forester of California. During that time he also acted as a sort of supreme inspector for Federal interests in California at the specific request of Chief Forester Pinchot in Washington. (The regional District Office was not established in San Francisco until December, 1908.) In 1908 the Forest Service agreed to cooperate with County governments by offering fire protection along the boundaries of the National Forests under formal agreements. These items are

quoted here to emphasize the intensive spirit of integrated cooperation existing since the first days of 1903 between State and Federal forest officials in California.

With Allen's departure for personal reasons in July, 1906, G. B. Lull was appointed State Forester. Lull was, of course, a trained forester, and like Allen, less than 30 years of age. He remained until 1910 at which time he resigned to work for one of the eucalyptus promotion companies at a considerably increased salary. Lull pointed out over and over again the weaknesses in the forestry laws and the need for the State to really supervise fire protection and pay for a reasonable share of the cost. He accomplished practically nothing in that respect.

It was at this period that the first serious agitation developed for the acquisition of State Forests, especially from tax delinquent and cut-over land, and the residue of forested State school land. Nothing was accomplished. In fact, the State Forester became quite innocently involved in what became blown up to "scandal" proportions in his management of California Redwood Park at Big Basin. He had let a contract to remove some burned timber from the park area. Local emotionalism succeeded in having the park placed back under a separate commission in 1911.

In 1910, G. Morris Homans, also a young U. S. Forest Service employee, was made State Forester. He picked up the rather thankless burden dropped by Allen and Lull. Hiram Johnson came in as a reform Governor in 1911. He did in fact institute many vital reforms in State government but the cause of forestry advanced very little. In 1911 the Federal government enacted the important Weeks Law under which cooperating States could receive matching Federal aid for forest fire protection. California, the state having most need for such help, failed to qualify for Federal aid until the summer of 1919, nine fire seasons late.

One very important event in the field of conservation of natural resources occurred in Governor Johnson's administration. This was the creation of the California Conservation Commission by law in 1911. Former Governor Pardee was made chairman of the three-man appointed commission. Another member was Francis Cuttle of Riverside. Both of these gentlemen became leaders of the later reconstructed State Board of Forestry under successive Governors Stephens and Richardson.

Between 1911 and 1915 the Conservation Commission investigated and reported upon many problems of natural resource management. Probably their greatest achievement was working toward and having created the State Water Commission in 1913. Nevertheless, this group must be credited with doing for forestry what the Board of Forestry of that era apparently did not do. They held open exploratory meetings with lumbermen and all interested parties upon every aspect of forestry as it affected the people.

In the meantime, State Forester Homans pleaded, elucidated, castigated, and just plain begged for State funds to allow his office to at least provide leadership in forest fire protection throughout the privately owned lands of California. For instance, in his official Report of 1910 he analyzed all items of his proposed two-year budget of \$122,600 in the place of the \$40,300 he actually received.

There was in Sacramento, the Chief, his Deputy, one and sometimes two Assistants, a couple of clerks. This was the "Forestry Department". The demands from the public regarding such technical questions as advice on tree planting and preparing management and fire plans could not be handled by this staff. Yet they were also charged with the responsibility for generally supervising several hundred firewardens around the State.

Whenever large fires ran out of control it was natural and proper that local officials would appeal to the State Forester for help. He and

his assistants responded. Yet the cost of the fire suppression measures which they directed under the pressure of surrounding calamity must later be passed upon and paid at the sole discretion of the local Board of Supervisors from county funds.

It is quite obvious that under such a system of forest fire protection for California it would be the rare and farsighted county indeed which would spend tax dollars preparing for the prevention of a fire before the chance fire occurred and became a calamity. And that is the way it was.

Two technical forestry problems occupied much thought and debate during these years and up until the early 1920's. One was the problem of disposing of slash and other debris left after logging. Fortunately, the issue was pretty well kept within calm and semi-scientific limits, largely because the responsible lumber operators recognized a responsibility upon their own part to reduce or eliminate this declared public nuisance of their own making. Secondly, the slash was an obvious fire menace to their young and merchantable timber and to their structural investments.

The other issue was so-called light-burning, which was a theory that large fires in timberland could be prevented if many small fires or ground fire burning under control were used to eliminate the combustible material on the ground. This was a highly emotional proposition, probably because so many people were sure that the government experts were deliberately destroying the public forests through their stupidity.

Some timber owners were likewise very positive that light-burning was the only logical if not ideal forest protection practice. During 1920 to 1923 a careful experiment was carried on under the direction of Deputy State Forester W. B. Rider. The Forest Service, University of California and lumber industry joined in the study. Their finding proved to them that light-burning was not helpful but was in fact detrimental to the forest. The lumber industry wanted

none of it. But to this day many people who have never owned an acre of forest land still advocate the theory of light-burning (although they are in truth generally a little vague about the whole thing when asked about details).

In the long period of lassitude in the serious business of fire protection there were a few serious studies and publications along other lines emanating from the State Forester's office. There was a bulletin on shade tree planting, one on pharmaceutical plants, technical documents on wood use, log measurements, and mill production.

NURSERY

In 1917 a law was finally enacted after many years of pleading which authorized the establishment of a forest nursery (Chapter 475). No money was appropriated to accomplish this. The law was strongly endorsed by the State Highway Commission and citizens anxious to see trees planted along public roads. Chapter 475 provided that trees could be grown for reforestation of public land, beautifying school grounds and parks, planting along streets and public roads.

In 1919 Senator Herbert Jones introduced a bill to appropriate \$38,000 to purchase land for a nursery and operate it. The bill failed to pass.

In the fall of 1920 the newly created Board of Forestry consulted with the Highway Commission and the latter agency agreed to purchase land for a nursery so that Forestry could grow highway planting stock. Forestry Board member Solon H. Williams discovered the present Davis site and the land purchase was made. The Legislature of 1921 at last made an appropriation of \$20,000 to the Board of Forestry for construction (Chapter 293) and in the support budget allotted \$15,000 for operation. The first planting was made in the spring of 1922 along the highway between Davis and the Yolo Causeway.

The County of Yolo provided \$2,500 to pay for planting stock.

In 1939 (Chapter 479) the first important amendment was made in the nursery authority in the quarter century of the existence of the Davis Nursery. Under this law it was now permissible for the State to sell (at not less than cost of production) planting stock for "soil erosion control, watershed protection, farm windbreaks, the production of forest products and farm woodlots".

Heretofore, the private nursery industry had raised overwhelming objection to the State competing in their field. Actually, this was an argument based upon a weak foundation as proved by the experience of many other States. State aid in forestry type planting had actually inspired landscaping and other planting to such an extent that private nursery sales were obviously enhanced. Furthermore, few private nurseries had ever come forth and produced planting stock in volume at a price which could make it economically available for the forestry type planting contemplated under the amended law.

In 1953 (Ch. 1339) the law was changed to allow the State Forester to establish a selling price with the approval of the Board of Forestry for nursery produce sold.

IMPETUS OF WAR; 1919

During the first World War the great fire losses in grain and farm structures was a matter of deep national concern. In California the farm leaders and the State Forester were intensely active in developing and encouraging local fire control companies. County supervisors were being shaken into action and most of them responded. In some of the mountain counties volunteer fire associations had been springing up here and there over the past years.

Also during the past sessions of the Legislature, especially 1913, 1915, 1917, bills, often bitterly conflicting, had been introduced to reconstruct

the Board of Forestry and its functions. No doubt the war scare brought the issue to a point where it could no longer be evaded by 1919.

On May 2, 1919, Governor Stephens signed the bill which became Chapter 176. This law pretty thoroughly reorganized the forestry agency without disturbing the criminal statutes pertaining to fire. Provision was made for administrative districts, rangers, equipment, securing emergency help, and especially the granting of authority to the State Forester to enter cooperative agreements for the purpose of preventing and suppressing fire with the Federal government, cities and counties, and private parties.

A couple of weeks later the Governor signed Chapter 544 which provided for an entirely new type of representative Board of Forestry. Now the Governor could appoint four persons representing the timber industry, livestock, hay and grain, and the public at large. These with the State Forester constituted the new Board of Forestry. As soon as the law became effective the Governor appointed a Board which promptly selected Doctor Pardee to be its chairman.

For the biennium 1919-1921 State Forester Homans had the stunning total of \$72,000 to work with, largely because, for the first time in history, this Legislature had made a special fire protection appropriation of \$25,000 (Chapter 414). Now the way was clear to take advantage of the Weeks Law and ask for federal aid in the protection of the headwaters of navigable streams.

This was not the total amount appropriated for fire protection that biennium. It was the first such general appropriation to the State Forester. Ever since 1907 special appropriations of one to several thousand dollars had been made for specific fire protection mostly within the National Forests of Southern California. In 1919 about \$10,000 was thus appropriated through special bills.

FIRST RANGERS AND LOOKOUTS

With the first protection appropriation the State arranged to hire its first four Rangers or "Weeks Law Patrolmen" (actually they received federal pay checks). During four summer months of 1919 these men worked wherever needed but their headquarters were respectively, Redding, Oroville, Placerville and Auburn.

By the fire season of 1920 there were ten Rangers employed. They handled supervision of fire protection in the forest and rural land outside National Forests in fifteen counties of California.

Through the cooperation of the long established Stockmen's Protective Association and several adjacent counties, the State Forester was able to construct a very modest fire lookout structure on Mt. Oso in Stanislaus County and string a telephone line down to the San Joaquin Valley floor. By July first, 1921, an observer was living at the station.

Over at Mt. Bielawski on the Santa Cruz-Santa Clara boundary a high steel tower was constructed and made ready for use exactly one year later. Three counties, the Park Commission, and the Highway Commission helped the Board of Forestry on this project.

In November, 1921, State Forester G. M. Homans died after a year of increasingly poor health. His Deputy, Merritt B. Pratt, was appointed to the position by Governor Stephens. The organization generally known as the State Board of Forestry and sometimes by the more logical term, "Forestry Department", progressed very slowly, but no doubt surely, in building up a loose cooperative association of county fire protection organizations. These were supervised by Rangers receiving a State paycheck backed by Federal aid funds. Nearly all regular operating costs were appropriated by the county. For

the most part the State was able to pay for excessive fire emergency costs.

Not all counties were involved in this confederation by any means. Los Angeles, and at some period, all of the Southern California counties maintained independent organizations and asked for special State appropriations to help in fire protection. Marin, San Mateo, and the Contra Costa Hills Association were in this latter category.

In 1921 the Board of Forestry took a strong position in the matter of watershed protection. It was undoubtedly because of Board influence that the Legislature adopted Senate Concurrent Resolution No. 27 which directed the Board of Forestry to examine areas denuded of vegetation and which were therefore causing damage to streams, harbors, irrigation systems and so forth. In the regular budget \$10,000 was appropriated to conduct a study. In 1923 a splendid, comprehensive Report to the Legislature was duly transmitted. It is commonly known as the E. N. Munns' Report after its author who was hired by the Board to make the investigation.

STATE PARKS AND FORESTS

The Board of Forestry was responsible for the supervision of parks except the California Redwood Park in Santa Cruz County. But there were no parks except one plot at Chico donated by Mrs. Bidwell in 1909. Dr. Pardee's Board of Forestry wished to acquire cut-over timber land and manage it as State Forests. The lumber industry promised to support bills asking for \$150,000 each biennium for this purpose.

Then came a concerted drive by recreation groups to save some of the virgin redwoods before it was too late. The Save-the-Redwoods League was born. Before the legislative session of 1921, these dedicated people proclaimed "Now or Never" so forcefully that the Legislature passed a bill appropriating

\$300,000 specifically to purchase redwood land in Mendocino and Humboldt Counties (Chapter 871). The process of acquiring land and managing it now fell upon the State Board of Forestry and remained there until the creation of a Division of Beaches and Parks in 1927.

The drive to acquire State Forests had been pretty well shattered. Another try was made in the ultra-conservative Richardson administration in the session of 1925. It had little chance for success. It was 1945 before the attitude regarding the acquisition of State Forests had materially improved.

Since 1927 the Division of Forestry has assumed responsibility for fire protection for all the State Parks within its area of responsibility, with the Division of Beaches and Parks providing such protection for structures as it has deemed proper. With only rare and transient differences of opinion in respect to disturbing vegetation of a fire hazardous nature this cooperative project has worked to the entire satisfaction of both agencies. After the great Conejos fire in San Diego County in 1951, both agencies have been cooperating in reforestation by planting in the Cuyamaca State Park.

* * * * *

When Governor Richardson prepared his first budget in the spring of 1923 his aim was to reduce the total twelve million dollars below the previous State budget. By one means and another he seems to have succeeded. One agency that suffered out of proportion was the Board of Forestry. Board Chairman Pardee resigned with as much public furor and fuss as his great name could generate. The slow progress of the agency became considerably slower.

Nevertheless, a great deal of forestry legislation was proposed during this period and some important bills became law. The Compulsory Patrol Law, commonly called "Chapter 313", was enacted in 1923 (repealed in 1941 by Chapter 1227). This law provided for the collection of a fee (under 3 cents)

per acre on all pine lands wherein the owner did not furnish a satisfactory fire patrol. The act was difficult to administer and sometimes was assailed with bitterness by the citizens effected.

The first rural fire protection district law was enacted in 1923. In 1925 the far-reaching change in the State Constitution was passed to the voters for a referendum vote in November, 1926. The favorable popular vote exempted from taxation young timber in plantations or cut-over land for a period of at least 40 years (Article 13, Section 12 3/4).

FOREST INSECTS AND DISEASE

Chapter 82 of 1923 permitted the State Forester to declare a zone of forest insect infestation and then if 60 percent of the landowners petitioned to eradicate the insects, he could proceed to do the work and all owners must then pay a proportionate share of the cost. The law was too cumbersome for practical operation and was amended in 1945 (Chapter 25). Under the amended law the State Forester was permitted to enter agreements with any person or party for the purpose of engaging in controlling forest insects. With the approval of the Board of Forestry, the State Forester was allowed to declare a zone of infestation, which authority made it legally possible for work of eradication to be carried on by entering upon State or private land within the declared zone. The cost of eradication work was to be shared under terms established by the Board of Forestry. In practice this ratio of cost was generally set at no more than 50 percent of cost to be assumed by the State.

In 1953 the law was amended (Chapter 1135) in two respects: (1) forest diseases and their infection zones were added to insect depredations. This modification now made the authority clear in respect to the cooperative part the Division of Forestry had taken under the so-called Federal Lea Act for the

control of white pine blister rust. (2) The "ratio of cost" clause was dropped and now any work of insect or disease control could proceed under general policy established by the Board of Forestry where the financial conditions were approved by the Department of Finance. The need for the flexibility thus gained arose once again from the biological facts of nature which had forced an amendment in the old law of 1923, namely, the necessity for prompt action.

DEPARTMENT CREATED

With the election of C. C. Young to the governorship in 1927, forestry and all natural resource affairs entered a renascent period in State government. The most important single event of the era was the creation of a unified Department of Natural Resources by the Legislature of 1927 (Chapter 128). Under the supervision of a department Director, there were established four Divisions: Forestry, Mines and Mining, Parks, Fish and Game. Now the State Forester also assumed the title, Chief of the Division of Forestry.

The Board of Forestry was reconstituted to include seven members appointed by the Governor. On the Board a member was to be familiar with one of the following respective subjects: pine timber industry, redwood industry, livestock, general agriculture, water conservation. The State Forester was not a member of the Board and hardly could have been since his primary duty was now to administer general policies determined by the Board of Forestry, the latter having lost its executive authority. The responsibility for supervising State Parks was transferred completely to the new Division of Parks.

It was almost a year before Governor Young appointed a new Board of Forestry, ostensibly because he was waiting for Doctor Pardee to agree to assume the chairmanship.

This was a time of considerable expansion into the several fields of

forest and wildland interest. In 1926 the California Forest Experiment Station was established as an arm of the U. S. Forest Service. Also in 1926 the office of the Extension Forester was established in California in direct connection with the University Department of Agriculture.

One of the greatest forward steps taken by the Congress was the enactment of the CLARKE-McNARY LAW in 1924. This act was essentially an extension of the Weeks Law of 1911 but it permitted more and easier adaptation of Federal aid funds to the fire control projects upon private lands in the several States. In California it had a valuable side effect in its mandatory segregation and designation of so-called "forest lands" in which the federal aid reimbursement funds could apply. In truth, this segregation of lands had little material effect toward aiding or persuading the State Board of Forestry to develop a clear-cut policy of State responsibility until about twenty years later. The Clarke-McNary Act also provided several other fields for State-Federal cooperation which had not been enjoyed by the State of California because the circumstances did not permit. The most neglected feature was that of cooperative production of planting stock for genuine forestry purposes. The Davis nursery continued to see most of its planting stock used for shade and ornamental planting. However, this situation began to change in 1948.

One aspect of the working of the Clarke-McNary Act is important to bear in mind. The complete supervision and performance of forestry work the cost of which could qualify for partial reimbursement by Federal money, was to be handled directly by the State official designated by State law to perform such work. And any similar work qualifying for Federal aid performed by a sub-division of government or private party must be certified by the State official as to its authenticity of performance and cost before it would be honored by the Federal government.

Speaking of qualification by other parties for a portion of the

Federal aid brings up the unfortunate influence such a policy brought to bear against unification of the State Division of Forestry into a closely coordinated agency. The fundamental policy of the Clarke-McNary Law was to induce private landowners to provide about 25 percent of the cost of fire protection. There is nothing wrong with such a policy. The distortion of operational control from an administrative standpoint came about when it became necessary to divide up the Federal "earnings" among each contributing party, and especially with each individual "County Ranger District" of the State Division of Forestry. That situation is touched upon below in the description of the Sanford Plan. In harmony with the Fire Plan of 1940, the Legislature of 1945 took vital action to end this disturbing pie-cutting ceremony. By Chapter 1170 it was provided that "all money received . . . pursuant to the Clarke-McNary Act shall be paid into the State Treasury to the credit of the General Fund".

* * * * *

In 1929, after several previous attempts had been nullified by vetoes, there was enacted the hazardous fire area law (Chapter 115). Under this act the Board of Forestry could honor the petition of a majority of land owners and designate areas of hazard after which certain rules of entry and use must prevail for the purpose of reducing the chance outbreak of wildfire.

Throughout the years the numerous criminal laws pertaining to the prevention, control and use of fire had been enacted, amended and adjusted to the economic and social conditions prevailing in California. The legislative sessions of 1919, 1923 and 1931 were the most fruitful in this respect. The tracing of any particular law may be a complicated matter and there is little to be gained by trying to do that here. In total, however, it must not be forgotten that these laws formed the skeleton of authority and responsibility under which the Division of Forestry fire protection field men were required to

perform their work. And at this time the great bulk of effort put forth by the Division was almost exclusively involved in some phase of forest and range fire protection.

During the Young administration additional counties entered cooperative agreements with the State Forester in order to have the State place a Ranger in their territory and conduct an operation still paid for essentially by County funds. In fire emergencies requiring the hiring of temporary personnel the State paid the bill, even though it often required appeals to the State Department of Finance for special allotments of funds to do so.

Such a system was beginning to develop a most unhappy administrative or organizational situation. Since the State furnished only "overhead" supervision it was incumbent upon the "County Ranger" to look to the local Board of Supervisors to furnish him with many material aids and often such assistants as clerks, truck drivers and even Assistant Rangers. Almost nothing was available from the State budget for structures and other physical features such as lookouts, telephone lines or firebreaks.

In 1929 the State very proudly fabricated, at the Sacramento Highway Shops, four specially designed fire trucks. There were few forest fire trucks existent in California at this time but of necessity the great majority of them were either built by, or for a county at the request of the locally assigned State Forest Ranger.

The next inevitable phase of such conditions led to occasional disputes as to ownership of property, but perhaps the least desirable aspect of the situation was the superficial separation of this body of dedicated men all wearing the same State Ranger's badge, but each representing his own territorial jurisdiction; each supported by varying degrees of "wealth". At worst, the situation led to an augmentation of State salaries with County funds based upon the extent of expenditures under the supervision of each particular Ranger. This

occurred about 1937. But prior to that came the Great Depression of the 1930's. It had a helpful leavening effect within the Division of Forestry in addition to bringing undreamed advances in material, physical improvements.

By the beginning of the James Rolph administration in 1931 the effect of the financial crash of 1929 was being seriously felt in State finances. The Treasury was depleted and descending into a heavy deficit. Fortunately, the Director of Finance at the time was able Roland E. Vandegrift. It was also fortunate that from his early residence in Butte County he had preserved a personal interest in forestry affairs. Vandegrift consulted with the Board of Forestry at the end of August, 1931, to review the state of affairs and develop a proposition for making the most out of the diminishing State funds and the reluctance of County Boards of Supervisors to increase cooperative allotments when they were burdened with exactly the same fiscal problems at home.

First, however, note should be taken of the course of wildfire statistics in the field. For many years there had occurred numerous incendiary fires in those portions of California where the local citizens could see little reason for preventing fire from burning vegetation that had no economic value to them. In fact, many of them were certain that the natural vegetation was a great detriment. Even when they possessed no direct interest or ownership in the land they were sometimes carried away by the emotionalism of the situation just as some people took up the theory of light-burning in the high timber forests.

Now with the serious economic conditions the number of incendiary fires increased to alarming proportions. As long as the State maintained a policy of hiring emergency firefighters there were certain to be desperately hungry people, most of them transients, ready to keep such fires burning. There was no question of the genuine hunger, and the grapes of wrath were being harvested by the overworked field Rangers of the Division of Forestry.

THE SANFORD PLAN

From this situation developed a new policy that had long been advocated by many foresters and firefighters. That was the establishment of regular, organized fire crews before the fire occurred; the so-called "sit-tight" crew. Heretofore, the guardians of the official purse strings had never conceded that the payment of a firefighter's salary when he was not actually fighting a fire could be anything but wasteful of the taxpayer's money.

The first such organized crews were tentatively tried in 1930 and proved to offer the most economical and certainly the most efficient means of combating wildfire.

But in the fiscal nightmare of 1931 it was acknowledged that before much could be accomplished there would have to be some order brought into the complex and generally unplanned system of allotting operating funds among the numerous geographical sub-divisions into which the Division of Forestry had been allowed to grow. And this included areas and agencies not under the direct supervision of the State Forester. For instance, the vast area of privately-owned land within and adjacent to the National Forests, protected by the Forest Service, was one such "outside" unit deriving a share of funds available to the State Forester for distribution.

To study and recommend an orderly procedure, one Burnett Sanford, a forest engineer, was hired by the Board of Forestry. In the course of about a year and a half he, with the collaboration of a small committee, made recommendations which were accepted and labeled "The Sanford Plan".

Sanford was confronted with the practical impossibility of treating the statewide fire protection problem as a simple matter of determining the origin and difficulty of suppressing the fires and then proposing methods of meeting the job on a relatively equalized basis. The divisive influence of the separate Ranger units, made that way from the dependence upon local contributions of

money, forced him to concentrate upon developing the fairest distribution system of available funds. Behind all this was the devastating theory, naturally held by the "wealthy" Rangers and their constituents, that the greatest effort deserved to be matched by the greatest returns in State as well as Federal aid funds.

The fiscal situation and even its solution are much too complicated for easy description. Suffice it is to say that Sanford did succeed in producing, and the Board of Forestry did approve, a money allotment scheme in which some of the available State money was allotted to County units on the basis of "weighted values" of area protected. In this case, the term "value" is synonymous with relative need in the way of protection to safeguard the "public interest" from fire. Stating the same object in reverse one could explain that the higher governments have little more obligation to pay the cost of protecting a private forest or grain field than for a private home. State and Federal government is interested in broad watersheds, and in timber as a necessary basic economic resource, and in public recreation including wildlife preservation.

Under ideal conditions the Sanford plan would have leaned more heavily toward the actual fire expectancy rather than public value in the property which was subject to destruction. At any rate, the plan prevailed and was used with some modification until the attack on Pearl Harbor changed the California fire situation and many other things in the country.

WORK RESERVOIRS IN THE FOREST

In the meantime the economic situation had not improved. Thousands of desperate single men and families were moving, and well-advertised California was certainly the most attractive goal. In the summer of 1931, S. Rexford Black, Secretary of the lumbermen's California Forest Protective Association, huddled with Finance Director Vandegrift on a project for setting up camps where men could work for board and lodging and possibly thus relieve the labor market to the benefit of hard pressed local workers. The idea of camps was probably as old as ancient Rome. Francis Cuttle had been advocating such work camps for years. Nevertheless, the personal drive on Black's part in pushing the project to reality must be respected. Governor Rolph placed him at the head of a committee to develop the "labor camps", as they were called. And incidentally, in August, 1932, Black became chairman of the State Board of Forestry.

The labor camps had to operate on a shoestring budget. Considerable Federal aid was secured and the timber industry also contributed. To the field men of the Division of Forestry fell the burden of finding sites, building camps and supervising about thirty such camps. Jobless men were permitted to come and go at will. In the winter of 1931-32 they received food, beds and tobacco in return for labor at building fire access roads, trails, telephone lines and chopping brush in hazard reduction work. Some fifteen thousand men passed through these camps during that winter and also the next. During 1932-33 a small wage was added to the rough living fare given the camp men.

This was a thoroughly successful project and it undoubtedly constituted the foundation for the national Civilian Conservation Corps which took over in the same manner from 1933 to 1942.

The work to be done was out there on the ground. But, unfortunately,

the Division of Forestry, which bore so much of the burden, had never had qualified personnel nor the opportunity to prepare a coordinated study of its own needs. Nor did it have money enough for the purchase of tools and structural materials to accomplish the more permanent type of physical plant installations. Just the engineering and land acquisition aspects of such a huge project would have staggered any organization less conditioned by its everyday work to creating near miracles from near nothing.

With the coming of the CCC program some acceptable degree of planning was required and, fortunately, Federal contributions made it possible to secure a few qualified men along with building materials and tools.

During the Civilian Conservation Corps period there were at the peak 33 camps operated under the supervision of the State Forester. In the camps 6000 young and able firefighter-laborers were making a reality of the dreams of past years. Of course, the Forest Service and other Federal agencies operated many similar camps in the high mountains of California during those years. Through combined work the great Ponderosa Way firebreak was literally chopped along the lower edge of timber from Tuolumne County northward around Redding into Trinity County, a distance of 800 miles. Thousands of miles of roads were built, hundreds of ranger stations, lookouts, warehouses and other buildings were constructed. It was a proud achievement and one which thrust the Division of Forestry "twenty years ahead of itself" according to State Forester Pratt. That was a modest boast if otherwise anticipated progress was to be measured by prior achievement.

In the meantime too, another activity was taking place in Sacramento. A few young forest technicians were being permitted to stand off and take an inventory of the physical condition of the Division and to study and prepare plans for an orderly development of fire lookouts, crew stations, telephone lines and the personnel and auxiliary equipment to go with them. This planning

was done with as little reference as possible to any particular source of funds which would be required to put the plan into operation.

Not a great deal transpired from this planning for several years except an intensive lookout building project conducted under the CCC program and carried out in conjunction with the Forest Service. The result was a precisely integrated and interdependent network of fire detection stations planned for the entire forest and watershed area of the state of California. Most all of the recommended buildings were constructed. The Division's fire lookout system was exactly doubled in size.

The Board of Forestry in these days of galloping progress faced more than the usual problems which come before such Boards, as for example the emotion-charged "controlled burning" issue. It was also trying to drive a three-horse team in which the two outside horses, represented by Federal and County money were sort of dragging the State part of the team. The truth was that the Legislature was being presented with an accomplished fact, a sort of hitherto unwanted child, which it was honor bound to support.

Little was done by the Board to segregate the respective areas of responsibility between State and County governments in fire protection. On April 9, 1938, a resolution was adopted which stated that where valley and rural land (zone 3) predominated in any cooperating county, the county should "pay the major proportion" of the cost of County protection "as stipulated by the State Board of Forestry". This good beginning was not followed up for some time.

FIRE PLANS

Nevertheless, at the next session the Board directed the State Forester to forthwith prepare "an adequate fire prevention, protection and suppression program, by counties, to be coordinated with a statewide comprehensive program". Now the fire planning of the young technicians began to pay off.

A supplemental or projected plan of development costing \$3,000,000 was prepared in detail and presented to the Board of Forestry within a month's time. Under the personal leadership of member W. T. Robie this plan and budget was reduced to about \$2,000,000 and advertised as being a vitally necessary expenditure to properly augment the regular biennial budget of about \$1,400,000. At this time the State General Fund was \$37,000,000 in the red. Nevertheless, the two million dollar SUPPLEMENTAL BUDGET bill was introduced into the Legislature in 1939. It failed to pass.

And then began the second World War in Europe and from it came the stories of fire devastation in the great cities. American military and fire protection officials took heed.

Culbert Olson took office in 1939, the first Democrat in some forty years to be elected Governor. New personalities came into the higher echelon of State offices. A different Board of Forestry was appointed. Warner L. Marsh became Deputy Director of the Department of Natural Resources and under his direction the Fire Plan of 1940, or Clar Plan, was developed into a natural extension of the Supplemental Budget of 1938. The Plan of 1940 gained strength by being molded at a series of field meetings before the assembled Rangers. It was taken before them by a four-man committee of employees selected and appointed by the Board of Forestry.

The Fire Plan of 1940 was divorced from the political practicalities of the 1938 version in two respects. Both were of utmost importance.

- (a) The area in which the State of California was to assume complete jurisdiction and responsibility for suppressing forest and watershed fires was designated just as though the Board of Forestry had done so. All other areas were set aside and considered to be the primary responsibility of a city or county or the Federal government.
- (b) A physical plan of protection including personnel, structures, communication facilities and equipment was planned strictly upon the basis of need to accomplish the fire control job without the slightest concern for political boundaries or anticipated source of funds.

To adopt the 1940 Plan meant to depart from the Sanford Plan. The great labor relief programs carried on through Federal aid and, secondly, the depletion of County treasuries were the strongest factors in pointing toward a unified and more independent State organization. The irresistible force was added on December 7, 1941, at Pearl Harbor.

But before Pearl Harbor two unrelated projects were working to affect the 1940 Plan. One was a series of dinner meetings from Yreka to San Diego, sponsored by the State Chamber of Commerce (which took no official stand itself). At these meetings the local components of the proposed Fire Plan were expounded and dissected before the region's leading citizens. This was strictly an educational program. It is impossible to quote cost figures for projects of this type without much explanation of fixed versus capital investment expenditures. Roughly, about \$3,000,000 annually would be needed to support the field organization proposed by the Plan.

The second matter was the quiet and very serious work of the State

Council of Defense and one of its children, The California Fire Disaster Plan. In that plan the Division of Forestry was scheduled to play a very important part in the event of local war emergency.

Before Pearl Harbor attempts were unsuccessfully made to initiate the 1940 Plan in successive biennial steps. The State General Fund was now in a 68 million dollar deficit and the Legislature was doing very weird things. Items were stricken from the regular Forestry support budget for reasons of economy and then granted under special bills with little question. In this atmosphere Director of Natural Resources Richard Sachse asked for a supplement of \$300,000 to offset the CCC camp firefighter strength which was lost due to closed camps. The bill was passed and approved. Through such occurrences, including flood damage appropriations, the total State appropriations to the Division began racing upward. Where a half-million dollars was available from the General Fund during the calendar year 1939, this became a million by 1941. In these days the organization was handling nearly 2000 forest and watershed fires and 2500 to 3000 rural fires each year. The job was too big and effected too many citizens to be ignored.

The crew system had come to stay, but it was not on a well-planned basis and, least desirable of all, it depended upon a razzle-dazzle fiscal game of support from a special budget item marked for fire suppression and not fire protection. The first principle of the Plan of 1940 was to build a firmer foundation under that program.

At any rate, on January 24, 1941, the Second Supplemental bill, or more properly, the first Fire Plan installment bill was introduced at the behest of new Director of Natural Resources Kenneth Fulton. It asked for \$1,171,505 "to be used . . . in accordance with the Forest Fire Protection and Control Plan". It was intended to be the first of three approximately equal biennial supplemental requests. The Assembly Committee on Ways and

Means supervised the painless extermination of the bill at an early date.

PEARL HARBOR

On the night of the attack on Pearl Harbor (which was well into the non-fire season) the Division of Forestry conformed to prearranged plans. Lookouts were sent to key stations to watch for enemy aircraft. Fire trucks were manned and placed on stand-by for immediate response in the event of bombing. Action and not budgets took precedence in the minds of Division administrators. On December 19, 1941, the Legislature met in special session and the members brought with them the same attitude of mind. They wished to listen seriously. The Army and Navy had their own problems but they were desperately concerned about wildfire in California.

So a few Division of Forestry men in Sacramento hammered out a special fire protection budget of nearly eight million dollars for the remaining 18 months of the biennium. The Fire Plan of 1940 was the valuable skeleton but now the requirement went much farther. The Division was asked to furnish the key statewide fire dispatching network. Much equipment including 25 bulldozers and 250 standby firetrucks were to be purchased. Crews were to be maintained continuously. It was a weary and exciting time. California was in imminent peril of deadly modern warfare. Eventually, a bill producing an extra \$4,022,700 for the calendar year 1942 was passed and approved. In a matter of hours the Division found itself confronted with a tripled budget and a mighty responsibility. It met the responsibility, but not easily. For instance, to keep 2000 men on the payroll that year, a total of 6000 employees came and departed, some for war, some for the shipyards and airplane factories. With it all the permanent gain for the Division of

Forestry was a firm footing on the ground so urgently and wistfully sought by all the Boards of Forestry and State Foresters of the past. Now, at last, the State of California had, perforce, recognized and met its own financial obligation in the matter of forest fire control.

FOREST STUDY COMMITTEE

With the inauguration of Earl Warren as Governor, the stage was set for some advances and much needed clarification in basic forestry law and policy. Regardless of the well-meaning of those administrative officials associated with forestry in the Olson administration, they were not in a congenial political position to accomplish any spectacular changes. But a background for change had been well laid. For example: an attempt had been made to create six administrative districts in the organizational structure of the Division. The State Forester to Ranger line of command had been clumsy for years. Now, with the tremendous growth of duties, and the responsibility of the State Forester's office for answering for performance on a statewide scale, it was obvious to almost everyone that authority to coordinate and direct must be placed closer to the field. Early in the Warren administration the creation of districts became a reality mostly because the several controlling agencies of government, such as the Personnel Board and Department of Finance, were willing to approve the recommendations of the Director of Natural Resources.

By 1944 the vigorous and progressive DeWitt Nelson, after nearly 20 years of Forest Service administrative experience, was appointed State Forester of California. W. S. Rosecrans, who had contributed much of his time voluntarily for some 30 years to conservation of natural resources, was made chairman of the new Board of Forestry. A new era blessed by a harmony that is unusual for any

great project of government was at hand.

By Act of June 8, 1943, the Legislature and Governor created a committee to study the forest situation in California (Ch. 1086). The committee consisted of two members of each legislative house, the Director of Natural Resources, and the Chairman of the Board of Forestry. \$15,000 was appropriated for its use.

In 1945, Senate Resolution 151 of June 15 created the Senate Forest Study Committee in continuation of the above project and appropriated \$10,000 to support it from Senate funds. Five Senators were appointed under the chairmanship of George M. Biggar of Covelo. Numerous public hearings before this committee stimulated interest and generally developed a comprehensive and far-reaching program of forestry legislation for presentation to the Legislature.

In 1941 a concerted effort had been made outside of the Board of Forestry to add to the State Constitution an article providing for a newly constituted seven-man Board and providing also that the State Forester could be removed from office at the pleasure of the appointing power. This was by no means a wild proposal. It was developed by many of the State's most influential and conservative citizens. The Senate of that session passed, with the concurrence of the Assembly, a Senate Constitutional Amendment No. 6. Through this act the matter was placed on the general election ballot of November, 1942. It was defeated by a very small number of votes.

This proposition in modified form was brought forth again by the Forest Study Committee. Its recommendation received legislative approval and became law as Chapter 316 of 1945. Under this law the Board is to be appointed by the Governor with confirmation by the Senate. Each member is to serve for a four-year staggered term. The seven members shall respectively represent the following: pine producing industry, redwood, forest land ownership, range-live-stock, agriculture, water, and the general public.

In 1943 a law (Chapt. 172) was passed which provided that no coniferous tree could be cut into commercial lumber unless its diameter exceeded 18 inches unless a permit to do so was secured from the State Forester. The permit was to be granted under specified conditions. This was the first actual forest regulatory law of its kind in California. This so-called "minimum-diameter law" was not very effective because of loopholes which allowed deliberate evasion, or which permitted the landowner to quite honestly change his mind in his future use of the forest land.

Without disturbing the minimum-diameter law (until it was repealed in 1955 by Chapter 1026) the Legislature passed in 1945, and the Governor approved the so-called FOREST PRACTICE ACT (Chapt. 84). Under this comprehensive law it was provided that in each of four major merchantable timber regions of the State (as designated in the act) there should be a forest practice committee of five appointed. Four were to be appointed by the Governor from among timberland owners in the areas; each appointee representing a different status of land ownership. The fifth member (and secretary) was to be an employee of the Division of Forestry appointed by the Board of Forestry. The committee must develop rules for the regulation of logging practices and for the protection of the forest from fire, insects, and disease during logging operations, and rules for the regeneration of the forest. Such regulatory rules were then to be voted upon by owners of timber land in each respective district. If approved by a two-thirds vote, then the rules were to be submitted to the Board of Forestry for its final approval. Thereupon the adopted rules and regulations would have the force and effect of law within the respective district. A modification or departure from rules under certain operational circumstances was duly provided for in the basic law. In 1957, Chapter 1648 tightened up on regulations pertaining to timber operator permits in order to more forcefully require compliance with the forest practice rules.

STATE FORESTS

As previously mentioned, the hope for a system of State-owned forests as distinguished from Parks arose early in Board of Forestry history. In fact, it was seldom far in the background of any Board or State Forester at any time. During the Olson and Merriam administrations there was no direct approach to the Legislature for the very obvious reason that even the vitally necessary functions of government were being sustained on borrowed money. And besides, the almost frantic activity in the camp programs had absorbed all the administrative time and energy available. But State Forests were not forgotten. The Olson Board tried to send a forest technician to investigate and report upon the program of eastern States. In 1937 there was enabling legislation passed (Chapt. 309) to allow the State, through the Director of Natural Resources, to enter agreements with the Federal Government under the so-called Fulmer Act. Under that law Congress agreed that the Federal government might purchase tracts of land and transfer them to the several states to be perpetually managed as State Forests. No money was ever appropriated to effectuate the act, however. But some parties had high hopes of securing under the Fulmer Act a timber-watershed State Forest in the Loma Prieta area along the Santa Clara - Santa Cruz boundary.

There had been continuous hope that the Latour exchange area in Shasta County would somehow be designated a State Forest and placed under management. This block of land represented the exchange with the U. S. Forest Service of unsold State School land intermingled with Federal land within the National Forests as such existed in the year 1927. About 9000 acres was involved.

In 1943 a proposal was put before the Legislature to provide \$1,052,000 for the purchase of State Forest lands. The bill was defeated.

At the next session in 1945, after the Senate Forest Study Committee had reported, there was a vastly different attitude. By one special bill

(Chapt. 1464) the sum of \$100,000 was appropriated to pay the Division of State Lands for the purchase of Latour as a State Forest.

Chapter 1496 provided for the purchase of the Mountain Home Tract in Tulare County as a State Forest; the sum of \$600,000 was appropriated.

By Chapter 317 the Legislature provided in detail the statutory rules under which the Board and Division of Forestry could acquire, manage and administer State Forest lands. A State Forest Purchase Committee was designated. One of the important stipulations in this statutory guide for the management of State Forests was a provision for paying to the several counties wherein the State Forests were situated a sum of money equal to the property tax the county would otherwise have assessed against the land and timber.

Also in 1945, Chapter 1405 provided the sum of \$45,000 for the making of surveys of potential State Forest purchase areas.

In 1946 (Chapt. 146) the Legislature provided a purchase fund of \$2,000,000 from which State Forests could be purchased without regard to fiscal year of expenditure. The major acquisition under this act was Jackson State Forest in Mendocino County.

There follows a listing of existing State Forest areas in the year 1957. No purely administrative sites are included. It is to be noted that the smaller sites, including part of Mt. Zion, have been gifts of land from private donors.

<u>State Forest</u>	<u>Acres</u>
Jackson	52,040
Latour	9,013
Mountain Home	4,560
Boggs Mountain	3,433
Mt. Zion	164
Las Posadas	796
Ellen Pickett	160
Loghry	68

70,234

By the end of 1956, revenue from timber sales and other sources from these State Forests had added a total of \$1,586,000 to the State Treasury.

RANGE IMPROVEMENT

Several times mention has been made of the controlled-burning issue and the administrative headache it caused the Board of Forestry and State Forester. In 1931 a well meant but hardly successful attempt was made in Mendocino County to try to reach a common ground of understanding and practical application with the landowners on this proposition. The diversity of opinion came about because the State officials (1) disliked to admit that vegetation of watershed value should be burned (although there was admittedly no legal reason whatsoever why the owner of the brush should be restrained from destroying it), and (2) there was a certain but poorly defined legal obligation upon the State forest official to restrain a citizen from so making use of fire that adjacent inflammable property was endangered.

In 1935 a law was passed (Chapt. 302) ostensibly to require a study of the effect upon surface and ground water flow when vegetation was burned. The Division, aided by the University, tried to carry forth its prescribed obligation under the law. Other agents named in the law offered nothing of record. It was not a successful project, and could hardly have been under the circumstances.

In 1945 the Legislature became more specific in authorizing the Division of Forestry to become more intensively engaged in the activity that was now called Range Improvement (Chapt. 1018 and Chapt. 1109). Provision was made for cooperative contracts with landowners and for independent experimentation by the Division. By authorizing the issuance of burning permits and specifying that forest officers could make reasonable recommendations to prevent fire

damage, the legal position of the Division was considerably clarified. In 1945 the first assignment was made of a forest technician to spend full time working with landowners who wished to remove unwanted vegetation with fire.

In 1949 (Chapt. 779) authority and funds were provided for the hiring of a couple of summer "stand-by" fire crews to aid in preventing the escape of brush range improvement fires, and more technicians were assigned to this work.

During the war years little burning was done because military authorities had so requested. Then an upward trend of burns under permit began, with a peak of 699 permits granted in 1954. Since then the trend of issued permits has been consistently downward (299 in 1957).

The entire range improvement situation changed after the war for two major reasons. Heavy land working equipment was more available, and higher meat and range produce values permitted greater initial expenditure by the owner working to convert his brushy land to better browse. There has been, therefore, better preparation before burning and more seeding and fertilization after burning. Sometimes there has been application of chemicals instead of fire to remove unwanted vegetation. Most of the emotionalism in the project has happily disappeared.

In 1957 this specialized work throughout the State occupies the time of nine men under the supervision of an Assistant Deputy State Forester who is a specialist in the subject, and incidentally, the first regular employee of the Division to have earned a doctor's degree as part of his technical qualification.

SERVICE FORESTRY

The original Board of Forestry was established very largely to furnish advice and encouragement in tree planting. This work later developed into the more comprehensive field of reforestation on cut-over lands, harvesting methods and fire protection plans. That is to say, the office of the State Forester was clearly established and recognized as a source where technical forestry information should be gathered and dispensed, especially among the smaller operators in forest industry. Prior to about 1950 the staff provided for such work was decidedly limited or non-existent.

As the great soil conservation movement developed in the Federal government in the mid-1930's it was inevitable that the several aspects of forest type planting should assume a major role in the action programs devised. Planting for soil erosion control automatically merged with the parallel national forestry problem, that of generally unmanaged millions of acres of forest trees of all ages and conditions held in small ownerships.

Congress created the Soil Conservation Service. In 1936 the Agricultural Conservation Program was initiated. In 1937 the Cooperative Farm Forestry Act was approved. This law was superseded in 1950 by the Cooperative Forest Management Act. Currently the Soil Bank Program is being revived or revised in the Federal government.

The story of the effect upon the landowner of these programs and the many millions of dollars spent through them is long and complex. There were, for instance, both the farm-forest and the forest-farm designation of projects. The point of consequence is simply that eventually the Secretary of Agriculture, in accordance with the common pattern, designated the Forest Service to supervise and cooperate with the several State Foresters in the conduct of a so-called service forestry program of an educational nature among the owners of small

woodland properties.

In 1940, field men of the Division of Forestry began to participate in a very minor way in demonstration projects with the Soil Conservation Service. In 1945, the Forest Service assumed specific responsibility in forestry phases of the program and two State technicians were designated by State budget recognition to spend full time on this work. Apparently, it was felt that the proper statutory authority was not possessed by the Division to engage in the program in spite of the long history of similar activity and in spite of the blessing of the Board of Forestry which clearly possessed authority to determine general policies for the Division. At any rate, Chapter 1131 was enacted in 1953 (see Section 4440 P.R.C.) which provided that the State Forester could engage in and demonstrate methods of protecting and using forest and wild land resources.

The Service Forestry Program may be briefly described as a program to extend, on a limited basis, in-the-woods technical advice to farm and other forest land owners on the establishment, protection, and management of forest lands and on harvesting, utilization, and marketing of forest products for the purpose of sustaining and improving the productivity of about 4,000,000 acres of forest land in farm and small ownerships in California.

In 1957 eight State Forest Technicians or Assistant Technicians were employed full time on Service Forestry work. In total they considered 1,228 requests for some type of advice of a forestry nature. Of this number only 45 projects were of such dimensions that they assumed the proportions of lumber operations which could well profit by the advice of professional forest consultants. In accordance with Division policy the land owners were advised to secure such professional advice. Yet the aggregate of harvested forest products represented by the Service Forestry projects reviewed by State Technicians during 1957 come to the remarkable total of 39 million board feet and earned an

income of over half a million dollars to the numerous land owners. Another profit, just as real in the mind of the government forester, is the increased respect for his forest property gained by the landowner and his neighbor.

The Division of Forestry budget for Service Forestry in 1957-58 fiscal year came to \$86,263 of which it is anticipated the sum of \$28,820 will be reimbursed through Federal aid to the program.

"SMALL WATERSHEDS ACT"

Although the responsibility of the Division of Forestry to bend every energy toward prevention of fire damage to watershed vegetation has been stressed continuously from the day the first Board of Forestry assembled in 1885, there has been actually very little entry of the Division into specific watershed projects. The reason was twofold: Foresters could not pretend to be structural engineers, and most engineers had become immersed in structural problems while exhibiting little respect for the generalized claims of foresters. But of late years the importance of maintaining upper watershed stability has become much more appreciated as a practical necessity by the specialists in the large water conservation projects.

The one adventure into the study of watersheds on a reasonably intensive scientific basis by the Board of Forestry was reported as the Munns' Report of 1923. Two other projects which resulted in printed reports should not be slighted, although neither presumed to exhibit the result to original research in the field.

During the Rolph administration an Honorary Watershed Committee was appointed under the Chairmanship of the redoubtable Dr. George Pardee. His committee of nineteen consisted of prominent men of government, agriculture, and lumbering. During their deliberations few minds needed to be changed to

produce a unanimous report issued on January 14, 1932, and entitled "Forestry in the Statewide Water Plan". One can read in the first few lines of this 22-page educational bulletin why forestry and foresters wished to be considered in the State water plan.

In 1947, fifteen years later, there was issued an 84-page bulletin by the Board of Forestry under the title, "Hydrologic Aspects of Burning Brush and Woodland-Grass Ranges in California". This work was essentially a compilation of writings, quotations, and reports on the title subject. The authors were three eminent specialists of the University of California faculty.

In 1935 Congress took action through its Public Law 46 to sponsor development of what might be termed medium or small size, comprehensive watershed units, in other words, the watershed projects between the great Corps of Engineer dams and the farmer-aid program wherein little soil dams were built on a single farm. This was recognized as a pioneer project which took its next important step in the officially named "Watershed Protection and Flood Prevention Act", or Public Law 566 of 1954. In 1956 the law was amended by P. L. 1018. The whole program seems to be well covered by the more popular name "Small Watersheds Act". (See State enabling acts, Chapt. 1886 and Chapt. 1680, both of 1955).

The program calls for the development of all phases of water collection, storage, and distribution, including flood and erosion prevention. The maximum size of any single watershed considered under this law cannot exceed 250,000 acres, nor any single dam units exceeding 25,000 acre-feet. In most cases, the number of necessarily interested private parties and government agencies makes this about the ultimate in cooperative activities.

Under the Act, the Secretary of Agriculture has delegated primary responsibility to the Chief of the Federal Soil Conservation Service. Forestry aspects of any particular projects are handled by the Forest Service. In keeping

with usual practice in all forest projects on non-Federal land, the Chief Forester, through terms of written agreements between Regional Forester and State Forester, provides that the State agency shall take primary responsibility for conducting field operations.

In specific terms, the duty of the State Forester (always in harmony with other cooperating and responsible parties) in every project under the Small Watershed Act is to estimate the required development and maintenance of forestry projects, especially fire protection and sometimes reforestation. At present the approved extension of facilities beyond so-called "basic" State fire protection are to be provided from other than State sources.

The Division of Forestry became actively involved in the 1949 pioneer Calleguas watershed project of Ventura County in which about \$40,000 was expended for added fire protection facilities to be operated by the local Fire Warden. With the recent revisions of law and a Federal appropriation of some 25 million dollars to effectuate the program, the Division has deemed it necessary to assign a special Ranger to spend full time on "Public Law 566." The future course of this program will be interesting to observe since about forty unit applications involving more than 2½ million acres are now approved for action or pending in California.

CURRENT FIRE PROTECTION SYSTEM

Much has been said heretofore about the slow and arduous progress in the development of a satisfactory forest fire protection system for the non-Federal lands in the highly inflammable State of California. The argument is submitted that the greatest single obstacle tending to delay the establishment of a satisfactory system was the failure on the part of the Legislature, guided by whatever influence may have existed, to provide adequate State funds to

allow for State leadership in the office of the State Forester. As a corollary or adjunct to that situation the Board of Forestry was hardly in a position to determine a policy for the guidance of the operational forces other than one which could function under the practical circumstances prevailing. As has been noted, the turning point came between 1941 and 1945.

A dominant basic axiom must be recognized in the business of fire control. Mutual Cooperation is a splendid and sometimes necessary object; but it must never be of a nature so indefinite as to cause confused leadership to be substituted for one single primary responsible agent during the time of a fire.

The obvious soundness of that axiom has long ago caused the several working organizations to clarify their respective positions of responsibility. One of the permanent outgrowths of Civil Defense planning (as first mentioned heretofore in regard to the California Fire Disaster Plan) has been the development of understandings of mutual aid, under which fire departments of every type shall dispatch men and equipment to emergency areas beyond their legally constituted boundary of operation. This has not been a simple matter and in the case of military installations has even required Congressional approval. In passing, it is proper to point out that one of the great advantages of a state-wide fire department, as conducted by the Division of Forestry, is its facility in dispatching forces throughout the State to points of emergency and its availability in depth of physical resources of men and equipment to enable it to do so.

The layman first scrutinizing the numerous political agencies responsible for fire protection, including districts, cities, counties, State, and the several Federal land-owning agencies, and with them the varying degrees of interest in the inflammable wealth, including timber, watershed, range, grain, structures, recreation values, and so forth, will be inclined to believe it all represents a hopelessly complicated muddle. On the contrary, time, good faith,

and the quoted axiom of necessity have caused the establishment of entirely congenial working arrangements to be followed on the ground at the time of the fire, and that is where the game is won or lost.

The whole story cannot be unfolded here. There follows merely some highlights pertaining to the Division of Forestry.

After the indefinite years the Legislature directed the Board of Forestry under Chapter 904 of 1945 to classify those lands wherein the State was to assume primary financial responsibility for the prevention and suppression of forest fires outside of incorporated cities and land of Federal ownership.

With the delineation of zones which followed, the State Forester was in a position to draw more specific contracts of protection with other agencies of government, especially the several Counties. Payment of specified sums for service rendered could be agreed upon and duly made. For instance, the U. S. Forest Service receives payment from a specified budget item for the contracted protection of private land inside and immediately adjacent to the National Forests. In 1957 the State Forester entered into agreements with 25 separate County Boards of Supervisors (under authority of Sec. 4006, P.R.C.) for the protection of rural (i.e., areas not forest or watershed land) or for winter structural protection. The total sum of reimbursement paid to the State of California by these Counties for itemized service rendered over and above "basic" State protection amounted approximately to one and one-half million dollars. In those cases where any County or other agency wishes to augment basic State protection (as provided by the State Forester's statewide plan and subsequent legislative appropriation) that agency is privileged to do so under the terms of written agreement and at the full cost of such service.

The following general statistics reveal the proportions of State fire protection during the fire season of 1957.

Areas Protected directly by Division of Forestry:

- (1) 22,806,000 acres forest, watershed and contiguous range land (inc. 3,000,000 acres intermingled Federal land)
- (2) 9,740,000 acres rural land (not State responsibility) under contract (zone 3).

State Responsibility Land protected by others:

- (a) 5,578,000 acres in National Forests
- (b) 3,209,000 acres in Counties giving direct protection.

The Division maintained 229 fire suppression crews, 36 patrolmen and 76 lookouts in addition to the regular administrative force of 30 Rangers and their assistants, dispatchers and clerks. In addition, 18 forestry honor camps were operated. (These figures exclusive of Zone 3 facilities.)

In the "forest" area (item (1) above) there occurred 2821 fires, burning 114,632 acres and doing \$303,858 damage exclusive of watershed damage.

In the rural area protected by the Division occurred 6168 fires, burning 20,298 acres and doing damage estimated at \$5,882,565.

The fire protection budget for protection of State lands only, as set forth in area (1) above approximated \$14,611,990 for the fire season. And for the total State responsibility area as represented by items (1) + (a) and (b) the sum of \$16,625,090. The figures do not, of course, include the $1\frac{1}{2}$ million dollars reimbursement received from counties as stated above. It should not be forgotten, however, that because of the State expenditure, the Federal government has paid into the State General Fund the sum of \$1,272,900 as aid under terms of the Clarke-McNary Act.

MODERN SCIENCE, RESEARCH, AND THE DIVISION OF FORESTRY

In spite of the fact that State Forestry will soon be celebrating its Diamond Jubilee, representing 75 years of existence, it is nevertheless in a pioneer stage of operation. The primary reason for this is that the science of technical forestry has only recently been launched in California on a true basis due to economic and silvicultural reasons too involved to consider here. Only recently has the determination to conquer the forest fire problem surmounted the primary economic barrier of prohibitive cost. In simple words the question, "What do we wish to accomplish and how do we do it best?" is currently given high priority.

The question has not suddenly arisen. The pioneers who wrestled with the primitive questions, many of which were identical with current questions, included many able men. Sometimes they found answers. But in 1957 it may be broadly stated that, (1) the questions are bigger, (2) it is more important to develop solutions, (3) the contributions of allied science are tremendously advanced due especially to technical military accomplishments and modern industrial research.

The State Forester's organization throughout its history has never attempted to become involved directly in intensive research projects. However, the organization has constantly been interested in finding a solution for numerous practical problems related directly to its field work. Sometimes the solutions have been sought by rather superficial research projects conducted by State personnel. More often the Division has made a cooperative contribution, either in money or direct effort, to some agency specializing in the particular area of interest. But in no sense has the Division of Forestry been just an agent for distributing subventions for technical research. Even when the cooperative contribution has been limited to money alone, the practical guidance of an "action agency" is considered to have been highly valuable.

Through the years the Division has entered into cooperative experimental projects generally by authority of appropriation acts. In the early years it appears that the Board of Examiners and then the Board of Control assumed the necessary authority for such ventures.

Since none of the investigative activities of the Division departed from the recognized field of forestry and were always known to budget authorities, and especially since they were approved by the Board of Forestry in its capacity of determining general policy guidance (Sec. 505, Pub. Res. Code), it is contended that the Division of Forestry has not departed from its statutory field of operation. Nevertheless, in 1953 the Legislature enacted Chapter 1131 (Sec. 4440, P.R.C.) to eliminate any possible doubt in this direction. This law was described in the story of Service Forestry. Also enacted in 1953 was Chapter 1118 (Sec. 4445, P.R.C.) which authorized the State Forester to engage in surveys of soils, vegetation, and forest products on forest, range and watershed lands and to enter cooperative agreements with others to engage in such work.

One of the most important projects of this nature has been a continuous item of appropriation, amounting to \$93,000 in 1957, for the preparation of a Soil-Vegetation Survey. The product of this work is essentially an inventory of class and quality of soils under the various types of wildland vegetation. It is a basic and lasting piece of research handled on the ground under the direct supervision of the California Forest and Range Experiment Station and Department of Soils, University of California.

In 1931 an appropriation act contained a clause which was transferred into the Public Resources Code as Sec. 4446 in 1955 (Chapt. 71). This law specifically permits the State Forester to make agreements with Federal agencies for studies of vegetation in respect to water conservation and soil erosion. Under this authority over the past eight years the State has been aiding in the

continuation of the highly intensive research in that work in the field laboratory at San Dimas Forest in Southern California. In 1957 the sum of \$24,000 was allotted to the project.

In the Forest Management program there has been a cooperative agreement drawn with the School of Forestry, University of California, in which \$9,500 (Chapt. 2313, 1957) is allotted for a study of the physiology of forest planting stock. The object of such a study will be well understood by persons familiar with the long and admittedly unhappy history of attempted reforestation and afforestation in California. There are literally millions of acres of potential forest land in this State which no doubt would be supporting valuable tree crops if the ecological and biological hurdles had been surmounted.

The Legislature of 1957, through Chapter 2405 provided for the annual transfer of the sum of \$100,000 from the State Land Act Fund to the Division of Forestry for "basic research, field studies and operations with respect to activities under its jurisdiction." Currently the Board of Forestry, aided by advisory committees, is studying the priority of some forty worthy projects to be investigated under this program. The range of recommended projects includes practically every aspect of the broad human activity called forestry.

Perhaps it is well that the job of forest fire control generates a high sense of drama and urgency as well as long hours of weary toil. The public interest and values at stake have kept the responsible officials alert to every phase of improved methods and have developed necessary public support in the search for those methods. As has been noted, the scientific advances by industry and military tacticians have been of invaluable aid, as has been the personal contributions of the representatives of private and military organizations. Fortunately too, State budget authorities have been alert to the need for practical research in the field of fire prevention and control.

In this matter, the "team approach" must be emphasized. It would be proper to note that the general coordination of solitary or group research projects in fire control is being undertaken by the California Forest and Range Experiment Station, a Federal institution.

Two items of the program were undertaken somewhat independently by the Division of Forestry. These were the development of special motorized equipment and a study of lightning dissipation by cloud seeding. The technical evaluation of the latter has been assigned to the Experiment Station under a cooperative State allotment of \$10,000 this year. The former project is followed intensively by the Division in close working cooperation with the Forest Service and other forest firefighting agencies.

A fire weather study involves the Division, Experiment Station, Forest Service and the U. S. Weather Bureau. \$10,000 is assigned to this program which concentrates upon the preparation of a Fire Weather Index. Experience gained during some fifteen years of development of predictions of the inflammability of fuels and changing risk of fire indicates that this work can be most profitable. Further study of "fire climate" will be undertaken by the Experiment Station through State aid to the extent of \$15,000 this year.

The University and the Experiment Station will further cooperate with the Division under a \$3,000 allotment to investigate fire prevention through a study of basic causes charged against human activity at the source of forest conflagrations.

In the more dramatic field of air and chemical attack on fire, the Division recently took a very active part in "Operation Firestop", and similar studies in which every available new product was tried and demonstrated in controlled field tests. These involved the use of helicopters and air-tankers, fire detection by television, air hose-lays, spraying by chemical, removal of vegetation by explosives and ultra-modern heavy equipment. Such experimentation

continues. There are no push-button solutions to the old problem of forest fire control in California. There are, however, hopeful avenues yet to be explored. Perhaps the most important aspect of this research program is that it is scheduled to continue under an atmosphere of harmonious cooperation.

HONOR CAMPS

The idea of utilizing the labor of incarcerated men on public works is not new by any means. It was seriously proposed 50 years ago that such men be employed in forest protection work. Several of the counties used prisoners for hazard reduction work and emergency fire fighting. Some made formal agreements for the use of inmates under the direction of State Rangers on large fire suppression jobs. Construction of highways by State prison camps was an early project.

However, it was not until a manpower shortage was caused by the second World War that the practice of taking crews of selected prisoners from San Quentin was introduced on an entirely successful basis. The inmates proved to be willing and able workers anxious for a little freedom and the opportunity to earn a small wage against their time of release. It was undoubtedly the success of the emergency projects that helped usher in the permanent honor camp program under statutory authority possessed by the Youth Authority and the Department of Corrections.

In 1945 four Youth Authority camps were built, in which the Division of Forestry assigned selected personnel to supervise all field work projects, and in which Youth Authority personnel assumed custodial responsibility. Currently there are in operation 3 Youth Authority camps and 18 adult camps in the State forestry program. In total about 1400 wards and inmate workers are housed and worked. Work consists of fighting fires, hazard reduction, construction and maintenance of fire control structures, telephones, roads and firebreaks. Two successful forest nurseries are maintained. Other forestry projects such as blister rust eradication, insect control and tree planting are undertaken. The whole progressive project is one in which the State of California can well be proud. It is also one in which an unusual working harmony is demonstrated among several differently constituted agencies of government.

ADMINISTRATION

In September of 1953, General Warren T. Hannum resigned as Director of Natural Resources. Governor Earl Warren appointed DeWitt Nelson to this cabinet position. Francis H. Raymond assumed the duties of State Forester. John Callaghan was selected to fill the Chief Deputy State Forester position.

It is interesting to observe that for the first time in the history of the State forestry organization the two leading executive positions were occupied by men of technical training who had begun their respective careers at the bottom rung of the administrative ladder in the Division of Forestry and then proceeded upward to become District Deputy State Foresters before assuming higher office.

The Division organization is established upon a staff and line basis on three levels, with the prime object of centering as much responsibility and authority as possible with the Rangers supervising the 30 field units.

The State Forester's staff is composed of Deputies supervising the following functions: Business Management, Fire Control, Fire Prevention, Forest Management, Engineering. The next level of authority and organizational contact is found in the six geographic districts, each supervised by a Deputy State Forester with his staff of assistants comparable to the functional officers at the State Forester's level. The Ranger Unit supervisors are in turn assisted by Associate and Assistant Rangers. This office assumes responsibility for assigning and supervising the various suppression crews, dispatchers, firetruck units, lookout stations, and for handling most all of the State forestry work throughout the vast portion of California which the modern Division of Forestry of the Department of Natural Resources looks upon as its area of jurisdiction and responsibility.